APPENDIX 1.1:

APPROVED TRAFFIC STUDY SCOPING AGREEMENT

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January 16, 2019

Mr. Jay Bautista
City of Ontario
303 E. B Street
Ontario, CA 91764

SUBJECT: SCOPING ASSUMPTIONS FOR THE MERRILL COMMERCE CENTER TRAFFIC IMPACT ANALYSIS

Dear Mr. Jay Bautista:

Urban Crossroads, Inc. has conducted an initial assessment of the proposed Merrill Commerce Center development (**Project**) to establish a traffic impact analysis (**TIA**) scope of work that would be prepared in support of a Project Environmental Impact Report (**EIR**). The Project is located north of Merrill Avenue between Grove Avenue and Carpenter Avenue in the City of Ontario. Based on the results of this assessment, the following memo outlines the project-related trip generation, trip distribution patterns, proposed study area and analysis scenarios expected to be included in the Project traffic impact analysis.

It is our understanding that the City will use the information contained in this memo as part of its Request for Proposal (RFP) process to solicit bids from consultants to prepare the EIR, TIA, and other technical studies that rely on the TIA. Thus, all responses to the RFP will rely on the same TIA scope of work outlined herein for bidding purposes. The following outlined scoping assumptions also can be utilized in the preparation of a traffic scoping agreement for the future Project TIA which would be reviewed and approved by City staff.

PROJECT DESCRIPTION

Exhibit 1 illustrates a preliminary land use plan for the Project and indicates the proposed phasing. Phase 1 of the proposed Project is anticipated to be developed by Year 2022 and includes the development of Planning Areas 5/5A. Phase 1A, also with an Opening Year of 2022), includes the development of Planning Areas 4/4A. Phase 2 of the proposed Project is anticipated to be developed by Year 2023 for Planning Areas 3/3A and 6/6A. Project Buildout is to include the development of Planning Areas 1/1A and 2 by the Year 2024. As indicated on Exhibit 1, the total development is proposed to consist of up to 7,014,000 square feet of industrial uses within Planning Areas 1, 2, 3, 4, 5, and 6 and up to 1,441,000 square feet of business park uses in Planning Areas 1A, 3A, 4A, 5A, and 6A. For purposes of scoping the TIA, the following mix of land uses are assumed, which represent a reasonable mix of industrial and business park uses that would be permitted by the Merrill Commerce Center Specific Plan:

- Industrial: 7,014,000 square feet of high-cube fulfillment center warehouse use
- Business Park: 1,441,000 square feet of a mix of uses including merchant wholesale, professional services, professional office, warehouse/storage, and research and development uses (as would fall under ITE Land Use Code 130).

- Total of 8,455,000 square feet

Access to the proposed Project would be provided via Grove Avenue (via Street A), Merrill Avenue, Eucalyptus Avenue, Walker Avenue, Baker Avenue, Vineyard Avenue, and Carpenter Avenue. Merrill Avenue will serve as the primary travel route for heavy trucks to and from the Project. Exhibit 2 illustrates the Project location.

PROPOSED ANALYSIS SCENARIOS

The following analysis scenarios are proposed based on planned development phasing:

- Existing (2019)
- Existing plus Project, with analysis broken down for:
    - Phase 1 – Planning Areas 5/5A
    - Phase 1A – Planning Areas 4/4A
    - Phase 1 + Phase 2 – Planning Areas 3/3A and 6/6A
    - Phase 1 + Phase 2 + Phase 3 – Planning Areas 1/1A and 2
- Opening Year Cumulative (2022) Without Project
- Opening Year Cumulative (2022) With Project Phases 1 and 1A, broken down for:
    - Phase 1 – Planning Areas 5/5A
    - Phase 1A – Planning Areas 4/4A
- Opening Year Cumulative (2023) Without Project
- Opening Year Cumulative (2023) With Project (Planning Areas 3/A and 6/6A)
- Opening Year Cumulative (2024) Without Project
- Opening Year Cumulative (2024) With Project (Project Buildout – All 3 Phases)
- Horizon Year (2040) Without Project – With Limonite Avenue Extension
- Horizon Year (2040) With Project (Project Buildout – All 3 Phases) – With Limonite Avenue Extension

TRIP GENERATION

Trip generation represents the amount of traffic that is attracted and produced by a development, and is based upon the specific land uses planned for a given project. Trip generation rates for the Project are shown in Table 1 for both passenger car equivalent (PCE) and actual vehicles.

The Specific Plan allows for the business park planning areas (1A, 3A, 4A, 5A, and 6A) to be developed with merchant wholesale, professional services, professional office, warehouse/storage, research and

development, and other similar related uses. Because the peak hour trip generation rates collected for the "business park" land use category by the Institute of Transportation Engineers (ITE) as provided in their Trip Generation Manual, 10th Edition, 2017 (ITE land use code 770) are based on limited data (i.e., a single surveyed site) that does not have the same physical or operational characteristics as the range of uses permitted in the Business Park planning areas of the Merrill Commerce Center Specific Plan, the trip generation rates for ITE land use code 130 (Industrial Park) have been used to derive site specific trip generation estimates for up to 1,441,000 square feet of business park uses proposed for the Project in planning areas 1A, 3A, 4A, 5A, and 6A. The ITE Trip Generation Handbook (3rd Edition, 2017) identifies a 13% mix of heavy trucks for ITE land use code 130, however, does not provide a breakdown of the 13% further by axle type. As such, the percentage of trucks, by axle type, were obtained from the South Coast Air Quality Management District (SCAQMD) Warehouse Truck Trip Study Data Results and Usage (2014) recommended truck mix. The SCAQMD has performed surveys of existing facilities and compiled the data to provide interim guidance on the mix of heavy trucks for these types of warehousing/storage facilities. Based on this guidance from the SCAQMD, the following truck fleet mix was utilized for the purposes of estimating the truck trip generation for the business park use (without cold storage): 16.7% of the total trucks as 2-axle trucks, 20.7% of the total trucks as 3-axle trucks, and 62.6% of the total trucks as 4+-axle trucks.

The ITE Trip Generation Manual (2017) has trip generation rates for high-cube fulfillment center use (ITE land use code 155), however, these rates are unreliable because they are based on limited data (i.e., one to two surveyed sites) and the ITE Trip Generation Manual recommends the use of local data sources where available. As such, the trip-generation statistics published in the DRAFT TUMF High-Cube Warehouse Trip Generation Study (WSP, November 6, 2018) which was commissioned by Western Riverside Council of Governments (WRCOG) in support of the Transportation Uniform Mitigation Fee (TUMF) update, has been utilized for the high-cube fulfillment center use. The WSP trip generation rates were published in November 2018 and are based on data collected at 11 local high-cube fulfillment center sites. However, the WSP study does not include a split for inbound and outbound vehicles, as such, the inbound and outbound splits per the ITE High-Cube Warehouse Vehicle Trip Generation Analysis (October 2016) have been utilized.

Finally, PCE factors were applied to the trip generation rates for heavy trucks (large 2-axles, 3-axles, 4+-axles) for both the Industrial and Business Park planning areas of the Merrill Commerce Center Specific Plan. PCEs allow the typical "real-world" mix of vehicle types to be represented as a single, standardized unit, such as the passenger car, to be used for the purposes of capacity and level of service analyses. The PCE factors are consistent with the recommended PCE factors in Appendix B of the San Bernardino County Congestion Management Program (CMP), 2016 Update.

The trip generation summary illustrating daily and peak hour trip generation estimates for the proposed Project in actual vehicles are shown on Table 2, and Table 3 shows the trip generation summary based on PCE. As shown on Table 2, the proposed Project is anticipated to generate a net total of 20,366 actual vehicle trip-ends per day with 1,467 AM peak hour trips and 1,775 PM peak hour trips. In comparison,

the proposed Project is anticipated to generate a net total of 25,674 PCE trip-ends per day, 1,806 PCE AM peak hour trips and 2,128 PCE PM peak hour trips (see Table 3).

TRIP DISTRIBUTION

The Project trip distribution and assignment process represents the directional orientation of traffic to and from the Project site. The Existing plus Project and Opening Year Cumulative trip distribution patterns utilize the existing roadway system while the Horizon Year trip distribution patterns assumes future roadway connections based on the City of Ontario General Plan (and those of surrounding agencies).

Exhibit 3 illustrates the truck trip distribution patterns for Existing plus Project, Opening Year Cumulative and Horizon Year conditions. As shown on Exhibit 3, trucks are anticipated to utilize designated truck routes such as Merrill Avenue to Euclid Avenue (SR-83), Archibald Avenue, Ontario Ranch Road, and Limonite Avenue to reach regional State highways such as the SR-71, SR-60, and I-15 Freeways. These travel patterns are not anticipated to change with the addition of new future facilities for Horizon Year traffic conditions. Exhibit 4 illustrates the Existing plus Project and Opening Year Cumulative passenger car trip distribution patterns that are based on a San Bernardino Transportation Analysis Model (SBTAM) select zone run for a zone wholly or partially containing the Project, with modifications to utilize existing roadways.

Exhibit 5 illustrates the passenger car trip distribution patterns for Horizon Year (With Limonite Avenue Extension) traffic conditions. The passenger car trip distribution patterns are based on a SBTAM select zone run.

INTERSECTION ANALYSIS LOCATIONS

Exhibit 6 depicts the recommended intersection analysis locations, based upon the Project trip generation and trip distribution patterns included as part of this letter. The recommended intersection analysis locations are based on the highest Project traffic contribution presented for either Opening Year Cumulative or Horizon Year scenarios (i.e., 50 peak hour trip criteria).

The San Bernardino County Transportation Authority (SBCTA) Congestion Management Program (CMP) intersections, where applicable, are illustrated on Exhibit 2. The general preparation of the traffic impact study for this Project will continue to be in conformance with the typical requirements of the San Bernardino County CMP.

FREEWAY OPERATIONS ANALYSIS

Based on the Project's anticipated contribution to the near-by State Highway System and at the request of Caltrans District 8 on other recent projects in the area, the following State highway facilities should also be evaluated in the TIA:

Basic Freeway Segments:

- SR-71 Freeway, north of Edison Avenue
- SR-71 Freeway, south of Euclid Avenue (SR-83) / Butterfield Ranch Road
- SR-60 Freeway, west of Euclid Avenue (SR-83)
- SR-60 Freeway, between Euclid Avenue (SR-83) to Grove Avenue
- SR-60 Freeway, east of Grove Avenue
- SR-60 Freeway, west of Archibald Avenue
- SR-60 Freeway, east of Archibald Avenue
- I-15 Freeway, north of Cantu-Galleano Ranch Road
- I-15 Freeway, south of Limonite Avenue

Merge/Diverge Ramp Junctions:

- SR-71 Freeway Southbound Off-Ramp at Edison Avenue
- SR-71 Freeway Northbound On-Ramp at Edison Avenue
- SR-71 Freeway Southbound Loop On-Ramp at Euclid Avenue (SR-83)
- SR-71 Freeway Northbound Off-Ramp at Euclid Avenue (SR-83)
- SR-60 Freeway Westbound On-Ramp at Euclid Avenue (SR-83)
- SR-60 Freeway Eastbound Off-Ramp at Euclid Avenue (SR-83)
- SR-60 Freeway Westbound On-Ramp at Grove Avenue
- SR-60 Freeway Westbound Off-Ramp at Grove Avenue
- SR-60 Freeway Eastbound Off-Ramp at Grove Avenue
- SR-60 Freeway Eastbound On-Ramp at Grove Avenue
- SR-60 Freeway Westbound Off-Ramp at Archibald Avenue
- SR-60 Freeway Eastbound On-Ramp at Archibald Avenue
- I-15 Freeway Southbound Off-Ramp at Cantu-Galleano Ranch Road
- I-15 Freeway Northbound Loop On-Ramp at Cantu-Galleano Ranch Road
- I-15 Freeway Southbound On-Ramp at Limonite Avenue
- I-15 Freeway Northbound Off-Ramp at Limonite Avenue

OPEN ITEMS – CUMULATIVE DEVELOPMENT PROJECTS

It is requested that the City of Ontario provide a list of cumulative projects for inclusion in the traffic study.

If you have any questions, please contact me directly at (949) 336-5978.

Respectfully submitted,

URBAN CROSSROADS, INC.

Aric Evatt, PTP
President

Charlene So, PE
Senior Associate

Attachments

EXHIBIT 1: PRELIMINARY LAND USE PLAN AND PHASING PLAN

STATISTICAL SUMMARY

PA	LAND USE DESIGNATION	ACRES	FAR	MAX SQUARE FOOTAGE
1	Industrial	58.9	0.65	1,411,000 SF
1A	Business Park	22.9	0.60	598,030 SF
2	Industrial	62.1	0.55	1,488,000 SF
3	Industrial	30.7	0.55	735,600 SF
3A	Business Park	6.7	0.60	150,000 SF
4	Industrial	31.1	0.55	745,000 SF
4A	Business Park	6.8	0.60	152,000 SF
5	Industrial	59.9	0.55	1,435,000 SF
5A	Business Park	11.2	0.60	293,000 SF
--	Circulation	19.4	--	--
Industrial Subtotal		272.7	0.55	5,814,600
Business Park Subtotal		49.6	0.60	1,193,030
TOTAL		307.7 AC		7,007,000 SF

Notes:
1. Acreages are approximate and subject to survey verification.
2. Land Use Plan for concept purposes only.

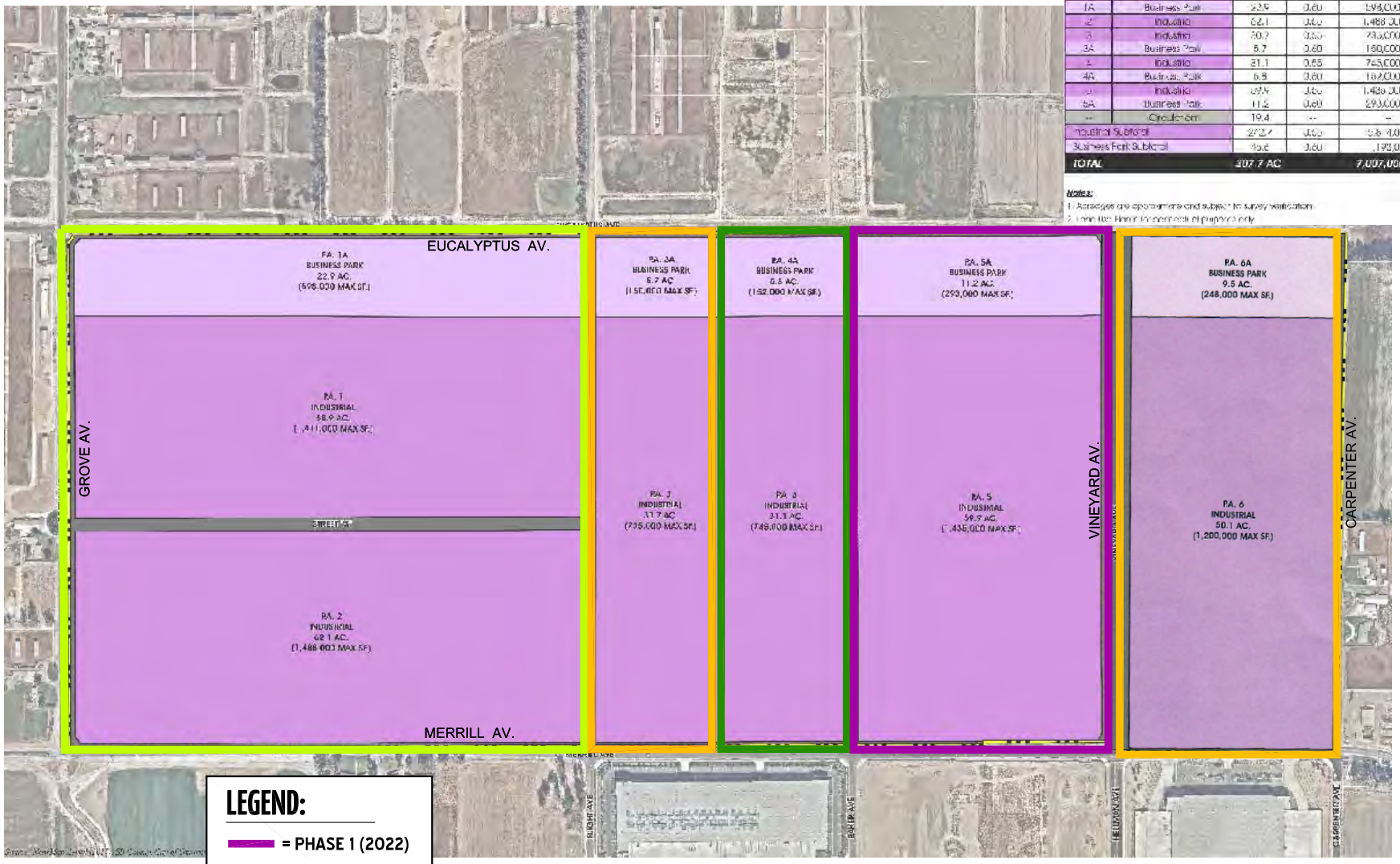

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EXHIBIT 2: LOCATION MAP

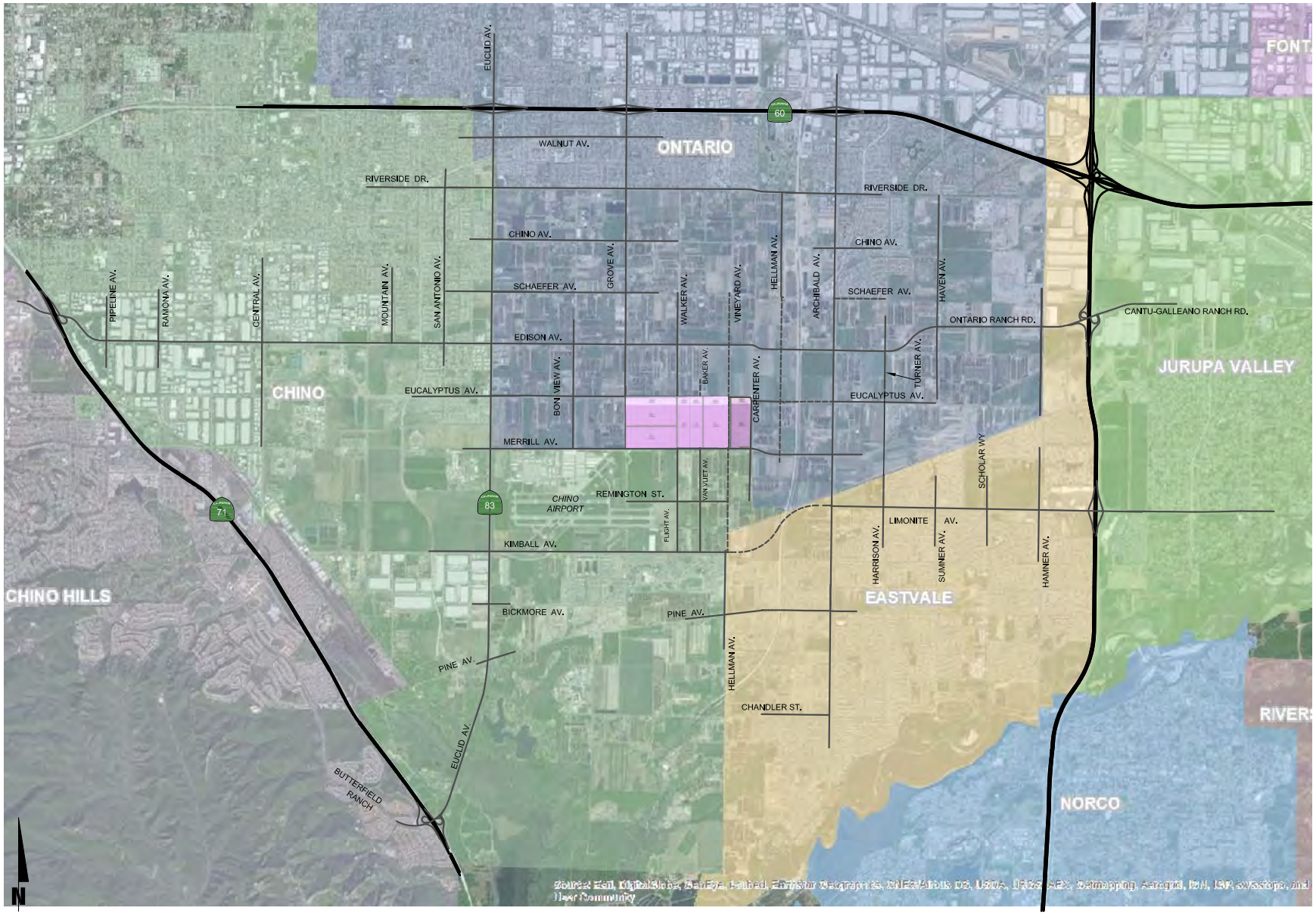

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EXHIBIT 3: PROJECT (TRUCK) TRIP DISTRIBUTION

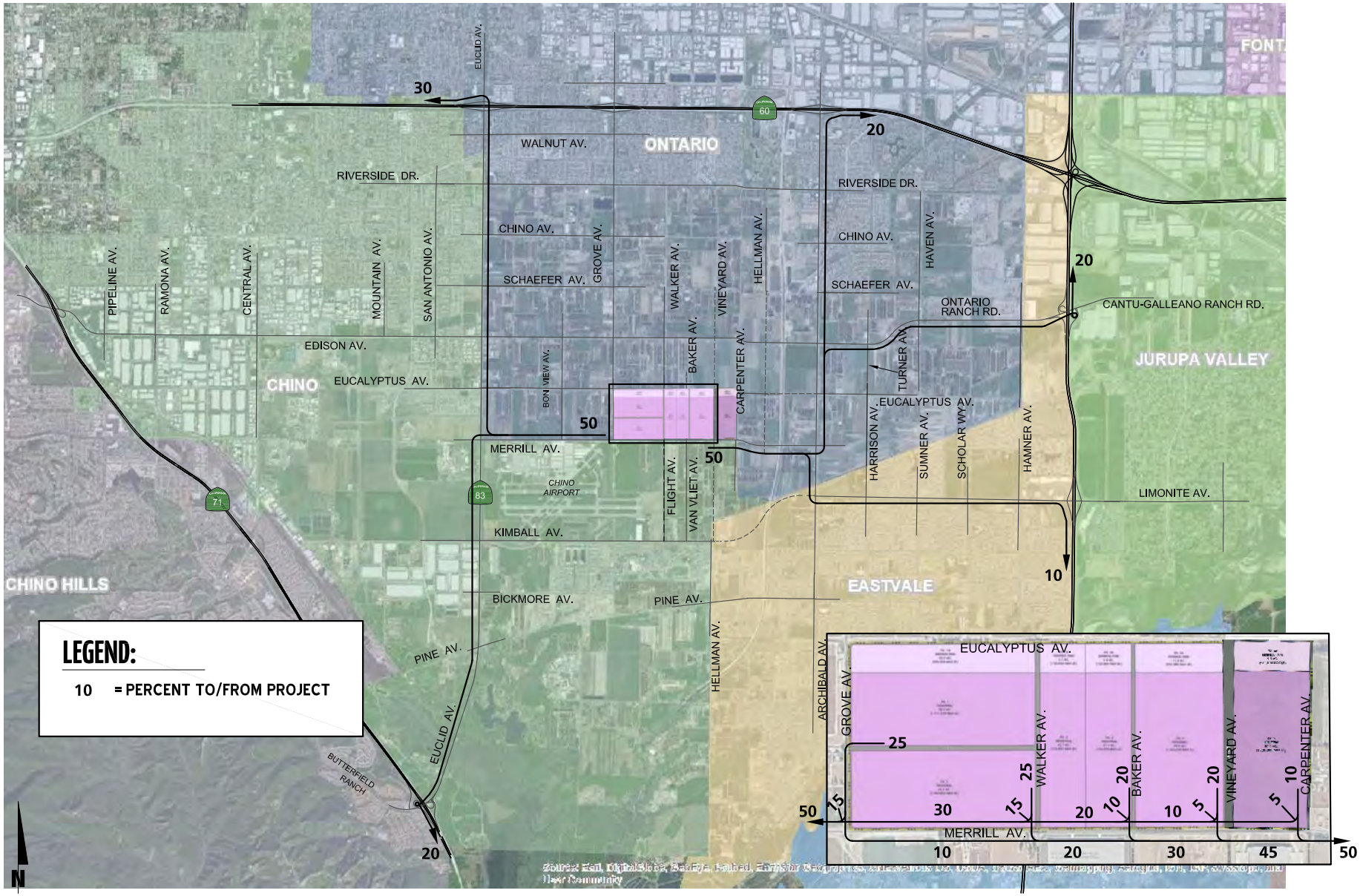

EXHIBIT 4: PROJECT (OPENING YEAR PASSENGER CAR) TRIP DISTRIBUTION

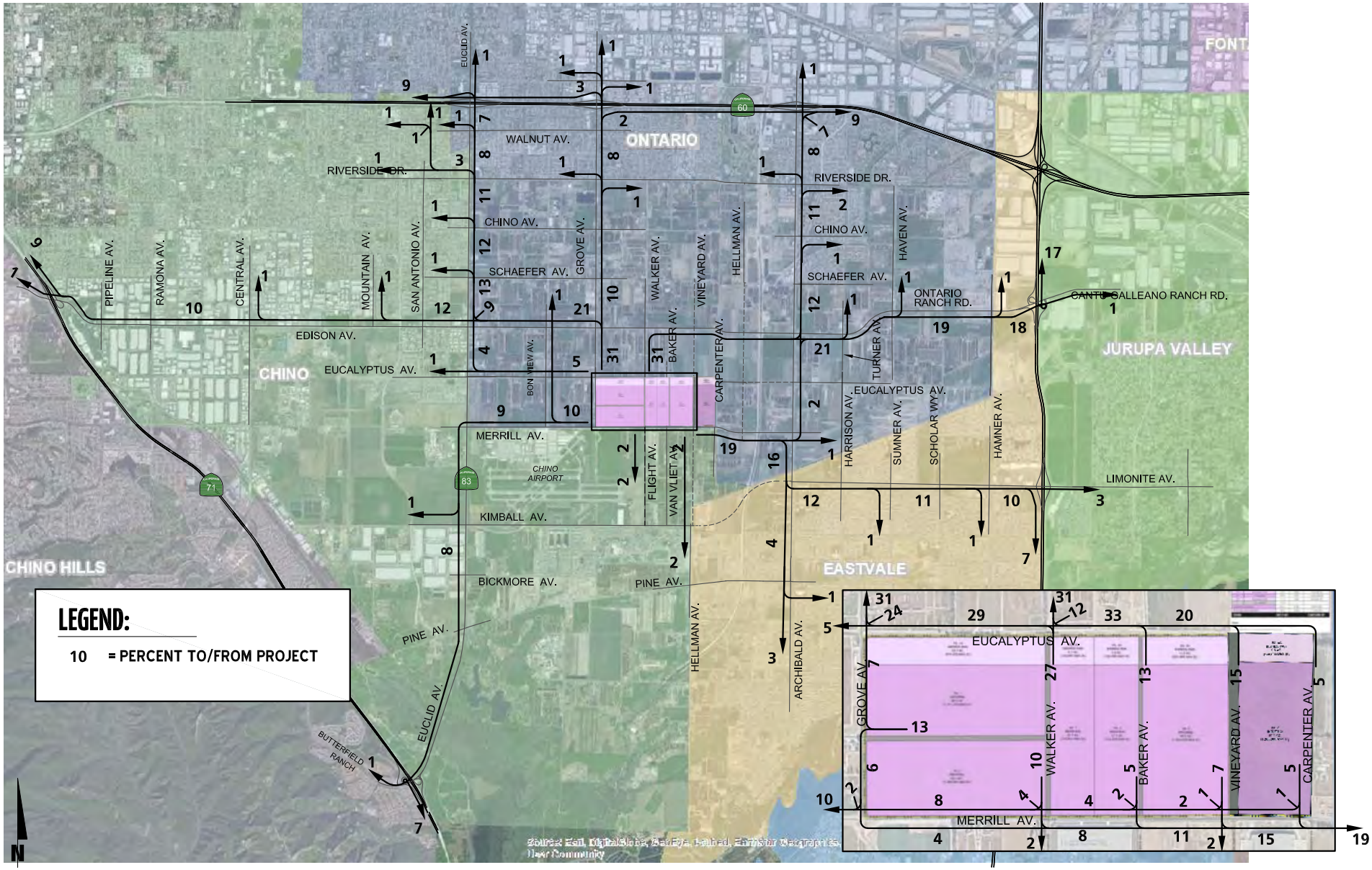

EXHIBIT 5: PROJECT (HORIZON YEAR WITH LIMONITE AVENUE EXTENSION PASSENGER CAR) TRIP DISTRIBUTION

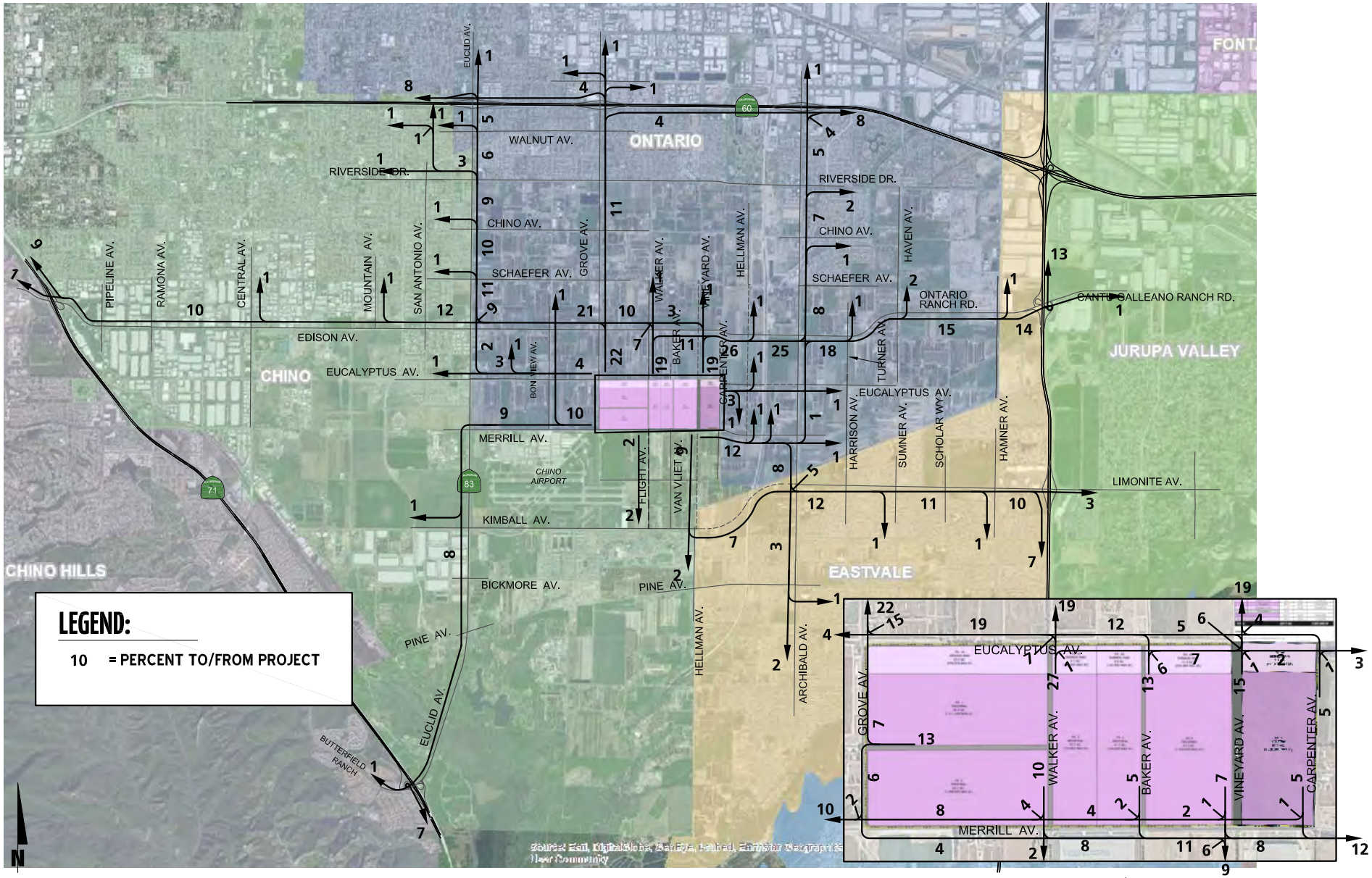

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EXHIBIT 6: STUDY AREA

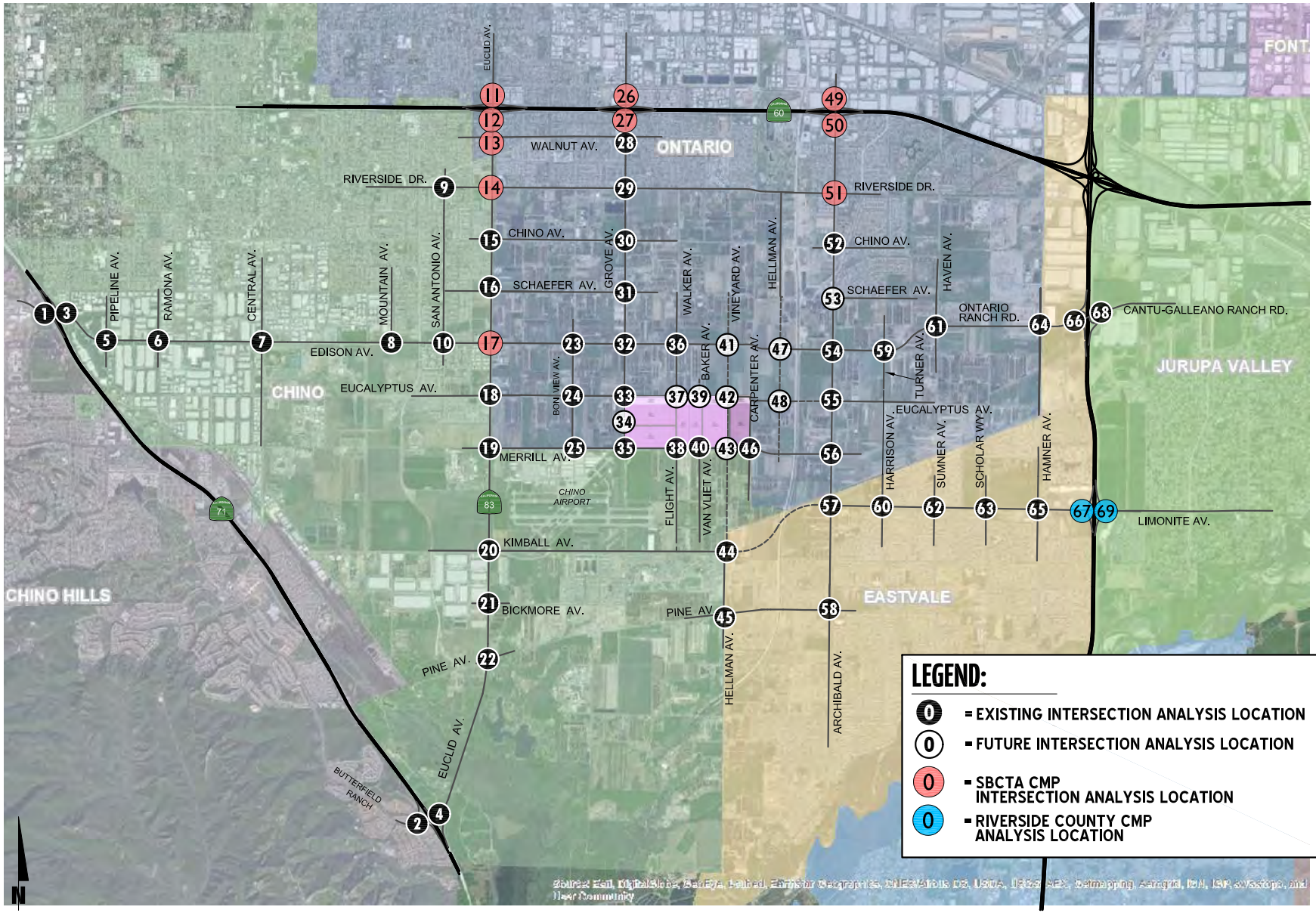

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Table 1

Project Trip Generation Rates

Land Use[1]	Units[2]	ITE LU Code	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Actual Vehicle Trip Generation Rates									
High-Cube Fulfillment Center Warehouse[3]	TSF	--	0.098	0.029	0.127	0.048	0.123	0.171	2.209
Passenger Cars			0.082	0.025	0.107	0.042	0.107	0.149	1.816
2-4 Axle Trucks			0.006	0.002	0.008	0.003	0.008	0.011	0.168
5+-Axle Trucks			0.009	0.003	0.012	0.003	0.008	0.011	0.225
Business Park[4,5]	TSF	130	0.324	0.076	0.400	0.084	0.316	0.400	3.370
Passenger Cars (87.0%)			0.282	0.066	0.348	0.073	0.275	0.348	2.932
2-Axle Trucks (2.17%)			0.007	0.002	0.009	0.002	0.007	0.009	0.073
3-Axle Trucks (2.69%)			0.009	0.002	0.011	0.002	0.009	0.011	0.091
4+-Axle Trucks (8.14%)			0.026	0.006	0.032	0.007	0.026	0.033	0.274
Passenger Car Equivalent (PCE) Trip Generation Rates[5]									
High-Cube Fulfillment Center Warehouse[3]	TSF	--	0.098	0.029	0.127	0.048	0.123	0.171	2.209
Passenger Cars			0.082	0.025	0.107	0.042	0.107	0.149	1.816
2-4 Axle Trucks (PCE = 2.0)			0.012	0.004	0.016	0.006	0.016	0.022	0.336
5+-Axle Trucks (PCE = 3.0)			0.028	0.008	0.036	0.009	0.024	0.033	0.675
Business Park[4,5]	TSF	130	0.324	0.076	0.400	0.084	0.316	0.400	3.370
Passenger Cars (87.0%)			0.282	0.066	0.348	0.073	0.275	0.348	2.932
2-Axle Trucks (2.17%) (PCE = 1.5)			0.011	0.003	0.014	0.003	0.011	0.014	0.110
3-Axle Trucks (2.69%) (PCE = 2.0)			0.018	0.004	0.022	0.004	0.018	0.022	0.182
4+-Axle Trucks (8.14%) (PCE = 3.0)			0.078	0.018	0.096	0.021	0.078	0.099	0.822

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Tenth Edition (2017).

[2] TSF = thousand square feet

[3] Vehicle Mix Source: DRAFT TUMF High Cube Warehouse Trip Generation Study, WSP, November 6, 2018.
Inbound and outbound split source: High Cube Warehouse Vehicle Trip Generation Analysis, October 2016, ITE.

[4] The Specific Plan allows for the Business Park area to be developed with merchant wholesale, professional services, professional office, warehouse/storage, and research and development uses. However, the Business Park (ITE Land Use Code 770) land use has trip generation rates for the peak hours is based on limited data (i.e., one surveyed site). As such, the trip generation rates for ITE Land Use Code 130 has been utilized for the business park portion of the Project.

[5] Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Handbook, Third Edition (September 2017).
Truck Mix Source: South Coast Air Quality Management District (SCAQMD) Warehouse Truck Trip Study Data Results and Usage (2014).
Normalized % - Without Cold Storage:
16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks

Table 2

Project Trip Generation Summary (Actual)

Land Use	Quantity	Units[1]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Phase 1 (2022) - Planning Area 5/5A									
High-Cube Fulfillment Center Warehouse	1,435.000	TSF							
Passenger Cars:			118	35	153	60	154	214	2,606
Truck Trips:									
2-4 axle:			9	3	12	4	11	15	242
5+-axle:			13	4	17	4	11	15	324
- Net Truck Trips			22	7	29	8	22	30	566
FULFILLMENT CENTER TOTAL NET TRIPS (Actual Vehicles) [2]			**140**	**42**	**182**	**68**	**176**	**244**	**3,172**
Business Park	293.000	TSF							
Passenger Cars:			83	19	102	21	81	102	860
Truck Trips:									
2-axle:			2	1	3	1	2	3	22
3-axle:			3	1	4	1	3	4	28
4+-axle:			8	2	10	2	8	10	80
- Net Truck Trips			13	4	17	4	13	17	130
BUSINESS PARK TOTAL NET TRIPS (Actual Vehicles) [2]			**96**	**23**	**119**	**25**	**94**	**119**	**990**
Total Phase 1 Project (Actual Vehicles)			**236**	**65**	**301**	**93**	**270**	**363**	**4,162**
Phase 1A (2022) - Planning Area 4/4A									
High-Cube Fulfillment Center Warehouse	745.000	TSF							
Passenger Cars:			61	18	79	31	80	111	1,354
Truck Trips:									
2-4 axle:			5	1	6	2	6	8	126
5+-axle:			7	2	9	2	6	8	168
- Net Truck Trips			12	3	15	4	12	16	294
FULFILLMENT CENTER TOTAL NET TRIPS (Actual Vehicles) [2]			**73**	**21**	**94**	**35**	**92**	**127**	**1,648**
Business Park	152.000	TSF							
Passenger Cars:			43	10	53	11	42	53	446
Truck Trips:									
2-axle:			1	0	1	0	1	1	12
3-axle:			1	0	1	0	1	1	14
4+-axle:			4	1	5	1	4	5	42
- Net Truck Trips			6	1	7	1	6	7	68
BUSINESS PARK TOTAL NET TRIPS (Actual Vehicles) [2]			**49**	**11**	**60**	**12**	**48**	**60**	**514**
Total Phase 1A Project (Actual Vehicles)			**122**	**32**	**154**	**47**	**140**	**187**	**2,162**
Phase 2 (2023) - Planning Area 3/3A & Planning Area 6/6A									
High-Cube Fulfillment Center Warehouse	1,935.000	TSF							
Passenger Cars:			159	48	207	81	208	288	3,514
Truck Trips:									
2-4 axle:			12	4	15	6	15	21	326
5+-axle:			18	5	23	6	15	21	436
- Net Truck Trips			30	9	38	12	30	42	762
FULFILLMENT CENTER TOTAL NET TRIPS (Actual Vehicles) [2]			**189**	**57**	**245**	**93**	**238**	**330**	**4,276**

Table 2

Project Trip Generation Summary (Actual)

Land Use	Quantity	Units[1]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Business Park	398.000	TSF							
Passenger Cars:			112	26	139	29	109	139	1,168
Truck Trips:									
2-axle:			3	1	4	1	3	4	30
3-axle:			4	1	4	1	4	4	36
4+-axle:			10	2	13	3	10	13	110
- Net Truck Trips			17	4	21	5	17	21	176
BUSINESS PARK TOTAL NET TRIPS (Actual Vehicles) [2]			**129**	**30**	**160**	**34**	**126**	**160**	**1,344**
Total Phase 2 Project (Actual Vehicles)			**318**	**87**	**405**	**127**	**364**	**490**	**5,620**
Phase 3 (2024) - Planning Area 1/1A & Planning Area 2									
High-Cube Fulfillment Center Warehouse	2,899.000	TSF							
Passenger Cars:			239	71	310	121	311	432	5,266
Truck Trips:									
2-4 axle:			18	5	23	9	23	32	488
5+-axle:			27	8	35	9	23	32	652
- Net Truck Trips			45	13	58	18	46	64	1,140
FULFILLMENT CENTER TOTAL NET TRIPS (Actual Vehicles) [2]			**284**	**84**	**368**	**139**	**357**	**496**	**6,406**
Business Park	598.000	TSF							
Passenger Cars:			169	39	208	44	164	208	1,754
Truck Trips:									
2-axle:			4	1	5	1	4	5	44
3-axle:			5	1	6	1	5	6	54
4+-axle:			16	4	20	4	16	20	164
- Net Truck Trips			25	6	31	6	25	31	262
BUSINESS PARK TOTAL NET TRIPS (Actual Vehicles) [2]			**194**	**45**	**239**	**50**	**189**	**239**	**2,016**
Total Phase 3 Project (Actual Vehicles)			**478**	**129**	**607**	**189**	**546**	**735**	**8,422**
Total Proposed Project (Actual Vehicles)			**1,154**	**313**	**1,467**	**456**	**1,320**	**1,775**	**20,366**

[1] TSF = thousand square feet

[2] TOTAL NET TRIPS = Passenger Cars + Net Truck Trips.

Table 3

Project Trip Generation Summary (PCE)

Land Use	Quantity	Units[1]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Phase 1 (2022) - Planning Area 5/5A									
High-Cube Fulfillment Center Warehouse	1,435.000	TSF							
Passenger Cars:			118	35	153	60	154	214	2,606
Truck Trips:									
2-4 axle:			18	5	23	9	23	32	482
5+-axle:			40	12	52	13	34	47	970
- Net Truck Trips			58	17	75	22	57	79	1,452
FULFILLMENT CENTER TOTAL NET TRIPS (PCE) [2]			**176**	**52**	**228**	**82**	**211**	**293**	**4,058**
Business Park	293.000	TSF							
Passenger Cars:			83	19	102	21	81	102	860
Truck Trips:									
2-axle:			3	1	4	1	3	4	32
3-axle:			5	1	6	1	5	6	54
4+-axle:			23	5	28	6	23	29	242
- Net Truck Trips			31	7	38	8	31	39	328
BUSINESS PARK TOTAL NET TRIPS (PCE) [2]			**114**	**26**	**140**	**29**	**112**	**141**	**1,188**
Total Phase 1 Project (PCE)			**290**	**78**	**368**	**111**	**323**	**434**	**5,246**
Phase 1A (2022) - Planning Area 4/4A									
High-Cube Fulfillment Center Warehouse	745.000	TSF							
Passenger Cars:			61	18	79	31	80	111	1,354
Truck Trips:									
2-4 axle:			9	3	12	5	12	17	250
5+-axle:			21	6	27	7	18	25	504
- Net Truck Trips			30	9	39	12	30	42	754
FULFILLMENT CENTER TOTAL NET TRIPS (PCE) [2]			**91**	**27**	**118**	**43**	**110**	**153**	**2,108**
Business Park	152.000	TSF							
Passenger Cars:			43	10	53	11	42	53	446
Truck Trips:									
2-axle:			2	0	2	0	2	2	18
3-axle:			3	1	4	1	3	4	28
4+-axle:			12	3	15	3	12	15	126
- Net Truck Trips			17	4	21	4	17	21	172
BUSINESS PARK TOTAL NET TRIPS (PCE) [2]			**60**	**14**	**74**	**15**	**59**	**74**	**618**
Total Phase 1A Project (PCE)			**151**	**41**	**192**	**58**	**169**	**227**	**2,726**
Phase 2 (2023) - Planning Area 3/3A & Planning Area 6/6A									
High-Cube Fulfillment Center Warehouse	1,935.000	TSF							
Passenger Cars:			159	48	207	81	208	288	3,514
Truck Trips:									
2-4 axle:			24	7	31	12	31	43	650
5+-axle:			54	16	70	18	46	64	1,306
- Net Truck Trips			78	23	101	30	77	107	1,956
FULFILLMENT CENTER TOTAL NET TRIPS (PCE) [2]			**237**	**71**	**308**	**111**	**285**	**395**	**5,470**

Table 3

Project Trip Generation Summary (PCE)

Land Use	Quantity	Units[1]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Business Park	398.000	TSF							
Passenger Cars:			112	26	138	29	109	138	1,168
Truck Trips:									
2-axle:			4	1	5	1	4	5	44
3-axle:			7	2	9	2	7	9	72
4+-axle:			31	7	38	8	31	39	328
- Net Truck Trips			42	10	52	11	42	53	444
BUSINESS PARK TOTAL NET TRIPS (PCE) [2]			**154**	**36**	**190**	**40**	**151**	**191**	**1,612**
Total Phase 2 Project (PCE)			**391**	**107**	**498**	**151**	**436**	**586**	**7,082**
Phase 3 (2024) - Planning Area 1/1A & Planning Area 2									
High-Cube Fulfillment Center Warehouse	2,899.000	TSF							
Passenger Cars:			239	71	310	121	311	432	5,266
Truck Trips:									
2-4 axle:			36	11	47	18	46	64	974
5+-axle:			80	24	104	27	69	96	1,958
- Net Truck Trips			116	35	151	45	115	160	2,932
FULFILLMENT CENTER TOTAL NET TRIPS (PCE) [2]			**355**	**106**	**461**	**166**	**426**	**592**	**8,198**
Business Park	598.000	TSF							
Passenger Cars:			169	39	208	44	164	208	1,754
Truck Trips:									
2-axle:			6	2	8	2	6	8	66
3-axle:			11	2	13	2	11	13	110
4+-axle:			47	11	58	13	47	60	492
- Net Truck Trips			64	15	79	17	64	81	668
BUSINESS PARK TOTAL NET TRIPS (PCE) [2]			**233**	**54**	**287**	**61**	**228**	**289**	**2,422**
Total Phase 3 Project (PCE)			**588**	**160**	**748**	**227**	**654**	**881**	**10,620**
Total Proposed Project (PCE)			**1,420**	**386**	**1,806**	**547**	**1,582**	**2,128**	**25,674**

[1] TSF = thousand square feet

[2] TOTAL NET TRIPS = Passenger Cars + Net Truck Trips.

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APPENDIX 1.2:

SITE ADJACENT QUEUES

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Intersection: 33: Grove Av. & Eucalyptus Av.

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	116	144	149	249	148	183	183	150	492	424
Average Queue (ft)	37	69	32	136	60	75	89	144	278	197
95th Queue (ft)	84	128	105	224	112	144	159	166	445	371
Link Distance (ft)		1067		2553		1278	1278		1420	1420
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	100		100		100			100		
Storage Blk Time (%)	0	4	0	24	4	6		51	7	
Queuing Penalty (veh)	0	2	1	5	7	4		149	25	

Intersection: 34: Grove Av. & Street A

Movement	WB	NB	SB	SB
Directions Served	LR	TR	L	T
Maximum Queue (ft)	102	281	141	207
Average Queue (ft)	43	104	54	53
95th Queue (ft)	85	224	108	154
Link Distance (ft)	1270	1285		1278
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			100	
Storage Blk Time (%)			4	2
Queuing Penalty (veh)			23	2

Intersection: 35: Merrill Av. & Grove Av.

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	149	446	396	405	486	439	114
Average Queue (ft)	130	196	135	232	290	264	47
95th Queue (ft)	170	376	309	370	447	403	88
Link Distance (ft)		1280	1280	2583	2583	1285	1285
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	100						
Storage Blk Time (%)	43	5					
Queuing Penalty (veh)	140	12					

Intersection: 37: Walker Av. & Eucalyptus Av.

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	138	260	149	388	73	97	150	570
Average Queue (ft)	46	116	34	208	27	36	100	303
95th Queue (ft)	105	219	107	351	62	85	186	489
Link Distance (ft)		2553		975		2622		2614
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100		100		100		100	
Storage Blk Time (%)	1	16		28		1	3	36
Queuing Penalty (veh)	2	7		5		0	20	55

Intersection: 38: Flight Av./Walker Av. & Merrill Av.

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	150	279	270	190	354	375	148	202	120	162
Average Queue (ft)	113	152	149	113	178	194	96	76	31	72
95th Queue (ft)	173	267	252	196	331	351	151	163	80	133
Link Distance (ft)		2583	2583		970	970		490		2622
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	100			100			100		100	
Storage Blk Time (%)	21	14		15	20		15	4	0	5
Queuing Penalty (veh)	78	23		79	30		24	6	0	2

Intersection: 39: Van Vliet Av. & Eucalyptus Av.

Movement	EB	WB	NB
Directions Served	TR	L	LR
Maximum Queue (ft)	18	51	57
Average Queue (ft)	1	15	21
95th Queue (ft)	8	42	47
Link Distance (ft)	975		2592
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		100	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 40: Van Vliet Av. & Merrill Av.

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	L	TR
Maximum Queue (ft)	130	222	210	124	360	370	99	56	40
Average Queue (ft)	53	60	59	33	121	138	42	20	13
95th Queue (ft)	107	156	147	82	294	314	84	49	39
Link Distance (ft)		970	970		875	875	2455		2592
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	100			200				100	
Storage Blk Time (%)	3	3			3				
Queuing Penalty (veh)	13	2			1				

Intersection: 42: Vineyard Av. & Eucalyptus Av.

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	61	224	147	297	96	230
Average Queue (ft)	17	117	75	137	40	119
95th Queue (ft)	45	196	122	248	79	195
Link Distance (ft)	895	895	1663	1663	2571	2629
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 43: Hellman Av./Vineyard Av. & Merrill Av.

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	R	L	T
Maximum Queue (ft)	249	366	313	249	418	442	250	232	188	52	150	378
Average Queue (ft)	185	139	116	51	231	229	149	122	87	20	127	139
95th Queue (ft)	275	328	227	139	383	396	297	215	163	43	169	319
Link Distance (ft)		875	875		874	874			2258	2258		2571
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	200			200			200	200			100	
Storage Blk Time (%)	17	1			17	15	0	3			35	2
Queuing Penalty (veh)	50	2			9	53	1	4			33	5

Intersection: 43: Hellman Av./Vineyard Av. & Merrill Av.

Movement	SB
Directions Served	R
Maximum Queue (ft)	88
Average Queue (ft)	40
95th Queue (ft)	75
Link Distance (ft)	2571
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 45: Carpenter Av. & Merrill Av.

Movement	EB	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	R	L	T	TR	LTR	LTR
Maximum Queue (ft)	134	287	306	39	263	314	378	2313	617
Average Queue (ft)	46	139	156	12	156	178	212	2308	617
95th Queue (ft)	109	250	264	34	244	281	338	2324	630
Link Distance (ft)		874	874	874		749	749	2308	620
Upstream Blk Time (%)								99	100
Queuing Penalty (veh)								0	0
Storage Bay Dist (ft)	90				190				
Storage Blk Time (%)	1	17			5	4			
Queuing Penalty (veh)	5	8			31	10			

Intersection: 33: Grove Av. & Eucalyptus Av.

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	149	252	149	381	149	325	348	150	230	225
Average Queue (ft)	88	91	30	212	40	174	190	95	128	120
95th Queue (ft)	149	184	108	338	103	297	318	155	202	197
Link Distance (ft)		1067		2553		1278	1278		1420	1420
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	100		100		100			100		
Storage Blk Time (%)	9	4		30	0	28		14	21	
Queuing Penalty (veh)	22	7		6	1	11		27	26	

Intersection: 34: Grove Av. & Street A

Movement	WB	NB	SB	SB
Directions Served	LR	TR	L	T
Maximum Queue (ft)	288	317	97	218
Average Queue (ft)	157	144	29	65
95th Queue (ft)	257	331	66	167
Link Distance (ft)	1270	1285		1278
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			100	
Storage Blk Time (%)			0	3
Queuing Penalty (veh)			1	1

Intersection: 35: Merrill Av. & Grove Av.

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	150	609	517	351	406	393	185
Average Queue (ft)	147	354	275	200	257	227	74
95th Queue (ft)	156	577	516	317	387	348	138
Link Distance (ft)		1280	1280	2583	2583	1285	1285
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	100						
Storage Blk Time (%)	61	2					
Queuing Penalty (veh)	270	7					

Intersection: 37: Walker Av. & Eucalyptus Av.

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	149	1478	119	422	150	392	150	380
Average Queue (ft)	149	1352	17	238	88	186	106	141
95th Queue (ft)	150	1505	66	374	172	312	167	294
Link Distance (ft)		2553		981		2622		2614
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100		100		100		100	
Storage Blk Time (%)	69	1	0	41	2	32	29	13
Queuing Penalty (veh)	261	5	0	6	7	28	63	18

Intersection: 38: Flight Av./Walker Av. & Merrill Av.

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	149	366	378	167	230	242	149	231	150	213
Average Queue (ft)	55	187	198	74	94	112	84	105	66	91
95th Queue (ft)	124	315	328	131	196	219	149	186	133	173
Link Distance (ft)		2583	2583		976	976		490		2622
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	100			100			100		100	
Storage Blk Time (%)	1	21		7	8		10	12	5	10
Queuing Penalty (veh)	6	11		30	8		21	13	10	10

Intersection: 39: Van Vliet Av. & Eucalyptus Av.

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	28	82
Average Queue (ft)	3	39
95th Queue (ft)	18	63
Link Distance (ft)		2592
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	100	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 40: Van Vliet Av. & Merrill Av.

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	53	288	298	52	220	226	83	194
Average Queue (ft)	21	106	112	16	74	87	42	76
95th Queue (ft)	52	238	245	44	183	193	77	143
Link Distance (ft)		976	976		881	881	2455	2592
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100			200				
Storage Blk Time (%)		6			1			
Queuing Penalty (veh)		1			0			

Intersection: 42: Vineyard Av. & Eucalyptus Av.

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	205	438	82	327	499	240
Average Queue (ft)	71	249	26	160	282	120
95th Queue (ft)	148	409	62	282	504	214
Link Distance (ft)	901	901	1663	1663	2571	2629
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 43: Hellman Av./Vineyard Av. & Merrill Av.

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	R	L	T
Maximum Queue (ft)	250	481	484	137	248	225	198	139	160	69	150	700
Average Queue (ft)	183	245	258	48	130	114	77	61	74	28	147	401
95th Queue (ft)	283	429	428	100	215	199	154	117	137	54	163	726
Link Distance (ft)		881	881		874	874			2258	2258		2571
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	200			200			200	200			100	
Storage Blk Time (%)	8	14			1	1	0	0	0		55	7
Queuing Penalty (veh)	38	33			1	2	1	0	0		78	29

Intersection: 43: Hellman Av./Vineyard Av. & Merrill Av.

Movement	SB
Directions Served	R
Maximum Queue (ft)	117
Average Queue (ft)	49
95th Queue (ft)	91
Link Distance (ft)	2571
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 45: Carpenter Av. & Merrill Av.

Movement	EB	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	R	L	T	TR	LTR	LTR
Maximum Queue (ft)	134	349	342	44	81	188	219	2313	614
Average Queue (ft)	65	151	166	17	28	94	97	2309	614
95th Queue (ft)	119	314	320	41	66	158	173	2324	624
Link Distance (ft)		874	874	874		749	749	2308	620
Upstream Blk Time (%)								99	100
Queuing Penalty (veh)								0	0
Storage Bay Dist (ft)	90				190				
Storage Blk Time (%)	5	12				0			
Queuing Penalty (veh)	33	8				0			

APPENDIX 3.1:

EXISTING (2019) TRAFFIC COUNTS – JANUARY 2019

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INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Jan 30, 19

LOCATION: Chino
NORTH & SOUTH: SR-71 SB Ramps
EAST & WEST: Grand

PROJECT #: SC2074
LOCATION #: 1
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N / ◄ W / E ► / S ▼

Add U-Turns to Left Turns

		NORTHBOUND (SR-71 SB Ramps)			SOUTHBOUND (SR-71 SB Ramps)			EASTBOUND (Grand)			WESTBOUND (Grand)			
	LANES:	NL X	NT X	NR X	SL 1.5	ST 0.5	SR 1	EL X	ET 3	ER 0	WL 2	WT 3	WR X	TOTAL
AM	7:00 AM	0	0	0	119	0	100	0	105	26	12	341	0	703
AM	7:15 AM	0	0	0	113	0	106	0	225	59	9	425	0	937
AM	7:30 AM	0	0	0	142	0	62	0	189	55	12	293	0	753
AM	7:45 AM	0	0	0	187	0	66	0	165	45	15	263	0	741
AM	8:00 AM	0	0	0	208	0	64	0	132	37	13	315	0	769
AM	8:15 AM	0	0	0	214	0	65	0	173	41	14	223	0	730
AM	8:30 AM	0	0	0	126	2	85	0	180	54	22	217	0	686
AM	8:45 AM	0	0	0	165	1	80	0	204	59	16	197	0	722
AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	VOLUMES	0	0	0	1,274	3	628	0	1,373	376	113	2,274	0	6,041
AM	APPROACH %	0%	0%	0%	67%	0%	33%	0%	79%	21%	5%	95%	0%	
AM	APP/DEPART	0	/	0	1,905	/	492	1,749	/	2,647	2,387	/	2,902	0
AM	BEGIN PEAK HR		7:15 AM											
AM	VOLUMES	0	0	0	650	0	298	0	711	196	49	1,296	0	3,200
AM	APPROACH %	0%	0%	0%	69%	0%	31%	0%	78%	22%	4%	96%	0%	
AM	PEAK HR FACTOR		0.000			0.871			0.798			0.775		0.854
AM	APP/DEPART	0	/	0	948	/	245	907	/	1,361	1,345	/	1,594	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	148	1	83	0	295	130	58	232	0	947
PM	4:15 PM	0	0	0	183	2	96	0	234	103	55	238	0	911
PM	4:30 PM	0	0	0	158	0	86	0	323	102	67	285	0	1,021
PM	4:45 PM	0	0	0	177	0	98	0	318	112	58	304	0	1,067
PM	5:00 PM	0	0	0	172	1	107	0	326	128	60	304	0	1,098
PM	5:15 PM	0	0	0	186	0	96	0	330	128	74	352	0	1,166
PM	5:30 PM	0	0	0	173	0	119	0	305	113	71	251	0	1,032
PM	5:45 PM	0	0	0	163	0	112	0	326	148	67	354	0	1,170
PM	VOLUMES	0	0	0	1,360	4	797	0	2,457	964	510	2,320	0	8,412
PM	APPROACH %	0%	0%	0%	63%	0%	37%	0%	72%	28%	18%	82%	0%	
PM	APP/DEPART	0	/	0	2,161	/	1,478	3,421	/	3,817	2,830	/	3,117	0
PM	BEGIN PEAK HR		5:00 PM											
PM	VOLUMES	0	0	0	694	1	434	0	1,287	517	272	1,261	0	4,466
PM	APPROACH %	0%	0%	0%	61%	0%	38%	0%	71%	29%	18%	82%	0%	
PM	PEAK HR FACTOR		0.000			0.967			0.951			0.900		0.954
PM	APP/DEPART	0	/	0	1,129	/	790	1,804	/	1,981	1,533	/	1,695	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	47	5	0
0	44	17	0
0	35	16	0
0	22	24	0
0	33	19	0
0	31	11	0
0	54	21	0
0	54	16	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	320	129	0
0	134	76	0
0	0	0	0
0	0	0	0
0	0	0	0
0	61	24	0
0	54	32	0
0	39	32	0
0	38	38	0
0	47	47	0
0	42	47	0
0	60	43	0
0	28	47	0
0	369	310	0
0	177	184	0

SR-71 SB Ramps

NORTH SIDE

Grand WEST SIDE EAST SIDE **Grand**

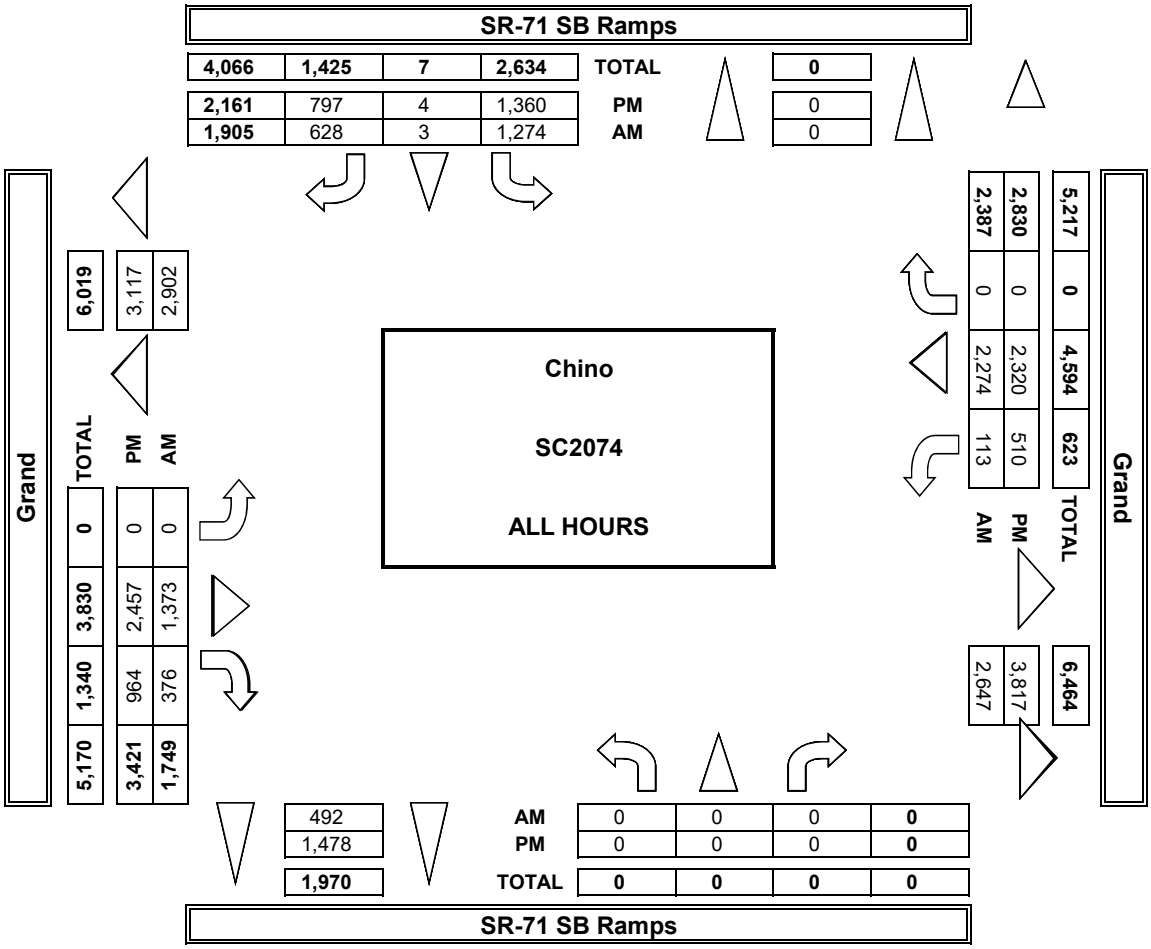
SOUTH SIDE

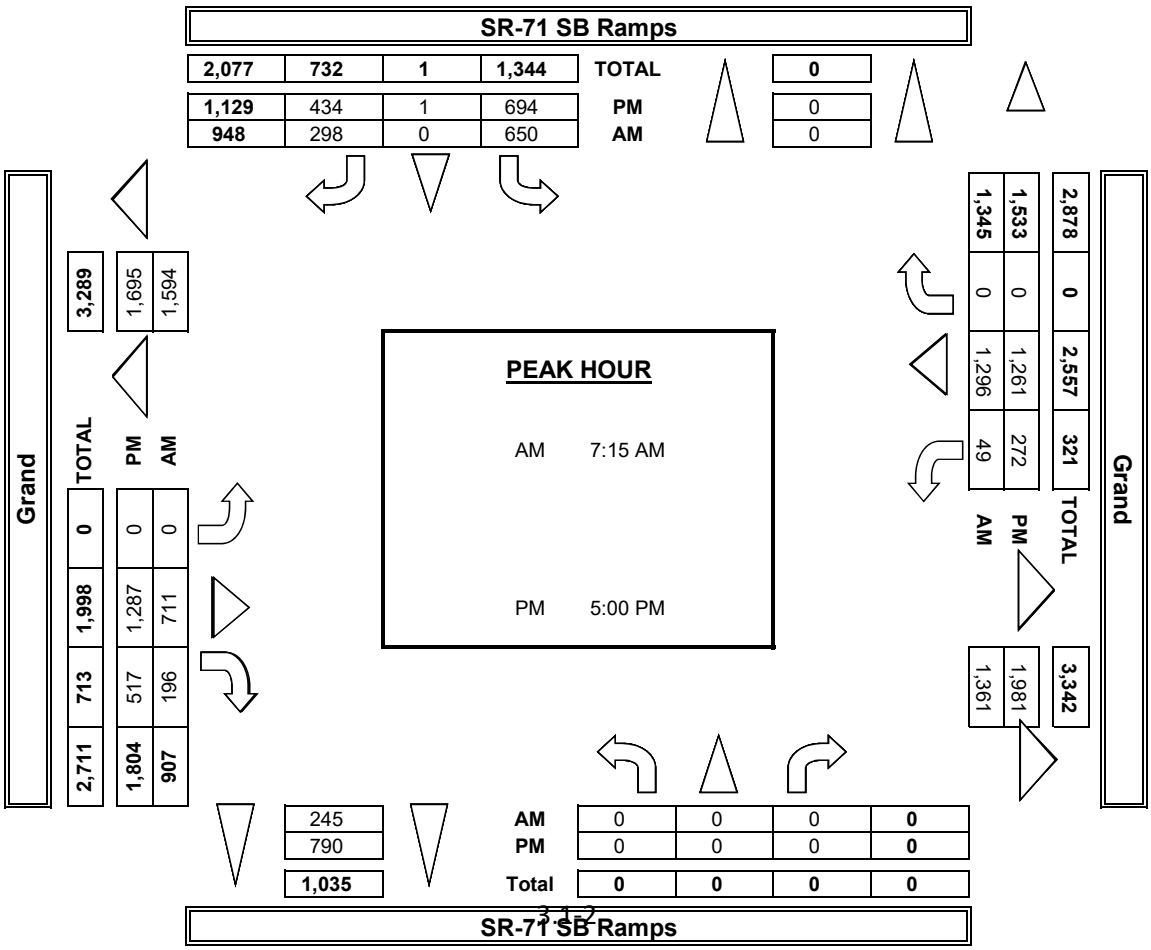
SR-71 SB Ramps

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	1	1	2	0	0	0	1	1	0	0	1	0	1
AM	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:45 AM	0	0	0	2	2	0	0	0	2	2	0	0	0	0	0
AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:15 AM	0	2	0	2	4	0	2	0	2	4	0	0	0	0	0
AM	8:30 AM	0	2	0	4	6	0	2	0	4	6	0	0	0	0	0
AM	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	TOTAL	0	4	1	9	14	0	0	0	2	13	0	0	0	0	1
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
PM	4:15 PM	0	0	0	4	4	0	0	0	4	4	0	0	0	0	0
PM	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:00 PM	0	0	0	3	3	0	0	0	2	2	0	0	0	1	1
PM	5:15 PM	0	0	1	1	2	0	0	0	1	1	0	0	1	0	1
PM	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:45 PM	0	0	1	2	3	0	0	0	1	1	0	0	1	1	2
PM	TOTAL	0	0	2	11	13	0	0	0	4	9	0	0	2	2	4

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	SR-71 SB Ramps	LOCATION #:	1
WEDNESDAY	EAST & WEST:	Grand	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND SR-71 SB Ramps			SOUTHBOUND SR-71 SB Ramps			EASTBOUND Grand			WESTBOUND Grand			
	LANES:	NL X	NT X	NR X	SL 1.5	ST 0.5	SR 1	EL X	ET 3	ER 0	WL 2	WT 3	WR X	TOTAL
AM	7:00 AM	0	0	0	4	0	2	0	4	1	0	9	0	20
	7:15 AM	0	0	0	10	0	2	0	7	2	0	5	0	26
	7:30 AM	0	0	0	10	0	3	0	4	3	1	7	0	28
	7:45 AM	0	0	0	4	0	1	0	2	0	3	12	0	22
	8:00 AM	0	0	0	14	0	1	0	1	1	0	9	0	26
	8:15 AM	0	0	0	3	0	3	0	4	3	1	6	0	20
	8:30 AM	0	0	0	7	1	6	0	9	1	2	5	0	31
	8:45 AM	0	0	0	10	0	2	0	5	0	3	5	0	25
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	62	1	20	0	36	11	10	58	0	198
	APPROACH %	0%	0%	0%	75%	1%	24%	0%	77%	23%	15%	85%	0%	
	APP/DEPART	0	/	0	83	/	22	47	/	98	68	/	78	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	34	1	12	0	19	5	6	25	0	102
	APPROACH %	0%	0%	0%	72%	2%	26%	0%	79%	21%	19%	81%	0%	
	PEAK HR FACTOR		0.000			0.783			0.600			0.517		0.823
	APP/DEPART	0	/	0	47	/	12	24	/	53	31	/	37	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	4	0	2	0	8	2	2	5	0	23
	4:15 PM	0	0	0	9	0	0	0	6	1	1	4	0	21
	4:30 PM	0	0	0	6	0	3	0	5	3	3	2	0	22
	4:45 PM	0	0	0	6	0	3	0	12	3	1	0	0	25
	5:00 PM	0	0	0	6	0	2	0	9	4	2	2	0	25
	5:15 PM	0	0	0	3	0	2	0	1	2	2	2	0	12
	5:30 PM	0	0	0	6	0	0	0	2	0	0	1	0	9
	5:45 PM	0	0	0	2	0	2	0	5	0	0	2	0	11
	VOLUMES	0	0	0	42	0	14	0	48	15	11	18	0	148
	APPROACH %	0%	0%	0%	75%	0%	25%	0%	76%	24%	38%	62%	0%	
	APP/DEPART	0	/	0	56	/	26	63	/	90	29	/	32	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	0	0	0	27	0	8	0	32	11	7	8	0	93
	APPROACH %	0%	0%	0%	77%	0%	23%	0%	74%	26%	47%	53%	0%	
	PEAK HR FACTOR		0.000			0.972			0.717			0.750		0.930
	APP/DEPART	0	/	0	35	/	18	43	/	59	15	/	16	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR 0	WRR X
0	1	1	0
0	1	0	0
0	2	1	0
0	0	0	0
0	0	1	0
0	1	2	0
0	5	0	0
0	2	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	12	5	0
0	8	3	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	6	3	0
0	2	3	0

SR-71 SB Ramps

NORTH SIDE

Grand WEST SIDE EAST SIDE **Grand**

SOUTH SIDE

SR-71 SB Ramps

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	SR-71 SB Ramps	LOCATION #:	1
WEDNESDAY	EAST & WEST:	Grand	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

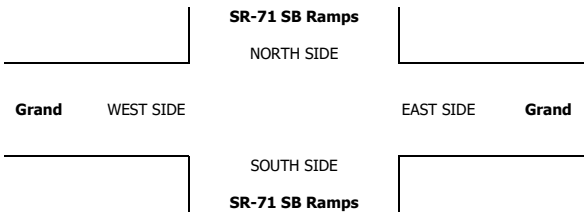
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
		SR-71 SB Ramps			SR-71 SB Ramps			Grand			Grand			
	LANES:	NL X	NT X	NR X	SL 1.5	ST 0.5	SR 1	EL X	ET 3	ER 0	WL 2	WT 3	WR X	TOTAL
AM	7:00 AM	0	0	0	1	0	2	0	0	0	0	1	0	4
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	5	0	0	0	0	0	0	1	0	6
	7:45 AM	0	0	0	1	0	0	0	1	0	0	2	0	4
	8:00 AM	0	0	0	2	0	0	0	2	0	0	0	0	4
	8:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
	8:30 AM	0	0	0	2	0	0	0	0	0	0	2	0	4
	8:45 AM	0	0	0	2	0	1	0	1	1	1	2	0	8
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	14	0	3	0	4	1	1	8	0	31
	APPROACH %	0%	0%	0%	82%	0%	18%	0%	80%	20%	11%	89%	0%	
	APP/DEPART	0	/	0	17	/	2	5	/	18	9	/	11	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	0	0	0	7	0	1	0	3	1	1	4	0	17
	APPROACH %	0%	0%	0%	88%	0%	13%	0%	75%	25%	20%	80%	0%	
	PEAK HR FACTOR		0.000			0.667			0.500			0.417		0.531
	APP/DEPART	0	/	0	8	/	2	4	/	10	5	/	5	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	2	0	0	0	0	0	0	0	0	2
	4:15 PM	0	0	0	3	0	0	0	1	0	0	0	0	4
	4:30 PM	0	0	0	1	0	0	0	1	0	0	0	0	2
	4:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
	5:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	5:45 PM	0	0	0	2	0	0	0	2	0	0	0	0	4
	VOLUMES	0	0	0	10	0	0	0	4	0	0	1	0	15
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	0	/	0	10	/	0	4	/	14	1	/	1	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	7	0	0	0	2	0	0	0	0	9
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.583			0.500			0.000		0.563
	APP/DEPART	0	/	0	7	/	0	2	/	9	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR 0	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	SR-71 SB Ramps	LOCATION #:	1
WEDNESDAY	EAST & WEST:	Grand	CONTROL:	SIGNAL

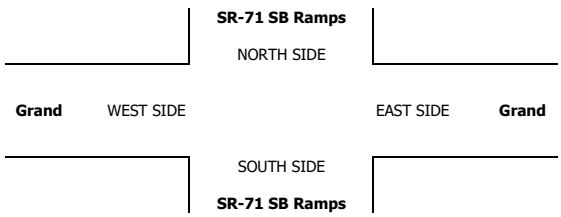
CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND SR-71 SB Ramps			SOUTHBOUND SR-71 SB Ramps			EASTBOUND Grand			WESTBOUND Grand				U-TURNS					RTOR			
	LANES:	NL X	NT X	NR X	SL 1.5	ST 0.5	SR 1	EL X	ET 3	ER 0	WL 2	WT 3	WR X	TOTAL	NB	SB	EB	WB	TTL	NRR X	SRR 0	ERR 0	WRR X
AM	7:00 AM	0	0	0	16	0	1	0	2	0	0	0	0	19	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	10	0	0	0	1	0	0	1	0	12	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	13	0	0	0	1	0	0	0	0	14	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	13	0	1	0	0	0	0	0	0	14	0	0	0	0	0	0	1	0	0
	8:00 AM	0	0	0	21	0	1	0	1	0	0	2	0	25	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	13	0	0	0	3	0	0	1	0	17	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	8	0	0	0	1	0	4	2	0	15	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	18	1	0	0	0	0	1	0	0	20	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	112	1	3	0	9	0	5	6	0	136	0	0	0	0	0	0	1	0	0
	APPROACH %	0%	0%	0%	97%	1%	3%	0%	100%	0%	45%	55%	0%										
	APP/DEPART	0	/	0	116	/	6	9	/	121	11	/	9	0									
	BEGIN PEAK HR		8:00 AM																				
	VOLUMES	0	0	0	60	1	1	0	5	0	5	5	0	77						0	0	0	0
	APPROACH %	0%	0%	0%	97%	2%	2%	0%	100%	0%	50%	50%	0%										
	PEAK HR FACTOR		0.000			0.705			0.417			0.417		0.770									
	APP/DEPART	0	/	0	62	/	6	5	/	65	10	/	6	0									
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	11	0	0	0	2	0	0	0	0	13	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	12	0	0	0	0	0	2	0	0	14	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	13	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	13	0	1	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	8	0	0	0	1	0	0	0	0	9	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	9	0	1	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	7	0	1	0	0	0	0	0	0	8	0	0	0	0	0	0	1	0	0
	5:45 PM	0	0	0	2	0	0	0	0	0	1	0	0	3	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	75	0	3	0	3	0	3	0	0	84	0	0	0	0	0	0	1	0	0
	APPROACH %	0%	0%	0%	96%	0%	4%	0%	100%	0%	100%	0%	0%										
	APP/DEPART	0	/	0	78	/	3	3	/	78	3	/	3	0									
	BEGIN PEAK HR		4:00 PM																				
	VOLUMES	0	0	0	49	0	1	0	2	0	2	0	0	54						0	0	0	0
	APPROACH %	0%	0%	0%	98%	0%	2%	0%	100%	0%	100%	0%	0%										
	PEAK HR FACTOR		0.000			0.893			0.250			0.250		0.964									
	APP/DEPART	0	/	0	50	/	2	2	/	51	2	/	1	0									



INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
Tue, Jan 29, 19	NORTH & SOUTH:	SR-71 SB Ramps	LOCATION #:	3
	EAST & WEST:	Butterfield Ranch	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N / ◄ W / E ► / S ▼

Add U-Turns to Left Turns

		NORTHBOUND (SR-71 SB Ramps)			SOUTHBOUND (SR-71 SB Ramps)			EASTBOUND (Butterfield Ranch)			WESTBOUND (Butterfield Ranch)			
	LANES:	NL 1	NT X	NR 1	SL 1.5	ST 0.5	SR 1	EL X	ET 2	ER 0	WL 1	WT 2	WR X	TOTAL
AM	7:00 AM	11	0	59	109	4	9	0	137	1	49	70	0	449
	7:15 AM	8	0	62	130	6	6	0	141	7	48	64	0	472
	7:30 AM	2	0	52	157	4	6	0	139	9	43	68	0	480
	7:45 AM	3	0	51	157	11	15	0	120	6	47	70	0	480
	8:00 AM	4	0	62	127	5	9	0	127	7	56	56	0	453
	8:15 AM	7	0	38	116	15	15	0	126	20	76	52	0	465
	8:30 AM	15	0	64	91	11	7	0	134	19	65	31	0	437
	8:45 AM	7	0	46	72	7	14	0	90	8	29	32	0	305
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	57	0	434	959	63	81	0	1,014	77	413	443	0	3,541
	APPROACH %	12%	0%	88%	87%	6%	7%	0%	93%	7%	48%	52%	0%	
	APP/DEPART	491	/	0	1,103	/	196	1,091	/	2,764	856	/	581	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	17	0	227	571	26	36	0	527	29	194	258	0	1,885
	APPROACH %	7%	0%	93%	90%	4%	6%	0%	95%	5%	43%	57%	0%	
	PEAK HR FACTOR		0.871			0.865			0.939			0.966		0.982
	APP/DEPART	244	/	0	633	/	74	556	/	1,500	452	/	311	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	2	0	30	135	8	15	0	144	10	11	37	0	392
	4:15 PM	6	0	23	157	13	10	0	164	23	21	57	0	474
	4:30 PM	9	0	30	140	6	14	0	180	13	16	67	0	475
	4:45 PM	6	0	31	125	9	17	0	192	14	25	56	0	475
	5:00 PM	1	0	28	185	22	14	0	167	11	22	58	0	508
	5:15 PM	5	0	35	146	14	12	0	191	19	34	63	0	519
	5:30 PM	5	0	31	146	20	23	0	151	14	38	59	0	487
	5:45 PM	3	0	29	133	23	21	0	111	18	18	47	0	403
	VOLUMES	37	0	237	1,167	115	126	0	1,300	122	185	444	0	3,733
	APPROACH %	14%	0%	86%	83%	8%	9%	0%	91%	9%	29%	71%	0%	
	APP/DEPART	274	/	0	1,408	/	373	1,422	/	2,753	629	/	607	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	17	0	125	602	65	66	0	701	58	119	236	0	1,989
	APPROACH %	12%	0%	88%	82%	9%	9%	0%	92%	8%	34%	66%	0%	
	PEAK HR FACTOR		0.888			0.829			0.904			0.915		0.958
	APP/DEPART	142	/	0	733	/	212	759	/	1,458	355	/	319	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
0	0	0	47	47
0	0	0	47	47
0	0	0	38	38
0	0	0	42	42
0	0	0	48	48
0	0	0	60	60
0	0	0	50	50
0	0	0	25	25
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	357	357
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	4	4
0	0	0	5	5
0	0	0	5	5
0	0	0	9	9
0	0	0	4	4
0	0	0	10	10
0	0	0	7	7
0	0	0	5	5
0	0	0	49	49

RTOR

NRR	SRR	ERR	WRR
0	0	0	X
20	3	0	0
14	4	1	0
14	2	3	0
13	3	3	0
27	7	2	0
19	9	4	0
18	4	8	0
26	8	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
151	40	21	0
68	16	9	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
20	5	3	0
10	4	9	0
16	4	3	0
14	5	3	0
12	8	2	0
18	4	4	0
13	9	3	0
18	9	5	0
121	48	32	0
57	26	12	0

SR-71 SB Ramps

NORTH SIDE

Butterfield Ranch WEST SIDE EAST SIDE **Butterfield Ranch**

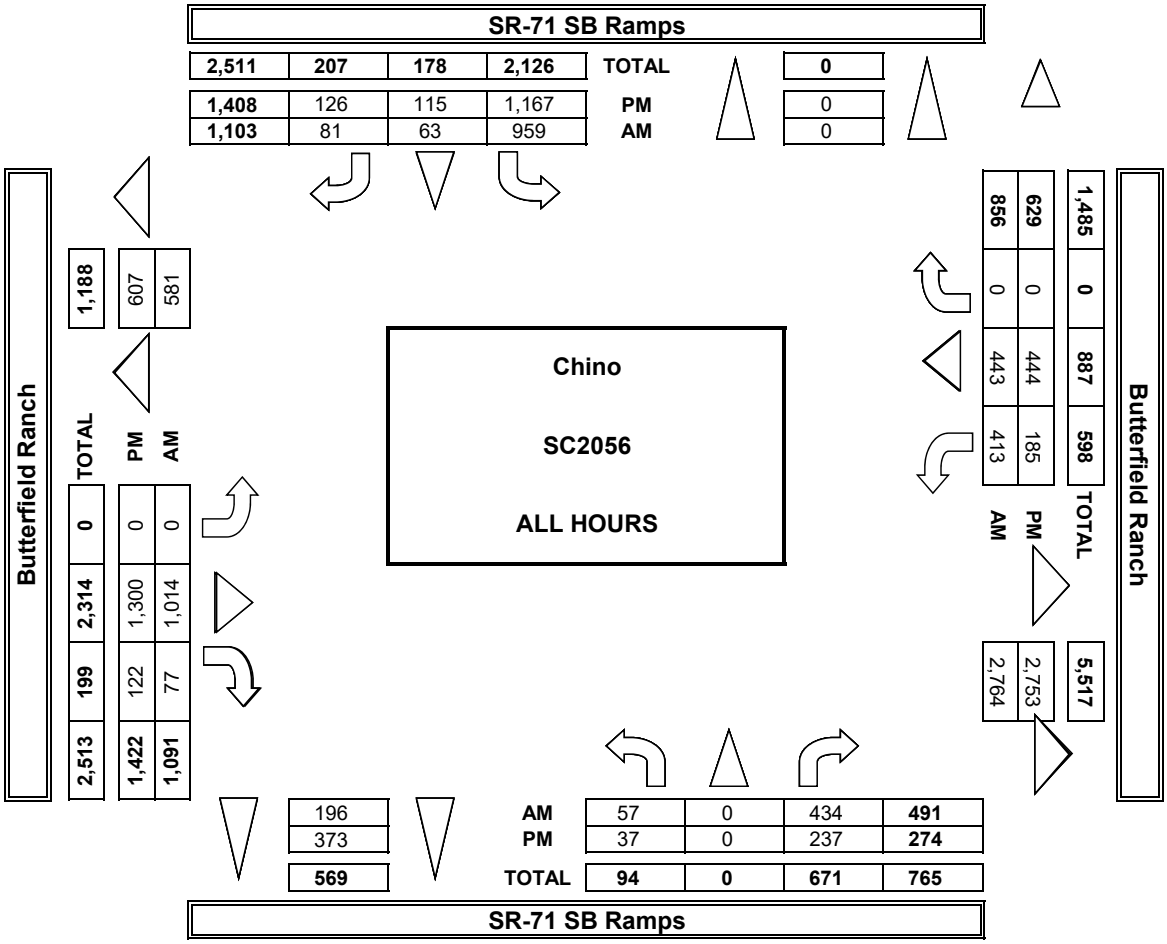
SOUTH SIDE

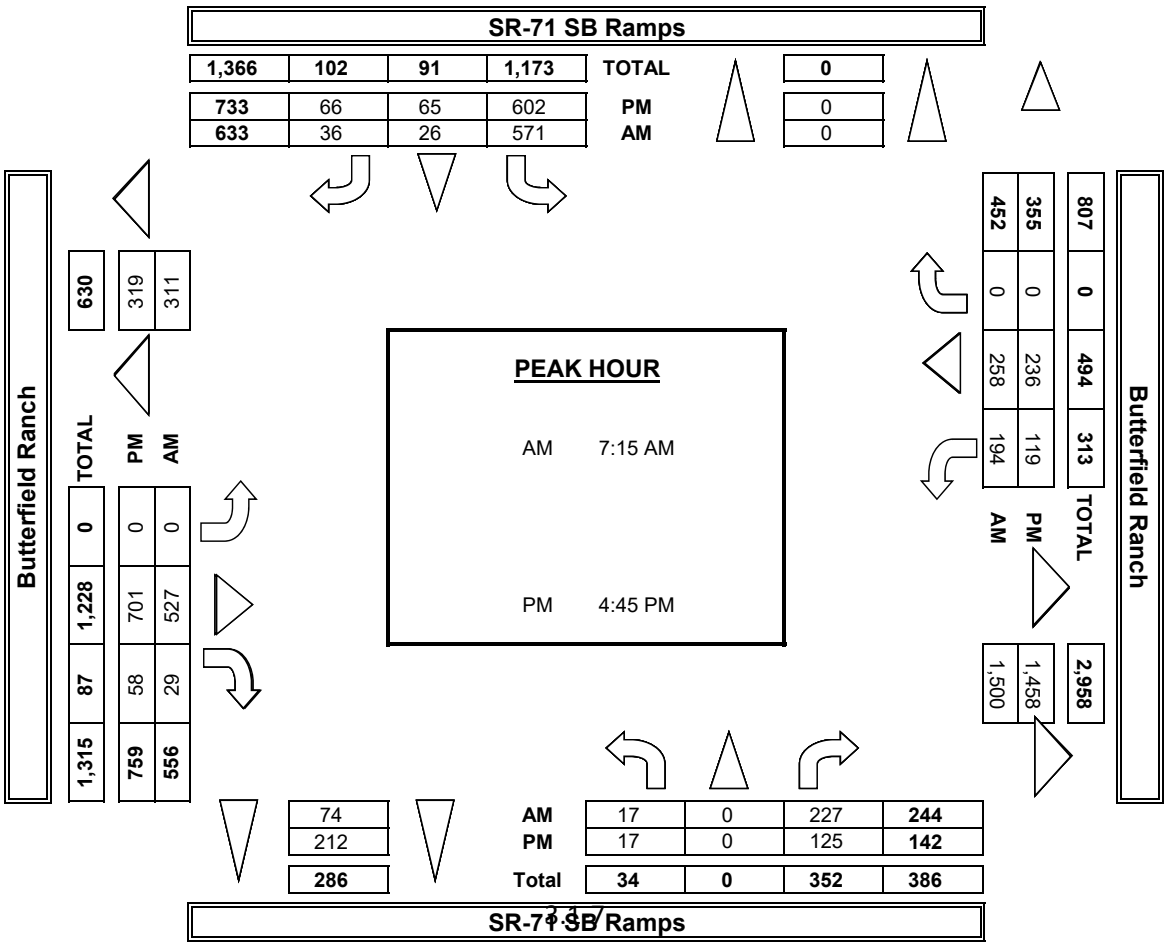
SR-71 SB Ramps

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/29/19	NORTH & SOUTH:	SR-71 SB Ramps	LOCATION #:	3
TUESDAY	EAST & WEST:	Butterfield Ranch	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND SR-71 SB Ramps			SOUTHBOUND SR-71 SB Ramps			EASTBOUND Butterfield Ranch			WESTBOUND Butterfield Ranch			
	LANES:	NL 1	NT X	NR 1	SL 1.5	ST 0.5	SR 1	EL X	ET 2	ER 0	WL 1	WT 2	WR X	TOTAL
AM	7:00 AM	0	0	2	5	0	0	0	4	0	5	3	0	19
	7:15 AM	0	0	0	9	1	1	0	9	0	2	2	0	24
	7:30 AM	0	0	0	6	0	0	0	11	0	3	9	0	29
	7:45 AM	0	0	1	5	0	2	0	8	1	3	3	0	23
	8:00 AM	0	0	2	7	0	1	0	5	1	6	7	0	29
	8:15 AM	1	0	1	7	0	0	0	9	0	5	5	0	28
	8:30 AM	0	0	0	4	3	2	0	3	1	2	2	0	17
	8:45 AM	0	0	2	4	0	0	0	6	1	0	3	0	16
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	0	8	47	4	6	0	55	4	26	34	0	185
	APPROACH %	11%	0%	89%	82%	7%	11%	0%	93%	7%	43%	57%	0%	
	APP/DEPART	9	/	0	57	/	10	59	/	134	60	/	41	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	1	0	4	25	0	3	0	33	2	1	24	0	109
	APPROACH %	20%	0%	80%	89%	0%	11%	0%	94%	6%	2%	59%	0%	
	PEAK HR FACTOR		0.625			0.875			0.795			0.788		0.940
	APP/DEPART	5	/	0	28	/	3	35	/	78	41	/	28	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	1	12	1	1	0	6	0	1	4	0	26
	4:15 PM	0	0	0	8	0	0	0	9	0	0	4	0	21
	4:30 PM	0	0	0	3	0	1	0	8	0	2	2	0	16
	4:45 PM	0	0	1	3	0	0	0	5	0	0	3	0	12
	5:00 PM	0	0	1	5	1	0	0	10	0	1	1	0	19
	5:15 PM	0	0	0	0	0	0	0	5	0	0	0	0	5
	5:30 PM	0	0	0	3	0	1	0	4	0	0	2	0	10
	5:45 PM	0	0	3	2	0	1	0	3	0	0	3	0	12
	VOLUMES	0	0	6	36	2	4	0	50	0	4	19	0	121
	APPROACH %	0%	0%	100%	86%	5%	10%	0%	100%	0%	17%	83%	0%	
	APP/DEPART	6	/	0	42	/	5	50	/	93	23	/	23	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	2	26	1	2	0	28	0	3	13	0	75
	APPROACH %	0%	0%	100%	90%	3%	7%	0%	100%	0%	19%	81%	0%	
	PEAK HR FACTOR		0.500			0.518			0.778			0.800		0.721
	APP/DEPART	2	/	0	29	/	4	28	/	56	16	/	15	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	5	5
0	0	0	2	2
0	0	0	3	3
0	0	0	3	3
0	0	0	5	5
0	0	0	5	5
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	24	24
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1

RTOR

NRR 0	SRR 0	ERR 0	WRR X
0	0	0	0
0	1	0	0
0	0	0	0
1	0	0	0
1	1	1	0
1	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
3	2	2	0
3	1	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
2	0	0	0
4	1	0	0
1	1	0	0

SR-71 SB Ramps

NORTH SIDE

Butterfield Ranch WEST SIDE EAST SIDE **Butterfield Ranch**

SOUTH SIDE

SR-71 SB Ramps

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/29/19	NORTH & SOUTH:	SR-71 SB Ramps	LOCATION #:	3
TUESDAY	EAST & WEST:	Butterfield Ranch	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND SR-71 SB Ramps			SOUTHBOUND SR-71 SB Ramps			EASTBOUND Butterfield Ranch			WESTBOUND Butterfield Ranch			
LANES:	NL 1	NT X	NR 1	SL 1.5	ST 0.5	SR 1	EL X	ET 2	ER 0	WL 1	WT 2	WR X	TOTAL
AM													
7:00 AM	0	0	0	2	0	0	0	1	0	0	1	0	4
7:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	1	1	0	2
7:45 AM	0	0	0	1	0	1	0	0	0	0	0	0	2
8:00 AM	0	0	0	2	0	0	0	0	0	0	0	0	2
8:15 AM	0	0	0	4	0	0	0	0	0	0	1	0	5
8:30 AM	1	0	0	1	0	0	0	0	1	0	0	0	3
8:45 AM	0	0	0	1	0	0	0	1	0	0	0	0	2
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	1	0	0	12	0	1	0	2	1	1	3	0	21
APPROACH %	100%	0%	0%	92%	0%	8%	0%	67%	33%	25%	75%	0%	
APP/DEPART	1	/	0	13	/	1	3	/	15	4	/	5	0
BEGIN PEAK HR		7:45 AM											
VOLUMES	1	0	0	8	0	0	0	1	1	0	1	0	12
APPROACH %	100%	0%	0%	100%	0%	0%	0%	50%	50%	0%	100%	0%	
PEAK HR FACTOR		0.250			0.500			0.500			0.250		0.600
APP/DEPART	1	/	0	8	/	1	2	/	9	1	/	2	0
PM													
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	2	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	2	0	0	0	1	0	0	0	0	3
5:00 PM	0	0	0	2	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:30 PM	0	0	0	2	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	9	0	0	0	2	0	0	0	0	11
APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	
APP/DEPART	0	/	0	9	/	0	2	/	11	0	/	0	0
BEGIN PEAK HR		4:15 PM											
VOLUMES	0	0	0	6	0	0	0	2	0	0	0	0	8
APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	
PEAK HR FACTOR		0.000			0.750			0.500			0.000		0.667
APP/DEPART	0	/	0	6	/	0	2	/	8	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

SR-71 SB Ramps

NORTH SIDE

Butterfield Ranch WEST SIDE EAST SIDE **Butterfield Ranch**

SOUTH SIDE

SR-71 SB Ramps

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/29/19	NORTH & SOUTH:	SR-71 SB Ramps	LOCATION #:	3
TUESDAY	EAST & WEST:	Butterfield Ranch	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

		NORTHBOUND SR-71 SB Ramps			SOUTHBOUND SR-71 SB Ramps			EASTBOUND Butterfield Ranch			WESTBOUND Butterfield Ranch			
	LANES:	NL 1	NT X	NR 1	SL 1.5	ST 0.5	SR 1	EL X	ET 2	ER 0	WL 1	WT 2	WR X	TOTAL
AM	7:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
	7:15 AM	0	0	0	1	0	0	0	0	0	0	1	0	2
	7:30 AM	0	0	0	4	0	0	0	0	0	0	0	0	4
	7:45 AM	0	0	0	7	0	0	0	0	0	0	1	0	8
	8:00 AM	0	0	0	6	0	1	0	1	0	0	0	0	8
	8:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
	8:30 AM	0	0	1	3	0	0	0	0	0	0	0	0	4
	8:45 AM	0	0	0	4	0	0	0	1	0	0	0	0	5
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	1	27	0	1	0	2	0	0	2	0	33
	APPROACH %	0%	0%	100%	96%	0%	4%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	1	/	0	28	/	0	2	/	30	2	/	3	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	18	0	1	0	1	0	0	2	0	22
	APPROACH %	0%	0%	0%	95%	0%	5%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.679			0.250			0.500		0.688
	APP/DEPART	0	/	0	19	/	0	1	/	19	2	/	3	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	2	0	0	0	0	0	0	0	0	2
	4:15 PM	0	0	0	3	0	0	0	0	0	0	0	0	3
	4:30 PM	0	0	0	1	0	0	0	1	0	0	1	0	3
	4:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
	5:00 PM	0	0	0	1	0	0	0	1	0	0	0	0	2
	5:15 PM	0	0	0	2	0	0	0	1	0	0	0	0	3
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	2	0	0	0	0	0	0	0	0	2
	VOLUMES	0	0	0	11	0	0	0	3	0	0	3	0	17
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	0	/	0	11	/	0	3	/	14	3	/	3	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	4	0	0	0	3	0	0	3	0	10
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.333			0.750			0.375		0.833
	APP/DEPART	0	/	0	4	/	0	3	/	7	3	/	3	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR 0	ERR 0	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	1	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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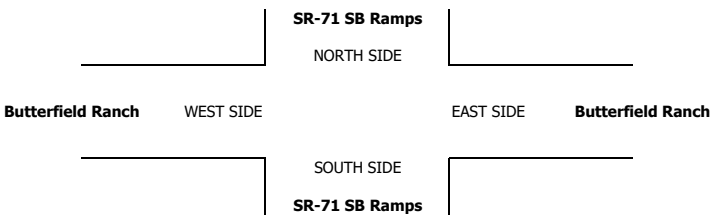
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
Wed, Jan 30, 19	NORTH & SOUTH:	Roswell	LOCATION #:	3
	EAST & WEST:	Grand	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N / ◄ W / E ► / S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Roswell)			SOUTHBOUND (Roswell)			EASTBOUND (Grand)			WESTBOUND (Grand)			
	LANES:	NL 1.5	NT 0.5	NR 1	SL 1	ST X	SR 2	EL 1	ET 3	ER 2	WL X	WT 4	WR 0	TOTAL
AM	7:00 AM	107	17	14	4	0	208	42	137	45	0	220	6	800
	7:15 AM	131	16	12	7	0	175	81	192	65	0	252	5	936
	7:30 AM	82	7	11	9	0	164	74	220	37	0	231	7	842
	7:45 AM	124	19	17	16	0	158	75	256	21	0	167	8	861
	8:00 AM	102	25	18	9	0	122	82	216	42	0	181	4	801
	8:15 AM	81	41	24	12	0	128	78	267	41	0	192	8	872
	8:30 AM	63	41	34	13	0	105	77	186	43	0	169	20	751
	8:45 AM	81	39	30	13	0	124	83	252	34	0	142	15	813
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	771	205	160	83	0	1,184	592	1,726	328	0	1,554	73	6,676
	APPROACH %	68%	18%	14%	7%	0%	93%	22%	65%	12%	0%	96%	4%	
	APP/DEPART	1,136	/	863	1,267	/	328	2,646	/	1,969	1,627	/	3,516	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	439	67	58	41	0	619	312	884	165	0	831	24	3,440
	APPROACH %	78%	12%	10%	6%	0%	94%	23%	65%	12%	0%	97%	3%	
	PEAK HR FACTOR		0.881			0.907			0.967			0.832		0.919
	APP/DEPART	564	/	402	660	/	165	1,361	/	983	855	/	1,890	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	91	26	38	38	0	144	75	309	59	0	255	13	1,048
	4:15 PM	81	31	38	31	0	113	90	265	64	0	287	30	1,030
	4:30 PM	58	24	50	40	0	182	89	304	88	0	378	14	1,227
	4:45 PM	94	44	50	42	0	163	82	361	52	0	305	22	1,215
	5:00 PM	82	25	39	35	0	194	91	327	80	0	389	14	1,276
	5:15 PM	115	35	59	36	0	186	82	360	74	0	316	12	1,275
	5:30 PM	77	37	51	28	0	187	84	331	63	0	349	7	1,214
	5:45 PM	120	25	67	35	0	154	76	331	82	0	303	18	1,211
	VOLUMES	718	247	392	285	0	1,323	669	2,588	562	0	2,582	130	9,496
	APPROACH %	53%	18%	29%	18%	0%	82%	18%	68%	15%	0%	95%	5%	
	APP/DEPART	1,357	/	1,023	1,608	/	562	3,819	/	3,265	2,712	/	4,646	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	349	128	198	153	0	725	344	1,352	294	0	1,388	62	4,993
	APPROACH %	52%	19%	29%	17%	0%	83%	17%	68%	15%	0%	96%	4%	
	PEAK HR FACTOR		0.807			0.959			0.964			0.900		0.978
	APP/DEPART	675	/	527	878	/	294	1,990	/	1,703	1,450	/	2,469	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	3	0	3
0	0	2	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	7	0	7
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	3	0	3
0	0	7	0	7
0	0	0	0	0
0	0	3	0	3
0	0	4	0	4
0	0	0	0	0
0	0	4	0	4
0	0	2	0	2
0	0	23	0	23

RTOR

NRR	SRR	ERR	WRR
0	0	X	0
11	98	0	0
7	101	0	0
8	62	0	0
14	45	0	0
8	46	0	0
19	41	0	1
28	48	0	0
22	49	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
117	490	0	1
37	254	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
21	59	0	0
18	42	0	0
40	68	0	3
30	63	0	1
29	77	0	2
31	85	0	0
32	61	0	0
36	73	0	0
237	528	0	6
130	293	0	6

Roswell

NORTH SIDE

Grand WEST SIDE EAST SIDE **Grand**

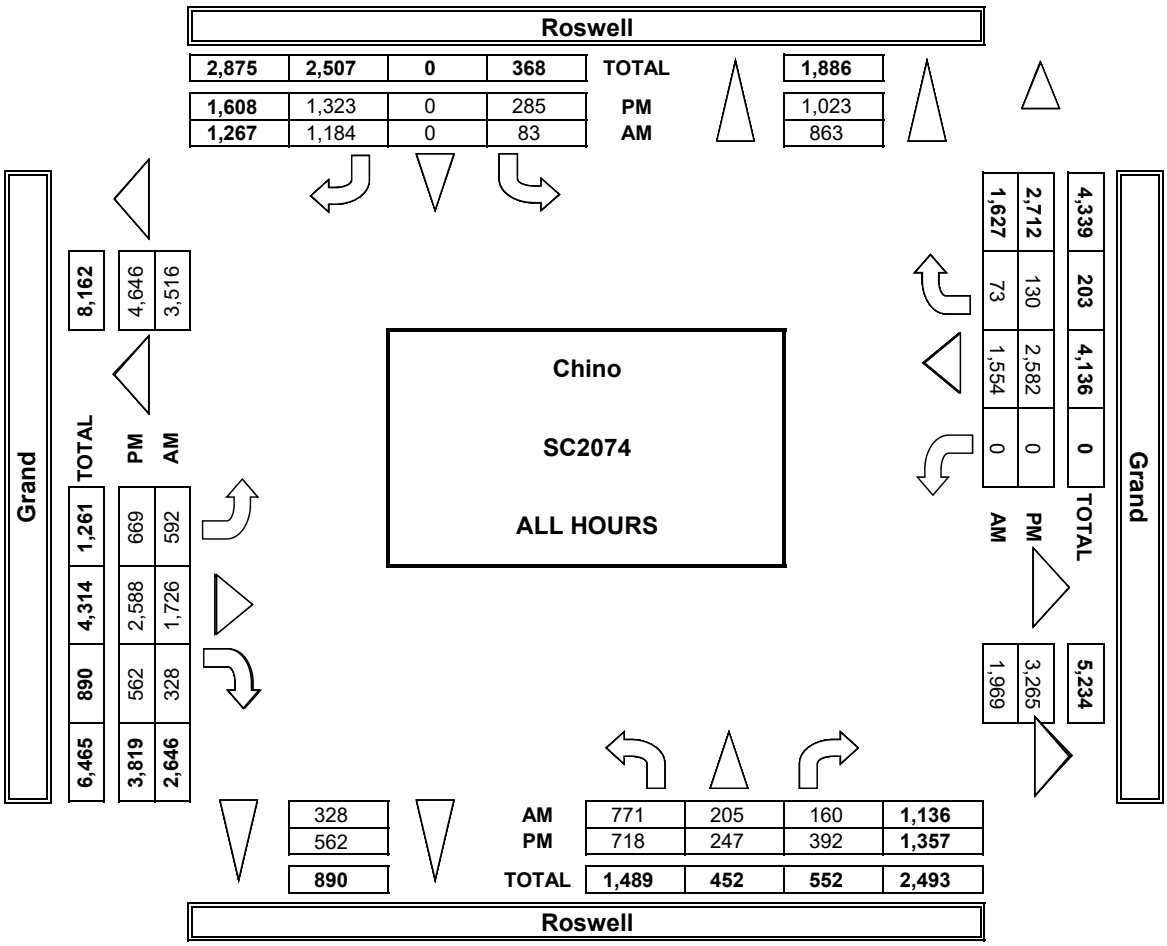
SOUTH SIDE

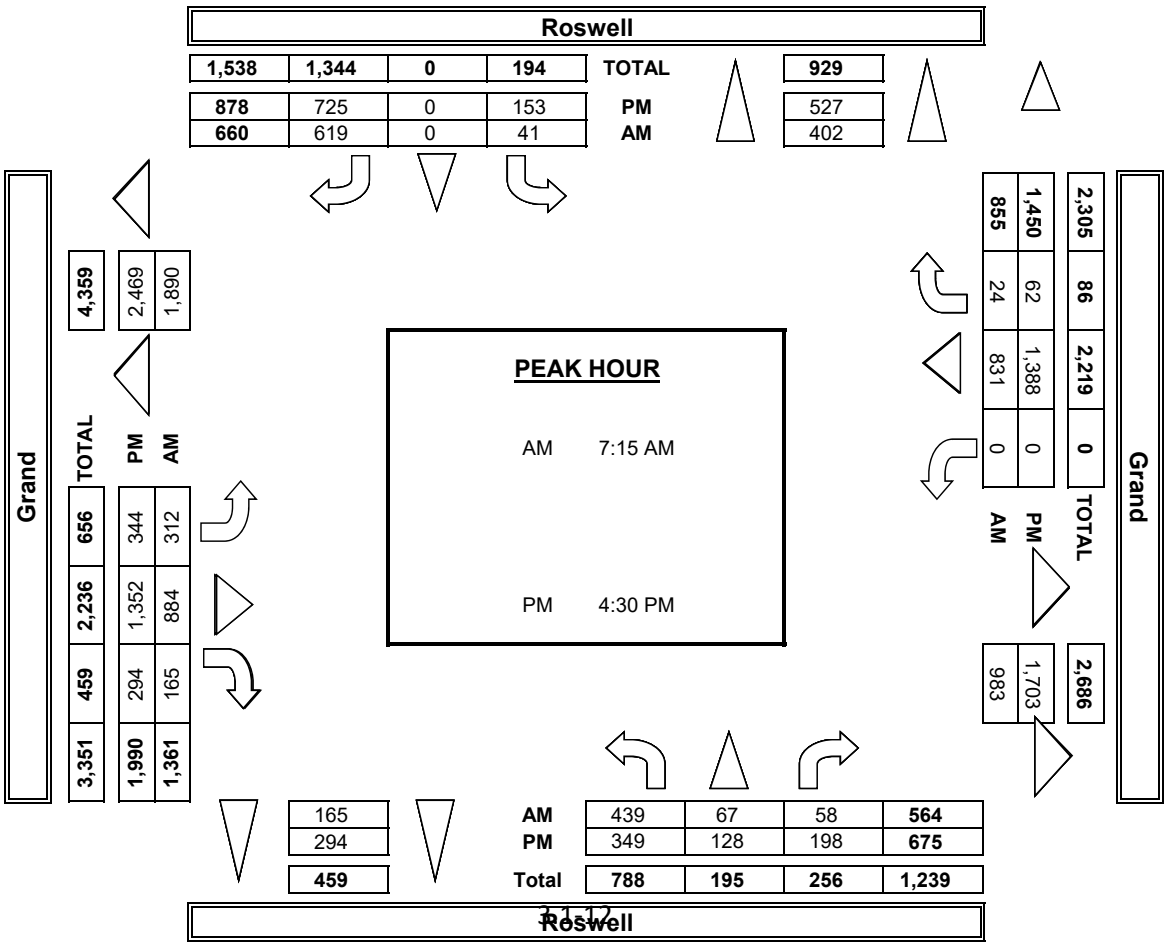
Roswell

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	3	3	0	0	0	3	3	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	1	3	4	0	0	0	0	3	0	0	0	0	1
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	5	0	0	4	9	5	0	0	4	9	0	0	0	0	0
	4:15 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	5:15 PM	1	0	0	1	2	1	0	0	1	2	0	0	0	0	0
	5:30 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	5:45 PM	1	0	0	2	3	1	0	0	2	3	0	0	0	0	0
	TOTAL	9	0	1	7	17	1	0	0	1	16	0	0	1	0	1

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Roswell	LOCATION #:	3
WEDNESDAY	EAST & WEST:	Grand	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

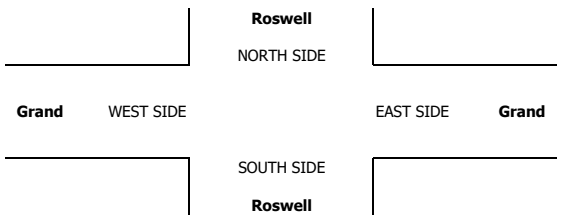
	NORTHBOUND (Roswell)			SOUTHBOUND (Roswell)			EASTBOUND (Grand)			WESTBOUND (Grand)			
LANES:	NL 1.5	NT 0.5	NR 1	SL 1	ST X	SR 2	EL 1	ET 3	ER 2	WL X	WT 4	WR 0	TOTAL
7:00 AM	1	1	1	1	0	9	2	4	2	0	4	0	25
7:15 AM	0	0	2	0	0	3	2	14	1	0	9	0	31
7:30 AM	4	1	0	0	0	7	2	11	1	0	14	1	41
7:45 AM	1	0	0	0	0	2	3	3	0	0	8	1	18
8:00 AM	5	0	2	0	0	5	2	13	0	0	5	0	32
8:15 AM	0	1	0	0	0	5	0	5	2	0	11	0	24
8:30 AM	1	0	1	1	0	3	4	9	3	0	7	2	31
8:45 AM	2	0	2	0	0	6	2	12	1	0	5	0	30
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	14	3	8	2	0	40	17	71	10	0	63	4	232
APPROACH %	56%	12%	32%	5%	0%	95%	17%	72%	10%	0%	94%	6%	
APP/DEPART	25	/	24	42	/	10	98	/	81	67	/	117	0
BEGIN PEAK HR	7:15 AM												
VOLUMES	10	1	4	0	0	17	9	41	2	0	36	2	122
APPROACH %	67%	7%	27%	0%	0%	100%	17%	79%	4%	0%	95%	5%	
PEAK HR FACTOR	0.536			0.607			0.765			0.633			0.744
APP/DEPART	15	/	12	17	/	2	52	/	45	38	/	63	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	2	1	1	0	0	2	0	10	2	0	8	0	26
4:15 PM	0	0	1	0	0	2	1	13	1	0	3	1	22
4:30 PM	0	0	1	0	0	4	2	7	2	0	7	0	23
4:45 PM	0	1	2	0	0	4	0	16	2	0	5	0	30
5:00 PM	0	2	0	0	0	3	0	14	1	0	10	1	31
5:15 PM	1	1	0	0	0	0	1	3	0	0	2	0	8
5:30 PM	0	0	0	0	0	0	3	4	1	0	6	0	14
5:45 PM	0	1	2	1	0	3	1	5	1	0	3	0	17
VOLUMES	3	6	7	1	0	18	8	72	10	0	44	2	171
APPROACH %	19%	38%	44%	5%	0%	95%	9%	80%	11%	0%	96%	4%	
APP/DEPART	16	/	16	19	/	10	90	/	80	46	/	65	0
BEGIN PEAK HR	4:15 PM												
VOLUMES	0	3	4	0	0	13	3	50	6	0	25	2	106
APPROACH %	0%	43%	57%	0%	0%	100%	5%	85%	10%	0%	93%	7%	
PEAK HR FACTOR	0.583			0.813			0.819			0.614			0.855
APP/DEPART	7	/	8	13	/	6	59	/	54	27	/	38	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	6	0	0
1	0	0	0
0	2	0	0
0	1	0	0
1	0	0	0
0	1	0	0
1	1	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
3	12	0	0
2	3	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
1	0	0	0
1	2	0	0
0	1	0	0
0	0	0	0
0	0	0	0
2	1	0	0
5	4	0	0
3	3	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Roswell	LOCATION #:	3
WEDNESDAY	EAST & WEST:	Grand	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

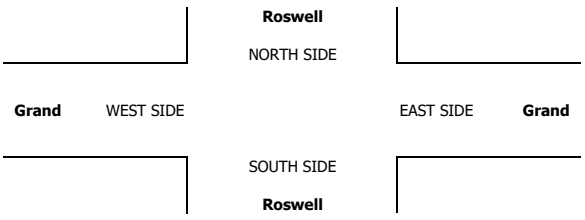
	NORTHBOUND Roswell			SOUTHBOUND Roswell			EASTBOUND Grand			WESTBOUND Grand			
LANES:	NL 1.5	NT 0.5	NR 1	SL 1	ST X	SR 2	EL 1	ET 3	ER 2	WL X	WT 4	WR 0	TOTAL
7:00 AM	0	0	0	0	0	0	0	1	0	0	4	0	5
7:15 AM	0	0	0	0	0	0	0	0	0	0	5	0	5
7:30 AM	0	0	0	0	0	0	1	4	0	0	3	0	8
7:45 AM	1	0	0	0	0	1	0	2	0	0	2	0	6
8:00 AM	0	0	0	0	0	0	2	2	0	0	1	0	5
8:15 AM	1	0	1	0	0	0	0	1	0	0	3	0	6
8:30 AM	1	1	0	0	0	1	0	1	1	0	2	0	7
8:45 AM	0	1	0	0	0	0	1	2	0	0	3	0	7
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	3	2	1	0	0	2	4	13	1	0	23	0	49
APPROACH %	50%	33%	17%	0%	0%	100%	22%	72%	6%	0%	100%	0%	
APP/DEPART	6	/	5	2	/	1	18	/	14	23	/	29	0
BEGIN PEAK HR		7:30 AM											
VOLUMES	2	2	1	0	0	1	2	6	1	0	9	0	25
APPROACH %	40%	40%	20%	0%	0%	100%	20%	60%	10%	0%	100%	0%	
PEAK HR FACTOR		0.625			0.250			0.500			0.750		0.781
APP/DEPART	5	/	4	1	/	1	10	/	7	9	/	13	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	1	1	0	0	0	2
4:15 PM	0	0	0	0	0	1	0	4	0	0	1	0	6
4:30 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
4:45 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	3	0	3
5:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	3	0	0	0	0	3
VOLUMES	0	0	0	0	0	1	1	12	1	0	6	0	21
APPROACH %	0%	0%	0%	0%	0%	100%	7%	86%	7%	0%	100%	0%	
APP/DEPART	0	/	1	1	/	1	14	/	12	6	/	7	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	0	0	0	0	1	0	8	1	0	3	0	13
APPROACH %	0%	0%	0%	0%	0%	100%	0%	89%	11%	0%	100%	0%	
PEAK HR FACTOR		0.000			0.250			0.563			0.750		0.542
APP/DEPART	0	/	0	1	/	1	9	/	8	3	/	4	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR 0	ERR X	WRR 0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Roswell	LOCATION #:	3
WEDNESDAY	EAST & WEST:	Grand	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N ◀ W E ▶ S ▼

	NORTHBOUND Roswell			SOUTHBOUND Roswell			EASTBOUND Grand			WESTBOUND Grand			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0.5	1	1	X	2	1	3	2	X	4	0	
AM 7:00 AM	0	0	1	0	0	1	0	18	0	0	14	0	34
7:15 AM	0	0	0	0	0	2	1	9	1	0	13	0	26
7:30 AM	0	0	0	0	0	0	0	14	0	0	18	0	32
7:45 AM	0	0	0	0	0	1	0	13	0	0	12	0	26
8:00 AM	0	0	1	0	0	1	0	20	2	0	18	0	42
8:15 AM	0	0	0	0	0	3	0	15	1	0	14	0	33
8:30 AM	0	0	0	0	0	0	0	9	0	0	22	0	31
8:45 AM	0	0	1	0	0	1	0	18	0	0	19	0	39
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	3	0	0	9	1	116	4	0	130	0	263
APPROACH %	0%	0%	100%	0%	0%	100%	1%	96%	3%	0%	100%	0%	
APP/DEPART	3	/	1	9	/	4	121	/	119	130	/	139	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	0	0	2	0	0	5	0	62	3	0	73	0	145
APPROACH %	0%	0%	100%	0%	0%	100%	0%	95%	5%	0%	100%	0%	
PEAK HR FACTOR		0.500			0.417			0.739			0.830		0.863
APP/DEPART	2	/	0	5	/	3	65	/	64	73	/	78	0
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	1	0	12	1	0	4	0	18
4:15 PM	0	0	0	0	0	1	0	12	0	0	8	0	21
4:30 PM	0	0	0	0	0	0	0	13	0	0	4	0	17
4:45 PM	0	0	0	0	0	0	0	13	0	0	4	0	17
5:00 PM	0	0	1	0	0	0	0	9	0	0	10	0	20
5:15 PM	0	0	0	0	0	0	0	9	0	0	9	0	18
5:30 PM	0	0	0	0	0	1	0	7	0	0	10	0	18
5:45 PM	0	0	0	0	0	0	0	2	0	0	6	1	9
VOLUMES	0	0	1	0	0	3	0	77	1	0	55	1	138
APPROACH %	0%	0%	100%	0%	0%	100%	0%	99%	1%	0%	98%	2%	
APP/DEPART	1	/	1	3	/	1	78	/	78	56	/	58	0
BEGIN PEAK HR		4:15 PM											
VOLUMES	0	0	1	0	0	1	0	47	0	0	26	0	75
APPROACH %	0%	0%	100%	0%	0%	100%	0%	100%	0%	0%	100%	0%	
PEAK HR FACTOR		0.250			0.250			0.904			0.650		0.893
APP/DEPART	1	/	0	1	/	0	47	/	48	26	/	27	0

U-TURNS

	NB	SB	EB	WB	TTL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
03:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0

RTOR

	NRR	SRR	ERR	WRR
LANES:	0	0	X	0
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	1	0	0
8:15 AM	0	1	0	0
8:30 AM	0	0	0	0
8:45 AM	0	1	0	0
9:00 AM	0	0	0	0
9:15 AM	0	0	0	0
9:30 AM	0	0	0	0
9:45 AM	0	0	0	0
VOLUMES	0	3	0	0
PEAK HR VOLUMES	0	3	0	0
03:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	1	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	1	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	1	0	0
5:45 PM	0	0	0	0
VOLUMES	1	2	0	0
PEAK HR VOLUMES	1	0	0	0

Roswell

NORTH SIDE

Grand WEST SIDE

EAST SIDE **Grand**

SOUTH SIDE

Roswell

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
Wed, Jan 30, 19	NORTH & SOUTH:	SR-71 NB Ramps	LOCATION #:	3
	EAST & WEST:	Grand	CONTROL:	SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

▲ N ◄ W E ► S ▼

Add U-Turns to Left Turns

	NORTHBOUND SR-71 NB Ramps			SOUTHBOUND SR-71 NB Ramps			EASTBOUND Grand			WESTBOUND Grand			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	X	X	X	X	X	X	X	3	X	X	4.5	1.5	
AM 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	178	178
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	124	124
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	172	172
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	166	166
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	96	96
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	161	161
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	101	101
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	136	136
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	1,134	1,134
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
APP/DEPART	0	/	1,134	0	/	0	0	/	0	1,134	/	0	0
BEGIN PEAK HR		7:00 AM											
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	640	640
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
PEAK HR FACTOR		0.000			0.000			0.000			0.899		0.899
APP/DEPART	0	/	640	0	/	0	0	/	0	640	/	0	0
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	203	203
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	195	195
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	266	266
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	203	203
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	305	305
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	191	191
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	290	290
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	158	158
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	1,811	1,811
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
APP/DEPART	0	/	1,811	0	/	0	0	/	0	1,811	/	0	0
BEGIN PEAK HR		4:45 PM											
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	989	989
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
PEAK HR FACTOR		0.000			0.000			0.000			0.811		0.811
APP/DEPART	0	/	989	0	/	0	0	/	0	989	/	0	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES	0	0	0	0		X	X	X	X
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PEAK HR VOLUMES						0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PEAK HR VOLUMES						0	0	0	0

SR-71 NB Ramps

NORTH SIDE

Grand WEST SIDE EAST SIDE **Grand**

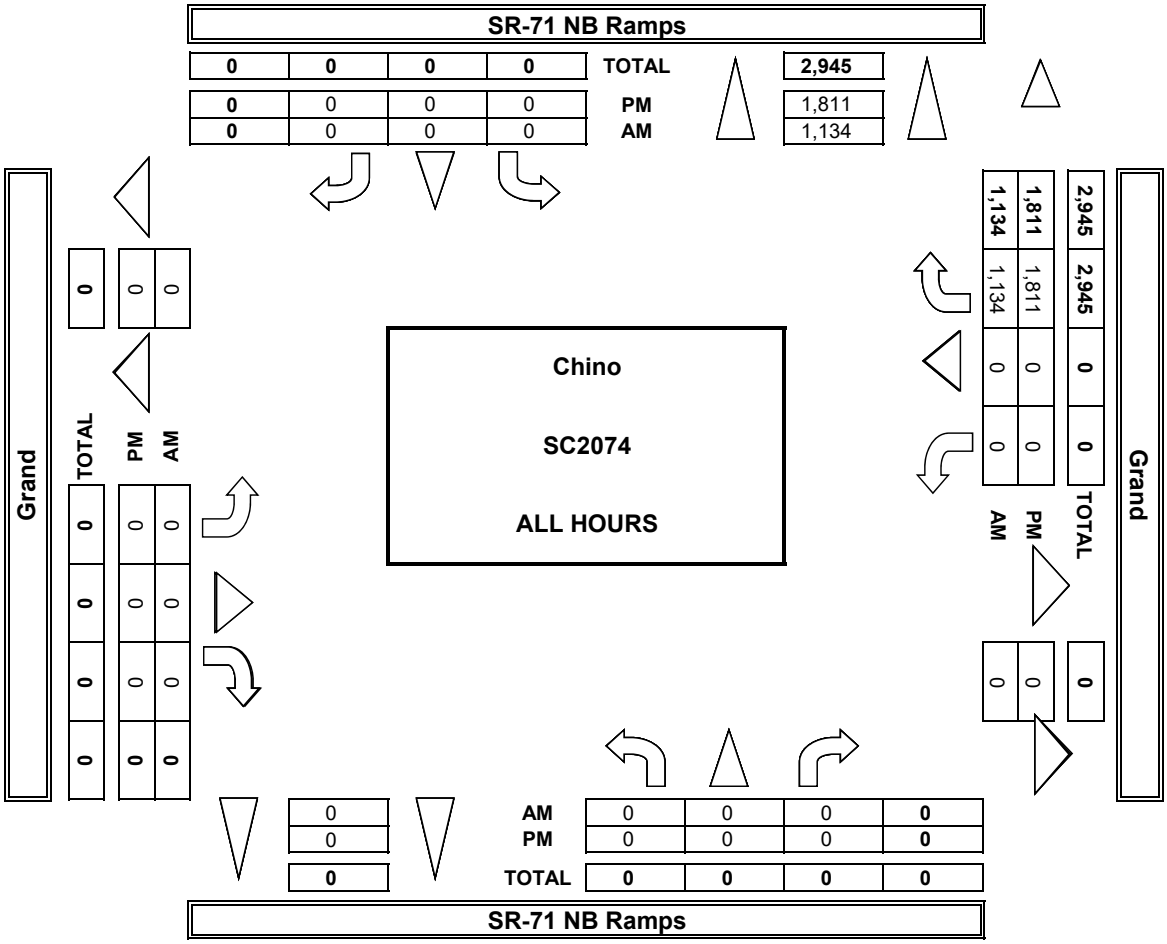
SOUTH SIDE

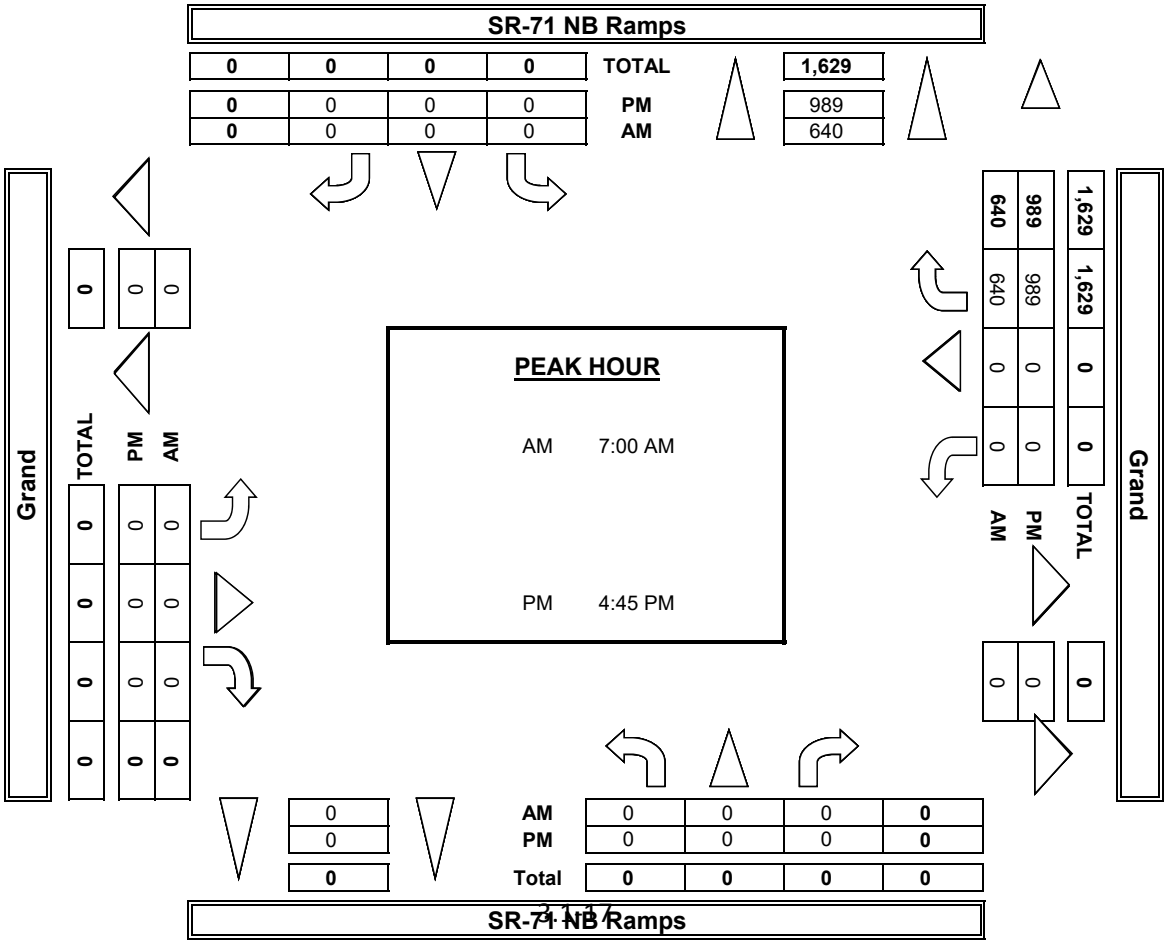
SR-71 NB Ramps

	ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	SR-71 NB Ramps	LOCATION #:	3
WEDNESDAY	EAST & WEST:	Grand	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND SR-71 NB Ramps			SOUTHBOUND SR-71 NB Ramps			EASTBOUND Grand			WESTBOUND Grand			
	LANES:	NL X	NT X	NR X	SL X	ST X	SR X	EL X	ET 3	ER X	WL X	WT 4.5	WR 1.5	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	5	5
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	7	7
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	9	9
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	5	5
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	8	8
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	6	6
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	4	4
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	5	5
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	49	49
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
	APP/DEPART	0	/	49	0	/	0	0	/	0	49	/	0	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	29	29
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.806		0.806
	APP/DEPART	0	/	29	0	/	0	0	/	0	29	/	0	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	5	5
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	5	5
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	8	8
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	9	9
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	4	4
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	3	3
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	36	36
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
	APP/DEPART	0	/	36	0	/	0	0	/	0	36	/	0	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	23	23
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.639		0.639
	APP/DEPART	0	/	23	0	/	0	0	/	0	23	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
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0	0	0	0
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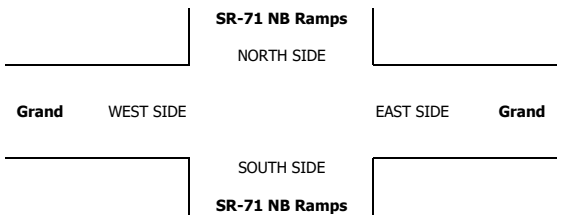
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	SR-71 NB Ramps	LOCATION #:	3
WEDNESDAY	EAST & WEST:	Grand	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND SR-71 NB Ramps			SOUTHBOUND SR-71 NB Ramps			EASTBOUND Grand			WESTBOUND Grand			
	LANES:	NL X	NT X	NR X	SL X	ST X	SR X	EL X	ET 3	ER X	WL X	WT 4.5	WR 1.5	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	2	2
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	4	4
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	2	2
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	3	3
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	4	4
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	3	3
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	20	20
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
	APP/DEPART	0	/	20	0	/	0	0	/	0	20	/	0	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	11	11
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.688		0.688
	APP/DEPART	0	/	11	0	/	0	0	/	0	11	/	0	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	2
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	2
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	6	6
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
	APP/DEPART	0	/	6	0	/	0	0	/	0	6	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	4	4
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.500		0.500
	APP/DEPART	0	/	4	0	/	0	0	/	0	4	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
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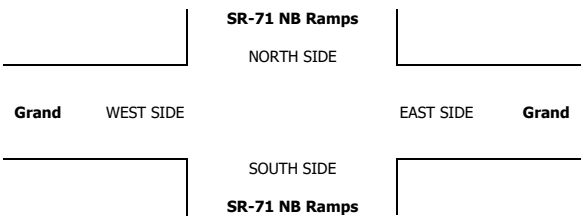
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	SR-71 NB Ramps	LOCATION #:	3
WEDNESDAY	EAST & WEST:	Grand	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

		NORTHBOUND SR-71 NB Ramps			SOUTHBOUND SR-71 NB Ramps			EASTBOUND Grand			WESTBOUND Grand			
	LANES:	NL X	NT X	NR X	SL X	ST X	SR X	EL X	ET 3	ER X	WL X	WT 4.5	WR 1.5	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	15	15
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	14	14
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	18	18
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	13	13
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	17	17
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	16	16
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	16	16
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	19	19
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	128	128
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
	APP/DEPART	0	/	128	0	/	0	0	/	0	128	/	0	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	68	68
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.895		0.895
	APP/DEPART	0	/	68	0	/	0	0	/	0	68	/	0	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	5	5
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	7	7
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	4	4
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	4	4
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	10	10
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	9	9
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	11	11
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	5	5
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	55	55
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
	APP/DEPART	0	/	55	0	/	0	0	/	0	55	/	0	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	35	35
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.795		0.795
	APP/DEPART	0	/	35	0	/	0	0	/	0	35	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
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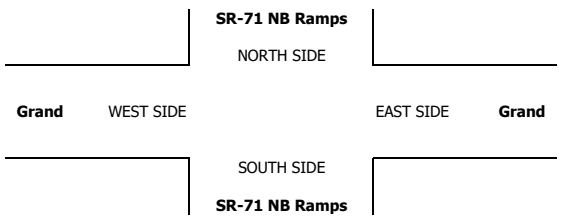
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



T1218

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
Tue, Jan 22, 19	NORTH & SOUTH:	SR-71 NB Ramps	LOCATION #:	6
	EAST & WEST:	Euclid	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N / ◄ W / E ► / S ▼

Add U-Turns to Left Turns

	NORTHBOUND (SR-71 NB Ramps)			SOUTHBOUND (SR-71 NB Ramps)			EASTBOUND (Euclid)			WESTBOUND (Euclid)			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	X	1	X	X	X	X	2	1	1	2	X	
AM													
7:00 AM	5	0	123	0	0	0	0	147	79	143	247	0	744
7:15 AM	6	0	158	0	0	0	0	146	51	164	215	0	740
7:30 AM	9	0	142	0	0	0	0	156	58	168	227	0	760
7:45 AM	10	0	144	0	0	0	0	163	69	170	189	0	745
8:00 AM	9	0	137	0	0	0	0	118	80	175	190	0	709
8:15 AM	12	0	133	0	0	0	0	172	77	181	232	0	807
8:30 AM	8	0	148	0	0	0	0	169	93	167	140	0	725
8:45 AM	12	0	126	0	0	0	0	114	66	148	144	0	610
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	71	0	1,111	0	0	0	0	1,185	573	1,316	1,584	0	5,840
APPROACH %	6%	0%	94%	0%	0%	0%	0%	67%	33%	45%	55%	0%	
APP/DEPART	1,182	/	0	0	/	1,889	1,758	/	2,296	2,900	/	1,655	0
BEGIN PEAK HR		7:30 AM											
VOLUMES	40	0	556	0	0	0	0	609	284	694	838	0	3,021
APPROACH %	7%	0%	93%	0%	0%	0%	0%	68%	32%	45%	55%	0%	
PEAK HR FACTOR		0.968			0.000			0.897			0.927		0.936
APP/DEPART	596	/	0	0	/	978	893	/	1,165	1,532	/	878	0
PM													
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	31	0	208	0	0	0	0	170	27	95	147	0	678
4:15 PM	22	0	191	0	0	0	0	191	37	78	175	0	694
4:30 PM	23	0	240	0	0	0	0	187	42	71	176	0	739
4:45 PM	26	0	204	0	0	0	0	222	30	69	227	0	778
5:00 PM	28	0	220	0	0	0	0	192	29	79	197	0	745
5:15 PM	15	0	182	0	0	0	0	171	38	81	174	0	661
5:30 PM	33	0	207	0	0	0	0	200	33	68	210	0	751
5:45 PM	43	0	236	0	0	0	0	208	46	107	244	0	884
VOLUMES	221	0	1,688	0	0	0	0	1,541	282	648	1,550	0	5,930
APPROACH %	12%	0%	88%	0%	0%	0%	0%	85%	15%	29%	71%	0%	
APP/DEPART	1,909	/	0	0	/	930	1,823	/	3,229	2,198	/	1,771	0
BEGIN PEAK HR		5:00 PM											
VOLUMES	119	0	845	0	0	0	0	771	146	335	825	0	3,041
APPROACH %	12%	0%	88%	0%	0%	0%	0%	84%	16%	29%	71%	0%	
PEAK HR FACTOR		0.864			0.000			0.903			0.826		0.860
APP/DEPART	964	/	0	0	/	481	917	/	1,616	1,160	/	944	0

U-TURNS

	NB	SB	EB	WB	TTL
	0	0	0	0	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
03:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0

RTOR

	NRR	SRR	ERR	WRR
	X	X	X	X
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
9:00 AM	0	0	0	0
9:15 AM	0	0	0	0
9:30 AM	0	0	0	0
9:45 AM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0
03:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0

SR-71 NB Ramps

NORTH SIDE

Euclid WEST SIDE

EAST SIDE **Euclid**

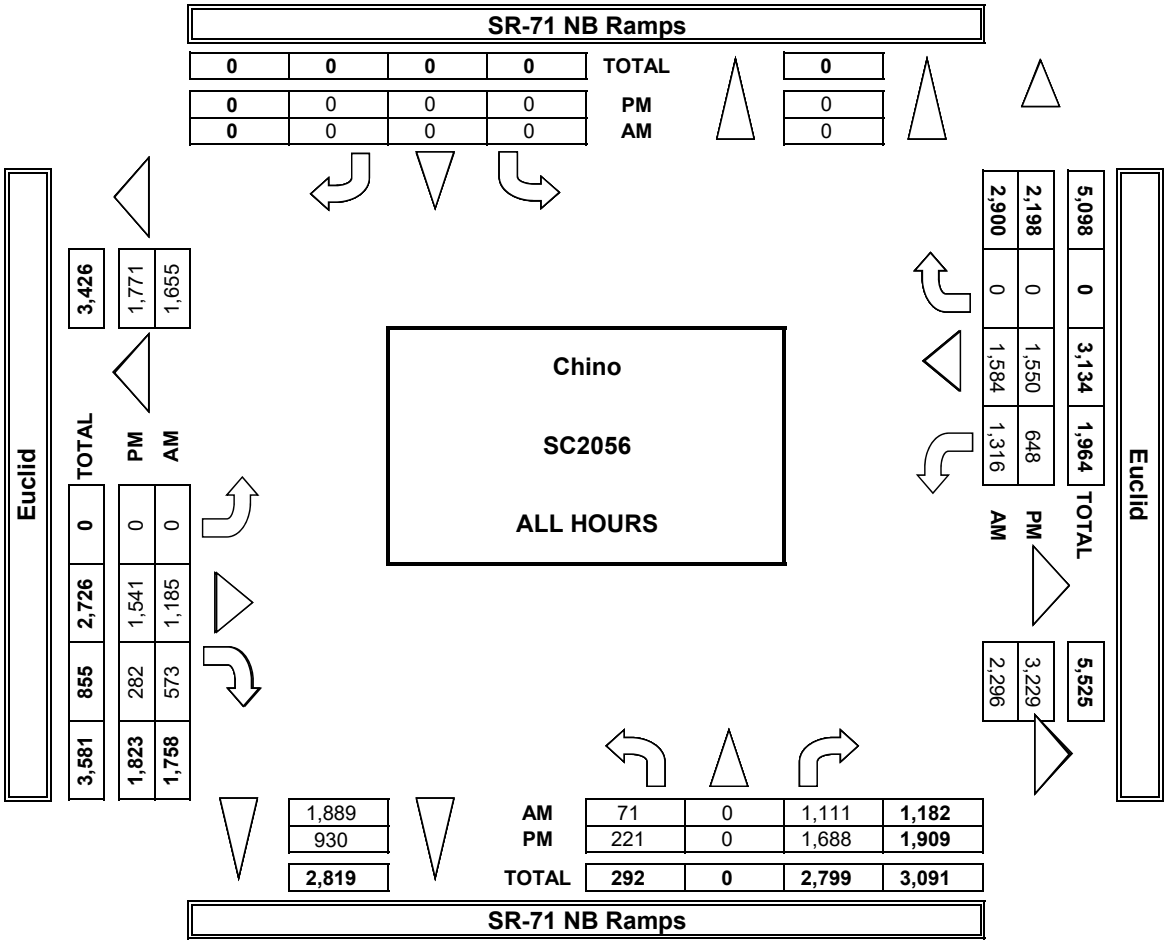
SOUTH SIDE

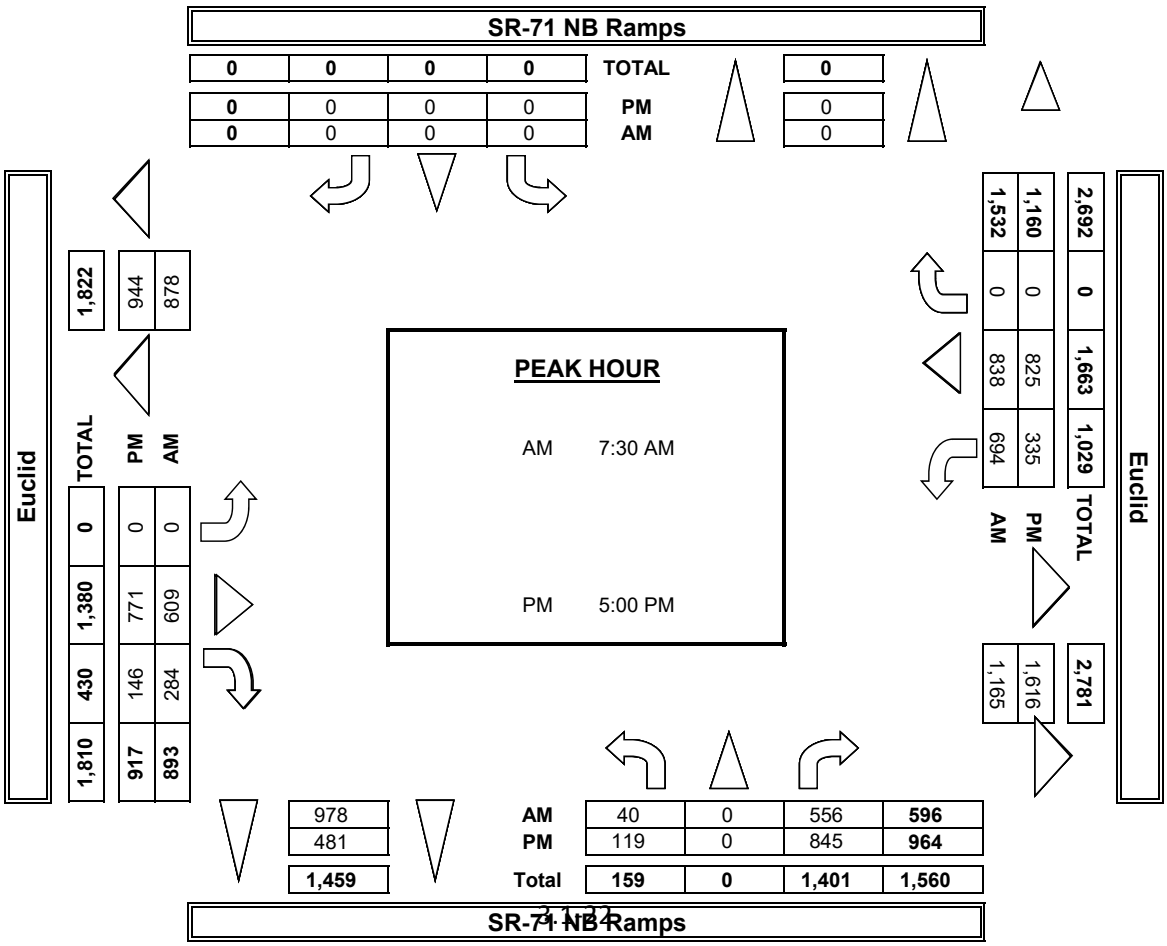
SR-71 NB Ramps

	ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM															
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
PM															
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	SR-71 NB Ramps	LOCATION #:	6
TUESDAY	EAST & WEST:	Euclid	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND SR-71 NB Ramps			SOUTHBOUND SR-71 NB Ramps			EASTBOUND Euclid			WESTBOUND Euclid			
	LANES:	NL 2	NT X	NR 1	SL X	ST X	SR X	EL X	ET 2	ER 1	WL 1	WT 2	WR X	TOTAL
AM	7:00 AM	0	0	8	0	0	0	0	7	0	3	16	0	34
	7:15 AM	3	0	15	0	0	0	0	6	1	2	8	0	35
	7:30 AM	0	0	7	0	0	0	0	7	0	10	17	0	41
	7:45 AM	2	0	4	0	0	0	0	7	0	8	10	0	31
	8:00 AM	0	0	7	0	0	0	0	6	2	11	9	0	35
	8:15 AM	3	0	7	0	0	0	0	10	1	4	11	0	36
	8:30 AM	0	0	2	0	0	0	0	9	3	4	7	0	25
	8:45 AM	2	0	3	0	0	0	0	7	2	2	8	0	24
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	10	0	53	0	0	0	0	59	9	44	86	0	261
	APPROACH %	16%	0%	84%	0%	0%	0%	0%	87%	13%	34%	66%	0%	
	APP/DEPART	63	/	0	0	/	53	68	/	112	130	/	96	0
	BEGIN PEAK HR	7:30 AM												
	VOLUMES	5	0	25	0	0	0	0	30	3	33	47	0	143
	APPROACH %	17%	0%	83%	0%	0%	0%	0%	91%	9%	41%	59%	0%	
	PEAK HR FACTOR	0.750			0.000			0.750			0.741			0.872
	APP/DEPART	30	/	0	0	/	36	33	/	55	80	/	52	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	3	0	13	0	0	0	0	11	1	3	5	0	36
	4:15 PM	4	0	18	0	0	0	0	9	0	1	8	0	40
	4:30 PM	1	0	20	0	0	0	0	8	2	2	4	0	37
	4:45 PM	0	0	7	0	0	0	0	4	0	5	10	0	26
	5:00 PM	0	0	13	0	0	0	0	5	0	3	5	0	26
	5:15 PM	0	0	7	0	0	0	0	4	0	3	4	0	18
	5:30 PM	0	0	2	0	0	0	0	2	0	0	1	0	5
	5:45 PM	1	0	7	0	0	0	0	3	0	2	2	0	15
	VOLUMES	9	0	87	0	0	0	0	46	3	19	39	0	203
	APPROACH %	9%	0%	91%	0%	0%	0%	0%	94%	6%	33%	67%	0%	
	APP/DEPART	96	/	0	0	/	22	49	/	133	58	/	48	0
	BEGIN PEAK HR	4:00 PM												
	VOLUMES	8	0	58	0	0	0	0	32	3	11	27	0	139
	APPROACH %	12%	0%	88%	0%	0%	0%	0%	91%	9%	29%	71%	0%	
	PEAK HR FACTOR	0.750			0.000			0.729			0.633			0.869
	APP/DEPART	66	/	0	0	/	14	35	/	90	38	/	35	0

U-TURNS					
	NB	SB	EB	WB	TTL
AM	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
PM	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0

RTOR			
NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
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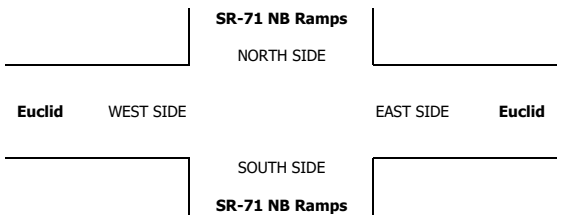
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	SR-71 NB Ramps	LOCATION #:	6
TUESDAY	EAST & WEST:	Euclid	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND SR-71 NB Ramps			SOUTHBOUND SR-71 NB Ramps			EASTBOUND Euclid			WESTBOUND Euclid			
	LANES:	NL 2	NT X	NR 1	SL X	ST X	SR X	EL X	ET 2	ER 1	WL 1	WT 2	WR X	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	3	0	0	1	0	4
	7:15 AM	0	0	0	0	0	0	0	2	0	0	1	0	3
	7:30 AM	0	0	1	0	0	0	0	0	0	3	1	0	5
	7:45 AM	0	0	1	0	0	0	0	2	0	6	2	0	11
	8:00 AM	0	0	0	0	0	0	0	0	1	4	2	0	7
	8:15 AM	0	0	2	0	0	0	0	1	0	0	1	0	4
	8:30 AM	0	0	2	0	0	0	0	3	0	1	2	0	8
	8:45 AM	0	0	3	0	0	0	0	1	1	0	0	0	5
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	9	0	0	0	0	12	2	14	10	0	47
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	86%	14%	58%	42%	0%	
	APP/DEPART	9	/	0	0	/	16	14	/	21	24	/	10	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	0	5	0	0	0	0	6	1	11	7	0	30
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	86%	14%	61%	39%	0%	
	PEAK HR FACTOR		0.625			0.000			0.583			0.563		0.682
	APP/DEPART	5	/	0	0	/	12	7	/	11	18	/	7	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	2	0	0	0	0	1	0	1	0	0	4
	4:15 PM	0	0	2	0	0	0	0	1	0	0	1	0	4
	4:30 PM	0	0	1	0	0	0	0	2	0	1	1	0	5
	4:45 PM	0	0	0	0	0	0	0	2	0	1	0	0	3
	5:00 PM	0	0	0	0	0	0	0	2	0	0	2	0	4
	5:15 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
	5:30 PM	0	0	3	0	0	0	0	1	0	0	2	0	6
	5:45 PM	0	0	2	0	0	0	0	1	0	0	2	0	5
	VOLUMES	0	0	10	0	0	0	0	12	0	3	9	0	34
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	100%	0%	25%	75%	0%	
	APP/DEPART	10	/	0	0	/	3	12	/	22	12	/	9	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	5	0	0	0	0	6	0	0	7	0	18
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.417			0.000			0.750			0.875		0.750
	APP/DEPART	5	/	0	0	/	0	6	/	11	7	/	7	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

SR-71 NB Ramps

NORTH SIDE

Euclid WEST SIDE EAST SIDE **Euclid**

SOUTH SIDE

SR-71 NB Ramps

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	SR-71 NB Ramps	LOCATION #:	6
TUESDAY	EAST & WEST:	Euclid	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND SR-71 NB Ramps			SOUTHBOUND SR-71 NB Ramps			EASTBOUND Euclid			WESTBOUND Euclid			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	X	1	X	X	X	X	2	1	1	2	X	
AM 7:00 AM	0	0	1	0	0	0	0	0	1	0	4	0	6
7:15 AM	0	0	0	0	0	0	0	2	1	2	5	0	10
7:30 AM	0	0	9	0	0	0	0	1	0	0	7	0	17
7:45 AM	0	0	5	0	0	0	0	1	0	2	6	0	14
8:00 AM	0	0	3	0	0	0	0	2	0	3	6	0	14
8:15 AM	0	0	10	0	0	0	0	2	0	1	7	0	20
8:30 AM	0	0	9	0	0	0	0	6	1	2	2	0	20
8:45 AM	0	0	7	0	0	0	0	5	0	3	4	0	19
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	44	0	0	0	0	19	3	13	41	0	120
APPROACH %	0%	0%	100%	0%	0%	0%	0%	86%	14%	24%	76%	0%	
APP/DEPART	44	/	0	0	/	16	22	/	63	54	/	41	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	0	0	29	0	0	0	0	15	1	9	19	0	73
APPROACH %	0%	0%	100%	0%	0%	0%	0%	94%	6%	32%	68%	0%	
PEAK HR FACTOR		0.725			0.000			0.571			0.778		0.913
APP/DEPART	29	/	0	0	/	10	16	/	44	28	/	19	0
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	3	0	0	0	0	1	0	2	7	0	13
4:15 PM	0	0	4	0	0	0	0	1	0	1	6	0	12
4:30 PM	0	0	6	0	0	0	0	3	0	2	4	0	15
4:45 PM	0	0	4	0	0	0	0	2	0	2	7	0	15
5:00 PM	0	0	5	0	0	0	0	0	0	2	2	0	9
5:15 PM	0	0	2	0	0	0	0	2	1	1	3	0	9
5:30 PM	0	0	11	0	0	0	0	0	0	4	6	0	21
5:45 PM	0	0	3	0	0	0	0	0	0	1	7	0	11
VOLUMES	0	0	38	0	0	0	0	9	1	15	42	0	105
APPROACH %	0%	0%	100%	0%	0%	0%	0%	90%	10%	26%	74%	0%	
APP/DEPART	38	/	0	0	/	16	10	/	47	57	/	42	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	0	17	0	0	0	0	7	0	7	24	0	55
APPROACH %	0%	0%	100%	0%	0%	0%	0%	100%	0%	23%	77%	0%	
PEAK HR FACTOR		0.708			0.000			0.583			0.861		0.917
APP/DEPART	17	/	0	0	/	7	7	/	24	31	/	24	0

U-TURNS

	NB	SB	EB	WB	TTL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
03:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0

RTOR

	NRR	SRR	ERR	WRR
LANES:	X	X	X	X
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
9:00 AM	0	0	0	0
9:15 AM	0	0	0	0
9:30 AM	0	0	0	0
9:45 AM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0
03:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0

SR-71 NB Ramps

NORTH SIDE

Euclid WEST SIDE

EAST SIDE **Euclid**

SOUTH SIDE

SR-71 NB Ramps

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Jan 30, 19

LOCATION: Chino
NORTH & SOUTH: Pipeline
EAST & WEST: Grand

PROJECT #: SC2074
LOCATION #: 5
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N / ◄ W / E ► / S ▼

Add U-Turns to Left Turns

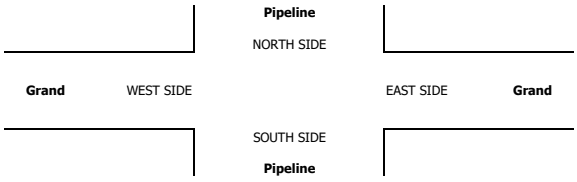
		NORTHBOUND (Pipeline)			SOUTHBOUND (Pipeline)			EASTBOUND (Grand)			WESTBOUND (Grand)			
	LANES:	NL 2	NT 2	NR 1	SL 1	ST 2	SR 1	EL 2	ET 3	ER 1	WL 2	WT 3	WR 1	TOTAL
AM	7:00 AM	28	55	17	6	57	12	21	127	21	35	215	8	602
	7:15 AM	41	47	23	9	63	13	23	151	37	30	199	12	648
	7:30 AM	31	41	22	10	61	10	23	156	28	38	173	6	599
	7:45 AM	32	56	30	16	73	14	24	192	31	32	132	12	644
	8:00 AM	28	43	18	15	112	11	16	159	34	43	143	6	628
	8:15 AM	40	54	24	15	82	13	28	181	31	32	143	3	646
	8:30 AM	41	57	21	10	73	12	23	123	46	45	117	3	571
	8:45 AM	47	56	25	15	87	19	23	153	43	38	101	11	618
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	288	409	180	96	608	104	181	1,242	271	293	1,223	61	4,956
	APPROACH %	33%	47%	21%	12%	75%	13%	11%	73%	16%	19%	78%	4%	
	APP/DEPART	877	/	618	808	/	1,161	1,694	/	1,530	1,577	/	1,647	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	132	187	93	50	309	48	86	658	130	143	647	36	2,519
	APPROACH %	32%	45%	23%	12%	76%	12%	10%	75%	15%	17%	78%	4%	
	PEAK HR FACTOR		0.873			0.737			0.885			0.857		0.972
	APP/DEPART	412	/	294	407	/	573	874	/	810	826	/	842	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	64	109	38	30	130	19	56	182	43	55	163	16	905
	4:15 PM	54	90	37	18	107	20	60	193	56	37	122	8	802
	4:30 PM	66	98	39	31	122	32	51	168	51	60	215	21	954
	4:45 PM	71	80	38	32	109	28	71	230	66	48	151	19	943
	5:00 PM	56	126	40	21	141	29	42	236	53	63	265	14	1,086
	5:15 PM	70	103	38	33	142	43	70	227	53	45	145	13	982
	5:30 PM	67	101	38	28	135	27	65	188	56	54	168	13	940
	5:45 PM	76	97	48	28	98	27	80	223	65	63	132	10	947
	VOLUMES	524	804	316	221	984	225	495	1,647	443	425	1,361	114	7,559
	APPROACH %	32%	49%	19%	15%	69%	16%	19%	64%	17%	22%	72%	6%	
	APP/DEPART	1,644	/	1,339	1,430	/	1,804	2,585	/	2,230	1,900	/	2,186	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	263	407	155	117	514	132	234	861	223	216	776	67	3,965
	APPROACH %	32%	49%	19%	15%	67%	17%	18%	65%	17%	20%	73%	6%	
	PEAK HR FACTOR		0.929			0.875			0.898			0.774		0.913
	APP/DEPART	825	/	675	763	/	925	1,318	/	1,160	1,059	/	1,205	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
0	0	4	2	6
0	0	4	2	6
0	0	7	4	11
0	0	2	1	3
0	0	2	2	4
0	0	4	0	4
0	0	6	1	7
1	0	4	0	5
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	33	12	46
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	9	4	13
0	0	6	4	10
0	1	13	6	20
0	0	4	7	11
0	0	7	10	17
0	0	10	5	15
0	0	12	5	17
0	1	15	7	23
0	2	76	48	126

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
12	6	7	1
16	9	12	5
17	7	11	2
19	12	10	7
15	5	9	1
13	8	7	3
15	8	17	1
16	8	14	6
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
123	63	87	26
67	33	42	15
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
21	5	16	8
19	8	23	6
24	17	12	6
22	14	20	12
22	17	14	9
11	21	14	8
20	10	20	9
22	15	14	5
161	107	133	63
79	69	60	35



ALL PED AND BIKE

	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	1	1	0	0	2
7:15 AM	0	2	0	2	4
7:30 AM	0	0	1	1	2
7:45 AM	1	1	1	0	3
8:00 AM	2	1	0	0	3
8:15 AM	1	2	0	0	3
8:30 AM	1	0	0	0	1
8:45 AM	0	1	0	1	2
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
TOTAL	6	8	2	4	20
3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	7	5	0	12
4:15 PM	2	3	0	1	6
4:30 PM	0	4	0	1	5
4:45 PM	0	7	0	0	7
5:00 PM	0	2	1	0	3
5:15 PM	0	0	1	0	1
5:30 PM	1	8	0	0	9
5:45 PM	0	0	0	0	0
TOTAL	3	31	7	2	43

PEDESTRIAN CROSSINGS

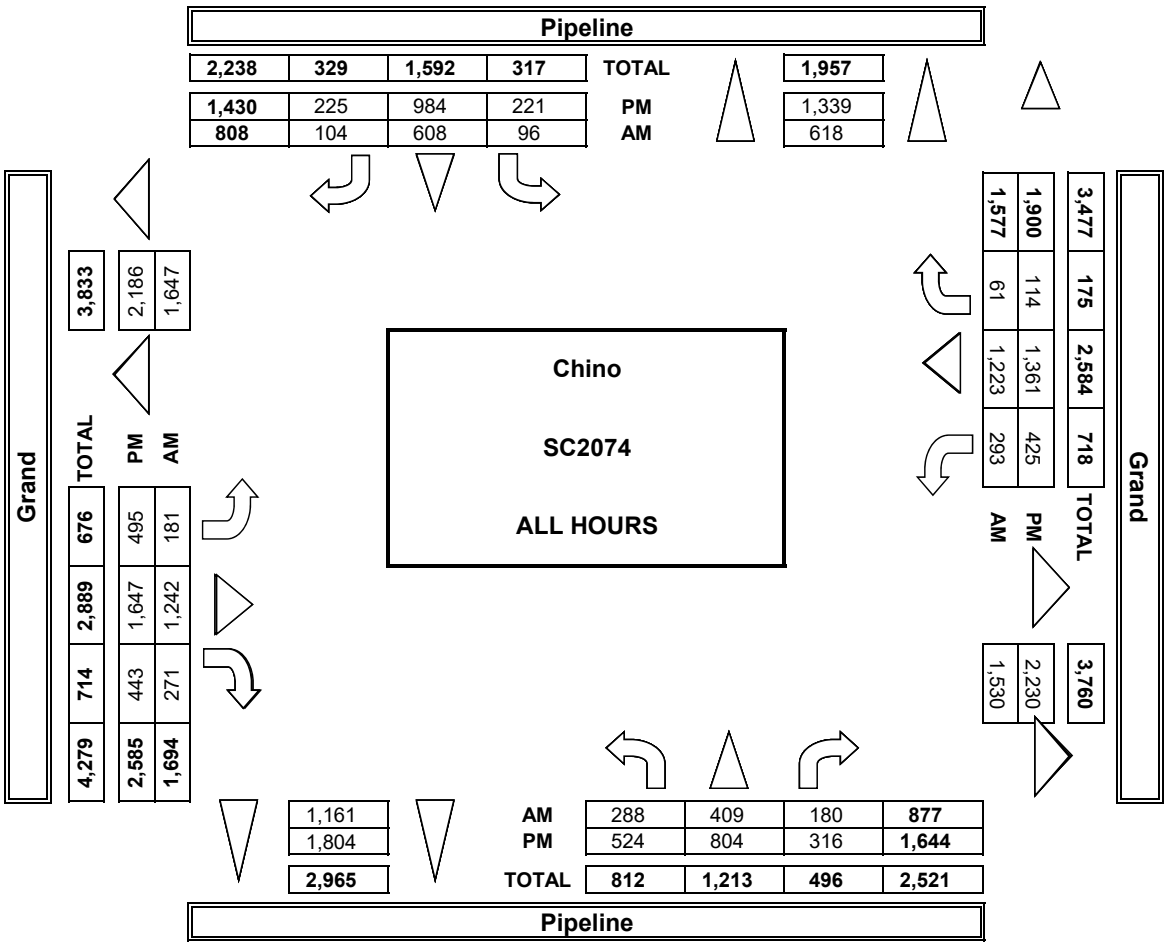
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
0	1	0	0	1
0	1	0	2	3
0	0	0	1	1
1	1	1	0	3
2	1	0	0	3
0	2	0	0	2
1	0	0	0	1
0	1	0	1	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
3	3	1	3	16
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	7	5	0	12
2	2	0	1	5
0	2	0	1	3
0	3	0	0	3
0	2	1	0	3
0	0	1	0	1
0	8	0	0	8
0	0	0	0	0
0	7	2	1	35

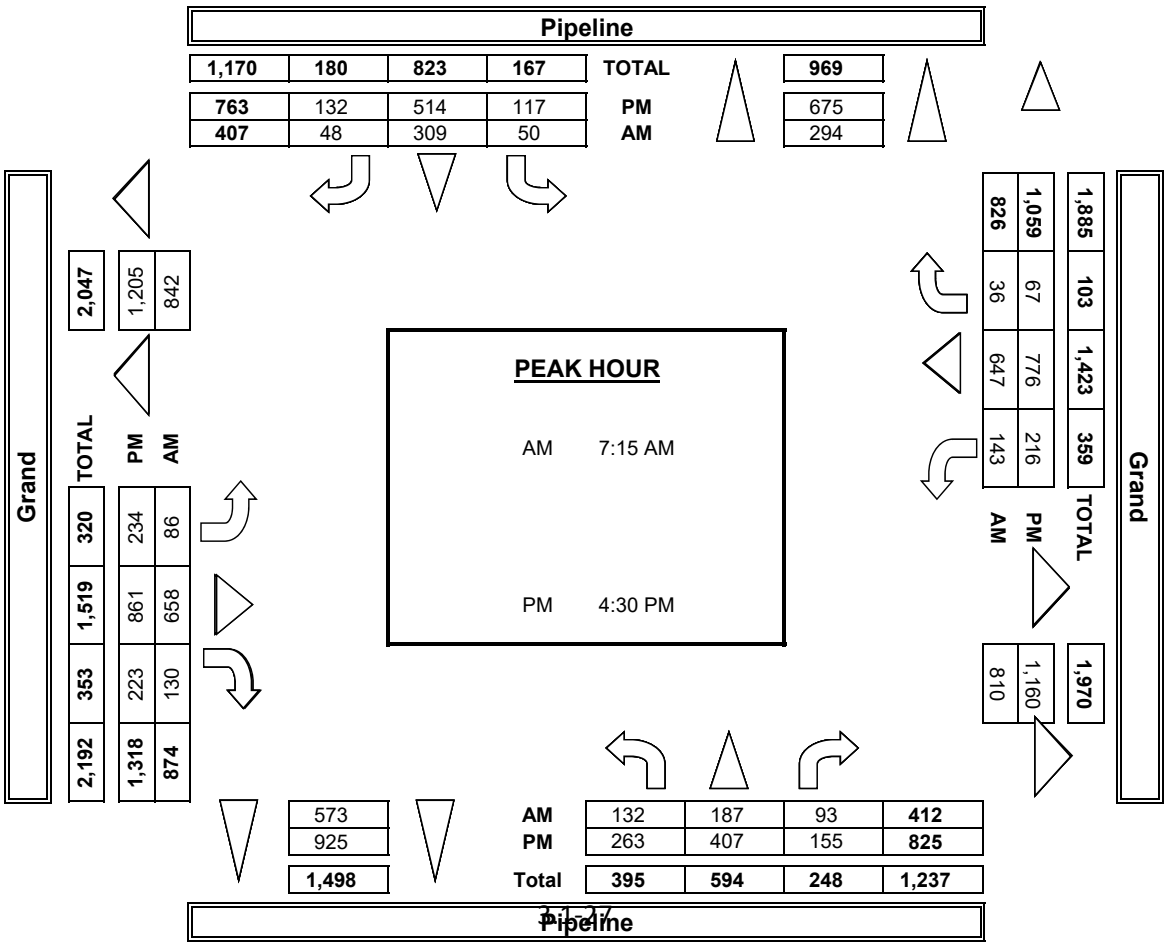
BICYCLE CROSSINGS

ES	WS	SS	NS	TOTAL
1	0	0	0	1
0	1	0	0	1
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	1	0	4
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	2	0	0	2
0	4	0	0	4
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	6	0	0	8

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Pipeline	LOCATION #:	5
WEDNESDAY	EAST & WEST:	Grand	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

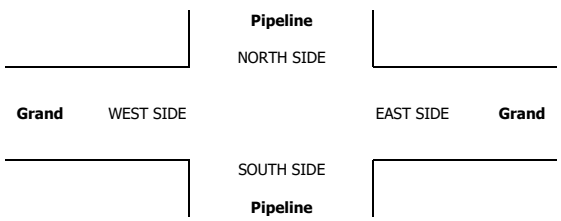
		NORTHBOUND (Pipeline)			SOUTHBOUND (Pipeline)			EASTBOUND (Grand)			WESTBOUND (Grand)			
	LANES:	NL 2	NT 2	NR 1	SL 1	ST 2	SR 1	EL 2	ET 3	ER 1	WL 2	WT 3	WR 1	TOTAL
AM	7:00 AM	3	2	2	0	1	1	0	5	3	2	7	0	26
	7:15 AM	1	1	1	0	5	0	0	7	1	0	6	0	22
	7:30 AM	4	1	2	0	2	1	1	12	1	2	12	0	38
	7:45 AM	3	1	2	0	0	1	0	6	1	0	8	0	22
	8:00 AM	0	0	1	1	3	1	0	7	1	0	6	2	22
	8:15 AM	1	4	1	4	2	1	1	8	0	1	12	0	35
	8:30 AM	1	0	1	0	0	0	0	7	2	1	6	0	18
	8:45 AM	1	1	2	0	5	1	1	9	0	2	5	0	27
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	14	10	12	5	18	6	3	61	9	8	62	2	210
	APPROACH %	39%	28%	33%	17%	62%	21%	4%	84%	12%	11%	86%	3%	
	APP/DEPART	36	/	14	29	/	33	73	/	80	72	/	83	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	8	6	6	5	7	4	1	33	3	1	38	2	117
	APPROACH %	40%	30%	30%	31%	44%	25%	3%	87%	8%	2%	88%	5%	
	PEAK HR FACTOR		0.714			0.571			0.679			0.768		0.770
	APP/DEPART	20	/	9	16	/	11	38	/	46	43	/	51	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	3	3	2	0	6	0	3	6	0	1	7	1	32
	4:15 PM	0	5	4	1	0	0	3	11	1	0	2	1	28
	4:30 PM	1	3	1	2	2	0	0	3	0	1	5	1	19
	4:45 PM	3	1	1	0	2	1	1	12	0	0	4	1	26
	5:00 PM	4	0	1	1	1	1	2	10	2	1	9	1	33
	5:15 PM	0	2	0	1	5	1	1	6	0	1	4	1	22
	5:30 PM	2	1	1	0	2	0	1	3	1	0	1	0	12
	5:45 PM	1	0	1	2	1	0	1	3	0	0	1	1	11
	VOLUMES	14	15	11	7	19	3	12	54	4	4	33	7	183
	APPROACH %	35%	38%	28%	24%	66%	10%	17%	77%	6%	9%	75%	16%	
	APP/DEPART	40	/	31	29	/	27	70	/	72	44	/	53	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	8	9	7	4	5	2	5	36	3	2	20	4	106
	APPROACH %	33%	38%	29%	36%	45%	18%	11%	80%	7%	8%	77%	15%	
	PEAK HR FACTOR		0.667			0.688			0.750			0.591		0.803
	APP/DEPART	24	/	18	11	/	10	45	/	47	26	/	31	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	1	2	3
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	2	3
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	3	0	3

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
1	1	1	0
1	0	0	0
2	1	0	0
1	1	1	0
0	0	0	0
0	1	0	0
0	0	2	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
6	4	4	0
3	3	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
2	0	0	1
2	0	1	1
1	0	0	1
1	0	0	0
1	1	2	0
0	1	0	1
1	0	0	0
0	0	0	1
8	2	3	5
5	1	3	2



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Pipeline	LOCATION #:	5
WEDNESDAY	EAST & WEST:	Grand	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND Pipeline			SOUTHBOUND Pipeline			EASTBOUND Grand			WESTBOUND Grand				U-TURNS					RTOR			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
	LANES:	2	2	1	1	2	1	2	3	1	2	3	1							0	0	0	0
AM	7:00 AM	0	2	0	0	1	0	0	1	0	0	4	0	8	0	0	0	0	0	0	0	0	0
AM	7:15 AM	0	0	0	0	2	1	1	2	0	0	2	0	8	0	0	1	0	1	0	0	0	0
AM	7:30 AM	0	0	0	0	0	0	0	2	0	0	4	0	6	0	0	0	0	0	0	0	0	0
AM	7:45 AM	0	1	0	0	1	0	1	1	0	0	3	1	8	0	0	0	0	0	0	0	0	1
AM	8:00 AM	0	0	0	0	1	0	0	2	0	0	2	0	5	0	0	0	0	0	0	0	0	0
AM	8:15 AM	0	1	0	0	0	0	0	2	0	0	4	0	7	0	0	0	0	0	0	0	0	0
AM	8:30 AM	1	0	0	0	0	0	0	1	0	0	2	0	4	0	0	0	0	0	0	0	0	0
AM	8:45 AM	0	0	0	2	0	0	0	4	0	0	1	0	7	0	0	0	0	0	0	0	0	0
AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	VOLUMES	1	4	0	2	5	1	2	15	0	0	22	1	53	0	0	1	0	1	0	0	0	1
AM	APPROACH %	20%	80%	0%	25%	63%	13%	12%	88%	0%	0%	96%	4%										
AM	APP/DEPART	5	/	6	8	/	5	17	/	17	23	/	25	0									
AM	BEGIN PEAK HR		7:00 AM																				
AM	VOLUMES	0	3	0	0	4	1	1	6	0	0	13	1	30						0	0	0	1
AM	APPROACH %	0%	100%	0%	0%	80%	20%	13%	75%	0%	0%	93%	7%										
AM	PEAK HR FACTOR		0.375			0.417			0.667			0.875		0.938									
AM	APP/DEPART	3	/	5	5	/	4	8	/	6	14	/	15	0									
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	2	0	0	1	0	0	0	1	0	0	4	0	0	0	0	0	1	1	0	0
PM	4:15 PM	0	0	0	1	0	0	0	5	0	0	0	0	6	0	0	0	0	0	0	0	0	0
PM	4:30 PM	0	0	0	1	1	0	0	2	0	0	1	0	5	0	0	0	0	0	0	0	0	0
PM	4:45 PM	1	0	0	0	0	0	0	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0
PM	5:00 PM	0	0	0	0	0	1	0	2	0	1	0	0	4	0	0	0	0	0	0	1	0	0
PM	5:15 PM	0	1	0	0	0	0	0	1	0	0	1	0	3	0	0	0	0	0	0	0	0	0
PM	5:30 PM	0	0	1	0	0	0	0	2	1	0	1	0	5	0	0	0	0	0	0	0	1	0
PM	5:45 PM	0	1	0	0	0	0	0	2	0	0	1	0	4	0	0	0	0	0	0	0	0	0
PM	VOLUMES	1	2	3	2	1	2	0	16	1	2	4	0	34	0	0	0	0	0	1	2	1	0
PM	APPROACH %	17%	33%	50%	40%	20%	40%	0%	94%	6%	33%	67%	0%										
PM	APP/DEPART	6	/	2	5	/	4	17	/	21	6	/	7	0									
PM	BEGIN PEAK HR		4:00 PM																				
PM	VOLUMES	1	0	0	2	1	1	0	11	0	1	1	0	18						0	1	0	0
PM	APPROACH %	100%	0%	0%	50%	25%	25%	0%	100%	0%	50%	50%	0%										
PM	PEAK HR FACTOR		0.125			0.500			0.550			0.500		0.750									
PM	APP/DEPART	1	/	0	4	/	2	11	/	13	2	/	3	0									

Pipeline

NORTH SIDE

Grand WEST SIDE

EAST SIDE **Grand**

SOUTH SIDE

Pipeline

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Pipeline	LOCATION #:	5
WEDNESDAY	EAST & WEST:	Grand	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

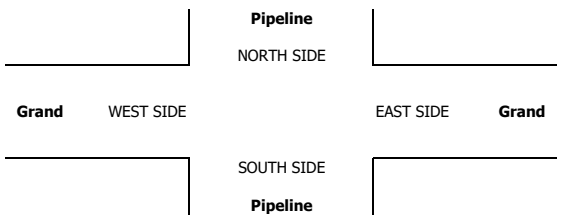
	NORTHBOUND (Pipeline)			SOUTHBOUND (Pipeline)			EASTBOUND (Grand)			WESTBOUND (Grand)			
LANES:	NL 2	NT 2	NR 1	SL 1	ST 2	SR 1	EL 2	ET 3	ER 1	WL 2	WT 3	WR 1	TOTAL
7:00 AM	0	0	0	0	1	2	1	13	0	0	13	0	30
7:15 AM	0	1	0	1	1	3	0	10	1	0	11	1	29
7:30 AM	1	0	0	1	0	2	0	14	2	1	11	1	33
7:45 AM	2	0	1	0	0	2	0	14	0	0	13	0	32
8:00 AM	0	1	0	0	0	1	2	14	4	1	11	0	34
8:15 AM	1	0	0	0	0	2	2	7	0	0	18	0	30
8:30 AM	1	0	0	1	0	2	2	9	0	1	12	1	29
8:45 AM	1	0	1	1	0	3	3	20	1	1	16	1	48
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	6	2	2	4	2	17	10	101	8	4	105	4	265
APPROACH %	60%	20%	20%	17%	9%	74%	8%	85%	7%	4%	93%	4%	
APP/DEPART	10	/	16	23	/	14	119	/	107	113	/	128	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	3	1	1	2	0	8	9	50	5	3	57	2	141
APPROACH %	60%	20%	20%	20%	0%	80%	14%	78%	8%	5%	92%	3%	
PEAK HR FACTOR		0.625			0.625			0.667			0.861		0.734
APP/DEPART	5	/	12	10	/	8	64	/	53	62	/	68	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	2	2	10	0	1	5	0	20
4:15 PM	0	0	0	0	0	2	1	12	0	0	5	2	22
4:30 PM	0	0	1	0	0	0	2	13	0	0	2	2	20
4:45 PM	0	0	0	1	0	3	1	10	0	0	5	0	20
5:00 PM	0	0	0	0	0	0	3	8	0	0	8	0	19
5:15 PM	1	0	2	0	0	4	0	8	0	0	3	1	19
5:30 PM	0	0	0	1	1	1	0	4	0	0	8	0	15
5:45 PM	1	0	0	0	0	1	0	7	0	1	9	1	20
VOLUMES	2	0	3	2	1	13	9	72	0	2	45	6	155
APPROACH %	40%	0%	60%	13%	6%	81%	11%	89%	0%	4%	85%	11%	
APP/DEPART	5	/	15	16	/	3	81	/	77	53	/	60	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	0	1	1	0	7	6	45	0	1	17	4	82
APPROACH %	0%	0%	100%	13%	0%	88%	12%	88%	0%	5%	77%	18%	
PEAK HR FACTOR		0.250			0.500			0.850			0.786		0.932
APP/DEPART	1	/	10	8	/	1	51	/	47	22	/	24	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	2	0	0
0	1	1	0
1	1	0	0
0	0	0	0
0	1	0	0
0	0	0	0
1	2	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
2	7	1	0
1	3	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	2
0	0	0	1
0	2	0	0
0	0	0	0
1	1	0	0
0	1	0	0
0	0	0	1
1	5	0	4
0	3	0	3



INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Jan 29, 19

LOCATION: Chino
NORTH & SOUTH: Ramona
EAST & WEST: Edison

PROJECT #: SC2074
LOCATION #: 6
CONTROL: SIGNAL

NOTES:

AM PM MD OTHER OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Ramona)			SOUTHBOUND (Ramona)			EASTBOUND (Edison)			WESTBOUND (Edison)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 2	ER 2	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	8	58	9	10	71	25	20	102	8	12	213	15	551
	7:15 AM	4	78	9	5	103	14	19	168	9	9	244	15	677
	7:30 AM	13	59	10	7	74	21	13	151	5	11	181	2	547
	7:45 AM	8	61	17	11	100	22	21	178	17	7	183	14	639
	8:00 AM	8	68	11	13	103	15	22	138	8	11	173	15	585
	8:15 AM	10	64	16	5	85	15	14	181	7	8	163	5	573
	8:30 AM	7	81	9	6	90	21	13	121	9	11	145	16	529
	8:45 AM	4	87	13	9	98	19	25	131	16	11	138	15	566
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	62	556	94	66	724	152	147	1,170	79	80	1,440	97	4,667
	APPROACH %	9%	78%	13%	7%	77%	16%	11%	84%	6%	5%	89%	6%	
	APP/DEPART	712	/	800	942	/	883	1,396	/	1,330	1,617	/	1,654	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	33	266	47	36	380	72	75	635	39	38	781	46	2,448
	APPROACH %	10%	77%	14%	7%	78%	15%	10%	85%	5%	4%	90%	5%	
	PEAK HR FACTOR		0.951			0.917			0.867			0.807		0.904
	APP/DEPART	346	/	387	488	/	457	749	/	718	865	/	886	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	13	103	18	7	80	12	13	227	18	16	174	9	690
	4:15 PM	17	91	15	8	85	27	17	208	18	13	123	6	628
	4:30 PM	19	92	17	10	88	20	22	203	21	16	199	5	712
	4:45 PM	18	106	17	10	82	15	36	219	26	14	175	12	730
	5:00 PM	21	95	12	15	97	31	26	261	21	21	243	13	856
	5:15 PM	16	92	13	9	92	20	17	258	30	13	171	15	746
	5:30 PM	22	69	16	9	79	16	21	220	32	15	188	13	700
	5:45 PM	16	68	10	3	104	17	25	228	24	7	153	9	664
	VOLUMES	142	716	118	71	707	158	177	1,824	190	115	1,426	82	5,726
	APPROACH %	15%	73%	12%	8%	76%	17%	8%	83%	9%	7%	88%	5%	
	APP/DEPART	976	/	974	936	/	1,012	2,191	/	2,013	1,623	/	1,727	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	74	385	59	44	359	86	101	941	98	64	788	45	3,044
	APPROACH %	14%	74%	11%	9%	73%	18%	9%	83%	9%	7%	88%	5%	
	PEAK HR FACTOR		0.918			0.855			0.925			0.810		0.889
	APP/DEPART	518	/	531	489	/	521	1,140	/	1,044	897	/	948	0

U-TURNS NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	1	0	1

RTOR NRR	SRR	ERR	WRR
0	0	0	0
6	5	3	0
3	4	1	0
7	2	0	0
10	3	2	1
8	2	1	3
9	3	2	0
6	3	3	2
7	4	4	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
56	26	16	6
28	11	4	4
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
7	0	0	0
10	3	6	1
5	4	5	0
4	1	5	1
6	8	4	0
5	6	7	1
6	4	9	0
4	0	10	1
47	26	46	4
20	19	21	2

Ramona

NORTH SIDE

Edison WEST SIDE EAST SIDE **Edison**

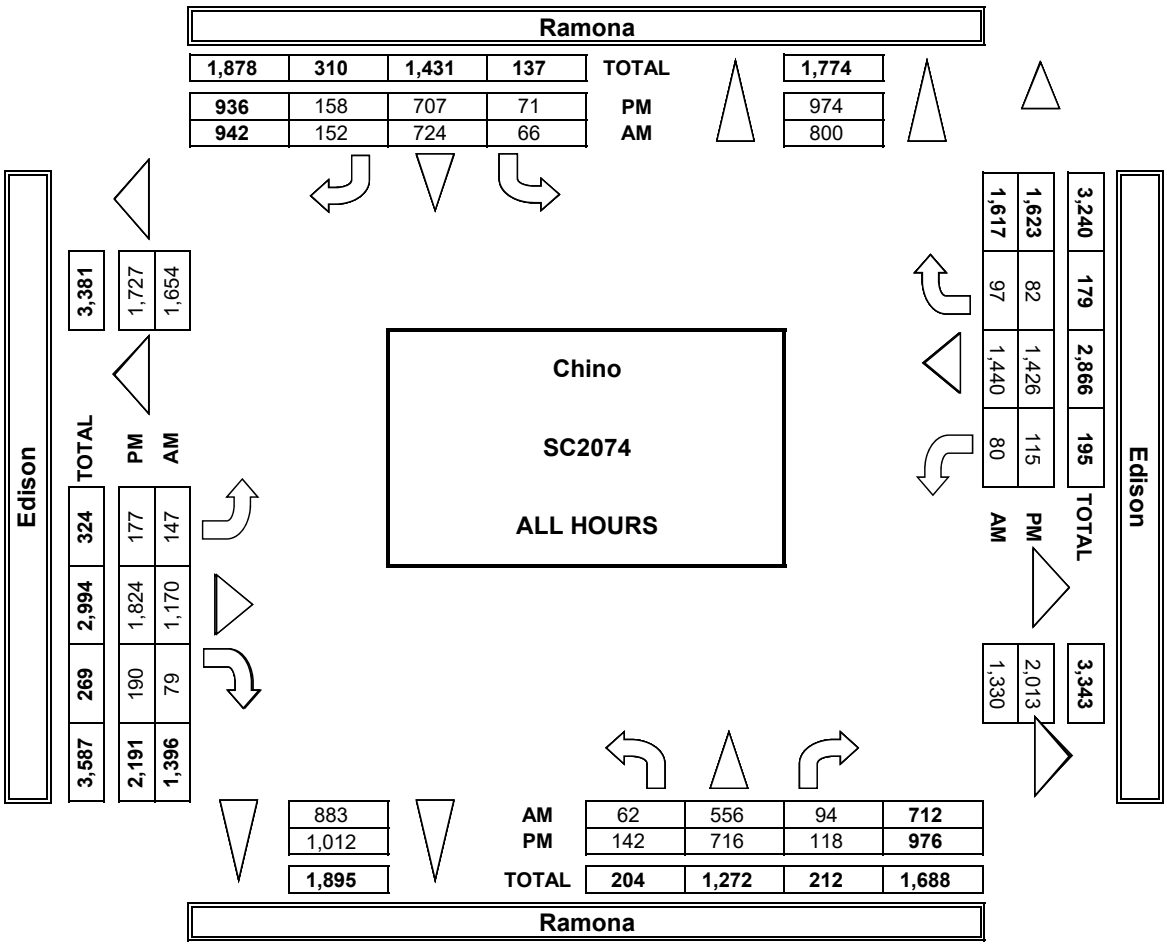
SOUTH SIDE

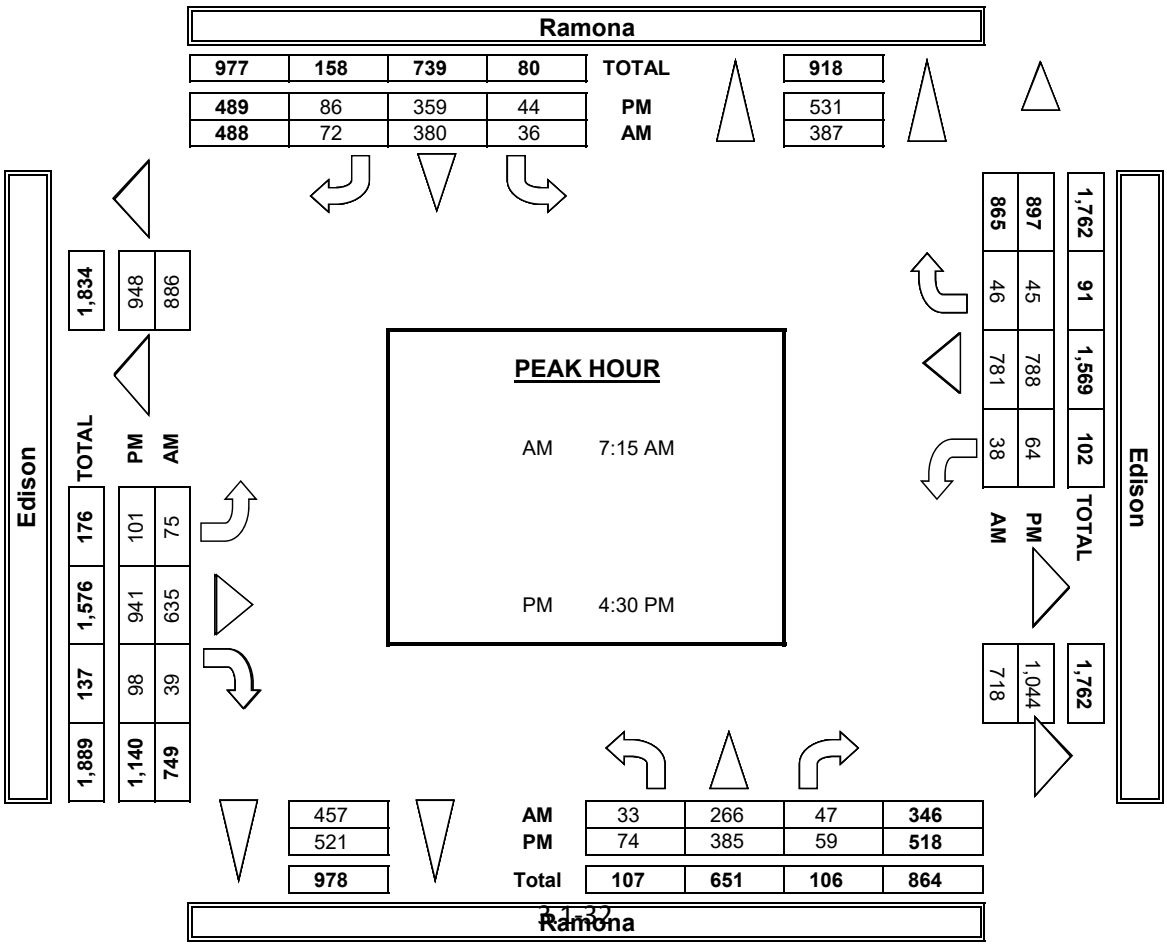
Ramona

		ALL PED AND BIKE E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	PEDESTRIAN CROSSINGS E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	BICYCLE CROSSINGS ES	WS	SS	NS	TOTAL
AM	7:00 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	1	0	1	0	2	1	0	1	0	2	0	0	0	0	0
	7:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	8:00 AM	1	1	0	1	3	1	0	0	0	1	0	1	0	1	2
	8:15 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	3	2	2	1	8	2	0	1	0	3	0	1	1	1	5
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	1	1	0	0	2	0	0	0	0	0	1	1	0	0	2
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	1	1	1	1	4	0	0	0	1	2	0	0	0	0	2

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/29/19	NORTH & SOUTH:	Ramona	LOCATION #:	6
TUESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Ramona)			SOUTHBOUND (Ramona)			EASTBOUND (Edison)			WESTBOUND (Edison)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 2	ER 2	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	1	2	0	1	3	2	3	6	2	2	6	0	28
	7:15 AM	0	7	0	0	10	2	1	11	1	1	6	0	39
	7:30 AM	3	1	2	0	7	3	1	9	1	0	9	0	36
	7:45 AM	0	2	0	1	9	1	0	9	3	0	7	4	36
	8:00 AM	1	1	0	0	9	0	4	5	0	2	7	2	31
	8:15 AM	1	5	0	1	3	1	0	12	1	1	12	1	38
	8:30 AM	1	5	1	0	18	2	3	2	2	0	5	0	39
	8:45 AM	0	6	3	0	8	0	3	8	1	1	13	1	44
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	7	29	6	3	67	11	15	62	11	7	65	8	291
	APPROACH %	17%	69%	14%	4%	83%	14%	17%	70%	13%	9%	81%	10%	
	APP/DEPART	42	/	52	81	/	85	88	/	71	80	/	83	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	3	17	4	1	38	3	10	27	4	4	37	4	152
	APPROACH %	13%	71%	17%	2%	90%	7%	24%	66%	10%	9%	82%	9%	
	PEAK HR FACTOR		0.667			0.525			0.788			0.750		0.864
	APP/DEPART	24	/	31	42	/	46	41	/	32	45	/	43	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	10	0	0	5	1	0	10	2	3	8	0	40
	4:15 PM	1	3	1	0	8	1	0	11	0	2	2	0	29
	4:30 PM	1	3	1	0	5	0	0	7	1	1	5	1	25
	4:45 PM	2	4	1	1	1	1	1	6	2	2	3	1	25
	5:00 PM	0	8	1	0	4	4	0	9	2	1	7	1	37
	5:15 PM	1	2	1	0	4	2	0	4	1	0	6	0	21
	5:30 PM	2	2	1	0	3	0	0	4	2	0	3	0	17
	5:45 PM	1	3	0	0	2	0	0	4	1	0	3	0	14
	VOLUMES	9	35	6	1	32	9	1	55	11	9	37	3	208
	APPROACH %	18%	70%	12%	2%	76%	21%	1%	82%	16%	18%	76%	6%	
	APP/DEPART	50	/	39	42	/	52	67	/	62	49	/	55	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	5	20	3	1	19	3	1	34	5	8	18	2	119
	APPROACH %	18%	71%	11%	4%	83%	13%	3%	85%	13%	29%	64%	7%	
	PEAK HR FACTOR		0.636			0.639			0.833			0.636		0.744
	APP/DEPART	28	/	23	23	/	32	40	/	38	28	/	26	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	1	0
0	0	0	0
2	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
1	0	0	0
2	0	0	0
0	0	0	0
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0	0	0	0
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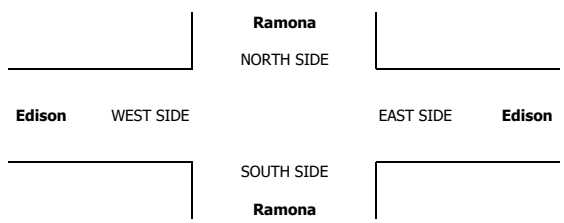
4	2	2	0
3	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/29/19	NORTH & SOUTH:	Ramona	LOCATION #:	6
TUESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

	NORTHBOUND (Ramona)			SOUTHBOUND (Ramona)			EASTBOUND (Edison)			WESTBOUND (Edison)			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 2	ER 2	WL 1	WT 2	WR 0	TOTAL
7:00 AM	0	1	0	0	0	0	0	1	0	0	3	0	5
7:15 AM	0	0	0	0	2	0	1	2	1	0	4	1	11
7:30 AM	0	0	1	1	1	0	0	1	0	1	7	0	12
7:45 AM	0	2	0	0	0	0	0	0	1	0	2	2	7
8:00 AM	0	0	0	0	1	0	0	3	0	1	1	0	6
8:15 AM	0	0	0	0	0	0	0	1	0	0	4	0	5
8:30 AM	0	0	0	0	1	0	0	1	0	0	3	0	5
8:45 AM	0	1	0	0	1	0	2	1	1	0	3	0	9
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	4	1	1	6	0	3	10	3	2	27	3	60
APPROACH %	0%	80%	20%	14%	86%	0%	19%	63%	19%	6%	84%	9%	
APP/DEPART	5	/	10	7	/	11	16	/	12	32	/	27	0
BEGIN PEAK HR		7:15 AM											
VOLUMES	0	2	1	1	4	0	1	6	2	2	14	3	36
APPROACH %	0%	67%	33%	20%	80%	0%	11%	67%	22%	11%	74%	16%	
PEAK HR FACTOR		0.375			0.625			0.563			0.594		0.750
APP/DEPART	3	/	6	5	/	8	9	/	8	19	/	14	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	8	0	1	1	0	10
4:15 PM	0	2	0	0	0	0	0	4	1	1	0	0	8
4:30 PM	0	1	0	0	0	0	0	5	0	0	1	0	7
4:45 PM	0	1	0	0	0	0	1	1	1	0	3	1	8
5:00 PM	0	0	0	0	0	0	0	2	0	0	1	1	4
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	1	0	0	0	0	1	1	0	0	2	0	5
5:45 PM	0	1	1	0	0	0	0	0	0	0	0	0	2
VOLUMES	0	6	1	0	0	0	2	21	2	2	8	2	44
APPROACH %	0%	86%	14%	0%	0%	0%	8%	84%	8%	17%	67%	17%	
APP/DEPART	7	/	10	0	/	4	25	/	22	12	/	8	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	4	0	0	0	0	1	18	2	2	5	1	33
APPROACH %	0%	100%	0%	0%	0%	0%	5%	86%	10%	25%	63%	13%	
PEAK HR FACTOR		0.500			0.000			0.656			0.500		0.825
APP/DEPART	4	/	6	0	/	4	21	/	18	8	/	5	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0

1	0	0	0

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	1	0
0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0

0	0	1	0

Ramona

NORTH SIDE

Edison WEST SIDE EAST SIDE **Edison**

SOUTH SIDE

Ramona

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/29/19	NORTH & SOUTH:	Ramona	LOCATION #:	6
TUESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

		NORTHBOUND (Ramona)			SOUTHBOUND (Ramona)			EASTBOUND (Edison)			WESTBOUND (Edison)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 2	ER 2	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	1	0	0	1	1	1	9	0	0	12	0	25
	7:15 AM	0	1	0	0	2	1	2	9	1	0	10	0	26
	7:30 AM	1	0	0	2	0	0	2	10	0	2	11	0	28
	7:45 AM	0	0	0	0	1	1	1	10	0	1	11	2	27
	8:00 AM	1	1	0	1	2	1	2	10	1	0	8	1	28
	8:15 AM	1	0	1	0	2	2	1	6	1	1	15	0	30
	8:30 AM	1	1	0	0	2	1	0	9	1	0	11	0	26
	8:45 AM	0	2	1	0	2	2	2	15	3	2	17	4	50
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	4	6	2	3	12	9	11	78	7	6	95	7	240
	APPROACH %	33%	50%	17%	13%	50%	38%	11%	81%	7%	6%	88%	6%	
	APP/DEPART	12	/	24	24	/	25	96	/	83	108	/	108	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	3	4	2	1	8	6	5	40	6	3	51	5	134
	APPROACH %	33%	44%	22%	7%	53%	40%	10%	78%	12%	5%	86%	8%	
	PEAK HR FACTOR		0.750			0.938			0.638			0.641		0.670
	APP/DEPART	9	/	14	15	/	17	51	/	43	59	/	60	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	2	1	2	0	1	7	1	1	4	1	20
	4:15 PM	2	1	0	1	1	3	1	11	0	2	4	1	27
	4:30 PM	1	0	0	2	1	0	1	11	0	0	3	0	19
	4:45 PM	1	3	2	0	1	1	0	11	2	3	5	1	30
	5:00 PM	1	0	2	2	1	0	0	7	0	1	7	1	22
	5:15 PM	0	1	1	0	0	0	0	6	2	2	4	0	16
	5:30 PM	0	0	2	4	0	0	1	6	1	0	9	0	23
	5:45 PM	1	1	2	0	1	0	0	4	0	0	8	0	17
	VOLUMES	6	6	11	10	7	4	4	63	6	9	44	4	174
	APPROACH %	26%	26%	48%	48%	33%	19%	5%	86%	8%	16%	77%	7%	
	APP/DEPART	23	/	14	21	/	22	73	/	84	57	/	54	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	5	4	4	5	4	4	2	40	2	6	19	3	98
	APPROACH %	38%	31%	31%	38%	31%	31%	5%	91%	5%	21%	68%	11%	
	PEAK HR FACTOR		0.542			0.650			0.846			0.778		0.817
	APP/DEPART	13	/	9	13	/	12	44	/	49	28	/	28	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
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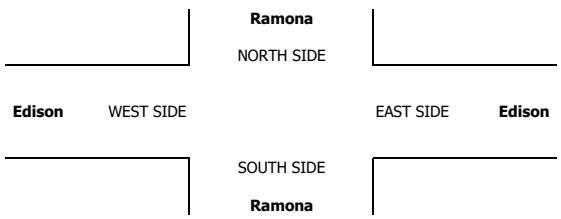


T1218

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
Tue, Jan 29, 19	NORTH & SOUTH:	Central	LOCATION #:	7
	EAST & WEST:	Edison	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N / ◄ W / E ► / S ▼

Add U-Turns to Left Turns

	NORTHBOUND (Central)			SOUTHBOUND (Central)			EASTBOUND (Edison)			WESTBOUND (Edison)			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	1	1	2	0	2	2	1	
AM													
7:00 AM	16	145	46	11	187	44	20	56	10	78	222	13	848
7:15 AM	19	149	64	13	213	44	16	86	8	64	213	18	907
7:30 AM	10	197	74	7	192	46	31	108	17	58	206	30	976
7:45 AM	16	190	77	15	203	57	37	86	13	72	197	22	985
8:00 AM	18	149	62	15	218	65	26	85	8	72	197	14	929
8:15 AM	10	186	48	14	190	68	26	86	13	57	177	18	893
8:30 AM	19	132	42	15	177	41	39	70	11	53	128	15	742
8:45 AM	21	181	49	11	155	40	29	71	10	60	120	15	762
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	129	1,329	462	101	1,535	405	224	648	90	514	1,460	145	7,042
APPROACH %	7%	69%	24%	5%	75%	20%	23%	67%	9%	24%	69%	7%	
APP/DEPART	1,920	/	1,699	2,041	/	2,139	962	/	1,210	2,119	/	1,994	0
BEGIN PEAK HR		7:15 AM											
VOLUMES	63	685	277	50	826	212	110	365	46	266	813	84	3,797
APPROACH %	6%	67%	27%	5%	76%	19%	21%	70%	9%	23%	70%	7%	
PEAK HR FACTOR		0.905			0.913			0.835			0.986		0.964
APP/DEPART	1,025	/	880	1,088	/	1,138	521	/	691	1,163	/	1,088	0
PM													
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	25	224	105	8	165	32	45	166	23	69	125	15	1,002
4:15 PM	13	228	93	21	189	27	43	181	21	47	110	16	989
4:30 PM	19	207	90	21	174	32	54	166	13	43	116	10	945
4:45 PM	15	220	77	18	184	34	53	175	14	74	142	20	1,026
5:00 PM	23	222	108	21	171	30	46	170	24	67	121	15	1,018
5:15 PM	12	227	95	23	169	27	42	169	22	46	115	17	964
5:30 PM	19	211	91	20	165	29	53	164	13	44	120	14	943
5:45 PM	15	217	79	17	163	30	49	165	9	41	121	19	925
VOLUMES	141	1,756	738	149	1,380	241	385	1,356	139	431	970	126	7,812
APPROACH %	5%	67%	28%	8%	78%	14%	20%	72%	7%	28%	64%	8%	
APP/DEPART	2,635	/	2,269	1,770	/	1,952	1,880	/	2,241	1,527	/	1,350	0
BEGIN PEAK HR		4:15 PM											
VOLUMES	70	877	368	81	718	123	196	692	72	231	489	61	3,978
APPROACH %	5%	67%	28%	9%	78%	13%	20%	72%	8%	30%	63%	8%	
PEAK HR FACTOR		0.931			0.973			0.980			0.827		0.969
APP/DEPART	1,315	/	1,134	922	/	1,022	960	/	1,141	781	/	681	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:	0	0	0	0		0	0	0	0
AM									
7:00 AM	0	0	0	0	0	42	16	4	9
7:15 AM	0	1	0	0	1	29	12	0	7
7:30 AM	0	0	0	0	0	51	9	4	7
7:45 AM	0	0	0	0	0	50	18	0	8
8:00 AM	0	0	0	0	0	45	17	2	5
8:15 AM	0	0	0	0	0	32	18	3	6
8:30 AM	0	0	0	0	0	32	13	5	6
8:45 AM	0	0	0	0	0	40	10	6	8
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	1	0	0	1	321	113	24	56
PEAK HR VOLUMES						175	56	6	27
PM									
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	1	0	0	1	25	8	0	2
4:15 PM	1	0	0	0	1	12	9	0	5
4:30 PM	0	0	0	0	0	21	8	2	3
4:45 PM	0	0	0	0	0	19	9	1	0
5:00 PM	0	0	0	0	0	27	7	1	3
5:15 PM	0	0	0	0	0	13	8	1	5
5:30 PM	1	1	0	0	2	21	7	1	3
5:45 PM	0	0	0	0	0	18	6	0	0
VOLUMES	2	2	0	0	4	156	62	6	21
PEAK HR VOLUMES						79	33	4	11

Central

NORTH SIDE

Edison WEST SIDE

EAST SIDE **Edison**

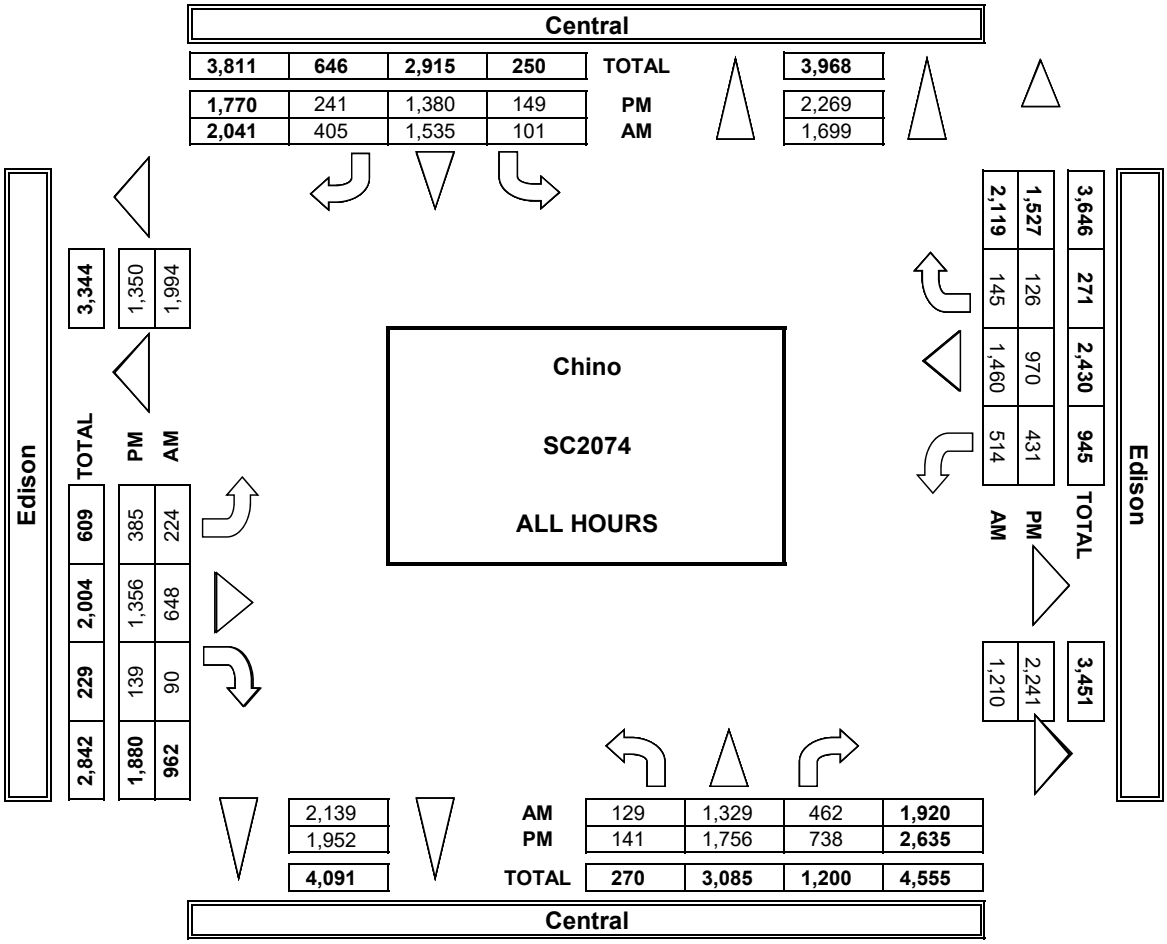
SOUTH SIDE

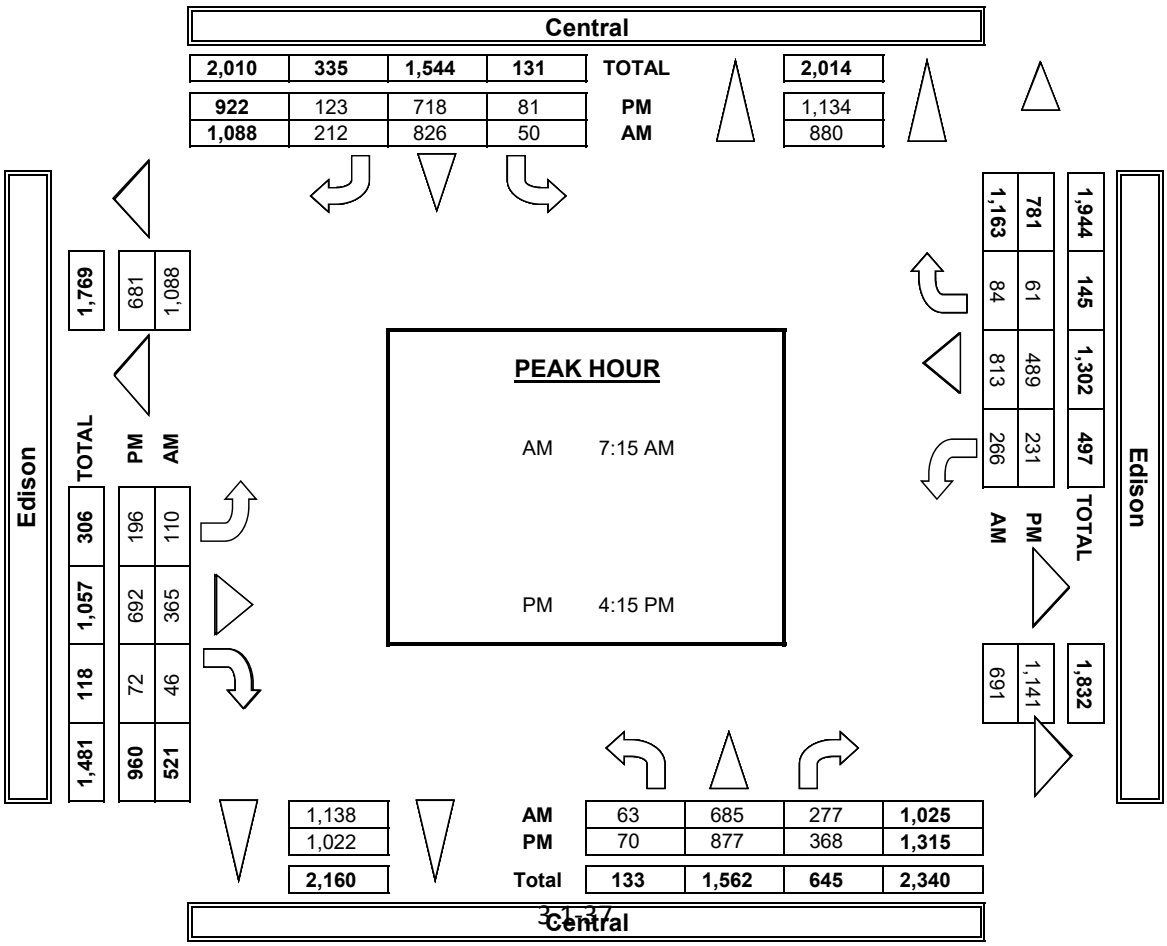
Central

	ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM															
7:00 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	2	0	1	3	0	0	0	1	1	0	2	0	0	2
7:45 AM	2	0	0	1	3	1	0	0	0	1	1	0	0	1	2
8:00 AM	1	1	0	0	2	1	0	0	0	1	0	1	0	0	1
8:15 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	4	4	0	2	10	2	0	0	1	3	1	3	0	1	7
PM															
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	3	1	1	0	5	1	1	0	0	2	2	0	1	0	3
4:15 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
4:30 PM	2	0	1	0	3	1	0	0	0	1	1	0	1	0	2
4:45 PM	2	0	0	0	2	0	0	0	0	0	2	0	0	0	2
5:00 PM	3	1	1	0	5	1	1	0	0	2	2	0	1	0	3
5:15 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
5:30 PM	2	0	1	0	3	1	0	0	0	1	1	0	1	0	2
5:45 PM	2	0	0	0	2	0	0	0	0	0	2	0	0	0	2
TOTAL	16	2	4	0	22	2	1	0	0	6	6	0	2	0	16

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/29/19	NORTH & SOUTH:	Central	LOCATION #:	7
TUESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

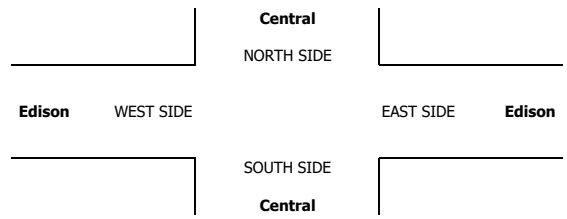
		NORTHBOUND Central			SOUTHBOUND Central			EASTBOUND Edison			WESTBOUND Edison			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 2	ER 0	WL 2	WT 2	WR 1	TOTAL
AM	7:00 AM	0	11	5	3	14	1	1	6	2	8	5	0	56
	7:15 AM	1	5	1	2	14	3	1	6	0	2	8	0	43
	7:30 AM	0	12	5	0	5	1	5	6	0	6	8	0	48
	7:45 AM	2	9	5	0	10	1	4	6	1	3	7	1	49
	8:00 AM	1	9	4	2	16	2	3	5	0	4	8	2	56
	8:15 AM	0	11	2	2	22	2	1	8	1	7	12	0	68
	8:30 AM	0	9	3	1	13	3	3	8	2	3	10	1	56
	8:45 AM	2	20	4	0	13	3	2	6	1	3	5	1	60
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	6	86	29	10	107	16	20	51	7	36	63	5	436
	APPROACH %	5%	71%	24%	8%	80%	12%	26%	65%	9%	35%	61%	5%	
	APP/DEPART	121	/	111	133	/	150	78	/	90	104	/	85	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	3	49	13	5	64	10	9	27	4	17	35	4	240
	APPROACH %	5%	75%	20%	6%	81%	13%	23%	68%	10%	30%	63%	7%	
	PEAK HR FACTOR		0.625			0.760			0.769			0.737		0.882
	APP/DEPART	65	/	62	79	/	85	40	/	45	56	/	48	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	17	5	1	6	3	4	8	1	7	5	0	57
	4:15 PM	0	8	4	0	6	1	0	8	2	4	3	0	36
	4:30 PM	0	13	5	0	10	0	3	6	0	3	4	0	44
	4:45 PM	0	14	1	1	10	0	5	4	0	2	5	0	42
	5:00 PM	0	15	3	2	8	2	3	7	1	6	3	0	50
	5:15 PM	0	11	3	0	9	0	0	6	1	5	4	0	39
	5:30 PM	0	7	2	0	7	2	4	8	1	2	4	0	37
	5:45 PM	0	8	3	0	6	0	2	5	0	1	4	0	29
	VOLUMES	0	93	26	4	62	8	21	52	6	30	32	0	334
	APPROACH %	0%	78%	22%	5%	84%	11%	27%	66%	8%	48%	52%	0%	
	APP/DEPART	119	/	116	74	/	98	79	/	80	62	/	40	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	52	15	1	32	4	12	26	3	16	17	0	179
	APPROACH %	0%	78%	22%	3%	84%	11%	29%	63%	7%	48%	52%	0%	
	PEAK HR FACTOR		0.761			0.864			0.788			0.688		0.785
	APP/DEPART	67	/	65	38	/	51	41	/	42	33	/	21	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	2	0	0	2

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
4	0	1	0
1	1	0	0
3	0	0	0
4	0	0	1
3	1	0	1
2	0	0	0
3	1	1	0
4	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
24	3	2	3
12	2	1	2
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
3	0	0	0
2	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/29/19	NORTH & SOUTH:	Central	LOCATION #:	7
TUESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

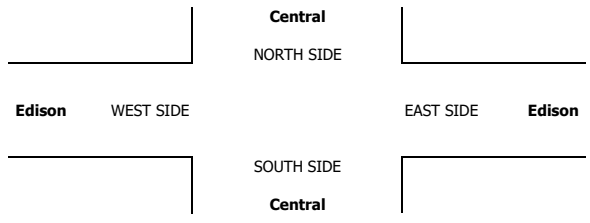
	NORTHBOUND (Central)			SOUTHBOUND (Central)			EASTBOUND (Edison)			WESTBOUND (Edison)			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 2	ER 0	WL 2	WT 2	WR 1	TOTAL
7:00 AM	0	0	0	1	0	0	1	2	0	4	3	2	13
7:15 AM	0	1	0	1	1	0	0	0	0	0	2	0	5
7:30 AM	0	1	0	1	0	1	0	3	0	2	7	0	15
7:45 AM	0	0	0	0	1	1	1	0	0	1	2	0	6
8:00 AM	0	0	1	0	0	0	0	3	1	0	4	0	9
8:15 AM	0	0	1	2	2	0	0	1	0	0	2	0	8
8:30 AM	0	0	0	0	0	0	0	3	0	1	2	0	6
8:45 AM	0	0	0	0	0	0	0	0	0	3	4	0	7
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	2	2	5	4	2	2	12	1	11	26	2	69
APPROACH %	0%	50%	50%	45%	36%	18%	13%	80%	7%	28%	67%	5%	
APP/DEPART	4	/	6	11	/	16	15	/	19	39	/	28	0
BEGIN PEAK HR		7:00 AM											
VOLUMES	0	2	0	3	2	2	2	5	0	7	14	2	39
APPROACH %	0%	100%	0%	43%	29%	29%	29%	71%	0%	30%	61%	9%	
PEAK HR FACTOR		0.500			0.875			0.583			0.639		0.650
APP/DEPART	2	/	6	7	/	9	7	/	8	23	/	16	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	2	1	1	1	0	0	8	0	0	3	0	16
4:15 PM	0	0	0	0	1	0	0	3	0	0	2	2	8
4:30 PM	1	0	0	0	0	0	1	4	0	0	3	2	11
4:45 PM	0	1	0	0	0	0	0	6	0	1	0	1	9
5:00 PM	0	1	0	0	0	0	0	6	0	0	3	0	10
5:15 PM	0	0	0	0	0	0	1	5	0	0	2	0	8
5:30 PM	1	1	1	1	1	0	0	3	0	1	3	2	14
5:45 PM	0	0	1	0	1	0	0	2	0	0	0	0	4
VOLUMES	2	5	3	2	4	0	2	37	0	2	16	7	80
APPROACH %	20%	50%	30%	33%	67%	0%	5%	95%	0%	8%	64%	28%	
APP/DEPART	10	/	14	6	/	6	39	/	42	25	/	18	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	1	3	1	1	2	0	1	21	0	1	8	5	44
APPROACH %	20%	60%	20%	33%	67%	0%	5%	95%	0%	7%	57%	36%	
PEAK HR FACTOR		0.417			0.375			0.688			0.700		0.688
APP/DEPART	5	/	9	3	/	3	22	/	23	14	/	9	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
2	0	0	1
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	2
0	0	0	1



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 1/29/19 TUESDAY	LOCATION:	Chino	PROJECT #:	SC2074
	NORTH & SOUTH:	Central	LOCATION #:	7
	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND Central			SOUTHBOUND Central			EASTBOUND Edison			WESTBOUND Edison			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	1	1	2	0	2	2	1	
AM													
7:00 AM	0	1	1	1	1	0	7	2	0	2	9	0	24
7:15 AM	0	2	1	3	3	4	1	5	0	1	5	3	28
7:30 AM	0	1	0	0	2	1	3	9	1	2	12	1	32
7:45 AM	1	3	0	1	1	2	1	4	0	0	12	0	25
8:00 AM	0	3	1	1	1	1	3	7	0	2	13	2	34
8:15 AM	0	2	2	3	0	1	2	6	0	2	7	3	28
8:30 AM	1	3	1	2	2	5	2	4	1	2	8	1	32
8:45 AM	1	2	0	0	0	2	5	3	0	3	18	2	36
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	3	17	6	11	10	16	24	40	2	14	84	12	239
APPROACH %	12%	65%	23%	30%	27%	43%	36%	61%	3%	13%	76%	11%	
APP/DEPART	26	/	53	37	/	26	66	/	57	110	/	103	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	2	10	4	6	3	9	12	20	1	9	46	8	130
APPROACH %	13%	63%	25%	33%	17%	50%	36%	61%	3%	14%	73%	13%	
PEAK HR FACTOR		0.800			0.500			0.825			0.685		0.903
APP/DEPART	16	/	30	18	/	13	33	/	30	63	/	57	0
PM													
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	2	3	3	0	2	1	0	7	0	1	11	2	32
4:15 PM	0	2	1	5	2	0	1	11	1	0	7	1	31
4:30 PM	1	5	0	1	1	0	1	12	0	0	4	1	26
4:45 PM	0	4	3	3	0	1	0	14	1	0	6	2	34
5:00 PM	1	2	2	2	1	0	1	10	0	0	9	0	28
5:15 PM	1	3	1	3	1	1	0	9	1	1	5	2	28
5:30 PM	0	2	1	2	0	1	0	8	1	0	3	1	19
5:45 PM	1	1	2	1	1	0	1	6	0	0	2	0	15
VOLUMES	6	22	13	17	8	4	4	77	4	2	47	9	213
APPROACH %	15%	54%	32%	59%	28%	14%	5%	91%	5%	3%	81%	16%	
APP/DEPART	41	/	35	29	/	14	85	/	107	58	/	57	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	3	14	7	9	5	2	2	44	2	1	28	6	123
APPROACH %	13%	58%	29%	56%	31%	13%	4%	92%	4%	3%	80%	17%	
PEAK HR FACTOR		0.750			0.571			0.800			0.625		0.904
APP/DEPART	24	/	22	16	/	8	48	/	60	35	/	33	0

	U-TURNS				
	NB	SB	EB	WB	TTL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
03:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0

	RTOR			
	NRR	SRR	ERR	WRR
LANES	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	2	0	0
7:30 AM	0	1	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	1	0	0
8:30 AM	0	1	1	0
8:45 AM	0	0	0	1
9:00 AM	0	0	0	0
9:15 AM	0	0	0	0
9:30 AM	0	0	0	0
9:45 AM	0	0	0	0
VOLUMES	0	5	1	1
PEAK HR VOLUMES	0	2	1	1
03:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0

Central

NORTH SIDE

Edison WEST SIDE

EAST SIDE **Edison**

SOUTH SIDE

Central

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Jan 30, 19

LOCATION: Chino
NORTH & SOUTH: Mountain
EAST & WEST: Edison

PROJECT #: SC2074
LOCATION #: 8
CONTROL: SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

▲ N
◄ W
E ►
S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Mountain)			SOUTHBOUND (Mountain)			EASTBOUND (Edison)			WESTBOUND (Edison)			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 1	EL 1	ET 3	ER 0	WL 1	WT 2	WR 1	TOTAL
AM	7:00 AM	33	37	6	12	11	49	26	62	4	1	202	22	465
	7:15 AM	17	48	9	17	23	52	30	97	10	1	191	19	514
	7:30 AM	13	39	9	11	19	65	41	133	13	2	190	20	555
	7:45 AM	16	21	14	17	20	67	24	81	8	5	219	23	515
	8:00 AM	12	43	10	15	18	43	27	79	8	3	160	14	432
	8:15 AM	15	63	38	16	16	49	22	90	4	10	134	14	471
	8:30 AM	9	25	27	16	37	37	14	74	4	35	137	17	432
	8:45 AM	8	29	6	12	11	31	30	72	3	6	128	11	347
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	123	305	119	116	155	393	214	688	54	63	1,361	140	3,731
	APPROACH %	22%	56%	22%	17%	23%	59%	22%	72%	6%	4%	87%	9%	
	APP/DEPART	547	/	658	664	/	272	956	/	923	1,564	/	1,878	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	79	145	38	57	73	233	121	373	35	9	802	84	2,049
	APPROACH %	30%	55%	15%	16%	20%	64%	23%	71%	7%	1%	90%	9%	
	PEAK HR FACTOR		0.862			0.873			0.707			0.906		0.923
	APP/DEPART	262	/	349	363	/	117	529	/	468	895	/	1,115	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	7	13	7	16	25	26	63	218	15	6	106	22	524
	4:15 PM	8	26	6	16	26	21	46	202	9	4	103	15	482
	4:30 PM	4	16	11	23	34	44	47	220	19	12	108	13	551
	4:45 PM	9	14	4	22	31	59	52	218	17	7	143	18	594
	5:00 PM	10	24	5	20	38	51	51	222	27	8	133	22	611
	5:15 PM	8	27	8	14	48	46	38	214	16	3	131	15	568
	5:30 PM	9	20	9	32	43	44	49	251	15	15	111	12	610
	5:45 PM	8	22	7	19	28	48	45	219	15	11	105	16	543
	VOLUMES	63	162	57	162	273	339	391	1,764	133	66	940	133	4,483
	APPROACH %	22%	57%	20%	21%	35%	44%	17%	77%	6%	6%	83%	12%	
	APP/DEPART	282	/	686	774	/	473	2,288	/	1,983	1,139	/	1,341	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	36	85	26	88	160	200	190	905	75	33	518	67	2,383
	APPROACH %	24%	58%	18%	20%	36%	45%	16%	77%	6%	5%	84%	11%	
	PEAK HR FACTOR		0.855			0.941			0.929			0.920		0.975
	APP/DEPART	147	/	342	448	/	269	1,170	/	1,019	618	/	753	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
1	0	0	0	1

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
6	23	0	1
4	24	2	2
6	39	1	5
12	41	1	2
7	27	1	1
21	38	1	0
10	25	0	3
3	22	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
69	239	6	14
28	127	4	10
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
6	13	2	4
5	9	0	4
6	24	2	2
1	28	0	1
4	11	0	2
6	15	1	5
4	10	1	4
5	23	4	3
37	133	10	25
15	64	2	12

ALL PED AND BIKE

	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	0	3	0	1	4
7:15 AM	0	2	1	0	3
7:30 AM	0	0	1	0	1
7:45 AM	0	0	0	0	0
8:00 AM	1	0	3	0	4
8:15 AM	0	0	2	1	3
8:30 AM	0	0	1	0	1
8:45 AM	1	0	0	0	1
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
TOTAL	2	5	8	2	17
3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	1	1	0	0	2
4:15 PM	0	1	2	0	3
4:30 PM	0	0	0	0	0
4:45 PM	0	0	3	0	3
5:00 PM	3	0	3	0	6
5:15 PM	0	0	3	0	3
5:30 PM	2	0	0	0	2
5:45 PM	2	0	2	0	4
TOTAL	8	2	13	0	23

PEDESTRIAN CROSSINGS

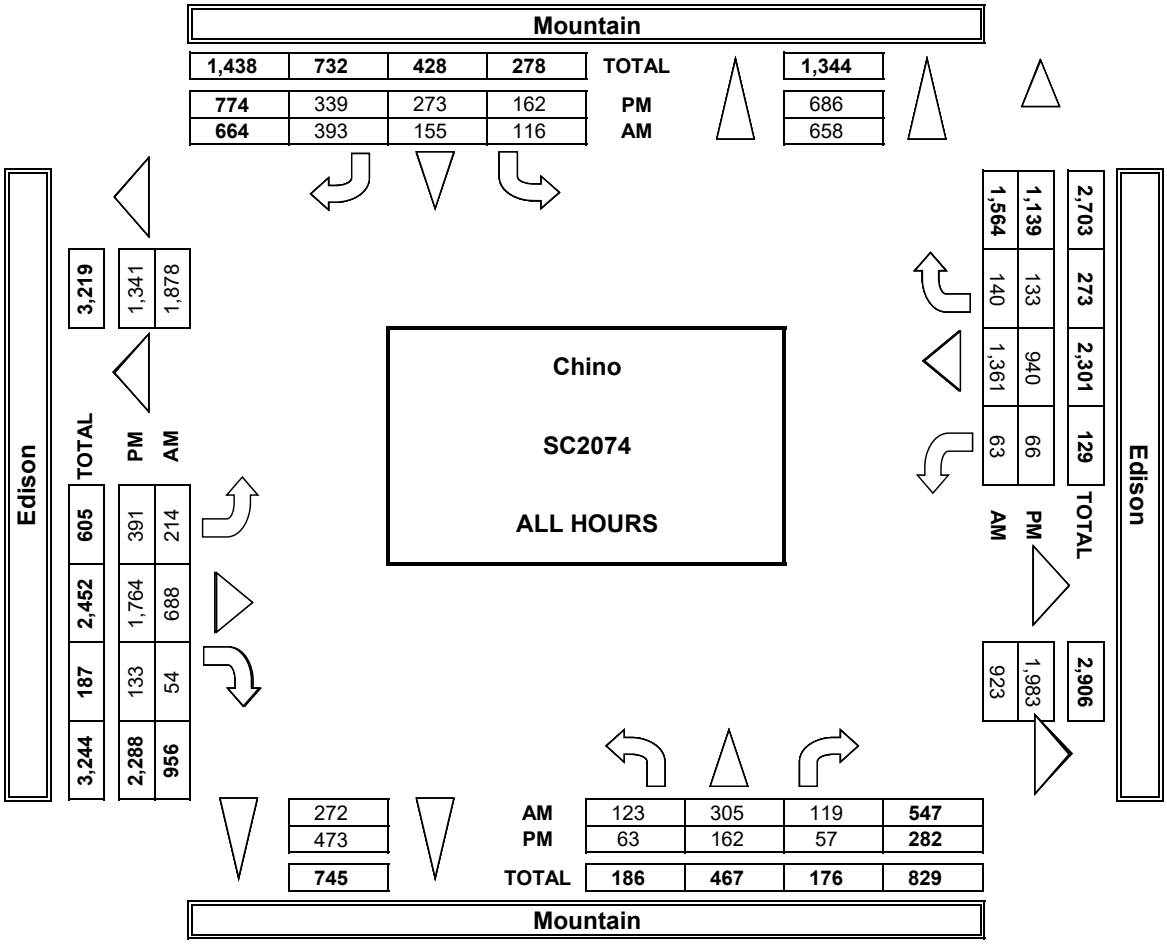
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	3	0	4
0	0	2	0	2
0	0	1	0	1
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	9
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	2	0	2
0	0	1	0	1
3	0	3	0	6
0	0	0	0	0
0	0	0	0	0
2	0	2	0	4
3	0	4	0	13

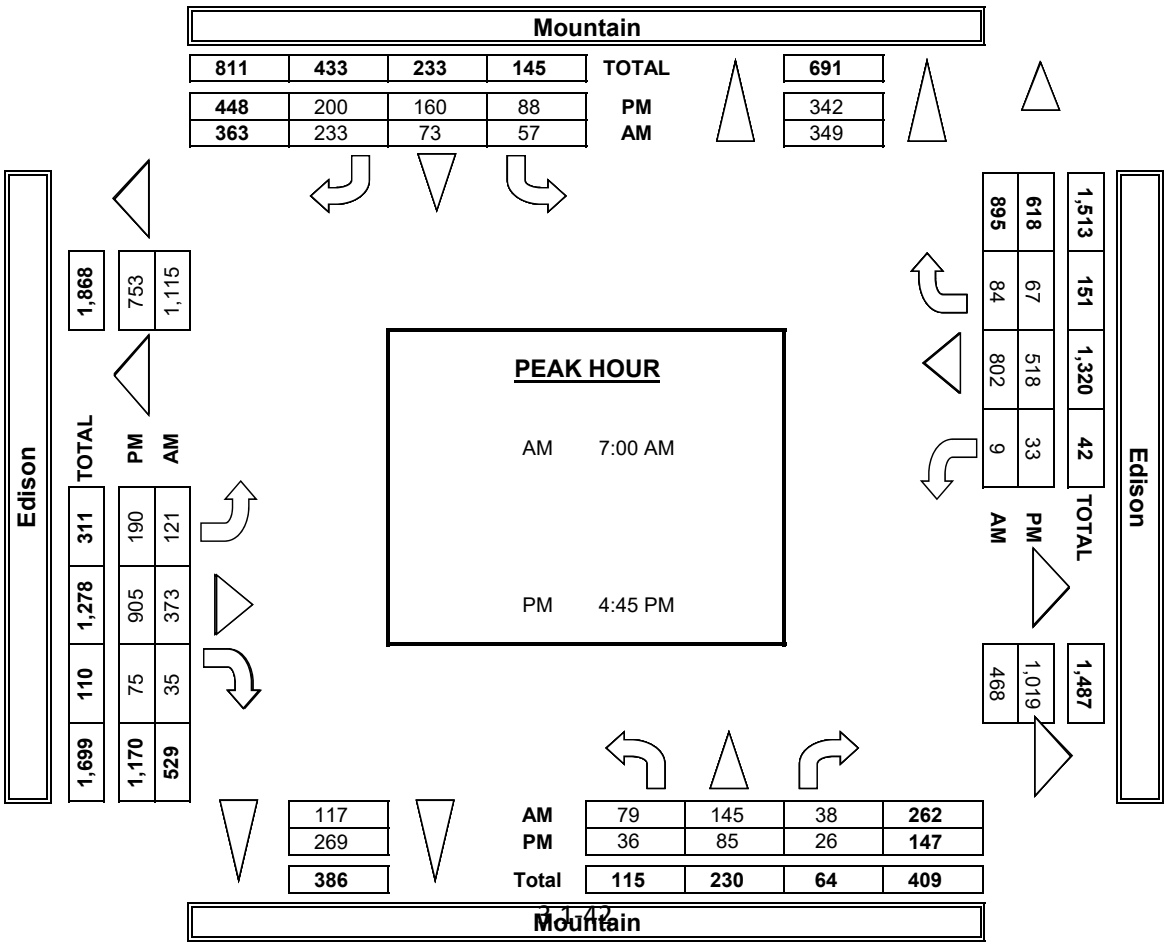
BICYCLE CROSSINGS

ES	WS	SS	NS	TOTAL
0	3	0	0	3
0	2	1	0	3
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	5	2	0	8
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	1	0	0	2
0	1	0	0	1
0	0	0	0	0
0	0	2	0	2
0	0	0	0	0
0	0	3	0	3
2	0	0	0	2
0	0	0	0	0
2	0	5	0	10

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Mountain	LOCATION #:	8
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Mountain)			SOUTHBOUND (Mountain)			EASTBOUND (Edison)			WESTBOUND (Edison)			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 1	EL 1	ET 3	ER 0	WL 1	WT 2	WR 1	TOTAL
AM	7:00 AM	1	0	0	3	1	2	1	8	0	0	4	3	23
	7:15 AM	0	3	0	3	1	2	0	5	0	0	8	0	22
	7:30 AM	0	1	0	1	0	2	1	12	1	0	5	2	25
	7:45 AM	1	1	0	2	0	3	1	3	0	1	7	3	22
	8:00 AM	0	0	0	3	0	2	2	8	1	0	7	0	23
	8:15 AM	1	0	0	3	0	3	1	9	1	0	14	0	32
	8:30 AM	0	0	0	1	1	2	0	10	0	1	10	1	26
	8:45 AM	1	2	0	3	2	2	2	7	0	0	4	0	23
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	4	7	0	19	5	18	8	62	3	2	59	9	196
	APPROACH %	36%	64%	0%	45%	12%	43%	11%	85%	4%	3%	84%	13%	
	APP/DEPART	11	/	24	42	/	10	73	/	81	70	/	81	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	2	2	0	10	3	9	5	34	2	1	35	1	104
	APPROACH %	50%	50%	0%	45%	14%	41%	12%	83%	5%	3%	95%	3%	
	PEAK HR FACTOR		0.333			0.786			0.932			0.661		0.813
	APP/DEPART	4	/	8	22	/	6	41	/	44	37	/	46	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	1	5	0	0	10	3	19
	4:15 PM	0	0	0	2	1	0	0	8	0	0	7	3	21
	4:30 PM	0	1	0	1	0	3	1	3	0	0	5	0	14
	4:45 PM	0	0	1	1	0	4	1	10	1	0	11	2	31
	5:00 PM	0	1	0	1	0	2	2	13	1	1	11	1	33
	5:15 PM	0	2	0	0	3	1	0	9	2	0	6	0	23
	5:30 PM	0	1	1	3	0	1	3	6	0	0	3	3	21
	5:45 PM	0	0	2	0	0	4	1	6	0	0	6	1	20
	VOLUMES	0	5	4	8	4	15	9	60	4	1	59	13	182
	APPROACH %	0%	56%	44%	30%	15%	56%	12%	82%	5%	1%	81%	18%	
	APP/DEPART	9	/	27	27	/	9	73	/	72	73	/	74	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	4	2	5	3	8	6	38	4	1	31	6	108
	APPROACH %	0%	67%	33%	31%	19%	50%	13%	79%	8%	3%	82%	16%	
	PEAK HR FACTOR		0.750			0.800			0.750			0.731		0.818
	APP/DEPART	6	/	16	16	/	8	48	/	45	38	/	39	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

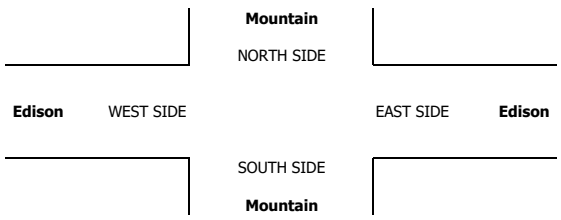
RTOR

NRR	SRR	ERR	WRR
0	1	0	0
0	1	0	0
0	2	0	1
0	2	0	0
0	1	0	0
0	2	0	0
0	1	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	11	0	1

0	5	0	0

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	3	0	0
0	3	0	0
0	0	0	0
0	0	0	0
0	1	0	0
2	1	0	1
2	8	0	2

0	4	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Mountain	LOCATION #:	8
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND (Mountain)			SOUTHBOUND (Mountain)			EASTBOUND (Edison)			WESTBOUND (Edison)			
LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 1	EL 1	ET 3	ER 0	WL 1	WT 2	WR 1	TOTAL
7:00 AM	0	0	0	0	0	0	0	1	0	0	2	0	3
7:15 AM	0	0	1	4	0	1	0	1	2	0	4	0	13
7:30 AM	0	0	0	2	0	1	0	6	0	0	6	2	17
7:45 AM	0	0	0	2	0	0	0	3	0	0	2	0	7
8:00 AM	0	0	0	0	0	0	0	4	0	0	3	0	7
8:15 AM	0	0	0	0	0	0	0	6	0	0	2	0	8
8:30 AM	0	0	0	1	0	0	0	2	0	0	5	0	8
8:45 AM	1	0	0	0	0	0	0	2	0	0	5	3	11
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	1	0	1	9	0	2	0	25	2	0	29	5	74
APPROACH %	50%	0%	50%	82%	0%	18%	0%	93%	7%	0%	85%	15%	
APP/DEPART	2	/	5	11	/	2	27	/	35	34	/	32	0
BEGIN PEAK HR		7:15 AM											
VOLUMES	0	0	1	8	0	2	0	14	2	0	15	2	44
APPROACH %	0%	0%	100%	80%	0%	20%	0%	88%	13%	0%	88%	12%	
PEAK HR FACTOR		0.250			0.500			0.667			0.531		0.647
APP/DEPART	1	/	2	10	/	2	16	/	23	17	/	17	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	12	0	0	2	0	14
4:15 PM	0	0	0	0	0	0	1	0	0	0	5	0	6
4:30 PM	0	1	0	0	0	0	0	6	0	0	1	2	10
4:45 PM	0	0	0	2	0	0	0	2	0	0	2	1	7
5:00 PM	1	0	0	0	0	0	0	7	0	0	2	1	11
5:15 PM	0	0	0	0	0	0	0	4	0	0	2	0	6
5:30 PM	0	0	0	1	0	0	0	2	0	0	2	1	6
5:45 PM	0	1	0	1	0	0	0	3	0	0	3	0	8
VOLUMES	1	2	0	4	0	0	1	36	0	0	19	5	68
APPROACH %	33%	67%	0%	100%	0%	0%	3%	97%	0%	0%	79%	21%	
APP/DEPART	3	/	8	4	/	0	37	/	40	24	/	20	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	1	0	2	0	0	1	20	0	0	10	3	37
APPROACH %	0%	100%	0%	100%	0%	0%	5%	95%	0%	0%	77%	23%	
PEAK HR FACTOR		0.250			0.250			0.438			0.650		0.661
APP/DEPART	1	/	5	2	/	0	21	/	22	13	/	10	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

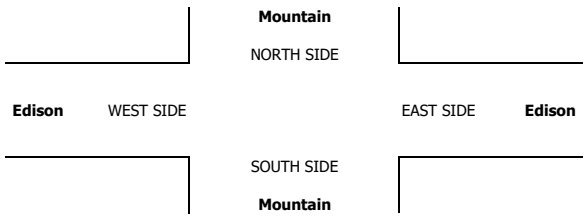
RTOR

NRR	SRR	ERR	WRR
0	0	0	0
1	1	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	2	0	0

NRR	SRR	ERR	WRR
1	2	0	0

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	1

NRR	SRR	ERR	WRR
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Mountain	LOCATION #:	8
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

		NORTHBOUND (Mountain)			SOUTHBOUND (Mountain)			EASTBOUND (Edison)			WESTBOUND (Edison)			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 1	EL 1	ET 3	ER 0	WL 1	WT 2	WR 1	TOTAL
AM	7:00 AM	0	0	0	2	0	0	0	5	0	0	11	0	18
	7:15 AM	0	0	0	0	0	0	0	3	0	0	11	0	14
	7:30 AM	0	0	0	2	0	0	0	12	0	0	13	1	28
	7:45 AM	0	0	0	0	1	0	0	3	0	0	13	2	19
	8:00 AM	0	0	0	1	0	1	2	7	0	0	12	1	24
	8:15 AM	0	0	0	3	0	0	0	11	0	0	14	3	31
	8:30 AM	0	0	0	3	0	4	2	8	0	0	12	0	29
	8:45 AM	0	0	0	3	0	0	1	4	0	0	20	2	30
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	14	1	5	5	53	0	0	106	9	193
	APPROACH %	0%	0%	0%	70%	5%	25%	9%	91%	0%	0%	92%	8%	
	APP/DEPART	0	/	14	20	/	1	58	/	67	115	/	111	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	0	0	0	10	0	5	5	30	0	0	58	6	114
	APPROACH %	0%	0%	0%	67%	0%	33%	14%	86%	0%	0%	91%	9%	
	PEAK HR FACTOR		0.000			0.536			0.795			0.727		0.919
	APP/DEPART	0	/	11	15	/	0	35	/	40	64	/	63	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	1	0	0	0	5	0	0	3	2	11
	4:15 PM	0	0	0	1	0	0	0	19	0	0	7	0	27
	4:30 PM	0	0	0	2	0	0	1	10	0	0	6	2	21
	4:45 PM	0	0	0	1	0	0	0	15	0	0	10	0	26
	5:00 PM	0	0	0	0	0	0	0	11	0	0	5	0	16
	5:15 PM	0	0	0	2	0	0	0	8	0	0	3	2	15
	5:30 PM	0	0	0	0	0	0	0	13	0	0	4	0	17
	5:45 PM	0	0	0	1	1	0	0	5	0	0	5	0	12
	VOLUMES	0	0	0	8	1	0	1	86	0	0	43	6	145
	APPROACH %	0%	0%	0%	89%	11%	0%	1%	99%	0%	0%	88%	12%	
	APP/DEPART	0	/	7	9	/	1	87	/	94	49	/	43	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	0	0	0	4	0	0	1	55	0	0	28	2	90
	APPROACH %	0%	0%	0%	100%	0%	0%	2%	98%	0%	0%	93%	7%	
	PEAK HR FACTOR		0.000			0.500			0.737			0.750		0.833
	APP/DEPART	0	/	3	4	/	0	56	/	59	30	/	28	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	2	0	0
0	2	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Mountain

NORTH SIDE

Edison WEST SIDE EAST SIDE **Edison**

SOUTH SIDE

Mountain

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Jan 30, 19

LOCATION: Chino
NORTH & SOUTH: San Antonio
EAST & WEST: Riverside

PROJECT #: SC2074
LOCATION #: 9
CONTROL: SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

▲ N
◄ W
E ►
S ▼

Add U-Turns to Left Turns

		NORTHBOUND (San Antonio)			SOUTHBOUND (San Antonio)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	27	1	14	2	3	9	0	57	7	6	207	4	337
	7:15 AM	30	1	9	5	1	17	2	93	12	6	205	1	382
	7:30 AM	32	0	11	5	1	10	5	127	12	8	188	2	401
	7:45 AM	24	1	12	3	2	13	3	111	14	8	182	0	373
	8:00 AM	20	0	9	1	1	7	5	90	13	8	185	1	340
	8:15 AM	23	0	11	4	0	9	6	58	10	11	185	4	321
	8:30 AM	47	0	10	0	2	10	2	69	10	9	168	2	329
	8:45 AM	28	1	6	1	0	5	4	71	14	6	161	1	298
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	231	4	82	21	10	80	27	676	92	62	1,481	15	2,781
	APPROACH %	73%	1%	26%	19%	9%	72%	3%	85%	12%	4%	95%	1%	
	APP/DEPART	317	/	46	111	/	162	795	/	781	1,558	/	1,792	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	106	2	41	14	5	47	15	421	51	30	760	4	1,496
	APPROACH %	71%	1%	28%	21%	8%	71%	3%	86%	10%	4%	96%	1%	
	PEAK HR FACTOR		0.866			0.717			0.845			0.936		0.933
	APP/DEPART	149	/	21	66	/	85	487	/	477	794	/	913	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	13	2	8	2	0	7	4	141	18	7	127	3	332
	4:15 PM	18	1	10	3	2	1	4	154	14	8	122	9	346
	4:30 PM	27	4	11	2	2	2	6	168	19	9	129	4	383
	4:45 PM	23	4	12	3	4	5	7	154	27	13	192	6	450
	5:00 PM	15	2	10	2	0	9	6	196	29	10	158	4	441
	5:15 PM	22	6	9	2	3	4	8	190	22	18	176	4	464
	5:30 PM	24	2	7	2	0	11	8	181	30	15	141	4	425
	5:45 PM	14	5	13	1	1	9	5	171	26	15	120	5	385
	VOLUMES	156	26	80	17	12	48	48	1,355	185	95	1,165	39	3,226
	APPROACH %	60%	10%	31%	22%	16%	62%	3%	85%	12%	7%	90%	3%	
	APP/DEPART	262	/	112	77	/	291	1,588	/	1,453	1,299	/	1,370	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	84	14	38	9	7	29	29	721	108	56	667	18	1,780
	APPROACH %	62%	10%	28%	20%	16%	64%	3%	84%	13%	8%	90%	2%	
	PEAK HR FACTOR		0.872			0.865			0.929			0.878		0.959
	APP/DEPART	136	/	61	45	/	171	858	/	768	741	/	780	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	2	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	1	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	1	2

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
7	5	1	1
5	7	2	1
5	3	1	0
6	4	1	0
5	2	0	0
7	8	3	0
5	3	1	1
5	1	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
45	33	10	3
21	16	4	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
4	5	1	0
7	1	1	0
7	2	1	0
5	3	1	0
6	7	0	0
6	3	2	0
6	9	3	0
7	6	3	0
48	36	12	0
23	22	6	0

San Antonio

NORTH SIDE

Riverside WEST SIDE EAST SIDE **Riverside**

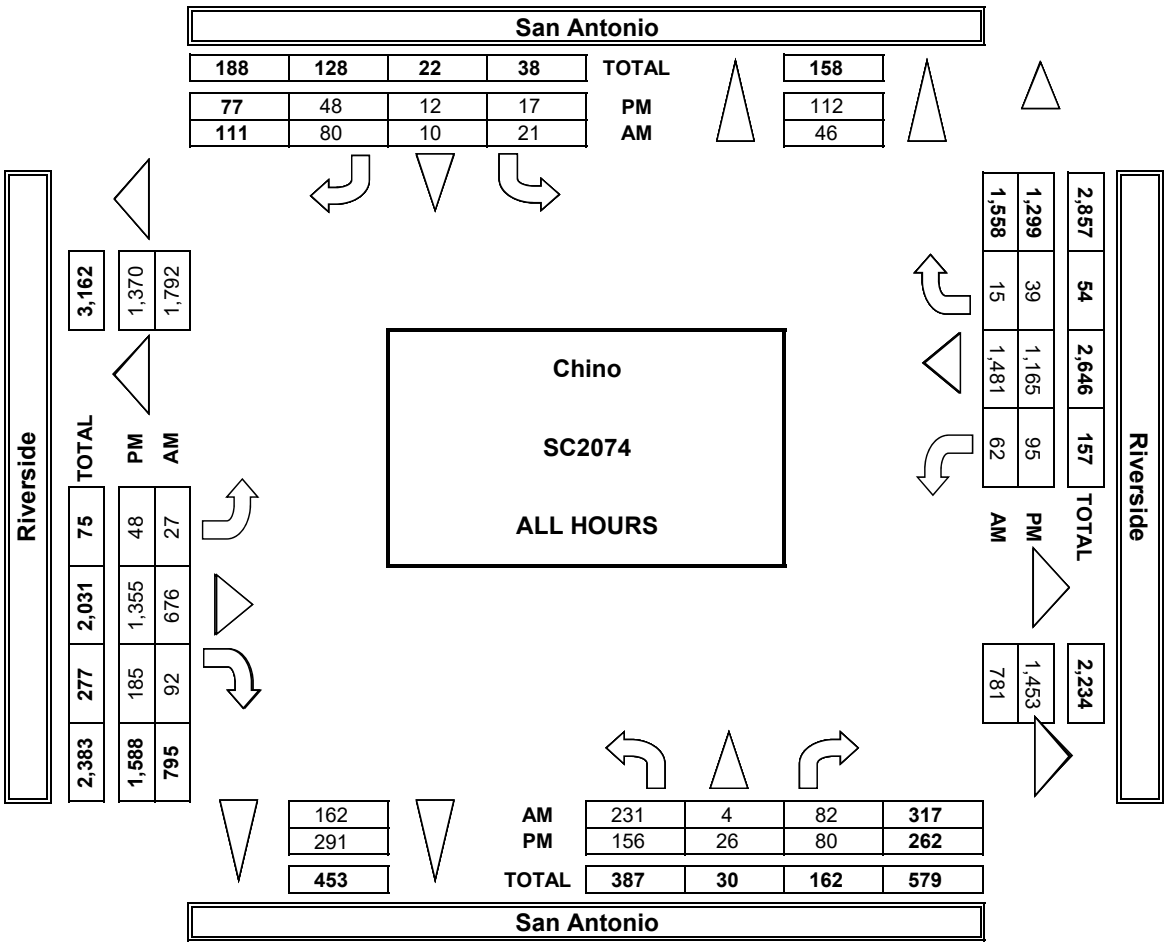
SOUTH SIDE

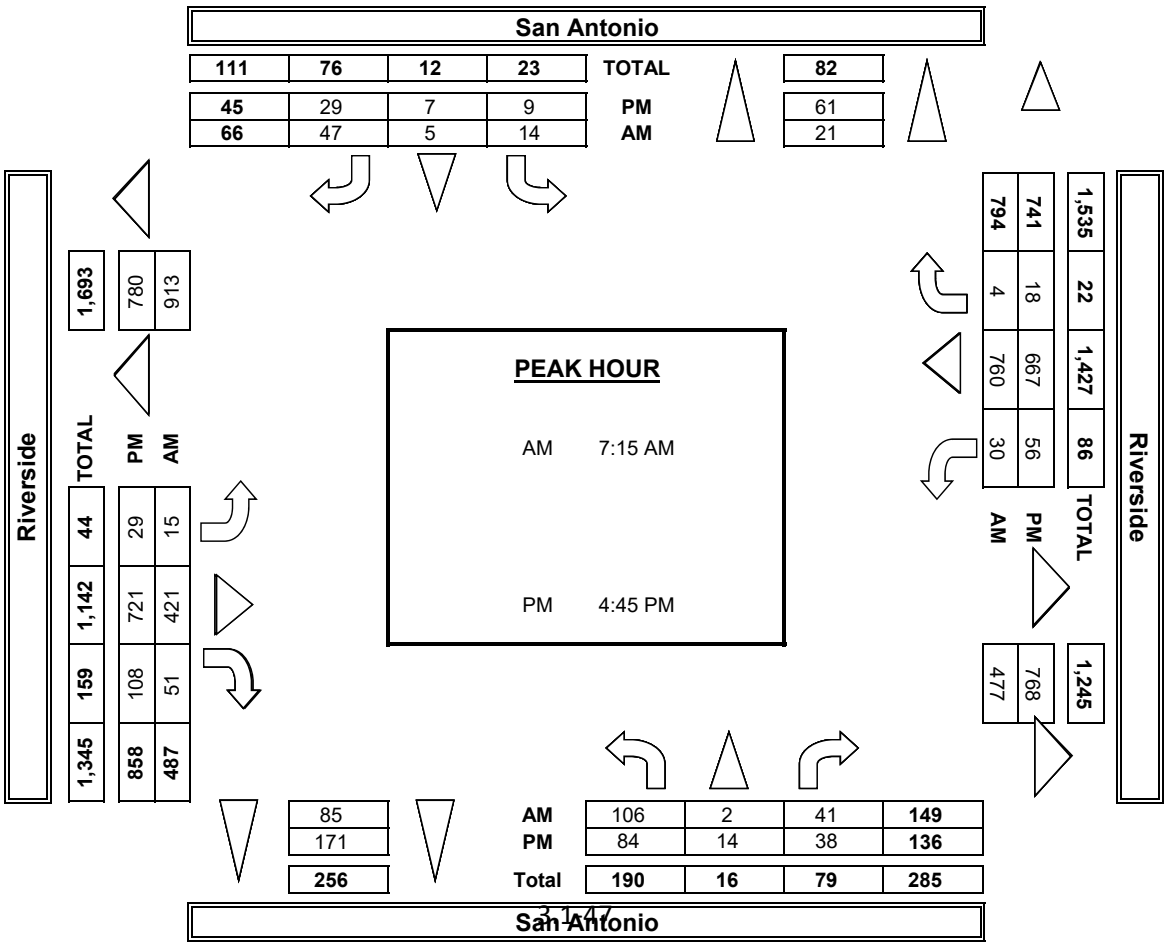
San Antonio

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	1	0	0	2	3	1	0	0	1	2	0	0	0	1	1
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	5	5	0	0	0	5	5	0	0	0	0	0
	8:30 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	8:45 AM	2	0	0	0	2	2	0	0	0	2	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	4	0	0	8	12	1	0	0	2	11	0	0	0	1	1
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	2	2	0	0	0	2	2	0	0	0	0	0
	4:15 PM	0	0	0	2	2	0	0	0	2	2	0	0	0	0	0
	4:30 PM	0	1	0	2	3	0	1	0	2	3	0	0	0	0	0
	4:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	5:00 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	5:15 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	5:30 PM	2	0	0	0	2	2	0	0	0	2	0	0	0	0	0
	5:45 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	TOTAL	3	1	2	7	13	2	0	1	1	12	0	0	1	0	1

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	San Antonio	LOCATION #:	9
WEDNESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND San Antonio			SOUTHBOUND San Antonio			EASTBOUND Riverside			WESTBOUND Riverside			
LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
7:00 AM	0	0	0	0	0	0	0	4	0	2	7	0	13
7:15 AM	0	0	0	0	0	0	0	7	1	0	4	0	12
7:30 AM	0	0	0	0	0	1	0	5	0	0	3	0	9
7:45 AM	0	0	0	0	0	1	1	7	1	1	6	0	17
8:00 AM	2	0	1	0	0	0	0	10	1	1	8	0	23
8:15 AM	0	0	0	0	0	0	0	4	0	0	6	0	10
8:30 AM	2	0	1	0	0	0	0	10	2	0	8	0	23
8:45 AM	0	0	0	0	0	1	0	7	1	0	9	0	18
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	4	0	2	0	0	3	1	54	6	4	51	0	125
APPROACH %	67%	0%	33%	0%	0%	100%	2%	89%	10%	7%	93%	0%	
APP/DEPART	6	/	1	3	/	9	61	/	57	55	/	58	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	4	0	2	0	0	1	0	31	4	1	31	0	74
APPROACH %	67%	0%	33%	0%	0%	100%	0%	89%	11%	3%	97%	0%	
PEAK HR FACTOR		0.500			0.250			0.729			0.889		0.804
APP/DEPART	6	/	0	1	/	5	35	/	33	32	/	36	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	1	0	2	0	0	0	0	5	0	0	4	0	12
4:15 PM	1	0	2	0	0	0	1	6	0	0	7	0	17
4:30 PM	0	0	0	0	0	0	0	4	0	0	6	0	10
4:45 PM	0	0	0	0	0	0	0	6	0	0	3	1	10
5:00 PM	1	0	0	0	0	0	0	7	0	0	6	0	14
5:15 PM	3	0	0	0	0	0	0	4	0	0	5	0	12
5:30 PM	0	0	0	0	0	0	1	1	2	0	1	0	5
5:45 PM	0	0	0	0	0	0	0	2	1	0	0	0	3
VOLUMES	6	0	4	0	0	0	2	35	3	0	32	1	83
APPROACH %	60%	0%	40%	0%	0%	0%	5%	88%	8%	0%	97%	3%	
APP/DEPART	10	/	2	0	/	3	40	/	39	33	/	39	0
BEGIN PEAK HR		4:15 PM											
VOLUMES	2	0	2	0	0	0	0	23	0	0	22	1	51
APPROACH %	50%	0%	50%	0%	0%	0%	0%	96%	0%	0%	96%	4%	
PEAK HR FACTOR		0.333			0.000			0.857			0.821		0.750
APP/DEPART	4	/	1	0	/	0	24	/	25	23	/	25	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	1	0	0
1	0	0	0
0	0	0	0
0	0	0	0
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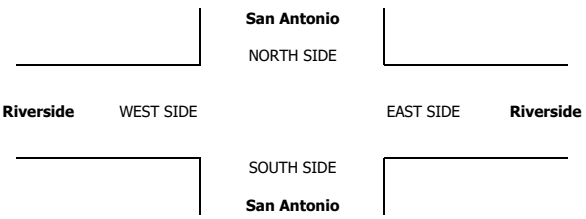
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
3	0	1	0
2	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	San Antonio	LOCATION #:	9
WEDNESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND San Antonio			SOUTHBOUND San Antonio			EASTBOUND Riverside			WESTBOUND Riverside			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	4	0	4
	7:15 AM	0	0	0	0	0	0	0	0	0	1	2	0	3
	7:30 AM	0	0	0	0	0	0	1	0	1	0	1	0	3
	7:45 AM	0	0	0	1	0	0	0	4	1	0	2	0	8
	8:00 AM	0	0	0	0	0	0	0	1	0	0	2	0	3
	8:15 AM	0	0	0	0	0	0	0	2	0	0	0	0	2
	8:30 AM	0	0	0	0	0	0	0	2	1	0	0	0	3
	8:45 AM	0	0	0	0	0	0	0	3	0	0	1	0	4
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	1	0	0	1	12	3	1	12	0	30
	APPROACH %	0%	0%	0%	100%	0%	0%	6%	75%	19%	8%	92%	0%	
	APP/DEPART	0	/	1	1	/	4	16	/	13	13	/	12	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	0	0	0	1	0	0	1	4	2	1	9	0	18
	APPROACH %	0%	0%	0%	100%	0%	0%	14%	57%	29%	10%	90%	0%	
	PEAK HR FACTOR		0.000			0.250			0.350			0.625		0.563
	APP/DEPART	0	/	1	1	/	3	7	/	5	10	/	9	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	0	0	0	0	0	0	0	0	0	1	0	2
	4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	5:00 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
	5:15 PM	0	0	0	0	0	0	0	4	0	0	1	0	5
	5:30 PM	0	0	0	0	0	0	0	1	0	0	3	0	4
	5:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
	VOLUMES	1	0	0	0	0	0	0	8	1	0	8	0	18
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	89%	11%	0%	100%	0%	
	APP/DEPART	1	/	0	0	/	1	9	/	8	8	/	9	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	0	0	0	0	0	0	7	1	0	5	0	13
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	88%	13%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.000			0.500			0.417		0.650
	APP/DEPART	0	/	0	0	/	1	8	/	7	5	/	5	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
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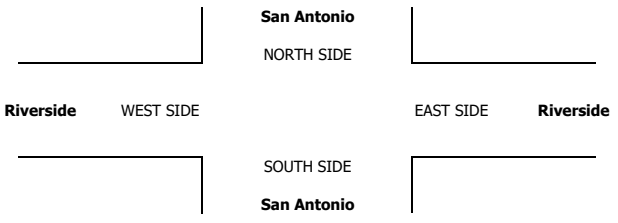
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	San Antonio	LOCATION #:	9
WEDNESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

	NORTHBOUND San Antonio			SOUTHBOUND San Antonio			EASTBOUND Riverside			WESTBOUND Riverside			
LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	1	0	0	3	0	4
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
8:15 AM	0	0	0	0	0	0	0	2	0	0	2	0	4
8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
8:45 AM	1	0	0	0	0	0	0	2	0	1	0	0	4
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	1	0	0	0	0	0	0	7	0	1	8	0	17
APPROACH %	100%	0%	0%	0%	0%	0%	0%	100%	0%	11%	89%	0%	
APP/DEPART	1	/	0	0	/	1	7	/	7	9	/	9	0
BEGIN PEAK HR		7:30 AM											
VOLUMES	1	0	0	0	0	0	0	5	0	1	4	0	11
APPROACH %	100%	0%	0%	0%	0%	0%	0%	100%	0%	20%	80%	0%	
PEAK HR FACTOR		0.250			0.000			0.625			0.417		0.688
APP/DEPART	1	/	0	0	/	1	5	/	5	5	/	5	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
4:45 PM	0	0	0	0	0	0	0	1	0	0	2	0	3
5:00 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
5:15 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
5:45 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
VOLUMES	0	0	0	0	0	0	0	7	0	0	7	0	14
APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
APP/DEPART	0	/	0	0	/	0	7	/	7	7	/	7	0
BEGIN PEAK HR		4:45 PM											
VOLUMES	0	0	0	0	0	0	0	6	0	0	4	0	10
APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
PEAK HR FACTOR		0.000			0.000			0.750			0.500		0.833
APP/DEPART	0	/	0	0	/	0	6	/	6	4	/	4	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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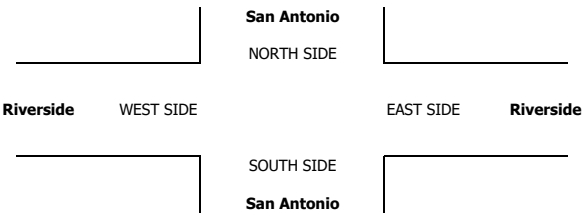
0	0	0	0



T1218

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
Wed, Jan 30, 19	NORTH & SOUTH:	San Antonio	LOCATION #:	10
	EAST & WEST:	Edison	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

Add U-Turns to Left Turns

		NORTHBOUND San Antonio			SOUTHBOUND San Antonio			EASTBOUND Edison			WESTBOUND Edison			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	0	1	0	0	1	0	1	2	1	1	2	1	
AM	7:00 AM	15	5	3	3	5	25	8	66	3	1	172	0	306
AM	7:15 AM	9	12	3	2	5	11	9	98	6	0	185	1	341
AM	7:30 AM	7	11	4	4	5	11	9	130	6	1	179	4	371
AM	7:45 AM	13	9	4	0	8	23	6	93	7	1	215	2	381
AM	8:00 AM	3	16	2	3	4	15	4	88	5	0	155	3	298
AM	8:15 AM	16	34	3	5	19	38	25	100	6	1	134	10	391
AM	8:30 AM	9	27	2	18	22	47	17	86	6	4	118	5	361
AM	8:45 AM	0	7	0	1	8	22	4	82	5	1	112	0	242
AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	VOLUMES	72	121	21	36	76	192	82	743	44	9	1,270	25	2,691
AM	APPROACH %	34%	57%	10%	12%	25%	63%	9%	86%	5%	1%	97%	2%	
AM	APP/DEPART	214	/	228	304	/	129	869	/	800	1,304	/	1,534	0
AM	BEGIN PEAK HR		7:30 AM											
AM	VOLUMES	39	70	13	12	36	87	44	411	24	3	683	19	1,441
AM	APPROACH %	32%	57%	11%	9%	27%	64%	9%	86%	5%	0%	97%	3%	
AM	PEAK HR FACTOR		0.575			0.544			0.826			0.808		0.921
AM	APP/DEPART	122	/	133	135	/	63	479	/	436	705	/	809	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	8	10	0	2	5	6	12	211	7	3	103	3	370
PM	4:15 PM	3	14	2	2	3	9	15	196	9	3	113	4	373
PM	4:30 PM	5	13	3	4	39	15	9	206	11	2	129	5	441
PM	4:45 PM	7	7	3	3	8	14	13	218	8	0	142	2	425
PM	5:00 PM	3	3	0	5	11	13	24	213	5	3	147	3	430
PM	5:15 PM	5	7	2	0	10	8	15	190	9	3	129	5	383
PM	5:30 PM	5	11	4	2	10	12	27	233	14	0	129	2	449
PM	5:45 PM	8	10	4	5	11	8	23	210	19	2	116	5	421
PM	VOLUMES	44	75	18	23	97	85	138	1,677	82	16	1,008	29	3,292
PM	APPROACH %	32%	55%	13%	11%	47%	41%	7%	88%	4%	2%	96%	3%	
PM	APP/DEPART	137	/	242	205	/	195	1,897	/	1,718	1,053	/	1,137	0
PM	BEGIN PEAK HR		4:45 PM											
PM	VOLUMES	20	28	9	10	39	47	79	854	36	6	547	12	1,687
PM	APPROACH %	35%	49%	16%	10%	41%	49%	8%	88%	4%	1%	97%	2%	
PM	PEAK HR FACTOR		0.713			0.828			0.884			0.923		0.939
PM	APP/DEPART	57	/	119	96	/	81	969	/	873	565	/	614	0

		U-TURNS					RTOR			
		NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
	LANES:	0	0	0	0		0	0	0	0
AM	7:00 AM	0	0	0	0	0	2	19	0	0
AM	7:15 AM	0	0	0	0	0	1	7	0	0
AM	7:30 AM	0	0	0	0	0	3	4	1	0
AM	7:45 AM	0	0	0	0	0	2	9	4	0
AM	8:00 AM	0	0	0	0	0	2	1	1	0
AM	8:15 AM	0	0	0	0	0	1	22	1	0
AM	8:30 AM	0	0	0	0	0	1	33	1	0
AM	8:45 AM	0	0	0	0	0	0	20	0	0
AM	9:00 AM	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0
AM	VOLUMES	0	0	0	0	0	12	115	8	0
AM	PEAK HR VOLUMES						8	36	7	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	3	1	0
PM	4:15 PM	0	0	0	0	0	1	6	1	0
PM	4:30 PM	0	0	0	0	0	1	7	0	0
PM	4:45 PM	0	0	0	0	0	1	9	0	0
PM	5:00 PM	0	0	0	0	0	0	10	0	1
PM	5:15 PM	0	0	0	0	0	2	5	1	2
PM	5:30 PM	0	0	0	0	0	1	4	0	0
PM	5:45 PM	0	0	0	0	0	0	5	2	1
PM	VOLUMES	0	0	0	0	0	6	49	5	4
PM	PEAK HR VOLUMES						4	28	1	3

San Antonio

NORTH SIDE

Edison WEST SIDE — EAST SIDE **Edison**

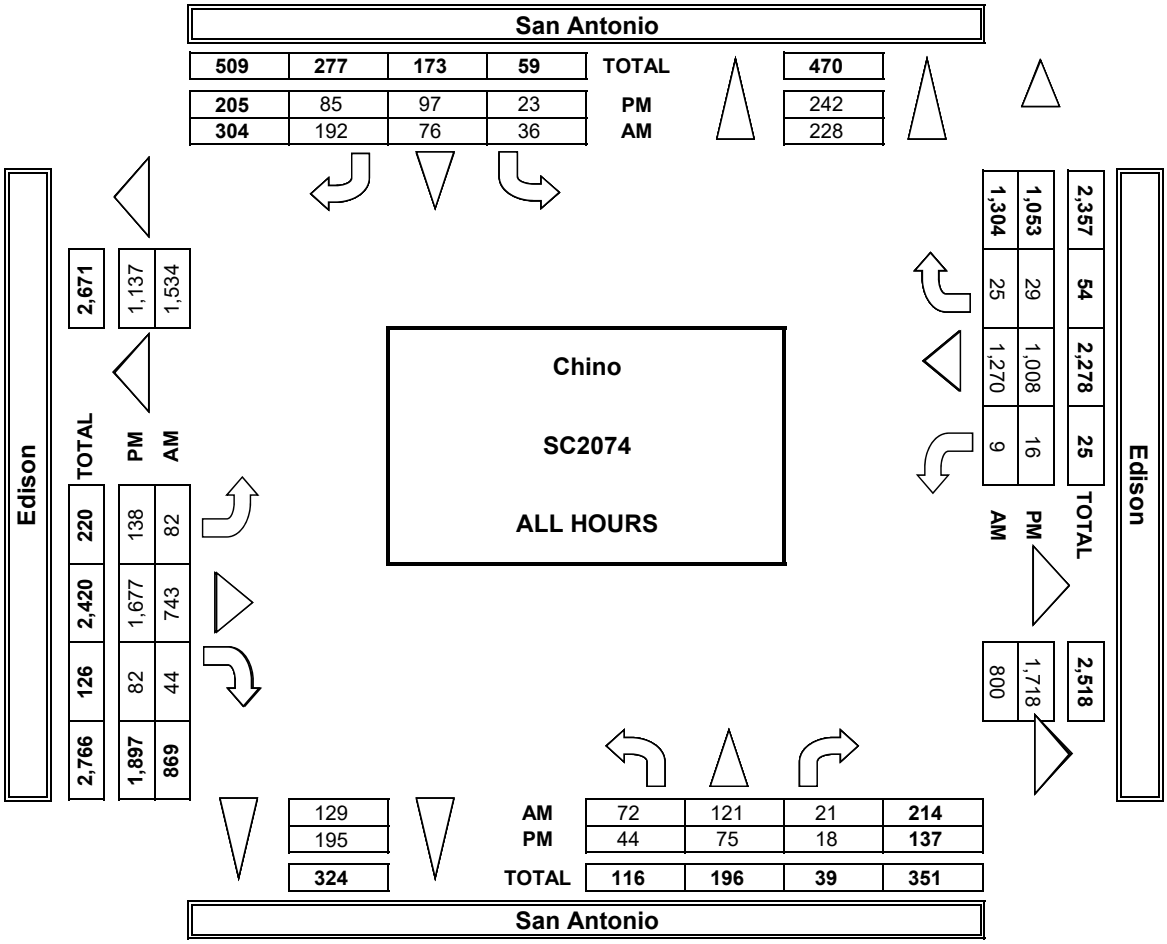
SOUTH SIDE

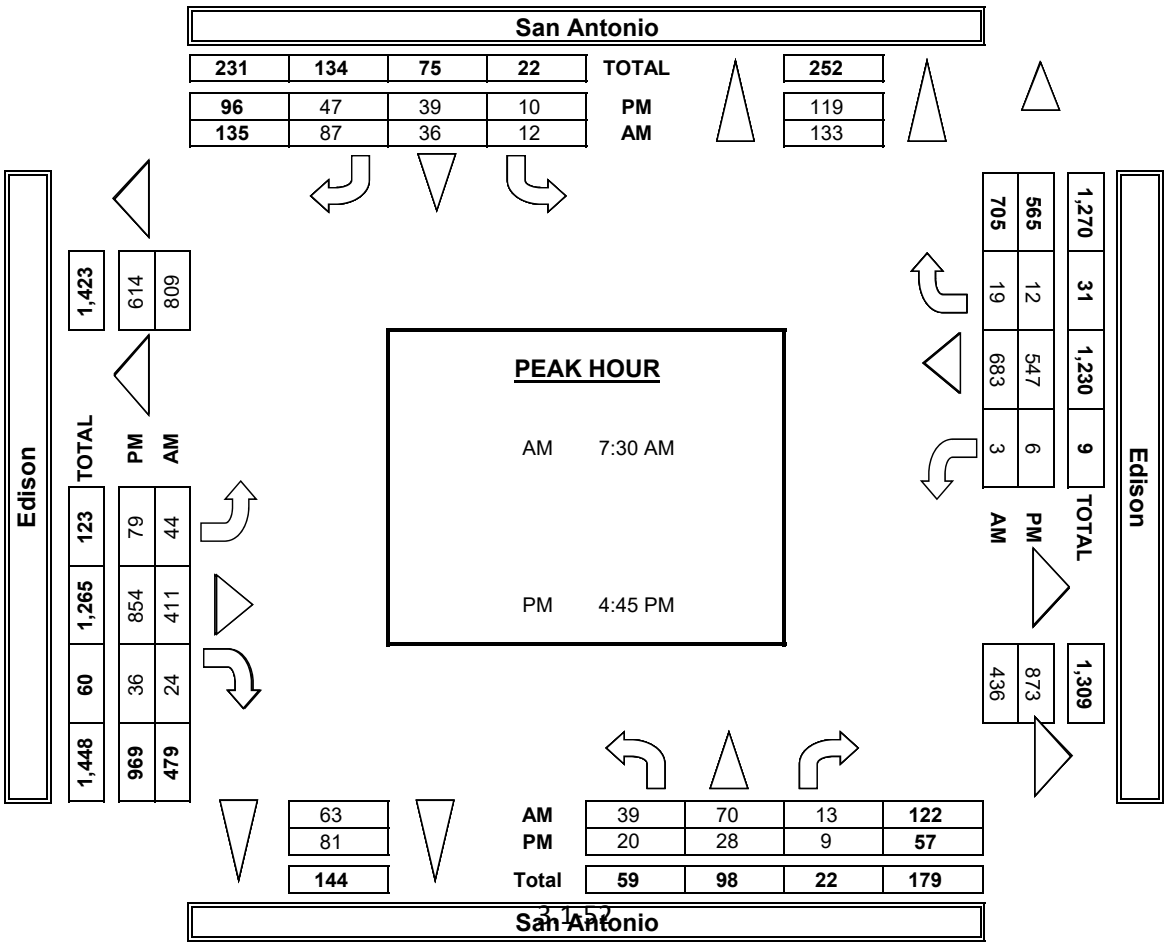
San Antonio

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:30 AM	1	1	0	0	2	1	0	0	0	1	0	1	0	0	1
AM	7:45 AM	1	3	0	0	4	1	3	0	0	4	0	0	0	0	0
AM	8:00 AM	0	2	1	0	3	0	2	1	0	3	0	0	0	0	0
AM	8:15 AM	0	1	1	0	2	0	1	1	0	2	0	0	0	0	0
AM	8:30 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
AM	8:45 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	2	9	2	0	13	2	6	2	0	12	0	1	0	0	1
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:30 PM	1	1	0	0	2	0	1	0	0	1	1	0	0	0	1
PM	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:45 PM	0	2	1	0	3	0	2	0	0	2	0	0	1	0	1
	TOTAL	1	3	1	1	6	0	0	0	0	4	0	0	0	0	2

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	San Antonio	LOCATION #:	10
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND San Antonio			SOUTHBOUND San Antonio			EASTBOUND Edison			WESTBOUND Edison			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	9	0	0	5	0	14
	7:15 AM	0	0	0	0	1	0	0	9	0	0	7	1	18
	7:30 AM	0	0	0	0	0	0	2	11	0	0	5	0	18
	7:45 AM	1	0	0	0	0	1	0	4	0	0	11	0	17
	8:00 AM	0	0	0	1	0	0	0	8	1	0	7	0	17
	8:15 AM	0	0	0	0	0	2	0	11	0	0	11	0	24
	8:30 AM	1	0	0	0	0	0	0	10	3	0	10	0	24
	8:45 AM	0	0	0	0	0	0	0	8	1	0	4	0	13
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	2	0	0	1	1	3	2	70	5	0	60	1	145
	APPROACH %	100%	0%	0%	20%	20%	60%	3%	91%	6%	0%	98%	2%	
	APP/DEPART	2	/	3	5	/	6	77	/	71	61	/	65	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	2	0	0	1	0	3	0	33	4	0	39	0	82
	APPROACH %	100%	0%	0%	25%	0%	75%	0%	89%	11%	0%	100%	0%	
	PEAK HR FACTOR		0.500			0.500			0.712			0.886		0.854
	APP/DEPART	2	/	0	4	/	4	37	/	34	39	/	44	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	1	0	1	0	0	0	7	0	0	12	0	21
	4:15 PM	0	0	0	0	0	0	1	8	0	1	9	0	19
	4:30 PM	0	0	1	0	0	0	0	4	1	0	5	0	11
	4:45 PM	1	1	0	0	1	0	0	10	0	0	14	0	27
	5:00 PM	0	1	0	0	0	1	0	11	0	0	14	1	28
	5:15 PM	0	0	0	0	0	0	1	5	0	0	5	0	11
	5:30 PM	0	0	0	0	0	0	0	9	0	0	2	0	11
	5:45 PM	0	0	0	0	0	0	1	7	1	0	10	0	19
	VOLUMES	1	3	1	1	1	1	3	61	2	1	71	1	147
	APPROACH %	20%	60%	20%	33%	33%	33%	5%	92%	3%	1%	97%	1%	
	APP/DEPART	5	/	7	3	/	4	66	/	63	73	/	73	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	1	2	1	0	1	1	1	33	1	1	42	1	85
	APPROACH %	25%	50%	25%	0%	50%	50%	3%	94%	3%	2%	95%	2%	
	PEAK HR FACTOR		0.500			0.500			0.795			0.733		0.759
	APP/DEPART	4	/	4	2	/	3	35	/	34	44	/	44	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	2	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	3	1	0
0	3	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
1	0	0	0
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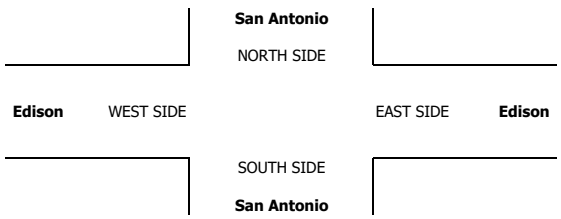
0	0	0	0
0	0	0	0
1	1	0	1
1	1	0	1



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	San Antonio	LOCATION #:	10
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND San Antonio			SOUTHBOUND San Antonio			EASTBOUND Edison			WESTBOUND Edison			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
7:00 AM	0	0	0	0	0	0	0	1	0	0	3	0	4
7:15 AM	0	0	0	0	0	0	0	5	0	0	6	0	11
7:30 AM	0	0	0	0	0	0	0	8	0	0	6	0	14
7:45 AM	0	0	0	0	0	0	0	2	0	0	2	0	4
8:00 AM	0	0	0	0	0	0	0	6	0	0	3	0	9
8:15 AM	0	0	0	0	0	0	0	6	0	0	2	0	8
8:30 AM	0	0	0	0	1	0	0	3	0	0	5	0	9
8:45 AM	0	0	0	0	0	0	0	1	0	0	7	0	8
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	1	0	0	32	0	0	34	0	67
APPROACH %	0%	0%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	
APP/DEPART	0	/	0	1	/	1	32	/	32	34	/	34	0
BEGIN PEAK HR		7:15 AM											
VOLUMES	0	0	0	0	0	0	0	21	0	0	17	0	38
APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
PEAK HR FACTOR		0.000			0.000			0.656			0.708		0.679
APP/DEPART	0	/	0	0	/	0	21	/	21	17	/	17	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	11	0	0	2	0	13
4:15 PM	0	0	0	0	0	0	0	2	0	0	7	0	9
4:30 PM	0	0	0	0	0	0	0	5	0	0	3	0	8
4:45 PM	0	0	0	0	0	0	0	5	0	0	2	0	7
5:00 PM	0	0	0	0	0	0	0	7	0	0	3	0	10
5:15 PM	0	0	0	0	0	0	0	4	0	0	2	0	6
5:30 PM	1	0	0	0	0	0	0	2	0	0	3	0	6
5:45 PM	0	0	0	0	0	0	0	5	0	0	1	0	6
VOLUMES	1	0	0	0	0	0	0	41	0	0	23	0	65
APPROACH %	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
APP/DEPART	1	/	0	0	/	0	41	/	41	23	/	24	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	0	0	0	0	0	0	23	0	0	14	0	37
APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
PEAK HR FACTOR		0.000			0.000			0.523			0.500		0.712
APP/DEPART	0	/	0	0	/	0	23	/	23	14	/	14	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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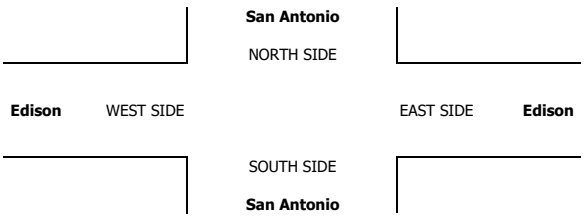
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	San Antonio	LOCATION #:	10
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

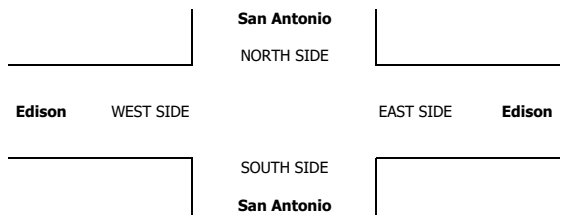
		NORTHBOUND San Antonio			SOUTHBOUND San Antonio			EASTBOUND Edison			WESTBOUND Edison			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	7	0	0	13	0	20
	7:15 AM	0	0	0	0	0	0	0	3	0	0	12	0	15
	7:30 AM	0	0	0	0	0	0	0	16	0	0	16	0	32
	7:45 AM	0	0	0	0	0	0	0	5	0	1	12	0	18
	8:00 AM	0	0	0	0	0	0	0	7	0	0	13	0	20
	8:15 AM	0	0	0	0	0	0	0	14	0	0	13	0	27
	8:30 AM	0	0	0	0	0	0	0	10	0	0	14	0	24
	8:45 AM	0	0	0	0	0	0	0	7	0	0	22	0	29
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	69	0	1	115	0	185
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	1%	99%	0%	
	APP/DEPART	0	/	0	0	/	1	69	/	69	116	/	115	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	0	0	0	0	0	0	0	38	0	0	62	0	100
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.000			0.679			0.705		0.862
	APP/DEPART	0	/	0	0	/	0	38	/	38	62	/	62	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	10	0	0	4	0	14
	4:15 PM	0	0	0	0	0	0	0	18	0	0	7	0	25
	4:30 PM	0	0	0	0	0	0	0	10	0	0	8	0	18
	4:45 PM	0	0	0	0	0	0	0	18	0	0	10	0	28
	5:00 PM	0	0	0	0	0	0	0	9	0	0	4	0	13
	5:15 PM	0	0	0	0	0	0	0	11	0	0	5	0	16
	5:30 PM	0	0	0	0	0	0	0	15	0	0	6	0	21
	5:45 PM	0	0	0	0	0	0	0	6	0	0	5	0	11
	VOLUMES	0	0	0	0	0	0	0	97	0	0	49	0	146
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	0	/	0	0	/	0	97	/	97	49	/	49	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	0	0	0	0	56	0	0	29	0	85
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.000			0.778			0.725		0.759
	APP/DEPART	0	/	0	0	/	0	56	/	56	29	/	29	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Jan 30, 19

LOCATION: Chino
NORTH & SOUTH: Euclid
EAST & WEST: SR-60 WB Ramps

PROJECT #: SC2074
LOCATION #: 11
CONTROL: SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

▲ N
◄ W
E ►
S ▼

Add U-Turns to Left Turns

		NORTHBOUND Euclid			SOUTHBOUND Euclid			EASTBOUND SR-60 WB Ramps			WESTBOUND SR-60 WB Ramps			
	LANES:	NL 1	NT 2	NR X	SL X	ST 2	SR 1	EL X	ET X	ER X	WL 1,3	WT 0.3	WR 1,3	TOTAL
AM	7:00 AM	70	159	0	0	190	129	0	0	0	94	1	90	733
	7:15 AM	90	178	0	0	195	123	0	0	0	66	1	100	753
	7:30 AM	58	200	0	0	216	80	0	0	0	83	0	88	725
	7:45 AM	47	237	0	0	206	103	0	0	0	112	1	117	823
	8:00 AM	73	206	0	0	218	111	0	0	0	96	1	85	790
	8:15 AM	67	171	0	0	226	81	0	0	0	100	1	64	710
	8:30 AM	47	186	0	0	175	93	0	0	0	96	0	72	669
	8:45 AM	65	180	0	0	149	87	0	0	0	96	3	98	678
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	517	1,517	0	0	1,575	807	0	0	0	743	8	714	5,881
	APPROACH %	25%	75%	0%	0%	66%	34%	0%	0%	0%	51%	1%	49%	
	APP/DEPART	2,034	/	2,231	2,382	/	2,326	0	/	0	1,465	/	1,324	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	268	821	0	0	835	417	0	0	0	357	3	390	3,091
	APPROACH %	25%	75%	0%	0%	67%	33%	0%	0%	0%	48%	0%	52%	
	PEAK HR FACTOR		0.959			0.951			0.000			0.815		0.939
	APP/DEPART	1,089	/	1,211	1,252	/	1,195	0	/	0	750	/	685	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	51	228	0	0	231	119	0	0	0	102	0	90	821
	4:15 PM	47	241	0	0	197	102	0	0	0	123	1	72	783
	4:30 PM	48	226	0	0	206	83	0	0	0	116	2	104	785
	4:45 PM	38	247	0	0	233	87	0	0	0	129	0	88	822
	5:00 PM	52	234	0	0	252	132	0	0	0	109	0	86	865
	5:15 PM	53	243	0	0	228	140	0	0	0	101	0	90	855
	5:30 PM	58	209	0	0	192	120	0	0	0	106	0	81	766
	5:45 PM	54	207	0	0	241	123	0	0	0	92	0	75	792
	VOLUMES	401	1,835	0	0	1,780	906	0	0	0	878	3	686	6,489
	APPROACH %	18%	82%	0%	0%	66%	34%	0%	0%	0%	56%	0%	44%	
	APP/DEPART	2,236	/	2,521	2,686	/	2,672	0	/	0	1,567	/	1,296	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	191	950	0	0	919	442	0	0	0	455	2	368	3,327
	APPROACH %	17%	83%	0%	0%	68%	32%	0%	0%	0%	55%	0%	45%	
	PEAK HR FACTOR		0.964			0.886			0.000			0.929		0.962
	APP/DEPART	1,141	/	1,318	1,361	/	1,381	0	/	0	825	/	628	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
1	0	0	0	1
1	0	0	0	1
1	0	0	0	1
0	0	0	0	0
2	0	0	0	2
2	0	0	0	2
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
8	0	0	0	8
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
2	0	0	0	2
4	0	0	0	4
3	0	0	0	3
2	0	0	0	2
1	0	0	0	1
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
1	0	0	0	1
14	0	0	0	14

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	69	0	46
0	54	0	61
0	36	0	47
0	56	0	47
0	68	0	51
0	35	0	42
0	51	0	38
0	52	0	56
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	421	0	388
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	53	0	50
0	48	0	48
0	29	0	47
0	41	0	43
0	64	0	43
0	63	0	41
0	44	0	31
0	42	0	31
0	384	0	334
0	214	0	206
0	197	0	174

Euclid

NORTH SIDE

SR-60 WB Ramps WEST SIDE EAST SIDE **SR-60 WB Ramps**

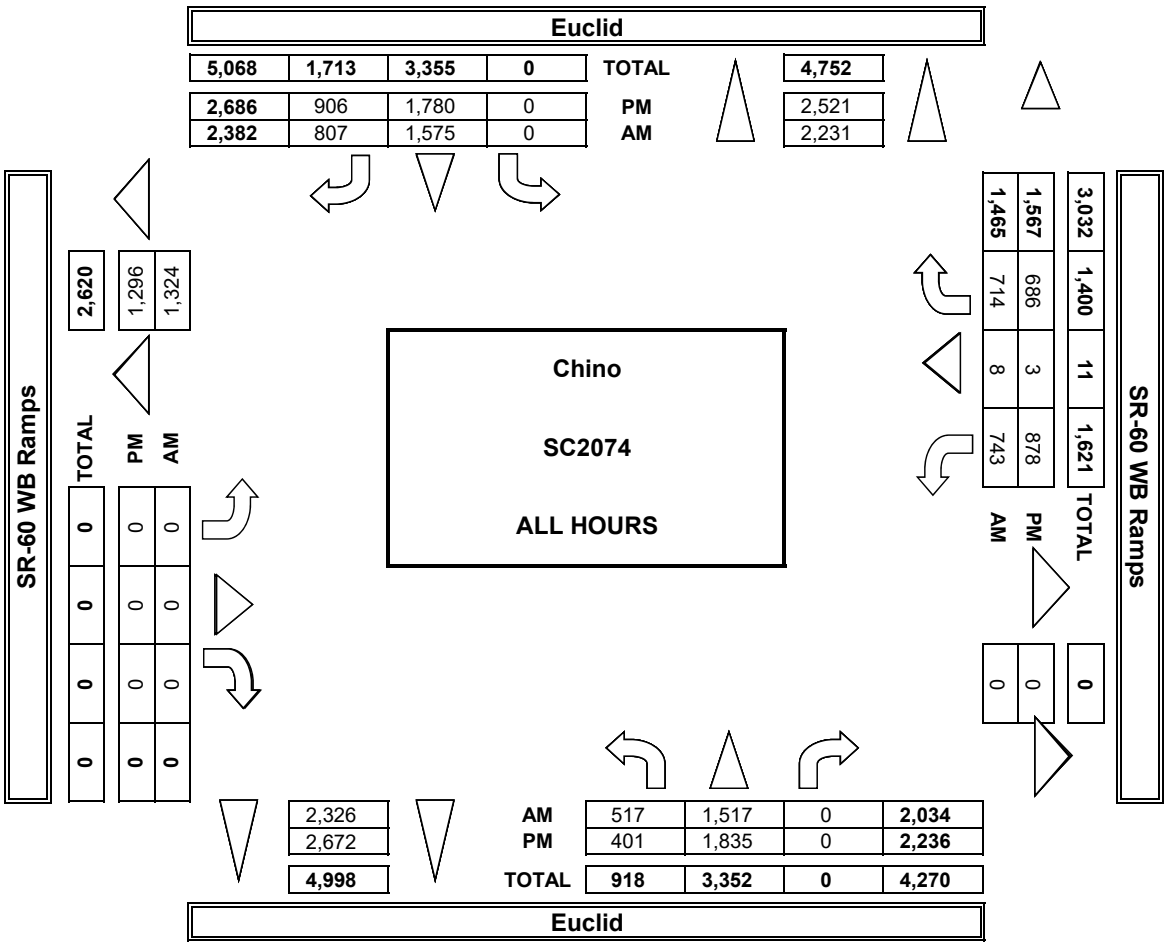
SOUTH SIDE

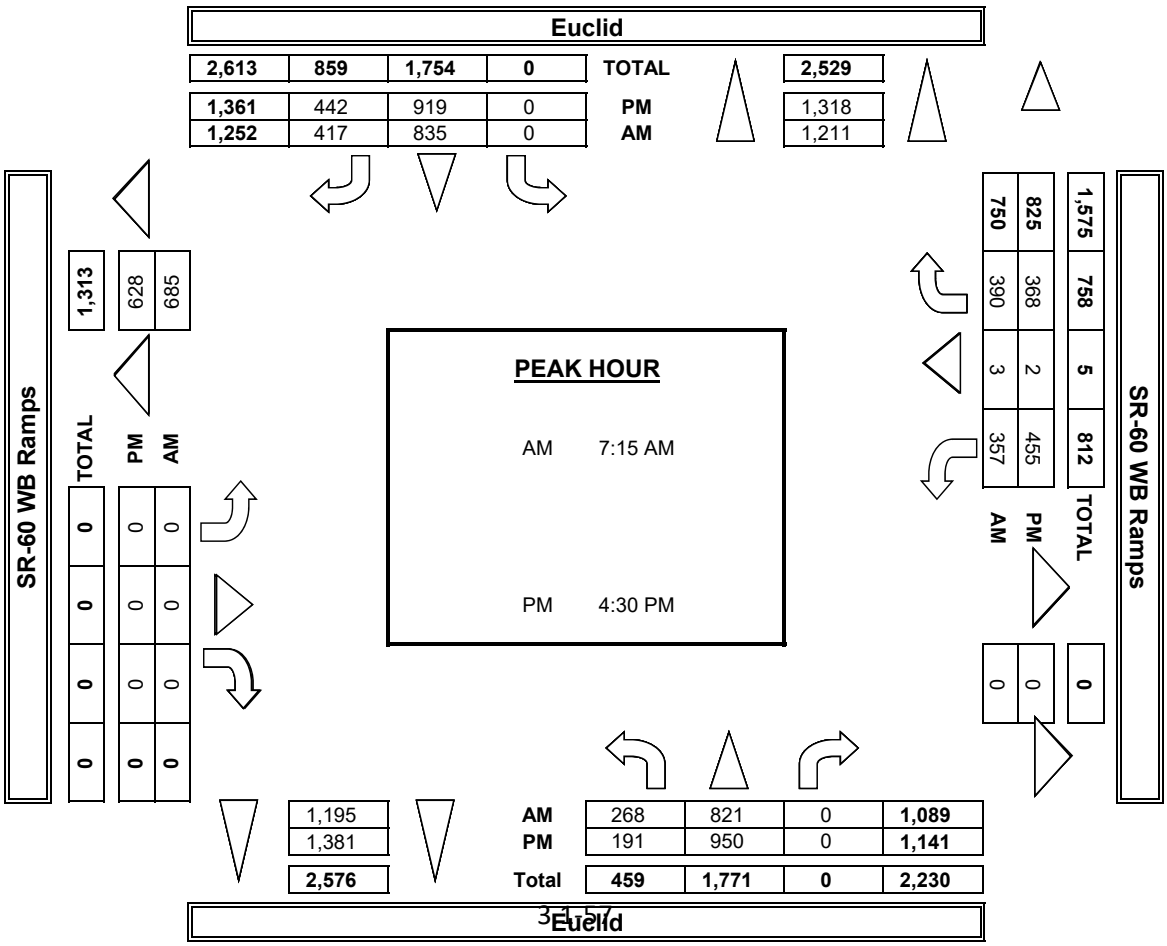
Euclid

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	7:30 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	7:45 AM	3	0	0	0	3	3	0	0	0	3	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	3	0	0	0	3	0	0	0	0	0	3	0	0	0	3
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	8	1	0	0	9	5	0	0	0	6	0	0	0	0	3
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	0	0	1	2	1	0	0	1	2	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	5:00 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	5:15 PM	5	0	1	1	7	5	0	1	1	7	0	0	0	0	0
	5:30 PM	3	0	0	0	3	2	0	0	0	2	1	0	0	0	1
	5:45 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	TOTAL	12	0	1	2	15	6	0	1	1	13	1	0	0	0	2

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Euclid	LOCATION #:	11
WEDNESDAY	EAST & WEST:	SR-60 WB Ramps	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

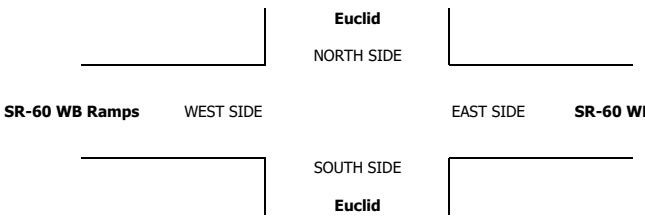
NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (SR-60 WB Ramps)			WESTBOUND (SR-60 WB Ramps)			
	LANES:	NL 1	NT 2	NR X	SL X	ST 2	SR 1	EL X	ET X	ER X	WL 1,3	WT 0.3	WR 1,3	TOTAL
AM	7:00 AM	5	7	0	0	12	13	0	0	0	8	0	6	51
	7:15 AM	9	9	0	0	9	8	0	0	0	8	1	5	49
	7:30 AM	5	12	0	0	11	8	0	0	0	9	0	8	53
	7:45 AM	4	7	0	0	14	7	0	0	0	16	0	4	52
	8:00 AM	9	6	0	0	11	9	0	0	0	12	1	1	49
	8:15 AM	9	12	0	0	15	8	0	0	0	16	0	5	65
	8:30 AM	6	19	0	0	7	8	0	0	0	10	0	7	57
	8:45 AM	10	16	0	0	11	10	0	0	0	9	0	3	59
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	57	88	0	0	90	71	0	0	0	88	2	39	435
	APPROACH %	39%	61%	0%	0%	56%	44%	0%	0%	0%	68%	2%	30%	
	APP/DEPART	145	/	127	161	/	179	0	/	0	129	/	129	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	34	53	0	0	44	35	0	0	0	47	1	16	230
	APPROACH %	39%	61%	0%	0%	56%	44%	0%	0%	0%	73%	2%	25%	
	PEAK HR FACTOR		0.837			0.859			0.000			0.762		0.885
	APP/DEPART	87	/	69	79	/	91	0	/	0	64	/	70	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	4	12	0	0	13	14	0	0	0	7	0	3	53
	4:15 PM	4	13	0	0	8	3	0	0	0	11	0	4	43
	4:30 PM	8	18	0	0	12	4	0	0	0	6	0	9	57
	4:45 PM	2	16	0	0	9	5	0	0	0	6	0	1	39
	5:00 PM	4	13	0	0	15	4	0	0	0	7	0	3	46
	5:15 PM	4	9	0	0	12	6	0	0	0	1	0	1	33
	5:30 PM	2	8	0	0	5	2	0	0	0	3	0	4	24
	5:45 PM	1	12	0	0	7	6	0	0	0	2	0	1	29
	VOLUMES	29	101	0	0	81	44	0	0	0	43	0	26	324
	APPROACH %	22%	78%	0%	0%	65%	35%	0%	0%	0%	62%	0%	38%	
	APP/DEPART	130	/	127	125	/	124	0	/	0	69	/	73	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	18	59	0	0	42	26	0	0	0	30	0	17	192
	APPROACH %	23%	77%	0%	0%	62%	38%	0%	0%	0%	64%	0%	36%	
	PEAK HR FACTOR		0.740			0.630			0.000			0.783		0.842
	APP/DEPART	77	/	76	68	/	72	0	/	0	47	/	44	0

U-TURNS					
NB	SB	EB	WB	TTL	
0	0	0	0	0	
0	0	0	0	0	
1	0	0	0	1	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
1	0	0	0	1	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	

RTOR			
NRR X	SRR 0	ERR X	WRR 0
0	8	0	3
0	4	0	1
0	6	0	5
0	3	0	1
0	5	0	1
0	5	0	4
0	4	0	3
0	7	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	42	0	19
0	21	0	9
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	3	0	3
0	1	0	4
0	1	0	4
0	2	0	0
0	2	0	2
0	3	0	1
0	0	0	0
0	3	0	1
0	15	0	15
0	7	0	11



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:				
1/30/19	LOCATION:	Chino	PROJECT #:	SC2074
WEDNESDAY	NORTH & SOUTH:	Euclid	LOCATION #:	11
	EAST & WEST:	SR-60 WB Ramps	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND Euclid			SOUTHBOUND Euclid			EASTBOUND SR-60 WB Ramps			WESTBOUND SR-60 WB Ramps			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	X	X	2	1	X	X	X	1,3	0.3	1,3	
AM 7:00 AM	1	1	0	0	3	0	0	0	0	5	0	1	11
7:15 AM	3	0	0	0	0	4	0	0	0	2	0	0	9
7:30 AM	0	0	0	0	1	0	0	0	0	3	0	0	4
7:45 AM	1	2	0	0	7	0	0	0	0	1	0	0	11
8:00 AM	5	0	0	0	2	0	0	0	0	1	0	1	9
8:15 AM	2	2	0	0	3	0	0	0	0	0	0	0	7
8:30 AM	1	2	0	0	3	1	0	0	0	7	0	0	14
8:45 AM	3	2	0	0	2	2	0	0	0	4	0	1	14
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	16	9	0	0	21	7	0	0	0	23	0	3	79
APPROACH %	64%	36%	0%	0%	75%	25%	0%	0%	0%	88%	0%	12%	
APP/DEPART	25	/	12	28	/	44	0	/	0	26	/	23	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	11	6	0	0	10	3	0	0	0	12	0	2	44
APPROACH %	65%	35%	0%	0%	77%	23%	0%	0%	0%	86%	0%	14%	
PEAK HR FACTOR		0.850			0.813			0.000			0.500		0.786
APP/DEPART	17	/	8	13	/	22	0	/	0	14	/	14	0
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	2	1	0	0	2	0	0	0	0	5	0	2	12
4:15 PM	1	2	0	0	0	0	0	0	0	7	0	0	10
4:30 PM	0	1	0	0	0	0	0	0	0	2	0	0	3
4:45 PM	0	0	0	0	3	0	0	0	0	2	0	3	8
5:00 PM	1	0	0	0	1	0	0	0	0	3	0	2	7
5:15 PM	1	2	0	0	0	1	0	0	0	1	0	0	5
5:30 PM	1	0	0	0	4	1	0	0	0	5	0	0	11
5:45 PM	2	1	0	0	0	0	0	0	0	4	0	0	7
VOLUMES	8	7	0	0	10	2	0	0	0	29	0	7	63
APPROACH %	53%	47%	0%	0%	83%	17%	0%	0%	0%	81%	0%	19%	
APP/DEPART	15	/	14	12	/	39	0	/	0	36	/	10	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	3	4	0	0	5	0	0	0	0	16	0	5	33
APPROACH %	43%	57%	0%	0%	100%	0%	0%	0%	0%	76%	0%	24%	
PEAK HR FACTOR		0.583			0.417			0.000			0.750		0.688
APP/DEPART	7	/	9	5	/	21	0	/	0	21	/	3	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:						X	0	X	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	2	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	1	0	0
8:45 AM	0	0	0	0	0	0	2	0	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	5	0	1
PEAK HR VOLUMES						0	3	0	1
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	3
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	4
PEAK HR VOLUMES						0	0	0	4

Euclid

NORTH SIDE

SR-60 WB Ramps WEST SIDE

EAST SIDE **SR-60 WB Ramps**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Euclid	LOCATION #:	11
WEDNESDAY	EAST & WEST:	SR-60 WB Ramps	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

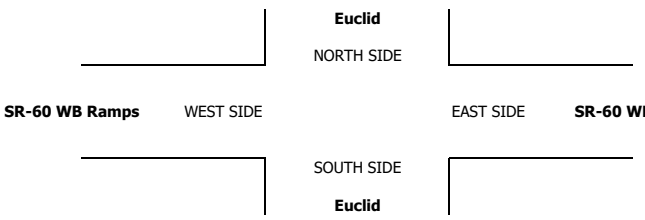
		NORTHBOUND Euclid			SOUTHBOUND Euclid			EASTBOUND SR-60 WB Ramps			WESTBOUND SR-60 WB Ramps			
	LANES:	NL 1	NT 2	NR X	SL X	ST 2	SR 1	EL X	ET X	ER X	WL 1,3	WT 0.3	WR 1,3	TOTAL
AM	7:00 AM	4	3	0	0	4	4	0	0	0	12	1	1	29
	7:15 AM	3	4	0	0	4	4	0	0	0	10	0	0	25
	7:30 AM	8	6	0	0	4	3	0	0	0	15	0	2	38
	7:45 AM	4	4	0	0	3	3	0	0	0	20	1	3	38
	8:00 AM	7	4	0	0	3	2	0	0	0	19	0	0	35
	8:15 AM	4	8	0	0	5	3	0	0	0	20	0	2	42
	8:30 AM	5	5	0	0	2	5	0	0	0	29	0	0	46
	8:45 AM	2	7	0	0	6	6	0	0	0	21	1	2	45
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	37	41	0	0	31	30	0	0	0	146	3	10	298
	APPROACH %	47%	53%	0%	0%	51%	49%	0%	0%	0%	92%	2%	6%	
	APP/DEPART	78	/	51	61	/	177	0	/	0	159	/	70	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	18	24	0	0	16	16	0	0	0	89	1	4	168
	APPROACH %	43%	57%	0%	0%	50%	50%	0%	0%	0%	95%	1%	4%	
	PEAK HR FACTOR		0.875			0.667			0.000			0.810		0.913
	APP/DEPART	42	/	28	32	/	105	0	/	0	94	/	35	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	4	7	0	0	3	2	0	0	0	12	0	2	30
	4:15 PM	4	6	0	0	0	3	0	0	0	15	1	2	31
	4:30 PM	6	6	0	0	3	3	0	0	0	9	1	1	29
	4:45 PM	1	6	0	0	2	1	0	0	0	9	0	0	19
	5:00 PM	1	2	0	0	2	3	0	0	0	10	0	1	19
	5:15 PM	5	5	0	0	1	0	0	0	0	9	0	0	20
	5:30 PM	3	3	0	0	1	2	0	0	0	4	0	2	15
	5:45 PM	2	1	0	0	2	3	0	0	0	6	0	0	14
	VOLUMES	26	36	0	0	14	17	0	0	0	74	2	8	177
	APPROACH %	42%	58%	0%	0%	45%	55%	0%	0%	0%	88%	2%	10%	
	APP/DEPART	62	/	44	31	/	88	0	/	0	84	/	45	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	15	25	0	0	8	9	0	0	0	45	2	5	109
	APPROACH %	38%	63%	0%	0%	47%	53%	0%	0%	0%	87%	4%	10%	
	PEAK HR FACTOR		0.833			0.708			0.000			0.722		0.879
	APP/DEPART	40	/	30	17	/	53	0	/	0	52	/	26	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	4	0	0
0	1	0	0
0	2	0	1
0	2	0	0
0	2	0	0
0	1	0	1
0	5	0	0
0	5	0	2
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	22	0	4
0	13	0	3
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	1
0	0	0	0
0	1	0	1
0	5	0	3
0	2	0	1



INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Jan 30, 19

LOCATION: Chino
NORTH & SOUTH: Euclid
EAST & WEST: SR-60 EB Ramps

PROJECT #: SC2074
LOCATION #: 12
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — N / W / E / S

Add U-Turns to Left Turns

		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (SR-60 EB Ramps)			WESTBOUND (SR-60 EB Ramps)			
	LANES:	NL X	NT 2	NR 1	SL 1	ST 2	SR X	EL 1,5	ET 0	ER 0.5	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	170	121	104	180	0	58	0	47	0	0	0	680
	7:15 AM	0	199	142	89	171	0	69	0	49	0	0	0	719
	7:30 AM	0	189	130	96	204	0	68	1	54	0	0	0	742
	7:45 AM	0	174	113	69	248	0	111	1	46	0	0	0	762
	8:00 AM	0	181	127	91	224	0	97	0	75	0	0	0	795
	8:15 AM	0	161	123	84	244	0	74	0	46	0	0	0	732
	8:30 AM	0	153	120	77	197	0	81	0	50	0	0	0	678
	8:45 AM	0	167	132	52	193	0	73	0	46	0	0	0	663
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	1,394	1,008	662	1,661	0	631	2	413	0	0	0	5,771
	APPROACH %	0%	58%	42%	28%	72%	0%	60%	0%	39%	0%	0%	0%	
	APP/DEPART	2,402	/	2,033	2,323	/	2,074	1,046	/	1,664	0	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	705	493	340	920	0	350	2	221	0	0	0	3,031
	APPROACH %	0%	59%	41%	27%	73%	0%	61%	0%	39%	0%	0%	0%	
	PEAK HR FACTOR		0.939			0.960			0.833			0.000		0.953
	APP/DEPART	1,198	/	1,057	1,260	/	1,141	573	/	833	0	/	0	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	192	102	83	254	0	87	0	57	0	0	0	775
	4:15 PM	0	199	114	77	246	0	89	0	65	0	0	0	790
	4:30 PM	0	190	90	83	242	0	82	0	65	0	0	0	752
	4:45 PM	0	186	94	84	280	0	100	1	66	0	0	0	811
	5:00 PM	0	210	92	88	275	0	74	0	67	0	0	0	806
	5:15 PM	0	199	119	90	240	0	97	0	54	0	0	0	799
	5:30 PM	0	202	95	88	206	0	61	1	62	0	0	0	715
	5:45 PM	0	184	97	81	258	0	75	0	64	0	0	0	759
	VOLUMES	0	1,562	803	674	2,001	0	665	2	500	0	0	0	6,207
	APPROACH %	0%	66%	34%	25%	75%	0%	57%	0%	43%	0%	0%	0%	
	APP/DEPART	2,365	/	2,239	2,675	/	2,501	1,167	/	1,467	0	/	0	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	785	395	345	1,037	0	353	1	252	0	0	0	3,168
	APPROACH %	0%	67%	33%	25%	75%	0%	58%	0%	42%	0%	0%	0%	
	PEAK HR FACTOR		0.928			0.949			0.907			0.000		0.977
	APP/DEPART	1,180	/	1,142	1,382	/	1,289	606	/	737	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
0	1	0	0	1
0	1	0	0	1
0	0	0	0	0
0	1	0	0	1
0	1	0	0	1
0	0	0	0	0
0	1	0	0	1
0	4	0	0	4
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	8	0	0	8
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	2	0	0	2
0	1	0	0	1
0	0	0	0	0
0	1	0	0	1
0	2	0	0	2
0	1	0	0	1
0	1	0	0	1
0	4	0	0	4
0	12	0	0	12

RTOR

NRR	SRR	ERR	WRR
0	X	0	X
28	0	17	0
41	0	23	0
49	0	13	0
31	0	5	0
53	0	19	0
56	0	15	0
55	0	13	0
63	0	15	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
376	0	120	0
189	0	52	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
47	0	13	0
63	0	25	0
39	0	13	0
44	0	13	0
50	0	22	0
57	0	18	0
42	0	24	0
46	0	16	0
388	0	144	0
190	0	66	0

Euclid

NORTH SIDE

SR-60 EB Ramps WEST SIDE EAST SIDE **SR-60 EB Ramps**

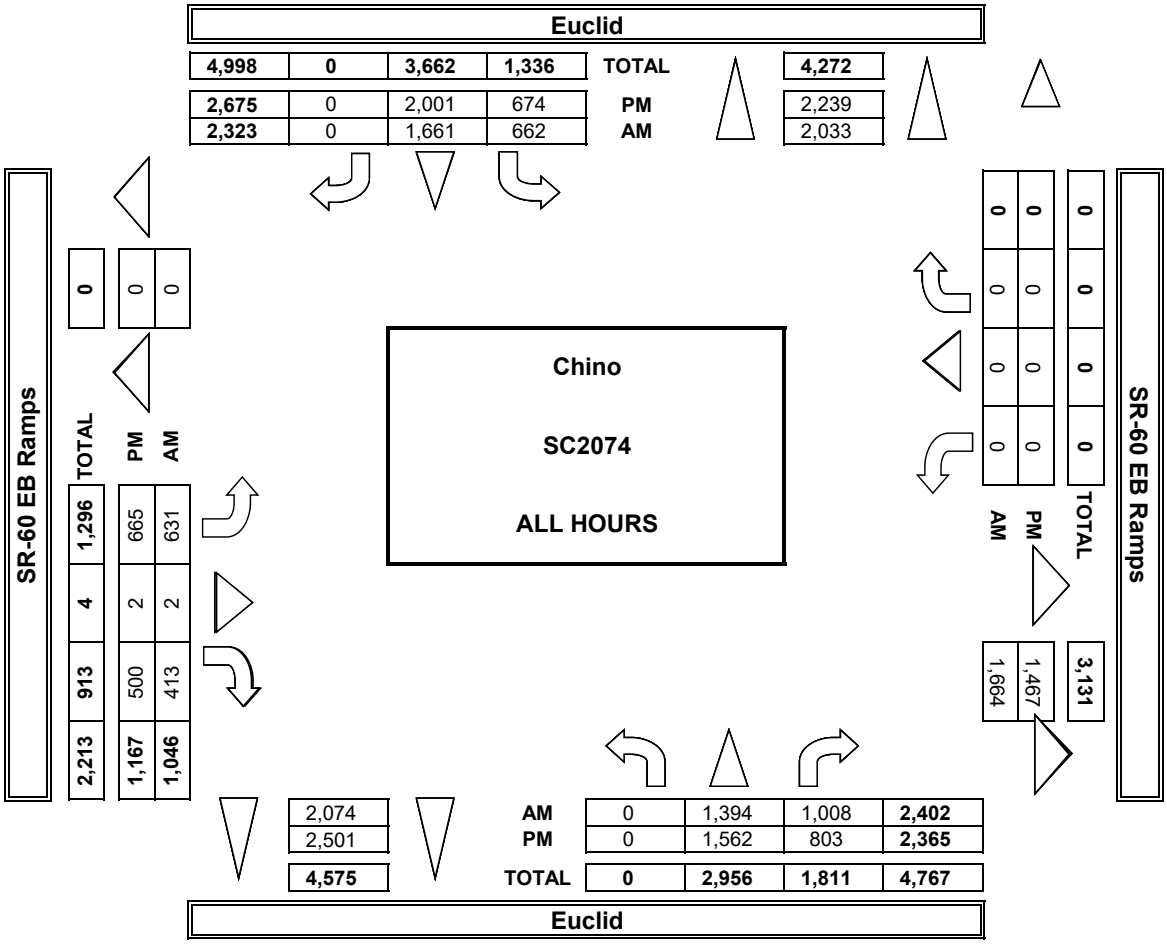
SOUTH SIDE

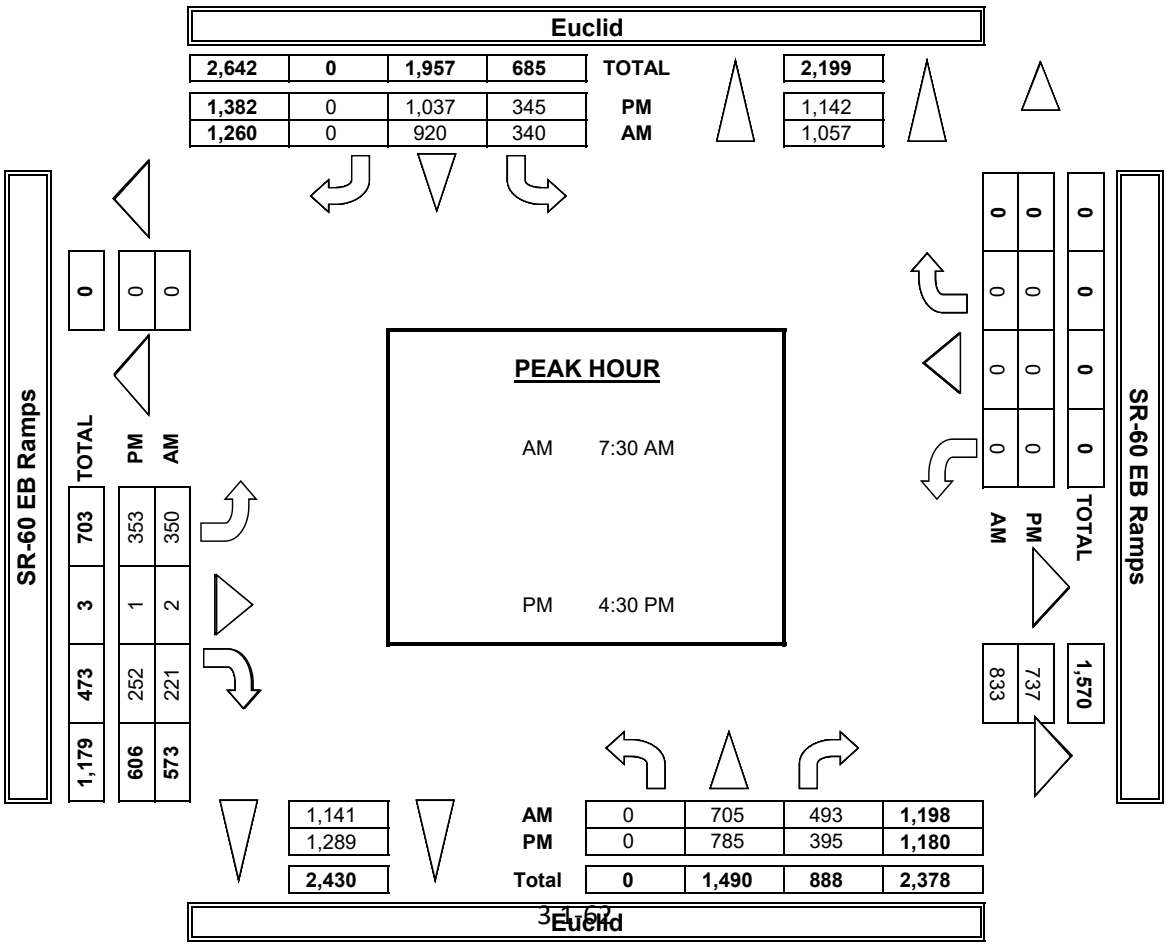
Euclid

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	7:30 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	7:45 AM	2	0	0	0	2	2	0	0	0	2	0	0	0	0	0
	8:00 AM	2	1	0	0	3	2	0	0	0	2	0	1	0	0	1
	8:15 AM	1	1	0	0	2	0	0	0	0	0	1	1	0	0	2
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	2	3	0	1	6	2	1	0	1	4	0	2	0	0	2
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	8	6	0	1	15	4	0	0	0	9	1	3	0	0	6
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	2	4	0	0	6	0	3	0	0	3	2	1	0	0	3
	4:15 PM	0	6	0	0	6	0	6	0	0	6	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	3	0	0	3	0	3	0	0	3	0	0	0	0	0
	5:00 PM	1	4	0	0	5	0	4	0	0	4	1	0	0	0	1
	5:15 PM	2	3	0	0	5	2	3	0	0	5	0	0	0	0	0
	5:30 PM	1	3	0	0	4	1	3	0	0	4	0	0	0	0	0
	5:45 PM	2	0	0	0	2	1	0	0	0	1	1	0	0	0	1
	TOTAL	8	23	0	0	31	2	10	0	0	26	1	0	0	0	5

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Euclid	LOCATION #:	12
WEDNESDAY	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND Euclid			SOUTHBOUND Euclid			EASTBOUND SR-60 EB Ramps			WESTBOUND SR-60 EB Ramps			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	X	2	1	1	2	X	1,5	0	0.5	X	X	X	
AM													
7:00 AM	0	9	6	3	18	0	3	0	6	0	0	0	45
7:15 AM	0	14	9	1	16	0	4	0	7	0	0	0	51
7:30 AM	0	12	5	1	20	0	5	0	4	0	0	0	47
7:45 AM	0	6	14	5	25	0	5	0	4	0	0	0	59
8:00 AM	0	13	12	3	20	0	2	0	10	0	0	0	60
8:15 AM	0	18	14	2	30	0	3	0	6	0	0	0	73
8:30 AM	0	19	9	1	14	0	7	0	5	0	0	0	55
8:45 AM	0	19	26	4	16	0	7	0	7	0	0	0	79
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	110	95	20	159	0	36	0	49	0	0	0	469
APPROACH %	0%	54%	46%	11%	89%	0%	42%	0%	58%	0%	0%	0%	
APP/DEPART	205	/	146	179	/	208	85	/	115	0	/	0	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	0	69	61	10	80	0	19	0	28	0	0	0	267
APPROACH %	0%	53%	47%	11%	89%	0%	40%	0%	60%	0%	0%	0%	
PEAK HR FACTOR		0.722			0.703			0.839			0.000		0.845
APP/DEPART	130	/	88	90	/	108	47	/	71	0	/	0	0
PM													
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	10	8	3	18	0	6	0	2	0	0	0	47
4:15 PM	0	6	12	2	15	0	11	0	3	0	0	0	49
4:30 PM	0	16	3	2	16	0	11	0	5	0	0	0	53
4:45 PM	0	5	0	4	10	0	13	0	3	0	0	0	35
5:00 PM	0	10	5	5	19	0	6	0	4	0	0	0	49
5:15 PM	0	5	0	6	8	0	7	0	2	0	0	0	28
5:30 PM	0	7	3	2	5	0	2	0	5	0	0	0	24
5:45 PM	0	8	6	3	6	0	5	0	6	0	0	0	34
VOLUMES	0	67	37	27	97	0	61	0	30	0	0	0	319
APPROACH %	0%	64%	36%	22%	78%	0%	67%	0%	33%	0%	0%	0%	
APP/DEPART	104	/	130	124	/	127	91	/	62	0	/	0	0
BEGIN PEAK HR		4:15 PM											
VOLUMES	0	37	20	11	60	0	41	0	15	0	0	0	186
APPROACH %	0%	65%	35%	15%	82%	0%	73%	0%	27%	0%	0%	0%	
PEAK HR FACTOR		0.750			0.760			0.875			0.000		0.877
APP/DEPART	57	/	80	73	/	75	56	/	31	0	/	0	0

U-TURNS

	NB	SB	EB	WB	TTL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
03:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	2	0	0	2
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	2	0	0	2

RTOR

	NRR	SRR	ERR	WRR
LANES:	0	X	0	X
7:00 AM	1	0	2	0
7:15 AM	2	0	1	0
7:30 AM	1	0	0	0
7:45 AM	4	0	1	0
8:00 AM	2	0	4	0
8:15 AM	8	0	1	0
8:30 AM	7	0	2	0
8:45 AM	12	0	2	0
9:00 AM	0	0	0	0
9:15 AM	0	0	0	0
9:30 AM	0	0	0	0
9:45 AM	0	0	0	0
VOLUMES	37	0	13	0
PEAK HR VOLUMES	29	0	9	0
03:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	1	0	0	0
4:15 PM	9	0	1	0
4:30 PM	1	0	2	0
4:45 PM	0	0	0	0
5:00 PM	4	0	3	0
5:15 PM	0	0	1	0
5:30 PM	0	0	3	0
5:45 PM	5	0	2	0
VOLUMES	20	0	12	0
PEAK HR VOLUMES	14	0	6	0

Euclid

NORTH SIDE

SR-60 EB Ramps WEST SIDE

EAST SIDE **SR-60 EB Ramps**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Euclid	LOCATION #:	12
WEDNESDAY	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Euclid			SOUTHBOUND Euclid			EASTBOUND SR-60 EB Ramps			WESTBOUND SR-60 EB Ramps			
	LANES:	NL X	NT 2	NR 1	SL 1	ST 2	SR X	EL 1,5	ET 0	ER 0.5	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	1	0	0	8	0	1	0	1	0	0	0	11
	7:15 AM	0	2	4	0	2	0	0	0	1	0	0	0	9
	7:30 AM	0	0	6	0	4	0	0	0	4	0	0	0	14
	7:45 AM	0	3	7	1	7	0	0	0	1	0	0	0	19
	8:00 AM	0	5	4	2	1	0	0	0	4	0	0	0	16
	8:15 AM	0	3	4	1	2	0	1	0	3	0	0	0	14
	8:30 AM	0	3	1	1	9	0	0	0	1	0	0	0	15
	8:45 AM	0	4	3	0	6	0	2	0	5	0	0	0	20
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	21	29	5	39	0	4	0	20	0	0	0	118
	APPROACH %	0%	42%	58%	11%	89%	0%	17%	0%	83%	0%	0%	0%	
	APP/DEPART	50	/	25	44	/	59	24	/	34	0	/	0	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	0	15	12	4	18	0	3	0	13	0	0	0	65
	APPROACH %	0%	56%	44%	18%	82%	0%	19%	0%	81%	0%	0%	0%	
	PEAK HR FACTOR		0.750			0.550			0.571			0.000		0.813
	APP/DEPART	27	/	18	22	/	31	16	/	16	0	/	0	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	3	2	0	7	0	0	0	2	0	0	0	14
	4:15 PM	0	2	3	0	7	0	1	0	3	0	0	0	16
	4:30 PM	0	0	2	0	2	0	1	0	1	0	0	0	6
	4:45 PM	0	0	1	2	3	0	0	0	0	0	0	0	6
	5:00 PM	0	1	1	1	3	0	0	0	2	0	0	0	8
	5:15 PM	0	3	3	0	1	0	0	0	1	0	0	0	8
	5:30 PM	0	1	2	2	7	0	0	0	1	0	0	0	13
	5:45 PM	0	3	2	0	4	0	0	0	1	0	0	0	10
	VOLUMES	0	13	16	5	34	0	2	0	11	0	0	0	81
	APPROACH %	0%	45%	55%	13%	87%	0%	15%	0%	85%	0%	0%	0%	
	APP/DEPART	29	/	15	39	/	45	13	/	21	0	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	5	8	2	19	0	2	0	6	0	0	0	42
	APPROACH %	0%	38%	62%	10%	90%	0%	25%	0%	75%	0%	0%	0%	
	PEAK HR FACTOR		0.650			0.750			0.500			0.000		0.656
	APP/DEPART	13	/	7	21	/	25	8	/	10	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR X	ERR 0	WRR X
0	0	1	0
1	0	1	0
1	0	4	0
1	0	0	0
1	0	1	0
2	0	2	0
0	0	0	0
1	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
7	0	10	0
4	0	4	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
4	0	3	0
2	0	2	0

Euclid

NORTH SIDE

SR-60 EB Ramps WEST SIDE EAST SIDE **SR-60 EB Ramps**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 1/30/19 WEDNESDAY	LOCATION:	Chino	PROJECT #:	SC2074
	NORTH & SOUTH:	Euclid	LOCATION #:	12
	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N

◄ W E ►

S ▼

		NORTHBOUND Euclid			SOUTHBOUND Euclid			EASTBOUND SR-60 EB Ramps			WESTBOUND SR-60 EB Ramps				U-TURNS					RTOR			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
	LANES:	X	2	1	1	2	X	1,5	0	0.5	X	X	X							0	X	0	X
AM	7:00 AM	0	4	6	1	15	0	3	0	6	0	0	0	35	0	0	0	0	0	0	0	4	0
	7:15 AM	0	4	9	1	13	0	3	0	8	0	0	0	38	0	0	0	0	0	3	0	3	0
	7:30 AM	0	10	13	2	17	0	4	1	5	0	0	0	52	0	0	0	0	0	8	0	1	0
	7:45 AM	0	4	9	2	21	0	4	0	2	0	0	0	42	0	0	0	0	0	2	0	0	0
	8:00 AM	0	8	12	1	21	0	3	0	7	0	0	0	52	0	0	0	0	0	5	0	2	0
	8:15 AM	0	6	16	2	23	0	6	0	4	0	0	0	57	0	0	0	0	0	9	0	1	0
	8:30 AM	0	8	16	1	30	0	2	0	4	0	0	0	61	0	0	0	0	0	6	0	0	0
	8:45 AM	0	5	16	3	24	0	4	0	5	0	0	0	57	0	0	0	0	0	7	0	3	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	49	97	13	164	0	29	1	41	0	0	0	394	0	0	0	0	0	40	0	14	0
	APPROACH %	0%	34%	66%	7%	93%	0%	41%	1%	58%	0%	0%	0%										
	APP/DEPART	146	/	78	177	/	205	71	/	111	0	/	0	0									
	BEGIN PEAK HR		8:00 AM																				
	VOLUMES	0	27	60	7	98	0	15	0	20	0	0	0	227						27	0	6	0
	APPROACH %	0%	31%	69%	7%	93%	0%	43%	0%	57%	0%	0%	0%										
	PEAK HR FACTOR		0.906			0.847			0.875			0.000		0.930									
	APP/DEPART	87	/	42	105	/	118	35	/	67	0	/	0	0									
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	8	23	1	15	0	3	0	4	0	0	0	54	0	0	0	0	0	11	0	1	0
	4:15 PM	0	8	17	0	15	0	2	0	7	0	0	0	49	0	0	0	0	0	9	0	2	0
	4:30 PM	0	8	21	3	9	0	4	0	7	0	0	0	52	0	0	0	0	0	5	0	0	0
	4:45 PM	0	4	8	0	11	0	3	1	2	0	0	0	29	0	0	0	0	0	3	0	0	0
	5:00 PM	0	1	17	0	12	0	2	0	5	0	0	0	37	0	0	0	0	0	9	0	2	0
	5:15 PM	0	8	16	0	10	0	2	0	6	0	0	0	42	0	0	0	0	0	6	0	2	0
	5:30 PM	0	3	11	0	3	0	3	0	1	0	0	0	21	0	0	0	0	0	1	0	1	0
	5:45 PM	0	2	14	0	9	0	1	0	3	0	0	0	29	0	0	0	0	0	5	0	2	0
	VOLUMES	0	42	127	4	84	0	20	1	35	0	0	0	313	0	0	0	0	0	49	0	10	0
	APPROACH %	0%	25%	75%	5%	95%	0%	36%	2%	63%	0%	0%	0%										
	APP/DEPART	169	/	62	88	/	119	56	/	132	0	/	0	0									
	BEGIN PEAK HR		4:00 PM																				
	VOLUMES	0	28	69	4	50	0	12	1	20	0	0	0	184						28	0	3	0
	APPROACH %	0%	29%	71%	7%	93%	0%	36%	3%	61%	0%	0%	0%										
	PEAK HR FACTOR		0.782			0.844			0.750			0.000		0.852									
	APP/DEPART	97	/	40	54	/	70	33	/	74	0	/	0	0									

Euclid

NORTH SIDE

SR-60 EB Ramps WEST SIDE

EAST SIDE **SR-60 EB Ramps**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Jan 30, 19

LOCATION: Chino
NORTH & SOUTH: Euclid
EAST & WEST: Walnut

PROJECT #: SC2074
LOCATION #: 13
CONTROL: SIGNAL

NOTES:

AM PM MD OTHER OTHER

▲ N
◄ W E ►
S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Walnut)			WESTBOUND (Walnut)			
	LANES:	NL 1	NT 3	NR 0	SL 2	ST 3	SR 1	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	19	205	10	23	204	13	20	38	17	15	97	48	709
	7:15 AM	43	218	12	30	189	13	32	57	26	14	95	52	781
	7:30 AM	29	216	9	35	170	8	33	121	32	20	80	59	812
	7:45 AM	30	262	10	34	234	19	22	64	24	15	65	44	823
	8:00 AM	15	203	10	46	227	15	23	42	21	17	59	45	723
	8:15 AM	11	200	17	61	226	12	25	54	35	25	56	34	756
	8:30 AM	22	209	12	36	197	16	29	26	16	16	66	41	686
	8:45 AM	22	238	9	37	208	18	19	33	17	14	43	37	695
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	191	1,751	89	302	1,655	114	203	435	188	136	561	360	5,985
	APPROACH %	9%	86%	4%	15%	80%	6%	25%	53%	23%	13%	53%	34%	
	APP/DEPART	2,031	/	2,446	2,071	/	1,988	826	/	694	1,057	/	857	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	117	899	41	145	820	55	110	284	103	66	299	200	3,139
	APPROACH %	11%	85%	4%	14%	80%	5%	22%	57%	21%	12%	53%	35%	
	PEAK HR FACTOR		0.875			0.885			0.668			0.877		0.954
	APP/DEPART	1,057	/	1,263	1,020	/	994	497	/	416	565	/	466	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	38	265	9	54	216	24	13	81	23	12	54	24	813
	4:15 PM	30	210	13	67	209	19	22	73	35	12	58	24	772
	4:30 PM	29	211	22	51	218	42	20	93	30	11	68	32	827
	4:45 PM	38	228	11	70	228	46	18	87	29	10	105	28	898
	5:00 PM	51	245	20	69	254	34	18	87	35	8	87	34	942
	5:15 PM	42	236	18	50	196	31	27	93	33	35	82	33	876
	5:30 PM	45	209	20	58	195	27	38	82	31	11	75	38	829
	5:45 PM	37	205	22	74	214	22	23	100	30	21	68	32	848
	VOLUMES	310	1,809	135	493	1,730	245	179	696	246	120	597	245	6,805
	APPROACH %	14%	80%	6%	20%	70%	10%	16%	62%	22%	12%	62%	25%	
	APP/DEPART	2,254	/	2,364	2,468	/	2,107	1,121	/	1,190	962	/	1,144	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	176	918	69	247	873	138	101	349	128	64	349	133	3,545
	APPROACH %	15%	79%	6%	20%	69%	11%	17%	60%	22%	12%	64%	24%	
	PEAK HR FACTOR		0.920			0.881			0.944			0.910		0.941
	APP/DEPART	1,163	/	1,206	1,258	/	1,070	578	/	608	546	/	661	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
3	8	0	0	11
2	12	0	0	14
2	11	0	0	13
1	17	0	0	18
0	14	0	0	14
1	28	0	0	29
0	22	0	0	22
0	20	0	0	20
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
9	132	0	0	141
0	0	0	0	0
3	13	0	0	16
0	24	0	0	24
2	14	0	0	16
0	14	0	0	14
3	21	0	0	24
0	13	0	0	13
2	9	3	0	14
1	26	0	0	27
11	134	3	0	148

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
5	3	6	7
5	6	9	12
2	2	5	13
4	9	11	7
6	3	9	6
8	2	11	8
4	6	4	9
1	6	6	13
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
35	37	61	75
17	20	34	38
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
3	7	6	4
6	8	5	6
6	19	5	5
4	18	9	5
7	11	0	5
8	13	10	6
6	9	3	8
10	7	9	10
50	92	47	49
25	51	22	24

Euclid

NORTH SIDE

Walnut WEST SIDE EAST SIDE **Walnut**

SOUTH SIDE

Euclid

ALL PED AND BIKE

	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	1	0	0	0	1
7:30 AM	0	0	0	1	1
7:45 AM	0	0	0	0	0
8:00 AM	0	1	0	1	2
8:15 AM	2	0	1	1	4
8:30 AM	0	0	0	0	0
8:45 AM	1	0	0	0	1
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
TOTAL	4	1	1	3	9
3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	1	0	0	1	2
4:15 PM	1	1	0	2	4
4:30 PM	0	3	1	0	4
4:45 PM	0	0	1	2	3
5:00 PM	1	0	0	3	4
5:15 PM	0	1	0	2	3
5:30 PM	1	0	1	0	2
5:45 PM	0	0	0	2	2
TOTAL	4	5	3	12	24

PEDESTRIAN CROSSINGS

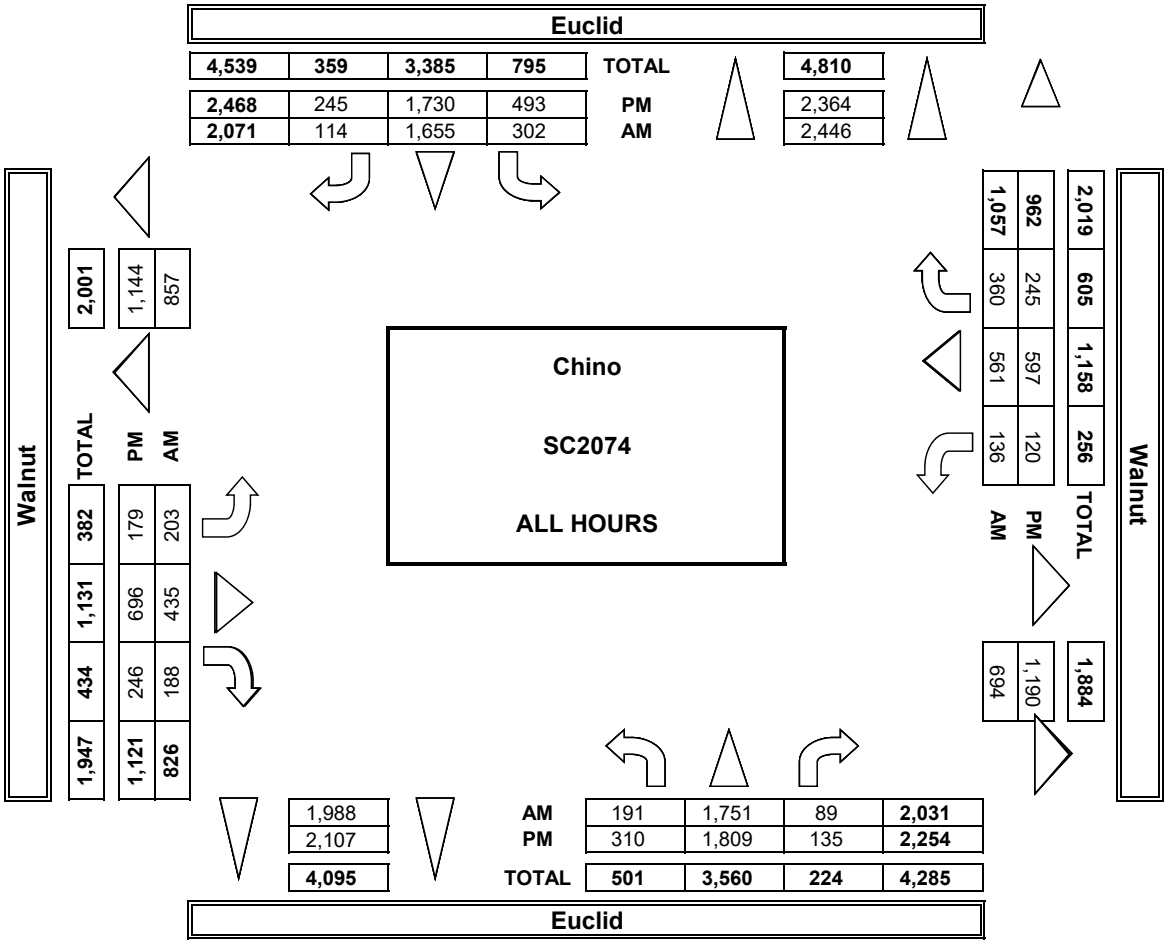
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
0	0	0	0	0
1	0	0	0	1
0	0	0	1	1
0	0	0	0	0
0	1	0	1	2
2	0	1	1	4
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	1	0	2	9
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	2	3
0	2	1	0	3
0	0	1	2	3
1	0	0	2	3
0	1	0	2	3
1	0	0	0	1
0	0	0	2	2
2	1	1	6	19

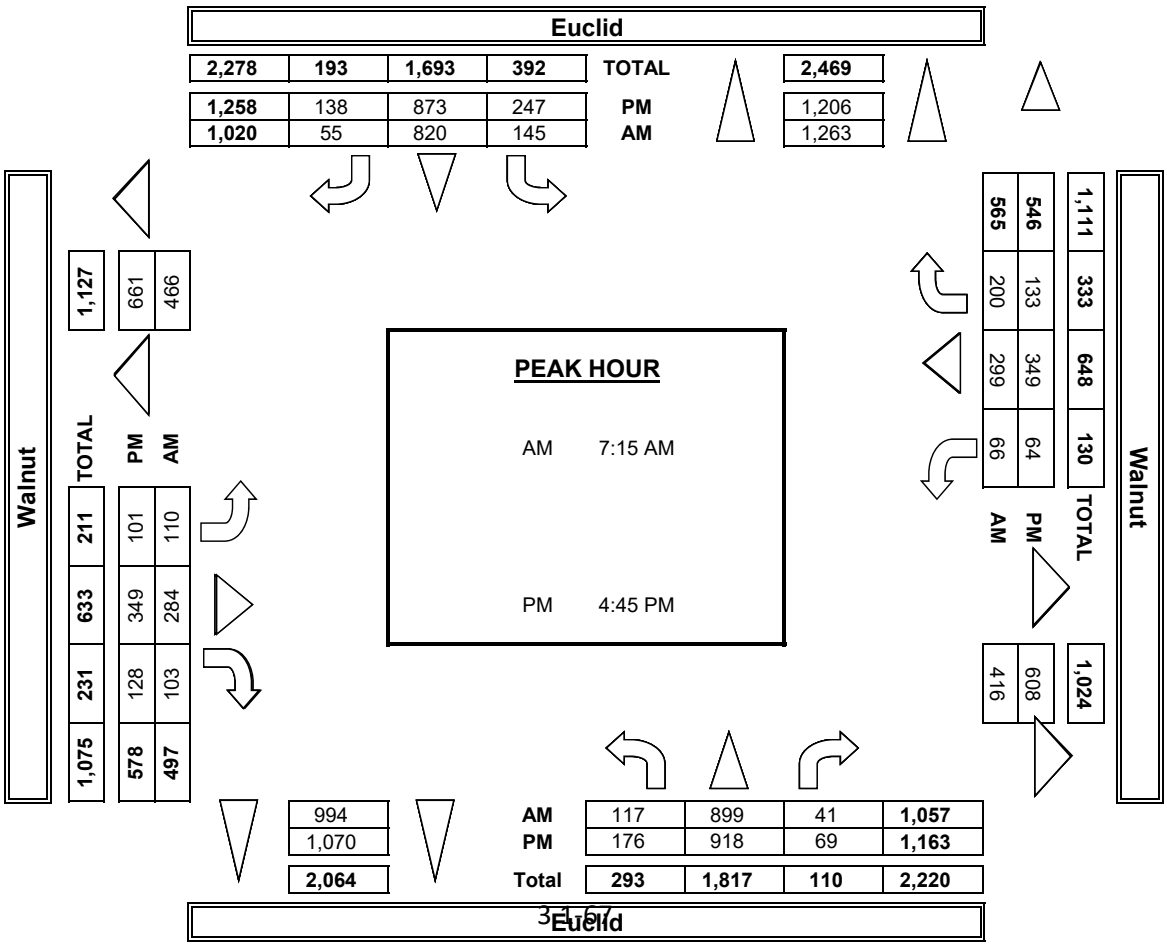
BICYCLE CROSSINGS

ES	WS	SS	NS	TOTAL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	2
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	1	1	5

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Euclid	LOCATION #:	13
WEDNESDAY	EAST & WEST:	Walnut	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Walnut)			WESTBOUND (Walnut)			
	LANES:	NL 1	NT 3	NR 0	SL 2	ST 3	SR 1	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	12	0	3	20	2	1	2	0	2	0	1	43
	7:15 AM	3	11	0	3	22	2	2	3	1	2	2	1	52
	7:30 AM	1	18	0	4	15	0	2	1	0	2	0	1	44
	7:45 AM	0	22	1	1	22	4	2	2	2	3	2	0	61
	8:00 AM	2	27	2	1	15	0	0	2	3	1	2	2	57
	8:15 AM	0	14	1	4	27	1	0	1	2	0	3	1	54
	8:30 AM	2	24	2	3	18	2	2	2	1	3	4	1	64
	8:45 AM	4	37	1	3	27	1	0	4	2	3	3	4	89
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	12	165	7	22	166	12	9	17	11	16	16	11	464
	APPROACH %	7%	90%	4%	11%	83%	6%	24%	46%	30%	37%	37%	26%	
	APP/DEPART	184	/	196	200	/	194	37	/	35	43	/	39	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	8	102	6	7	87	4	2	9	8	7	12	8	264
	APPROACH %	7%	88%	5%	7%	85%	4%	11%	47%	42%	26%	44%	30%	
	PEAK HR FACTOR		0.690			0.797			0.792			0.675		0.742
	APP/DEPART	116	/	116	102	/	102	19	/	22	27	/	24	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	21	0	3	15	1	2	2	1	1	1	2	50
	4:15 PM	2	12	2	2	11	1	0	4	1	1	1	1	38
	4:30 PM	1	14	0	1	16	2	1	2	1	0	2	0	40
	4:45 PM	0	6	0	2	9	1	1	5	3	1	1	0	29
	5:00 PM	0	9	2	2	18	0	1	1	2	0	4	3	42
	5:15 PM	2	10	0	3	9	1	0	5	0	0	1	1	32
	5:30 PM	0	6	0	1	9	1	0	2	4	0	3	1	27
	5:45 PM	2	7	0	2	9	0	1	1	0	1	2	2	27
	VOLUMES	8	85	4	16	96	7	6	22	12	4	15	10	285
	APPROACH %	8%	88%	4%	13%	81%	6%	15%	55%	30%	14%	52%	34%	
	APP/DEPART	97	/	105	119	/	112	40	/	38	29	/	30	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	4	53	2	6	51	5	4	13	6	3	5	3	157
	APPROACH %	7%	90%	3%	9%	80%	8%	17%	57%	26%	27%	45%	27%	
	PEAK HR FACTOR		0.670			0.842			0.639			0.688		0.785
	APP/DEPART	59	/	62	64	/	60	23	/	21	11	/	14	0

U-TURNS

NB	SB	EB	WB	TTL
0	2	0	0	2
1	3	0	0	4
0	1	0	0	1
0	1	0	0	1
0	1	0	0	1
0	1	0	0	1
0	2	0	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	11	0	0	12
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	2	0	0	2
0	0	0	0	0
0	0	0	0	0
0	4	0	0	4

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	1	0	0
0	1	1	0
0	0	0	0
0	2	1	0
1	0	0	0
0	0	1	0
1	2	0	0
0	0	0	2
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
2	6	3	2
2	2	1	2
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	1
0	2	0	0
0	1	2	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
1	3	2	2
1	3	2	1

Euclid

NORTH SIDE

Walnut WEST SIDE EAST SIDE **Walnut**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Euclid	LOCATION #:	13
WEDNESDAY	EAST & WEST:	Walnut	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Walnut)			WESTBOUND (Walnut)			
	LANES:	NL 1	NT 3	NR 0	SL 2	ST 3	SR 1	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	3	0	0	11	0	0	0	0	0	0	0	14
	7:15 AM	0	5	0	0	5	0	0	0	0	0	0	1	11
	7:30 AM	0	6	0	0	6	0	0	0	0	0	0	0	12
	7:45 AM	0	10	0	0	6	0	0	0	0	0	0	0	16
	8:00 AM	0	3	0	0	5	0	0	0	0	1	0	0	9
	8:15 AM	0	7	0	1	5	1	1	0	1	0	0	0	16
	8:30 AM	0	4	0	0	9	0	0	0	1	0	0	0	14
	8:45 AM	0	6	1	0	7	1	1	0	0	0	0	0	16
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	44	1	1	54	2	2	0	2	1	0	1	108
	APPROACH %	0%	98%	2%	2%	95%	4%	50%	0%	50%	50%	0%	50%	
	APP/DEPART	45	/	47	57	/	57	4	/	2	2	/	2	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	20	1	1	26	2	2	0	2	1	0	0	55
	APPROACH %	0%	95%	5%	3%	90%	7%	50%	0%	50%	100%	0%	0%	
	PEAK HR FACTOR		0.525			0.806			0.500			0.250		0.859
	APP/DEPART	21	/	22	29	/	29	4	/	2	1	/	2	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	6	0	1	8	0	0	0	0	0	0	0	15
	4:15 PM	0	6	0	0	8	0	0	0	0	1	0	0	15
	4:30 PM	0	3	0	0	5	0	0	0	0	0	0	0	8
	4:45 PM	0	2	0	0	3	0	0	0	0	0	0	0	5
	5:00 PM	1	2	0	0	4	0	1	0	0	0	0	0	8
	5:15 PM	0	3	0	0	3	0	0	0	0	0	0	0	6
	5:30 PM	0	5	0	0	5	0	0	0	0	0	0	0	10
	5:45 PM	0	5	0	0	4	0	0	0	0	0	0	0	9
	VOLUMES	1	32	0	1	40	0	1	0	0	1	0	0	76
	APPROACH %	3%	97%	0%	2%	98%	0%	100%	0%	0%	100%	0%	0%	
	APP/DEPART	33	/	33	41	/	41	1	/	1	1	/	1	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	17	0	1	24	0	0	0	0	1	0	0	43
	APPROACH %	0%	100%	0%	4%	96%	0%	0%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.708			0.694			0.000			0.250		0.717
	APP/DEPART	17	/	17	25	/	25	0	/	1	1	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Euclid

NORTH SIDE

Walnut WEST SIDE EAST SIDE **Walnut**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Euclid	LOCATION #:	13
WEDNESDAY	EAST & WEST:	Walnut	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND Euclid			SOUTHBOUND Euclid			EASTBOUND Walnut			WESTBOUND Walnut		
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	1	3	0	2	3	1	1	2	0	1	2	0	
AM	7:00 AM	0	19	0	0	23	0	0	0	0	0	0	0	42
	7:15 AM	0	15	0	0	21	0	0	0	1	0	0	0	37
	7:30 AM	0	17	0	0	21	0	0	0	2	0	1	0	41
	7:45 AM	0	19	0	1	20	0	0	0	0	0	0	0	40
	8:00 AM	1	19	0	0	25	0	0	0	0	0	0	0	45
	8:15 AM	0	18	0	0	32	0	0	0	0	0	0	0	50
	8:30 AM	1	19	0	0	29	0	0	0	0	0	1	0	50
	8:45 AM	0	20	0	0	33	0	0	0	0	0	0	0	53
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	2	146	0	1	204	0	0	0	3	0	2	0	358
	APPROACH %	1%	99%	0%	0%	100%	0%	0%	0%	100%	0%	100%	0%	
	APP/DEPART	148	/	146	205	/	207	3	/	1	2	/	4	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	2	76	0	0	119	0	0	0	0	0	1	0	198
	APPROACH %	3%	97%	0%	0%	100%	0%	0%	0%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.975			0.902			0.000			0.250		0.934
	APP/DEPART	78	/	76	119	/	119	0	/	0	1	/	3	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	31	0	0	20	0	0	0	0	0	0	0	51
	4:15 PM	0	24	0	0	20	0	0	0	0	0	0	0	44
	4:30 PM	0	28	0	0	17	0	0	0	1	0	1	0	47
	4:45 PM	0	15	0	1	12	0	0	0	0	0	1	0	29
	5:00 PM	0	21	0	0	17	0	0	0	0	0	0	0	38
	5:15 PM	0	19	0	0	14	0	0	0	0	0	1	1	35
	5:30 PM	3	16	0	0	7	0	0	0	0	0	0	0	26
	5:45 PM	0	14	0	0	11	0	0	1	0	0	0	0	26
	VOLUMES	3	168	0	1	118	0	0	1	1	0	3	1	296
	APPROACH %	2%	98%	0%	1%	99%	0%	0%	50%	50%	0%	75%	25%	
	APP/DEPART	171	/	169	119	/	120	2	/	2	4	/	5	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	98	0	1	69	0	0	0	1	0	2	0	171
	APPROACH %	0%	100%	0%	1%	99%	0%	0%	0%	100%	0%	100%	0%	
	PEAK HR FACTOR		0.790			0.875			0.250			0.500		0.838
	APP/DEPART	98	/	98	70	/	70	1	/	1	2	/	2	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:						0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	1	0
VOLUMES (peak hr)						0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	1	0	0	0	1	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
VOLUMES	1	0	0	0	1	0	0	0	0
VOLUMES (peak hr)						0	0	0	0

Euclid

NORTH SIDE

Walnut WEST SIDE

EAST SIDE **Walnut**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Jan 22, 19

LOCATION: Chino
NORTH & SOUTH: Euclid
EAST & WEST: Riverside

PROJECT #: SC2056
LOCATION #: 11
CONTROL: SIGNAL

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 1	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	11	157	24	22	151	38	29	58	6	33	162	18	709
	7:15 AM	12	165	27	24	172	26	31	83	9	29	126	26	730
	7:30 AM	21	206	42	36	148	21	36	90	13	45	102	20	780
	7:45 AM	14	171	34	38	202	41	29	78	9	39	136	30	821
	8:00 AM	10	151	34	44	155	35	31	80	13	44	112	24	733
	8:15 AM	11	173	31	48	184	42	40	50	10	45	116	23	773
	8:30 AM	19	167	38	38	186	31	36	69	9	30	103	23	749
	8:45 AM	14	187	31	33	152	40	37	75	8	42	120	23	762
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	112	1,377	261	283	1,350	274	269	583	77	307	977	187	6,057
	APPROACH %	6%	79%	15%	15%	71%	14%	29%	63%	8%	21%	66%	13%	
	APP/DEPART	1,750	/	1,874	1,907	/	1,735	929	/	1,080	1,471	/	1,368	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	56	701	141	166	689	139	136	298	45	173	466	97	3,107
	APPROACH %	6%	78%	16%	17%	69%	14%	28%	62%	9%	24%	63%	13%	
	PEAK HR FACTOR		0.835			0.884			0.862			0.898		0.946
	APP/DEPART	898	/	966	994	/	907	479	/	571	736	/	663	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	18	201	59	26	170	41	24	89	13	30	71	16	758
	4:15 PM	16	186	44	41	154	31	31	94	14	37	83	16	747
	4:30 PM	16	178	51	37	181	42	38	104	21	22	97	11	798
	4:45 PM	18	208	44	38	163	40	29	102	13	34	95	12	796
	5:00 PM	15	197	48	23	171	55	32	112	15	41	98	10	817
	5:15 PM	16	221	62	29	177	44	34	110	15	37	111	19	875
	5:30 PM	12	195	49	35	210	42	36	105	19	43	84	17	847
	5:45 PM	18	199	65	34	156	36	31	102	17	52	93	11	814
	VOLUMES	129	1,585	422	263	1,382	331	255	818	127	296	732	112	6,452
	APPROACH %	6%	74%	20%	13%	70%	17%	21%	68%	11%	26%	64%	10%	
	APP/DEPART	2,136	/	2,009	1,976	/	1,808	1,200	/	1,442	1,140	/	1,193	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	61	812	224	121	714	177	133	429	66	173	386	57	3,353
	APPROACH %	6%	74%	20%	12%	71%	17%	21%	68%	11%	28%	63%	9%	
	PEAK HR FACTOR		0.917			0.882			0.981			0.922		0.958
	APP/DEPART	1,097	/	1,023	1,012	/	955	628	/	753	616	/	622	0

U-TURNS					
	NB 0	SB 0	EB 0	WB 0	TTL
	0	3	0	0	3
	1	3	0	0	4
	0	6	0	0	6
	0	14	0	0	14
	0	10	0	0	10
	0	4	2	0	6
	0	3	2	0	5
	0	4	2	0	6
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	1	47	6	0	54
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	1	9	2	0	12
	0	8	0	0	8
	0	10	2	0	12
	0	13	0	0	13
	1	5	0	0	6
	1	3	0	0	4
	0	5	0	0	5
	0	8	0	0	8
	3	61	4	0	68

RTOR			
NRR 0	SRR 0	ERR 0	WRR 0
16	17	3	5
11	14	3	10
7	7	5	5
13	23	2	9
10	13	5	5
8	13	3	9
13	13	2	2
15	19	3	6
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
93	119	26	51
38	56	15	28
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
9	16	5	3
16	20	5	6
12	15	9	3
13	21	5	5
8	29	8	3
12	22	4	6
10	20	6	4
22	16	6	2
102	159	48	32
52	87	24	15

Euclid

NORTH SIDE

Riverside WEST SIDE EAST SIDE **Riverside**

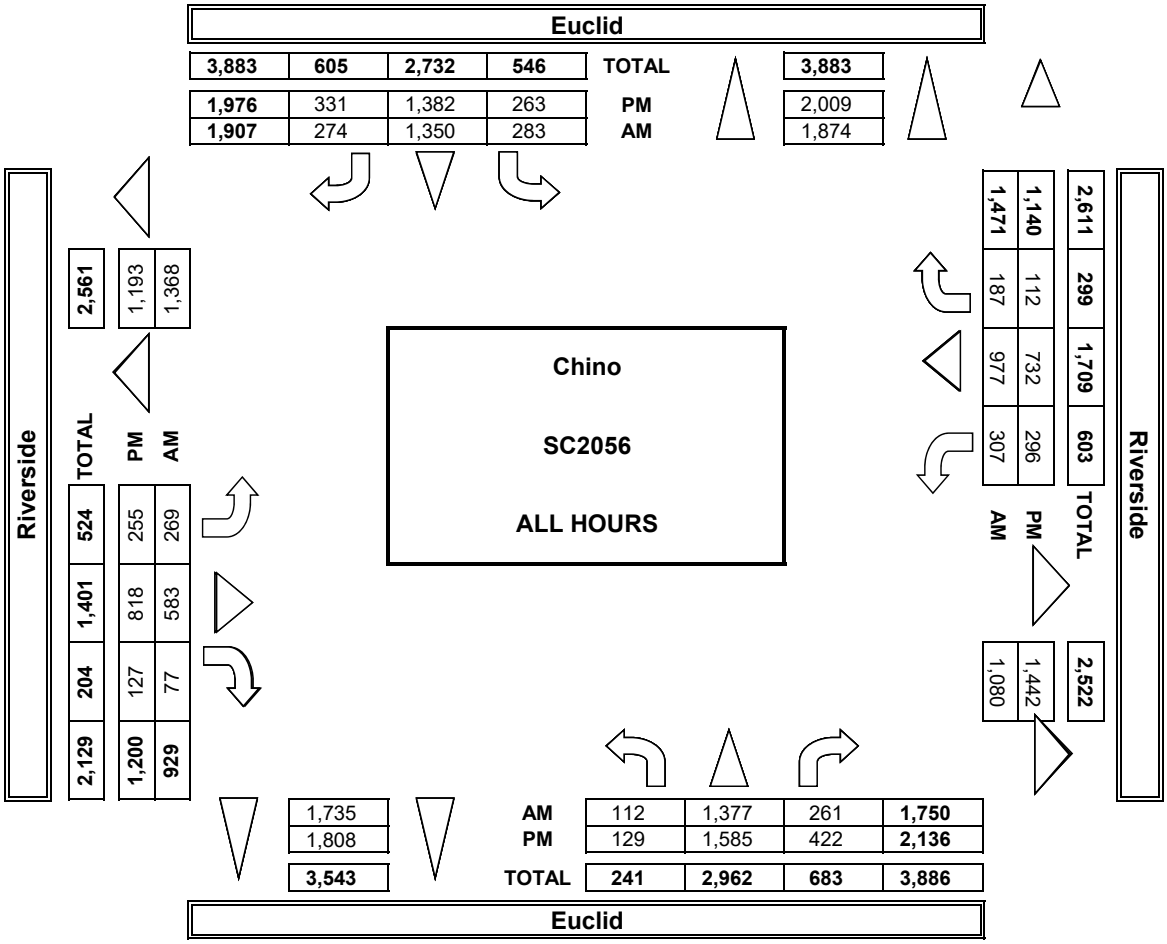
SOUTH SIDE

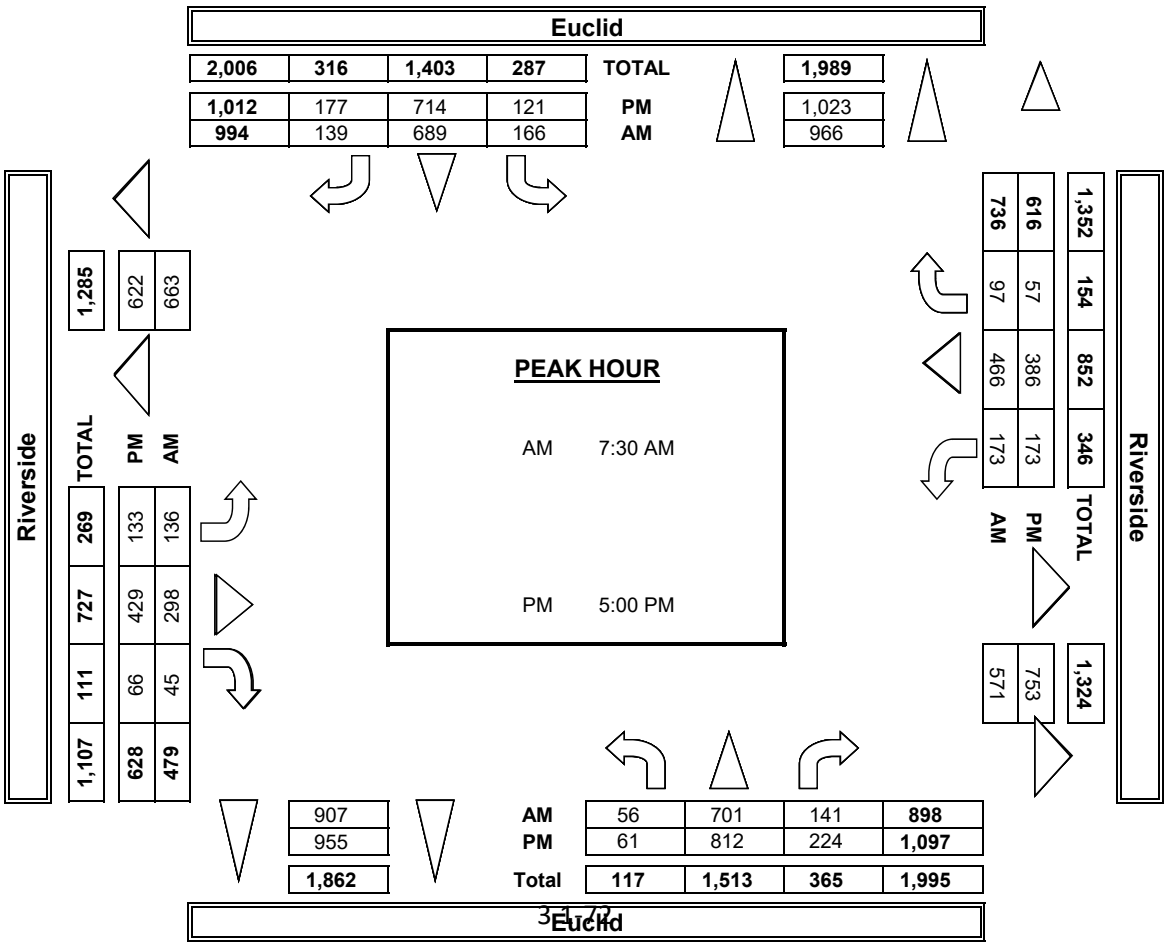
Euclid

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	1	2	1	4	0	0	2	1	3	0	1	0	0	1
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	2	2	2	6	0	1	2	2	5	0	1	0	0	1
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	2	2	0	0	0	1	1	0	0	0	1	1
	4:15 PM	2	0	1	0	3	0	0	0	0	0	2	0	1	0	3
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	5:00 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	5:15 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	2	2	1	3	8	0	0	0	2	2	2	2	1	1	6

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Euclid	LOCATION #:	11
TUESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

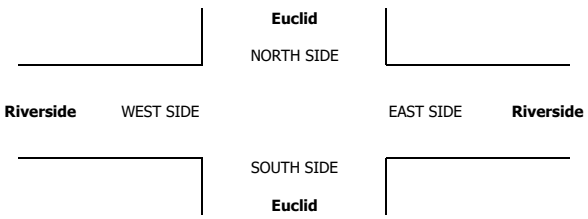
	NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 1	ER 0	WL 1	WT 2	WR 0	TOTAL
7:00 AM	1	11	1	0	14	3	1	3	0	0	3	0	37
7:15 AM	2	15	0	2	22	0	6	2	1	0	6	0	56
7:30 AM	0	10	1	7	9	1	2	5	1	3	4	0	43
7:45 AM	0	15	0	4	21	4	2	3	0	2	6	2	59
8:00 AM	1	10	0	1	16	1	0	1	2	1	6	0	39
8:15 AM	1	19	0	4	12	3	1	2	3	2	5	1	53
8:30 AM	4	14	5	3	17	0	2	5	0	3	5	1	59
8:45 AM	0	24	4	0	13	2	5	5	0	6	5	2	66
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	9	118	11	21	124	14	19	26	7	17	40	6	412
APPROACH %	7%	86%	8%	13%	78%	9%	37%	50%	13%	27%	63%	10%	
APP/DEPART	138	/	149	159	/	148	52	/	52	63	/	63	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	6	67	9	5	58	6	8	13	5	12	21	4	217
APPROACH %	7%	82%	11%	7%	81%	8%	31%	50%	19%	32%	57%	11%	
PEAK HR FACTOR		0.732			0.900			0.650			0.712		0.822
APP/DEPART	82	/	82	72	/	75	26	/	27	37	/	33	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	2	16	1	1	18	3	4	3	1	0	3	0	52
4:15 PM	0	11	0	1	9	1	2	0	1	1	3	1	30
4:30 PM	1	18	1	0	7	0	3	7	2	2	1	0	42
4:45 PM	0	12	1	1	10	3	1	2	2	2	1	0	35
5:00 PM	0	8	3	2	9	0	0	4	1	1	2	0	30
5:15 PM	2	7	1	3	6	0	2	3	3	0	0	0	27
5:30 PM	1	11	1	3	8	1	1	1	1	0	2	1	31
5:45 PM	2	4	1	0	6	0	0	0	1	0	2	0	16
VOLUMES	8	87	9	11	73	8	13	20	12	6	14	2	263
APPROACH %	8%	84%	9%	12%	79%	9%	29%	44%	27%	27%	64%	9%	
APP/DEPART	104	/	102	92	/	91	45	/	40	22	/	30	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	3	57	3	3	44	7	10	12	6	5	8	1	159
APPROACH %	5%	90%	5%	6%	81%	13%	36%	43%	21%	36%	57%	7%	
PEAK HR FACTOR		0.788			0.614			0.583			0.700		0.764
APP/DEPART	63	/	68	54	/	55	28	/	18	14	/	18	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	3	0	0	3
0	1	0	0	1
0	2	0	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	6	0	0	6
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	2	0	0
0	0	0	0
1	0	1	0
0	2	0	2
0	0	0	0
0	2	1	1
2	0	0	0
2	2	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
5	8	2	3
4	4	1	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	1	0
1	2	1	0
1	0	0	0
0	0	1	0
1	0	0	0
0	0	1	0
3	3	4	0
1	3	2	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Euclid	LOCATION #:	11
TUESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 1	ER 0	WL 1	WT 2	WR 0	TOTAL
7:00 AM	0	3	0	1	1	0	0	0	0	0	1	0	6
7:15 AM	0	4	0	1	4	0	0	0	0	1	1	1	12
7:30 AM	4	6	0	1	5	0	1	0	1	1	1	0	20
7:45 AM	0	3	0	1	3	0	0	1	0	1	2	0	11
8:00 AM	0	5	0	0	2	0	1	2	0	0	2	1	13
8:15 AM	1	4	0	1	8	0	0	0	1	0	1	2	18
8:30 AM	0	10	2	0	10	0	1	0	0	0	0	1	24
8:45 AM	0	13	1	0	8	0	1	0	0	0	0	0	23
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	5	48	3	5	41	0	4	3	2	3	8	5	127
APPROACH %	9%	86%	5%	11%	89%	0%	44%	33%	22%	19%	50%	31%	
APP/DEPART	56	/	58	46	/	46	9	/	10	16	/	13	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	1	32	3	1	28	0	3	2	1	0	3	4	78
APPROACH %	3%	89%	8%	3%	97%	0%	50%	33%	17%	0%	43%	57%	
PEAK HR FACTOR		0.643			0.725			0.500			0.583		0.813
APP/DEPART	36	/	39	29	/	29	6	/	6	7	/	4	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	8	0	1	0	0	0	0	0	0	1	1	11
4:15 PM	0	1	0	0	3	0	1	0	0	0	0	0	5
4:30 PM	0	2	0	0	4	0	0	0	0	0	2	0	8
4:45 PM	0	5	0	0	3	0	0	0	0	0	1	0	9
5:00 PM	0	2	0	1	4	0	1	1	0	0	0	0	9
5:15 PM	0	3	0	2	3	0	0	0	0	0	0	0	8
5:30 PM	0	1	0	0	3	0	0	0	0	0	1	1	6
5:45 PM	0	5	0	0	2	0	1	0	0	0	0	0	8
VOLUMES	0	27	0	4	22	0	3	1	0	0	5	2	64
APPROACH %	0%	100%	0%	15%	85%	0%	75%	25%	0%	0%	71%	29%	
APP/DEPART	27	/	32	26	/	22	4	/	5	7	/	5	0
BEGIN PEAK HR		4:30 PM											
VOLUMES	0	12	0	3	14	0	1	1	0	0	3	0	34
APPROACH %	0%	100%	0%	18%	82%	0%	50%	50%	0%	0%	100%	0%	
PEAK HR FACTOR		0.600			0.850			0.250			0.375		0.944
APP/DEPART	12	/	13	17	/	14	2	/	4	3	/	3	0

U-TURNS

	NB	SB	EB	WB	TTL
AM 7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	1	0	0	1
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
AM TOTAL	0	1	0	0	1
PM 03:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
PM TOTAL	0	0	0	0	0

RTOR

	NRR 0	SRR 0	ERR 0	WRR 0
AM 7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	1
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
9:00 AM	0	0	0	0
9:15 AM	0	0	0	0
9:30 AM	0	0	0	0
9:45 AM	0	0	0	0
AM TOTAL	0	0	0	1
AM BEGIN PEAK HR	0	0	0	1
PM 03:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
PM TOTAL	0	0	0	0
PM BEGIN PEAK HR	0	0	0	0

Euclid

NORTH SIDE

Riverside WEST SIDE EAST SIDE **Riverside**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Euclid	LOCATION #:	11
TUESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

	NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 1	ER 0	WL 1	WT 2	WR 0	TOTAL
7:00 AM	1	14	0	0	17	0	1	0	1	1	0	1	36
7:15 AM	1	14	0	1	16	0	0	0	0	1	0	2	35
7:30 AM	0	11	1	2	16	1	0	1	0	0	0	2	34
7:45 AM	0	21	0	1	23	0	0	0	0	0	0	0	45
8:00 AM	1	13	2	1	20	1	0	0	0	2	0	2	42
8:15 AM	0	22	0	1	15	3	3	1	0	1	0	0	46
8:30 AM	1	13	1	0	29	1	0	1	0	1	3	2	52
8:45 AM	1	23	0	0	33	0	2	0	0	0	1	2	62
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	5	131	4	6	169	6	6	3	1	6	4	11	352
APPROACH %	4%	94%	3%	3%	93%	3%	60%	30%	10%	29%	19%	52%	
APP/DEPART	140	/	149	181	/	176	10	/	12	21	/	15	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	3	71	3	2	97	5	5	2	0	4	4	6	202
APPROACH %	4%	92%	4%	2%	93%	5%	71%	29%	0%	29%	29%	43%	
PEAK HR FACTOR		0.802			0.788			0.438			0.583		0.815
APP/DEPART	77	/	82	104	/	101	7	/	7	14	/	12	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	13	2	2	18	0	0	1	1	0	0	0	37
4:15 PM	0	14	0	2	18	0	1	1	1	1	0	0	38
4:30 PM	0	17	2	0	14	1	0	0	0	0	0	1	35
4:45 PM	0	10	0	2	16	0	1	1	0	0	0	0	30
5:00 PM	0	20	0	0	17	1	1	0	0	0	0	1	40
5:15 PM	0	9	0	0	5	1	1	2	0	0	1	0	19
5:30 PM	0	20	0	0	12	1	0	0	0	0	0	0	33
5:45 PM	0	15	0	0	12	0	0	0	0	0	0	0	27
VOLUMES	0	118	4	6	112	4	4	5	2	1	1	2	259
APPROACH %	0%	97%	3%	5%	92%	3%	36%	45%	18%	25%	25%	50%	
APP/DEPART	122	/	124	122	/	115	11	/	15	4	/	5	0
BEGIN PEAK HR		4:15 PM											
VOLUMES	0	61	2	4	65	2	3	2	1	1	0	2	143
APPROACH %	0%	97%	3%	6%	92%	3%	50%	33%	17%	33%	0%	67%	
PEAK HR FACTOR		0.788			0.888			0.500			0.750		0.894
APP/DEPART	63	/	66	71	/	67	6	/	8	3	/	2	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	1	0
0	0	0	0
0	1	0	1
0	0	0	0
0	0	0	0
0	1	0	0
0	1	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	3	1	2

NRR	SRR	ERR	WRR
0	2	0	1

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1

NRR	SRR	ERR	WRR
0	0	0	1

Euclid

NORTH SIDE

Riverside WEST SIDE EAST SIDE **Riverside**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
Thu, Jan 24, 19	NORTH & SOUTH:	Euclid	LOCATION #:	12
	EAST & WEST:	Chino	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Chino)			WESTBOUND (Chino)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 1	ER 1	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	8	165	25	4	188	7	22	31	5	17	34	7	513
	7:15 AM	11	178	25	7	166	10	31	42	8	15	30	5	528
	7:30 AM	20	192	27	11	191	23	23	48	5	21	47	2	610
	7:45 AM	6	166	27	14	211	24	21	43	14	16	30	10	582
	8:00 AM	6	199	33	12	201	26	17	24	6	10	30	11	575
	8:15 AM	12	174	16	7	189	21	17	28	8	10	33	5	520
	8:30 AM	10	208	26	7	168	15	26	27	8	14	20	9	538
	8:45 AM	4	197	30	7	173	6	15	22	9	8	16	4	491
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	77	1,479	209	69	1,487	132	172	265	63	111	240	53	4,357
	APPROACH %	4%	84%	12%	4%	88%	8%	34%	53%	13%	27%	59%	13%	
	APP/DEPART	1,765	/	1,717	1,688	/	1,663	500	/	530	404	/	447	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	43	735	112	44	769	83	92	157	33	62	137	28	2,295
	APPROACH %	5%	83%	13%	5%	86%	9%	33%	56%	12%	27%	60%	12%	
	PEAK HR FACTOR		0.931			0.900			0.870			0.811		0.941
	APP/DEPART	890	/	863	896	/	864	282	/	305	227	/	263	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	12	263	48	7	170	22	14	47	14	16	25	3	641
	4:15 PM	17	252	55	4	176	24	12	43	12	22	20	6	643
	4:30 PM	7	218	33	6	186	15	23	41	11	12	16	2	570
	4:45 PM	13	253	59	7	196	12	31	78	9	15	22	2	697
	5:00 PM	7	246	44	4	203	15	15	55	14	15	29	1	648
	5:15 PM	8	268	60	5	208	13	23	80	8	26	34	3	736
	5:30 PM	4	248	46	6	208	24	17	51	13	18	19	3	657
	5:45 PM	9	243	37	3	237	16	21	38	15	24	24	3	670
	VOLUMES	77	1,991	382	42	1,584	141	156	433	96	148	189	23	5,262
	APPROACH %	3%	81%	16%	2%	90%	8%	23%	63%	14%	41%	53%	6%	
	APP/DEPART	2,450	/	2,178	1,767	/	1,830	685	/	849	360	/	405	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	32	1,015	209	22	815	64	86	264	44	74	104	9	2,738
	APPROACH %	3%	81%	17%	2%	90%	7%	22%	67%	11%	40%	56%	5%	
	PEAK HR FACTOR		0.935			0.946			0.835			0.742		0.930
	APP/DEPART	1,256	/	1,112	901	/	934	394	/	493	187	/	199	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
0	2	0	0	2
0	0	0	0	0
0	3	0	0	3
0	2	0	0	2
0	3	0	0	3
1	0	0	0	1
0	1	0	0	1
1	2	0	0	3
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
2	13	0	0	15
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	3	0	0	3
1	2	0	0	3
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	2	0	0	2
0	0	0	0	0
2	8	0	0	10

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
15	1	2	1
5	3	3	2
3	11	2	1
5	11	8	5
10	4	2	3
6	9	3	0
5	4	3	3
7	1	5	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
56	44	28	16
23	29	15	11
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
13	10	4	0
16	3	4	0
6	6	11	2
19	2	3	1
8	10	5	1
19	4	5	1
20	15	8	1
9	4	8	0
110	54	48	6
66	31	21	4

Euclid

NORTH SIDE

Chino WEST SIDE — EAST SIDE **Chino**

SOUTH SIDE

Euclid

ALL PED AND BIKE

	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	0	1	0	0	1
7:15 AM	0	0	1	0	1
7:30 AM	0	1	0	1	2
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	1	0	0	1
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
TOTAL	0	3	1	1	5
3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	1	1	0	1	3
4:15 PM	0	0	0	0	0
4:30 PM	1	0	0	0	1
4:45 PM	1	0	0	0	1
5:00 PM	0	1	0	0	1
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	3	2	0	1	6

PEDESTRIAN CROSSINGS

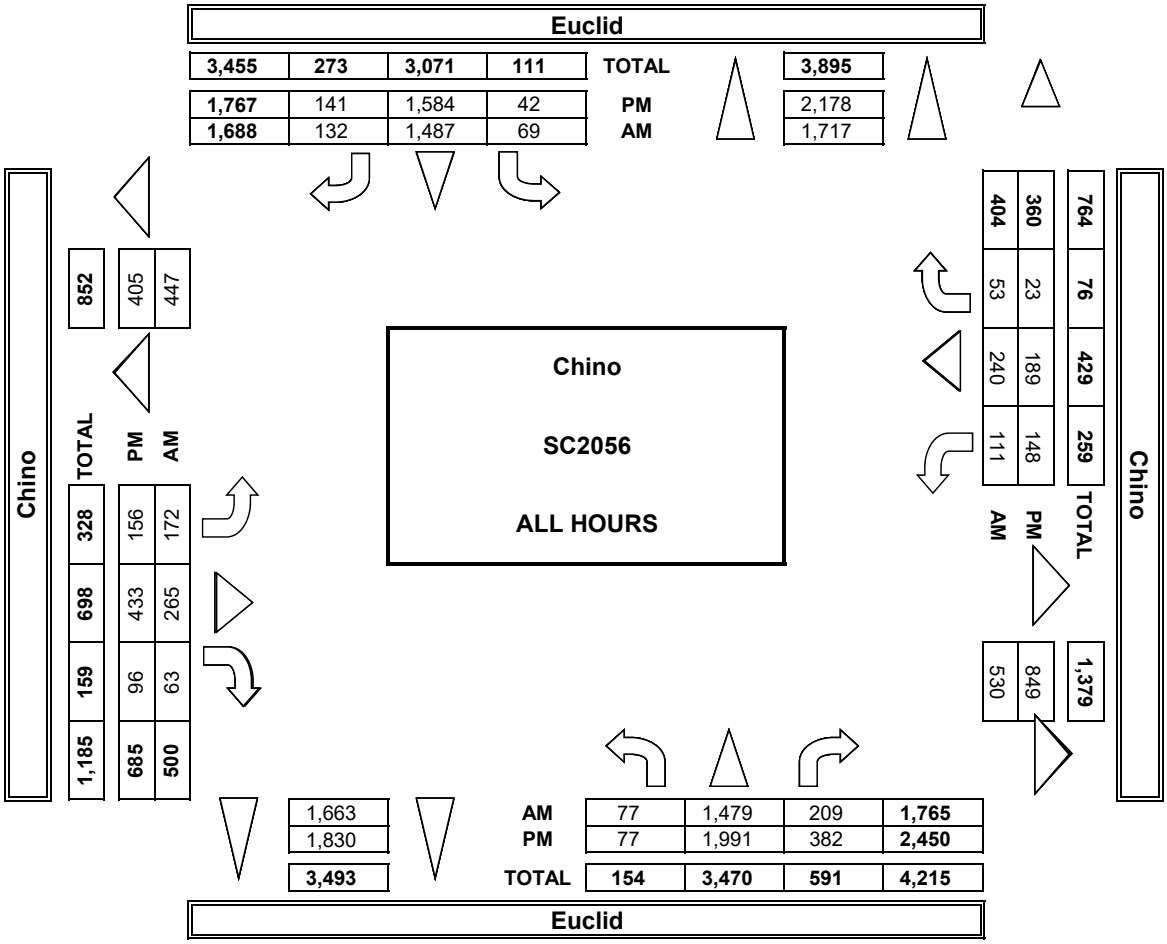
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1

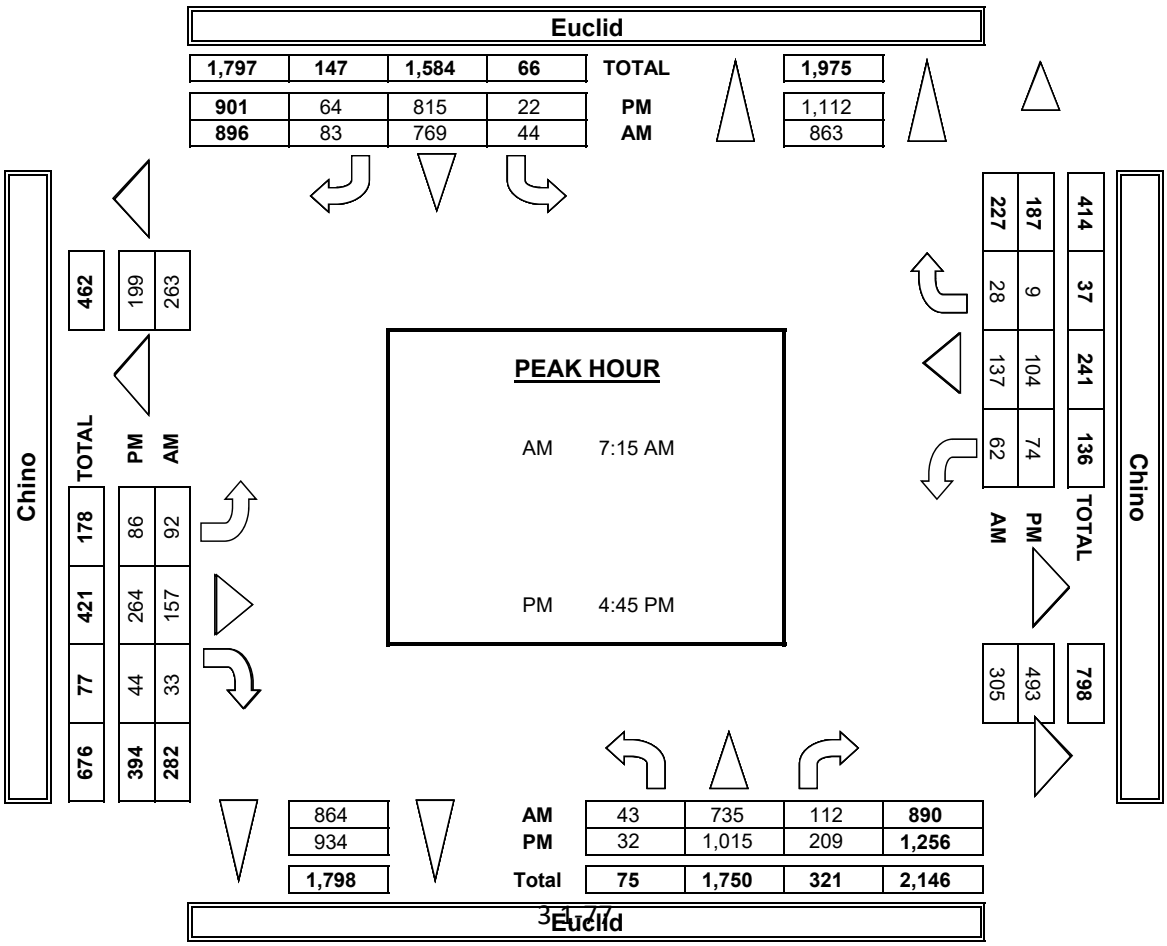
BICYCLE CROSSINGS

ES	WS	SS	NS	TOTAL
0	1	0	0	1
0	0	0	0	0
0	1	0	1	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	3	0	1	4
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	1	2
0	0	0	0	0
1	0	0	0	1
1	0	0	0	1
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
3	1	0	1	5

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/24/19	NORTH & SOUTH:	Euclid	LOCATION #:	12
THURSDAY	EAST & WEST:	Chino	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

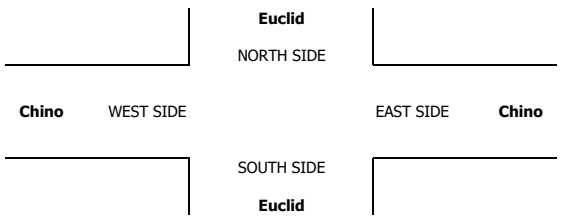
	NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Chino)			WESTBOUND (Chino)			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 1	ER 1	WL 0	WT 1	WR 0	TOTAL
7:00 AM	1	11	0	1	31	1	4	0	1	1	0	2	53
7:15 AM	1	11	1	3	18	0	2	3	1	0	0	0	40
7:30 AM	2	13	1	1	14	1	4	3	0	2	2	1	44
7:45 AM	1	17	3	0	24	3	0	1	0	1	1	1	52
8:00 AM	1	22	0	1	25	2	1	4	0	2	1	1	60
8:15 AM	0	20	0	2	21	2	1	1	1	2	3	0	53
8:30 AM	1	35	2	1	14	0	1	2	0	1	2	4	63
8:45 AM	0	44	3	1	11	2	4	3	2	1	0	0	71
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	7	173	10	10	158	11	17	17	5	10	9	9	436
APPROACH %	4%	91%	5%	6%	88%	6%	44%	44%	13%	36%	32%	32%	
APP/DEPART	190	/	199	179	/	173	39	/	37	28	/	27	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	2	121	5	5	71	6	7	10	3	6	6	5	247
APPROACH %	2%	95%	4%	6%	87%	7%	35%	50%	15%	35%	35%	29%	
PEAK HR FACTOR		0.681			0.732			0.556			0.607		0.870
APP/DEPART	128	/	133	82	/	80	20	/	20	17	/	14	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	18	7	0	12	0	0	2	1	1	1	0	42
4:15 PM	1	12	3	0	13	0	0	2	1	0	1	0	33
4:30 PM	0	13	2	0	14	1	0	3	0	0	1	0	34
4:45 PM	0	11	6	0	16	1	1	3	1	1	1	0	41
5:00 PM	0	9	3	1	7	1	0	1	1	0	0	0	23
5:15 PM	1	12	3	0	9	2	0	3	0	1	0	0	31
5:30 PM	0	10	1	0	10	0	0	3	1	0	0	0	25
5:45 PM	0	11	0	1	7	0	0	5	0	1	1	0	26
VOLUMES	2	96	25	2	88	5	1	22	5	4	5	0	255
APPROACH %	2%	78%	20%	2%	93%	5%	4%	79%	18%	44%	56%	0%	
APP/DEPART	123	/	97	95	/	97	28	/	49	9	/	12	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	1	54	18	0	55	2	1	10	3	2	4	0	150
APPROACH %	1%	74%	25%	0%	96%	4%	7%	71%	21%	33%	67%	0%	
PEAK HR FACTOR		0.730			0.838			0.700			0.750		0.893
APP/DEPART	73	/	55	57	/	60	14	/	28	6	/	7	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
1	2	0	0
0	1	0	0
0	0	1	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	3	2	0
0	1	2	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
1	0	0	0
1	1	0	0
2	0	0	0
1	0	0	0
2	2	0	0
0	0	1	0
0	0	0	0
8	3	1	0
5	1	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/24/19	NORTH & SOUTH:	Euclid	LOCATION #:	12
THURSDAY	EAST & WEST:	Chino	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Chino)			WESTBOUND (Chino)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 1	ER 1	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	5	1	0	3	0	1	0	0	3	0	0	13
	7:15 AM	1	2	0	0	2	0	0	0	0	2	0	1	8
	7:30 AM	0	5	0	1	5	0	0	0	0	0	0	0	11
	7:45 AM	0	2	1	0	5	1	1	0	0	0	0	2	12
	8:00 AM	0	5	1	1	2	0	0	0	0	0	3	0	12
	8:15 AM	0	3	1	1	5	0	0	1	0	1	2	0	14
	8:30 AM	0	6	1	0	4	0	0	0	0	1	0	2	14
	8:45 AM	0	11	1	2	5	0	0	0	0	0	0	2	21
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	39	6	5	31	1	2	1	0	7	5	7	105
	APPROACH %	2%	85%	13%	14%	84%	3%	67%	33%	0%	37%	26%	37%	
	APP/DEPART	46	/	49	37	/	38	3	/	11	19	/	7	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	0	25	4	3	16	0	0	1	0	2	5	4	61
	APPROACH %	0%	86%	14%	15%	80%	0%	0%	100%	0%	18%	45%	36%	
	PEAK HR FACTOR		0.604			0.714			0.250			0.917		0.726
	APP/DEPART	29	/	30	20	/	18	1	/	8	11	/	5	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	6	0	0	4	0	0	0	0	0	0	0	10
	4:15 PM	0	5	0	0	3	0	0	0	0	0	0	0	8
	4:30 PM	0	2	0	0	2	0	0	0	0	0	0	0	4
	4:45 PM	0	4	1	0	3	0	0	2	1	0	0	0	11
	5:00 PM	0	2	0	0	3	1	0	0	0	0	0	1	7
	5:15 PM	0	1	1	1	0	0	0	0	0	0	0	0	3
	5:30 PM	0	7	1	0	2	0	0	0	0	0	0	0	10
	5:45 PM	0	4	0	0	3	0	0	0	0	0	2	0	9
	VOLUMES	0	31	3	1	20	1	0	2	1	0	2	1	62
	APPROACH %	0%	91%	9%	5%	91%	5%	0%	67%	33%	0%	67%	33%	
	APP/DEPART	34	/	32	22	/	21	3	/	6	3	/	3	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	17	1	0	12	0	0	2	1	0	0	0	33
	APPROACH %	0%	94%	6%	0%	100%	0%	0%	67%	33%	0%	0%	0%	
	PEAK HR FACTOR		0.750			0.750			0.250			0.000		0.750
	APP/DEPART	18	/	17	12	/	13	3	/	3	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR 0	ERR 0	WRR 0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
1	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	2
1	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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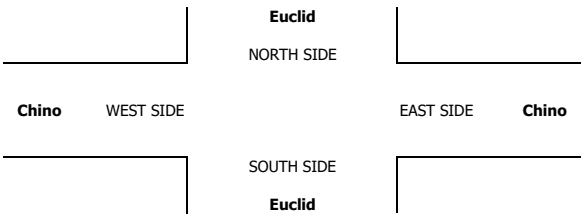
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/24/19	NORTH & SOUTH:	Euclid	LOCATION #:	12
THURSDAY	EAST & WEST:	Chino	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◀ W E ▶ S ▼

	NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Chino)			WESTBOUND (Chino)				U-TURNS					RTOR			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:	1	2	1	1	2	1	1	1	1	0	1	0							0	0	0	0
AM																						
7:00 AM	1	11	0	0	15	0	1	0	0	1	0	2	31	0	0	0	0	0	0	0	0	0
7:15 AM	2	14	0	0	18	0	0	0	0	1	0	0	35	0	0	0	0	0	0	0	0	0
7:30 AM	2	9	3	2	21	1	1	1	0	0	0	0	40	0	0	0	0	0	0	0	0	0
7:45 AM	0	17	0	2	23	4	0	0	0	2	0	0	48	0	0	0	0	0	0	1	0	0
8:00 AM	0	17	1	3	17	1	1	0	0	0	0	5	45	0	1	0	0	1	0	0	0	1
8:15 AM	0	20	1	0	23	1	1	0	1	0	0	2	49	0	0	0	0	0	0	0	0	0
8:30 AM	1	20	3	0	26	1	1	0	0	0	2	0	54	0	0	0	0	0	0	1	0	0
8:45 AM	0	18	0	1	27	0	1	1	0	2	1	1	52	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	6	126	8	8	170	8	6	2	1	6	3	10	354	0	1	0	0	1	0	2	0	1
APPROACH %	4%	90%	6%	4%	91%	4%	67%	22%	11%	32%	16%	53%										
APP/DEPART	140	/	143	186	/	177	9	/	17	19	/	17	0									
BEGIN PEAK HR		8:00 AM																				
VOLUMES	1	75	5	3	93	3	4	1	1	2	3	8	200						0	1	0	1
APPROACH %	1%	93%	6%	3%	93%	3%	67%	17%	17%	15%	23%	62%										
PEAK HR FACTOR		0.844			0.893			0.750			0.650		0.926									
APP/DEPART	81	/	88	100	/	96	6	/	9	13	/	7	0									
PM																						
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	1	15	0	1	19	1	0	1	0	0	0	0	38	0	0	0	0	0	0	1	0	0
4:15 PM	2	11	0	0	19	1	2	0	0	0	0	0	35	0	0	0	0	0	0	1	0	0
4:30 PM	0	15	0	0	21	0	1	0	0	0	0	0	37	0	0	0	0	0	0	0	0	0
4:45 PM	0	11	0	0	13	0	0	0	0	0	1	0	25	0	0	0	0	0	0	0	0	0
5:00 PM	1	12	1	0	14	0	0	1	0	0	0	0	29	0	0	0	0	0	0	0	0	0
5:15 PM	0	11	2	0	14	0	0	1	0	0	0	0	28	0	0	0	0	0	1	0	0	0
5:30 PM	0	12	0	0	14	0	1	0	0	0	0	0	27	0	0	0	0	0	0	0	0	0
5:45 PM	0	15	0	0	10	0	0	1	0	0	0	0	26	0	0	0	0	0	0	0	0	0
VOLUMES	4	102	3	1	124	2	4	4	0	0	1	0	245	0	0	0	0	0	1	2	0	0
APPROACH %	4%	94%	3%	1%	98%	2%	50%	50%	0%	0%	100%	0%										
APP/DEPART	109	/	106	127	/	124	8	/	8	1	/	7	0									
BEGIN PEAK HR		4:00 PM																				
VOLUMES	3	52	0	1	72	2	3	1	0	0	1	0	135						0	2	0	0
APPROACH %	5%	95%	0%	1%	96%	3%	75%	25%	0%	0%	100%	0%										
PEAK HR FACTOR		0.859			0.893			0.500			0.250		0.888									
APP/DEPART	55	/	55	75	/	72	4	/	2	1	/	6	0									

Euclid

NORTH SIDE

Chino WEST SIDE

EAST SIDE **Chino**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Jan 22, 19

LOCATION: Chino
NORTH & SOUTH: Euclid
EAST & WEST: Schaefer

PROJECT #: SC2056
LOCATION #: 13
CONTROL: SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

▲ N
◄ W
E ►
S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Schaefer)			WESTBOUND (Schaefer)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL
AM	7:00 AM	24	143	3	4	188	34	29	12	20	8	24	6	495
	7:15 AM	32	186	4	4	170	32	39	9	9	39	36	2	562
	7:30 AM	23	221	10	8	185	21	34	22	12	6	41	3	586
	7:45 AM	30	176	4	8	212	33	40	24	12	30	56	3	628
	8:00 AM	14	188	8	6	180	31	35	13	20	32	38	2	567
	8:15 AM	28	175	4	5	193	29	32	13	10	32	31	4	556
	8:30 AM	25	207	8	11	188	20	46	26	17	7	29	2	586
	8:45 AM	28	190	5	8	157	28	28	16	21	16	20	4	521
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	204	1,486	46	54	1,473	228	283	135	121	170	275	26	4,501
	APPROACH %	12%	86%	3%	3%	84%	13%	53%	25%	22%	36%	58%	6%	
	APP/DEPART	1,736	/	1,798	1,755	/	1,766	539	/	232	471	/	705	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	99	771	26	26	747	117	148	68	53	107	171	10	2,343
	APPROACH %	11%	86%	3%	3%	84%	13%	55%	25%	20%	37%	59%	3%	
	PEAK HR FACTOR		0.882			0.879			0.885			0.809		0.933
	APP/DEPART	896	/	929	890	/	908	269	/	120	288	/	386	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	25	217	8	9	164	32	53	49	34	8	18	5	622
	4:15 PM	22	213	14	2	162	23	64	50	26	12	14	7	609
	4:30 PM	24	207	12	6	180	17	67	61	41	12	12	1	640
	4:45 PM	26	262	19	4	200	23	57	74	32	15	19	5	736
	5:00 PM	26	218	16	6	224	29	71	72	42	18	17	5	744
	5:15 PM	12	246	14	4	214	25	65	71	49	19	16	6	741
	5:30 PM	17	194	16	9	235	30	76	53	49	21	7	6	713
	5:45 PM	16	239	10	5	182	17	67	57	28	10	9	3	643
	VOLUMES	168	1,796	109	45	1,561	196	520	487	301	115	112	38	5,448
	APPROACH %	8%	87%	5%	2%	87%	11%	40%	37%	23%	43%	42%	14%	
	APP/DEPART	2,073	/	2,355	1,802	/	1,985	1,308	/	640	265	/	468	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	81	920	65	23	873	107	269	270	172	73	59	22	2,934
	APPROACH %	8%	86%	6%	2%	87%	11%	38%	38%	24%	47%	38%	14%	
	PEAK HR FACTOR		0.868			0.915			0.961			0.939		0.986
	APP/DEPART	1,066	/	1,211	1,003	/	1,122	711	/	358	154	/	243	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	2	0	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
2	3	0	0	5
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
3	0	0	0	3
0	0	0	0	0
3	0	0	0	3
0	0	0	0	0
1	0	0	0	1
1	0	0	0	1
8	1	0	0	9

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
2	11	11	1
0	11	4	0
4	6	5	2
2	11	1	0
3	4	8	0
1	8	3	0
3	7	6	0
1	8	10	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
16	66	48	3
9	32	18	2
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
2	15	6	0
1	6	13	4
4	1	18	0
6	6	13	0
1	12	8	0
5	5	10	2
6	7	10	3
5	1	9	0
30	53	87	9
18	30	41	5

Euclid

NORTH SIDE

Schaefer WEST SIDE EAST SIDE **Schaefer**

SOUTH SIDE

Euclid

ALL PED AND BIKE

	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	0	1	0	0	1
7:15 AM	0	0	0	2	2
7:30 AM	0	2	0	1	3
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	1	0	0	0	1
8:30 AM	0	2	0	1	3
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
TOTAL	1	5	0	4	10
3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	1	0	0	1
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	1	0	0	1

PEDESTRIAN CROSSINGS

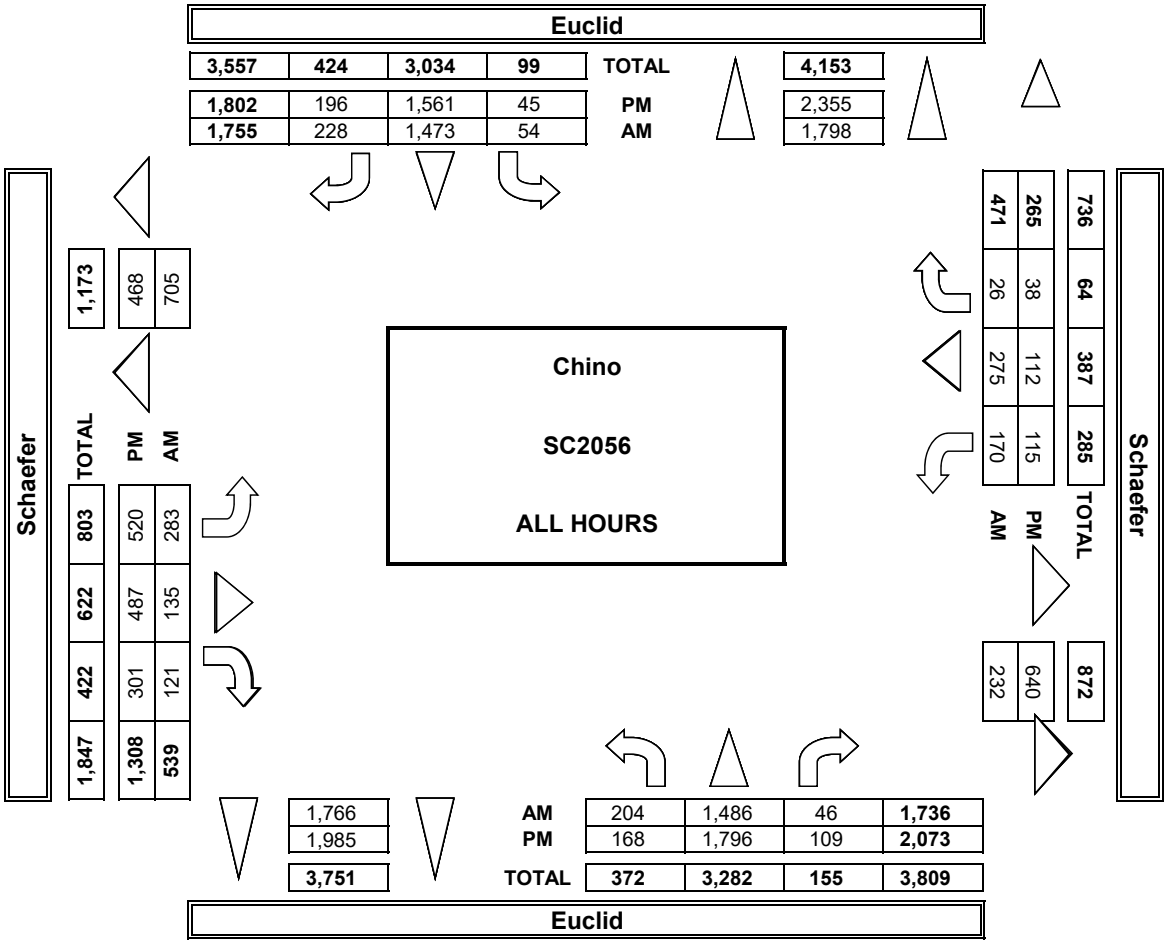
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
0	0	0	0	0
0	0	0	2	2
0	2	0	1	3
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	1	0	1	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	3	0	4	8
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

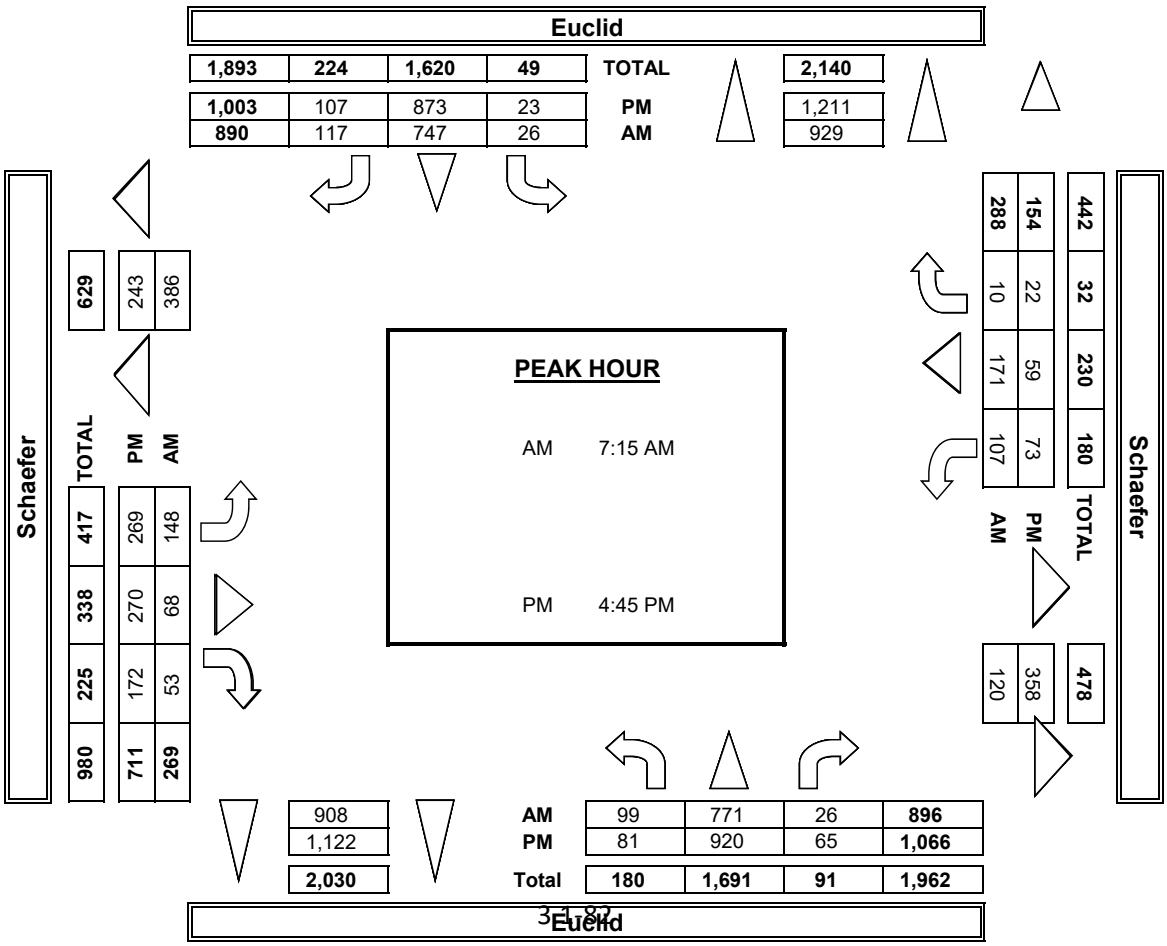
BICYCLE CROSSINGS

ES	WS	SS	NS	TOTAL
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	2	0	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Euclid	LOCATION #:	13
TUESDAY	EAST & WEST:	Schaefer	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Schaefer)			WESTBOUND (Schaefer)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL
AM	7:00 AM	1	13	0	1	21	4	2	1	3	0	0	2	48
	7:15 AM	2	16	1	0	18	1	1	1	1	23	0	0	64
	7:30 AM	2	12	0	0	16	1	1	2	2	0	0	0	36
	7:45 AM	1	13	1	2	19	2	1	4	1	1	3	0	48
	8:00 AM	0	12	0	0	13	1	3	2	4	18	0	0	53
	8:15 AM	1	10	0	0	17	1	4	0	1	23	2	0	59
	8:30 AM	2	20	1	0	18	0	0	2	0	2	2	0	47
	8:45 AM	4	16	0	0	20	1	1	1	2	7	1	0	53
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	13	112	3	3	142	11	13	13	14	74	8	2	408
	APPROACH %	10%	88%	2%	2%	91%	7%	33%	33%	35%	88%	10%	2%	
	APP/DEPART	128	/	127	156	/	230	40	/	19	84	/	32	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	7	58	1	0	68	3	8	5	7	50	5	0	212
	APPROACH %	11%	88%	2%	0%	96%	4%	40%	25%	35%	91%	9%	0%	
	PEAK HR FACTOR		0.717			0.845			0.556			0.550		0.898
	APP/DEPART	66	/	66	71	/	125	20	/	6	55	/	15	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	18	0	1	17	1	5	0	3	0	0	0	45
	4:15 PM	1	10	3	1	14	1	4	3	0	1	2	0	40
	4:30 PM	0	16	4	0	12	1	3	1	4	0	0	0	41
	4:45 PM	0	13	0	0	18	0	1	1	2	0	3	1	39
	5:00 PM	1	13	5	0	13	1	3	3	2	1	0	0	42
	5:15 PM	0	13	3	0	10	0	3	1	1	0	0	0	31
	5:30 PM	0	12	3	0	7	1	6	2	0	0	1	0	32
	5:45 PM	0	11	7	1	7	0	1	1	2	0	0	0	30
	VOLUMES	2	106	25	3	98	5	26	12	14	2	6	1	300
	APPROACH %	2%	80%	19%	3%	92%	5%	50%	23%	27%	22%	67%	11%	
	APP/DEPART	133	/	133	106	/	114	52	/	40	9	/	13	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	1	57	7	2	61	3	13	5	9	1	5	1	165
	APPROACH %	2%	88%	11%	3%	92%	5%	48%	19%	33%	14%	71%	14%	
	PEAK HR FACTOR		0.813			0.868			0.844			0.438		0.917
	APP/DEPART	65	/	71	66	/	71	27	/	14	7	/	9	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	3	1	1
0	0	0	0
0	0	1	0
0	0	0	0
0	0	3	0
0	1	0	0
1	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	4	6	1
1	1	4	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
7	2	4	0
2	0	2	0

Euclid

NORTH SIDE

Schaefer WEST SIDE EAST SIDE **Schaefer**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Euclid	LOCATION #:	13
TUESDAY	EAST & WEST:	Schaefer	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

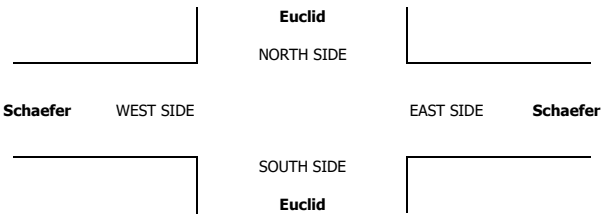
	NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Schaefer)			WESTBOUND (Schaefer)			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL
7:00 AM	0	3	0	0	3	0	0	0	1	0	0	0	7
7:15 AM	0	6	0	2	5	0	0	0	0	1	0	0	14
7:30 AM	0	7	0	0	4	0	1	0	0	0	0	0	12
7:45 AM	0	4	0	0	7	0	1	0	0	1	0	1	14
8:00 AM	0	3	0	0	2	0	0	0	1	4	0	0	10
8:15 AM	0	4	1	0	2	0	0	0	0	0	1	0	8
8:30 AM	1	8	0	1	7	0	0	0	0	0	0	0	17
8:45 AM	1	10	0	0	5	0	0	0	0	0	0	1	17
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	2	45	1	3	35	0	2	0	2	6	1	2	99
APPROACH %	4%	94%	2%	8%	92%	0%	50%	0%	50%	67%	11%	22%	
APP/DEPART	48	/	49	38	/	43	4	/	4	9	/	3	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	2	25	1	1	16	0	0	0	1	4	1	1	52
APPROACH %	7%	89%	4%	6%	94%	0%	0%	0%	100%	67%	17%	17%	
PEAK HR FACTOR		0.636			0.531			0.250			0.375		0.765
APP/DEPART	28	/	26	17	/	21	1	/	2	6	/	3	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	4	0	0	5	0	0	1	0	0	1	3	14
4:15 PM	0	2	1	0	3	0	1	0	0	2	0	0	9
4:30 PM	0	3	2	0	3	0	0	0	0	0	0	0	8
4:45 PM	0	5	0	0	1	0	1	0	0	0	1	0	8
5:00 PM	0	2	0	0	7	0	1	0	0	0	0	0	10
5:15 PM	0	3	0	0	1	1	0	0	1	0	0	0	6
5:30 PM	0	0	1	1	4	0	0	0	0	0	0	0	6
5:45 PM	0	5	0	0	0	0	0	1	0	0	0	0	6
VOLUMES	0	24	4	1	24	1	3	2	1	2	2	3	67
APPROACH %	0%	86%	14%	4%	92%	4%	50%	33%	17%	29%	29%	43%	
APP/DEPART	28	/	30	26	/	27	6	/	7	7	/	3	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	14	3	0	12	0	2	1	0	2	2	3	39
APPROACH %	0%	82%	18%	0%	100%	0%	67%	33%	0%	29%	29%	43%	
PEAK HR FACTOR		0.850			0.600			0.750			0.438		0.696
APP/DEPART	17	/	19	12	/	14	3	/	4	7	/	2	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
1	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Euclid	LOCATION #:	13
TUESDAY	EAST & WEST:	Schaefer	CONTROL:	SIGNAL

CLASS 4:	NOTES:	AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / E ► / S ▼
4 OR MORE AXLE TRUCKS			

	NORTHBOUND Euclid			SOUTHBOUND Euclid			EASTBOUND Schaefer			WESTBOUND Schaefer			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	1	1	1	1	1	1	0	
AM													
7:00 AM	0	11	0	0	12	0	0	0	0	0	0	1	24
7:15 AM	0	14	2	0	15	0	0	0	0	1	1	0	33
7:30 AM	0	9	0	0	8	0	0	0	0	0	0	0	17
7:45 AM	0	19	1	0	18	1	0	0	0	1	1	0	41
8:00 AM	0	16	1	0	17	0	0	0	0	1	0	0	35
8:15 AM	0	20	0	0	21	0	0	0	0	1	0	1	43
8:30 AM	0	19	0	0	19	0	0	0	1	1	1	1	42
8:45 AM	2	23	0	2	32	0	1	0	1	0	0	2	63
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	2	131	4	2	142	1	1	0	2	5	3	5	298
APPROACH %	1%	96%	3%	1%	98%	1%	33%	0%	67%	38%	23%	38%	
APP/DEPART	137	/	138	145	/	149	3	/	5	13	/	6	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	2	78	1	1	89	0	1	0	2	3	1	4	183
APPROACH %	2%	96%	1%	1%	98%	0%	33%	0%	67%	38%	13%	50%	
PEAK HR FACTOR		0.810			0.669			0.375			0.667		0.726
APP/DEPART	81	/	84	91	/	94	3	/	2	8	/	3	0
PM													
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	16	0	3	20	0	0	0	1	1	0	0	41
4:15 PM	0	13	0	1	14	0	0	1	0	0	0	2	31
4:30 PM	1	19	0	0	15	1	0	0	0	1	0	0	37
4:45 PM	0	18	3	0	18	0	0	0	0	0	0	0	39
5:00 PM	0	17	0	2	15	1	1	0	1	1	0	1	39
5:15 PM	0	10	1	0	6	0	0	1	0	0	1	0	19
5:30 PM	0	22	0	0	14	0	0	0	0	0	0	0	36
5:45 PM	1	14	0	0	12	0	0	0	0	0	0	1	28
VOLUMES	2	129	4	6	114	2	1	2	2	3	1	4	270
APPROACH %	1%	96%	3%	5%	93%	2%	20%	40%	40%	38%	13%	50%	
APP/DEPART	135	/	134	122	/	119	5	/	12	8	/	5	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	1	66	3	4	67	1	0	1	1	2	0	2	148
APPROACH %	1%	94%	4%	6%	93%	1%	0%	50%	50%	50%	0%	50%	
PEAK HR FACTOR		0.833			0.783			0.500			0.500		0.902
APP/DEPART	70	/	68	72	/	70	2	/	8	4	/	2	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:						0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	1	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	1	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	1	0	0	1	0	1	0	0
PEAK HR VOLUMES						0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	1	0	0	0
5:00 PM	0	0	0	0	0	0	1	1	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	1	1	2	0
PEAK HR VOLUMES						1	0	1	0

Euclid

NORTH SIDE

Schaefer WEST SIDE

EAST SIDE **Schaefer**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Jan 23, 19

LOCATION: Chino
NORTH & SOUTH: Euclid
EAST & WEST: Edison

PROJECT #: SC2056
LOCATION #: 14
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Edison)			WESTBOUND (Edison)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL
AM	7:00 AM	41	177	5	5	145	38	20	32	18	8	87	12	588
	7:15 AM	49	169	5	12	190	29	16	44	19	9	102	10	654
	7:30 AM	46	213	9	18	149	36	29	58	25	7	93	11	694
	7:45 AM	43	203	7	6	181	36	29	62	17	0	91	10	685
	8:00 AM	42	161	6	12	157	26	27	44	23	12	96	16	622
	8:15 AM	42	164	8	11	117	28	27	48	19	7	87	14	572
	8:30 AM	55	209	12	11	165	45	18	38	15	5	94	14	681
	8:45 AM	56	178	6	10	170	44	16	37	32	15	96	8	668
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	374	1,474	58	85	1,274	282	182	363	168	63	746	95	5,164
	APPROACH %	20%	77%	3%	5%	78%	17%	26%	51%	24%	7%	83%	11%	
	APP/DEPART	1,906	/	1,761	1,641	/	1,510	713	/	496	904	/	1,397	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	180	746	27	48	677	127	101	208	84	28	382	47	2,655
	APPROACH %	19%	78%	3%	6%	79%	15%	26%	53%	21%	6%	84%	10%	
	PEAK HR FACTOR		0.889			0.922			0.877			0.921		0.956
	APP/DEPART	953	/	898	852	/	790	393	/	279	457	/	688	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	32	228	20	17	148	40	48	59	47	2	38	13	692
	4:15 PM	30	249	14	9	181	44	45	118	58	6	69	8	831
	4:30 PM	41	218	12	20	203	35	37	100	52	2	82	8	810
	4:45 PM	31	245	12	24	258	31	48	109	71	8	72	6	915
	5:00 PM	31	259	11	13	258	29	52	100	61	6	54	7	881
	5:15 PM	33	216	12	21	259	43	41	106	57	10	63	7	868
	5:30 PM	27	208	16	17	239	35	51	88	67	6	46	13	813
	5:45 PM	20	200	7	16	243	33	55	87	62	4	40	8	775
	VOLUMES	245	1,823	104	137	1,789	290	377	767	475	44	464	70	6,585
	APPROACH %	11%	84%	5%	6%	81%	13%	23%	47%	29%	8%	80%	12%	
	APP/DEPART	2,172	/	2,286	2,216	/	2,318	1,619	/	992	578	/	989	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	122	928	51	75	1,014	138	192	403	256	30	235	33	3,477
	APPROACH %	11%	84%	5%	6%	83%	11%	23%	47%	30%	10%	79%	11%	
	PEAK HR FACTOR		0.914			0.950			0.933			0.866		0.950
	APP/DEPART	1,101	/	1,163	1,227	/	1,305	851	/	519	298	/	490	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
1	0	0	0	1
0	0	0	0	0
0	3	0	0	3
0	0	0	0	0
1	1	0	0	2
0	0	0	0	0
2	1	0	0	3
1	5	0	0	6
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
5	10	0	0	15
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	1	0	0	2
2	2	0	0	4
1	3	0	0	4
0	2	0	0	2
4	3	0	0	7
0	4	0	0	4
1	1	0	0	2
1	0	0	0	1
10	16	0	0	26

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
2	12	7	2
0	6	13	1
5	12	12	1
2	18	10	2
1	13	18	1
1	15	10	2
5	14	9	3
2	13	19	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
18	103	98	12
8	49	53	5
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
2	9	20	4
2	11	26	0
1	10	21	3
1	7	20	2
2	5	23	0
1	12	15	1
4	6	20	3
1	10	18	1
14	70	163	14
8	30	78	6

Euclid

NORTH SIDE

Edison WEST SIDE EAST SIDE **Edison**

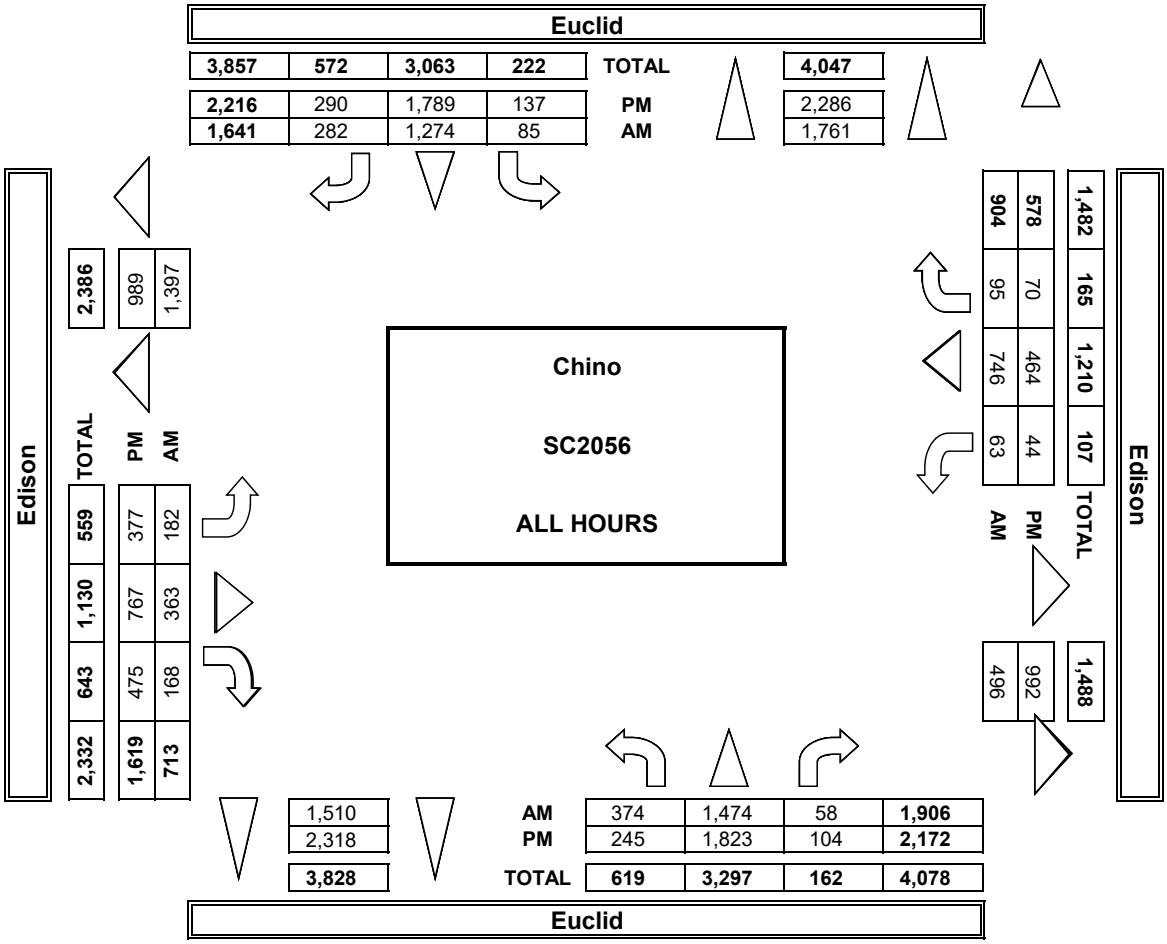
SOUTH SIDE

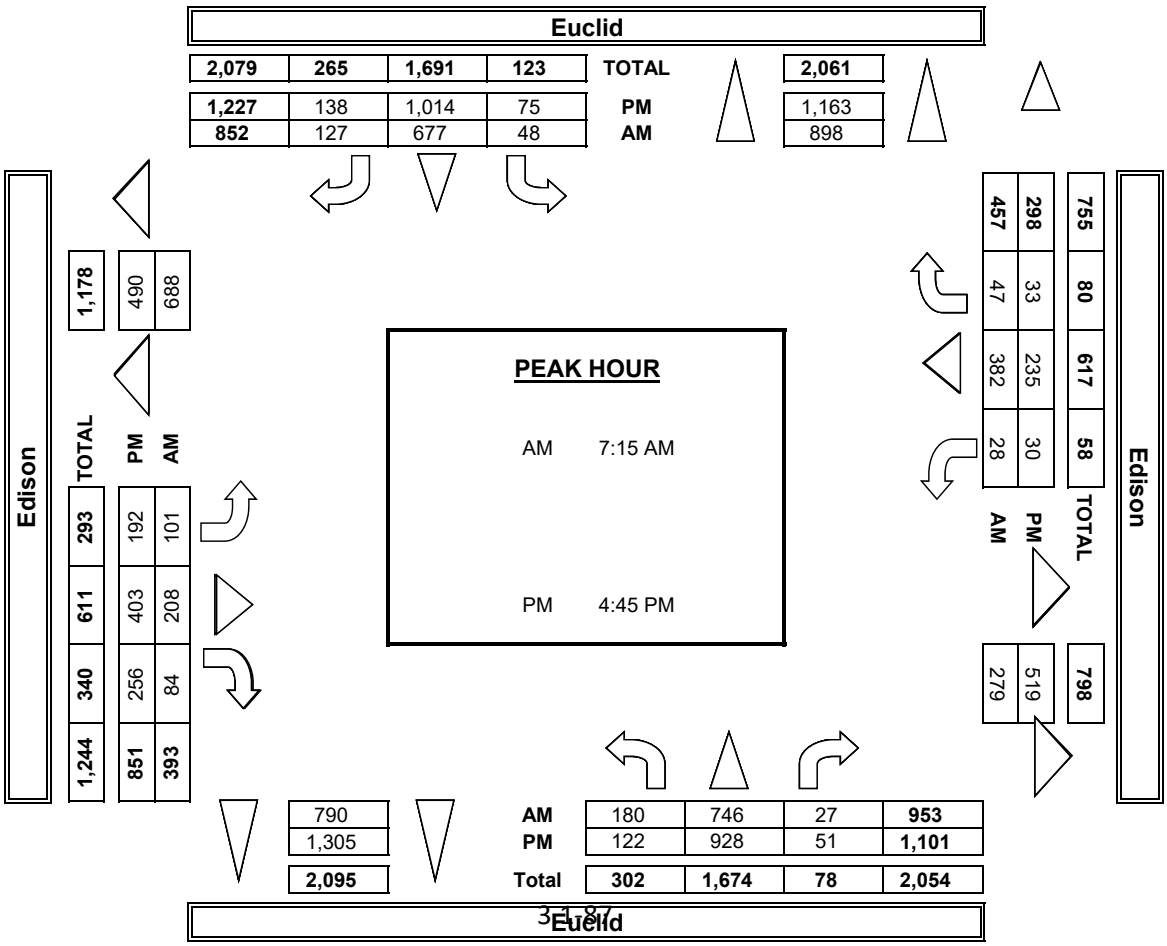
Euclid

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	1	1	0	2	0	1	1	0	2	0	0	0	0	0
	7:45 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	8:00 AM	0	1	0	1	2	0	0	0	1	1	0	1	0	0	1
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	4	1	1	6	0	1	1	1	3	0	3	0	0	3
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	4:45 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	2	0	0	0	2	2	0	0	0	2	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	TOTAL	3	0	0	2	5	2	0	0	1	3	1	0	0	1	2

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/23/19	NORTH & SOUTH:	Euclid	LOCATION #:	14
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

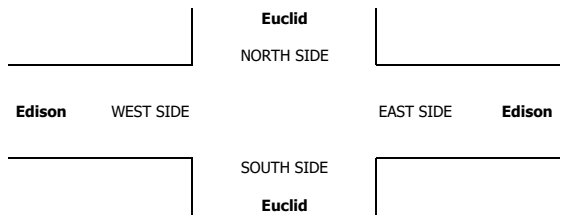
		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Edison)			WESTBOUND (Edison)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL
AM	7:00 AM	2	12	1	0	24	6	2	2	3	1	3	1	57
	7:15 AM	1	9	2	3	22	4	1	4	5	0	7	0	58
	7:30 AM	4	9	0	1	16	3	3	2	4	0	4	3	49
	7:45 AM	3	14	2	0	31	0	2	3	0	0	5	0	60
	8:00 AM	16	21	2	4	25	1	3	5	3	1	8	2	91
	8:15 AM	6	10	0	2	14	2	4	3	3	3	6	2	55
	8:30 AM	3	24	0	1	32	4	3	1	1	0	8	2	79
	8:45 AM	9	19	1	5	26	2	3	2	4	0	6	1	78
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	44	118	8	16	190	22	21	22	23	5	47	11	527
	APPROACH %	26%	69%	5%	7%	83%	10%	32%	33%	35%	8%	75%	17%	
	APP/DEPART	170	/	155	228	/	218	66	/	41	63	/	113	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	34	74	3	7	97	9	13	11	11	4	28	7	303
	APPROACH %	31%	67%	3%	6%	82%	8%	37%	31%	31%	10%	72%	18%	
	PEAK HR FACTOR		0.712			0.797			0.795			0.886		0.832
	APP/DEPART	111	/	99	118	/	112	35	/	21	39	/	71	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	7	7	2	4	10	3	3	5	2	0	5	0	48
	4:15 PM	3	19	0	0	7	4	2	6	2	1	6	4	54
	4:30 PM	10	14	1	0	17	2	1	9	1	0	5	0	60
	4:45 PM	7	25	0	3	21	3	5	5	0	1	4	0	74
	5:00 PM	4	19	0	1	9	0	3	3	0	1	2	0	42
	5:15 PM	3	16	0	2	15	1	0	5	0	1	3	1	47
	5:30 PM	3	14	2	3	11	1	5	4	3	1	0	0	47
	5:45 PM	1	10	0	0	10	0	2	3	4	0	0	0	30
	VOLUMES	38	124	5	13	100	14	21	40	12	5	25	5	402
	APPROACH %	23%	74%	3%	10%	79%	11%	29%	55%	16%	14%	71%	14%	
	APP/DEPART	167	/	151	127	/	117	73	/	57	35	/	77	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	27	65	3	6	55	12	11	25	5	2	20	4	236
	APPROACH %	28%	68%	3%	8%	74%	16%	27%	61%	12%	8%	77%	15%	
	PEAK HR FACTOR		0.742			0.685			0.932			0.591		0.797
	APP/DEPART	95	/	81	74	/	62	41	/	34	26	/	59	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	4	0	0	4
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	5	0	0	5
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1

RTOR

NRR	SRR	ERR	WRR
0	1	1	0
0	1	4	0
0	1	3	1
1	0	0	0
0	0	2	0
0	1	2	0
0	1	0	0
0	1	2	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	6	14	1
0	3	6	0
0	0	0	0
0	2	0	0
0	2	1	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	1	2	0
0	0	2	0
1	6	5	0
0	5	1	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/23/19	NORTH & SOUTH:	Euclid	LOCATION #:	14
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Euclid			SOUTHBOUND Euclid			EASTBOUND Edison			WESTBOUND Edison			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL
AM	7:00 AM	1	2	0	1	1	4	2	5	0	0	2	1	19
	7:15 AM	0	0	0	0	5	0	2	0	0	0	3	0	10
	7:30 AM	1	1	1	0	2	4	2	2	0	0	2	0	15
	7:45 AM	1	5	0	1	2	2	3	1	0	0	0	0	15
	8:00 AM	0	2	0	0	2	0	3	3	1	0	1	1	13
	8:15 AM	0	2	0	1	2	0	1	0	0	0	0	1	7
	8:30 AM	0	4	0	0	2	2	1	1	1	1	1	0	13
	8:45 AM	1	3	0	0	2	2	0	1	1	1	0	0	11
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	4	19	1	3	18	14	14	13	3	2	9	3	103
	APPROACH %	17%	79%	4%	9%	51%	40%	47%	43%	10%	14%	64%	21%	
	APP/DEPART	24	/	36	35	/	23	30	/	17	14	/	27	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	3	8	1	2	10	10	9	8	0	0	7	1	59
	APPROACH %	25%	67%	8%	9%	45%	45%	53%	47%	0%	0%	88%	13%	
	PEAK HR FACTOR		0.500			0.917			0.607			0.667		0.776
	APP/DEPART	12	/	18	22	/	10	17	/	11	8	/	20	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	3	0	0	0	0	1	2	0	0	0	0	6
	4:15 PM	1	2	0	0	0	4	2	2	0	0	1	0	12
	4:30 PM	0	0	0	1	0	7	2	1	0	0	1	0	12
	4:45 PM	0	1	0	0	2	4	2	4	1	0	0	0	14
	5:00 PM	0	3	0	0	2	3	1	2	0	0	0	0	11
	5:15 PM	1	0	1	0	2	2	4	1	4	1	0	0	16
	5:30 PM	1	5	1	0	0	1	1	0	0	0	0	0	9
	5:45 PM	0	0	1	0	1	1	0	2	1	0	0	0	6
	VOLUMES	3	14	3	1	7	22	13	14	6	1	2	0	86
	APPROACH %	15%	70%	15%	3%	23%	73%	39%	42%	18%	33%	67%	0%	
	APP/DEPART	20	/	27	30	/	14	33	/	18	3	/	27	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	1	4	1	1	6	16	9	8	5	1	1	0	53
	APPROACH %	17%	67%	17%	4%	26%	70%	41%	36%	23%	50%	50%	0%	
	PEAK HR FACTOR		0.500			0.719			0.611			0.500		0.828
	APP/DEPART	6	/	13	23	/	12	22	/	10	2	/	18	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
1	2	0	0
0	2	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	4	2	0

1	4	0	0

0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	3	0	0
0	0	0	0
0	0	0	0
0	1	1	0
0	1	0	0
0	0	0	0
0	6	1	0

0	4	1	0

Euclid

NORTH SIDE

Edison WEST SIDE EAST SIDE **Edison**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/23/19	NORTH & SOUTH:	Euclid	LOCATION #:	14
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

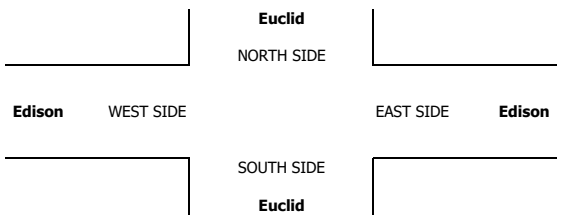
	NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Edison)			WESTBOUND (Edison)			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL
7:00 AM	2	8	1	0	9	4	3	3	1	0	4	2	37
7:15 AM	3	9	0	2	9	4	4	2	0	0	2	2	37
7:30 AM	2	7	0	2	9	5	7	5	2	0	1	0	40
7:45 AM	0	17	2	1	8	4	6	0	0	0	1	1	40
8:00 AM	2	11	1	0	6	2	3	1	1	2	4	3	36
8:15 AM	0	10	3	1	10	5	6	3	1	2	4	1	46
8:30 AM	2	11	2	1	12	9	3	3	0	2	9	1	55
8:45 AM	1	17	1	1	13	15	2	3	3	3	5	3	67
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	12	90	10	8	76	48	34	20	8	9	30	13	358
APPROACH %	11%	80%	9%	6%	58%	36%	55%	32%	13%	17%	58%	25%	
APP/DEPART	112	/	137	132	/	94	62	/	38	52	/	89	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	4	49	7	3	41	31	14	10	5	9	22	8	204
APPROACH %	7%	80%	11%	4%	55%	41%	48%	34%	17%	23%	56%	21%	
PEAK HR FACTOR		0.803			0.647			0.725			0.813		0.761
APP/DEPART	61	/	71	75	/	56	29	/	20	39	/	57	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	3	6	2	0	4	8	7	3	0	0	1	0	34
4:15 PM	1	10	3	0	14	8	7	2	4	0	2	0	51
4:30 PM	1	12	4	1	8	9	4	6	6	0	1	1	53
4:45 PM	0	5	1	0	9	3	6	7	4	2	3	0	40
5:00 PM	2	5	3	0	4	2	7	5	1	0	0	0	29
5:15 PM	1	12	2	1	7	5	5	4	2	0	3	0	42
5:30 PM	0	12	1	0	2	2	11	6	1	1	0	0	36
5:45 PM	0	9	2	1	9	6	11	2	0	0	2	0	42
VOLUMES	8	71	18	3	57	43	58	35	18	3	12	1	327
APPROACH %	8%	73%	19%	3%	55%	42%	52%	32%	16%	19%	75%	6%	
APP/DEPART	97	/	130	103	/	79	111	/	56	16	/	62	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	5	33	10	1	35	28	24	18	14	2	7	1	178
APPROACH %	10%	69%	21%	2%	55%	44%	43%	32%	25%	20%	70%	10%	
PEAK HR FACTOR		0.706			0.727			0.824			0.500		0.840
APP/DEPART	48	/	58	64	/	51	56	/	29	10	/	40	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1

RTOR

NRR	SRR	ERR	WRR
1	0	1	1
0	0	0	1
0	0	1	0
0	0	0	1
0	1	1	0
0	2	0	1
2	1	0	0
0	2	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
3	6	4	4
2	6	2	1
0	0	0	0
0	0	0	0
0	0	0	0
1	3	0	0
2	0	1	0
1	1	1	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	1	0	0
4	6	2	0
4	4	2	0



INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Jan 22, 19

LOCATION: Chino
NORTH & SOUTH: Euclid
EAST & WEST: Eucalyptus

PROJECT #: SC2056
LOCATION #: 15
CONTROL: SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

▲ N
◄ W
E ►
S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Eucalyptus)			WESTBOUND (Eucalyptus)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL
AM	7:00 AM	31	185	2	7	166	6	8	3	20	5	35	4	472
	7:15 AM	42	246	1	4	212	13	12	6	28	10	33	7	614
	7:30 AM	43	257	2	2	195	4	20	8	36	5	34	9	615
	7:45 AM	43	188	4	1	201	6	19	7	36	7	39	6	557
	8:00 AM	35	246	2	10	195	12	15	4	43	5	44	3	614
	8:15 AM	35	231	0	7	200	3	12	4	29	5	19	7	552
	8:30 AM	34	265	1	11	163	7	10	5	24	3	17	10	550
	8:45 AM	45	245	3	9	151	4	17	4	24	5	20	4	531
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	308	1,863	15	51	1,483	55	113	41	240	45	241	50	4,505
	APPROACH %	14%	85%	1%	3%	93%	3%	29%	10%	61%	13%	72%	15%	
	APP/DEPART	2,186	/	2,039	1,589	/	1,770	394	/	94	336	/	602	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	163	937	9	17	803	35	66	25	143	27	150	25	2,400
	APPROACH %	15%	84%	1%	2%	94%	4%	28%	11%	61%	13%	74%	12%	
	PEAK HR FACTOR		0.918			0.933			0.914			0.971		0.976
	APP/DEPART	1,109	/	1,032	855	/	974	234	/	47	202	/	347	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	20	238	3	7	208	7	7	24	36	0	7	2	559
	4:15 PM	19	243	2	9	188	11	7	24	41	2	4	2	552
	4:30 PM	20	282	3	8	239	10	4	35	49	0	5	3	658
	4:45 PM	21	272	2	12	240	13	5	32	55	1	5	4	662
	5:00 PM	24	218	6	4	256	18	6	40	44	1	4	1	622
	5:15 PM	24	260	3	11	341	13	13	34	52	2	5	2	760
	5:30 PM	32	190	4	9	296	17	9	48	48	3	6	0	662
	5:45 PM	47	176	15	7	209	13	15	21	43	1	12	0	559
	VOLUMES	207	1,879	38	67	1,977	102	66	258	368	10	48	14	5,034
	APPROACH %	10%	88%	2%	3%	92%	5%	10%	37%	53%	14%	67%	19%	
	APP/DEPART	2,124	/	1,973	2,146	/	2,357	692	/	348	72	/	356	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	101	940	15	36	1,133	61	33	154	199	7	20	7	2,706
	APPROACH %	10%	89%	1%	3%	92%	5%	9%	40%	52%	21%	59%	21%	
	PEAK HR FACTOR		0.895			0.842			0.919			0.850		0.890
	APP/DEPART	1,056	/	990	1,230	/	1,339	386	/	195	34	/	182	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
0	4	0	0	4
0	0	0	0	0
1	1	0	0	2
0	1	0	0	1
0	2	0	0	2
0	2	0	0	2
1	3	0	0	4
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
2	13	0	0	15
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	3	0	0	3
0	2	0	0	2
0	1	0	0	1
0	6	0	0	6
2	0	1	0	3
2	15	1	0	18

RTOR

NRR	SRR	ERR	WRR
0	0		
0	0	18	1
0	5	15	1
0	1	22	5
1	2	19	1
0	3	28	1
0	0	22	4
0	0	14	7
1	0	17	4
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
2	11	155	24
1	11	84	8
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	21	1
1	3	32	1
0	1	34	1
1	1	33	1
0	4	22	1
0	3	28	1
0	3	20	0
4	1	22	0
7	16	212	6
1	11	103	3

Euclid

NORTH SIDE

Eucalyptus WEST SIDE EAST SIDE **Eucalyptus**

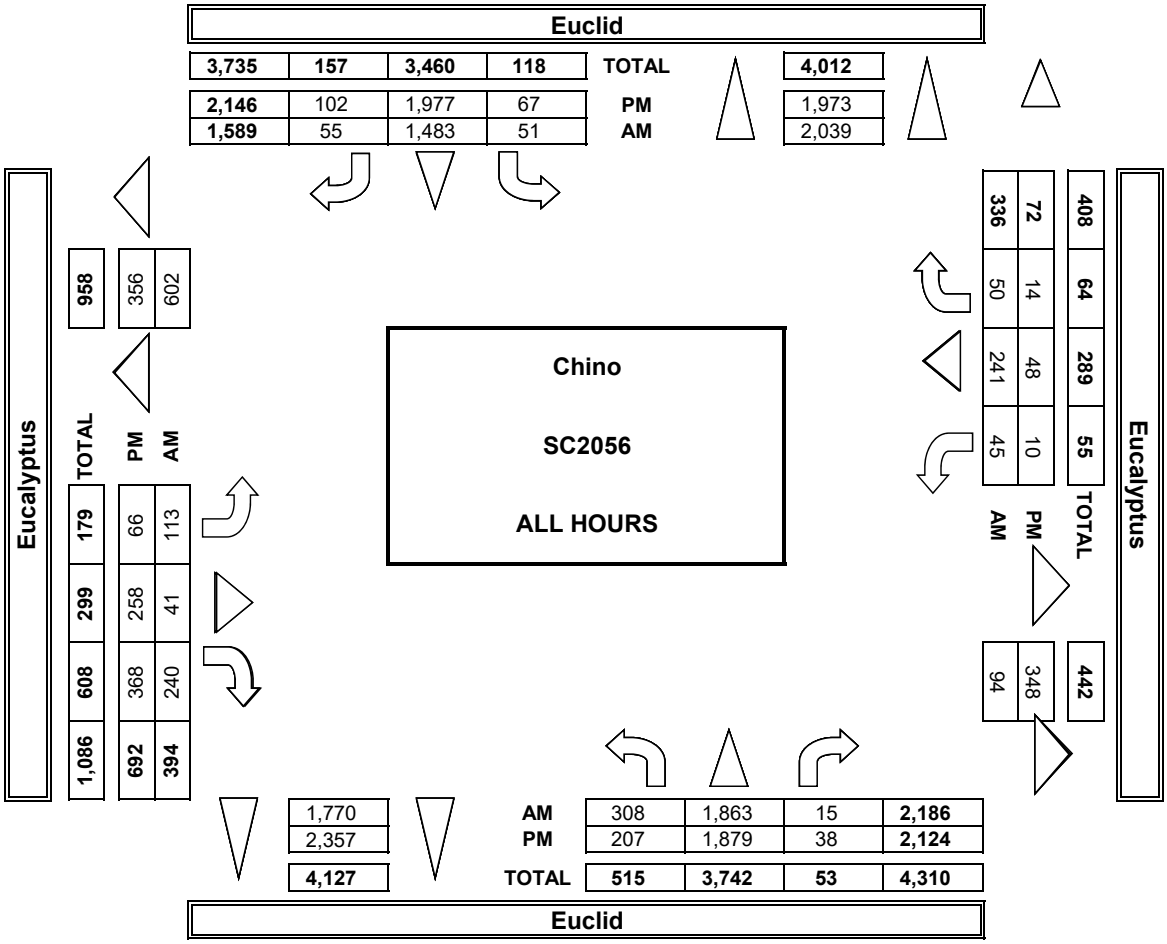
SOUTH SIDE

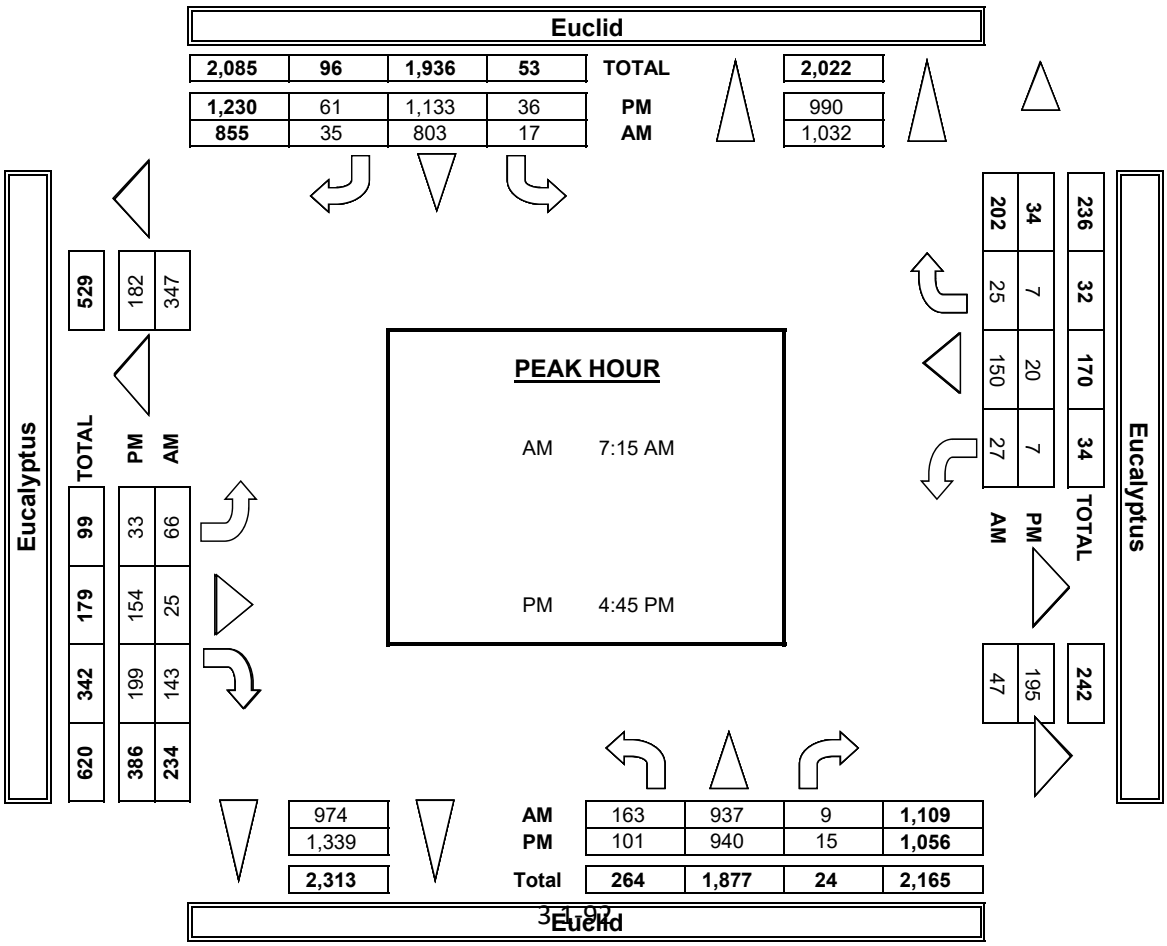
Euclid

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	3	0	0	3	0	1	0	0	1	0	2	0	0	2
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	1	0	0	2	0	0	0	0	0	1	1	0	0	2
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	2	0	2	0	0	2	0	2	0	0	0	0	0
	TOTAL	1	2	2	0	5	0	0	2	0	2	1	2	0	0	3

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Euclid	LOCATION #:	15
TUESDAY	EAST & WEST:	Eucalyptus	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Eucalyptus)			WESTBOUND (Eucalyptus)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL
AM	7:00 AM	0	13	0	0	17	1	0	0	1	0	2	0	34
	7:15 AM	4	14	0	1	18	2	0	0	2	1	0	0	42
	7:30 AM	1	9	0	0	19	1	1	0	1	0	0	0	32
	7:45 AM	0	8	0	0	33	0	0	0	1	0	1	1	44
	8:00 AM	2	25	0	0	34	1	0	0	5	1	1	1	70
	8:15 AM	1	18	0	0	41	0	0	0	1	0	2	0	63
	8:30 AM	1	32	0	1	10	1	0	0	1	0	0	0	46
	8:45 AM	0	31	0	1	22	1	0	1	3	0	0	0	59
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	9	150	0	3	194	7	1	1	15	2	6	2	390
	APPROACH %	6%	94%	0%	1%	95%	3%	6%	6%	88%	20%	60%	20%	
	APP/DEPART	159	/	153	204	/	212	17	/	4	10	/	21	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	3	106	0	2	107	3	0	1	10	1	3	1	238
	APPROACH %	3%	96%	0%	2%	96%	3%	0%	9%	91%	20%	60%	20%	
	PEAK HR FACTOR		0.833			0.683			0.550			0.417		0.850
	APP/DEPART	110	/	107	112	/	119	11	/	3	5	/	9	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	17	0	0	16	0	0	0	1	0	0	0	35
	4:15 PM	2	33	0	0	14	0	0	0	0	0	0	0	49
	4:30 PM	2	25	1	0	15	0	0	0	2	0	0	0	45
	4:45 PM	0	30	0	0	12	0	0	0	3	0	0	0	45
	5:00 PM	0	18	0	0	15	0	0	1	1	0	0	0	35
	5:15 PM	0	25	0	0	10	1	0	1	0	1	1	0	39
	5:30 PM	1	19	0	0	11	0	0	1	2	0	0	0	34
	5:45 PM	1	8	1	1	10	0	4	0	1	0	1	0	27
	VOLUMES	7	175	2	1	103	1	4	3	10	1	2	0	309
	APPROACH %	4%	95%	1%	1%	98%	1%	24%	18%	59%	33%	67%	0%	
	APP/DEPART	184	/	179	105	/	114	17	/	6	3	/	10	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	4	106	1	0	56	0	0	1	6	0	0	0	174
	APPROACH %	4%	95%	1%	0%	100%	0%	0%	14%	86%	0%	0%	0%	
	PEAK HR FACTOR		0.793			0.875			0.583			0.000		0.888
	APP/DEPART	111	/	106	56	/	62	7	/	2	0	/	4	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	1	0
0	0	2	0
0	1	1	0
0	0	0	0
0	0	4	1
0	0	1	0
0	0	0	0
0	0	3	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	12	1
0	0	8	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	6	0
0	0	4	0

Euclid

NORTH SIDE

Eucalyptus WEST SIDE EAST SIDE **Eucalyptus**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Euclid	LOCATION #:	15
TUESDAY	EAST & WEST:	Eucalyptus	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND Euclid			SOUTHBOUND Euclid			EASTBOUND Eucalyptus			WESTBOUND Eucalyptus			TOTAL	U-TURNS					RTOR			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:	1	2	1	1	2	1	1	1	1	1	1	0							0	0	0	0
AM 7:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
7:15 AM	0	4	0	0	4	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0
7:30 AM	0	3	0	0	5	0	0	0	0	0	0	1	9	0	0	0	0	0	0	0	0	1
7:45 AM	0	3	1	0	4	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0
8:00 AM	0	1	0	0	2	1	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
8:15 AM	0	2	0	0	6	0	1	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0
8:30 AM	0	7	0	1	2	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0
8:45 AM	0	4	0	0	3	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	26	1	1	26	1	1	0	0	0	0	1	57	0	0	0	0	0	0	0	0	1
APPROACH %	0%	96%	4%	4%	93%	4%	100%	0%	0%	0%	0%	100%										
APP/DEPART	27	/	28	28	/	26	1	/	2	1	/	1	0									
BEGIN PEAK HR		7:45 AM																				
VOLUMES	0	13	1	1	14	1	1	0	0	0	0	0	31						0	0	0	0
APPROACH %	0%	93%	7%	6%	88%	6%	100%	0%	0%	0%	0%	0%										
PEAK HR FACTOR		0.500			0.667			0.250			0.000		0.775									
APP/DEPART	14	/	14	16	/	14	1	/	2	0	/	1	0									
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
4:15 PM	0	3	0	1	3	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0
4:30 PM	0	2	0	0	3	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	2	1	0	0	0	0	0	0	0	3	0	1	0	0	1	0	0	0	0
5:00 PM	0	5	0	0	3	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0
5:15 PM	0	4	0	0	2	0	0	1	0	0	0	0	7	0	0	0	0	0	0	0	0	0
5:30 PM	0	3	0	2	0	0	0	0	0	0	0	0	5	0	2	0	0	2	0	0	0	0
5:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
VOLUMES	0	19	0	5	14	0	0	1	0	0	0	0	39	0	3	0	0	3	0	0	0	0
APPROACH %	0%	100%	0%	26%	74%	0%	0%	100%	0%	0%	0%	0%										
APP/DEPART	19	/	22	19	/	14	1	/	3	0	/	0	0									
BEGIN PEAK HR		4:15 PM																				
VOLUMES	0	12	0	1	6	0	0	1	0	0	0	0	23						0	0	0	0
APPROACH %	0%	100%	0%	10%	60%	0%	0%	100%	0%	0%	0%	0%										
PEAK HR FACTOR		0.600			0.625			0.250			0.000		0.719									
APP/DEPART	12	/	15	10	/	6	1	/	2	0	/	0	0									

Euclid

NORTH SIDE

Eucalyptus WEST SIDE

EAST SIDE **Eucalyptus**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Euclid	LOCATION #:	15
TUESDAY	EAST & WEST:	Eucalyptus	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Eucalyptus)			WESTBOUND (Eucalyptus)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL
AM	7:00 AM	0	7	0	1	10	0	0	0	0	0	0	1	19
	7:15 AM	0	9	0	1	10	1	0	0	1	1	0	3	26
	7:30 AM	1	10	0	0	6	0	0	0	0	0	0	1	18
	7:45 AM	0	9	1	0	12	0	0	0	0	0	0	0	22
	8:00 AM	0	14	0	1	14	0	0	0	0	1	0	1	31
	8:15 AM	0	10	0	0	13	0	0	0	0	1	0	1	25
	8:30 AM	0	23	0	2	8	0	0	0	0	1	0	1	35
	8:45 AM	1	17	0	1	16	1	0	0	0	0	0	1	37
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	2	99	1	6	89	2	0	0	1	4	0	9	213
	APPROACH %	2%	97%	1%	6%	92%	2%	0%	0%	100%	31%	0%	69%	
	APP/DEPART	102	/	109	97	/	95	1	/	6	13	/	3	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	1	64	0	3	51	1	0	0	0	3	0	4	128
	APPROACH %	2%	98%	0%	5%	91%	2%	0%	0%	0%	43%	0%	57%	
	PEAK HR FACTOR		0.707			0.778			0.000			0.875		0.865
	APP/DEPART	65	/	69	56	/	54	0	/	3	7	/	2	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	8	1	1	15	0	0	0	0	0	0	0	25
	4:15 PM	0	15	0	2	8	0	0	0	1	0	0	0	26
	4:30 PM	0	11	0	0	14	0	0	0	1	0	0	0	26
	4:45 PM	0	8	0	1	9	0	1	0	0	0	0	0	19
	5:00 PM	0	13	0	0	10	0	1	0	0	0	0	0	24
	5:15 PM	0	10	0	0	10	0	0	0	0	0	0	1	21
	5:30 PM	0	8	1	1	9	0	0	0	0	0	0	0	19
	5:45 PM	1	6	0	0	7	0	0	0	0	0	0	0	14
	VOLUMES	1	79	2	5	82	0	2	0	2	0	0	1	174
	APPROACH %	1%	96%	2%	6%	94%	0%	50%	0%	50%	0%	0%	100%	
	APP/DEPART	82	/	84	87	/	85	4	/	5	1	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	42	1	3	46	0	1	0	2	0	0	0	96
	APPROACH %	0%	98%	2%	6%	92%	0%	33%	0%	67%	0%	0%	0%	
	PEAK HR FACTOR		0.717			0.781			0.750			0.000		0.923
	APP/DEPART	43	/	44	50	/	48	3	/	4	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	1	0	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
1	0	0	0	1
1	2	0	0	3
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	1	2
0	0	0	2
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	2	0
0	0	2	0

Euclid

NORTH SIDE

Eucalyptus WEST SIDE EAST SIDE **Eucalyptus**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
Tue, Jan 22, 19	NORTH & SOUTH:	Euclid	LOCATION #:	16
	EAST & WEST:	Facility	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

Add U-Turns to Left Turns

	NORTHBOUND Euclid			SOUTHBOUND Euclid			EASTBOUND Facility			WESTBOUND Facility			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	0	0	1	0	0	1	0	
AM 7:00 AM	4	171	17	15	154	22	0	0	2	52	21	47	505
7:15 AM	3	242	30	20	222	9	0	2	2	51	10	47	638
7:30 AM	3	236	42	26	203	8	1	1	3	40	14	65	642
7:45 AM	1	191	23	26	205	13	2	2	2	45	12	50	572
8:00 AM	3	240	30	32	203	8	0	1	4	57	11	38	627
8:15 AM	2	216	23	20	211	3	1	3	0	47	0	49	575
8:30 AM	3	232	26	27	161	3	2	0	2	40	12	66	574
8:45 AM	6	243	31	27	151	2	0	2	0	36	3	49	550
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	25	1,771	222	193	1,510	68	6	11	15	368	83	411	4,683
APPROACH %	1%	88%	11%	11%	85%	4%	19%	34%	47%	43%	10%	48%	
APP/DEPART	2,018	/	2,189	1,771	/	1,893	32	/	425	862	/	176	0
BEGIN PEAK HR		7:15 AM											
VOLUMES	10	909	125	104	833	38	3	6	11	193	47	200	2,479
APPROACH %	1%	87%	12%	11%	85%	4%	15%	30%	55%	44%	11%	45%	
PEAK HR FACTOR		0.929			0.971			0.833			0.924		0.965
APP/DEPART	1,044	/	1,112	975	/	1,037	20	/	235	440	/	95	0
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	230	55	29	215	0	6	12	4	18	0	23	592
4:15 PM	0	236	48	37	198	2	1	8	4	26	1	27	588
4:30 PM	0	273	54	41	246	1	1	9	3	44	0	31	703
4:45 PM	0	271	49	67	229	0	5	15	3	41	2	19	701
5:00 PM	1	214	49	43	258	0	4	5	2	32	0	32	640
5:15 PM	1	252	45	75	320	0	1	0	2	50	0	34	780
5:30 PM	1	204	46	58	287	2	0	0	2	47	0	22	669
5:45 PM	0	207	28	55	200	0	1	0	0	37	0	30	558
VOLUMES	3	1,887	374	405	1,953	5	19	49	20	295	3	218	5,231
APPROACH %	0%	83%	17%	17%	83%	0%	22%	56%	23%	57%	1%	42%	
APP/DEPART	2,264	/	2,124	2,363	/	2,270	88	/	828	516	/	9	0
BEGIN PEAK HR		4:30 PM											
VOLUMES	2	1,010	197	226	1,053	1	11	29	10	167	2	116	2,824
APPROACH %	0%	84%	16%	18%	82%	0%	22%	58%	20%	59%	1%	41%	
PEAK HR FACTOR		0.924			0.810			0.543			0.848		0.905
APP/DEPART	1,209	/	1,137	1,280	/	1,231	50	/	452	285	/	4	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:	0	0	0	0		0	0	0	0
7:00 AM	0	0	0	0	0	8	13	1	13
7:15 AM	0	0	0	0	0	6	2	1	5
7:30 AM	0	0	0	0	0	17	1	0	4
7:45 AM	0	0	0	0	0	5	8	0	7
8:00 AM	0	0	0	0	0	14	3	0	10
8:15 AM	0	0	0	0	0	12	0	0	6
8:30 AM	0	0	0	0	0	14	1	0	20
8:45 AM	0	1	0	0	1	14	1	0	13
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	1	0	0	1	90	29	2	78
PEAK HR VOLUMES						42	14	1	26
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	16	0	0	6
4:15 PM	0	0	0	0	0	19	2	0	5
4:30 PM	0	0	0	0	0	20	1	0	4
4:45 PM	0	0	0	0	0	4	0	1	1
5:00 PM	0	0	0	0	0	20	0	0	2
5:15 PM	1	0	0	0	1	15	0	0	2
5:30 PM	1	0	0	0	1	10	0	1	0
5:45 PM	0	0	0	0	0	9	0	0	4
VOLUMES	2	0	0	0	2	113	3	2	24
PEAK HR VOLUMES						59	1	1	9

Euclid

NORTH SIDE

Facility WEST SIDE EAST SIDE **Facility**

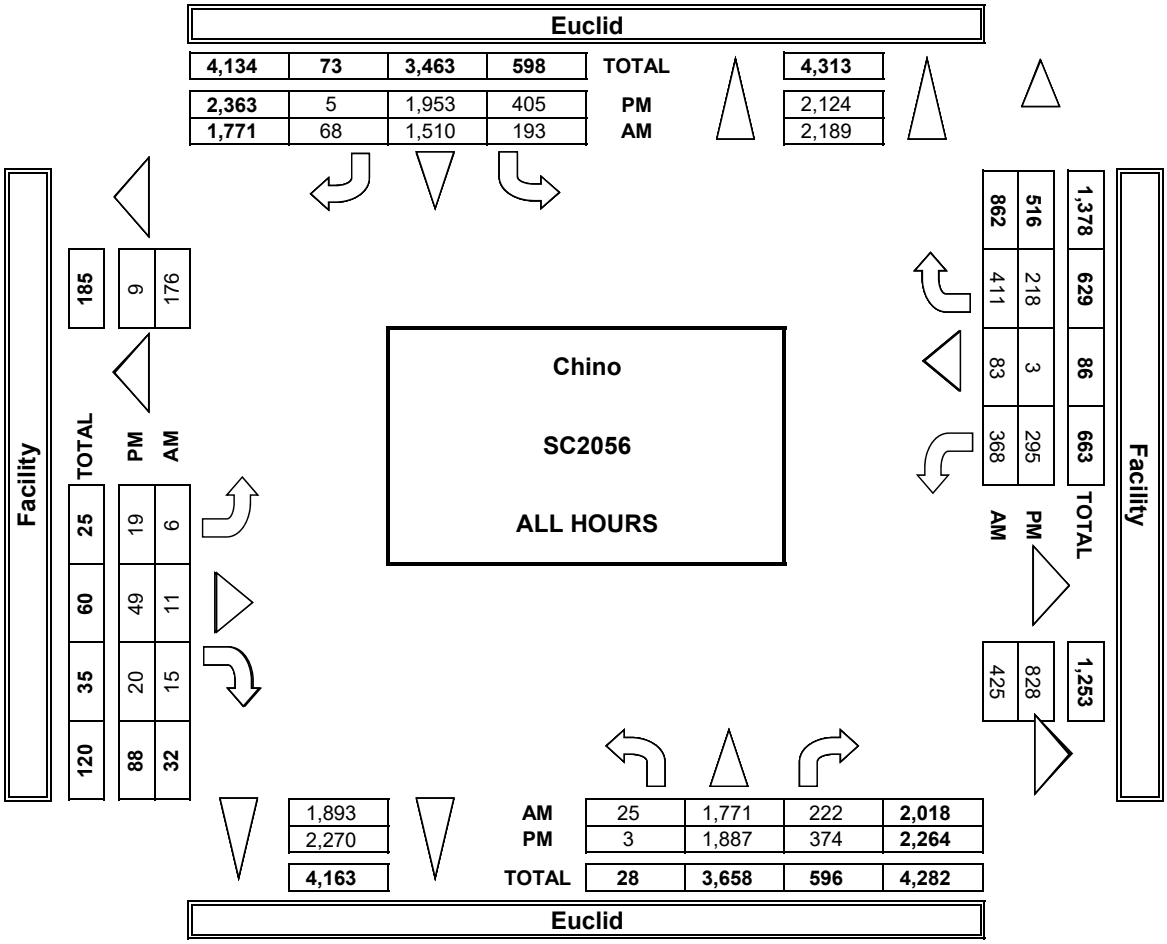
SOUTH SIDE

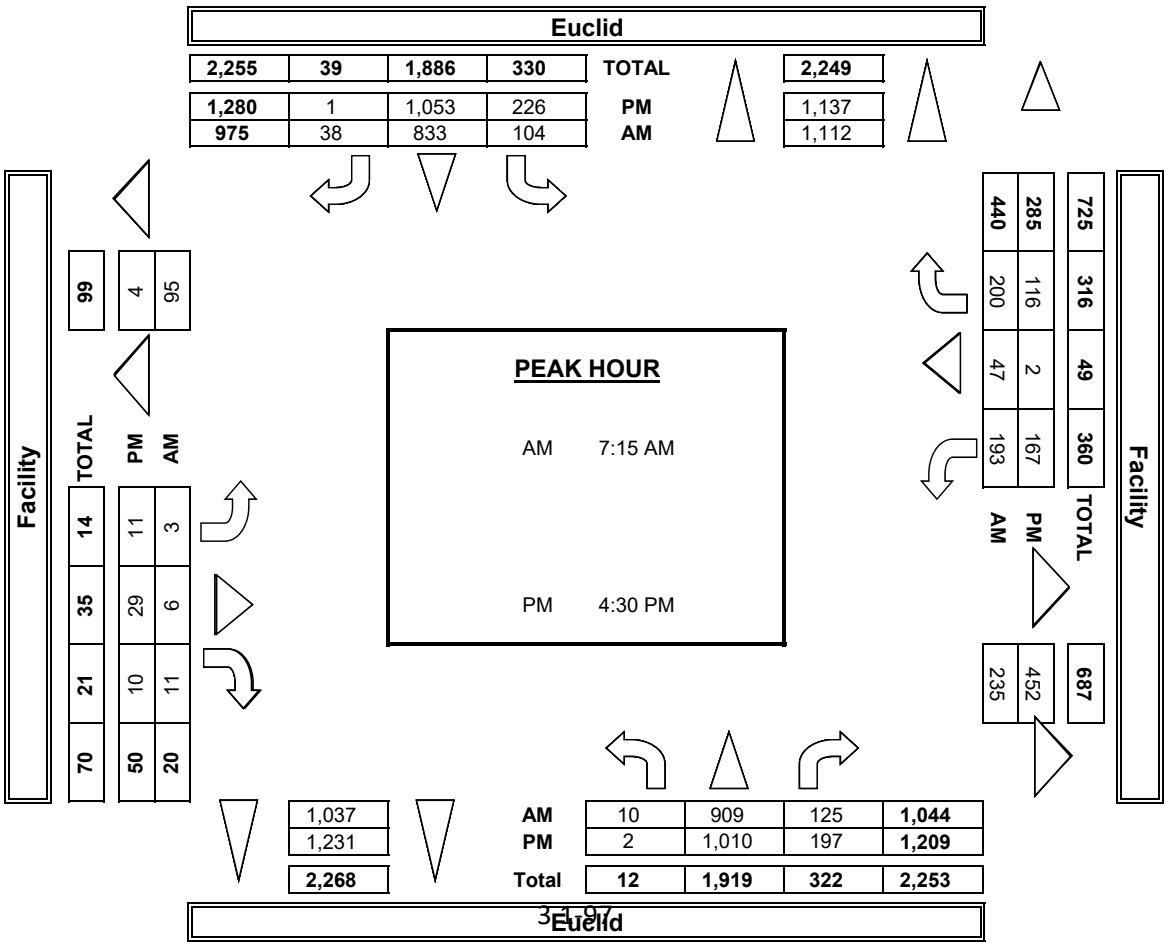
Euclid

	ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM 7:00 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	2	0	0	2	0	1	0	0	1	0	1	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	4	0	0	4	0	1	0	0	1	0	3	0	0	3
PM 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Euclid	LOCATION #:	16
TUESDAY	EAST & WEST:	Facility	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Facility)			WESTBOUND (Facility)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	2	11	1	2	16	0	0	0	1	2	0	2	37
	7:15 AM	0	17	1	1	20	0	0	0	1	6	0	1	47
	7:30 AM	0	7	5	2	17	1	0	0	3	4	0	3	42
	7:45 AM	0	5	1	3	31	0	1	0	1	3	1	2	48
	8:00 AM	0	26	4	5	35	0	0	0	0	12	0	1	83
	8:15 AM	0	17	1	4	37	1	0	0	0	1	0	2	63
	8:30 AM	0	26	2	2	10	0	2	0	1	0	1	5	49
	8:45 AM	2	29	0	2	23	0	0	0	0	6	0	2	64
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	4	138	15	21	189	2	3	0	7	34	2	18	433
	APPROACH %	3%	88%	10%	10%	89%	1%	30%	0%	70%	63%	4%	33%	
	APP/DEPART	157	/	159	212	/	230	10	/	36	54	/	8	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	2	98	7	13	105	1	2	0	1	19	1	10	259
	APPROACH %	2%	92%	7%	11%	88%	1%	67%	0%	33%	63%	3%	33%	
	PEAK HR FACTOR		0.863			0.708			0.250			0.577		0.780
	APP/DEPART	107	/	110	119	/	125	3	/	20	30	/	4	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	18	5	1	16	0	0	0	0	1	0	0	41
	4:15 PM	0	31	6	3	14	0	0	0	0	3	0	4	61
	4:30 PM	0	26	5	0	15	0	0	0	0	1	0	2	49
	4:45 PM	0	30	2	4	10	0	0	0	0	1	0	0	47
	5:00 PM	0	18	3	2	14	0	0	0	0	2	0	0	39
	5:15 PM	0	23	4	1	12	0	0	0	0	2	0	2	44
	5:30 PM	0	20	2	1	11	0	0	0	0	2	0	0	36
	5:45 PM	0	10	0	0	10	0	0	0	0	3	0	0	23
	VOLUMES	0	176	27	12	102	0	0	0	0	15	0	8	340
	APPROACH %	0%	87%	13%	11%	89%	0%	0%	0%	0%	65%	0%	35%	
	APP/DEPART	203	/	184	114	/	117	0	/	39	23	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	105	18	8	55	0	0	0	0	6	0	6	198
	APPROACH %	0%	85%	15%	13%	87%	0%	0%	0%	0%	50%	0%	50%	
	PEAK HR FACTOR		0.831			0.926			0.000			0.429		0.811
	APP/DEPART	123	/	111	63	/	61	0	/	26	12	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	1
0	0	1	0
0	0	0	0
0	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	1	1
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
1	0	0	0

Euclid

NORTH SIDE

Facility WEST SIDE EAST SIDE **Facility**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Euclid	LOCATION #:	16
TUESDAY	EAST & WEST:	Facility	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

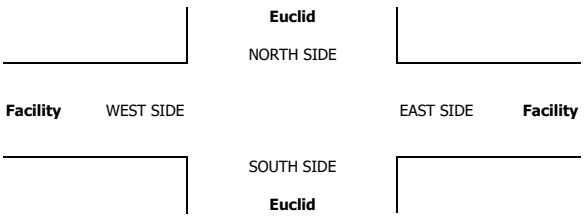
		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Facility)			WESTBOUND (Facility)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	1	0	0	0	1	0	0	0	0	0	1	3
	7:15 AM	0	4	2	1	3	0	0	0	0	1	0	0	11
	7:30 AM	0	1	0	1	4	0	0	0	0	1	0	2	9
	7:45 AM	0	4	0	0	3	0	0	1	1	1	0	0	10
	8:00 AM	0	1	1	0	2	0	0	1	0	0	0	0	5
	8:15 AM	0	2	0	1	5	0	0	0	0	0	0	0	8
	8:30 AM	0	6	0	2	0	0	0	0	0	0	2	1	11
	8:45 AM	0	4	0	1	2	0	0	0	0	0	0	0	7
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	23	3	6	19	1	0	2	1	3	2	4	64
	APPROACH %	0%	88%	12%	23%	73%	4%	0%	67%	33%	33%	22%	44%	
	APP/DEPART	26	/	27	26	/	23	3	/	11	9	/	3	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	10	3	2	12	0	0	2	1	3	0	2	35
	APPROACH %	0%	77%	23%	14%	86%	0%	0%	67%	33%	60%	0%	40%	
	PEAK HR FACTOR		0.542			0.700			0.375			0.417		0.795
	APP/DEPART	13	/	12	14	/	16	3	/	7	5	/	0	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
	4:15 PM	0	2	1	0	3	0	0	0	0	0	0	1	7
	4:30 PM	0	2	0	0	3	0	0	0	0	0	0	0	5
	4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
	5:00 PM	0	3	0	1	2	0	0	0	0	0	0	2	8
	5:15 PM	0	4	0	0	2	0	0	0	2	1	0	0	9
	5:30 PM	0	3	1	0	0	0	0	0	0	0	0	0	4
	5:45 PM	0	2	1	0	0	0	0	0	0	0	0	0	3
	VOLUMES	0	16	3	1	13	0	0	0	2	1	0	3	39
	APPROACH %	0%	84%	16%	7%	93%	0%	0%	0%	100%	25%	0%	75%	
	APP/DEPART	19	/	19	14	/	16	2	/	4	4	/	0	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	12	2	1	4	0	0	0	2	1	0	2	24
	APPROACH %	0%	86%	14%	20%	80%	0%	0%	0%	100%	33%	0%	67%	
	PEAK HR FACTOR		0.875			0.417			0.250			0.375		0.667
	APP/DEPART	14	/	14	5	/	7	2	/	3	3	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR 0	ERR 0	WRR 0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Euclid	LOCATION #:	16
TUESDAY	EAST & WEST:	Facility	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND Euclid			SOUTHBOUND Euclid			EASTBOUND Facility			WESTBOUND Facility			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	0	0	1	0	0	1	0	
AM													
7:00 AM	0	5	1	3	7	0	0	0	0	5	0	2	23
7:15 AM	0	6	1	0	12	0	0	0	0	5	0	3	27
7:30 AM	0	8	1	0	7	0	0	0	0	1	0	3	20
7:45 AM	0	9	1	2	10	0	0	0	0	1	0	1	24
8:00 AM	0	10	0	2	13	0	0	0	1	1	0	4	31
8:15 AM	0	8	1	2	12	0	1	0	0	3	0	1	28
8:30 AM	0	18	1	3	6	0	0	0	0	4	0	5	37
8:45 AM	2	16	3	4	12	0	0	0	0	0	0	2	39
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	2	80	9	16	79	0	1	0	1	20	0	21	229
APPROACH %	2%	88%	10%	17%	83%	0%	50%	0%	50%	49%	0%	51%	
APP/DEPART	91	/	102	95	/	100	2	/	25	41	/	2	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	2	52	5	11	43	0	1	0	1	8	0	12	135
APPROACH %	3%	88%	8%	20%	80%	0%	50%	0%	50%	40%	0%	60%	
PEAK HR FACTOR		0.702			0.844			0.500			0.556		0.865
APP/DEPART	59	/	65	54	/	52	2	/	16	20	/	2	0
PM													
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	8	2	0	15	0	0	0	0	1	0	1	27
4:15 PM	0	14	2	2	7	0	0	0	0	1	0	1	27
4:30 PM	0	8	1	3	12	0	0	0	0	1	0	3	28
4:45 PM	0	8	5	0	9	0	0	0	0	2	0	0	24
5:00 PM	0	9	2	4	6	0	0	0	0	1	0	4	26
5:15 PM	1	9	2	3	7	0	0	0	0	2	0	1	25
5:30 PM	0	6	5	1	8	0	0	0	0	2	0	3	25
5:45 PM	0	5	0	2	6	0	0	0	0	1	0	2	16
VOLUMES	1	67	19	15	70	0	0	0	0	11	0	15	198
APPROACH %	1%	77%	22%	18%	82%	0%	0%	0%	0%	42%	0%	58%	
APP/DEPART	87	/	82	85	/	82	0	/	34	26	/	0	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	38	10	5	43	0	0	0	0	5	0	5	106
APPROACH %	0%	79%	21%	10%	90%	0%	0%	0%	0%	50%	0%	50%	
PEAK HR FACTOR		0.750			0.800			0.000			0.625		0.946
APP/DEPART	48	/	43	48	/	48	0	/	15	10	/	0	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:						0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	1
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	3
PEAK HR VOLUMES						0	0	0	2
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	1	0	0	0	1	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
VOLUMES	1	0	0	0	1	0	0	0	0
PEAK HR VOLUMES						0	0	0	0

Euclid

NORTH SIDE

Facility WEST SIDE

EAST SIDE **Facility**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Jan 22, 19

LOCATION: Chino
NORTH & SOUTH: Euclid
EAST & WEST: Kimball

PROJECT #: SC2056
LOCATION #: 17
CONTROL: SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

▲ N
◄ W
E ►
S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Kimball)			WESTBOUND (Kimball)			
	LANES:	NL 1	NT 2	NR 1	SL 2	ST 2	SR 1	EL 2	ET 2	ER 0	WL 1	WT 1.5	WR 0.5	TOTAL
AM	7:00 AM	13	151	7	45	160	62	32	40	5	9	189	65	778
	7:15 AM	21	160	3	37	129	90	13	50	12	8	172	57	752
	7:30 AM	21	139	4	40	97	69	15	80	1	9	196	99	770
	7:45 AM	24	189	7	48	116	91	26	42	3	4	149	58	757
	8:00 AM	24	143	7	42	108	101	34	57	4	7	159	46	732
	8:15 AM	16	157	9	36	104	50	16	55	4	16	166	67	696
	8:30 AM	19	144	8	40	93	70	34	56	3	7	158	72	704
	8:45 AM	12	152	16	34	105	58	30	42	6	10	107	53	625
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	150	1,235	61	322	912	591	200	422	38	70	1,296	517	5,814
	APPROACH %	10%	85%	4%	18%	50%	32%	30%	64%	6%	4%	69%	27%	
	APP/DEPART	1,446	/	1,958	1,825	/	1,031	660	/	798	1,883	/	2,027	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	79	639	21	170	502	312	86	212	21	30	706	279	3,057
	APPROACH %	11%	86%	3%	17%	51%	32%	27%	66%	7%	3%	70%	27%	
	PEAK HR FACTOR		0.840			0.921			0.831			0.835		0.982
	APP/DEPART	739	/	1,007	984	/	557	319	/	399	1,015	/	1,094	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	10	171	11	76	132	31	81	145	7	9	61	43	777
	4:15 PM	4	158	3	66	108	38	83	169	8	11	60	47	755
	4:30 PM	14	177	7	104	138	57	84	136	7	4	61	37	826
	4:45 PM	10	183	9	103	144	49	94	178	10	9	94	41	924
	5:00 PM	12	177	7	120	172	33	67	160	15	13	56	41	873
	5:15 PM	16	188	10	90	171	49	59	183	6	13	73	37	895
	5:30 PM	19	172	3	93	185	44	59	185	7	13	61	37	878
	5:45 PM	18	169	1	106	152	41	40	210	11	12	80	38	878
	VOLUMES	103	1,395	51	758	1,202	342	567	1,366	71	84	546	321	6,806
	APPROACH %	7%	90%	3%	33%	52%	15%	28%	68%	4%	9%	57%	34%	
	APP/DEPART	1,549	/	2,347	2,302	/	1,375	2,004	/	2,111	951	/	973	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	57	720	29	406	672	175	279	706	38	48	284	156	3,570
	APPROACH %	7%	89%	4%	32%	54%	14%	27%	69%	4%	10%	58%	32%	
	PEAK HR FACTOR		0.942			0.964			0.907			0.847		0.966
	APP/DEPART	806	/	1,183	1,253	/	768	1,023	/	1,113	488	/	506	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	1	0	1
4	2	0	0	6
0	1	0	0	1
0	1	0	0	1
2	1	0	0	3
3	0	0	0	3
1	1	0	0	2
1	1	0	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
11	7	1	0	19
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
2	11	0	0	13
1	15	0	0	16
0	10	0	0	10
3	9	0	0	12
3	13	0	0	16
2	4	0	0	6
2	2	0	0	4
5	0	0	0	5
18	64	0	0	82

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
6	17	1	8
0	36	6	3
3	39	1	19
3	34	1	5
6	51	1	11
7	28	1	9
2	34	0	10
9	34	1	12
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
36	273	12	77
12	126	9	35
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
9	7	2	10
2	25	2	16
4	30	0	7
5	23	0	9
2	21	1	9
5	31	1	5
3	20	1	14
0	12	2	11
30	169	9	81
15	95	3	37

Euclid

NORTH SIDE

Kimball WEST SIDE EAST SIDE **Kimball**

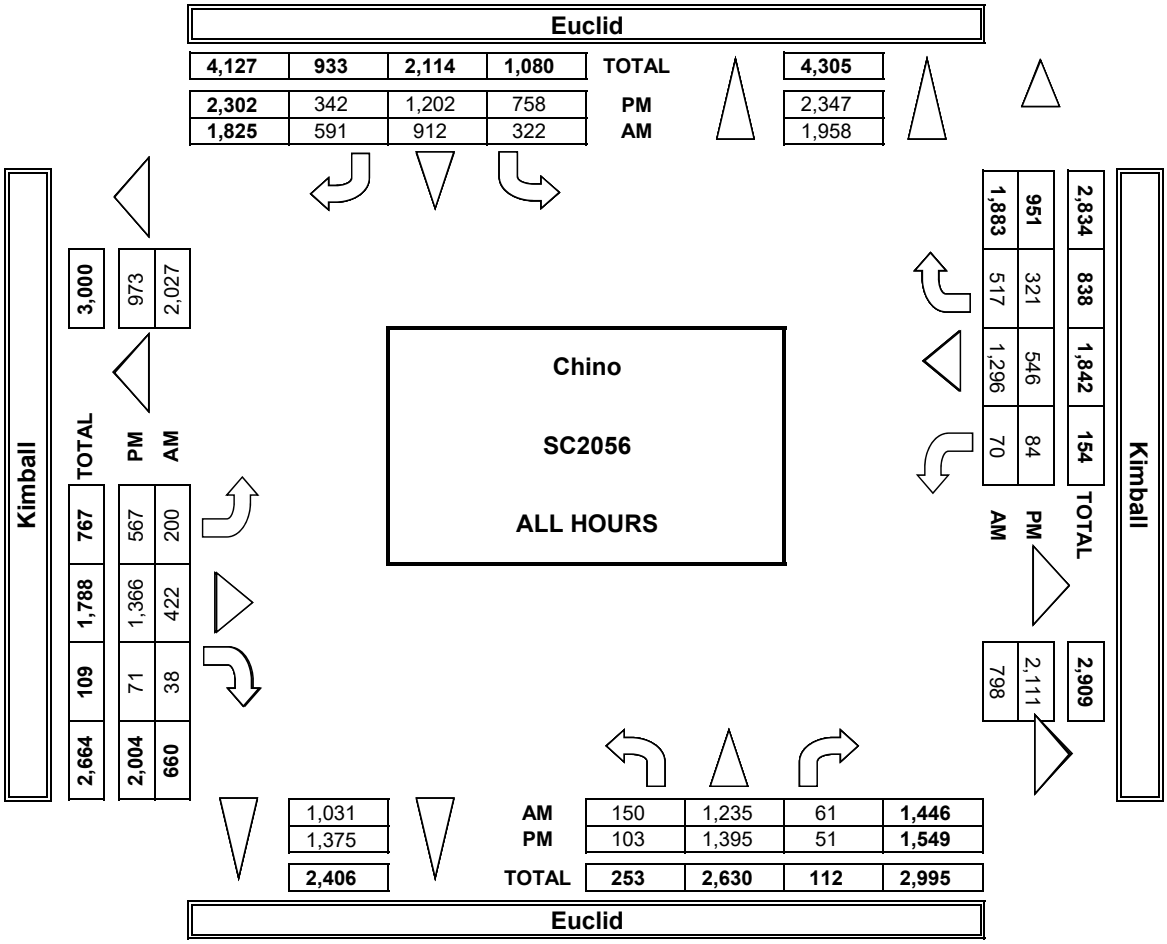
SOUTH SIDE

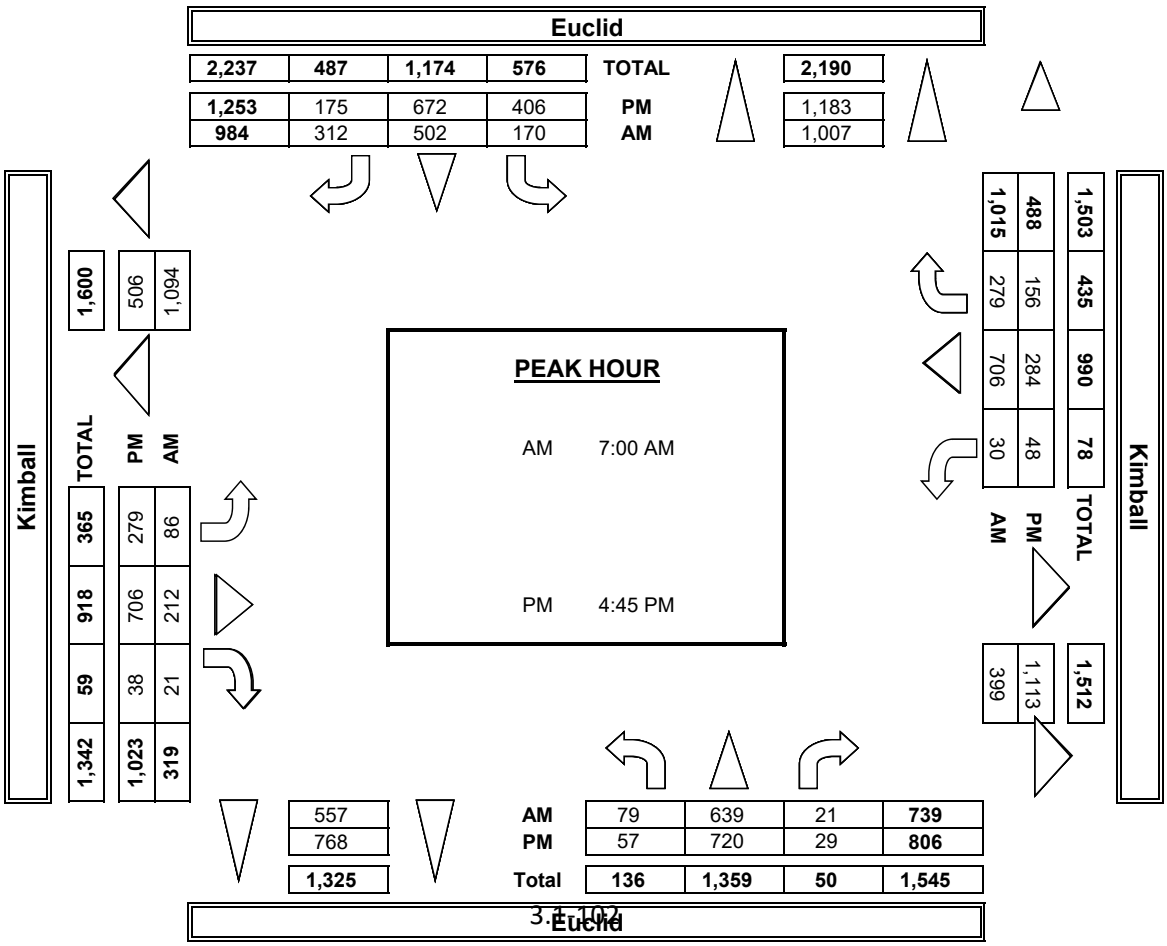
Euclid

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	8:30 AM	4	0	0	0	4	4	0	0	0	4	0	0	0	0	0
	8:45 AM	0	1	0	2	3	0	0	0	2	2	0	1	0	0	1
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	4	3	0	2	9	4	0	0	2	6	0	3	0	0	3
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	2	0	2	0	0	2	0	2	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	2	1	0	3	0	1	1	0	2	0	1	0	0	1
	4:45 PM	0	1	1	0	2	0	1	1	0	2	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	3	4	0	7	0	2	4	0	6	0	1	0	0	1

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Euclid	LOCATION #:	17
TUESDAY	EAST & WEST:	Kimball	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Kimball)			WESTBOUND (Kimball)			
	LANES:	NL 1	NT 2	NR 1	SL 2	ST 2	SR 1	EL 2	ET 2	ER 0	WL 1	WT 1.5	WR 0.5	TOTAL
AM	7:00 AM	2	10	0	10	18	6	4	1	2	1	2	3	59
	7:15 AM	2	9	1	5	24	13	3	6	2	2	6	1	74
	7:30 AM	2	6	1	7	10	4	3	2	0	2	5	3	45
	7:45 AM	0	13	1	4	7	12	8	2	2	1	2	3	55
	8:00 AM	2	17	0	0	14	42	15	1	1	1	2	5	100
	8:15 AM	3	17	2	4	12	10	0	3	0	0	4	1	56
	8:30 AM	1	24	0	2	12	24	9	5	1	1	4	6	89
	8:45 AM	1	15	0	4	13	3	9	0	2	2	4	1	54
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	13	111	5	36	110	114	51	20	10	10	29	23	532
	APPROACH %	10%	86%	4%	14%	42%	44%	63%	25%	12%	16%	47%	37%	
	APP/DEPART	129	/	185	260	/	132	81	/	61	62	/	154	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	4	71	3	10	45	88	32	11	4	3	12	15	300
	APPROACH %	5%	89%	4%	7%	31%	62%	68%	23%	9%	10%	40%	50%	
	PEAK HR FACTOR		0.800			0.638			0.691			0.682		0.750
	APP/DEPART	80	/	118	143	/	54	47	/	24	30	/	104	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	21	0	3	11	3	6	2	0	1	2	1	50
	4:15 PM	0	17	0	0	4	6	8	4	0	1	0	4	44
	4:30 PM	1	22	1	1	7	10	6	2	0	0	1	1	52
	4:45 PM	1	27	0	2	11	6	8	4	1	1	4	3	68
	5:00 PM	0	23	1	2	7	6	7	7	1	0	1	1	56
	5:15 PM	0	23	0	1	6	13	3	4	0	0	2	2	54
	5:30 PM	0	14	0	1	10	8	3	4	1	0	0	2	43
	5:45 PM	0	10	0	4	2	12	2	3	1	0	1	1	36
	VOLUMES	2	157	2	14	58	64	43	30	4	3	11	15	403
	APPROACH %	1%	98%	1%	10%	43%	47%	56%	39%	5%	10%	38%	52%	
	APP/DEPART	161	/	215	136	/	65	77	/	46	29	/	77	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	2	95	2	6	31	35	24	17	2	1	8	7	230
	APPROACH %	2%	96%	2%	8%	43%	49%	56%	40%	5%	6%	50%	44%	
	PEAK HR FACTOR		0.884			0.900			0.717			0.500		0.846
	APP/DEPART	99	/	126	72	/	34	43	/	25	16	/	45	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
2	0	0	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
2	0	0	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	1	1
0	5	1	0
0	2	0	0
1	7	1	0
0	22	0	2
1	6	0	0
0	11	0	2
0	2	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
2	55	3	5
2	46	1	4
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	4	0	2
0	7	0	0
0	2	0	1
0	5	0	0
0	7	0	0
0	3	0	1
0	3	1	1
0	31	1	5
0	21	0	1

Euclid

NORTH SIDE

Kimball WEST SIDE EAST SIDE **Kimball**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Euclid	LOCATION #:	17
TUESDAY	EAST & WEST:	Kimball	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Euclid			SOUTHBOUND Euclid			EASTBOUND Kimball			WESTBOUND Kimball			
	LANES:	NL 1	NT 2	NR 1	SL 2	ST 2	SR 1	EL 2	ET 2	ER 0	WL 1	WT 1.5	WR 0.5	TOTAL
AM	7:00 AM	1	2	1	3	1	1	0	1	0	0	1	1	12
	7:15 AM	1	1	0	2	3	0	0	0	0	1	0	0	8
	7:30 AM	0	0	0	0	4	1	1	0	0	0	0	1	7
	7:45 AM	0	1	0	0	0	1	0	0	0	0	2	1	5
	8:00 AM	1	1	0	0	0	1	1	3	0	0	1	0	8
	8:15 AM	0	0	0	1	1	1	0	0	0	0	0	0	3
	8:30 AM	0	2	0	0	1	1	3	0	0	0	1	0	8
	8:45 AM	0	2	0	0	4	0	2	1	0	0	1	0	10
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	3	9	1	6	14	6	7	5	0	1	6	3	61
	APPROACH %	23%	69%	8%	23%	54%	23%	58%	42%	0%	10%	60%	30%	
	APP/DEPART	13	/	19	26	/	15	12	/	12	10	/	15	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	2	4	1	5	8	3	1	1	0	1	3	3	32
	APPROACH %	29%	57%	14%	31%	50%	19%	50%	50%	0%	14%	43%	43%	
	PEAK HR FACTOR		0.438			0.800			0.500			0.583		0.667
	APP/DEPART	7	/	8	16	/	9	2	/	7	7	/	8	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	1	0	1	1	0	0	1	0	0	0	0	4
	4:15 PM	0	3	0	0	0	0	1	0	0	1	0	0	5
	4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
	4:45 PM	0	0	0	1	1	2	2	0	0	0	0	0	6
	5:00 PM	0	1	0	0	0	1	0	0	1	0	0	1	4
	5:15 PM	0	1	0	2	2	1	0	1	0	0	3	0	10
	5:30 PM	0	2	0	0	1	0	0	0	0	1	0	0	4
	5:45 PM	0	1	0	1	0	1	0	1	0	0	0	0	4
	VOLUMES	0	10	0	5	5	5	3	3	1	2	3	1	38
	APPROACH %	0%	100%	0%	33%	33%	33%	43%	43%	14%	33%	50%	17%	
	APP/DEPART	10	/	14	15	/	8	7	/	8	6	/	8	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	4	0	3	4	4	2	1	1	1	3	1	24
	APPROACH %	0%	100%	0%	27%	36%	36%	50%	25%	25%	20%	60%	20%	
	PEAK HR FACTOR		0.500			0.550			0.500			0.417		0.600
	APP/DEPART	4	/	7	11	/	6	4	/	4	5	/	7	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR 0	ERR 0	WRR 0
1	0	0	1
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	1	0	1
1	1	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	3	0	0
0	3	0	0

Euclid

NORTH SIDE

Kimball WEST SIDE EAST SIDE **Kimball**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Euclid	LOCATION #:	17
TUESDAY	EAST & WEST:	Kimball	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND Euclid			SOUTHBOUND Euclid			EASTBOUND Kimball			WESTBOUND Kimball			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	2	2	1	2	2	0	1	1.5	0.5	
AM													
7:00 AM	0	3	0	0	8	8	3	0	2	1	0	0	25
7:15 AM	0	4	0	0	5	6	3	1	2	0	1	2	24
7:30 AM	0	3	0	1	4	2	4	1	0	4	0	0	19
7:45 AM	0	11	2	0	6	6	4	0	0	0	1	2	32
8:00 AM	1	6	1	0	6	4	3	2	0	1	1	0	25
8:15 AM	1	3	1	0	11	5	2	0	0	8	0	0	31
8:30 AM	2	7	3	1	10	6	7	2	0	0	2	2	42
8:45 AM	3	10	5	2	7	6	6	1	1	1	2	2	46
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	7	47	12	4	57	43	32	7	5	15	7	8	244
APPROACH %	11%	71%	18%	4%	55%	41%	73%	16%	11%	50%	23%	27%	
APP/DEPART	66	/	87	104	/	77	44	/	23	30	/	57	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	7	26	10	3	34	21	18	5	1	10	5	4	144
APPROACH %	16%	60%	23%	5%	59%	36%	75%	21%	4%	53%	26%	21%	
PEAK HR FACTOR		0.597			0.853			0.667			0.594		0.783
APP/DEPART	43	/	48	58	/	45	24	/	18	19	/	33	0
PM													
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	1	8	0	1	4	2	3	1	0	2	0	0	22
4:15 PM	0	4	0	0	4	2	7	0	1	1	0	1	20
4:30 PM	2	5	0	1	11	7	3	0	0	0	1	0	30
4:45 PM	0	1	1	0	4	8	3	6	0	1	2	0	26
5:00 PM	0	4	1	0	2	3	6	0	2	1	1	1	21
5:15 PM	0	6	0	0	7	3	11	3	0	1	3	0	34
5:30 PM	1	6	1	0	3	2	6	4	0	1	1	1	26
5:45 PM	1	7	1	0	6	3	3	1	2	2	0	0	26
VOLUMES	5	41	4	2	41	30	42	15	5	9	8	3	205
APPROACH %	10%	82%	8%	3%	56%	41%	68%	24%	8%	45%	40%	15%	
APP/DEPART	50	/	86	73	/	57	62	/	21	20	/	41	0
BEGIN PEAK HR		4:30 PM											
VOLUMES	2	16	2	1	24	21	23	9	2	3	7	1	111
APPROACH %	10%	80%	10%	2%	52%	46%	68%	26%	6%	27%	64%	9%	
PEAK HR FACTOR		0.714			0.605			0.607			0.688		0.816
APP/DEPART	20	/	40	46	/	29	34	/	12	11	/	30	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
						0	0	0	0
7:00 AM	0	0	0	0	0	0	2	0	0
7:15 AM	0	0	0	0	0	0	2	0	0
7:30 AM	0	0	0	0	0	0	1	0	0
7:45 AM	0	0	0	0	0	0	2	0	0
8:00 AM	0	0	0	0	0	1	1	0	0
8:15 AM	0	0	0	0	0	1	3	0	0
8:30 AM	0	0	0	0	0	2	2	0	0
8:45 AM	0	0	0	0	0	2	1	0	2
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	6	14	0	2
PEAK HR VOLUMES						6	7	0	2
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	1	0	0
4:15 PM	0	0	0	0	0	0	1	0	0
4:30 PM	0	0	0	0	0	0	4	0	0
4:45 PM	0	0	0	0	0	0	3	0	0
5:00 PM	0	0	0	0	0	0	1	0	0
5:15 PM	0	0	0	0	0	0	3	0	0
5:30 PM	1	0	0	0	1	1	1	0	1
5:45 PM	1	0	0	0	1	0	0	0	0
VOLUMES	2	0	0	0	2	1	14	0	1
PEAK HR VOLUMES						0	11	0	0

Euclid

NORTH SIDE

Kimball WEST SIDE

EAST SIDE **Kimball**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
Tue, Jan 22, 19	NORTH & SOUTH:	Euclid	LOCATION #:	18
	EAST & WEST:	Bickmore	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Bickmore)			WESTBOUND (Bickmore)			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL
AM	7:00 AM	7	117	3	9	128	21	9	2	6	67	70	38	477
	7:15 AM	4	130	10	6	116	34	5	3	2	31	37	26	404
	7:30 AM	5	145	4	5	137	31	2	3	2	27	31	29	421
	7:45 AM	6	124	2	11	110	29	5	0	3	38	53	34	415
	8:00 AM	6	131	3	15	111	41	22	4	3	35	36	26	433
	8:15 AM	7	144	6	5	94	20	15	2	3	29	20	17	362
	8:30 AM	5	142	9	6	107	20	21	3	6	19	16	19	373
	8:45 AM	5	146	4	11	89	18	10	2	1	15	20	16	337
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	45	1,079	41	68	892	214	89	19	26	261	283	205	3,222
	APPROACH %	4%	93%	4%	6%	76%	18%	66%	14%	19%	35%	38%	27%	
	APP/DEPART	1,165	/	1,373	1,174	/	1,181	134	/	128	749	/	540	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	22	516	19	31	491	115	21	8	13	163	191	127	1,717
	APPROACH %	4%	93%	3%	5%	77%	18%	50%	19%	31%	34%	40%	26%	
	PEAK HR FACTOR		0.904			0.921			0.618			0.687		0.900
	APP/DEPART	557	/	664	637	/	668	42	/	58	481	/	327	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	3	152	12	16	112	22	29	21	12	7	8	4	398
	4:15 PM	4	141	5	14	133	23	25	18	8	4	4	6	385
	4:30 PM	5	165	12	17	141	27	43	24	17	8	4	12	475
	4:45 PM	2	133	16	12	167	35	28	26	9	9	7	8	452
	5:00 PM	6	124	21	18	130	24	20	23	9	9	2	16	402
	5:15 PM	3	144	22	26	155	16	7	22	5	9	6	12	427
	5:30 PM	1	136	14	20	151	15	9	14	14	1	4	7	386
	5:45 PM	11	138	13	21	144	15	32	16	10	9	2	11	422
	VOLUMES	35	1,133	115	144	1,133	177	193	164	84	56	37	76	3,347
	APPROACH %	3%	88%	9%	10%	78%	12%	44%	37%	19%	33%	22%	45%	
	APP/DEPART	1,283	/	1,402	1,454	/	1,273	441	/	423	169	/	249	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	16	566	71	73	593	102	98	95	40	35	19	48	1,756
	APPROACH %	2%	87%	11%	10%	77%	13%	42%	41%	17%	34%	19%	47%	
	PEAK HR FACTOR		0.897			0.897			0.693			0.944		0.924
	APP/DEPART	653	/	712	768	/	668	233	/	239	102	/	137	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
2	0	0	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
2	10	3	11
4	12	0	9
0	10	0	10
0	11	1	5
1	18	3	9
1	7	3	6
1	6	2	5
1	4	0	8
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
10	78	12	63
6	43	4	35
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
6	5	3	1
3	6	2	6
5	7	6	10
6	13	3	0
4	5	3	8
6	4	2	8
1	1	4	4
5	6	4	7
36	47	27	44
21	29	14	26

Euclid

NORTH SIDE

Bickmore WEST SIDE EAST SIDE **Bickmore**

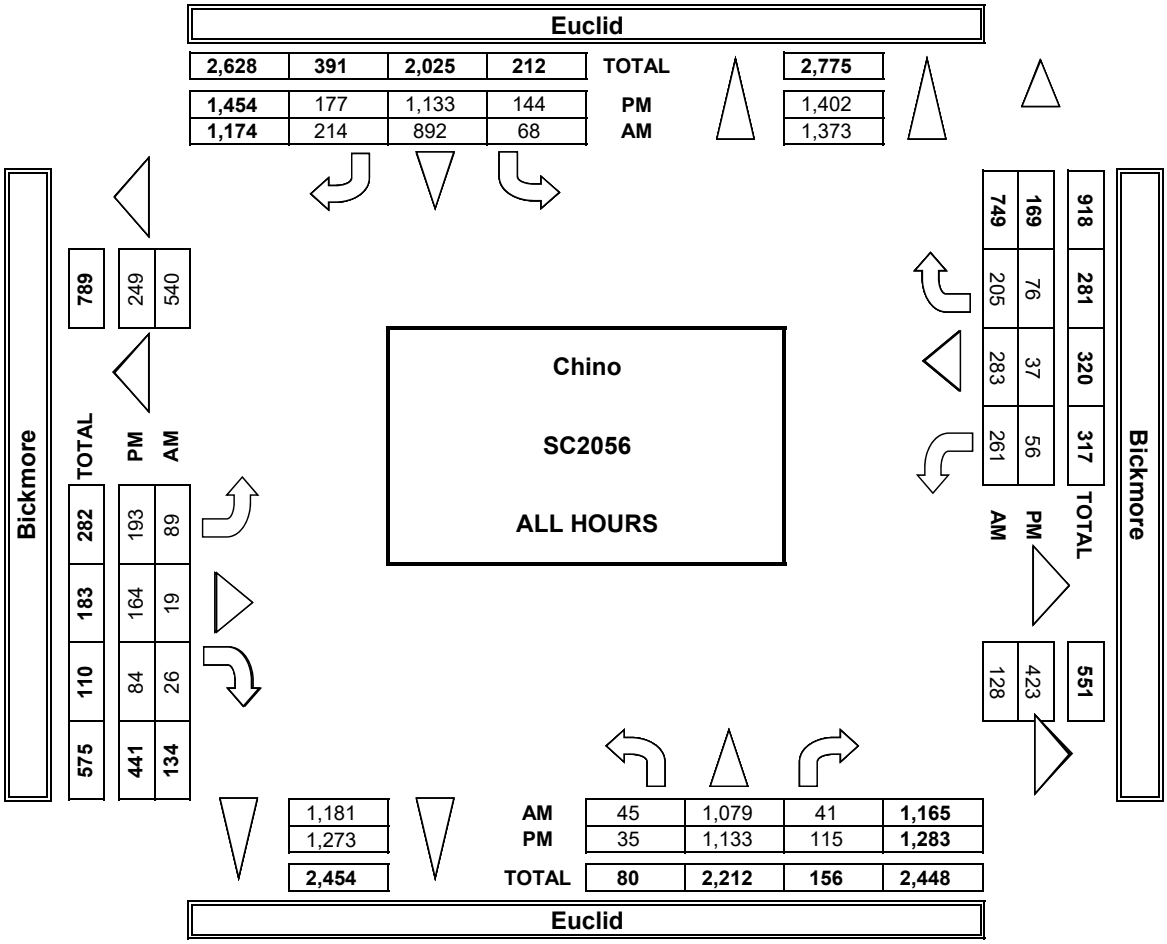
SOUTH SIDE

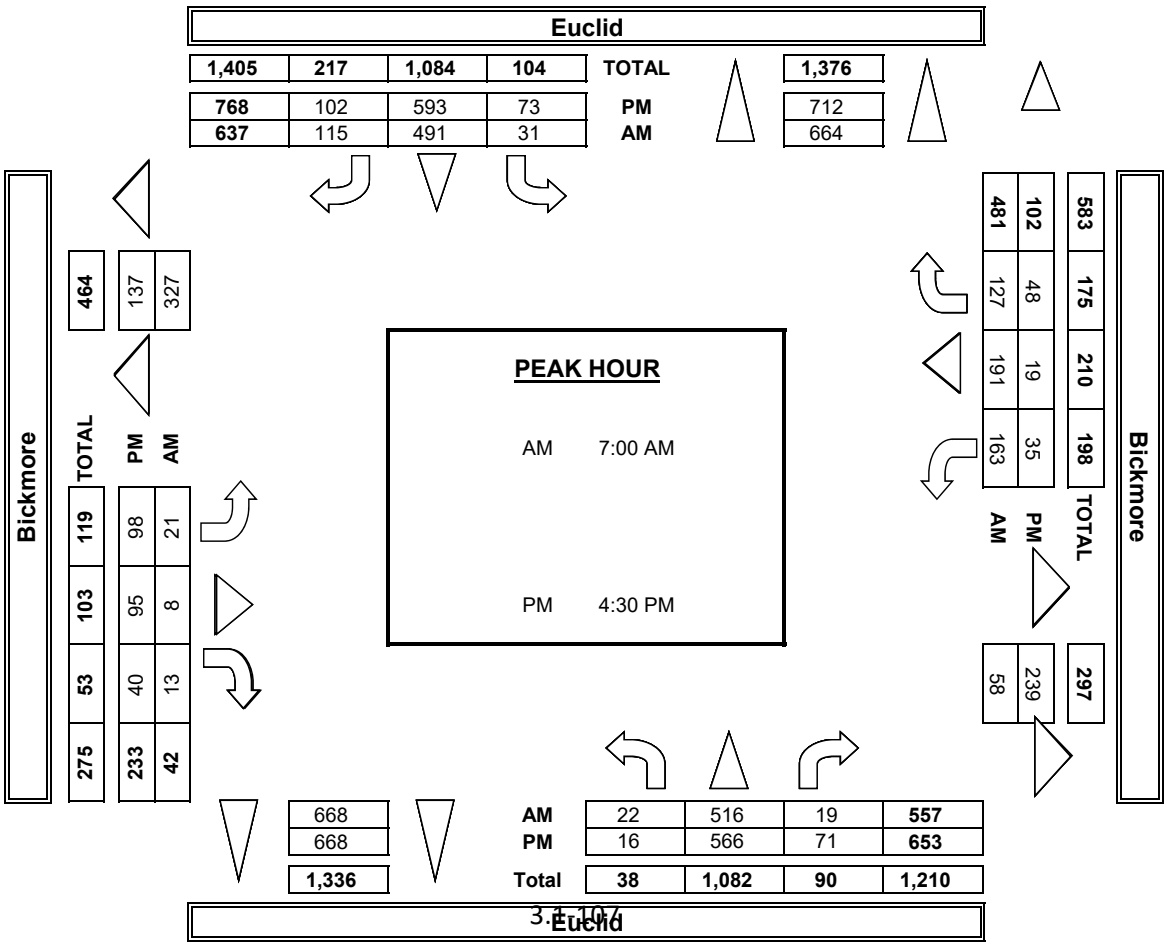
Euclid

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Euclid	LOCATION #:	18
TUESDAY	EAST & WEST:	Bickmore	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Bickmore)			WESTBOUND (Bickmore)			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL
7:00 AM	1	4	0	1	14	5	0	0	2	1	2	4	34
7:15 AM	1	7	1	0	12	10	0	0	0	1	1	0	33
7:30 AM	0	8	0	0	27	7	0	0	0	1	0	2	45
7:45 AM	0	3	0	3	15	2	0	0	0	1	0	0	24
8:00 AM	0	5	0	4	12	5	8	0	3	2	0	3	42
8:15 AM	1	4	1	1	8	4	5	1	1	0	0	1	27
8:30 AM	0	7	1	0	14	10	6	0	3	1	0	2	44
8:45 AM	0	10	0	1	7	5	4	0	0	0	0	1	28
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	3	48	3	10	109	48	23	1	9	7	3	13	277
APPROACH %	6%	89%	6%	6%	65%	29%	70%	3%	27%	30%	13%	57%	
APP/DEPART	54	/	84	167	/	125	33	/	14	23	/	54	0
BEGIN PEAK HR		7:15 AM											
VOLUMES	1	23	1	7	66	24	8	0	3	5	1	5	144
APPROACH %	4%	92%	4%	7%	68%	25%	73%	0%	27%	45%	9%	45%	
PEAK HR FACTOR		0.694			0.713			0.250			0.550		0.800
APP/DEPART	25	/	36	97	/	74	11	/	8	11	/	26	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	2	12	0	0	1	8	1	0	0	1	1	0	26
4:15 PM	3	14	0	0	7	9	5	0	0	0	1	2	41
4:30 PM	2	14	1	0	2	17	3	0	0	0	2	0	41
4:45 PM	0	8	1	0	2	8	4	0	0	0	0	0	23
5:00 PM	4	8	1	1	6	7	3	0	1	0	0	1	32
5:15 PM	2	4	0	2	5	4	0	1	0	0	1	1	20
5:30 PM	1	10	1	0	0	4	0	0	0	0	0	2	18
5:45 PM	2	6	0	0	0	7	1	0	1	0	0	1	18
VOLUMES	16	76	4	3	23	64	17	1	2	1	5	7	219
APPROACH %	17%	79%	4%	3%	26%	71%	85%	5%	10%	8%	38%	54%	
APP/DEPART	96	/	100	90	/	26	20	/	8	13	/	85	0
BEGIN PEAK HR		4:15 PM											
VOLUMES	9	44	3	1	17	41	15	0	1	0	3	3	137
APPROACH %	16%	79%	5%	2%	29%	69%	94%	0%	6%	0%	50%	50%	
PEAK HR FACTOR		0.824			0.776			0.800			0.500		0.835
APP/DEPART	56	/	62	59	/	18	16	/	4	6	/	53	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	3	1	2
1	5	0	0
0	3	0	2
0	1	0	0
0	4	3	2
1	1	1	1
0	3	1	0
0	1	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
2	21	6	8
1	13	3	4
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
2	24	1	5
1	17	0	2

Euclid

NORTH SIDE

Bickmore WEST SIDE EAST SIDE **Bickmore**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Euclid	LOCATION #:	18
TUESDAY	EAST & WEST:	Bickmore	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Euclid			SOUTHBOUND Euclid			EASTBOUND Bickmore			WESTBOUND Bickmore			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	1	2	0	0	0	1	0	0	0	4
	7:15 AM	0	0	0	0	4	0	0	0	0	0	0	1	5
	7:30 AM	0	2	0	0	3	0	0	0	0	1	0	0	6
	7:45 AM	0	1	0	0	5	1	0	0	0	0	0	0	7
	8:00 AM	0	0	0	0	1	1	0	0	0	0	0	0	2
	8:15 AM	0	2	0	1	3	0	0	0	0	0	0	0	6
	8:30 AM	0	4	0	0	1	0	0	0	0	0	0	0	5
	8:45 AM	0	1	0	0	0	0	1	0	0	0	0	0	2
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	10	0	2	19	2	1	0	1	1	0	1	37
	APPROACH %	0%	100%	0%	9%	83%	9%	50%	0%	50%	50%	0%	50%	
	APP/DEPART	10	/	12	23	/	21	2	/	2	2	/	2	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	0	3	0	1	14	1	0	0	1	1	0	1	22
	APPROACH %	0%	100%	0%	6%	88%	6%	0%	0%	100%	50%	0%	50%	
	PEAK HR FACTOR		0.375			0.667			0.250			0.500		0.786
	APP/DEPART	3	/	4	16	/	16	1	/	1	2	/	1	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
	4:15 PM	0	3	0	0	0	1	0	0	0	0	0	0	4
	4:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
	4:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
	5:00 PM	0	2	0	0	0	0	0	0	1	0	0	0	3
	5:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
	5:30 PM	0	0	0	0	1	0	0	0	1	0	0	0	2
	5:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
	VOLUMES	0	9	0	0	5	1	0	0	3	0	0	0	18
	APPROACH %	0%	100%	0%	0%	83%	17%	0%	0%	100%	0%	0%	0%	
	APP/DEPART	9	/	9	6	/	8	3	/	0	0	/	1	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	0	7	0	0	2	1	0	0	1	0	0	0	11
	APPROACH %	0%	100%	0%	0%	67%	33%	0%	0%	100%	0%	0%	0%	
	PEAK HR FACTOR		0.583			0.750			0.250			0.000		0.688
	APP/DEPART	7	/	7	3	/	3	1	/	0	0	/	1	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	1	0
0	0	0	1
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	1	1

0	1	1	1

0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0

0	0	1	0

Euclid

NORTH SIDE

Bickmore WEST SIDE EAST SIDE **Bickmore**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:				
1/22/19	LOCATION:	Chino	PROJECT #:	SC2056
TUESDAY	NORTH & SOUTH:	Euclid	LOCATION #:	18
	EAST & WEST:	Bickmore	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N / ◄ W / E ► / S ▼

		NORTHBOUND Euclid			SOUTHBOUND Euclid			EASTBOUND Bickmore			WESTBOUND Bickmore			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	1	2	0	1	2	1	1	1	1	1	1	0	
AM	7:00 AM	0	0	0	0	7	2	6	0	0	0	0	0	15
AM	7:15 AM	0	1	0	0	4	1	3	0	1	0	0	0	10
AM	7:30 AM	1	4	0	0	5	1	1	0	1	0	1	0	14
AM	7:45 AM	1	3	0	0	2	3	3	0	2	0	0	0	14
AM	8:00 AM	0	6	0	0	8	1	5	0	0	0	0	0	20
AM	8:15 AM	0	4	0	0	3	3	6	0	1	0	0	0	17
AM	8:30 AM	1	4	0	0	1	1	2	0	2	0	0	0	11
AM	8:45 AM	2	7	0	0	5	5	5	0	1	0	0	0	25
AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	VOLUMES	5	29	0	0	35	17	31	0	8	0	1	0	126
AM	APPROACH %	15%	85%	0%	0%	67%	33%	79%	0%	21%	0%	100%	0%	
AM	APP/DEPART	34	/	60	52	/	43	39	/	0	1	/	23	0
AM	BEGIN PEAK HR		8:00 AM											
AM	VOLUMES	3	21	0	0	17	10	18	0	4	0	0	0	73
AM	APPROACH %	13%	88%	0%	0%	63%	37%	82%	0%	18%	0%	0%	0%	
AM	PEAK HR FACTOR		0.667			0.675			0.786			0.000		0.730
AM	APP/DEPART	24	/	39	27	/	21	22	/	0	0	/	13	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	4	0	0	5	3	3	0	0	0	0	0	15
PM	4:15 PM	0	4	0	0	6	1	4	0	2	0	0	0	17
PM	4:30 PM	0	4	0	0	3	1	1	0	2	0	0	0	11
PM	4:45 PM	0	4	0	0	3	1	4	0	2	0	0	0	14
PM	5:00 PM	1	3	0	0	2	3	0	0	2	0	0	0	11
PM	5:15 PM	0	4	0	0	6	2	1	0	0	0	0	0	13
PM	5:30 PM	0	6	0	0	3	1	2	0	4	0	0	0	16
PM	5:45 PM	5	2	0	0	5	1	2	0	2	0	0	0	17
PM	VOLUMES	6	31	0	0	33	13	17	0	14	0	0	0	114
PM	APPROACH %	16%	84%	0%	0%	72%	28%	55%	0%	45%	0%	0%	0%	
PM	APP/DEPART	37	/	48	46	/	47	31	/	0	0	/	19	0
PM	BEGIN PEAK HR		4:00 PM											
PM	VOLUMES	6	15	0	0	16	7	5	0	8	0	0	0	57
PM	APPROACH %	29%	71%	0%	0%	70%	30%	38%	0%	62%	0%	0%	0%	
PM	PEAK HR FACTOR		0.750			0.719			0.542			0.000		0.838
PM	APP/DEPART	21	/	20	23	/	24	13	/	0	0	/	13	0

		U-TURNS					RTOR			
		NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
	LANES:						0	0	0	0
AM	7:00 AM	0	0	0	0	0	0	2	0	0
AM	7:15 AM	0	0	0	0	0	0	0	0	0
AM	7:30 AM	0	0	0	0	0	0	0	0	0
AM	7:45 AM	0	0	0	0	0	0	0	0	0
AM	8:00 AM	0	0	0	0	0	0	0	0	0
AM	8:15 AM	0	0	0	0	0	0	0	1	0
AM	8:30 AM	0	0	0	0	0	0	0	1	0
AM	8:45 AM	0	0	0	0	0	0	1	0	0
AM	9:00 AM	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0
AM	VOLUMES	0	0	0	0	0	0	3	2	0
AM	PEAK HR VOLUMES						0	1	2	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	1	0	0
PM	4:15 PM	0	0	0	0	0	0	0	0	0
PM	4:30 PM	0	0	0	0	0	0	0	0	0
PM	4:45 PM	0	0	0	0	0	0	0	0	0
PM	5:00 PM	0	0	0	0	0	0	1	0	0
PM	5:15 PM	0	0	0	0	0	0	0	0	0
PM	5:30 PM	0	0	0	0	0	0	1	0	0
PM	5:45 PM	0	0	0	0	0	0	1	1	0
PM	VOLUMES	0	0	0	0	0	0	4	1	0
PM	PEAK HR VOLUMES						0	3	1	0

Euclid

NORTH SIDE

Bickmore WEST SIDE

EAST SIDE **Bickmore**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Jan 22, 19

LOCATION: Chino
NORTH & SOUTH: Euclid
EAST & WEST: Pine

PROJECT #: SC2056
LOCATION #: 19
CONTROL: SIGNAL

NOTES:

AM PM MD OTHER OTHER

▲ N
◄ W E ►
S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Pine)			WESTBOUND (Pine)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 1.5	SR 0.5	EL 1	ET 1	ER 1	WL 2	WT 1	WR 0	TOTAL
AM	7:00 AM	9	118	142	8	200	6	0	21	8	234	50	7	803
AM	7:15 AM	4	131	135	5	126	5	1	21	1	228	80	15	752
AM	7:30 AM	7	156	166	6	160	6	1	25	10	209	68	6	820
AM	7:45 AM	5	131	159	9	129	1	0	40	3	231	68	5	781
AM	8:00 AM	6	138	122	5	137	1	1	52	12	255	79	3	811
AM	8:15 AM	17	138	147	9	118	2	4	43	6	205	71	8	768
AM	8:30 AM	12	150	160	8	130	3	2	35	6	186	51	10	753
AM	8:45 AM	10	134	117	4	88	0	0	39	3	190	33	13	631
AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	VOLUMES	70	1,096	1,148	54	1,088	24	9	276	49	1,738	500	67	6,119
AM	APPROACH %	3%	47%	50%	5%	93%	2%	3%	83%	15%	75%	22%	3%	
AM	APP/DEPART	2,314	/	1,173	1,166	/	2,878	334	/	1,477	2,305	/	591	0
AM	BEGIN PEAK HR		7:30 AM											
AM	VOLUMES	35	563	594	29	544	10	6	160	31	900	286	22	3,180
AM	APPROACH %	3%	47%	50%	5%	93%	2%	3%	81%	16%	75%	24%	2%	
AM	PEAK HR FACTOR		0.906			0.847			0.758			0.896		0.970
AM	APP/DEPART	1,192	/	592	583	/	1,478	197	/	782	1,208	/	328	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	2	120	231	8	110	2	2	78	15	121	18	15	722
PM	4:15 PM	10	148	256	10	138	0	1	76	12	110	13	5	779
PM	4:30 PM	4	168	230	11	147	3	2	101	16	92	13	11	798
PM	4:45 PM	9	150	243	9	168	0	0	112	9	110	21	5	836
PM	5:00 PM	5	157	251	12	155	1	2	94	16	114	15	8	830
PM	5:15 PM	4	152	261	11	150	0	1	95	20	124	11	4	833
PM	5:30 PM	10	150	261	17	160	1	2	115	23	97	16	3	855
PM	5:45 PM	6	151	227	18	144	0	2	108	20	91	18	6	791
PM	VOLUMES	50	1,196	1,960	96	1,172	7	12	779	131	859	125	57	6,444
PM	APPROACH %	2%	37%	61%	8%	92%	1%	1%	84%	14%	83%	12%	5%	
PM	APP/DEPART	3,206	/	1,266	1,275	/	2,165	922	/	2,834	1,041	/	179	0
PM	BEGIN PEAK HR		4:45 PM											
PM	VOLUMES	28	609	1,016	49	633	2	5	416	68	445	63	20	3,354
PM	APPROACH %	2%	37%	61%	7%	93%	0%	1%	85%	14%	84%	12%	4%	
PM	PEAK HR FACTOR		0.982			0.961			0.873			0.950		0.981
PM	APP/DEPART	1,653	/	634	684	/	1,148	489	/	1,481	528	/	91	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
2	0	0	0	2
0	0	0	0	0
1	1	0	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
3	1	0	0	4
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	1	0	0	1
3	1	0	0	4

RTOR

NRR	SRR	ERR	WRR
0	0	0	1
0	2	0	0
0	2	0	1
0	0	0	1
1	0	0	0
1	0	0	0
2	0	0	3
0	0	0	3
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
445	8	0	9
248	4	0	2
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
76	0	0	3
93	0	0	0
83	2	0	3
94	0	0	0
96	0	0	1
108	0	0	1
111	0	0	0
82	0	0	1
743	2	0	9
409	0	0	2

Euclid

NORTH SIDE

Pine WEST SIDE EAST SIDE **Pine**

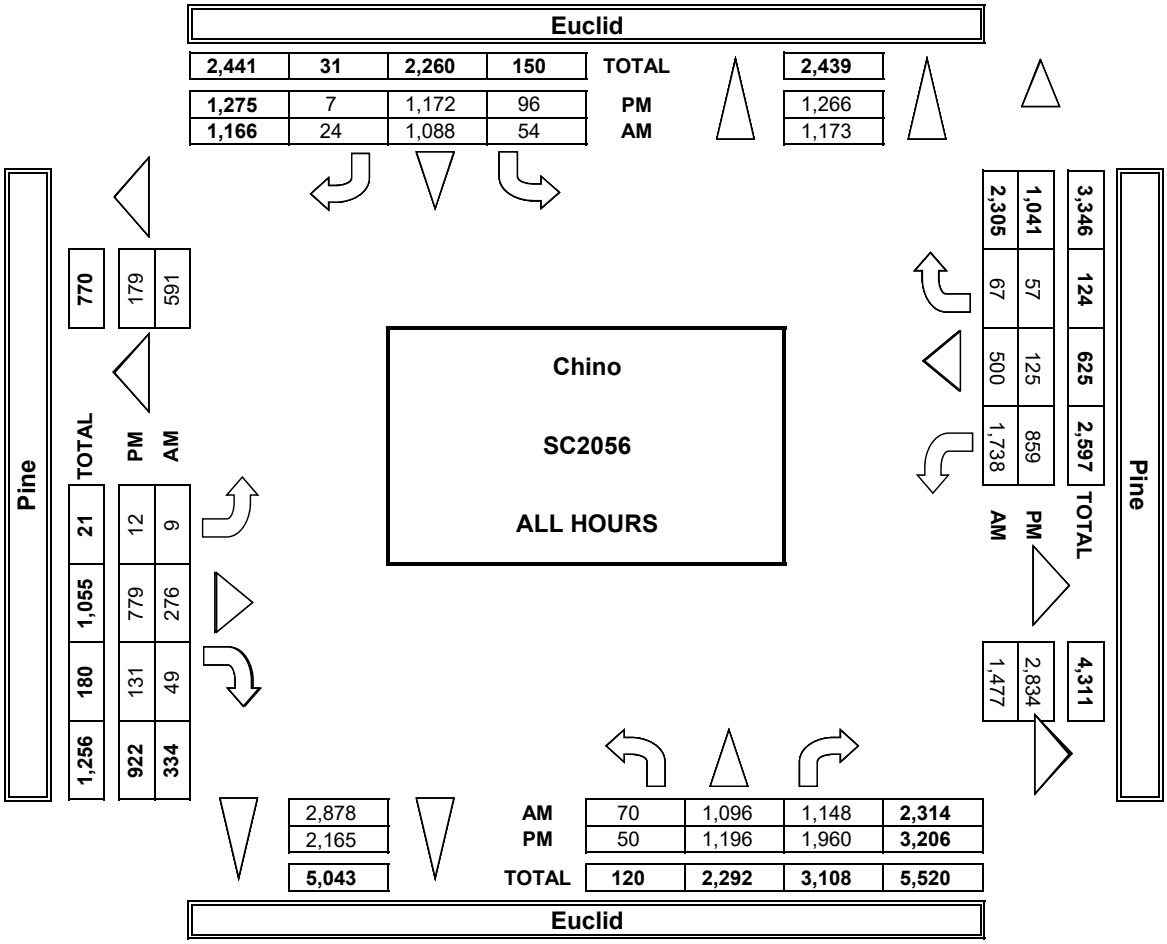
SOUTH SIDE

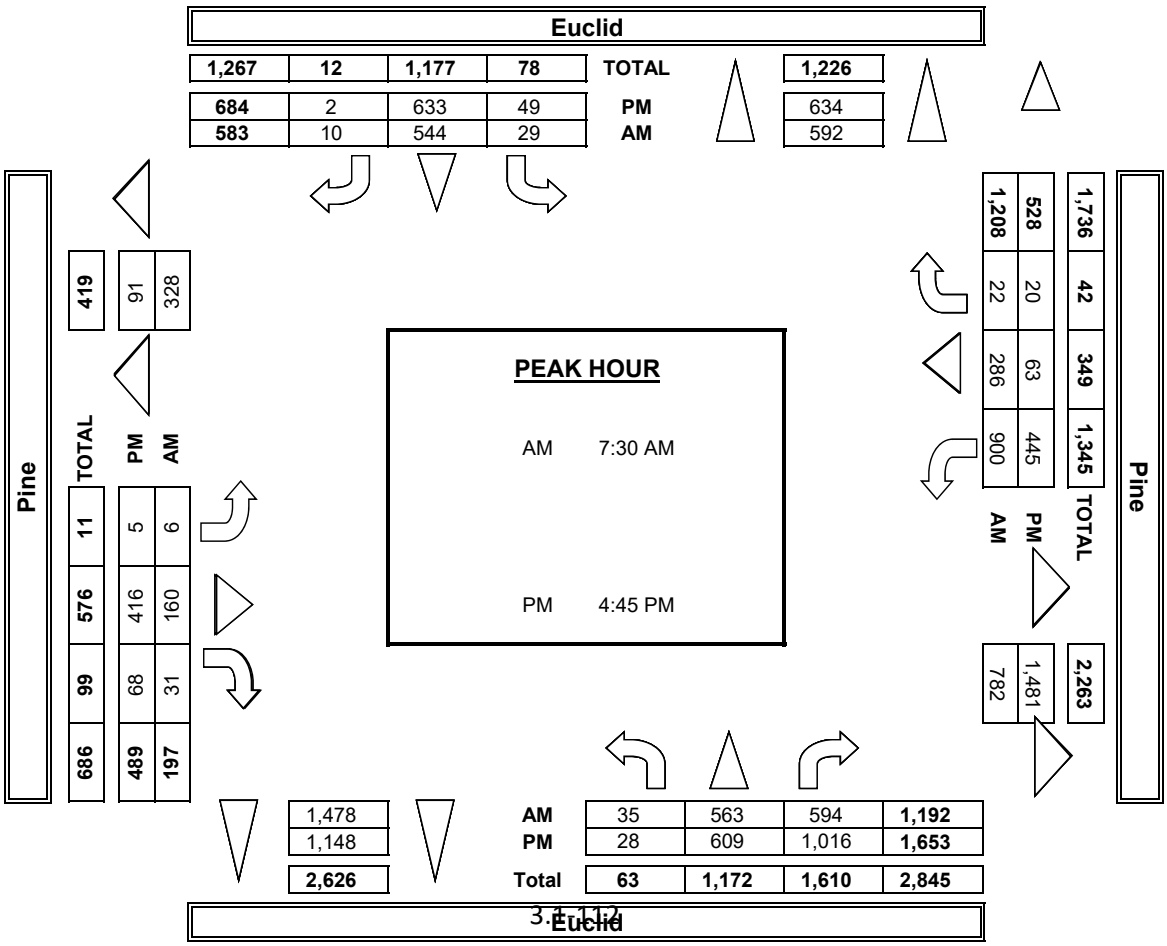
Euclid

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:45 AM	1	0	1	0	2	0	0	0	0	0	1	0	1	0	2
AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:45 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	TOTAL	1	1	1	0	3	0	0	0	0	0	1	1	1	0	3
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Euclid	LOCATION #:	19
TUESDAY	EAST & WEST:	Pine	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

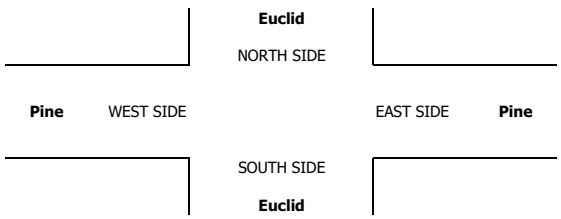
		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Pine)			WESTBOUND (Pine)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 1.5	SR 0.5	EL 1	ET 1	ER 1	WL 2	WT 1	WR 0	TOTAL
AM	7:00 AM	0	4	11	0	14	0	0	2	1	5	1	2	40
	7:15 AM	0	8	3	1	12	3	0	4	1	4	2	1	39
	7:30 AM	0	3	9	0	16	0	0	1	3	6	2	0	40
	7:45 AM	2	5	13	0	11	0	0	3	1	7	3	0	45
	8:00 AM	0	5	5	0	14	0	0	5	3	7	4	0	43
	8:15 AM	0	4	7	0	11	0	0	3	2	4	3	0	34
	8:30 AM	0	10	10	2	15	0	0	5	3	3	4	1	53
	8:45 AM	1	5	4	0	9	0	0	4	0	2	3	2	30
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	3	44	62	3	102	3	0	27	14	38	22	6	324
	APPROACH %	3%	40%	57%	3%	94%	3%	0%	66%	34%	58%	33%	9%	
	APP/DEPART	109	/	50	108	/	155	41	/	92	66	/	27	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	1	24	35	2	51	0	0	16	9	21	14	1	175
	APPROACH %	2%	39%	57%	4%	96%	0%	0%	64%	36%	58%	39%	3%	
	PEAK HR FACTOR		0.763			0.779			0.781			0.818		0.825
	APP/DEPART	61	/	25	53	/	82	25	/	53	36	/	15	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	10	17	0	2	0	0	5	1	1	1	1	38
	4:15 PM	1	12	8	1	4	0	0	3	0	5	0	0	34
	4:30 PM	1	18	7	0	3	0	0	3	1	1	1	0	35
	4:45 PM	2	8	4	1	4	0	0	6	0	4	1	0	30
	5:00 PM	0	8	2	0	9	0	0	3	2	4	1	0	29
	5:15 PM	1	12	8	0	3	0	0	3	0	3	0	0	30
	5:30 PM	0	6	2	1	2	0	0	3	1	2	0	0	17
	5:45 PM	3	6	3	0	1	0	0	2	0	1	1	0	17
	VOLUMES	8	80	51	3	28	0	0	28	5	21	5	1	230
	APPROACH %	6%	58%	37%	10%	90%	0%	0%	85%	15%	78%	19%	4%	
	APP/DEPART	139	/	81	31	/	54	33	/	82	27	/	13	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	4	48	36	2	13	0	0	17	2	11	3	1	137
	APPROACH %	5%	55%	41%	13%	87%	0%	0%	89%	11%	73%	20%	7%	
	PEAK HR FACTOR		0.815			0.750			0.792			0.750		0.901
	APP/DEPART	88	/	49	15	/	26	19	/	55	15	/	7	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR 0	ERR X	WRR 0
4	0	0	0
1	1	0	0
5	0	0	0
7	0	0	0
1	0	0	0
3	0	0	0
1	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
23	1	0	0
12	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
6	0	0	0
3	0	0	0
2	0	0	0
0	0	0	0
2	0	0	0
3	0	0	0
0	0	0	0
0	0	0	0
16	0	0	0
11	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Euclid	LOCATION #:	19
TUESDAY	EAST & WEST:	Pine	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Pine)			WESTBOUND (Pine)			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 1.5	SR 0.5	EL 1	ET 1	ER 1	WL 2	WT 1	WR 0	TOTAL
7:00 AM	1	1	1	1	0	0	0	0	0	1	0	0	5
7:15 AM	0	1	1	0	4	0	0	0	0	0	0	0	6
7:30 AM	1	2	0	0	3	0	0	0	1	2	0	0	9
7:45 AM	0	0	2	1	4	0	0	0	0	7	0	0	14
8:00 AM	0	0	0	0	1	0	0	1	0	1	1	0	4
8:15 AM	0	0	2	0	1	0	0	0	0	0	0	0	3
8:30 AM	0	1	3	0	1	0	0	0	0	2	0	0	7
8:45 AM	0	3	1	0	0	0	0	1	0	0	0	0	5
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	2	8	10	2	14	0	0	2	1	13	1	0	53
APPROACH %	10%	40%	50%	13%	88%	0%	0%	67%	33%	93%	7%	0%	
APP/DEPART	20	/	8	16	/	28	3	/	14	14	/	3	0
BEGIN PEAK HR		7:00 AM											
VOLUMES	2	4	4	2	11	0	0	0	1	10	0	0	34
APPROACH %	20%	40%	40%	15%	85%	0%	0%	0%	100%	100%	0%	0%	
PEAK HR FACTOR		0.833			0.650			0.250			0.357		0.607
APP/DEPART	10	/	4	13	/	22	1	/	6	10	/	2	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	1	0	1	0	0	0	0	0	0	1	3
4:15 PM	0	1	2	0	1	0	0	2	0	0	0	0	6
4:30 PM	0	1	2	0	2	0	0	1	0	0	0	0	6
4:45 PM	0	1	0	0	1	0	0	0	0	1	0	0	3
5:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	2
5:15 PM	1	1	1	0	2	0	0	0	0	0	0	0	5
5:30 PM	1	2	1	0	2	0	0	0	0	0	0	0	6
5:45 PM	0	2	1	0	1	0	0	0	0	0	0	0	4
VOLUMES	2	9	9	0	10	0	0	3	0	1	0	1	35
APPROACH %	10%	45%	45%	0%	100%	0%	0%	100%	0%	50%	0%	50%	
APP/DEPART	20	/	10	10	/	11	3	/	12	2	/	2	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	3	5	0	5	0	0	3	0	1	0	1	18
APPROACH %	0%	38%	63%	0%	100%	0%	0%	100%	0%	50%	0%	50%	
PEAK HR FACTOR		0.667			0.625			0.375			0.500		0.750
APP/DEPART	8	/	4	5	/	6	3	/	8	2	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	X	0
1	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
0	0	0	0
1	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
4	0	0	0
2	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
2	0	0	0
1	0	0	0

Euclid

NORTH SIDE

Pine WEST SIDE EAST SIDE **Pine**

SOUTH SIDE

Euclid

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Euclid	LOCATION #:	19
TUESDAY	EAST & WEST:	Pine	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (Pine)			WESTBOUND (Pine)		
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	1	2	1	1	1.5	0.5	1	1	1	2	1	0	
AM	7:00 AM	1	0	0	0	9	1	0	1	1	0	0	0	13
AM	7:15 AM	1	1	2	0	4	1	0	0	0	0	1	1	11
AM	7:30 AM	2	6	0	1	4	2	0	0	3	1	1	0	20
AM	7:45 AM	0	5	0	0	4	0	0	1	0	3	1	1	15
AM	8:00 AM	1	4	2	0	6	0	0	1	1	2	0	0	17
AM	8:15 AM	4	4	1	1	5	1	1	1	1	0	0	0	19
AM	8:30 AM	4	9	5	1	3	0	1	1	0	3	2	0	29
AM	8:45 AM	2	7	3	0	4	0	0	0	2	1	0	1	20
AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	VOLUMES	15	36	13	3	39	5	2	5	8	10	5	3	144
AM	APPROACH %	23%	56%	20%	6%	83%	11%	13%	33%	53%	56%	28%	17%	
AM	APP/DEPART	64	/	41	47	/	57	15	/	21	18	/	25	0
AM	BEGIN PEAK HR		8:00 AM											
AM	VOLUMES	11	24	11	2	18	1	2	3	4	6	2	1	85
AM	APPROACH %	24%	52%	24%	10%	86%	5%	22%	33%	44%	67%	22%	11%	
AM	PEAK HR FACTOR		0.639			0.750			0.750			0.450		0.733
AM	APP/DEPART	46	/	27	21	/	28	9	/	16	9	/	14	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	1	0	3	0	3	2	0	0	3	0	0	2	14
PM	4:15 PM	2	3	0	0	6	0	1	2	1	1	0	0	16
PM	4:30 PM	0	2	3	1	3	0	0	2	2	0	0	0	13
PM	4:45 PM	3	6	1	0	6	0	0	0	1	1	0	0	18
PM	5:00 PM	3	3	1	0	4	1	0	0	1	2	0	0	15
PM	5:15 PM	1	2	0	0	4	0	0	0	2	0	0	1	10
PM	5:30 PM	4	4	0	0	7	0	0	0	6	0	0	0	21
PM	5:45 PM	1	5	1	0	4	0	0	0	3	0	0	0	14
PM	VOLUMES	15	25	9	1	37	3	1	4	19	4	0	3	121
PM	APPROACH %	31%	51%	18%	2%	90%	7%	4%	17%	79%	57%	0%	43%	
PM	APP/DEPART	49	/	29	41	/	60	24	/	14	7	/	18	0
PM	BEGIN PEAK HR		4:45 PM											
PM	VOLUMES	11	15	2	0	21	1	0	0	10	3	0	1	64
PM	APPROACH %	39%	54%	7%	0%	95%	5%	0%	0%	100%	75%	0%	25%	
PM	PEAK HR FACTOR		0.700			0.786			0.417			0.500		0.762
PM	APP/DEPART	28	/	16	22	/	34	10	/	2	4	/	12	0

U-TURNS

	NB	SB	EB	WB	TTL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
03:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0

RTOR

	NRR	SRR	ERR	WRR
LANES	0	0	X	0
7:00 AM	0	0	0	0
7:15 AM	1	1	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	1	0	0	0
8:15 AM	1	0	0	0
8:30 AM	3	0	0	0
8:45 AM	1	0	0	0
9:00 AM	0	0	0	0
9:15 AM	0	0	0	0
9:30 AM	0	0	0	0
9:45 AM	0	0	0	0
VOLUMES	7	1	0	0
PEAK HR VOLUMES	6	0	0	0
03:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	1	0	0	1
4:15 PM	0	0	0	0
4:30 PM	1	0	0	0
4:45 PM	1	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	1	0	0	0
VOLUMES	4	0	0	1
PEAK HR VOLUMES	1	0	0	0

Euclid

NORTH SIDE

Pine WEST SIDE

EAST SIDE **Pine**

SOUTH SIDE

Euclid

T1218

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
Wed, Jan 30, 19	NORTH & SOUTH:	Bon View	LOCATION #:	23
	EAST & WEST:	Edison	CONTROL:	STOP ALL

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

Add U-Turns to Left Turns

	NORTHBOUND (Bon View)			SOUTHBOUND (Bon View)			EASTBOUND (Edison)			WESTBOUND (Edison)			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
AM 7:00 AM	2	10	3	6	19	6	2	33	1	2	101	0	185
7:15 AM	5	17	2	2	20	8	10	44	2	6	109	7	232
7:30 AM	3	27	1	6	19	9	15	55	2	1	115	3	256
7:45 AM	3	15	3	3	27	12	17	44	6	4	117	4	255
8:00 AM	0	10	7	2	24	8	6	38	1	3	61	5	165
8:15 AM	0	9	1	4	13	11	8	36	0	0	10	0	92
8:30 AM	4	11	1	1	17	8	9	31	3	3	10	1	99
8:45 AM	4	10	1	1	15	11	6	33	3	1	17	1	103
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	21	109	19	25	154	73	73	314	18	20	540	21	1,387
APPROACH %	14%	73%	13%	10%	61%	29%	18%	78%	4%	3%	93%	4%	
APP/DEPART	149	/	203	252	/	192	405	/	358	581	/	634	0
BEGIN PEAK HR		7:00 AM											
VOLUMES	13	69	9	17	85	35	44	176	11	13	442	14	928
APPROACH %	14%	76%	10%	12%	62%	26%	19%	76%	5%	3%	94%	3%	
PEAK HR FACTOR		0.734			0.815			0.802			0.938		0.906
APP/DEPART	91	/	127	137	/	109	231	/	202	469	/	490	0
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	2	19	2	1	13	7	19	100	3	2	50	3	221
4:15 PM	3	13	2	4	12	7	15	98	2	1	55	0	212
4:30 PM	7	24	1	5	16	3	3	90	3	2	68	0	222
4:45 PM	3	19	3	5	21	11	14	119	6	2	57	1	261
5:00 PM	2	23	3	2	22	11	23	91	1	1	66	3	248
5:15 PM	1	30	0	3	16	11	11	111	4	1	66	1	255
5:30 PM	6	9	0	5	18	10	10	103	5	2	57	1	226
5:45 PM	4	19	0	3	18	3	14	116	3	0	59	3	242
VOLUMES	28	156	11	28	136	63	109	828	27	11	478	12	1,887
APPROACH %	14%	80%	6%	12%	60%	28%	11%	86%	3%	2%	95%	2%	
APP/DEPART	195	/	277	227	/	174	964	/	867	501	/	569	0
BEGIN PEAK HR		4:45 PM											
VOLUMES	12	81	6	15	77	43	58	424	16	6	246	6	990
APPROACH %	12%	82%	6%	11%	57%	32%	12%	85%	3%	2%	95%	2%	
PEAK HR FACTOR		0.798			0.912			0.896			0.921		0.948
APP/DEPART	99	/	145	135	/	99	498	/	445	258	/	301	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:	0	0	0	0		X	X	X	X
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PEAK HR VOLUMES						0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PEAK HR VOLUMES						0	0	0	0

Bon View

NORTH SIDE

Edison WEST SIDE EAST SIDE **Edison**

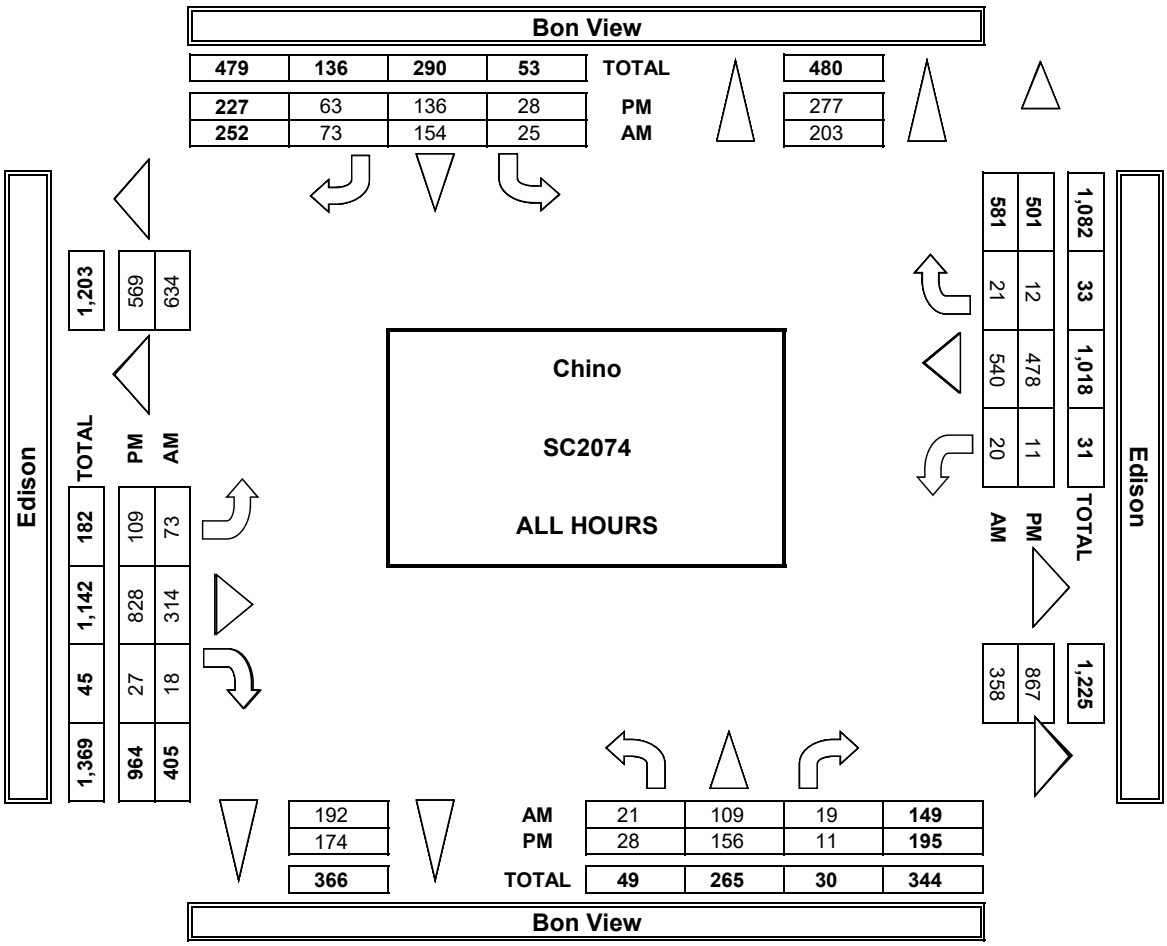
SOUTH SIDE

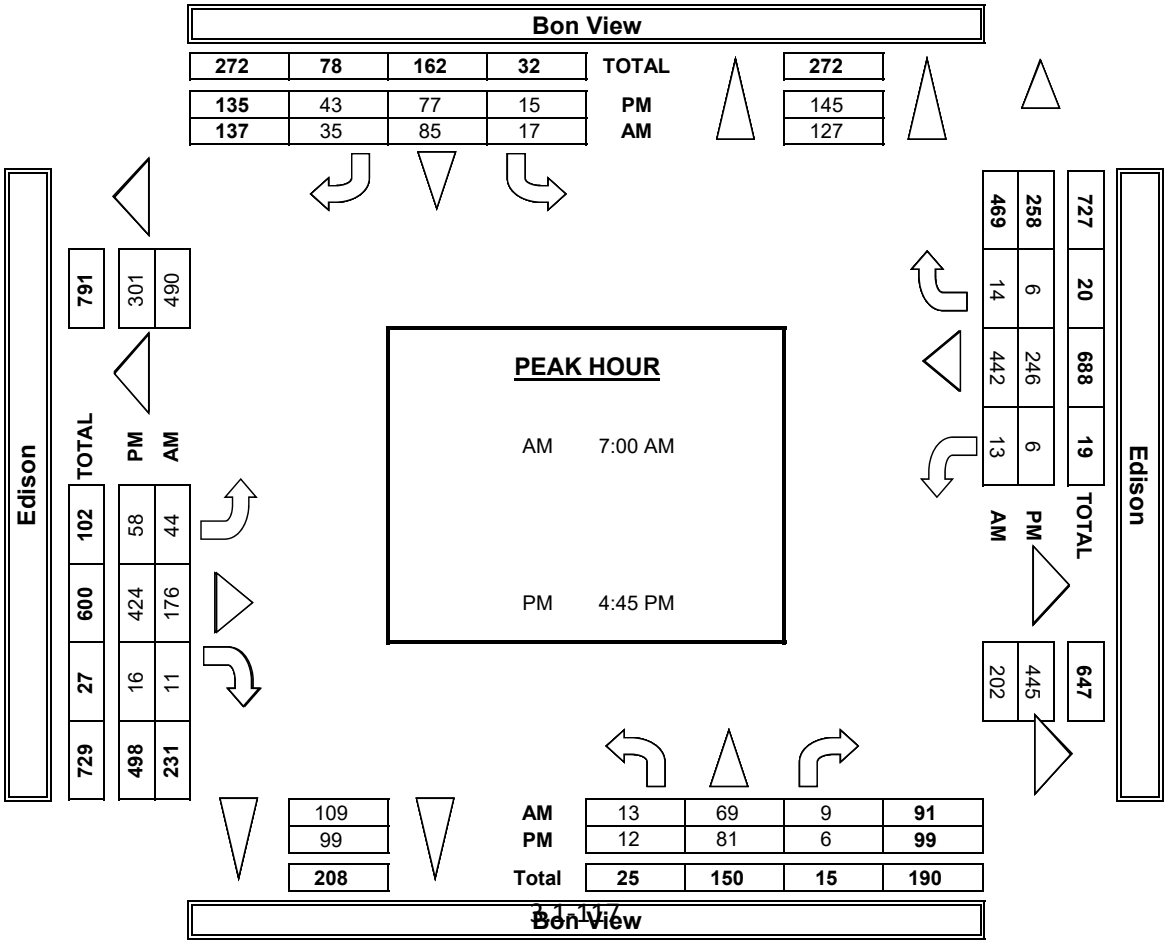
Bon View

	ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Bon View	LOCATION #:	23
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	STOP ALL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

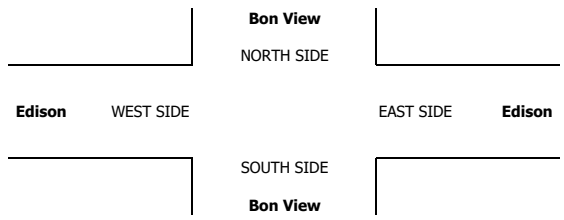
		NORTHBOUND (Bon View)			SOUTHBOUND (Bon View)			EASTBOUND (Edison)			WESTBOUND (Edison)			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	1	0	1	0	0	0	5	0	0	5	0	12
	7:15 AM	0	0	0	0	1	0	1	4	0	1	4	0	11
	7:30 AM	0	1	1	1	1	1	0	3	1	0	3	0	12
	7:45 AM	0	0	1	0	0	0	1	2	0	1	6	0	11
	8:00 AM	0	0	2	1	3	0	0	4	0	1	5	1	17
	8:15 AM	0	0	0	0	0	0	1	4	0	0	4	0	9
	8:30 AM	0	0	0	0	1	0	1	4	1	1	1	0	9
	8:45 AM	0	0	0	0	0	3	0	5	0	0	4	1	13
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	2	4	3	6	4	4	31	2	4	32	2	94
	APPROACH %	0%	33%	67%	23%	46%	31%	11%	84%	5%	11%	84%	5%	
	APP/DEPART	6	/	8	13	/	12	37	/	38	38	/	36	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	1	4	2	5	1	2	13	1	3	18	1	51
	APPROACH %	0%	20%	80%	25%	63%	13%	13%	81%	6%	14%	82%	5%	
	PEAK HR FACTOR		0.625			0.500			0.800			0.786		0.750
	APP/DEPART	5	/	4	8	/	9	16	/	19	22	/	19	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	2	0	0	0	0	0	6	0	0	7	1	16
	4:15 PM	0	1	0	0	0	0	1	4	0	0	0	0	6
	4:30 PM	0	1	0	1	0	1	0	5	1	0	3	0	12
	4:45 PM	1	0	0	1	0	0	0	7	1	0	6	0	16
	5:00 PM	0	1	0	1	0	0	4	5	0	0	4	0	15
	5:15 PM	0	3	0	0	1	1	0	6	1	0	2	0	14
	5:30 PM	0	0	0	0	2	0	0	7	0	0	0	0	9
	5:45 PM	0	1	0	0	0	0	1	3	0	0	2	0	7
	VOLUMES	1	9	0	3	3	2	6	43	3	0	24	1	95
	APPROACH %	10%	90%	0%	38%	38%	25%	12%	83%	6%	0%	96%	4%	
	APP/DEPART	10	/	16	8	/	6	52	/	46	25	/	27	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	1	5	0	3	1	2	4	23	3	0	15	0	57
	APPROACH %	17%	83%	0%	50%	17%	33%	13%	77%	10%	0%	100%	0%	
	PEAK HR FACTOR		0.500			0.750			0.833			0.625		0.891
	APP/DEPART	6	/	9	6	/	4	30	/	26	15	/	18	0

U-TURNS

AM	NB	SB	EB	WB	TTL
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
PM	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0

RTOR

AM	NRR X	SRR X	ERR X	WRR X
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
PM	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Bon View	LOCATION #:	23
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	STOP ALL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND Bon View			SOUTHBOUND Bon View			EASTBOUND Edison			WESTBOUND Edison			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
7:00 AM	0	0	2	0	0	0	0	1	1	0	1	0	5
7:15 AM	2	0	0	0	0	0	0	0	0	1	1	0	4
7:30 AM	0	0	0	0	0	0	0	6	0	0	2	0	8
7:45 AM	0	0	1	0	1	2	0	0	0	0	2	0	6
8:00 AM	0	1	1	0	0	0	1	3	0	0	0	1	7
8:15 AM	0	0	0	0	1	2	0	1	0	0	0	0	4
8:30 AM	1	0	0	0	0	0	0	0	0	1	0	0	2
8:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	2
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	3	1	4	0	2	5	1	12	1	2	6	1	38
APPROACH %	38%	13%	50%	0%	29%	71%	7%	86%	7%	22%	67%	11%	
APP/DEPART	8	/	3	7	/	5	14	/	16	9	/	14	0
BEGIN PEAK HR		7:15 AM											
VOLUMES	0	1	2	0	2	4	1	10	0	0	4	1	25
APPROACH %	0%	33%	67%	0%	33%	67%	9%	91%	0%	0%	80%	20%	
PEAK HR FACTOR		0.375			0.500			0.458			0.625		0.781
APP/DEPART	3	/	3	6	/	2	11	/	12	5	/	8	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	2	1	1	0	1	0	5
4:15 PM	0	0	0	0	0	0	0	1	2	0	2	0	5
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	3	1	0	0	0	4
5:00 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
5:15 PM	0	0	0	0	0	0	0	2	1	0	1	0	4
5:30 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	2	11	5	0	6	0	24
APPROACH %	0%	0%	0%	0%	0%	0%	11%	61%	28%	0%	100%	0%	
APP/DEPART	0	/	2	0	/	5	18	/	11	6	/	6	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	0	0	0	0	0	2	6	4	0	3	0	15
APPROACH %	0%	0%	0%	0%	0%	0%	17%	50%	33%	0%	100%	0%	
PEAK HR FACTOR		0.000			0.000			0.750			0.375		0.750
APP/DEPART	0	/	2	0	/	4	12	/	6	3	/	3	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

NRR X	SRR X	ERR X	WRR X
0	0	0	0

NRR X	SRR X	ERR X	WRR X
0	0	0	0

Bon View

NORTH SIDE

Edison WEST SIDE EAST SIDE **Edison**

SOUTH SIDE

Bon View

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Bon View	LOCATION #:	23
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	STOP ALL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND (Bon View)			SOUTHBOUND (Bon View)			EASTBOUND (Edison)			WESTBOUND (Edison)				U-TURNS					RTOR			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
	LANES:	0	1	0	0	1	0	0	1	0	0	1	0							X	X	X	X
AM	7:00 AM	0	1	0	1	0	0	0	1	0	1	5	0	9	0	0	0	0	0	0	0	0	0
AM	7:15 AM	1	1	0	0	0	0	0	0	0	1	4	0	7	0	0	0	0	0	0	0	0	0
AM	7:30 AM	0	0	0	0	0	1	1	2	1	0	7	0	12	0	0	0	0	0	0	0	0	0
AM	7:45 AM	1	0	0	0	2	0	0	2	0	0	6	0	11	0	0	0	0	0	0	0	0	0
AM	8:00 AM	0	0	0	0	1	1	0	5	0	1	3	0	11	0	0	0	0	0	0	0	0	0
AM	8:15 AM	0	0	0	0	0	0	0	3	0	0	1	0	4	0	0	0	0	0	0	0	0	0
AM	8:30 AM	0	0	1	0	1	0	0	6	1	0	2	0	11	0	0	0	0	0	0	0	0	0
AM	8:45 AM	0	2	0	0	1	0	0	1	1	0	4	0	9	0	0	0	0	0	0	0	0	0
AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	VOLUMES	2	4	1	1	5	2	1	20	3	3	32	0	74	0	0	0	0	0	0	0	0	0
AM	APPROACH %	29%	57%	14%	13%	63%	25%	4%	83%	13%	9%	91%	0%										
AM	APP/DEPART	7	/	5	8	/	11	24	/	22	35	/	36	0									
AM	BEGIN PEAK HR		7:15 AM																				
AM	VOLUMES	2	1	0	0	3	2	1	9	1	2	20	0	41						0	0	0	0
AM	APPROACH %	67%	33%	0%	0%	60%	40%	9%	82%	9%	9%	91%	0%										
AM	PEAK HR FACTOR		0.375			0.625			0.550			0.786		0.854									
AM	APP/DEPART	3	/	2	5	/	6	11	/	9	22	/	24	0									
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	1	0	0	0	0	1	4	0	0	1	1	8	0	0	0	0	0	0	0	0	0
PM	4:15 PM	0	1	0	0	0	1	1	2	0	0	4	0	9	0	0	0	0	0	0	0	0	0
PM	4:30 PM	0	0	0	0	0	0	0	2	0	0	3	0	5	0	0	0	0	0	0	0	0	0
PM	4:45 PM	0	0	1	0	0	0	2	5	0	0	3	0	11	0	0	0	0	0	0	0	0	0
PM	5:00 PM	0	0	1	0	0	0	0	5	0	0	2	0	8	0	0	0	0	0	0	0	0	0
PM	5:15 PM	0	1	0	0	0	0	0	5	0	0	0	0	6	0	0	0	0	0	0	0	0	0
PM	5:30 PM	0	0	0	0	0	0	0	4	0	1	1	0	6	0	0	0	0	0	0	0	0	0
PM	5:45 PM	0	1	0	0	0	0	0	6	0	0	1	0	8	0	0	0	0	0	0	0	0	0
PM	VOLUMES	0	4	2	0	0	1	4	33	0	1	15	1	61	0	0	0	0	0	0	0	0	0
PM	APPROACH %	0%	67%	33%	0%	0%	100%	11%	89%	0%	6%	88%	6%										
PM	APP/DEPART	6	/	9	1	/	1	37	/	35	17	/	16	0									
PM	BEGIN PEAK HR		4:00 PM																				
PM	VOLUMES	0	1	2	0	0	1	3	14	0	0	12	0	33						0	0	0	0
PM	APPROACH %	0%	33%	67%	0%	0%	100%	18%	82%	0%	0%	100%	0%										
PM	PEAK HR FACTOR		0.750			0.250			0.607			0.750		0.750									
PM	APP/DEPART	3	/	4	1	/	0	17	/	16	12	/	13	0									

Bon View

NORTH SIDE

Edison WEST SIDE

EAST SIDE **Edison**

SOUTH SIDE

Bon View

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
Wed, Jan 30, 19	NORTH & SOUTH:	Bon View	LOCATION #:	24
	EAST & WEST:	Eucalyptus	CONTROL:	STOP ALL

NOTES:

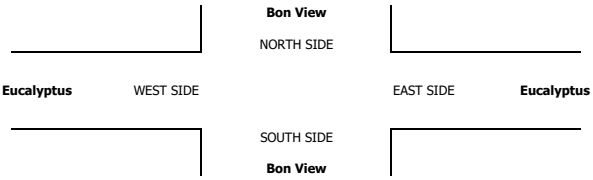
AM / PM / MD / OTHER / OTHER — ▲ N / ◄ W / E ► / S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Bon View)			SOUTHBOUND (Bon View)			EASTBOUND (Eucalyptus)			WESTBOUND (Eucalyptus)			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	4	6	0	1	10	8	5	5	0	0	40	3	82
	7:15 AM	5	17	1	2	13	7	2	6	0	0	39	1	93
	7:30 AM	2	18	0	3	13	6	4	3	0	1	31	6	87
	7:45 AM	3	10	0	4	15	12	3	9	1	0	42	5	104
	8:00 AM	6	8	1	9	10	13	4	12	1	0	36	1	101
	8:15 AM	3	6	0	1	8	7	2	8	2	0	14	4	55
	8:30 AM	3	9	0	7	10	4	1	7	1	1	21	3	67
	8:45 AM	4	6	0	0	7	6	4	8	0	0	27	4	66
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	30	80	2	27	86	63	25	58	5	2	250	27	655
	APPROACH %	27%	71%	2%	15%	49%	36%	28%	66%	6%	1%	90%	10%	
	APP/DEPART	112	/	132	176	/	93	88	/	87	279	/	343	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	16	53	2	18	51	38	13	30	2	1	148	13	385
	APPROACH %	23%	75%	3%	17%	48%	36%	29%	67%	4%	1%	91%	8%	
	PEAK HR FACTOR		0.772			0.836			0.662			0.862		0.925
	APP/DEPART	71	/	79	107	/	54	45	/	50	162	/	202	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	18	0	7	9	7	5	19	0	0	10	0	76
	4:15 PM	0	9	2	4	8	4	4	45	1	0	5	2	84
	4:30 PM	1	21	0	3	12	3	5	36	2	0	5	3	91
	4:45 PM	0	14	3	1	17	3	4	38	1	0	13	3	97
	5:00 PM	1	21	2	4	18	1	6	51	1	1	11	2	119
	5:15 PM	0	27	2	4	10	4	3	59	1	0	14	1	125
	5:30 PM	1	9	0	6	15	4	0	44	1	1	9	2	92
	5:45 PM	0	12	0	3	8	6	6	30	1	0	8	2	76
	VOLUMES	4	131	9	32	97	32	33	322	8	2	75	15	760
	APPROACH %	3%	91%	6%	20%	60%	20%	9%	89%	2%	2%	82%	16%	
	APP/DEPART	144	/	178	161	/	107	363	/	362	92	/	113	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	2	71	7	15	60	12	13	192	4	2	47	8	433
	APPROACH %	3%	89%	9%	17%	69%	14%	6%	92%	2%	4%	82%	14%	
	PEAK HR FACTOR		0.690			0.870			0.829			0.891		0.866
	APP/DEPART	80	/	92	87	/	66	209	/	214	57	/	61	0

U-TURNS					
	NB 0	SB 0	EB 0	WB 0	TTL
AM 7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
PEAK HR	0	0	0	0	0
PM 03:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	1	0	1
4:15 PM	0	0	0	0	0
4:30 PM	0	1	0	0	1
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	1	0	1
VOLUMES	0	1	2	0	3
PEAK HR	0	0	0	0	0

RTOR				
	NRR X	SRR X	ERR X	WRR X
AM 7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
9:00 AM	0	0	0	0
9:15 AM	0	0	0	0
9:30 AM	0	0	0	0
9:45 AM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR	0	0	0	0
PM 03:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR	0	0	0	0



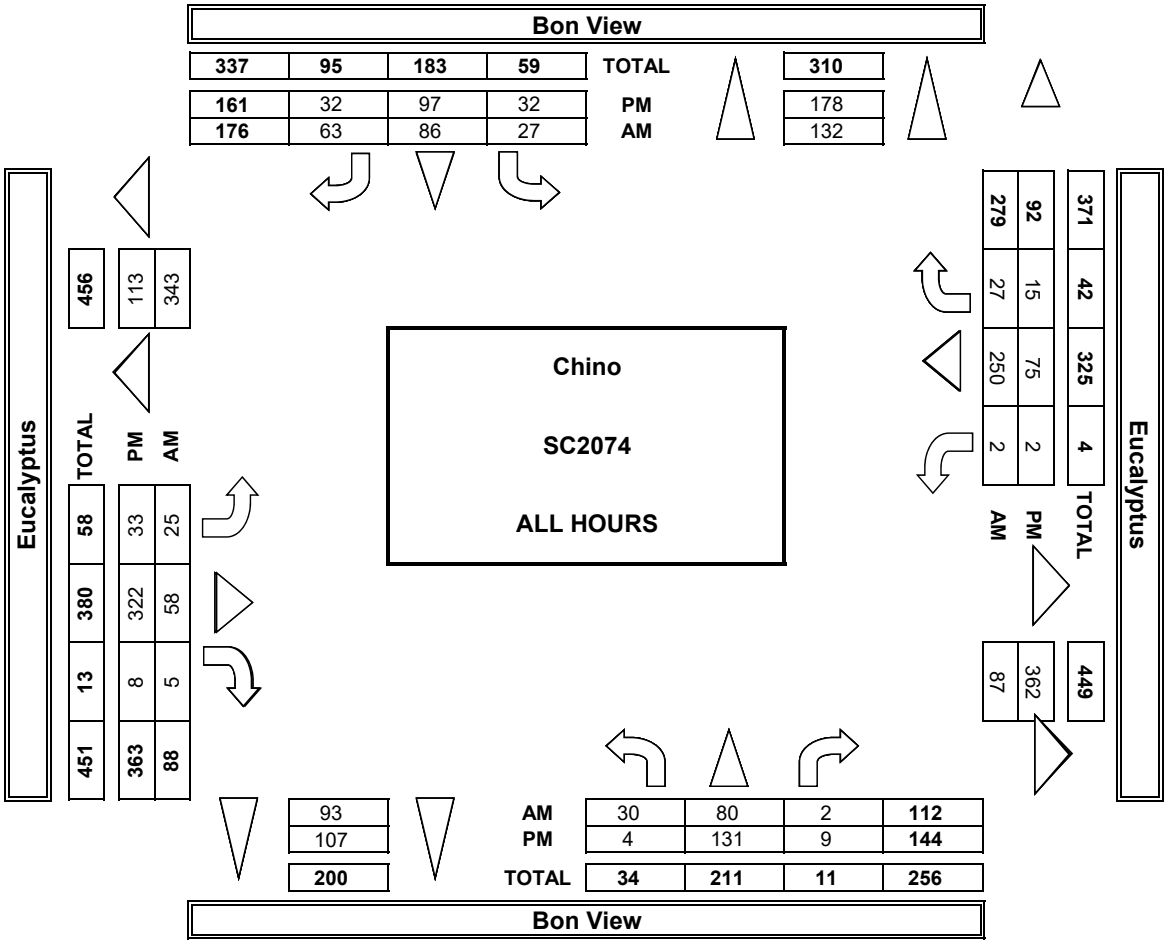
	ALL PED AND BIKE				
	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
AM 7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
TOTAL	0	0	0	0	0
PM 3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0

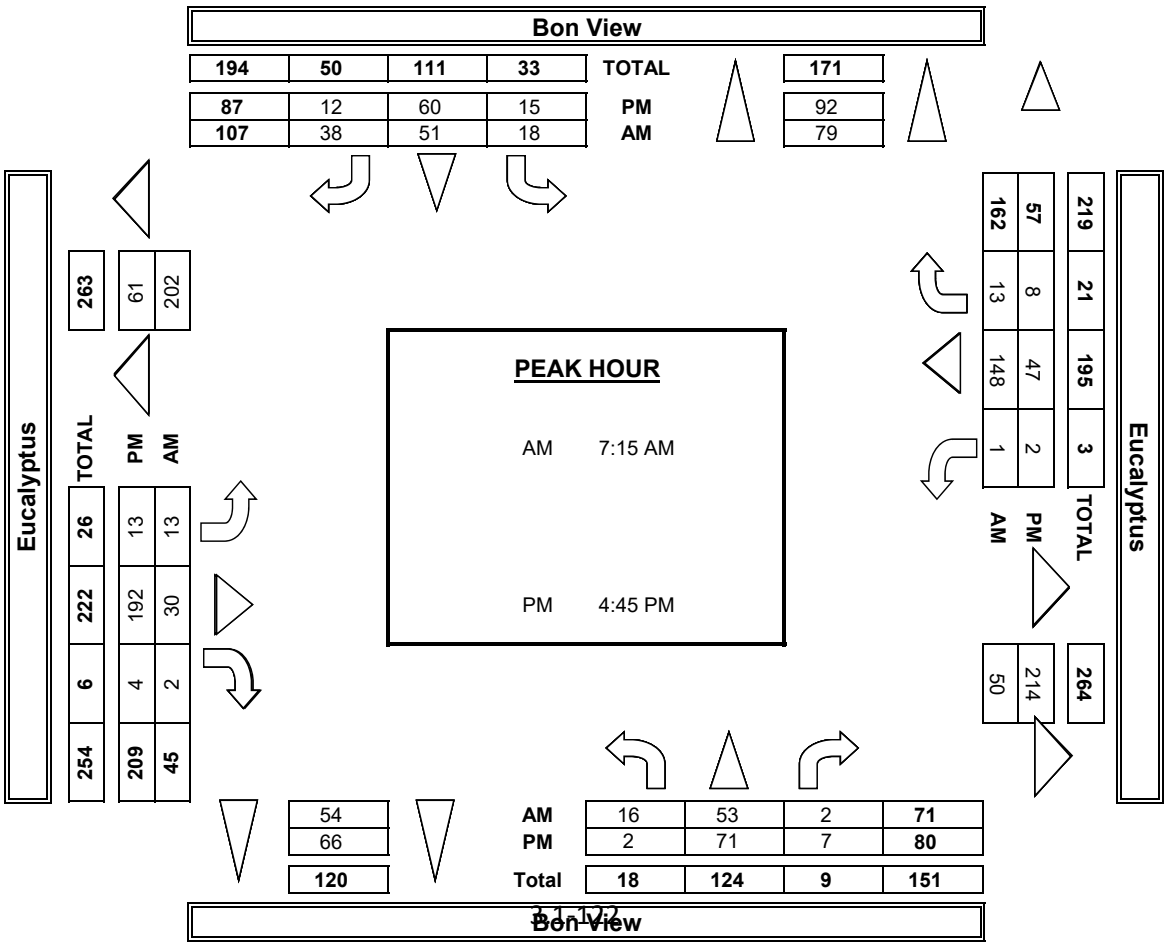
	PEDESTRIAN CROSSINGS				
	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
AM 7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
TOTAL	0	0	0	0	0
PM 3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0

	BICYCLE CROSSINGS				
	ES	WS	SS	NS	TOTAL
AM 7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
TOTAL	0	0	0	0	0
PM 3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Bon View	LOCATION #:	24
WEDNESDAY	EAST & WEST:	Eucalyptus	CONTROL:	STOP ALL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND (Bon View)			SOUTHBOUND (Bon View)			EASTBOUND (Eucalyptus)			WESTBOUND (Eucalyptus)			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
7:00 AM	0	1	0	0	0	0	0	0	0	0	1	0	2
7:15 AM	1	0	0	0	0	0	1	0	0	0	2	0	4
7:30 AM	0	1	0	2	1	1	0	1	0	0	1	0	7
7:45 AM	0	0	0	0	0	1	0	1	0	0	1	0	3
8:00 AM	0	0	1	1	0	4	0	2	0	0	1	0	9
8:15 AM	0	0	0	0	1	0	0	0	0	0	0	1	2
8:30 AM	0	0	0	1	0	1	0	1	0	0	0	0	3
8:45 AM	0	0	0	0	0	0	0	1	0	0	2	0	3
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	1	2	1	4	2	7	1	6	0	0	8	1	33
APPROACH %	25%	50%	25%	31%	15%	54%	14%	86%	0%	0%	89%	11%	
APP/DEPART	4	/	4	13	/	2	7	/	11	9	/	16	0
BEGIN PEAK HR		7:15 AM											
VOLUMES	1	1	1	3	1	6	1	4	0	0	5	0	23
APPROACH %	33%	33%	33%	30%	10%	60%	20%	80%	0%	0%	100%	0%	
PEAK HR FACTOR		0.750			0.500			0.625			0.625		0.639
APP/DEPART	3	/	2	10	/	1	5	/	8	5	/	12	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	1	0	1	0	0	0	0	0	0	1	0	3
4:15 PM	0	1	0	1	0	0	0	7	0	0	0	0	9
4:30 PM	0	1	0	1	0	0	0	2	0	0	1	0	5
4:45 PM	0	0	0	0	1	0	0	3	0	0	0	1	5
5:00 PM	0	0	0	0	3	0	0	1	0	0	1	0	5
5:15 PM	0	2	1	0	1	0	0	0	0	0	0	0	4
5:30 PM	0	1	0	0	0	0	0	1	0	0	0	1	3
5:45 PM	0	2	0	0	0	0	0	0	0	0	1	0	3
VOLUMES	0	8	1	3	5	0	0	14	0	0	4	2	37
APPROACH %	0%	89%	11%	38%	63%	0%	0%	100%	0%	0%	67%	33%	
APP/DEPART	9	/	10	8	/	5	14	/	18	6	/	4	0
BEGIN PEAK HR		4:15 PM											
VOLUMES	0	2	0	2	4	0	0	13	0	0	2	1	24
APPROACH %	0%	100%	0%	33%	67%	0%	0%	100%	0%	0%	67%	33%	
PEAK HR FACTOR		0.500			0.500			0.464			0.750		0.667
APP/DEPART	2	/	3	6	/	4	13	/	15	3	/	2	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
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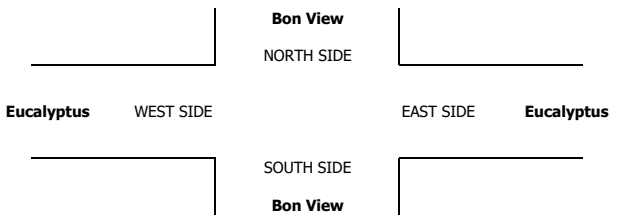
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Bon View	LOCATION #:	24
WEDNESDAY	EAST & WEST:	Eucalyptus	CONTROL:	STOP ALL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND Bon View			SOUTHBOUND Bon View			EASTBOUND Eucalyptus			WESTBOUND Eucalyptus			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
AM 7:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	2
7:15 AM	0	0	0	1	0	1	0	1	0	0	2	0	5
7:30 AM	0	0	0	0	0	0	0	0	0	0	6	0	6
7:45 AM	0	0	0	0	0	0	0	3	0	0	0	1	4
8:00 AM	0	1	0	0	0	0	0	2	1	0	5	0	9
8:15 AM	0	0	0	0	0	0	0	0	0	0	2	1	3
8:30 AM	0	0	0	1	1	0	0	2	0	0	2	0	6
8:45 AM	0	0	0	0	0	0	0	1	0	0	4	1	6
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	1	0	2	1	1	0	9	1	0	22	4	41
APPROACH %	0%	100%	0%	50%	25%	25%	0%	90%	10%	0%	85%	15%	
APP/DEPART	1	/	5	4	/	2	10	/	11	26	/	23	0
BEGIN PEAK HR		7:15 AM											
VOLUMES	0	1	0	1	1	0	0	5	1	0	13	2	24
APPROACH %	0%	100%	0%	50%	50%	0%	0%	83%	17%	0%	87%	13%	
PEAK HR FACTOR		0.250			0.250			0.500			0.625		0.667
APP/DEPART	1	/	3	2	/	2	6	/	6	15	/	13	0
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	1	0	0	0	0	0	0	0	0	0	2	0	3
4:15 PM	0	1	0	0	0	1	0	1	0	0	0	0	3
4:30 PM	0	0	0	1	0	0	0	1	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
VOLUMES	1	1	0	1	1	1	1	3	0	0	2	0	11
APPROACH %	50%	50%	0%	33%	33%	33%	25%	75%	0%	0%	100%	0%	
APP/DEPART	2	/	3	3	/	1	4	/	3	2	/	4	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	1	1	0	0	0	1	0	3	0	0	2	0	9
APPROACH %	50%	50%	0%	0%	0%	50%	0%	100%	0%	0%	100%	0%	
PEAK HR FACTOR		0.500			0.500			0.750			0.250		0.750
APP/DEPART	2	/	2	2	/	0	3	/	3	2	/	4	0

	U-TURNS				
	NB	SB	EB	WB	TTL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
03:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	1	0	0	1
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	1	0	0	1

	RTOR			
	NRR	SRR	ERR	WRR
LANES:	X	X	X	X
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
9:00 AM	0	0	0	0
9:15 AM	0	0	0	0
9:30 AM	0	0	0	0
9:45 AM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0
03:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0

Bon View

NORTH SIDE

Eucalyptus WEST SIDE

EAST SIDE **Eucalyptus**

SOUTH SIDE

Bon View

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Bon View	LOCATION #:	24
WEDNESDAY	EAST & WEST:	Eucalyptus	CONTROL:	STOP ALL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND Bon View			SOUTHBOUND Bon View			EASTBOUND Eucalyptus			WESTBOUND Eucalyptus				U-TURNS					RTOR			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
	LANES:	0	1	0	0	1	0	0	1	0	0	1	0							X	X	X	X
AM	7:00 AM	0	0	0	1	0	0	1	0	0	0	1	0	3	0	0	0	0	0	0	0	0	0
	7:15 AM	0	1	0	0	0	0	0	1	0	0	1	0	3	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	1	0	1	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	2	0	1	0	1	0	0	1	1	6	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	1	0	2	0	1	0	0	0	0	4	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	1	0	0	0	0	0	0	1	1	3	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	1	0	2	0	0	0	2	0	5	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	1	0	7	2	4	3	3	0	0	6	3	29	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	100%	0%	54%	15%	31%	50%	50%	0%	0%	67%	33%										
	APP/DEPART	1	/	7	13	/	2	6	/	10	9	/	10	0									
	BEGIN PEAK HR		8:00 AM																				
	VOLUMES	0	0	0	4	1	3	2	2	0	0	4	2	18						0	0	0	0
	APPROACH %	0%	0%	0%	50%	13%	38%	50%	50%	0%	0%	67%	33%										
	PEAK HR FACTOR		0.000			0.667			0.500			0.750		0.750									
	APP/DEPART	0	/	4	8	/	1	4	/	6	6	/	7	0									
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	1	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	1	0	0	1	0	2	0	0	0	0	0	0	0	0	0
	4:30 PM	1	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0
	4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	5:00 PM	0	2	0	2	0	0	1	0	0	0	1	0	6	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	1	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0
	VOLUMES	1	4	0	3	0	1	1	4	0	0	2	0	16	0	0	0	0	0	0	0	0	0
	APPROACH %	20%	80%	0%	75%	0%	25%	20%	80%	0%	0%	100%	0%										
	APP/DEPART	5	/	5	4	/	0	5	/	7	2	/	4	0									
	BEGIN PEAK HR		4:15 PM																				
	VOLUMES	1	3	0	2	0	0	1	2	0	0	2	0	11						0	0	0	0
	APPROACH %	25%	75%	0%	100%	0%	0%	33%	67%	0%	0%	100%	0%										
	PEAK HR FACTOR		0.500			0.250			0.750			0.500		0.458									
	APP/DEPART	4	/	4	2	/	0	3	/	4	2	/	3	0									

Bon View

NORTH SIDE

Eucalyptus WEST SIDE

EAST SIDE **Eucalyptus**

SOUTH SIDE

Bon View

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
Wed, Jan 30, 19	NORTH & SOUTH:	Bon View	LOCATION #:	25
	EAST & WEST:	Merrill	CONTROL:	STOP S

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

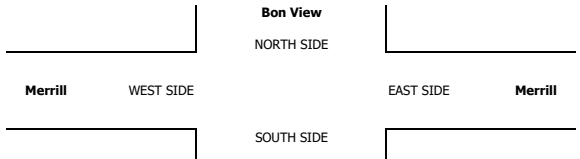
		NORTHBOUND (Bon View)			SOUTHBOUND (Bon View)			EASTBOUND (Merrill)			WESTBOUND (Merrill)			
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	11	3	33	0	0	83	8	138
	7:15 AM	0	0	0	5	0	9	8	39	0	0	121	14	196
	7:30 AM	0	0	0	3	0	11	6	36	0	0	103	14	173
	7:45 AM	0	0	0	6	0	10	4	55	0	0	119	7	201
	8:00 AM	0	0	0	4	0	5	2	49	0	0	113	11	184
	8:15 AM	0	0	0	2	0	8	4	58	0	0	110	6	188
	8:30 AM	0	0	0	8	0	4	4	49	0	0	102	8	175
	8:45 AM	0	0	0	2	0	4	2	52	0	0	79	7	146
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	30	0	62	33	371	0	0	830	75	1,401
	APPROACH %	0%	0%	0%	33%	0%	67%	8%	92%	0%	0%	92%	8%	
	APP/DEPART	0	/	108	92	/	0	404	/	401	905	/	892	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	18	0	35	20	179	0	0	456	46	754
	APPROACH %	0%	0%	0%	34%	0%	66%	10%	90%	0%	0%	91%	9%	
	PEAK HR FACTOR		0.000			0.828			0.843			0.930		0.938
	APP/DEPART	0	/	66	53	/	0	199	/	197	502	/	491	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	3	0	5	12	111	0	0	32	6	169
	4:15 PM	0	0	0	6	0	3	7	109	0	0	44	4	173
	4:30 PM	0	0	0	9	0	5	12	121	0	0	61	12	220
	4:45 PM	0	0	0	11	0	7	14	121	0	0	73	1	227
	5:00 PM	0	0	0	8	0	10	21	141	0	0	67	7	254
	5:15 PM	0	0	0	6	0	8	19	137	0	0	75	7	252
	5:30 PM	0	0	0	9	0	7	9	105	0	0	57	3	190
	5:45 PM	0	0	0	5	0	5	6	113	0	0	68	5	202
	VOLUMES	0	0	0	57	0	50	100	958	0	0	477	45	1,687
	APPROACH %	0%	0%	0%	53%	0%	47%	9%	91%	0%	0%	91%	9%	
	APP/DEPART	0	/	145	107	/	0	1,058	/	1,015	522	/	527	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	0	0	34	0	30	66	520	0	0	276	27	953
	APPROACH %	0%	0%	0%	53%	0%	47%	11%	89%	0%	0%	91%	9%	
	PEAK HR FACTOR		0.000			0.889			0.904			0.924		0.938
	APP/DEPART	0	/	93	64	/	0	586	/	554	303	/	306	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

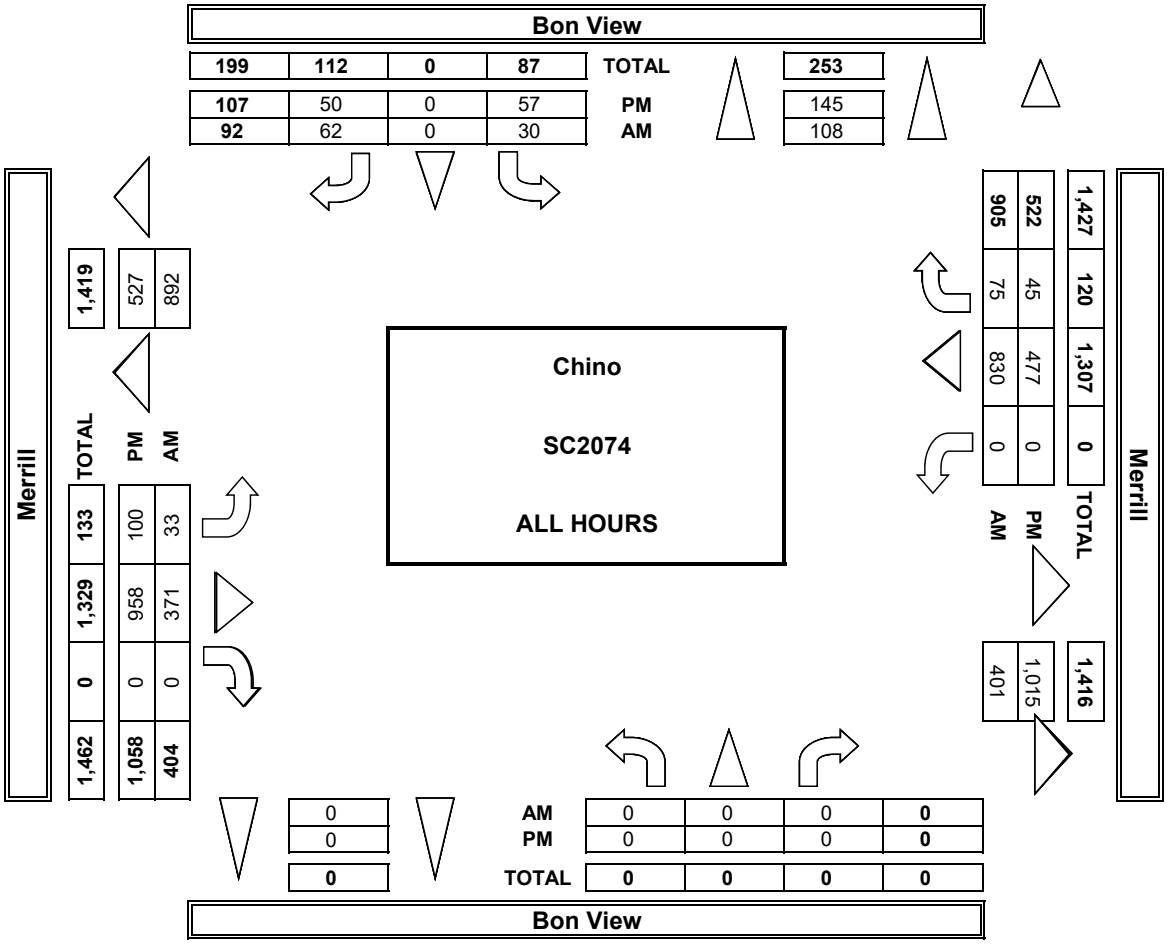
NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

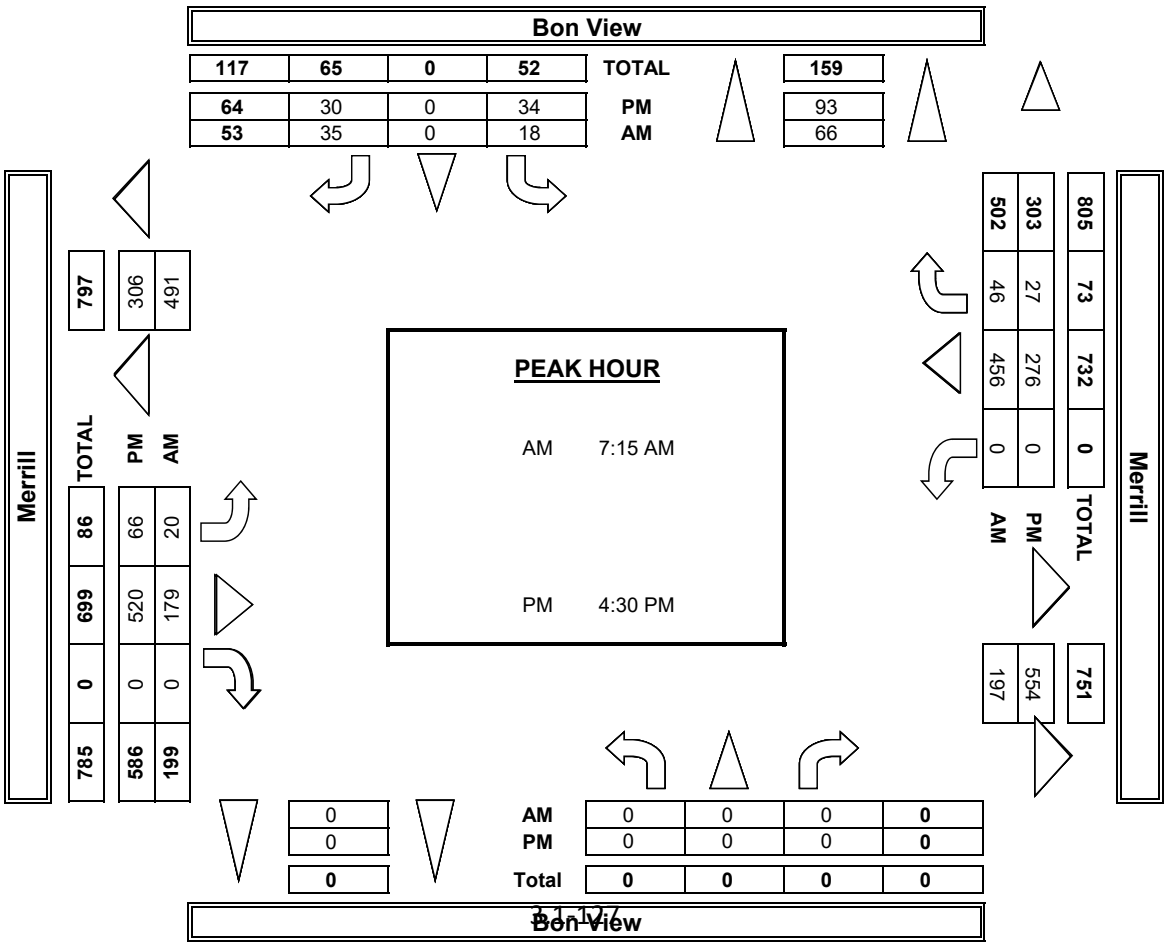


		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Bon View	LOCATION #:	25
WEDNESDAY	EAST & WEST:	Merrill	CONTROL:	STOP S

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

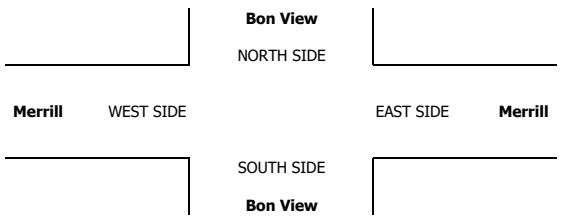
		NORTHBOUND (Bon View)			SOUTHBOUND (Bon View)			EASTBOUND (Merrill)			WESTBOUND (Merrill)			
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	1	1	0	0	7	0	9
	7:15 AM	0	0	0	0	0	1	0	2	0	0	4	1	8
	7:30 AM	0	0	0	1	0	0	0	2	0	0	4	1	8
	7:45 AM	0	0	0	0	0	0	0	4	0	0	7	0	11
	8:00 AM	0	0	0	0	0	1	0	7	0	0	13	0	21
	8:15 AM	0	0	0	0	0	0	0	6	0	0	5	0	11
	8:30 AM	0	0	0	0	0	0	0	8	0	0	5	0	13
	8:45 AM	0	0	0	0	0	0	0	5	0	0	6	0	11
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	1	0	2	1	35	0	0	51	2	92
	APPROACH %	0%	0%	0%	33%	0%	67%	3%	97%	0%	0%	96%	4%	
	APP/DEPART	0	/	3	3	/	0	36	/	36	53	/	53	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	0	0	0	0	1	0	26	0	0	29	0	56
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.250			0.813			0.558		0.667
	APP/DEPART	0	/	0	1	/	0	26	/	26	29	/	30	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	2	8	0	0	3	0	13
	4:15 PM	0	0	0	0	0	0	1	7	0	0	4	0	12
	4:30 PM	0	0	0	0	0	0	1	8	0	0	6	0	15
	4:45 PM	0	0	0	1	0	0	0	6	0	0	4	0	11
	5:00 PM	0	0	0	0	0	1	0	4	0	0	2	0	7
	5:15 PM	0	0	0	1	0	0	1	9	0	0	5	1	17
	5:30 PM	0	0	0	1	0	0	0	6	0	0	3	0	10
	5:45 PM	0	0	0	1	0	0	0	5	0	0	5	2	13
	VOLUMES	0	0	0	4	0	1	5	53	0	0	32	3	98
	APPROACH %	0%	0%	0%	80%	0%	20%	9%	91%	0%	0%	91%	9%	
	APP/DEPART	0	/	8	5	/	0	58	/	57	35	/	33	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	1	0	0	4	29	0	0	17	0	51
	APPROACH %	0%	0%	0%	100%	0%	0%	12%	88%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.250			0.825			0.708		0.850
	APP/DEPART	0	/	4	1	/	0	33	/	30	17	/	17	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Bon View	LOCATION #:	25
WEDNESDAY	EAST & WEST:	Merrill	CONTROL:	STOP S

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND (Bon View)			SOUTHBOUND (Bon View)			EASTBOUND (Merrill)			WESTBOUND (Merrill)			
LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 0	TOTAL
AM													
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	1	0	0	2	0	3
7:45 AM	0	0	0	0	0	0	0	3	0	0	0	0	3
8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
8:15 AM	0	0	0	0	0	0	0	3	0	0	1	0	4
8:30 AM	0	0	0	1	0	0	0	4	0	0	3	0	8
8:45 AM	0	0	0	0	0	0	0	2	0	0	2	0	4
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	1	0	0	0	13	0	0	10	0	24
APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	100%	0%	
APP/DEPART	0	/	0	1	/	0	13	/	14	10	/	10	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	0	0	0	1	0	0	0	9	0	0	7	0	17
APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	100%	0%	
PEAK HR FACTOR		0.000			0.250			0.563			0.583		0.531
APP/DEPART	0	/	0	1	/	0	9	/	10	7	/	7	0
PM													
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
4:15 PM	0	0	0	0	0	0	0	1	0	0	2	0	3
4:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	4	0	0	1	0	5
5:00 PM	0	0	0	0	0	0	0	3	0	0	1	0	4
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
VOLUMES	0	0	0	0	0	0	0	12	0	0	8	0	20
APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
APP/DEPART	0	/	0	0	/	0	12	/	12	8	/	8	0
BEGIN PEAK HR		4:15 PM											
VOLUMES	0	0	0	0	0	0	0	10	0	0	4	0	14
APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
PEAK HR FACTOR		0.000			0.000			0.625			0.500		0.700
APP/DEPART	0	/	0	0	/	0	10	/	10	4	/	4	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

0	0	0	0

0	0	0	0

Bon View

NORTH SIDE

Merrill WEST SIDE EAST SIDE **Merrill**

SOUTH SIDE

Bon View

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Bon View	LOCATION #:	25
WEDNESDAY	EAST & WEST:	Merrill	CONTROL:	STOP S

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND Bon View			SOUTHBOUND Bon View			EASTBOUND Merrill			WESTBOUND Merrill			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	X	X	X	0	X	0	0	1	X	X	1	0	
AM 7:00 AM	0	0	0	0	0	0	0	3	0	0	3	0	6
7:15 AM	0	0	0	0	0	0	0	4	0	0	8	0	12
7:30 AM	0	0	0	1	0	0	0	3	0	0	1	0	5
7:45 AM	0	0	0	0	0	0	0	5	0	0	9	0	14
8:00 AM	0	0	0	0	0	0	0	4	0	0	6	0	10
8:15 AM	0	0	0	0	0	0	0	5	0	0	4	0	9
8:30 AM	0	0	0	0	0	0	0	9	0	0	11	0	20
8:45 AM	0	0	0	0	0	1	0	3	0	0	5	0	9
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	1	0	1	0	36	0	0	47	0	85
APPROACH %	0%	0%	0%	50%	0%	50%	0%	100%	0%	0%	100%	0%	
APP/DEPART	0	/	0	2	/	0	36	/	37	47	/	48	0
BEGIN PEAK HR		7:45 AM											
VOLUMES	0	0	0	0	0	0	0	23	0	0	30	0	53
APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
PEAK HR FACTOR		0.000			0.000			0.639			0.682		0.663
APP/DEPART	0	/	0	0	/	0	23	/	23	30	/	30	0
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	5	0	0	6	0	11
4:15 PM	0	0	0	0	0	0	0	7	0	0	2	0	9
4:30 PM	0	0	0	0	0	0	1	5	0	0	2	0	8
4:45 PM	0	0	0	0	0	0	1	7	0	0	4	0	12
5:00 PM	0	0	0	0	0	0	2	3	0	0	5	0	10
5:15 PM	0	0	0	0	0	0	0	7	0	0	6	0	13
5:30 PM	0	0	0	0	0	0	0	5	0	0	0	0	5
5:45 PM	0	0	0	0	0	0	0	4	0	0	0	0	4
VOLUMES	0	0	0	0	0	0	4	43	0	0	25	0	72
APPROACH %	0%	0%	0%	0%	0%	0%	9%	91%	0%	0%	100%	0%	
APP/DEPART	0	/	4	0	/	0	47	/	43	25	/	25	0
BEGIN PEAK HR		4:30 PM											
VOLUMES	0	0	0	0	0	0	4	22	0	0	17	0	43
APPROACH %	0%	0%	0%	0%	0%	0%	15%	85%	0%	0%	100%	0%	
PEAK HR FACTOR		0.000			0.000			0.813			0.708		0.827
APP/DEPART	0	/	4	0	/	0	26	/	22	17	/	17	0

U-TURNS

	NB	SB	EB	WB	TTL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
03:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0

RTOR

	NRR	SRR	ERR	WRR
LANES:	X	X	X	X
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
9:00 AM	0	0	0	0
9:15 AM	0	0	0	0
9:30 AM	0	0	0	0
9:45 AM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0
03:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0

Bon View
NORTH SIDE

Merrill WEST SIDE

EAST SIDE **Merrill**

SOUTH SIDE
Bon View

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Jan 30, 19

LOCATION: Chino
NORTH & SOUTH: Grove
EAST & WEST: SR-60 WB Ramps

PROJECT #: SC2074
LOCATION #: 26
CONTROL: SIGNAL

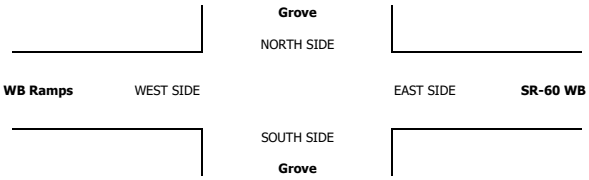
NOTES:
PM WB Queue

AM / PM / MD / OTHER / OTHER

N ▲ / ◄ W / E ► / S ▼

Add U-Turns to Left Turns

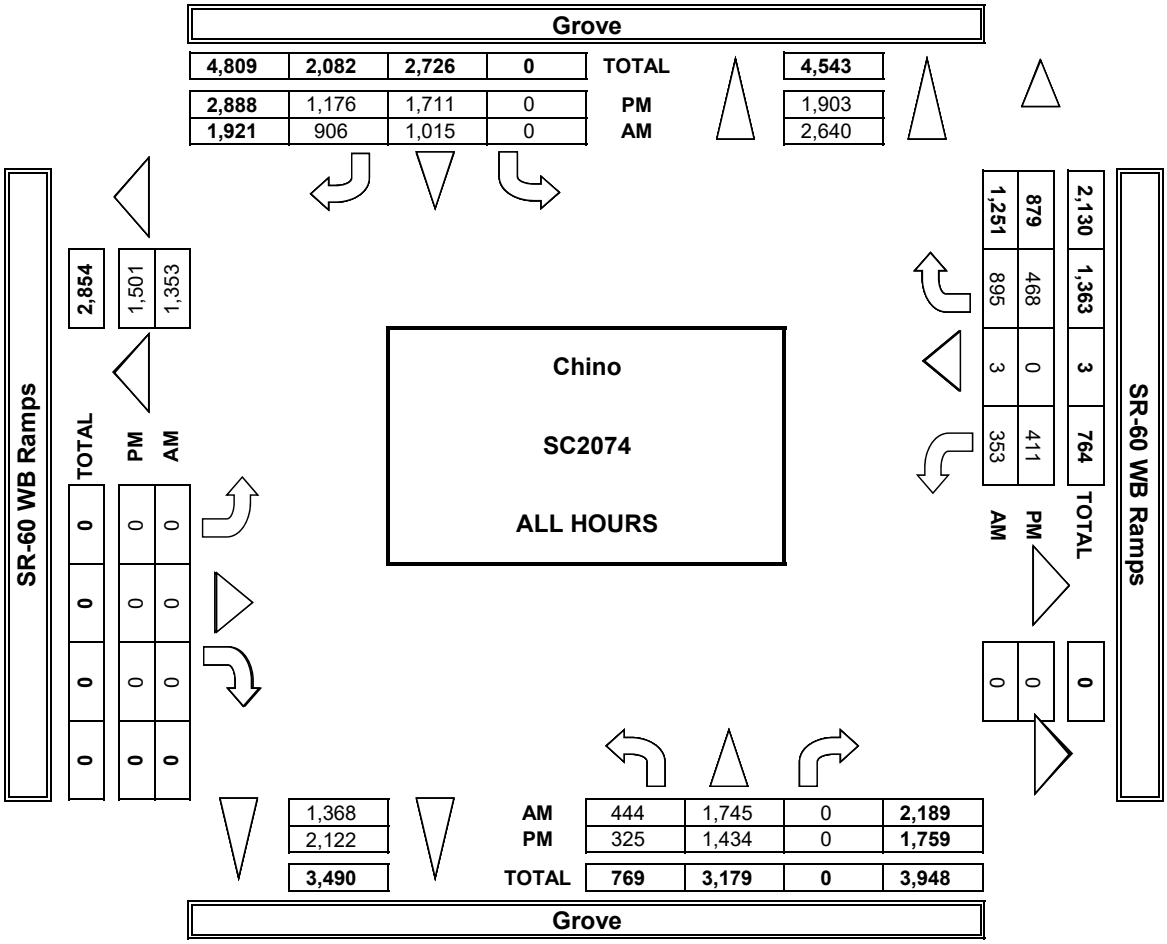
		NORTHBOUND (Grove)			SOUTHBOUND (Grove)			EASTBOUND (SR-60 WB Ramps)			WESTBOUND (SR-60 WB Ramps)				U-TURNS					RTOR			
	LANES:	NL 1	NT 2	NR X	SL X	ST 2	SR 1	EL X	ET X	ER X	WL 0.5	WT 0.5	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL	NRR X	SRR 0	ERR X	WRR 0
AM	7:00 AM	78	178	0	0	117	126	0	0	0	45	2	112	658	0	0	0	0	0	0	44	0	38
	7:15 AM	79	212	0	0	121	122	0	0	0	30	0	100	664	0	0	0	0	0	0	42	0	19
	7:30 AM	50	243	0	0	137	108	0	0	0	43	0	98	679	0	0	0	0	0	0	30	0	24
	7:45 AM	49	251	0	0	160	108	0	0	0	46	0	137	751	0	0	0	0	0	0	20	0	36
	8:00 AM	48	206	0	0	133	118	0	0	0	48	0	109	662	0	0	0	0	0	0	26	0	33
	8:15 AM	51	208	0	0	138	113	0	0	0	41	0	120	671	0	0	0	0	0	0	26	0	26
	8:30 AM	46	227	0	0	102	112	0	0	0	53	1	118	659	0	0	0	0	0	0	42	0	19
	8:45 AM	43	220	0	0	107	99	0	0	0	47	0	101	617	0	0	0	0	0	0	35	0	20
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	444	1,745	0	0	1,015	906	0	0	0	353	3	895	5,361	0	0	0	0	0	0	265	0	215
	APPROACH %	20%	80%	0%	0%	53%	47%	0%	0%	0%	28%	0%	72%										
	APP/DEPART	2,189	/	2,640	1,921	/	1,368	0	/	0	1,251	/	1,353	0									
	BEGIN PEAK HR		7:30 AM																				
	VOLUMES	198	908	0	0	568	447	0	0	0	178	0	464	2,763						0	102	0	119
	APPROACH %	18%	82%	0%	0%	56%	44%	0%	0%	0%	28%	0%	72%										
	PEAK HR FACTOR		0.922			0.947			0.000			0.877		0.920									
	APP/DEPART	1,106	/	1,372	1,015	/	746	0	/	0	642	/	645	0									
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	44	191	0	0	200	173	0	0	0	53	0	73	734	0	0	0	0	0	0	47	0	46
	4:15 PM	45	176	0	0	168	129	0	0	0	52	0	71	641	0	1	0	0	1	0	44	0	46
	4:30 PM	41	189	0	0	220	157	0	0	0	49	0	75	731	0	0	0	0	0	0	47	0	49
	4:45 PM	39	179	0	0	247	121	0	0	0	65	0	52	703	0	0	0	0	0	0	30	0	32
	5:00 PM	41	173	0	0	189	119	0	0	0	60	0	55	637	0	0	0	0	0	0	27	0	36
	5:15 PM	38	168	0	0	242	170	0	0	0	49	0	49	716	0	0	0	0	0	0	47	0	39
	5:30 PM	40	173	0	0	240	149	0	0	0	38	0	45	685	0	0	0	0	0	0	35	0	25
	5:45 PM	37	185	0	0	205	158	0	0	0	45	0	48	678	0	0	0	0	0	0	50	0	29
	VOLUMES	325	1,434	0	0	1,711	1,176	0	0	0	411	0	468	5,526	0	1	0	0	1	0	327	0	302
	APPROACH %	18%	82%	0%	0%	59%	41%	0%	0%	0%	47%	0%	53%										
	APP/DEPART	1,759	/	1,903	2,888	/	2,122	0	/	0	879	/	1,501	0									
	BEGIN PEAK HR		4:00 PM																				
	VOLUMES	169	735	0	0	835	580	0	0	0	219	0	271	2,810						0	168	0	173
	APPROACH %	19%	81%	0%	0%	59%	41%	0%	0%	0%	45%	0%	55%										
	PEAK HR FACTOR		0.962			0.939			0.000			0.972		0.957									
	APP/DEPART	904	/	1,007	1,416	/	1,054	0	/	0	490	/	749	0									

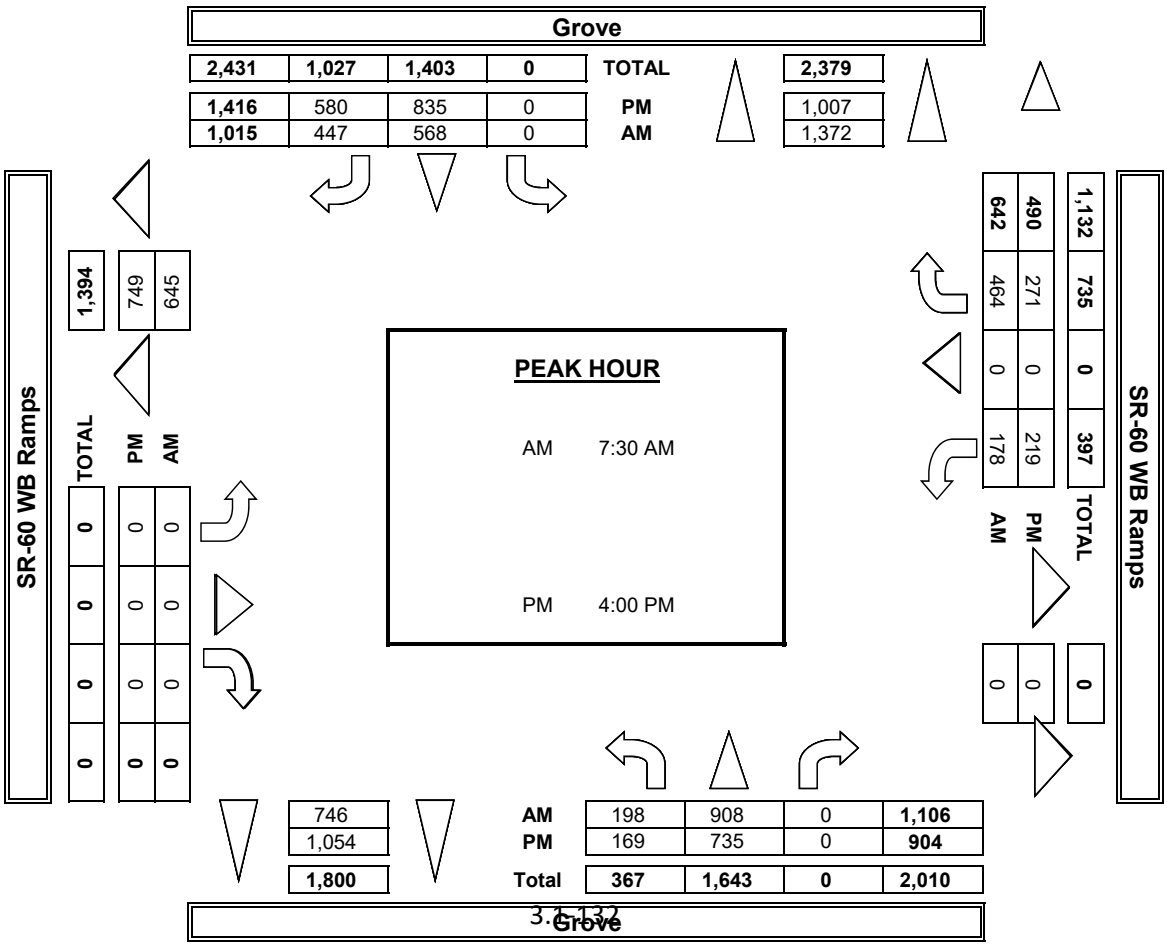


		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	7:45 AM	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0
	8:00 AM	1	1	0	0	2	1	1	0	0	2	0	0	0	0	0
	8:15 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	4	3	0	0	7	3	3	0	0	7	0	0	0	0	0
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	4:30 PM	4	1	0	0	5	3	0	0	0	3	1	1	0	0	2
	4:45 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	5:00 PM	3	3	0	0	6	2	1	0	0	3	1	2	0	0	3
	5:15 PM	1	1	0	0	2	0	0	0	0	0	1	1	0	0	2
	5:30 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	5:45 PM	0	2	0	0	2	0	1	0	0	1	0	1	0	0	1
	TOTAL	10	8	0	0	18	4	1	0	0	10	1	1	0	0	8

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	26
WEDNESDAY	EAST & WEST:	SR-60 WB Ramps	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

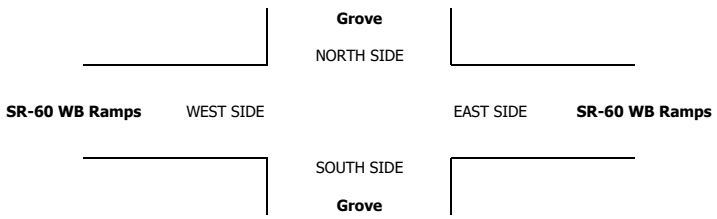
		NORTHBOUND (Grove)			SOUTHBOUND (Grove)			EASTBOUND (SR-60 WB Ramps)			WESTBOUND (SR-60 WB Ramps)			
	LANES:	NL 1	NT 2	NR X	SL X	ST 2	SR 1	EL X	ET X	ER X	WL 0.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	6	13	0	0	13	18	0	0	0	4	0	7	61
	7:15 AM	6	11	0	0	14	12	0	0	0	3	0	11	57
	7:30 AM	2	12	0	0	9	17	0	0	0	2	0	14	56
	7:45 AM	2	13	0	0	13	18	0	0	0	2	0	11	59
	8:00 AM	4	15	0	0	19	16	0	0	0	0	0	16	70
	8:15 AM	1	10	0	0	16	17	0	0	0	5	0	19	68
	8:30 AM	5	11	0	0	13	12	0	0	0	5	0	10	56
	8:45 AM	1	13	0	0	14	17	0	0	0	5	0	9	59
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	27	98	0	0	111	127	0	0	0	26	0	97	486
	APPROACH %	22%	78%	0%	0%	47%	53%	0%	0%	0%	21%	0%	79%	
	APP/DEPART	125	/	195	238	/	137	0	/	0	123	/	154	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	11	49	0	0	62	62	0	0	0	15	0	54	253
	APPROACH %	18%	82%	0%	0%	50%	50%	0%	0%	0%	22%	0%	78%	
	PEAK HR FACTOR		0.789			0.886			0.000			0.719		0.904
	APP/DEPART	60	/	103	124	/	77	0	/	0	69	/	73	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	2	15	0	0	8	8	0	0	0	4	0	5	42
	4:15 PM	3	17	0	0	6	6	0	0	0	3	0	11	46
	4:30 PM	0	19	0	0	7	3	0	0	0	1	0	8	38
	4:45 PM	2	17	0	0	8	6	0	0	0	6	0	4	43
	5:00 PM	1	13	0	0	5	8	0	0	0	2	0	12	41
	5:15 PM	0	12	0	0	9	3	0	0	0	1	0	3	28
	5:30 PM	2	12	0	0	6	5	0	0	0	4	0	4	33
	5:45 PM	0	10	0	0	6	1	0	0	0	3	0	3	23
	VOLUMES	10	115	0	0	55	40	0	0	0	24	0	50	294
	APPROACH %	8%	92%	0%	0%	58%	42%	0%	0%	0%	32%	0%	68%	
	APP/DEPART	125	/	165	95	/	79	0	/	0	74	/	50	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	7	68	0	0	29	23	0	0	0	14	0	28	169
	APPROACH %	9%	91%	0%	0%	56%	44%	0%	0%	0%	33%	0%	67%	
	PEAK HR FACTOR		0.938			0.813			0.000			0.750		0.918
	APP/DEPART	75	/	96	52	/	43	0	/	0	42	/	30	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	5	0	1
0	5	0	1
0	8	0	2
0	5	0	3
0	4	0	5
0	7	0	1
0	5	0	2
0	9	0	5
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	48	0	20
0	25	0	13
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	12	0	34
0	7	0	20



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	26
WEDNESDAY	EAST & WEST:	SR-60 WB Ramps	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

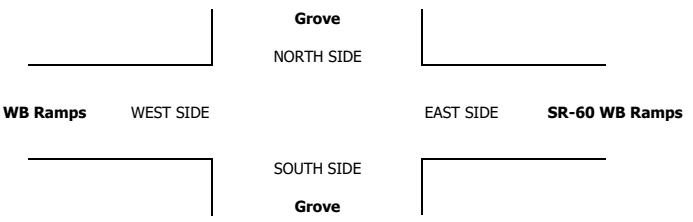
		NORTHBOUND Grove			SOUTHBOUND Grove			EASTBOUND SR-60 WB Ramps			WESTBOUND SR-60 WB Ramps			
	LANES:	NL 1	NT 2	NR X	SL X	ST 2	SR 1	EL X	ET X	ER X	WL 0.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	1	1	0	0	1	2	0	0	0	2	0	1	8
	7:15 AM	2	1	0	0	3	3	0	0	0	2	0	0	11
	7:30 AM	0	1	0	0	1	5	0	0	0	5	0	1	13
	7:45 AM	1	2	0	0	3	0	0	0	0	1	0	1	8
	8:00 AM	1	0	0	0	4	1	0	0	0	2	0	2	10
	8:15 AM	1	0	0	0	4	1	0	0	0	1	0	3	10
	8:30 AM	1	4	0	0	4	0	0	0	0	0	0	5	14
	8:45 AM	1	3	0	0	4	2	0	0	0	2	0	3	15
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	8	12	0	0	24	14	0	0	0	15	0	16	89
	APPROACH %	40%	60%	0%	0%	63%	37%	0%	0%	0%	48%	0%	52%	
	APP/DEPART	20	/	28	38	/	39	0	/	0	31	/	22	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	4	7	0	0	16	4	0	0	0	5	0	13	49
	APPROACH %	36%	64%	0%	0%	80%	20%	0%	0%	0%	28%	0%	72%	
	PEAK HR FACTOR		0.550			0.833			0.000			0.900		0.817
	APP/DEPART	11	/	20	20	/	21	0	/	0	18	/	8	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	3	2	0	0	1	1	0	0	0	1	0	1	9
	4:15 PM	1	3	0	0	1	1	0	0	0	1	0	1	8
	4:30 PM	1	1	0	0	2	0	0	0	0	0	0	3	7
	4:45 PM	0	4	0	0	3	0	0	0	0	1	0	2	10
	5:00 PM	0	1	0	0	0	0	0	0	0	1	0	0	2
	5:15 PM	1	0	0	0	5	0	0	0	0	1	0	0	7
	5:30 PM	1	2	0	0	6	1	0	0	0	0	0	0	10
	5:45 PM	0	1	0	0	3	0	0	0	0	1	0	0	5
	VOLUMES	7	14	0	0	21	3	0	0	0	6	0	7	58
	APPROACH %	33%	67%	0%	0%	88%	13%	0%	0%	0%	46%	0%	54%	
	APP/DEPART	21	/	21	24	/	27	0	/	0	13	/	10	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	5	10	0	0	7	2	0	0	0	3	0	7	34
	APPROACH %	33%	67%	0%	0%	78%	22%	0%	0%	0%	30%	0%	70%	
	PEAK HR FACTOR		0.750			0.750			0.000			0.833		0.850
	APP/DEPART	15	/	17	9	/	10	0	/	0	10	/	7	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	1	0	1
0	1	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	2	0	3
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	1	0	4
0	0	0	4



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	26
WEDNESDAY	EAST & WEST:	SR-60 WB Ramps	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

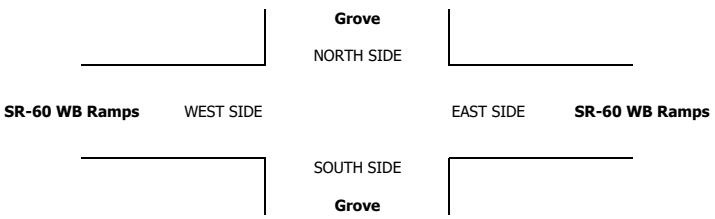
		NORTHBOUND Grove			SOUTHBOUND Grove			EASTBOUND SR-60 WB Ramps			WESTBOUND SR-60 WB Ramps			
	LANES:	NL 1	NT 2	NR X	SL X	ST 2	SR 1	EL X	ET X	ER X	WL 0.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	6	6	0	0	6	4	0	0	0	1	0	5	28
	7:15 AM	8	8	0	0	4	7	0	0	0	1	0	3	31
	7:30 AM	2	11	0	0	12	3	0	0	0	1	0	4	33
	7:45 AM	4	8	0	0	4	2	0	0	0	7	0	3	28
	8:00 AM	6	8	0	0	8	5	0	0	0	4	0	3	34
	8:15 AM	4	11	0	0	7	9	0	0	0	4	0	3	38
	8:30 AM	5	2	0	0	9	10	0	0	0	3	0	6	35
	8:45 AM	5	14	0	0	1	12	0	0	0	10	0	8	50
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	40	68	0	0	51	52	0	0	0	31	0	35	277
	APPROACH %	37%	63%	0%	0%	50%	50%	0%	0%	0%	47%	0%	53%	
	APP/DEPART	108	/	103	103	/	82	0	/	0	66	/	92	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	20	35	0	0	25	36	0	0	0	21	0	20	157
	APPROACH %	36%	64%	0%	0%	41%	59%	0%	0%	0%	51%	0%	49%	
	PEAK HR FACTOR		0.724			0.803			0.000			0.569		0.785
	APP/DEPART	55	/	55	61	/	46	0	/	0	41	/	56	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	5	1	0	0	5	6	0	0	0	6	0	5	28
	4:15 PM	1	6	0	0	4	5	0	0	0	6	0	5	27
	4:30 PM	2	10	0	0	4	7	0	0	0	2	0	5	30
	4:45 PM	2	9	0	0	6	3	0	0	0	4	0	3	27
	5:00 PM	2	6	0	0	3	2	0	0	0	4	0	0	17
	5:15 PM	2	6	0	0	0	6	0	0	0	6	0	1	21
	5:30 PM	3	4	0	0	0	3	0	0	0	5	0	0	15
	5:45 PM	2	6	0	0	3	4	0	0	0	2	0	2	19
	VOLUMES	19	48	0	0	25	36	0	0	0	35	0	21	184
	APPROACH %	28%	72%	0%	0%	41%	59%	0%	0%	0%	63%	0%	38%	
	APP/DEPART	67	/	69	61	/	60	0	/	0	56	/	55	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	10	26	0	0	19	21	0	0	0	18	0	18	112
	APPROACH %	28%	72%	0%	0%	48%	53%	0%	0%	0%	50%	0%	50%	
	PEAK HR FACTOR		0.750			0.909			0.000			0.818		0.933
	APP/DEPART	36	/	44	40	/	37	0	/	0	36	/	31	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	2	0	0
0	0	0	0
0	2	0	1
0	0	0	1
0	0	0	1
0	1	0	0
0	1	0	0
0	3	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	9	0	4
0	5	0	2
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	2
0	1	0	1
0	2	0	2
0	0	0	3
0	1	0	0
0	2	0	1
0	1	0	0
0	1	0	0
0	9	0	9
0	4	0	8



INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

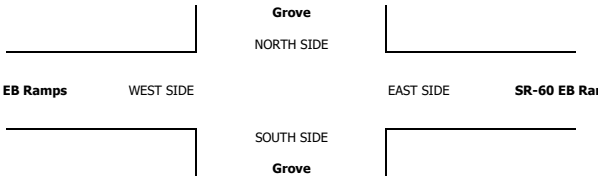
DATE:	LOCATION:	Chino	PROJECT #:	SC2074
Wed, Jan 30, 19	NORTH & SOUTH:	Grove	LOCATION #:	27
	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N / ◄ W / E ► / S ▼

Add U-Turns to Left Turns

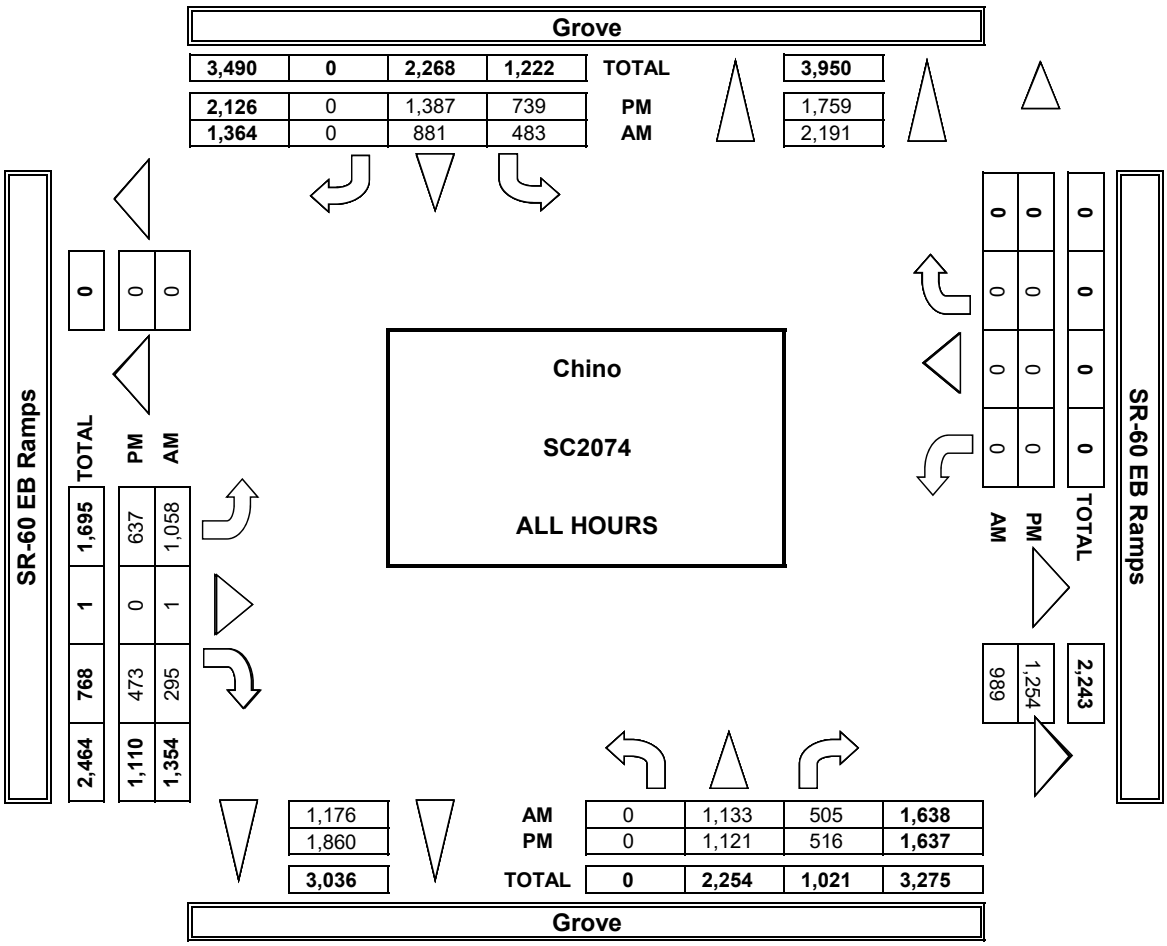
		NORTHBOUND (Grove)			SOUTHBOUND (Grove)			EASTBOUND (SR-60 EB Ramps)			WESTBOUND (SR-60 EB Ramps)				U-TURNS					RTOR			
	LANES:	NL X	NT 2	NR 0	SL 1	ST 2	SR X	EL 0.5	ET 0.5	ER 1	WL X	WT X	WR X	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL	NRR 0	SRR X	ERR 0	WRR X
AM	7:00 AM	0	131	62	65	97	0	125	0	35	0	0	0	515	0	0	0	0	0	12	0	20	0
	7:15 AM	0	154	72	63	88	0	137	0	30	0	0	0	544	0	0	0	0	0	18	0	11	0
	7:30 AM	0	163	81	58	118	0	130	0	36	0	0	0	586	0	0	0	0	0	33	0	22	0
	7:45 AM	0	156	75	69	137	0	144	0	41	0	0	0	622	0	0	0	0	0	30	0	18	0
	8:00 AM	0	121	50	65	116	0	133	1	40	0	0	0	526	0	0	0	0	0	19	0	18	0
	8:15 AM	0	139	45	49	130	0	120	0	39	0	0	0	522	0	0	0	0	0	11	0	25	0
	8:30 AM	0	125	59	58	97	0	148	0	31	0	0	0	518	0	0	0	0	0	18	0	14	0
	8:45 AM	0	144	61	56	98	0	121	0	43	0	0	0	523	0	0	0	0	0	22	0	21	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	1,133	505	483	881	0	1,058	1	295	0	0	0	4,356	0	0	0	0	0	163	0	149	0
	APPROACH %	0%	69%	31%	35%	65%	0%	78%	0%	22%	0%	0%	0%										
	APP/DEPART	1,638	/	2,191	1,364	/	1,176	1,354	/	989	0	/	0	0									
	BEGIN PEAK HR		7:15 AM																				
	VOLUMES	0	594	278	255	459	0	544	1	147	0	0	0	2,278						100	0	69	0
	APPROACH %	0%	68%	32%	36%	64%	0%	79%	0%	21%	0%	0%	0%										
	PEAK HR FACTOR		0.893			0.867			0.935			0.000		0.916									
	APP/DEPART	872	/	1,138	714	/	606	692	/	534	0	/	0	0									
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	153	68	87	170	0	82	0	56	0	0	0	616	0	0	0	0	0	27	0	21	0
	4:15 PM	0	132	60	85	135	0	89	0	47	0	0	0	548	0	0	0	0	0	20	0	14	0
	4:30 PM	0	142	65	95	174	0	88	0	68	0	0	0	632	0	0	0	0	0	25	0	22	0
	4:45 PM	0	144	71	110	202	0	74	0	70	0	0	0	671	0	0	0	0	0	18	0	13	0
	5:00 PM	0	137	61	78	171	0	77	0	61	0	0	0	585	0	0	0	0	0	18	0	24	0
	5:15 PM	0	127	58	91	200	0	78	0	60	0	0	0	614	0	1	0	0	1	16	0	22	0
	5:30 PM	0	146	63	104	174	0	67	0	57	0	0	0	611	0	0	0	0	0	18	0	23	0
	5:45 PM	0	140	70	89	161	0	82	0	54	0	0	0	596	0	0	0	0	0	16	0	19	0
	VOLUMES	0	1,121	516	739	1,387	0	637	0	473	0	0	0	4,873	0	1	0	0	1	158	0	158	0
	APPROACH %	0%	68%	32%	35%	65%	0%	57%	0%	43%	0%	0%	0%										
	APP/DEPART	1,637	/	1,759	2,126	/	1,860	1,110	/	1,254	0	/	0	0									
	BEGIN PEAK HR		4:30 PM																				
	VOLUMES	0	550	255	374	747	0	317	0	259	0	0	0	2,502						77	0	81	0
	APPROACH %	0%	68%	32%	33%	67%	0%	55%	0%	45%	0%	0%	0%										
	PEAK HR FACTOR		0.936			0.898			0.923			0.000		0.932									
	APP/DEPART	805	/	868	1,121	/	1,006	576	/	628	0	/	0	0									

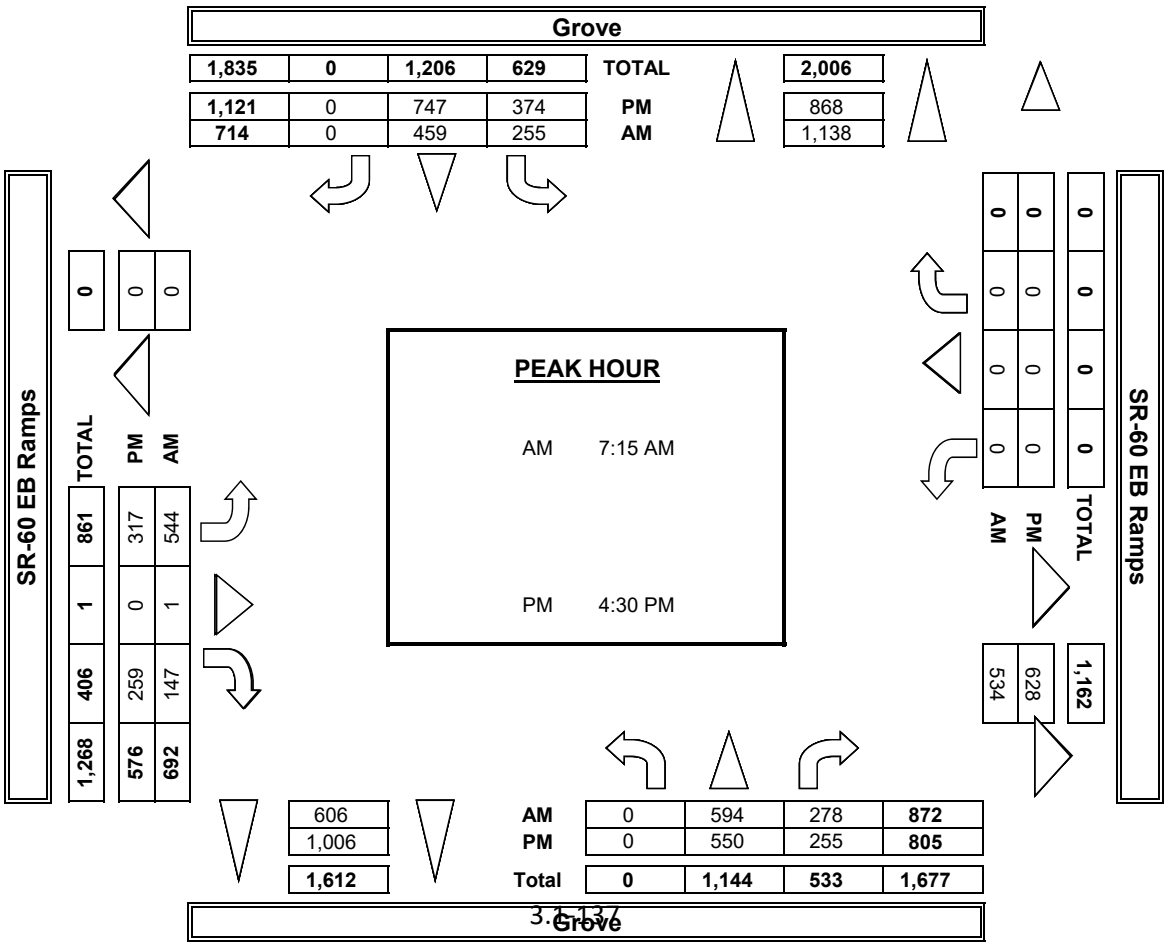


		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	2	2	0	0	4	2	2	0	0	4	0	0	0	0	0
	7:45 AM	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0
	8:00 AM	0	2	2	0	4	0	2	2	0	4	0	0	0	0	0
	8:15 AM	3	0	0	0	3	3	0	0	0	3	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	2	2	0	0	4	2	2	0	0	4	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	7	8	2	0	17	2	6	2	0	17	0	0	0	0	0
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	4:30 PM	3	1	0	0	4	2	0	0	0	2	1	1	0	0	2
	4:45 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	5:00 PM	1	3	0	0	4	0	2	0	0	2	1	1	0	0	2
	5:15 PM	1	2	0	0	3	0	1	0	0	1	1	1	0	0	2
	5:30 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	5:45 PM	0	2	1	0	3	0	1	1	0	2	0	1	0	0	1
	TOTAL	6	9	2	0	17	3	3	0	0	10	3	3	0	0	7

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

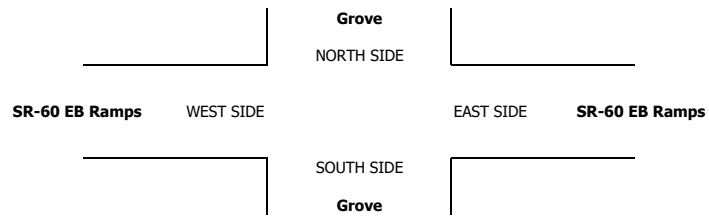
DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	27
WEDNESDAY	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:	AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / E ► / S ▼

		NORTHBOUND Grove			SOUTHBOUND Grove			EASTBOUND SR-60 EB Ramps			WESTBOUND SR-60 EB Ramps			
	LANES:	NL X	NT 2	NR 0	SL 1	ST 2	SR X	EL 0.5	ET 0.5	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	8	5	7	10	0	10	0	4	0	0	0	44
	7:15 AM	0	14	6	5	12	0	4	0	2	0	0	0	43
	7:30 AM	0	8	1	3	8	0	6	0	5	0	0	0	31
	7:45 AM	0	6	6	8	7	0	8	0	4	0	0	0	39
	8:00 AM	0	9	4	12	7	0	10	0	1	0	0	0	43
	8:15 AM	0	8	3	9	12	0	3	0	2	0	0	0	37
	8:30 AM	0	10	4	10	8	0	6	0	4	0	0	0	42
	8:45 AM	0	5	9	11	8	0	9	0	3	0	0	0	45
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	68	38	65	72	0	56	0	25	0	0	0	324
	APPROACH %	0%	64%	36%	47%	53%	0%	69%	0%	31%	0%	0%	0%	
	APP/DEPART	106	/	124	137	/	97	81	/	103	0	/	0	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	0	32	20	42	35	0	28	0	10	0	0	0	167
	APPROACH %	0%	62%	38%	55%	45%	0%	74%	0%	26%	0%	0%	0%	
	PEAK HR FACTOR		0.929			0.917			0.792			0.000		0.928
	APP/DEPART	52	/	60	77	/	45	38	/	62	0	/	0	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	11	5	6	6	0	6	0	7	0	0	0	41
	4:15 PM	0	12	4	4	5	0	8	0	3	0	0	0	36
	4:30 PM	0	8	3	2	6	0	11	0	6	0	0	0	36
	4:45 PM	0	14	3	5	9	0	5	0	2	0	0	0	38
	5:00 PM	0	8	1	0	7	0	6	0	2	0	0	0	24
	5:15 PM	0	6	1	3	7	0	6	0	4	0	0	0	27
	5:30 PM	0	8	2	3	7	0	6	0	2	0	0	0	28
	5:45 PM	0	5	4	3	6	0	5	0	1	0	0	0	24
	VOLUMES	0	72	23	26	53	0	53	0	27	0	0	0	254
	APPROACH %	0%	76%	24%	33%	67%	0%	66%	0%	34%	0%	0%	0%	
	APP/DEPART	95	/	125	79	/	80	80	/	49	0	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	45	15	17	26	0	30	0	18	0	0	0	151
	APPROACH %	0%	75%	25%	40%	60%	0%	63%	0%	38%	0%	0%	0%	
	PEAK HR FACTOR		0.882			0.768			0.706			0.000		0.921
	APP/DEPART	60	/	75	43	/	44	48	/	32	0	/	0	0

U-TURNS					
NB	SB	EB	WB	TTL	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	

RTOR			
NRR 0	SRR X	ERR 0	WRR X
0	0	2	0
2	0	1	0
1	0	2	0
1	0	0	0
1	0	0	0
1	0	2	0
1	0	0	0
3	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
10	0	7	0
6	0	2	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
1	0	0	0
0	0	0	0
1	0	1	0
0	0	0	0
0	0	2	0
0	0	0	0
1	0	0	0
3	0	4	0
2	0	2	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	27
WEDNESDAY	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Grove			SOUTHBOUND Grove			EASTBOUND SR-60 EB Ramps			WESTBOUND SR-60 EB Ramps			
	LANES:	NL X	NT 2	NR 0	SL 1	ST 2	SR X	EL 0.5	ET 0.5	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	1	6	1	2	0	1	0	1	0	0	0	12
	7:15 AM	0	3	3	1	4	0	0	0	1	0	0	0	12
	7:30 AM	0	0	3	2	4	0	1	0	4	0	0	0	14
	7:45 AM	0	2	3	1	3	0	1	0	0	0	0	0	10
	8:00 AM	0	1	3	1	5	0	0	0	0	0	0	0	10
	8:15 AM	0	1	3	2	3	0	0	0	1	0	0	0	10
	8:30 AM	0	1	2	2	2	0	4	0	0	0	0	0	11
	8:45 AM	0	1	6	4	2	0	3	0	1	0	0	0	17
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	10	29	14	25	0	10	0	8	0	0	0	96
	APPROACH %	0%	26%	74%	36%	64%	0%	56%	0%	44%	0%	0%	0%	
	APP/DEPART	39	/	20	39	/	33	18	/	43	0	/	0	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	0	4	14	9	12	0	7	0	2	0	0	0	48
	APPROACH %	0%	22%	78%	43%	57%	0%	78%	0%	22%	0%	0%	0%	
	PEAK HR FACTOR		0.643			0.875			0.450			0.000		0.706
	APP/DEPART	18	/	11	21	/	14	9	/	23	0	/	0	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	4	1	2	0	0	1	0	3	0	0	0	11
	4:15 PM	0	3	2	1	1	0	1	0	1	0	0	0	9
	4:30 PM	0	1	2	1	1	0	1	0	1	0	0	0	7
	4:45 PM	0	1	1	1	3	0	3	0	2	0	0	0	11
	5:00 PM	0	0	3	0	1	0	1	0	1	0	0	0	6
	5:15 PM	0	1	1	2	4	0	0	0	1	0	0	0	9
	5:30 PM	0	1	1	3	3	0	2	0	0	0	0	0	10
	5:45 PM	0	0	1	2	2	0	1	0	2	0	0	0	8
	VOLUMES	0	11	12	12	15	0	10	0	11	0	0	0	71
	APPROACH %	0%	48%	52%	44%	56%	0%	48%	0%	52%	0%	0%	0%	
	APP/DEPART	23	/	21	27	/	26	21	/	24	0	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	9	6	5	5	0	6	0	7	0	0	0	38
	APPROACH %	0%	60%	40%	50%	50%	0%	46%	0%	54%	0%	0%	0%	
	PEAK HR FACTOR		0.750			0.625			0.650			0.000		0.864
	APP/DEPART	15	/	15	10	/	12	13	/	11	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR X	ERR 0	WRR X
1	0	1	0
0	0	0	0
1	0	2	0
0	0	0	0
1	0	0	0
0	0	1	0
0	0	0	0
2	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
5	0	5	0
3	0	2	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
2	0	3	0
1	0	2	0

Grove

NORTH SIDE

SR-60 EB Ramps WEST SIDE EAST SIDE **SR-60 EB Ramps**

SOUTH SIDE

Grove

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	27
WEDNESDAY	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N / ◄ W / E ► / S ▼

		NORTHBOUND Grove			SOUTHBOUND Grove			EASTBOUND SR-60 EB Ramps			WESTBOUND SR-60 EB Ramps			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	X	2	0	1	2	X	0.5	0.5	1	X	X	X	
AM	7:00 AM	0	7	4	4	3	0	5	0	2	0	0	0	25
AM	7:15 AM	0	11	5	3	2	0	5	0	2	0	0	0	28
AM	7:30 AM	0	6	6	6	7	0	7	0	1	0	0	0	33
AM	7:45 AM	0	4	6	2	9	0	8	0	4	0	0	0	33
AM	8:00 AM	0	7	3	6	6	0	7	0	3	0	0	0	32
AM	8:15 AM	0	8	1	4	7	0	7	0	7	0	0	0	34
AM	8:30 AM	0	6	10	8	4	0	1	0	4	0	0	0	33
AM	8:45 AM	0	8	8	7	4	0	11	0	1	0	0	0	39
AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	VOLUMES	0	57	43	40	42	0	51	0	24	0	0	0	257
AM	APPROACH %	0%	57%	43%	49%	51%	0%	68%	0%	32%	0%	0%	0%	
AM	APP/DEPART	100	/	108	82	/	66	75	/	83	0	/	0	0
AM	BEGIN PEAK HR		8:00 AM											
AM	VOLUMES	0	29	22	25	21	0	26	0	15	0	0	0	138
AM	APPROACH %	0%	57%	43%	54%	46%	0%	63%	0%	37%	0%	0%	0%	
AM	PEAK HR FACTOR		0.797			0.958			0.732			0.000		0.885
AM	APP/DEPART	51	/	55	46	/	36	41	/	47	0	/	0	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	2	3	3	8	0	4	0	3	0	0	0	23
PM	4:15 PM	0	1	3	5	5	0	6	0	3	0	0	0	23
PM	4:30 PM	0	4	6	3	3	0	8	0	9	0	0	0	33
PM	4:45 PM	0	2	1	4	6	0	9	0	8	0	0	0	30
PM	5:00 PM	0	4	2	3	4	0	4	0	5	0	0	0	22
PM	5:15 PM	0	4	2	1	5	0	4	0	3	0	0	0	19
PM	5:30 PM	0	4	3	0	5	0	3	0	4	0	0	0	19
PM	5:45 PM	0	3	4	2	3	0	5	0	6	0	0	0	23
PM	VOLUMES	0	24	24	21	39	0	43	0	41	0	0	0	192
PM	APPROACH %	0%	50%	50%	35%	65%	0%	51%	0%	49%	0%	0%	0%	
PM	APP/DEPART	48	/	67	60	/	80	84	/	45	0	/	0	0
PM	BEGIN PEAK HR		4:00 PM											
PM	VOLUMES	0	9	13	15	22	0	27	0	23	0	0	0	109
PM	APPROACH %	0%	41%	59%	41%	59%	0%	54%	0%	46%	0%	0%	0%	
PM	PEAK HR FACTOR		0.550			0.841			0.735			0.000		0.826
PM	APP/DEPART	22	/	36	37	/	45	50	/	28	0	/	0	0

U-TURNS

	NB	SB	EB	WB	TTL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
03:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0

RTOR

	NRR	SRR	ERR	WRR
LANES	0	X	0	X
7:00 AM	0	0	0	0
7:15 AM	1	0	0	0
7:30 AM	1	0	1	0
7:45 AM	1	0	1	0
8:00 AM	0	0	0	0
8:15 AM	1	0	4	0
8:30 AM	0	0	0	0
8:45 AM	3	0	1	0
9:00 AM	0	0	0	0
9:15 AM	0	0	0	0
9:30 AM	0	0	0	0
9:45 AM	0	0	0	0
VOLUMES	7	0	7	0
AM PEAK HR VOLUMES	4	0	5	0
03:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	1	0	1	0
4:15 PM	0	0	0	0
4:30 PM	2	0	2	0
4:45 PM	0	0	0	0
5:00 PM	1	0	3	0
5:15 PM	0	0	2	0
5:30 PM	0	0	1	0
5:45 PM	1	0	2	0
VOLUMES	5	0	11	0
PM PEAK HR VOLUMES	3	0	3	0

Grove

NORTH SIDE

SR-60 EB Ramps WEST SIDE

EAST SIDE **SR-60 EB Ramps**

SOUTH SIDE

Grove

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Jan 30, 19

LOCATION: Chino
NORTH & SOUTH: Grove
EAST & WEST: Walnut

PROJECT #: SC2074
LOCATION #: 28
CONTROL: SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

▲ N
◄ W
E ►
S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Grove)			SOUTHBOUND (Grove)			EASTBOUND (Walnut)			WESTBOUND (Walnut)			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	17	97	1	16	79	19	44	20	8	3	34	50	388
	7:15 AM	8	113	2	17	71	7	42	34	7	3	44	43	391
	7:30 AM	10	139	3	16	104	30	45	69	14	4	45	62	541
	7:45 AM	3	109	3	23	102	15	40	53	14	3	55	48	468
	8:00 AM	11	94	1	24	97	18	41	41	12	2	39	32	412
	8:15 AM	20	95	4	25	92	33	33	24	12	4	45	35	422
	8:30 AM	7	124	6	11	64	17	44	29	9	4	22	24	361
	8:45 AM	16	99	5	15	78	22	46	14	6	3	24	27	355
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	92	870	25	147	687	161	335	284	82	26	308	321	3,338
	APPROACH %	9%	88%	3%	15%	69%	16%	48%	41%	12%	4%	47%	49%	
	APP/DEPART	987	/	1,530	995	/	795	701	/	452	655	/	561	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	44	437	11	88	395	96	159	187	52	13	184	177	1,843
	APPROACH %	9%	89%	2%	15%	68%	17%	40%	47%	13%	3%	49%	47%	
	PEAK HR FACTOR		0.809			0.965			0.777			0.842		0.852
	APP/DEPART	492	/	775	579	/	460	398	/	284	374	/	324	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	10	121	4	40	128	43	49	53	18	2	29	11	508
	4:15 PM	23	130	6	34	121	34	29	56	23	4	37	28	525
	4:30 PM	20	109	5	30	119	32	37	61	20	1	29	26	489
	4:45 PM	12	131	6	42	125	36	30	75	23	1	32	25	538
	5:00 PM	27	101	5	27	122	44	41	70	9	2	33	28	509
	5:15 PM	10	137	6	40	144	35	26	78	19	3	42	26	566
	5:30 PM	15	129	4	42	129	38	32	66	22	6	36	23	542
	5:45 PM	23	106	4	53	140	43	35	65	17	5	40	40	571
	VOLUMES	140	964	40	308	1,028	305	279	524	151	24	278	207	4,248
	APPROACH %	12%	84%	3%	19%	63%	19%	29%	55%	16%	5%	55%	41%	
	APP/DEPART	1,144	/	1,450	1,641	/	1,203	954	/	872	509	/	723	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	75	473	19	162	535	160	134	279	67	16	151	117	2,188
	APPROACH %	13%	83%	3%	19%	62%	19%	28%	58%	14%	6%	53%	41%	
	PEAK HR FACTOR		0.926			0.908			0.976			0.835		0.958
	APP/DEPART	567	/	724	857	/	618	480	/	460	284	/	386	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	1	0	0	1
0	1	0	0	1
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	4	0	0	4
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	11	3	18
2	1	3	19
0	9	3	23
1	5	5	16
0	5	2	9
0	12	3	12
1	4	6	15
2	11	3	15
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
6	58	28	127
1	31	13	60
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
2	15	7	7
3	16	8	12
2	15	8	7
3	11	9	16
2	20	1	5
3	12	3	8
3	15	6	4
2	18	4	17
20	122	46	76
10	65	14	34

Grove

NORTH SIDE

Walnut WEST SIDE EAST SIDE **Walnut**

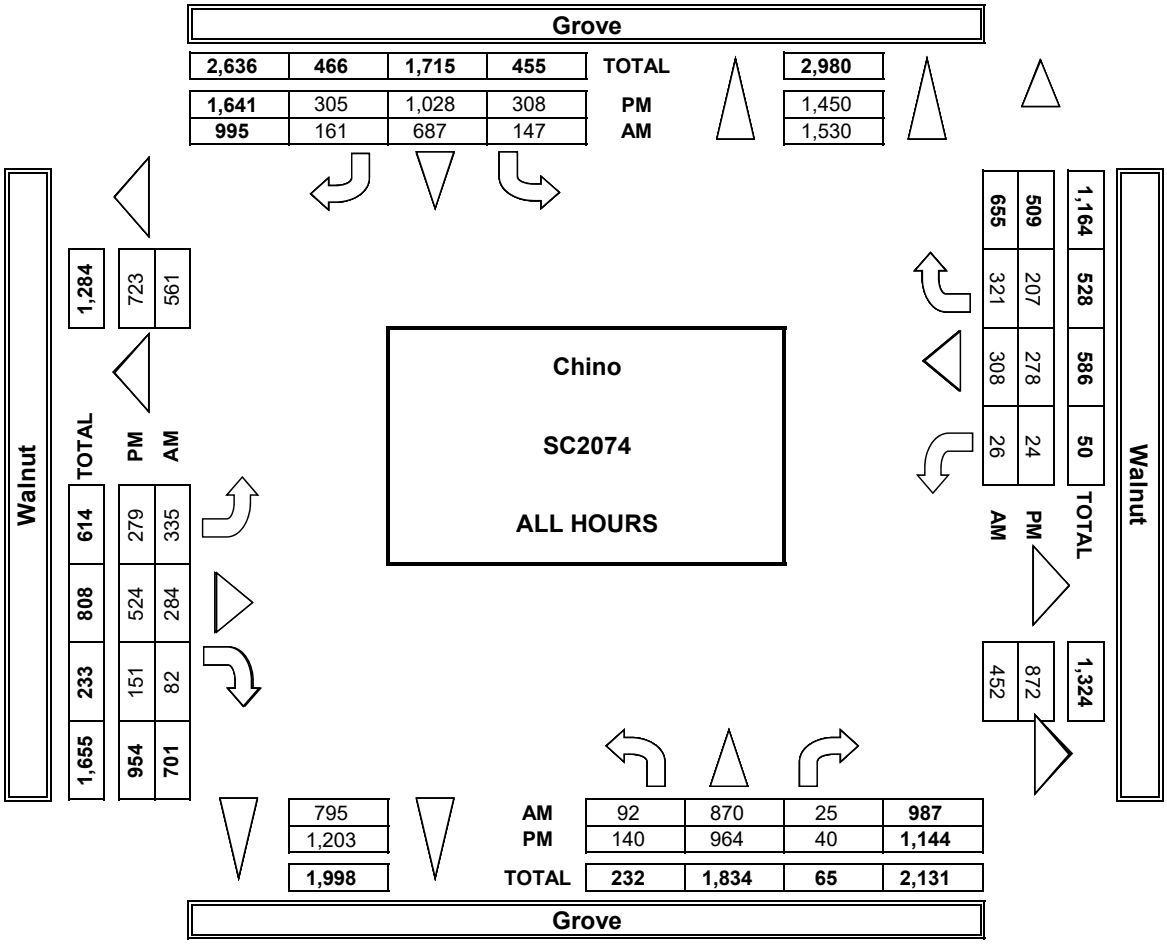
SOUTH SIDE

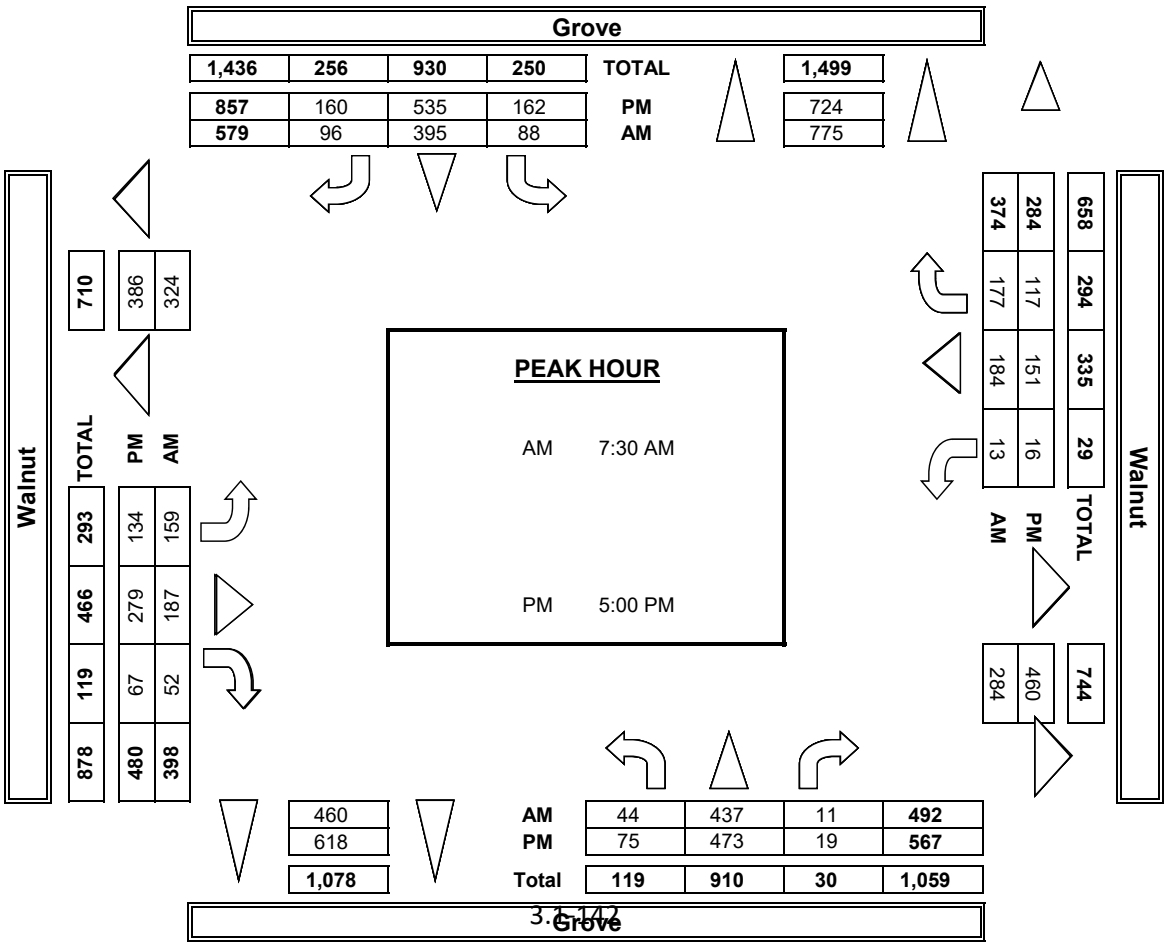
Grove

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	3	0	3	0	0	2	0	2	0	0	1	0	1
	7:30 AM	0	0	3	1	4	0	0	1	1	2	0	0	2	0	2
	7:45 AM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	8:00 AM	0	1	1	1	3	0	1	1	1	3	0	0	0	0	0
	8:15 AM	3	1	1	2	7	3	1	1	2	7	0	0	0	0	0
	8:30 AM	0	1	2	1	4	0	1	1	1	3	0	0	1	0	1
	8:45 AM	2	0	0	0	2	2	0	0	0	2	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	5	3	10	6	24	3	2	3	5	20	0	0	2	0	4
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	1	1	0	2	0	0	0	0	0	0	1	1	0	2
	4:15 PM	0	0	0	2	2	0	0	0	2	2	0	0	0	0	0
	4:30 PM	0	2	2	4	8	0	2	2	4	8	0	0	0	0	0
	4:45 PM	0	1	1	2	4	0	1	1	2	4	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	1	0	0	1	2	1	0	0	0	1	0	0	0	1	1
	5:30 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	5:45 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
	TOTAL	1	4	4	11	20	1	0	0	1	16	0	0	0	2	4

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	28
WEDNESDAY	EAST & WEST:	Walnut	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

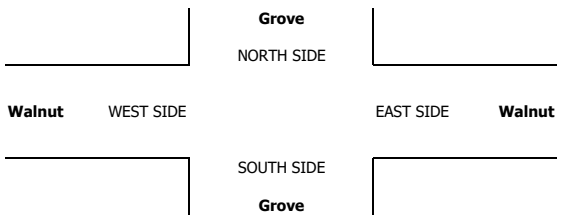
	NORTHBOUND (Grove)			SOUTHBOUND (Grove)			EASTBOUND (Walnut)			WESTBOUND (Walnut)			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
7:00 AM	3	5	0	4	11	1	2	1	2	0	2	2	33
7:15 AM	0	5	0	1	10	1	3	0	1	0	0	1	22
7:30 AM	1	11	0	1	10	0	3	0	1	0	0	1	28
7:45 AM	0	4	0	1	8	1	1	3	1	0	0	2	21
8:00 AM	0	8	0	0	4	1	2	0	0	0	1	0	16
8:15 AM	1	10	0	1	9	3	2	1	0	0	2	0	29
8:30 AM	1	13	0	0	8	0	10	0	1	0	2	0	35
8:45 AM	0	7	1	1	8	2	7	0	1	0	1	0	28
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	6	63	1	9	68	9	30	5	7	0	8	6	212
APPROACH %	9%	90%	1%	10%	79%	10%	71%	12%	17%	0%	57%	43%	
APP/DEPART	70	/	99	86	/	75	42	/	15	14	/	23	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	2	38	1	2	29	6	21	1	2	0	6	0	108
APPROACH %	5%	93%	2%	5%	78%	16%	88%	4%	8%	0%	100%	0%	
PEAK HR FACTOR		0.732			0.712			0.545			0.750		0.771
APP/DEPART	41	/	59	37	/	31	24	/	4	6	/	14	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	14	1	0	10	2	1	1	2	0	1	0	32
4:15 PM	0	11	0	3	9	2	2	0	1	0	2	1	31
4:30 PM	1	10	0	1	7	1	3	0	0	0	0	0	23
4:45 PM	3	8	1	3	6	1	1	2	1	0	0	2	28
5:00 PM	2	10	0	0	7	0	4	4	0	1	0	1	29
5:15 PM	1	7	0	0	10	0	1	6	0	0	1	2	28
5:30 PM	1	15	0	2	5	1	0	1	1	0	0	0	26
5:45 PM	2	6	0	2	2	1	2	2	0	0	1	0	18
VOLUMES	10	81	2	11	56	8	14	16	5	1	5	6	215
APPROACH %	11%	87%	2%	15%	75%	11%	40%	46%	14%	8%	42%	50%	
APP/DEPART	93	/	101	75	/	62	35	/	29	12	/	23	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	4	43	2	7	32	6	7	3	4	0	3	3	114
APPROACH %	8%	88%	4%	16%	71%	13%	50%	21%	29%	0%	50%	50%	
PEAK HR FACTOR		0.817			0.804			0.875			0.500		0.891
APP/DEPART	49	/	53	45	/	36	14	/	12	6	/	13	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	1	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	2	2	0
0	1	2	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	2
0	0	0	0
0	0	0	0
1	2	1	3
1	2	1	1



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	28
WEDNESDAY	EAST & WEST:	Walnut	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND Grove			SOUTHBOUND Grove			EASTBOUND Walnut			WESTBOUND Walnut			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
AM 7:00 AM	1	6	0	0	3	0	1	0	1	0	0	0	12
7:15 AM	0	2	0	1	3	0	0	0	0	0	0	0	6
7:30 AM	0	2	0	0	8	1	0	0	1	0	0	0	12
7:45 AM	0	1	0	0	3	0	0	0	0	0	1	0	5
8:00 AM	0	7	0	0	5	0	0	0	0	0	0	0	12
8:15 AM	0	6	0	0	4	1	1	0	1	0	0	0	13
8:30 AM	0	4	0	0	2	0	0	0	0	0	0	0	6
8:45 AM	1	9	0	0	3	1	0	0	0	0	0	0	14
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	2	37	0	1	31	3	2	0	3	0	1	0	80
APPROACH %	5%	95%	0%	3%	89%	9%	40%	0%	60%	0%	100%	0%	
APP/DEPART	39	/	39	35	/	34	5	/	1	1	/	6	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	1	26	0	0	14	2	1	0	1	0	0	0	45
APPROACH %	4%	96%	0%	0%	88%	13%	50%	0%	50%	0%	0%	0%	
PEAK HR FACTOR		0.675			0.800			0.250			0.000		0.804
APP/DEPART	27	/	27	16	/	15	2	/	0	0	/	3	0
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
4:15 PM	0	3	0	0	4	0	0	0	1	0	0	0	8
4:30 PM	0	4	0	0	3	0	0	0	0	0	1	0	8
4:45 PM	0	3	0	0	2	0	1	0	0	0	0	0	6
5:00 PM	0	1	0	0	5	0	0	0	0	0	0	0	6
5:15 PM	1	2	0	0	5	0	0	0	0	0	0	0	8
5:30 PM	1	2	0	0	1	0	0	0	1	0	0	0	5
5:45 PM	0	7	0	0	3	0	0	0	1	0	0	0	11
VOLUMES	2	22	0	0	25	0	1	0	3	0	1	0	54
APPROACH %	8%	92%	0%	0%	100%	0%	25%	0%	75%	0%	100%	0%	
APP/DEPART	24	/	23	25	/	28	4	/	0	1	/	3	0
BEGIN PEAK HR		5:00 PM											
VOLUMES	2	12	0	0	14	0	0	0	2	0	0	0	30
APPROACH %	14%	86%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	
PEAK HR FACTOR		0.500			0.700			0.500			0.000		0.682
APP/DEPART	14	/	12	14	/	16	2	/	0	0	/	2	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:						0	0	0	0
7:00 AM	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	1	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	1	1	0
AM PEAK HR VOLUMES						0	1	0	0
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PM PEAK HR VOLUMES						0	0	0	0

Grove

NORTH SIDE

Walnut WEST SIDE

EAST SIDE **Walnut**

SOUTH SIDE

Grove

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	28
WEDNESDAY	EAST & WEST:	Walnut	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND Grove			SOUTHBOUND Grove			EASTBOUND Walnut			WESTBOUND Walnut			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
AM 7:00 AM	1	8	0	0	4	0	2	0	1	0	0	0	16
7:15 AM	0	13	0	0	6	0	1	0	0	0	0	0	20
7:30 AM	0	17	0	0	4	0	0	0	1	0	0	0	22
7:45 AM	1	8	0	0	11	1	2	0	0	0	0	0	23
8:00 AM	0	11	0	0	9	0	1	0	0	0	0	0	21
8:15 AM	0	10	0	0	11	0	0	0	0	0	0	1	22
8:30 AM	0	14	0	0	5	0	0	0	0	0	0	0	19
8:45 AM	1	12	0	0	14	1	2	0	0	0	0	0	30
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	3	93	0	0	64	2	8	0	2	0	0	1	173
APPROACH %	3%	97%	0%	0%	97%	3%	80%	0%	20%	0%	0%	100%	
APP/DEPART	96	/	102	66	/	66	10	/	0	1	/	5	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	1	47	0	0	39	1	3	0	0	0	0	1	92
APPROACH %	2%	98%	0%	0%	98%	3%	100%	0%	0%	0%	0%	100%	
PEAK HR FACTOR		0.857			0.667			0.375			0.250		0.767
APP/DEPART	48	/	51	40	/	39	3	/	0	1	/	2	0
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	6	0	0	13	0	1	0	1	0	0	0	21
4:15 PM	0	5	0	0	11	0	2	1	1	0	0	0	20
4:30 PM	0	6	0	0	14	0	1	0	1	0	0	1	23
4:45 PM	0	4	0	1	12	1	0	0	0	0	0	0	18
5:00 PM	0	5	0	0	9	0	1	0	0	0	0	0	15
5:15 PM	0	4	0	0	8	0	0	0	1	0	0	0	13
5:30 PM	0	7	0	0	6	0	1	0	0	0	0	0	14
5:45 PM	0	4	0	0	5	0	0	0	0	0	0	0	9
VOLUMES	0	41	0	1	78	1	6	1	4	0	0	1	133
APPROACH %	0%	100%	0%	1%	98%	1%	55%	9%	36%	0%	0%	100%	
APP/DEPART	41	/	48	80	/	82	11	/	2	1	/	1	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	21	0	1	50	1	4	1	3	0	0	1	82
APPROACH %	0%	100%	0%	2%	96%	2%	50%	13%	38%	0%	0%	100%	
PEAK HR FACTOR		0.875			0.929			0.500			0.250		0.891
APP/DEPART	21	/	26	52	/	53	8	/	2	1	/	1	0

U-TURNS

	NB	SB	EB	WB	TTL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
03:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0

RTOR

	NRR	SRR	ERR	WRR
LANES	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
9:00 AM	0	0	0	0
9:15 AM	0	0	0	0
9:30 AM	0	0	0	0
9:45 AM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0
03:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	1	1
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
VOLUMES	0	0	1	1
PEAK HR VOLUMES	0	0	1	1

Grove

NORTH SIDE

Walnut WEST SIDE

EAST SIDE **Walnut**

SOUTH SIDE

Grove

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Jan 30, 19

LOCATION: Chino
NORTH & SOUTH: Grove
EAST & WEST: Riverside

PROJECT #: SC2074
LOCATION #: 29
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

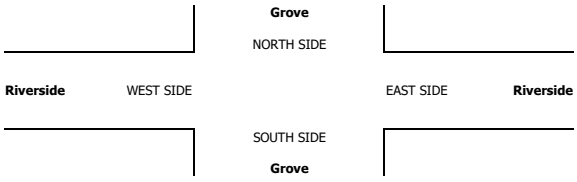
		NORTHBOUND (Grove)			SOUTHBOUND (Grove)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 1	EL 1	ET 1	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	7	51	3	10	46	30	17	58	1	7	165	22	417
	7:15 AM	4	50	7	10	52	35	31	75	1	4	180	19	468
	7:30 AM	6	70	10	26	49	38	39	99	5	25	182	20	569
	7:45 AM	2	51	14	16	51	39	28	99	8	6	176	28	518
	8:00 AM	7	47	14	20	49	40	25	82	7	15	157	24	487
	8:15 AM	5	54	11	16	51	35	18	57	3	20	167	22	459
	8:30 AM	5	64	12	13	31	28	36	59	1	12	167	20	448
	8:45 AM	2	46	7	16	50	27	29	53	5	10	120	15	380
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	38	433	78	127	379	272	223	582	31	99	1,314	170	3,746
	APPROACH %	7%	79%	14%	16%	49%	35%	27%	70%	4%	6%	83%	11%	
	APP/DEPART	549	/	825	778	/	509	836	/	787	1,583	/	1,625	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	19	218	45	72	201	152	123	355	21	50	695	91	2,042
	APPROACH %	7%	77%	16%	17%	47%	36%	25%	71%	4%	6%	83%	11%	
	PEAK HR FACTOR		0.820			0.940			0.872			0.921		0.897
	APP/DEPART	282	/	432	425	/	272	499	/	472	836	/	866	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	6	71	13	37	70	19	38	131	3	7	77	24	496
	4:15 PM	2	82	15	52	64	25	32	100	6	4	102	43	527
	4:30 PM	3	84	18	42	59	25	34	133	5	8	115	27	553
	4:45 PM	5	73	19	38	68	30	34	122	3	3	101	20	516
	5:00 PM	4	81	10	24	58	34	40	135	4	11	137	23	561
	5:15 PM	7	88	16	36	63	36	46	127	5	7	131	16	578
	5:30 PM	7	72	20	36	59	37	36	139	4	9	142	25	586
	5:45 PM	2	65	13	32	57	39	27	147	3	8	104	29	526
	VOLUMES	36	616	124	297	498	245	287	1,034	33	57	909	207	4,343
	APPROACH %	5%	79%	16%	29%	48%	24%	21%	76%	2%	5%	77%	18%	
	APP/DEPART	776	/	1,110	1,040	/	588	1,354	/	1,455	1,173	/	1,190	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	20	306	59	128	237	146	149	548	16	35	514	93	2,251
	APPROACH %	5%	79%	15%	25%	46%	29%	21%	77%	2%	5%	80%	14%	
	PEAK HR FACTOR		0.867			0.946			0.996			0.912		0.960
	APP/DEPART	385	/	548	511	/	288	713	/	735	642	/	680	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	19	0	6
3	23	0	7
5	15	1	5
7	16	2	5
5	23	3	6
4	16	0	11
4	19	0	9
0	15	0	6
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
28	146	6	55
20	77	6	23
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
4	5	0	13
5	7	2	22
2	10	1	10
7	13	1	6
4	17	0	11
2	10	0	8
5	17	1	7
5	11	0	18
34	90	5	95
16	55	1	44



ALL PED AND BIKE

	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	0	0	0	3	3
7:15 AM	1	0	0	1	2
7:30 AM	0	0	0	1	1
7:45 AM	0	0	0	2	2
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	1	1
8:30 AM	0	0	0	0	0
8:45 AM	0	1	0	0	1
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
TOTAL	1	1	0	8	10
3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	1	0	1
5:30 PM	0	0	0	1	1
5:45 PM	0	0	1	0	1
TOTAL	0	0	2	1	3

PEDESTRIAN CROSSINGS

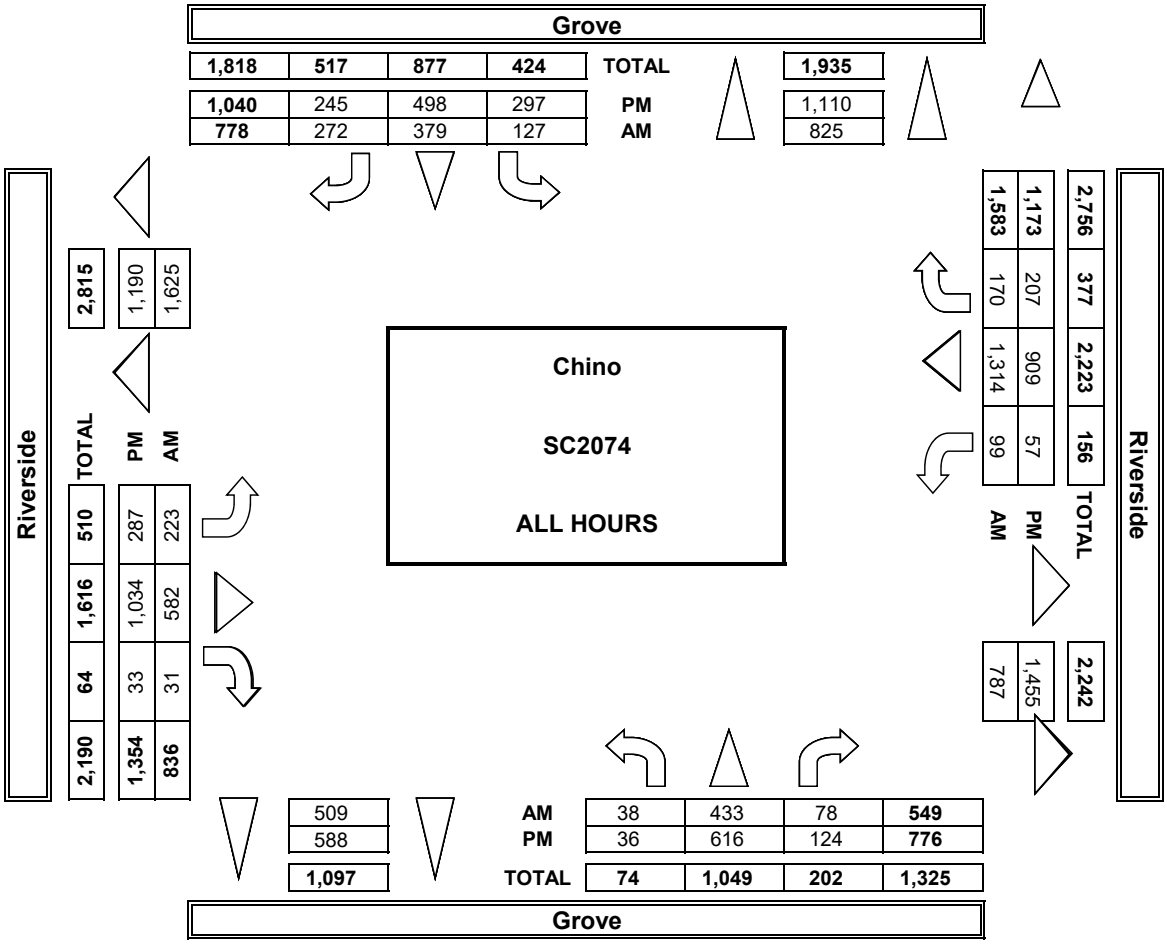
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
0	0	0	1	1
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	3
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	1	1

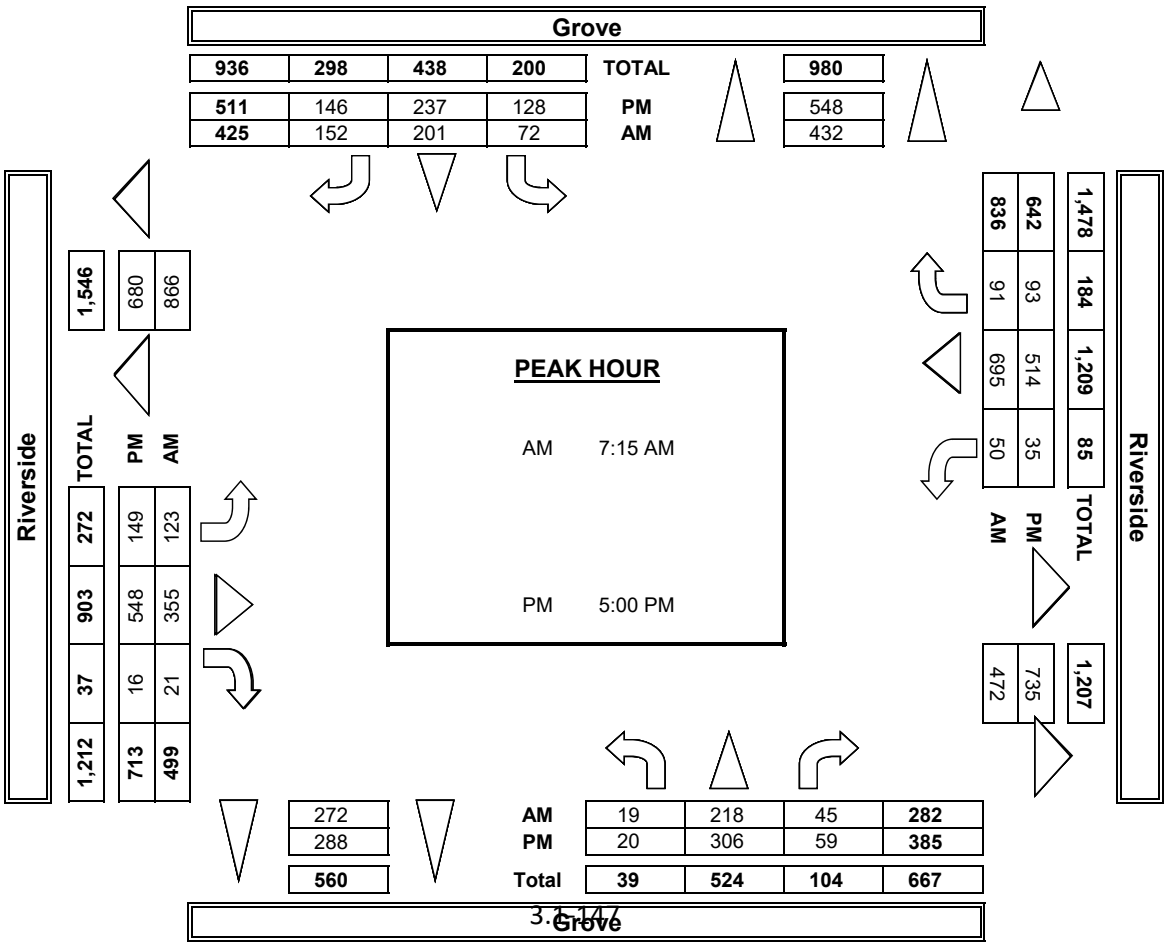
BICYCLE CROSSINGS

ES	WS	SS	NS	TOTAL
0	0	0	2	2
1	0	0	1	2
0	0	0	0	0
0	0	0	2	2
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	3	7
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	1	0	1
0	0	2	0	2

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	29
WEDNESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N / ◄ W / E ► / S ▼

	NORTHBOUND Grove			SOUTHBOUND Grove			EASTBOUND Riverside			WESTBOUND Riverside			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	1	1	1	1	1	0	1	2	0	
AM 7:00 AM	1	7	0	0	9	2	0	3	0	0	7	2	31
7:15 AM	0	5	0	0	11	3	1	5	0	0	4	1	30
7:30 AM	0	8	0	2	6	2	1	5	1	2	5	1	33
7:45 AM	0	3	2	4	4	2	1	8	4	0	10	1	39
8:00 AM	1	7	1	2	2	2	2	4	2	0	4	3	30
8:15 AM	1	6	0	3	3	1	2	1	0	2	8	2	29
8:30 AM	0	5	0	1	1	5	5	7	0	1	15	3	43
8:45 AM	0	4	1	0	6	1	3	4	0	1	8	0	28
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	3	45	4	12	42	18	15	37	7	6	61	13	263
APPROACH %	6%	87%	8%	17%	58%	25%	25%	63%	12%	8%	76%	16%	
APP/DEPART	52	/	73	72	/	55	59	/	53	80	/	82	0
BEGIN PEAK HR		7:45 AM											
VOLUMES	2	21	3	10	10	10	10	20	6	3	37	9	141
APPROACH %	8%	81%	12%	33%	33%	33%	28%	56%	17%	6%	76%	18%	
PEAK HR FACTOR		0.722			0.750			0.692			0.645		0.820
APP/DEPART	26	/	40	30	/	19	36	/	33	49	/	49	0
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	1	5	0	4	6	2	3	9	0	0	2	1	33
4:15 PM	0	5	0	2	6	2	3	4	2	0	4	3	31
4:30 PM	0	12	0	1	6	1	1	10	1	0	2	0	34
4:45 PM	0	4	1	3	3	3	3	5	0	0	4	3	29
5:00 PM	0	8	2	0	2	5	4	6	1	1	7	1	37
5:15 PM	1	6	0	4	3	1	1	4	0	0	4	1	25
5:30 PM	0	9	2	1	3	4	3	8	0	1	4	1	36
5:45 PM	0	3	0	0	1	2	5	5	0	0	6	1	23
VOLUMES	2	52	5	15	30	20	23	51	4	2	33	11	248
APPROACH %	3%	88%	8%	23%	46%	31%	29%	65%	5%	4%	72%	24%	
APP/DEPART	59	/	86	65	/	36	78	/	71	46	/	55	0
BEGIN PEAK HR		4:15 PM											
VOLUMES	0	29	3	6	17	11	11	25	4	1	17	7	131
APPROACH %	0%	91%	9%	18%	50%	32%	28%	63%	10%	4%	68%	28%	
PEAK HR FACTOR		0.667			0.850			0.833			0.694		0.885
APP/DEPART	32	/	47	34	/	22	40	/	34	25	/	28	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:						0	0	0	0
7:00 AM	0	0	0	0	0	0	1	0	0
7:15 AM	0	0	0	0	0	0	2	0	0
7:30 AM	0	0	0	0	0	0	1	0	1
7:45 AM	0	0	0	0	0	1	0	2	0
8:00 AM	0	0	0	0	0	0	2	1	0
8:15 AM	0	0	0	0	0	0	1	0	0
8:30 AM	0	0	0	0	0	0	1	0	2
8:45 AM	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	1	8	3	3
AM PEAK HR VOLUMES						1	4	3	2
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	1	0	1
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	1	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	1	2	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	1	4	0	2
PM PEAK HR VOLUMES						0	2	0	1

Grove

NORTH SIDE

Riverside WEST SIDE EAST SIDE **Riverside**

SOUTH SIDE

Grove

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	29
WEDNESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Grove)			SOUTHBOUND (Grove)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 1	EL 1	ET 1	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	5	0	1	3	0	0	0	0	0	0	0	9
	7:15 AM	0	1	0	0	4	0	1	0	0	0	1	0	7
	7:30 AM	0	1	0	2	5	1	0	0	0	0	0	0	9
	7:45 AM	0	1	0	0	2	0	0	1	0	0	1	0	5
	8:00 AM	0	6	0	1	5	0	2	0	2	0	0	1	17
	8:15 AM	0	3	0	0	4	0	1	0	0	1	0	2	11
	8:30 AM	1	3	0	0	3	0	2	2	0	0	1	0	12
	8:45 AM	0	7	0	0	3	0	1	0	2	0	0	0	13
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	27	0	4	29	1	7	3	4	1	3	3	83
	APPROACH %	4%	96%	0%	12%	85%	3%	50%	21%	29%	14%	43%	43%	
	APP/DEPART	28	/	37	34	/	34	14	/	7	7	/	5	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	1	19	0	1	15	0	6	2	4	1	1	3	53
	APPROACH %	5%	95%	0%	6%	94%	0%	50%	17%	33%	20%	20%	60%	
	PEAK HR FACTOR		0.714			0.667			0.750			0.417		0.779
	APP/DEPART	20	/	28	16	/	20	12	/	3	5	/	2	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	1	4	0	1	0	0	0	1	0	7
	4:15 PM	0	3	0	0	3	2	0	0	0	0	1	0	9
	4:30 PM	0	5	0	1	2	0	1	0	0	0	0	0	9
	4:45 PM	0	1	1	1	1	0	1	2	0	0	0	0	7
	5:00 PM	0	2	0	1	2	1	0	0	0	0	0	0	6
	5:15 PM	0	2	0	0	4	0	0	0	0	0	3	0	9
	5:30 PM	0	1	0	0	1	0	1	1	0	0	0	0	4
	5:45 PM	0	6	0	1	0	1	0	0	0	0	0	0	8
	VOLUMES	0	20	1	5	17	4	4	3	0	0	5	0	59
	APPROACH %	0%	95%	5%	19%	65%	15%	57%	43%	0%	0%	100%	0%	
	APP/DEPART	21	/	24	26	/	17	7	/	9	5	/	9	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	9	1	3	10	2	3	2	0	0	2	0	32
	APPROACH %	0%	90%	10%	20%	67%	13%	60%	40%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.500			0.750			0.417			0.500		0.889
	APP/DEPART	10	/	12	15	/	10	5	/	6	2	/	4	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	1	1
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	1	2

0	0	1	2

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	0	0	0

Grove

NORTH SIDE

Riverside WEST SIDE EAST SIDE **Riverside**

SOUTH SIDE

Grove

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	29
WEDNESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

		NORTHBOUND (Grove)			SOUTHBOUND (Grove)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 1	EL 1	ET 1	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	13	0	2	2	1	1	0	0	0	1	0	20
	7:15 AM	1	9	1	0	3	2	2	0	0	0	0	0	18
	7:30 AM	0	11	0	0	5	1	3	0	1	0	0	1	22
	7:45 AM	0	8	0	2	10	0	1	0	0	0	0	1	22
	8:00 AM	0	7	0	0	8	0	2	1	0	0	0	1	19
	8:15 AM	0	7	0	0	11	0	0	0	0	0	3	3	24
	8:30 AM	0	10	0	2	2	1	1	0	0	0	4	1	21
	8:45 AM	0	8	0	0	12	2	2	1	0	1	4	3	33
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	73	1	6	53	7	12	2	1	1	12	10	179
	APPROACH %	1%	97%	1%	9%	80%	11%	80%	13%	7%	4%	52%	43%	
	APP/DEPART	75	/	95	66	/	55	15	/	9	23	/	20	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	0	32	0	2	33	3	5	2	0	1	11	8	97
	APPROACH %	0%	100%	0%	5%	87%	8%	71%	29%	0%	5%	55%	40%	
	PEAK HR FACTOR		0.800			0.679			0.583			0.625		0.735
	APP/DEPART	32	/	45	38	/	34	7	/	4	20	/	14	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	5	0	1	10	2	0	1	0	0	0	0	19
	4:15 PM	0	4	0	4	7	1	0	0	0	0	0	0	16
	4:30 PM	0	5	0	2	11	2	1	0	0	0	2	1	24
	4:45 PM	0	1	1	1	10	2	0	0	0	0	1	2	18
	5:00 PM	0	6	0	1	4	1	2	0	0	0	1	0	15
	5:15 PM	0	4	0	0	8	2	2	0	0	0	0	0	16
	5:30 PM	0	3	0	1	4	1	1	1	0	0	1	1	13
	5:45 PM	0	3	0	0	5	0	0	1	0	0	1	0	10
	VOLUMES	0	31	1	10	59	11	6	3	0	0	6	4	131
	APPROACH %	0%	97%	3%	13%	74%	14%	67%	33%	0%	0%	60%	40%	
	APP/DEPART	32	/	41	80	/	59	9	/	14	10	/	17	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	15	1	8	38	7	1	1	0	0	3	3	77
	APPROACH %	0%	94%	6%	15%	72%	13%	50%	50%	0%	0%	50%	50%	
	PEAK HR FACTOR		0.800			0.883			0.500			0.500		0.802
	APP/DEPART	16	/	19	53	/	38	2	/	10	6	/	10	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	1	0	0
1	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	1	0	2
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	3	0	3
0	1	0	3
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
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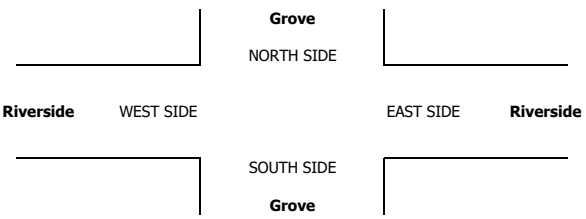
0	0	0	0
0	0	0	0
0	2	0	0
0	2	0	0



INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
Wed, Jan 30, 19	NORTH & SOUTH:	Grove	LOCATION #:	30
	EAST & WEST:	Chino	CONTROL:	STOP N/S

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N / ◄ W / E ► / S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Grove)			SOUTHBOUND (Grove)			EASTBOUND (Chino)			WESTBOUND (Chino)			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	2	45	0	2	46	2	8	15	6	2	22	14	164
	7:15 AM	6	48	1	7	40	3	7	19	4	1	23	4	163
	7:30 AM	10	66	4	3	60	6	16	27	4	1	18	6	221
	7:45 AM	10	46	1	11	62	5	12	19	8	1	21	8	204
	8:00 AM	5	57	0	7	50	6	10	18	8	3	19	3	186
	8:15 AM	7	54	3	11	57	6	12	13	6	2	8	1	180
	8:30 AM	2	66	3	4	43	2	11	13	4	1	15	1	165
	8:45 AM	5	47	0	5	49	5	9	11	2	1	9	6	149
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	47	429	12	50	407	35	85	135	42	12	135	43	1,432
	APPROACH %	10%	88%	2%	10%	83%	7%	32%	52%	16%	6%	71%	23%	
	APP/DEPART	488	/	557	492	/	461	262	/	197	190	/	217	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	32	223	8	32	229	23	50	77	26	7	66	18	791
	APPROACH %	12%	85%	3%	11%	81%	8%	33%	50%	17%	8%	73%	20%	
	PEAK HR FACTOR		0.822			0.910			0.814			0.758		0.895
	APP/DEPART	263	/	291	284	/	262	153	/	117	91	/	121	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	5	68	3	6	61	5	15	30	14	2	7	9	225
	4:15 PM	3	86	6	5	68	5	19	31	8	2	9	7	249
	4:30 PM	11	70	1	6	57	6	21	37	9	1	6	10	235
	4:45 PM	8	67	6	5	58	3	16	40	5	2	9	9	228
	5:00 PM	7	79	4	4	61	8	16	40	5	2	8	7	241
	5:15 PM	7	89	0	6	63	5	17	31	6	2	11	7	244
	5:30 PM	10	73	3	3	69	5	21	50	7	0	6	5	252
	5:45 PM	7	59	5	6	59	6	17	24	0	3	11	8	205
	VOLUMES	58	591	28	41	496	43	142	283	54	14	67	62	1,879
	APPROACH %	9%	87%	4%	7%	86%	7%	30%	59%	11%	10%	47%	43%	
	APP/DEPART	677	/	795	580	/	564	479	/	352	143	/	168	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	32	308	13	18	251	21	70	161	23	6	34	28	965
	APPROACH %	9%	87%	4%	6%	87%	7%	28%	63%	9%	9%	50%	41%	
	PEAK HR FACTOR		0.919			0.942			0.814			0.850		0.957
	APP/DEPART	353	/	406	290	/	280	254	/	192	68	/	87	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
X	X	X	X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Grove

NORTH SIDE

Chino WEST SIDE EAST SIDE **Chino**

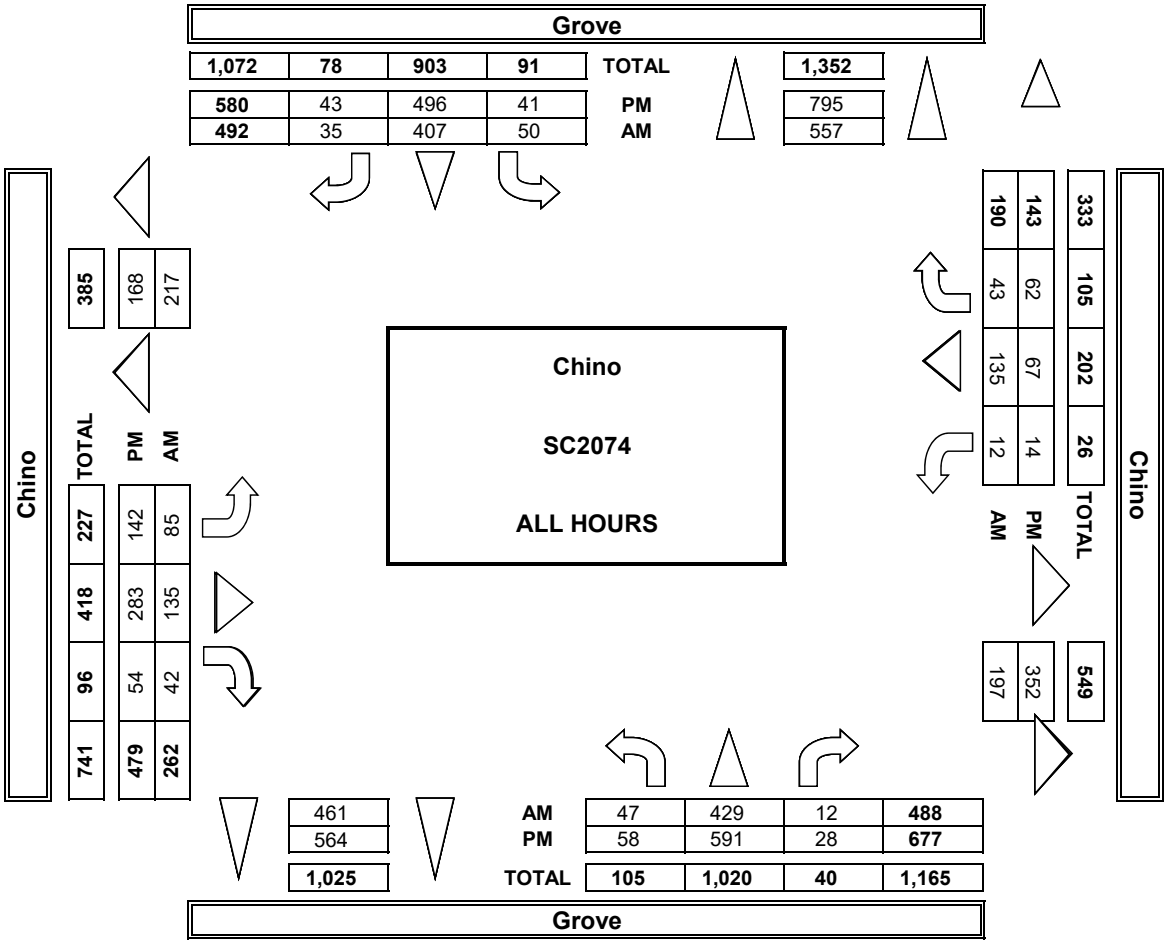
SOUTH SIDE

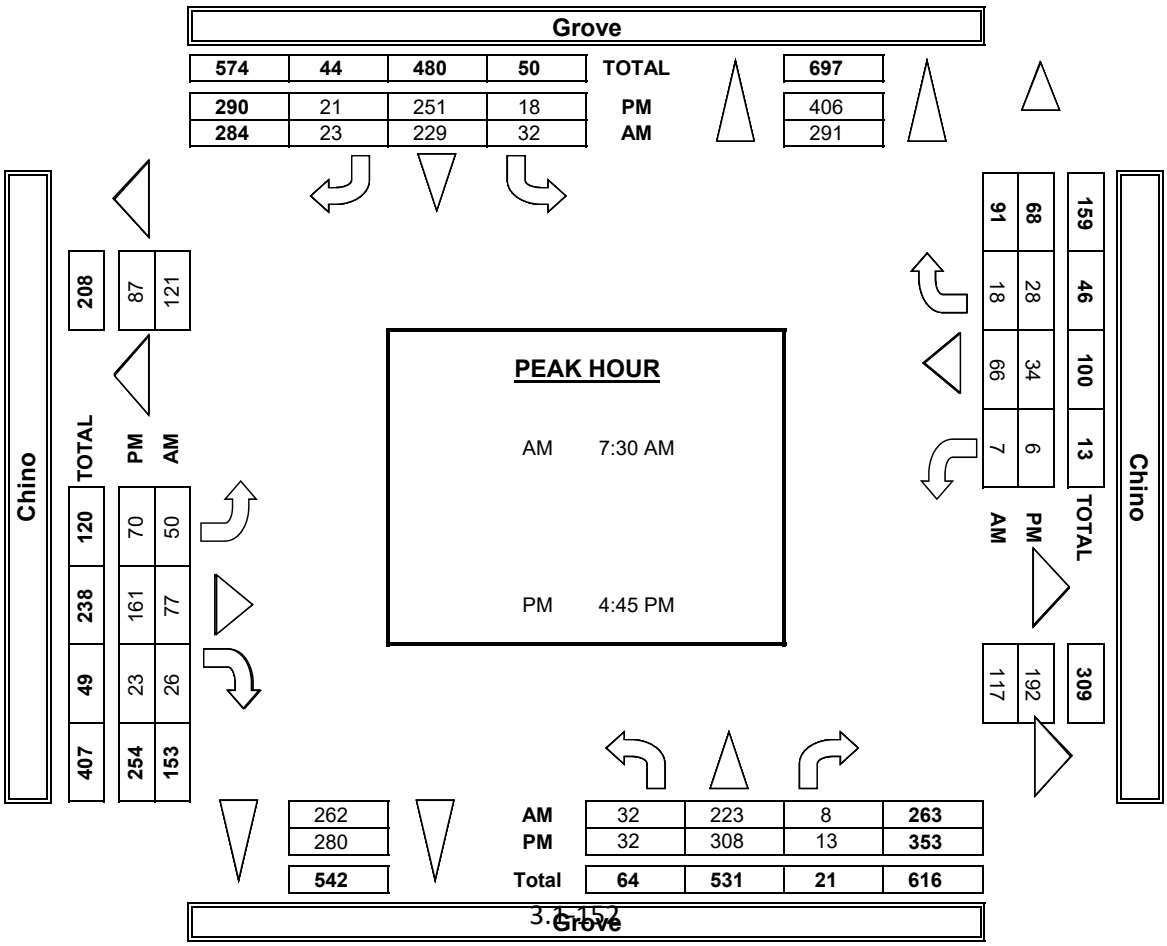
Grove

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	2	0	2	0	0	0	0	0	0	0	2	0	2
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	3	0	3	0	0	0	0	1	0	0	0	0	2
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	1	1	2	0	0	0	1	1	0	0	0	0	1

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	30
WEDNESDAY	EAST & WEST:	Chino	CONTROL:	STOP N/S

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Grove)			SOUTHBOUND (Grove)			EASTBOUND (Chino)			WESTBOUND (Chino)			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	4	0	1	10	0	3	2	0	0	3	3	26
	7:15 AM	1	3	0	1	6	1	1	1	0	0	1	1	16
	7:30 AM	0	5	0	1	9	0	1	4	1	0	1	2	24
	7:45 AM	0	2	0	2	6	1	0	3	0	0	2	1	17
	8:00 AM	0	8	0	0	2	0	1	1	1	0	3	0	16
	8:15 AM	0	5	1	0	4	0	0	3	0	0	0	0	13
	8:30 AM	0	3	0	0	2	0	0	1	0	0	0	0	6
	8:45 AM	1	6	0	0	5	1	1	1	0	0	0	0	15
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	2	36	1	5	44	3	7	16	2	0	10	7	133
	APPROACH %	5%	92%	3%	10%	85%	6%	28%	64%	8%	0%	59%	41%	
	APP/DEPART	39	/	50	52	/	46	25	/	22	17	/	15	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	1	14	0	5	31	2	5	10	1	0	7	7	83
	APPROACH %	7%	93%	0%	13%	82%	5%	31%	63%	6%	0%	50%	50%	
	PEAK HR FACTOR		0.750			0.864			0.667			0.583		0.798
	APP/DEPART	15	/	26	38	/	32	16	/	15	14	/	10	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	5	0	2	2	2	0	3	0	0	1	1	16
	4:15 PM	0	7	0	0	9	0	1	1	0	0	0	1	19
	4:30 PM	0	8	1	1	3	0	1	2	0	0	1	0	17
	4:45 PM	2	5	1	1	2	0	1	4	0	0	2	2	20
	5:00 PM	2	9	1	2	1	0	2	5	0	1	1	2	26
	5:15 PM	0	6	0	1	4	0	0	2	0	0	1	0	14
	5:30 PM	1	5	1	1	3	0	2	3	1	0	1	1	19
	5:45 PM	1	3	0	0	3	0	0	2	0	1	1	1	12
	VOLUMES	6	48	4	8	27	2	7	22	1	2	8	8	143
	APPROACH %	10%	83%	7%	22%	73%	5%	23%	73%	3%	11%	44%	44%	
	APP/DEPART	58	/	63	37	/	30	30	/	34	18	/	16	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	4	29	3	4	15	0	5	12	0	1	4	5	82
	APPROACH %	11%	81%	8%	21%	79%	0%	29%	71%	0%	10%	40%	50%	
	PEAK HR FACTOR		0.750			0.528			0.607			0.625		0.788
	APP/DEPART	36	/	39	19	/	16	17	/	19	10	/	8	0

U-TURNS					RTOR			
NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
					0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
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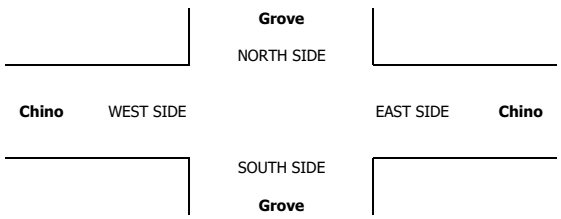
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
					0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	30
WEDNESDAY	EAST & WEST:	Chino	CONTROL:	STOP N/S

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Grove)			SOUTHBOUND (Grove)			EASTBOUND (Chino)			WESTBOUND (Chino)			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	3	0	0	3	0	0	0	0	0	0	1	7
	7:15 AM	0	1	0	2	1	0	0	0	0	0	0	0	4
	7:30 AM	0	1	0	2	4	0	0	1	0	0	0	1	9
	7:45 AM	0	0	0	1	2	0	0	1	0	0	0	1	5
	8:00 AM	1	5	0	1	3	0	1	0	0	1	0	0	12
	8:15 AM	0	2	1	3	5	0	0	0	0	0	0	0	11
	8:30 AM	1	3	0	0	1	0	1	0	0	0	1	0	7
	8:45 AM	0	3	0	0	5	0	2	0	0	0	1	3	14
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	2	18	1	9	24	0	4	2	0	1	2	6	69
	APPROACH %	10%	86%	5%	27%	73%	0%	67%	33%	0%	11%	22%	67%	
	APP/DEPART	21	/	28	33	/	25	6	/	12	9	/	4	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	2	13	1	4	14	0	4	0	0	1	2	3	44
	APPROACH %	13%	81%	6%	22%	78%	0%	100%	0%	0%	17%	33%	50%	
	PEAK HR FACTOR		0.667			0.563			0.500			0.375		0.786
	APP/DEPART	16	/	20	18	/	15	4	/	5	6	/	4	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	1	0	1	2	0	0	2	0	0	0	0	6
	4:15 PM	0	3	1	0	1	0	0	0	0	0	0	0	5
	4:30 PM	0	2	0	0	2	0	0	1	0	0	0	0	5
	4:45 PM	0	2	0	0	1	0	0	0	0	0	0	0	3
	5:00 PM	0	0	0	0	2	0	0	0	0	0	0	1	3
	5:15 PM	1	2	0	1	4	0	0	0	0	0	0	0	8
	5:30 PM	0	1	0	0	1	0	0	1	0	0	0	0	3
	5:45 PM	0	7	0	0	0	0	1	0	0	0	0	0	8
	VOLUMES	1	18	1	2	13	0	1	4	0	0	0	1	41
	APPROACH %	5%	90%	5%	13%	87%	0%	20%	80%	0%	0%	0%	100%	
	APP/DEPART	20	/	20	15	/	13	5	/	7	1	/	1	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	1	10	0	1	7	0	1	1	0	0	0	1	22
	APPROACH %	9%	91%	0%	13%	88%	0%	50%	50%	0%	0%	0%	100%	
	PEAK HR FACTOR		0.393			0.400			0.500			0.250		0.688
	APP/DEPART	11	/	12	8	/	7	2	/	2	1	/	1	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
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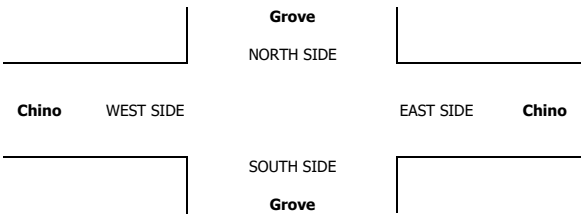
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	30
WEDNESDAY	EAST & WEST:	Chino	CONTROL:	STOP N/S

CLASS 4:	NOTES:	AM PM MD OTHER OTHER	▲ N ◄ W E ► S ▼
4 OR MORE AXLE TRUCKS			

	NORTHBOUND Grove			SOUTHBOUND Grove			EASTBOUND Chino			WESTBOUND Chino				U-TURNS					RTOR			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:	0	1	0	0	1	0	0	1	0	0	1	0							X	X	X	X
AM																						
7:00 AM	0	6	0	0	1	0	0	0	1	0	1	6	15	0	0	0	0	0	0	0	0	0
7:15 AM	0	9	0	1	3	0	0	0	0	0	0	3	16	0	0	0	0	0	0	0	0	0
7:30 AM	0	9	1	0	4	0	0	1	0	1	0	2	18	0	0	0	0	0	0	0	0	0
7:45 AM	1	7	0	1	8	0	0	0	0	0	1	1	19	0	0	0	0	0	0	0	0	0
8:00 AM	0	7	0	0	8	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	0
8:15 AM	0	6	1	1	7	1	1	0	0	1	1	0	19	0	0	0	0	0	0	0	0	0
8:30 AM	0	8	1	1	5	0	0	2	0	0	0	1	18	0	0	0	0	0	0	0	0	0
8:45 AM	0	6	0	1	8	2	1	0	0	0	2	1	21	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	1	58	3	5	44	3	2	3	1	2	5	14	141	0	0	0	0	0	0	0	0	0
APPROACH %	2%	94%	5%	10%	85%	6%	33%	50%	17%	10%	24%	67%										
APP/DEPART	62	/	74	52	/	47	6	/	11	21	/	9	0									
BEGIN PEAK HR		8:00 AM																				
VOLUMES	0	27	2	3	28	3	2	2	0	1	3	2	73						0	0	0	0
APPROACH %	0%	93%	7%	9%	82%	9%	50%	50%	0%	17%	50%	33%										
PEAK HR FACTOR		0.806			0.773			0.500			0.500		0.869									
APP/DEPART	29	/	31	34	/	29	4	/	7	6	/	6	0									
PM																						
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	5	1	3	6	0	0	2	1	0	0	2	20	0	0	0	0	0	0	0	0	0
4:15 PM	0	4	0	1	7	0	0	1	0	1	1	0	15	0	0	0	0	0	0	0	0	0
4:30 PM	0	4	0	1	10	0	0	1	0	0	0	0	16	0	0	0	0	0	0	0	0	0
4:45 PM	0	2	1	2	7	0	0	0	0	0	0	1	13	0	0	0	0	0	0	0	0	0
5:00 PM	0	2	2	1	4	0	0	1	0	0	0	1	11	0	0	0	0	0	0	0	0	0
5:15 PM	1	5	0	1	7	0	0	0	0	1	0	2	17	0	0	0	0	0	0	0	0	0
5:30 PM	0	3	1	0	4	0	1	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0
5:45 PM	1	1	0	1	4	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0
VOLUMES	2	26	5	10	49	0	1	5	1	2	1	6	108	0	0	0	0	0	0	0	0	0
APPROACH %	6%	79%	15%	17%	83%	0%	14%	71%	14%	22%	11%	67%										
APP/DEPART	33	/	33	59	/	52	7	/	20	9	/	3	0									
BEGIN PEAK HR		4:00 PM																				
VOLUMES	0	15	2	7	30	0	0	4	1	1	1	3	64						0	0	0	0
APPROACH %	0%	88%	12%	19%	81%	0%	0%	80%	20%	20%	20%	60%										
PEAK HR FACTOR		0.708			0.841			0.417			0.625		0.800									
APP/DEPART	17	/	18	37	/	32	5	/	13	5	/	1	0									

Grove

NORTH SIDE

Chino WEST SIDE EAST SIDE **Chino**

SOUTH SIDE

Grove

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Jan 30, 19

LOCATION: Chino
NORTH & SOUTH: Grove
EAST & WEST: Schaefer

PROJECT #: SC2074
LOCATION #: 31
CONTROL: STOP ALL

NOTES:

AM
PM
MD
OTHER
OTHER

▲ N
◄ W
E ►
S ▼

Add U-Turns to Left Turns

		NORTHBOUND Grove			SOUTHBOUND Grove			EASTBOUND Schaefer			WESTBOUND Schaefer			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	5	30	2	3	46	4	4	5	7	4	20	6	136
	7:15 AM	13	51	2	6	31	7	4	5	4	1	31	6	161
	7:30 AM	9	59	1	7	49	6	8	6	7	1	32	6	191
	7:45 AM	10	45	3	3	56	9	4	7	4	2	26	6	175
	8:00 AM	6	47	2	4	34	8	4	9	1	17	22	7	161
	8:15 AM	4	45	2	11	51	8	11	11	6	2	8	4	163
	8:30 AM	4	60	2	4	39	8	9	10	6	2	10	4	158
	8:45 AM	4	31	3	6	36	7	9	3	6	3	4	3	115
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	55	368	17	44	342	57	53	56	41	32	153	42	1,260
	APPROACH %	13%	84%	4%	10%	77%	13%	35%	37%	27%	14%	67%	19%	
	APP/DEPART	440	/	464	443	/	415	150	/	116	227	/	265	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	29	196	8	25	190	31	27	33	18	22	88	23	690
	APPROACH %	12%	84%	3%	10%	77%	13%	35%	42%	23%	17%	66%	17%	
	PEAK HR FACTOR		0.844			0.879			0.696			0.723		0.903
	APP/DEPART	233	/	246	246	/	230	78	/	66	133	/	148	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	5	73	6	11	43	2	12	28	15	0	7	8	210
	4:15 PM	5	66	9	4	47	2	20	20	20	0	4	10	207
	4:30 PM	6	62	1	6	54	13	21	27	16	0	13	6	225
	4:45 PM	4	65	6	6	51	8	25	41	15	1	10	8	240
	5:00 PM	2	69	3	5	48	10	22	25	29	1	6	4	224
	5:15 PM	5	73	5	7	62	10	20	31	20	0	11	9	253
	5:30 PM	2	60	2	4	55	6	17	17	22	3	4	6	198
	5:45 PM	2	42	4	4	48	4	18	12	14	3	4	2	157
	VOLUMES	31	510	36	47	408	55	155	201	151	8	59	53	1,714
	APPROACH %	5%	88%	6%	9%	80%	11%	31%	40%	30%	7%	49%	44%	
	APP/DEPART	577	/	717	510	/	567	507	/	284	120	/	146	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	17	269	15	24	215	41	88	124	80	2	40	27	942
	APPROACH %	6%	89%	5%	9%	77%	15%	30%	42%	27%	3%	58%	39%	
	PEAK HR FACTOR		0.907			0.886			0.901			0.863		0.931
	APP/DEPART	301	/	383	280	/	297	292	/	163	69	/	99	0

U-TURNS					
	NB 0	SB 0	EB 0	WB 0	TTL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	1	0	0	1
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
VOLUMES	0	1	0	0	1
03:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	1	0	1
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	1	0	1

RTOR				
	NRR X	SRR X	ERR X	WRR X
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
9:00 AM	0	0	0	0
9:15 AM	0	0	0	0
9:30 AM	0	0	0	0
9:45 AM	0	0	0	0
VOLUMES	0	0	0	0
7:30 AM	0	0	0	0
4:30 PM	0	0	0	0
03:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
VOLUMES	0	0	0	0
4:30 PM	0	0	0	0

Grove

NORTH SIDE

Schaefer WEST SIDE EAST SIDE **Schaefer**

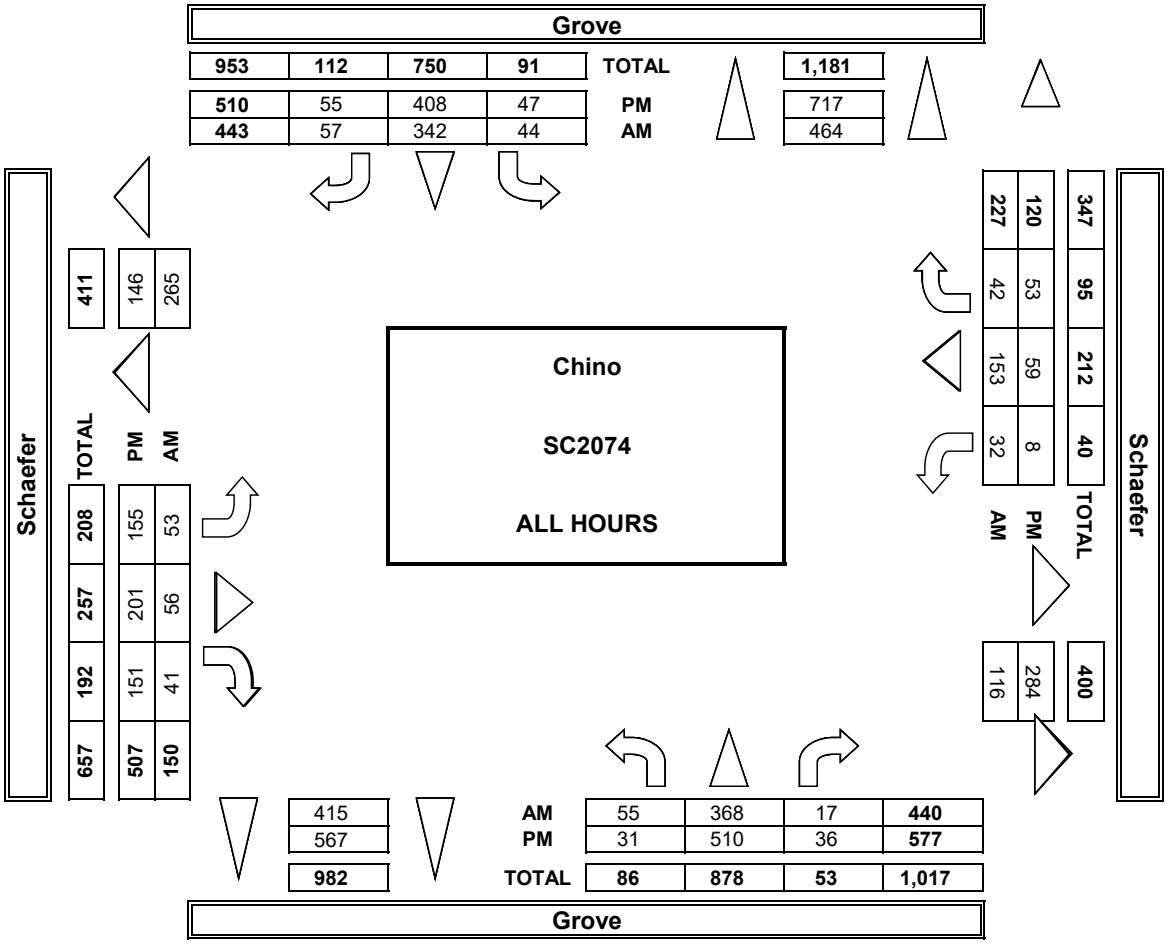
SOUTH SIDE

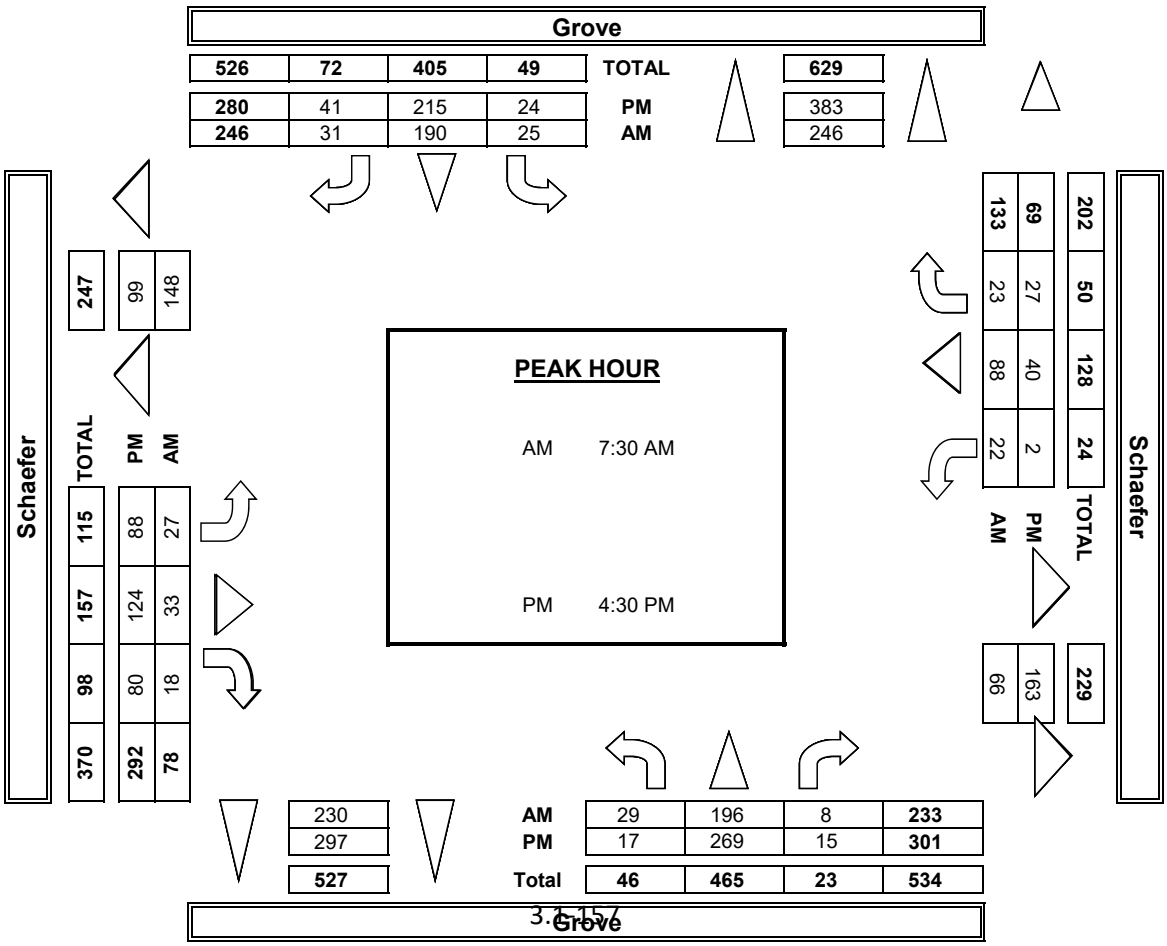
Grove

	ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	31
WEDNESDAY	EAST & WEST:	Schaefer	CONTROL:	STOP ALL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND (Grove)			SOUTHBOUND (Grove)			EASTBOUND (Schaefer)			WESTBOUND (Schaefer)			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
7:00 AM	0	1	1	0	9	0	0	1	0	2	1	2	17
7:15 AM	0	3	0	0	6	2	0	1	2	0	2	2	18
7:30 AM	0	0	0	0	8	0	1	1	1	1	0	2	14
7:45 AM	0	2	0	0	6	0	0	0	0	0	0	0	8
8:00 AM	1	3	0	1	1	0	2	0	0	16	6	2	32
8:15 AM	0	3	1	1	2	1	3	1	0	0	1	1	14
8:30 AM	0	4	0	1	2	0	1	1	0	0	1	0	10
8:45 AM	0	3	1	0	7	0	0	1	3	0	1	1	17
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	1	19	3	3	41	3	7	6	6	19	12	10	130
APPROACH %	4%	83%	13%	6%	87%	6%	37%	32%	32%	46%	29%	24%	
APP/DEPART	23	/	37	47	/	66	19	/	11	41	/	16	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	1	13	2	2	12	1	6	3	3	16	9	4	73
APPROACH %	6%	81%	13%	13%	75%	6%	50%	25%	25%	55%	31%	14%	
PEAK HR FACTOR		1.000			0.571			0.750			0.302		0.570
APP/DEPART	16	/	24	16	/	31	12	/	7	29	/	11	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	6	1	2	4	0	0	1	2	0	1	1	18
4:15 PM	1	3	5	2	1	1	1	2	3	0	0	1	20
4:30 PM	0	10	1	2	7	2	2	1	0	0	2	3	30
4:45 PM	2	3	3	1	5	0	0	2	0	0	2	1	19
5:00 PM	0	6	1	1	0	3	1	2	0	0	1	1	16
5:15 PM	0	5	4	2	3	0	0	4	1	0	2	0	21
5:30 PM	0	9	1	0	1	0	1	2	0	1	0	1	16
5:45 PM	0	2	2	0	3	0	0	1	1	0	0	0	9
VOLUMES	3	44	18	10	24	6	5	15	7	1	8	8	149
APPROACH %	5%	68%	28%	25%	60%	15%	19%	56%	26%	6%	47%	47%	
APP/DEPART	65	/	57	40	/	32	27	/	43	17	/	17	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	3	22	10	7	17	3	3	6	5	0	5	6	87
APPROACH %	9%	63%	29%	26%	63%	11%	21%	43%	36%	0%	45%	55%	
PEAK HR FACTOR		0.795			0.614			0.583			0.550		0.725
APP/DEPART	35	/	31	27	/	22	14	/	23	11	/	11	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
X	X	X	X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
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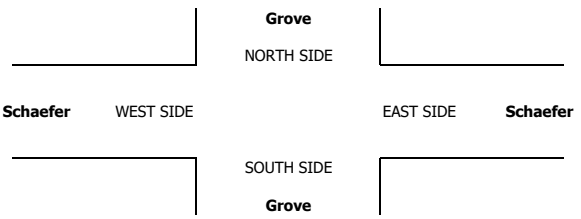
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	31
WEDNESDAY	EAST & WEST:	Schaefer	CONTROL:	STOP ALL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND (Grove)			SOUTHBOUND (Grove)			EASTBOUND (Schaefer)			WESTBOUND (Schaefer)			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
7:00 AM	0	1	0	0	2	1	1	1	0	0	1	0	7
7:15 AM	0	1	0	0	0	0	0	1	0	0	2	0	4
7:30 AM	0	1	0	0	2	0	0	0	0	0	1	0	4
7:45 AM	0	2	1	0	1	0	0	0	0	2	0	0	6
8:00 AM	0	4	0	0	1	0	1	0	0	0	0	0	6
8:15 AM	0	1	0	0	3	1	0	0	0	0	0	1	6
8:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
8:45 AM	0	2	1	4	0	0	3	0	0	0	0	0	10
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	13	2	4	10	2	5	2	0	2	4	1	45
APPROACH %	0%	87%	13%	25%	63%	13%	71%	29%	0%	29%	57%	14%	
APP/DEPART	15	/	19	16	/	12	7	/	8	7	/	6	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	0	8	1	4	5	1	4	0	0	0	0	1	24
APPROACH %	0%	89%	11%	40%	50%	10%	100%	0%	0%	0%	0%	100%	
PEAK HR FACTOR		0.563			0.625			0.333			0.250		0.600
APP/DEPART	9	/	13	10	/	5	4	/	5	1	/	1	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	4	0	2	0	0	0	0	0	0	0	2	8
4:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	1	0	1	1	0	0	0	0	3
5:00 PM	0	1	2	0	0	0	1	0	0	0	0	1	5
5:15 PM	0	2	0	0	0	3	0	1	0	0	0	0	6
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	1	2
5:45 PM	0	2	0	0	1	1	1	0	0	0	0	0	5
VOLUMES	0	10	2	2	2	4	4	2	0	0	0	4	30
APPROACH %	0%	83%	17%	25%	25%	50%	67%	33%	0%	0%	0%	100%	
APP/DEPART	12	/	18	8	/	2	6	/	6	4	/	4	0
BEGIN PEAK HR		5:00 PM											
VOLUMES	0	6	2	0	1	4	2	1	0	0	0	2	18
APPROACH %	0%	75%	25%	0%	20%	80%	67%	33%	0%	0%	0%	100%	
PEAK HR FACTOR		0.667			0.417			0.750			0.500		0.750
APP/DEPART	8	/	10	5	/	1	3	/	3	2	/	4	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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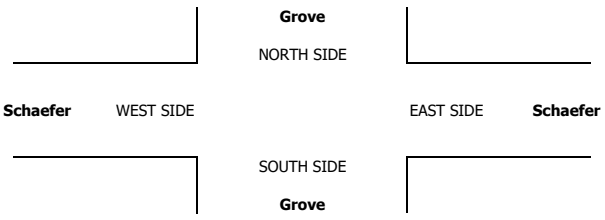

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	31
WEDNESDAY	EAST & WEST:	Schaefer	CONTROL:	STOP ALL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND Grove			SOUTHBOUND Grove			EASTBOUND Schaefer			WESTBOUND Schaefer			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
AM	7:00 AM	0	0	0	0	3	0	1	2	1	0	0	4	11
AM	7:15 AM	0	6	0	1	3	0	0	0	0	0	0	3	13
AM	7:30 AM	0	1	0	0	5	0	2	0	0	0	3	2	13
AM	7:45 AM	0	3	0	1	6	2	2	0	0	0	1	2	17
AM	8:00 AM	0	4	0	1	4	1	0	1	0	1	1	3	16
AM	8:15 AM	0	2	0	2	6	0	1	3	0	0	0	0	14
AM	8:30 AM	0	7	0	1	4	2	2	1	0	0	1	1	19
AM	8:45 AM	2	3	0	1	5	1	1	0	1	1	0	2	17
AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	VOLUMES	2	26	0	7	36	6	9	7	2	2	6	17	120
AM	APPROACH %	7%	93%	0%	14%	73%	12%	50%	39%	11%	8%	24%	68%	
AM	APP/DEPART	28	/	52	49	/	40	18	/	14	25	/	14	0
AM	BEGIN PEAK HR		7:45 AM											
AM	VOLUMES	2	16	0	5	19	4	4	5	1	2	2	6	66
AM	APPROACH %	11%	89%	0%	18%	68%	14%	40%	50%	10%	20%	20%	60%	
AM	PEAK HR FACTOR		0.643			0.778			0.625			0.500		0.868
AM	APP/DEPART	18	/	26	28	/	22	10	/	10	10	/	8	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	5	2	5	4	0	0	0	0	0	1	0	17
PM	4:15 PM	0	3	1	2	3	0	1	1	0	0	0	0	11
PM	4:30 PM	0	0	0	2	0	1	0	2	0	0	0	1	6
PM	4:45 PM	0	0	1	3	0	2	1	2	1	0	0	1	11
PM	5:00 PM	0	2	0	3	1	1	1	1	0	0	0	0	9
PM	5:15 PM	0	3	0	4	0	1	0	1	0	0	1	1	11
PM	5:30 PM	0	2	0	2	2	0	0	0	1	0	0	1	8
PM	5:45 PM	0	4	1	2	2	1	0	0	0	0	0	0	10
PM	VOLUMES	0	19	5	23	12	6	3	7	2	0	2	4	83
PM	APPROACH %	0%	79%	21%	56%	29%	15%	25%	58%	17%	0%	33%	67%	
PM	APP/DEPART	24	/	26	41	/	14	12	/	35	6	/	8	0
PM	BEGIN PEAK HR		4:00 PM											
PM	VOLUMES	0	8	4	12	7	3	2	5	1	0	1	2	45
PM	APPROACH %	0%	67%	33%	55%	32%	14%	25%	63%	13%	0%	33%	67%	
PM	PEAK HR FACTOR		0.429			0.611			0.500			0.750		0.662
PM	APP/DEPART	12	/	12	22	/	8	8	/	21	3	/	4	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:						X	X	X	X
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PEAK HR VOLUMES						0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PEAK HR VOLUMES						0	0	0	0

Grove

NORTH SIDE

Schaefer WEST SIDE

EAST SIDE **Schaefer**

SOUTH SIDE

Grove

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Jan 30, 19

LOCATION: Chino
NORTH & SOUTH: Grove
EAST & WEST: Edison

PROJECT #: SC2074
LOCATION #: 32
CONTROL: STOP ALL

NOTES:

AM
PM
MD
OTHER
OTHER

▲ N
◄ W
E ►
S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Grove)			SOUTHBOUND (Grove)			EASTBOUND (Edison)			WESTBOUND (Edison)			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	4	28	7	12	42	2	3	39	1	14	97	5	254
	7:15 AM	5	47	3	10	23	2	6	41	1	15	113	10	276
	7:30 AM	4	55	3	14	31	7	8	49	3	10	121	3	308
	7:45 AM	0	35	6	6	43	8	10	39	0	18	113	8	286
	8:00 AM	11	44	5	9	44	2	8	36	1	9	44	4	217
	8:15 AM	7	40	14	7	42	6	6	33	3	1	11	1	171
	8:30 AM	2	49	6	9	23	6	5	28	1	2	5	6	142
	8:45 AM	5	32	0	2	30	14	6	32	1	1	5	1	129
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	38	330	44	69	278	47	52	297	11	70	509	38	1,783
	APPROACH %	9%	80%	11%	18%	71%	12%	14%	83%	3%	11%	82%	6%	
	APP/DEPART	412	/	420	394	/	359	360	/	410	617	/	594	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	13	165	19	42	139	19	27	168	5	57	444	26	1,124
	APPROACH %	7%	84%	10%	21%	70%	10%	14%	84%	3%	11%	84%	5%	
	PEAK HR FACTOR		0.794			0.877			0.833			0.948		0.912
	APP/DEPART	197	/	218	200	/	201	200	/	229	527	/	476	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	57	22	18	29	4	11	100	3	3	53	11	312
	4:15 PM	3	60	30	20	44	8	15	103	0	4	45	9	341
	4:30 PM	4	48	30	20	32	8	9	86	1	7	64	4	313
	4:45 PM	4	62	32	28	39	7	8	105	2	8	50	11	356
	5:00 PM	5	54	28	27	39	6	10	93	2	14	60	11	349
	5:15 PM	2	67	37	40	42	2	8	89	1	21	70	5	384
	5:30 PM	1	50	24	28	47	5	8	100	2	13	56	7	341
	5:45 PM	2	29	25	22	49	8	19	97	3	10	47	7	318
	VOLUMES	22	427	228	203	321	48	88	773	14	80	445	65	2,714
	APPROACH %	3%	63%	34%	35%	56%	8%	10%	88%	2%	14%	75%	11%	
	APP/DEPART	677	/	580	572	/	415	875	/	1,204	590	/	515	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	12	233	121	123	167	20	34	387	7	56	236	34	1,430
	APPROACH %	3%	64%	33%	40%	54%	6%	8%	90%	2%	17%	72%	10%	
	PEAK HR FACTOR		0.863			0.923			0.930			0.849		0.931
	APP/DEPART	366	/	301	310	/	230	428	/	631	326	/	268	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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RTOR

NRR	SRR	ERR	WRR
X	X	X	X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Grove

NORTH SIDE

Edison WEST SIDE EAST SIDE **Edison**

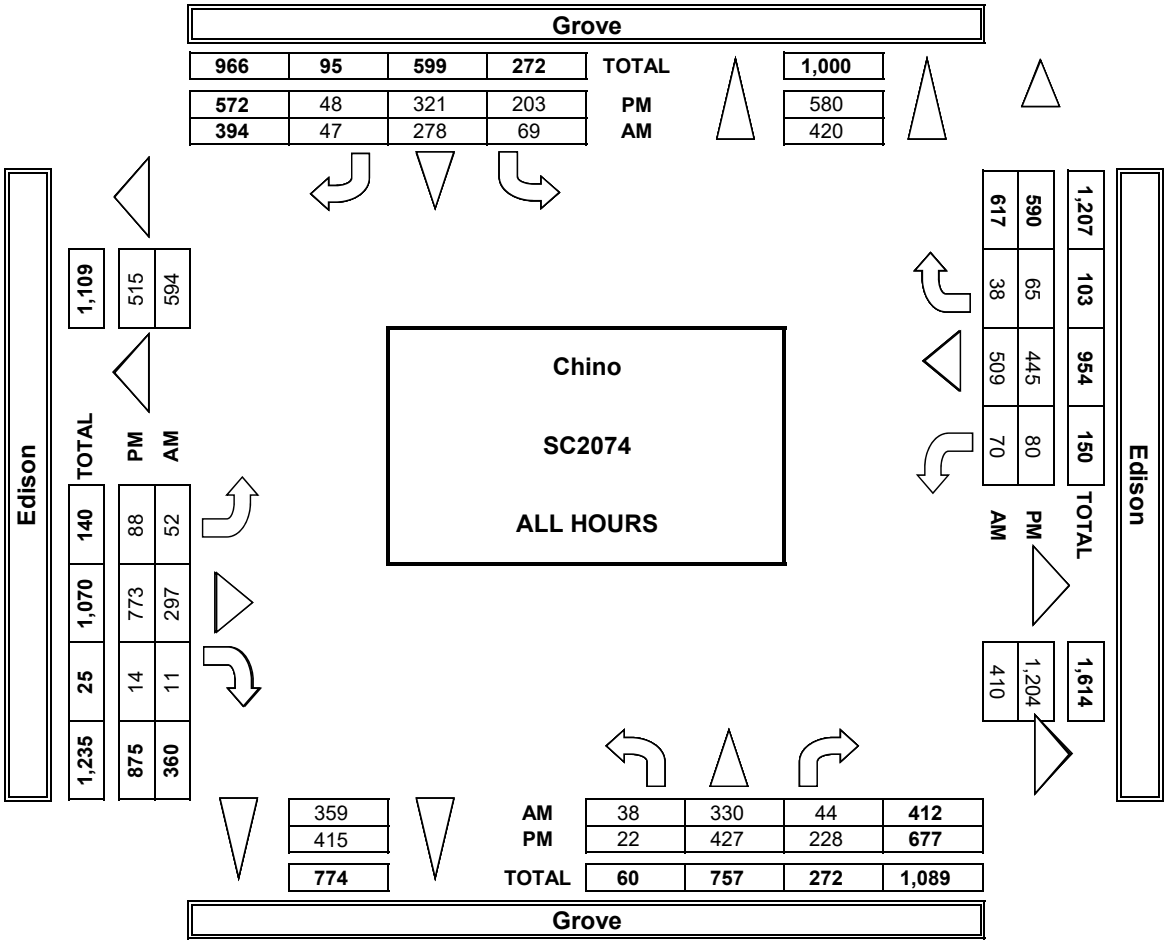
SOUTH SIDE

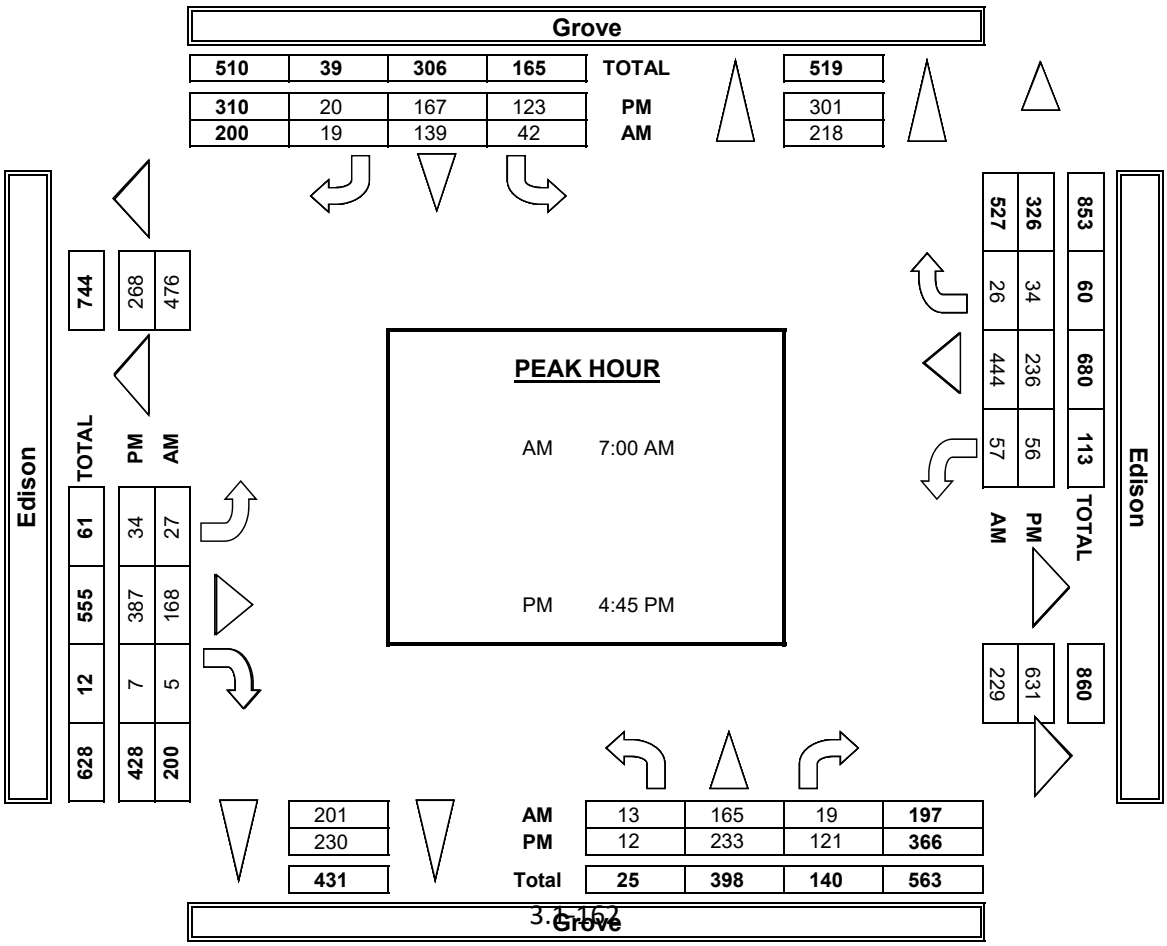
Grove

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	1	0	1	2	0	1	0	1	2	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	1	0	1	2	0	1	0	1	2	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	32
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	STOP ALL

CLASS 2:	NOTES:	AM / PM / MD / OTHER / OTHER	▲ N ◄ W E ► S ▼
2-AXLE WORK VEHICLES/ TRUCKS			

	NORTHBOUND Grove			SOUTHBOUND Grove			EASTBOUND Edison			WESTBOUND Edison			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
AM													
7:00 AM	0	2	0	3	7	0	0	6	0	0	8	0	26
7:15 AM	1	1	0	3	5	1	0	4	1	0	5	0	21
7:30 AM	0	0	1	3	8	0	0	5	1	2	9	1	30
7:45 AM	0	1	1	2	2	1	0	3	0	0	5	0	15
8:00 AM	1	2	0	1	17	1	1	7	0	2	2	0	34
8:15 AM	1	3	2	1	2	0	0	2	1	0	0	0	12
8:30 AM	0	2	1	0	2	0	1	3	0	0	2	1	12
8:45 AM	0	1	0	0	3	3	1	6	0	0	1	0	15
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	3	12	5	13	46	6	3	36	3	4	32	2	165
APPROACH %	15%	60%	25%	20%	71%	9%	7%	86%	7%	11%	84%	5%	
APP/DEPART	20	/	17	65	/	53	42	/	54	38	/	41	0
BEGIN PEAK HR		7:15 AM											
VOLUMES	2	4	2	9	32	3	1	19	2	4	21	1	100
APPROACH %	25%	50%	25%	20%	73%	7%	5%	86%	9%	15%	81%	4%	
PEAK HR FACTOR		0.667			0.579			0.688			0.542		0.735
APP/DEPART	8	/	6	44	/	38	22	/	30	26	/	26	0
PM													
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	3	1	1	1	1	2	5	0	0	8	2	24
4:15 PM	0	5	1	3	4	1	1	7	0	0	0	0	22
4:30 PM	0	5	4	2	4	0	4	3	0	0	4	0	26
4:45 PM	1	7	2	1	4	2	1	5	0	0	4	2	29
5:00 PM	0	3	0	1	1	0	1	7	0	2	6	3	24
5:15 PM	0	6	0	1	1	0	1	5	0	4	0	0	18
5:30 PM	0	5	1	0	2	0	1	4	0	1	1	2	17
5:45 PM	0	1	1	1	1	1	2	1	0	0	4	1	13
VOLUMES	1	35	10	10	18	5	13	37	0	7	27	10	173
APPROACH %	2%	76%	22%	30%	55%	15%	26%	74%	0%	16%	61%	23%	
APP/DEPART	46	/	58	33	/	25	50	/	57	44	/	33	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	1	20	7	7	13	3	7	22	0	2	14	5	101
APPROACH %	4%	71%	25%	30%	57%	13%	24%	76%	0%	10%	67%	24%	
PEAK HR FACTOR		0.700			0.719			0.906			0.477		0.871
APP/DEPART	28	/	32	23	/	15	29	/	36	21	/	18	0

	U-TURNS				
	NB	SB	EB	WB	TTL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
03:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0

	RTOR			
	NRR	SRR	ERR	WRR
LANES:	X	X	X	X
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
9:00 AM	0	0	0	0
9:15 AM	0	0	0	0
9:30 AM	0	0	0	0
9:45 AM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0
03:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0

Grove

NORTH SIDE

Edison WEST SIDE

EAST SIDE **Edison**

SOUTH SIDE

Grove

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	32
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	STOP ALL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Grove)			SOUTHBOUND (Grove)			EASTBOUND (Edison)			WESTBOUND (Edison)			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	1	1	0	2	0	0	3	0	0	0	0	7
	7:15 AM	0	0	0	0	0	0	0	0	0	0	1	1	2
	7:30 AM	0	0	1	1	0	0	1	5	0	0	1	0	9
	7:45 AM	0	1	0	0	3	0	0	0	0	1	1	1	7
	8:00 AM	0	0	0	0	1	0	2	1	0	0	1	1	6
	8:15 AM	0	1	1	0	1	1	0	1	0	0	1	0	6
	8:30 AM	0	1	1	0	2	0	0	0	0	1	0	0	5
	8:45 AM	0	2	0	0	0	0	1	0	0	0	0	0	3
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	6	4	1	9	1	4	10	0	2	5	3	45
	APPROACH %	0%	60%	40%	9%	82%	9%	29%	71%	0%	20%	50%	30%	
	APP/DEPART	10	/	13	11	/	11	14	/	15	10	/	6	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	2	2	1	5	1	3	7	0	1	4	2	28
	APPROACH %	0%	50%	50%	14%	71%	14%	30%	70%	0%	14%	57%	29%	
	PEAK HR FACTOR		0.500			0.583			0.417			0.583		0.778
	APP/DEPART	4	/	7	7	/	6	10	/	10	7	/	5	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	4	2	0	1	0	0	2	0	0	1	0	10
	4:15 PM	0	0	2	1	0	0	1	0	0	0	2	1	7
	4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	4:45 PM	0	0	0	0	0	0	0	3	0	0	0	0	3
	5:00 PM	0	1	0	0	1	0	2	1	0	0	1	0	6
	5:15 PM	0	1	0	0	0	0	1	1	0	0	0	0	3
	5:30 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
	5:45 PM	0	1	0	1	1	0	0	0	0	0	0	1	4
	VOLUMES	0	8	4	2	3	0	4	9	0	0	4	2	36
	APPROACH %	0%	67%	33%	40%	60%	0%	31%	69%	0%	0%	67%	33%	
	APP/DEPART	12	/	14	5	/	3	13	/	15	6	/	4	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	4	4	1	1	0	1	6	0	0	3	1	21
	APPROACH %	0%	50%	50%	50%	50%	0%	14%	86%	0%	0%	75%	25%	
	PEAK HR FACTOR		0.333			0.500			0.583			0.333		0.525
	APP/DEPART	8	/	6	2	/	1	7	/	11	4	/	3	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

0	0	0	0

0	0	0	0

Grove

NORTH SIDE

Edison WEST SIDE EAST SIDE **Edison**

SOUTH SIDE

Grove

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	32
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	STOP ALL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND Grove			SOUTHBOUND Grove			EASTBOUND Edison			WESTBOUND Edison			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
AM													
7:00 AM	0	0	0	0	2	1	0	2	0	1	4	0	10
7:15 AM	1	5	0	2	2	0	0	0	0	0	5	1	16
7:30 AM	1	1	0	2	1	1	0	2	0	1	6	0	15
7:45 AM	0	0	0	1	4	1	1	1	0	1	6	0	15
8:00 AM	0	4	1	0	5	1	0	5	0	0	1	0	17
8:15 AM	0	1	0	0	3	1	2	1	0	0	0	0	8
8:30 AM	0	5	0	0	4	1	1	6	0	0	0	0	17
8:45 AM	1	4	0	0	4	2	0	1	0	0	1	0	13
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	3	20	1	5	25	8	4	18	0	3	23	1	111
APPROACH %	13%	83%	4%	13%	66%	21%	18%	82%	0%	11%	85%	4%	
APP/DEPART	24	/	25	38	/	28	22	/	24	27	/	34	0
BEGIN PEAK HR		7:15 AM											
VOLUMES	2	10	1	5	12	3	1	8	0	2	18	1	63
APPROACH %	15%	77%	8%	25%	60%	15%	11%	89%	0%	10%	86%	5%	
PEAK HR FACTOR		0.542			0.833			0.450			0.750		0.926
APP/DEPART	13	/	12	20	/	14	9	/	14	21	/	23	0
PM													
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	1	0	0	3	0	1	5	0	1	3	3	17
4:15 PM	0	5	1	0	3	0	0	0	0	1	2	0	12
4:30 PM	0	0	0	0	0	0	0	3	0	0	4	1	8
4:45 PM	0	0	0	0	0	0	1	5	0	0	1	2	9
5:00 PM	0	1	1	1	1	0	0	4	1	0	2	0	11
5:15 PM	0	4	1	0	0	0	1	4	0	1	1	0	12
5:30 PM	0	2	0	2	1	0	0	4	0	0	1	1	11
5:45 PM	0	2	0	0	2	0	2	3	0	0	1	1	11
VOLUMES	0	15	3	3	10	0	5	28	1	3	15	8	91
APPROACH %	0%	83%	17%	23%	77%	0%	15%	82%	3%	12%	58%	31%	
APP/DEPART	18	/	28	13	/	14	34	/	34	26	/	15	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	6	1	0	6	0	2	13	0	2	10	6	46
APPROACH %	0%	86%	14%	0%	100%	0%	13%	87%	0%	11%	56%	33%	
PEAK HR FACTOR		0.292			0.500			0.625			0.643		0.676
APP/DEPART	7	/	14	6	/	8	15	/	14	18	/	10	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
						X	X	X	X
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PEAK HR VOLUMES						0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PEAK HR VOLUMES						0	0	0	0

Grove

NORTH SIDE

Edison WEST SIDE

EAST SIDE **Edison**

SOUTH SIDE

Grove

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Jan 30, 19

LOCATION: Chino
NORTH & SOUTH: Grove
EAST & WEST: Eucalyptus

PROJECT #: SC2074
LOCATION #: 33
CONTROL: STOP E/W

NOTES:

AM
PM
MD
OTHER
OTHER

▲ N
◄ W
E ►
S ▼

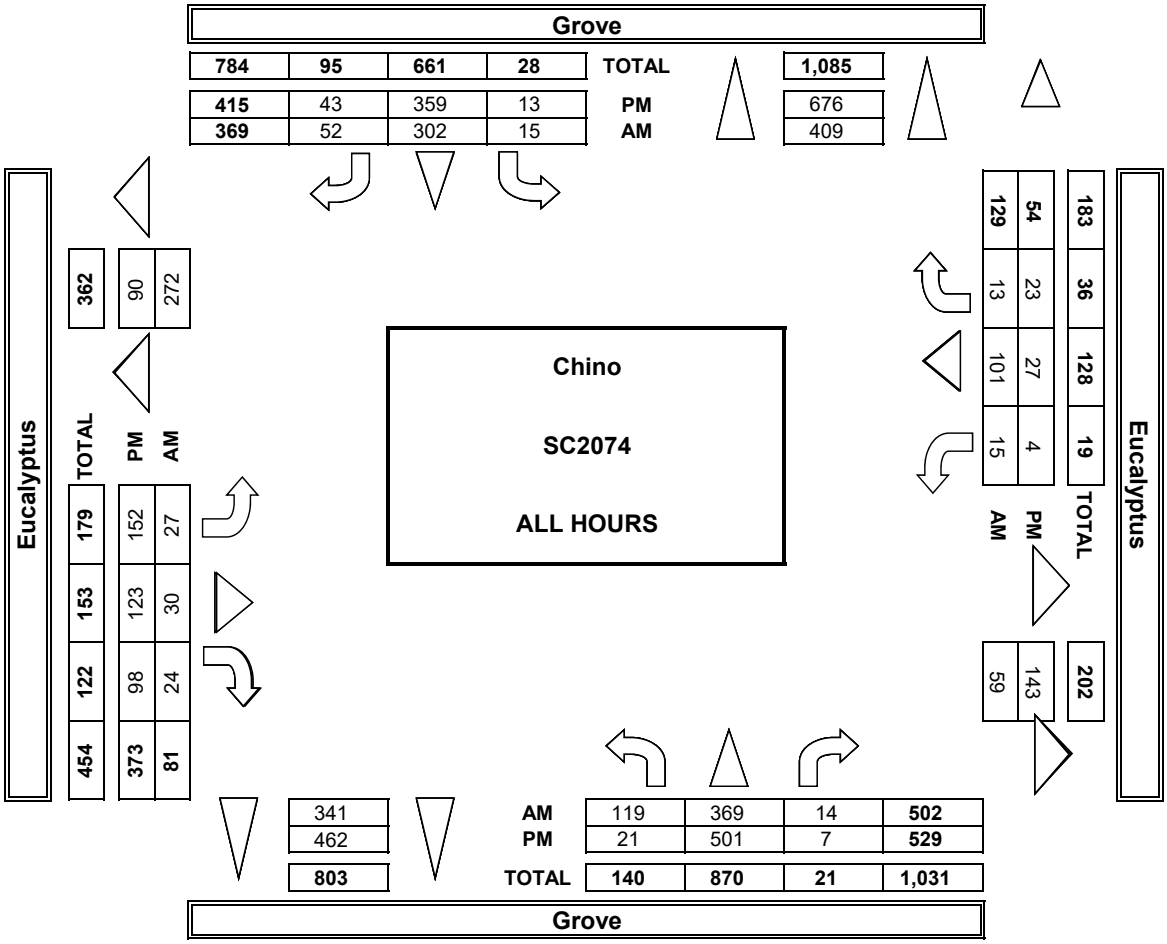
Add U-Turns to Left Turns

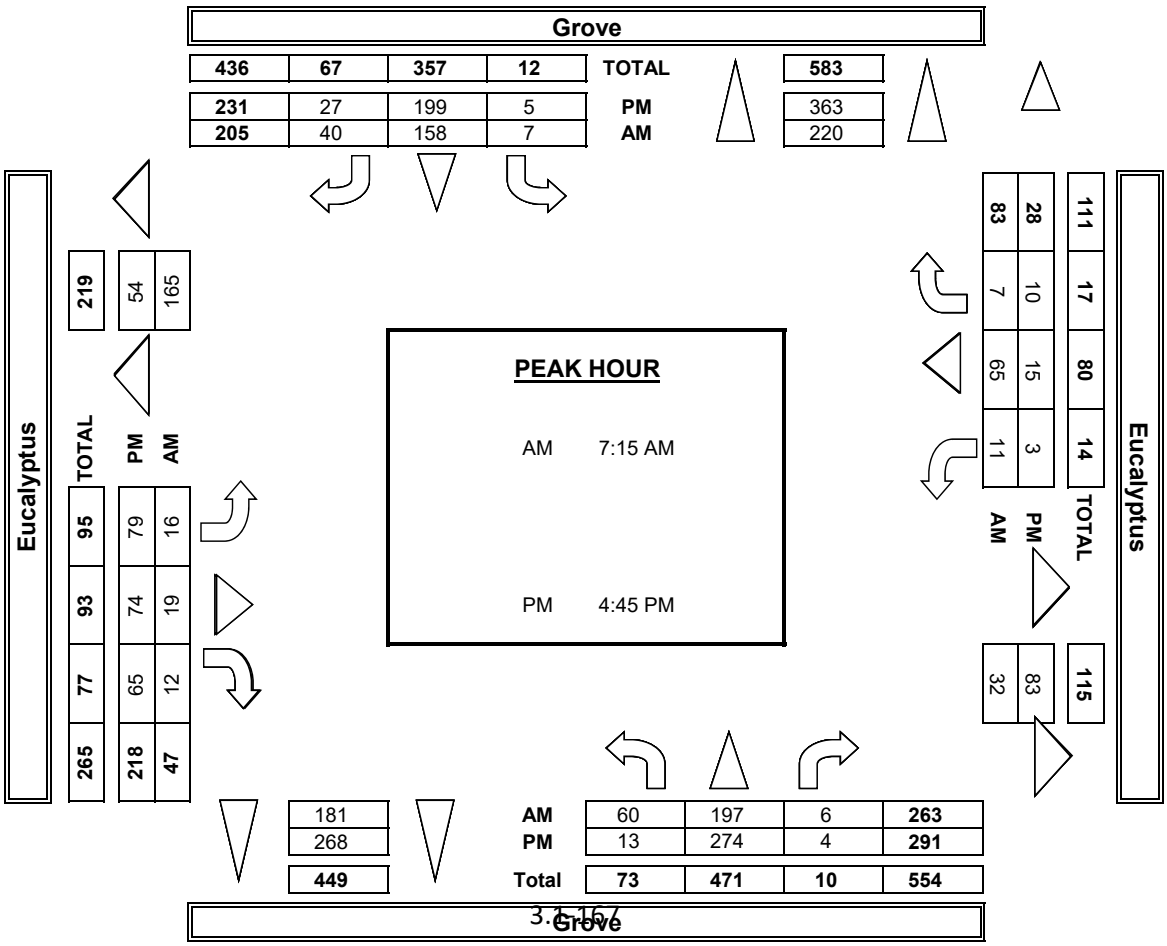
		NORTHBOUND (Grove)			SOUTHBOUND (Grove)			EASTBOUND (Eucalyptus)			WESTBOUND (Eucalyptus)				U-TURNS					RTOR			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	23	36	0	1	49	6	1	1	3	2	12	0	134	0	0	0	0	0	0	0	0	0
AM	7:15 AM	20	52	1	3	32	10	3	5	1	2	10	1	140	0	0	0	0	0	0	0	0	0
AM	7:30 AM	10	54	0	2	34	9	1	4	1	3	17	4	139	0	0	0	0	0	0	0	0	0
AM	7:45 AM	16	39	2	1	42	10	2	6	3	6	28	0	155	0	0	0	0	0	0	0	0	0
AM	8:00 AM	14	52	3	1	50	11	10	4	7	0	10	2	164	0	0	0	0	0	0	0	0	0
AM	8:15 AM	7	51	1	4	42	0	5	2	2	1	8	1	124	0	0	0	0	0	0	0	0	0
AM	8:30 AM	13	53	6	2	26	1	4	6	2	1	8	2	124	0	0	0	0	0	0	0	0	0
AM	8:45 AM	16	32	1	1	27	5	1	2	5	0	8	3	101	0	0	0	0	0	0	0	0	0
AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	VOLUMES	119	369	14	15	302	52	27	30	24	15	101	13	1,081	0	0	0	0	0	0	0	0	0
AM	APPROACH %	24%	74%	3%	4%	82%	14%	33%	37%	30%	12%	78%	10%										
AM	APP/DEPART	502	/	409	369	/	341	81	/	59	129	/	272	0									
AM	BEGIN PEAK HR		7:15 AM																				
AM	VOLUMES	60	197	6	7	158	40	16	19	12	11	65	7	598						0	0	0	0
AM	APPROACH %	23%	75%	2%	3%	77%	20%	34%	40%	26%	13%	78%	8%										
AM	PEAK HR FACTOR		0.901			0.827			0.560			0.610		0.912									
AM	APP/DEPART	263	/	220	205	/	181	47	/	32	83	/	165	0									
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	3	64	0	2	32	3	15	6	9	1	1	3	139	0	0	0	0	0	0	0	0	0
PM	4:15 PM	2	56	2	3	40	4	27	20	8	0	3	6	171	0	0	0	0	0	0	0	0	0
PM	4:30 PM	3	67	1	1	36	1	17	12	9	0	5	3	155	0	0	0	0	0	0	0	0	0
PM	4:45 PM	5	77	0	0	45	4	14	19	12	1	6	3	186	0	0	0	0	0	0	0	0	0
PM	5:00 PM	3	65	2	3	44	9	20	23	14	2	3	3	191	1	0	0	0	1	0	0	0	0
PM	5:15 PM	2	81	2	1	49	8	28	18	20	0	3	2	214	0	0	0	0	0	0	0	0	0
PM	5:30 PM	3	51	0	1	61	6	17	14	19	0	3	2	177	0	0	0	0	0	0	0	0	0
PM	5:45 PM	0	40	0	2	52	8	14	11	7	0	3	1	138	0	0	0	0	0	0	0	0	0
PM	VOLUMES	21	501	7	13	359	43	152	123	98	4	27	23	1,371	1	0	0	0	1	0	0	0	0
PM	APPROACH %	4%	95%	1%	3%	87%	10%	41%	33%	26%	7%	50%	43%										
PM	APP/DEPART	529	/	676	415	/	462	373	/	143	54	/	90	0									
PM	BEGIN PEAK HR		4:45 PM																				
PM	VOLUMES	13	274	4	5	199	27	79	74	65	3	15	10	768						0	0	0	0
PM	APPROACH %	4%	94%	1%	2%	86%	12%	36%	34%	30%	11%	54%	36%										
PM	PEAK HR FACTOR		0.856			0.849			0.826			0.700		0.897									
PM	APP/DEPART	291	/	363	231	/	268	218	/	83	28	/	54	0									

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:15 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
AM	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	TOTAL	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	33
WEDNESDAY	EAST & WEST:	Eucalyptus	CONTROL:	STOP E/W

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:	AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / E ► / S ▼

		NORTHBOUND (Grove)			SOUTHBOUND (Grove)			EASTBOUND (Eucalyptus)			WESTBOUND (Eucalyptus)			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	1	0	0	0	5	0	0	0	0	0	0	0	6
	7:15 AM	0	2	0	1	1	3	0	0	0	0	0	0	7
	7:30 AM	0	0	0	1	7	1	0	2	1	0	0	1	13
	7:45 AM	0	2	0	1	1	1	0	0	0	1	1	0	7
	8:00 AM	0	2	0	1	17	1	1	1	1	0	0	0	24
	8:15 AM	0	3	0	0	3	0	0	0	0	0	0	1	7
	8:30 AM	0	2	1	0	1	0	1	1	0	1	0	1	8
	8:45 AM	0	3	0	0	1	0	0	0	1	0	2	0	7
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	14	1	4	36	6	2	4	3	2	3	3	79
	APPROACH %	6%	88%	6%	9%	78%	13%	22%	44%	33%	25%	38%	38%	
	APP/DEPART	16	/	19	46	/	41	9	/	9	8	/	10	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	7	0	3	28	3	1	3	2	1	1	2	51
	APPROACH %	0%	100%	0%	9%	82%	9%	17%	50%	33%	25%	25%	50%	
	PEAK HR FACTOR		0.583			0.447			0.500			0.500		0.531
	APP/DEPART	7	/	10	34	/	31	6	/	6	4	/	4	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	4	0	0	1	0	1	0	1	0	0	0	7
	4:15 PM	1	2	0	1	3	0	3	1	2	0	0	0	13
	4:30 PM	0	5	0	0	3	0	3	0	0	0	0	1	12
	4:45 PM	0	7	0	0	2	0	0	3	2	0	0	1	15
	5:00 PM	0	2	0	0	2	0	0	0	0	0	0	0	4
	5:15 PM	0	6	0	0	5	0	0	0	0	0	0	0	11
	5:30 PM	0	7	0	0	3	0	0	1	1	0	0	0	12
	5:45 PM	0	1	0	0	2	1	0	0	0	0	1	0	5
	VOLUMES	1	34	0	1	21	1	7	5	6	0	1	2	79
	APPROACH %	3%	97%	0%	4%	91%	4%	39%	28%	33%	0%	33%	67%	
	APP/DEPART	35	/	43	23	/	27	18	/	6	3	/	3	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	1	18	0	1	9	0	7	4	5	0	0	2	47
	APPROACH %	5%	95%	0%	10%	90%	0%	44%	25%	31%	0%	0%	100%	
	PEAK HR FACTOR		0.679			0.625			0.667			0.500		0.783
	APP/DEPART	19	/	27	10	/	14	16	/	5	2	/	1	0

U-TURNS					
	NB	SB	EB	WB	TTL
AM	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
PM	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0

RTOR			
NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
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0	0	0	0
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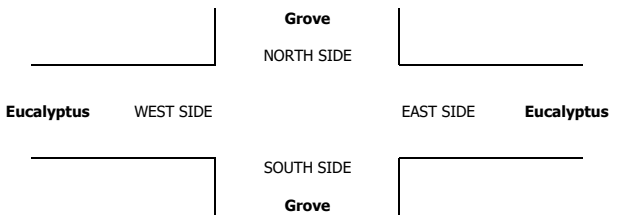
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	33
WEDNESDAY	EAST & WEST:	Eucalyptus	CONTROL:	STOP E/W

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND Grove			SOUTHBOUND Grove			EASTBOUND Eucalyptus			WESTBOUND Eucalyptus			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
7:00 AM	0	0	0	1	0	0	0	0	0	0	1	0	2
7:15 AM	0	0	0	0	0	0	0	1	0	0	2	0	3
7:30 AM	0	0	0	0	0	0	0	0	0	0	6	1	7
7:45 AM	0	0	2	0	2	1	0	3	0	0	1	0	9
8:00 AM	0	0	0	0	1	2	1	1	0	0	6	0	11
8:15 AM	0	1	0	2	1	0	0	0	0	0	1	0	5
8:30 AM	0	2	3	0	2	0	0	2	0	0	2	0	11
8:45 AM	0	1	1	0	0	0	0	1	0	0	4	1	8
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	4	6	3	6	3	1	8	0	0	23	2	56
APPROACH %	0%	40%	60%	25%	50%	25%	11%	89%	0%	0%	92%	8%	
APP/DEPART	10	/	7	12	/	6	9	/	17	25	/	26	0
BEGIN PEAK HR		7:45 AM											
VOLUMES	0	3	5	2	6	3	1	6	0	0	10	0	36
APPROACH %	0%	38%	63%	18%	55%	27%	14%	86%	0%	0%	100%	0%	
PEAK HR FACTOR		0.400			0.917			0.583			0.417		0.818
APP/DEPART	8	/	4	11	/	6	7	/	13	10	/	13	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	2	0	0	0	2	1	0	0	0	0	2	7
4:15 PM	0	0	0	0	0	0	1	2	0	0	0	0	3
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	4	0	1	0	2	2	3	0	0	0	3	15
APPROACH %	0%	100%	0%	33%	0%	67%	40%	60%	0%	0%	0%	100%	
APP/DEPART	4	/	9	3	/	0	5	/	4	3	/	2	0
BEGIN PEAK HR		3:45 PM											
VOLUMES	0	2	0	0	0	2	2	3	0	0	0	2	11
APPROACH %	0%	100%	0%	0%	0%	100%	40%	60%	0%	0%	0%	100%	
PEAK HR FACTOR		0.250			0.250			0.417			0.250		0.393
APP/DEPART	2	/	6	2	/	0	5	/	3	2	/	2	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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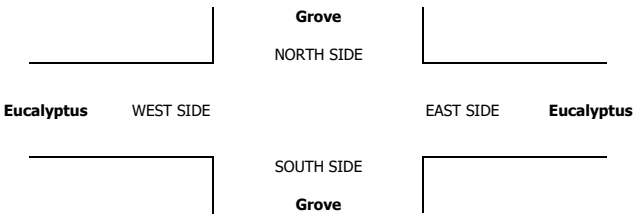
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	33
WEDNESDAY	EAST & WEST:	Eucalyptus	CONTROL:	STOP E/W

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND (Grove)			SOUTHBOUND (Grove)			EASTBOUND (Eucalyptus)			WESTBOUND (Eucalyptus)			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
7:00 AM	0	1	0	0	4	1	0	0	0	1	0	0	7
7:15 AM	0	4	1	0	1	0	1	1	0	0	1	1	10
7:30 AM	1	1	0	0	1	1	1	0	0	0	0	0	5
7:45 AM	0	0	0	0	4	1	0	0	0	0	0	0	5
8:00 AM	0	2	0	0	5	1	3	0	0	0	0	1	12
8:15 AM	0	1	0	0	3	0	0	2	0	0	0	0	6
8:30 AM	0	5	0	1	4	0	0	1	0	0	2	0	13
8:45 AM	0	3	0	1	3	0	0	0	0	0	1	1	9
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	1	17	1	2	25	4	5	4	0	1	4	3	67
APPROACH %	5%	89%	5%	6%	81%	13%	56%	44%	0%	13%	50%	38%	
APP/DEPART	19	/	25	31	/	26	9	/	7	8	/	9	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	0	11	0	2	15	1	3	3	0	0	3	2	40
APPROACH %	0%	100%	0%	11%	83%	6%	50%	50%	0%	0%	60%	40%	
PEAK HR FACTOR		0.550			0.750			0.500			0.625		0.769
APP/DEPART	11	/	16	18	/	15	6	/	5	5	/	4	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	2	0	1	2	0	0	0	0	0	0	0	5
4:15 PM	0	4	0	1	2	2	0	1	0	0	0	1	11
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	1	0	0	2	0	1	0	0	1	1	0	6
5:15 PM	0	5	0	0	1	0	1	1	0	0	0	0	8
5:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	2
5:45 PM	0	2	0	2	0	0	0	1	0	0	0	0	5
VOLUMES	0	15	0	5	7	2	2	4	0	1	1	1	38
APPROACH %	0%	100%	0%	36%	50%	14%	33%	67%	0%	33%	33%	33%	
APP/DEPART	15	/	18	14	/	8	6	/	9	3	/	3	0
BEGIN PEAK HR		5:00 PM											
VOLUMES	0	9	0	3	3	0	2	2	0	1	1	0	21
APPROACH %	0%	100%	0%	50%	50%	0%	50%	50%	0%	50%	50%	0%	
PEAK HR FACTOR		0.450			0.750			0.500			0.250		0.656
APP/DEPART	9	/	11	6	/	4	4	/	5	2	/	1	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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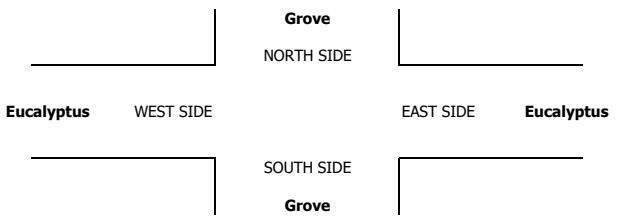
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Jan 30, 19

LOCATION: Chino
NORTH & SOUTH: Grove
EAST & WEST: Merrill

PROJECT #: SC2074
LOCATION #: 35
CONTROL: STOP ALL

NOTES:

AM
PM
MD
OTHER
OTHER

▲ N
◄ W
E ►
S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Grove)			SOUTHBOUND (Grove)			EASTBOUND (Merrill)			WESTBOUND (Merrill)			
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	34	0	19	7	30	0	0	70	52	212
	7:15 AM	0	0	0	12	0	23	19	22	0	0	117	55	248
	7:30 AM	0	0	0	17	0	19	9	32	0	0	98	55	230
	7:45 AM	0	0	0	25	0	27	11	45	0	0	100	46	254
	8:00 AM	0	0	0	30	0	24	14	39	0	0	96	54	257
	8:15 AM	0	0	0	33	0	14	20	38	0	0	104	36	245
	8:30 AM	0	0	0	21	0	8	17	37	0	0	102	58	243
	8:45 AM	0	0	0	17	0	5	14	42	0	0	87	32	197
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	189	0	139	111	285	0	0	774	388	1,887
	APPROACH %	0%	0%	0%	58%	0%	42%	28%	72%	0%	0%	67%	33%	
	APP/DEPART	0	/	499	328	/	0	396	/	475	1,163	/	913	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	0	0	109	0	73	62	159	0	0	402	194	999
	APPROACH %	0%	0%	0%	60%	0%	40%	28%	72%	0%	0%	67%	33%	
	PEAK HR FACTOR		0.000			0.843			0.953			0.931		0.972
	APP/DEPART	0	/	256	182	/	0	221	/	268	596	/	475	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	37	0	7	29	79	0	0	39	37	228
	4:15 PM	0	0	0	29	0	12	39	79	0	0	31	19	209
	4:30 PM	0	0	0	35	0	10	37	83	0	0	59	34	258
	4:45 PM	0	0	0	39	0	19	44	99	0	0	49	37	287
	5:00 PM	0	0	0	37	0	21	35	114	0	0	52	37	296
	5:15 PM	0	0	0	45	0	24	42	98	0	0	49	39	297
	5:30 PM	0	0	0	54	0	23	26	87	0	0	40	28	258
	5:45 PM	0	0	0	46	0	16	23	99	0	0	51	18	253
	VOLUMES	0	0	0	322	0	132	275	738	0	0	370	249	2,087
	APPROACH %	0%	0%	0%	71%	0%	29%	27%	73%	0%	0%	60%	40%	
	APP/DEPART	0	/	525	455	/	0	1,013	/	1,060	619	/	502	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	0	0	156	0	74	158	394	0	0	209	147	1,139
	APPROACH %	0%	0%	0%	68%	0%	32%	29%	71%	0%	0%	59%	41%	
	PEAK HR FACTOR		0.000			0.837			0.926			0.957		0.959
	APP/DEPART	0	/	306	231	/	0	552	/	550	356	/	283	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Grove

NORTH SIDE

Merrill WEST SIDE EAST SIDE **Merrill**

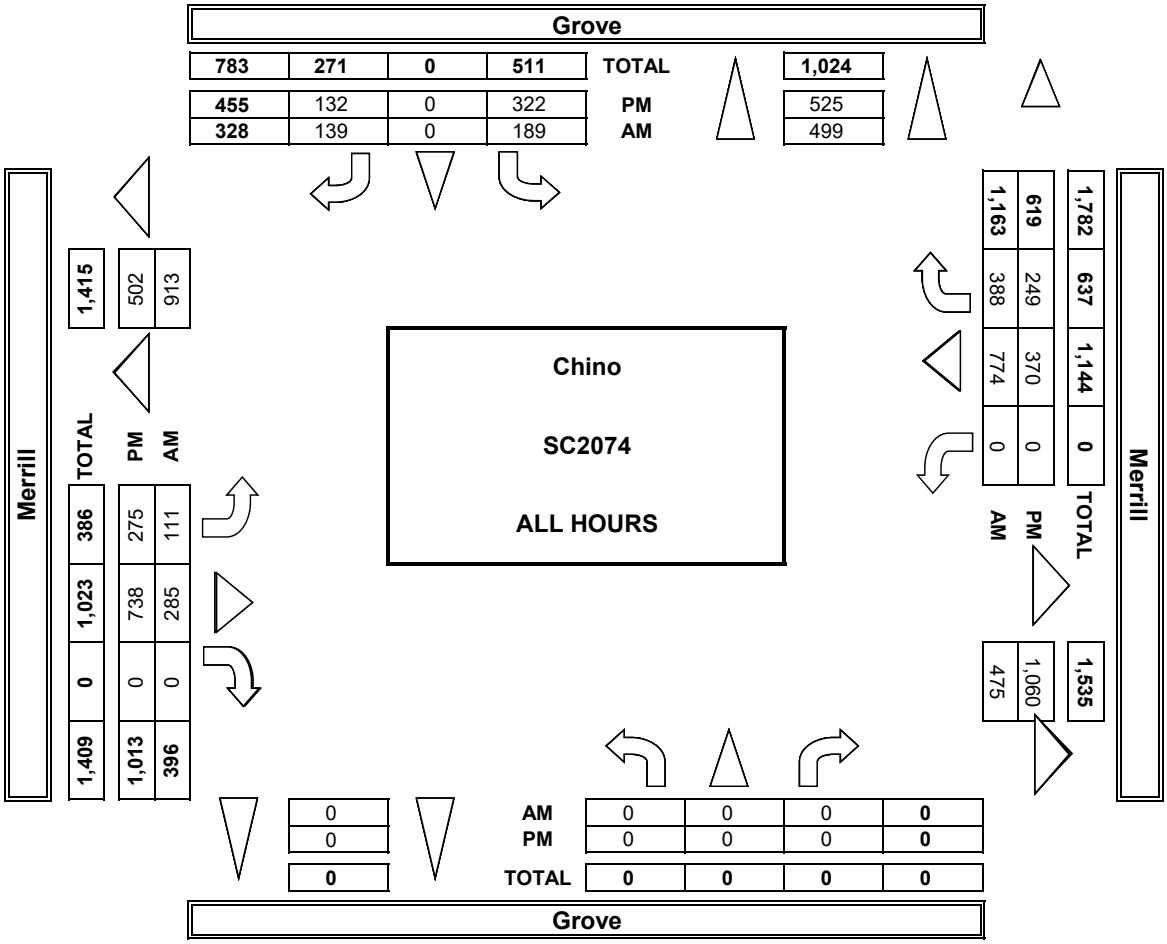
SOUTH SIDE

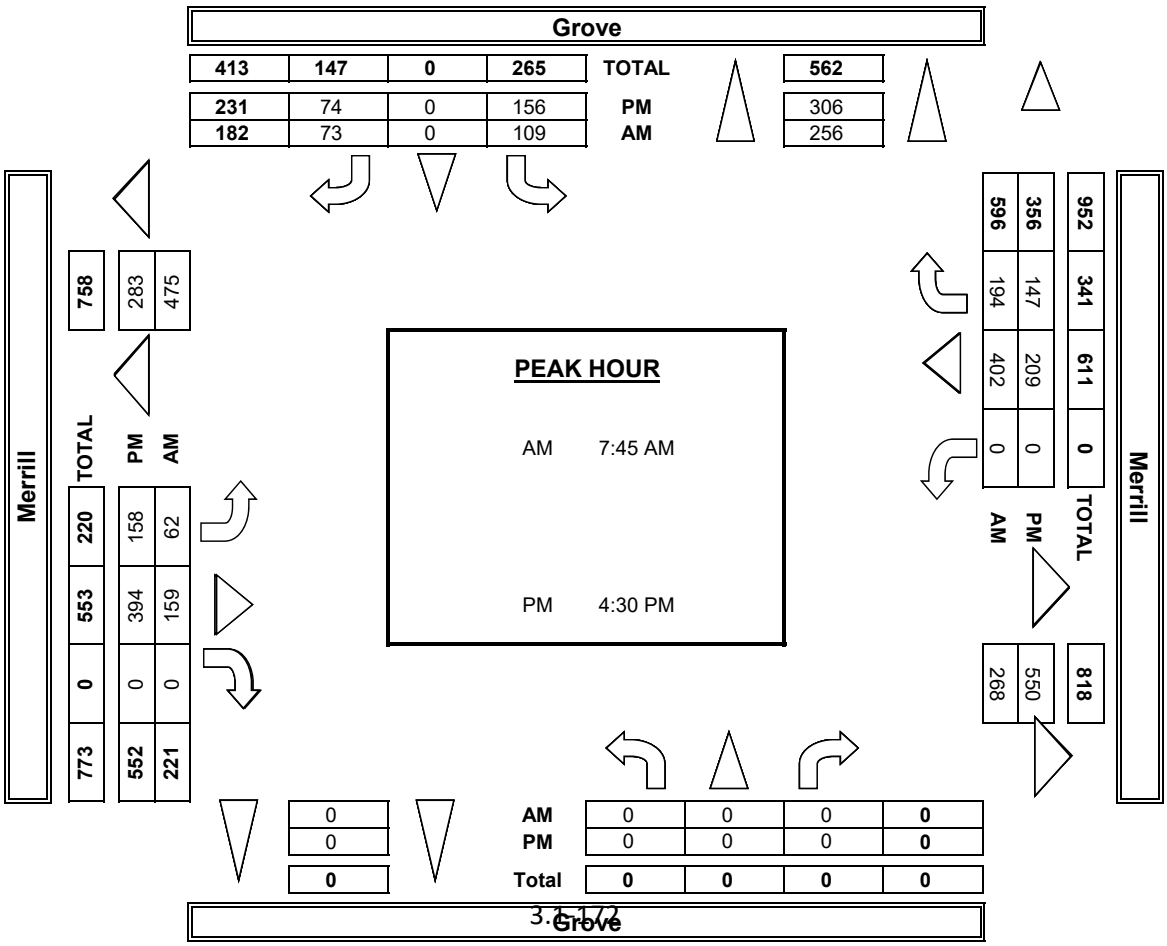
Grove

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	35
WEDNESDAY	EAST & WEST:	Merrill	CONTROL:	STOP ALL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Grove)			SOUTHBOUND (Grove)			EASTBOUND (Merrill)			WESTBOUND (Merrill)			
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	5	0	2	0	2	0	0	4	2	15
	7:15 AM	0	0	0	2	0	1	1	0	0	0	3	2	9
	7:30 AM	0	0	0	6	0	1	0	3	0	0	2	0	12
	7:45 AM	0	0	0	1	0	2	1	4	0	0	5	1	14
	8:00 AM	0	0	0	2	0	16	3	5	0	0	2	2	30
	8:15 AM	0	0	0	2	0	0	1	2	0	0	6	2	13
	8:30 AM	0	0	0	1	0	0	3	6	0	0	4	0	14
	8:45 AM	0	0	0	1	0	0	1	2	0	0	4	1	9
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	20	0	22	10	24	0	0	30	10	116
	APPROACH %	0%	0%	0%	48%	0%	52%	29%	71%	0%	0%	75%	25%	
	APP/DEPART	0	/	20	42	/	0	34	/	44	40	/	52	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	0	0	6	0	18	8	17	0	0	17	5	71
	APPROACH %	0%	0%	0%	25%	0%	75%	32%	68%	0%	0%	77%	23%	
	PEAK HR FACTOR		0.000			0.333			0.694			0.688		0.592
	APP/DEPART	0	/	13	24	/	0	25	/	23	22	/	35	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	2	0	0	4	0	0	0	4	0	10
	4:15 PM	0	0	0	1	0	1	2	5	0	0	3	0	12
	4:30 PM	0	0	0	4	0	1	5	4	0	0	4	2	20
	4:45 PM	0	0	0	2	0	0	6	6	0	0	3	2	19
	5:00 PM	0	0	0	3	0	1	2	1	0	0	1	1	9
	5:15 PM	0	0	0	1	0	4	8	3	0	0	3	2	21
	5:30 PM	0	0	0	1	0	3	4	3	0	0	2	4	17
	5:45 PM	0	0	0	1	0	2	2	1	0	0	2	0	8
	VOLUMES	0	0	0	15	0	12	33	23	0	0	22	11	116
	APPROACH %	0%	0%	0%	56%	0%	44%	59%	41%	0%	0%	67%	33%	
	APP/DEPART	0	/	44	27	/	0	56	/	38	33	/	34	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	0	0	10	0	6	21	14	0	0	11	7	69
	APPROACH %	0%	0%	0%	63%	0%	38%	60%	40%	0%	0%	61%	39%	
	PEAK HR FACTOR		0.000			0.800			0.729			0.750		0.821
	APP/DEPART	0	/	28	16	/	0	35	/	24	18	/	17	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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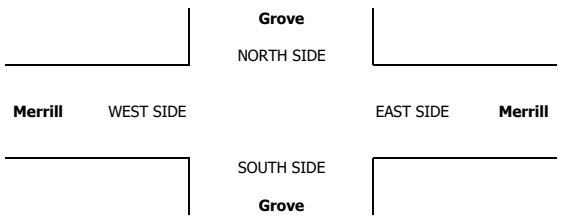
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	35
WEDNESDAY	EAST & WEST:	Merrill	CONTROL:	STOP ALL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Grove)			SOUTHBOUND (Grove)			EASTBOUND (Merrill)			WESTBOUND (Merrill)			
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	1	0	0	0	0	0	0	2	1	4
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	7:45 AM	0	0	0	1	0	1	2	0	0	0	0	0	4
	8:00 AM	0	0	0	1	0	0	0	0	0	0	1	0	2
	8:15 AM	0	0	0	1	0	0	0	3	0	0	1	1	6
	8:30 AM	0	0	0	1	0	2	3	4	0	0	2	2	14
	8:45 AM	0	0	0	0	0	0	2	1	0	0	2	0	5
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	5	0	3	7	8	0	0	9	4	37
	APPROACH %	0%	0%	0%	63%	0%	38%	47%	53%	0%	0%	64%	29%	
	APP/DEPART	0	/	11	8	/	0	15	/	14	14	/	12	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	0	0	0	3	0	2	5	8	0	0	6	3	27
	APPROACH %	0%	0%	0%	60%	0%	40%	38%	62%	0%	0%	67%	33%	
	PEAK HR FACTOR		0.000			0.417			0.464			0.563		0.482
	APP/DEPART	0	/	8	5	/	0	13	/	11	9	/	8	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	2	0	0	1	2	5
	4:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	2
	4:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
	4:45 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
	5:00 PM	0	0	0	0	0	0	1	2	0	0	3	0	6
	5:15 PM	0	0	0	0	0	0	0	3	0	0	0	0	3
	5:30 PM	0	0	0	0	0	0	0	0	0	0	2	1	3
	5:45 PM	0	0	0	1	0	0	1	0	0	0	1	0	3
	VOLUMES	0	0	0	1	0	0	3	12	0	0	8	3	27
	APPROACH %	0%	0%	0%	100%	0%	0%	20%	80%	0%	0%	73%	27%	
	APP/DEPART	0	/	6	1	/	0	15	/	13	11	/	8	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	0	0	1	0	0	2	5	0	0	6	1	15
	APPROACH %	0%	0%	0%	100%	0%	0%	29%	71%	0%	0%	86%	14%	
	PEAK HR FACTOR		0.000			0.250			0.583			0.583		0.625
	APP/DEPART	0	/	3	1	/	0	7	/	6	7	/	6	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Grove

NORTH SIDE

Merrill WEST SIDE EAST SIDE **Merrill**

SOUTH SIDE

Grove

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Grove	LOCATION #:	35
WEDNESDAY	EAST & WEST:	Merrill	CONTROL:	STOP ALL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND Grove			SOUTHBOUND Grove			EASTBOUND Merrill			WESTBOUND Merrill			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	X	X	X	0	X	0	0	1	X	X	1	0	
AM 7:00 AM	0	0	0	4	0	2	0	6	0	0	1	0	13
7:15 AM	0	0	0	0	0	1	1	3	0	0	7	4	16
7:30 AM	0	0	0	1	0	0	0	3	0	0	1	2	7
7:45 AM	0	0	0	3	0	2	0	5	0	0	7	0	17
8:00 AM	0	0	0	3	0	1	0	4	0	0	5	2	15
8:15 AM	0	0	0	4	0	0	0	3	0	0	4	0	11
8:30 AM	0	0	0	2	0	0	3	5	0	0	11	2	23
8:45 AM	0	0	0	1	0	1	2	2	0	0	4	2	12
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	18	0	7	6	31	0	0	40	12	114
APPROACH %	0%	0%	0%	72%	0%	28%	16%	84%	0%	0%	77%	23%	
APP/DEPART	0	/	18	25	/	0	37	/	49	52	/	47	0
BEGIN PEAK HR		7:45 AM											
VOLUMES	0	0	0	12	0	3	3	17	0	0	27	4	66
APPROACH %	0%	0%	0%	80%	0%	20%	15%	85%	0%	0%	87%	13%	
PEAK HR FACTOR		0.000			0.750			0.625			0.596		0.717
APP/DEPART	0	/	7	15	/	0	20	/	29	31	/	30	0
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	2	0	1	0	5	0	0	5	2	15
4:15 PM	0	0	0	2	0	0	2	3	0	0	2	1	10
4:30 PM	0	0	0	0	0	0	0	4	0	0	2	0	6
4:45 PM	0	0	0	0	0	0	0	7	0	0	4	0	11
5:00 PM	0	0	0	2	0	1	1	4	0	0	2	1	11
5:15 PM	0	0	0	0	0	1	0	8	0	0	6	4	19
5:30 PM	0	0	0	0	0	0	1	4	0	0	1	0	6
5:45 PM	0	0	0	0	0	0	2	2	0	0	0	0	4
VOLUMES	0	0	0	6	0	3	6	37	0	0	22	8	82
APPROACH %	0%	0%	0%	67%	0%	33%	14%	86%	0%	0%	73%	27%	
APP/DEPART	0	/	14	9	/	0	43	/	43	30	/	25	0
BEGIN PEAK HR		4:30 PM											
VOLUMES	0	0	0	2	0	2	2	23	0	0	13	5	47
APPROACH %	0%	0%	0%	50%	0%	50%	8%	92%	0%	0%	72%	28%	
PEAK HR FACTOR		0.000			0.333			0.781			0.450		0.618
APP/DEPART	0	/	7	4	/	0	25	/	25	18	/	15	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:						X	X	X	X
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
AM PEAK HR VOLUMES						0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PM PEAK HR VOLUMES						0	0	0	0

Grove

NORTH SIDE

Merrill WEST SIDE

EAST SIDE **Merrill**

SOUTH SIDE

Grove

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
Wed, Jan 30, 19	NORTH & SOUTH:	Walker	LOCATION #:	36
	EAST & WEST:	Edison	CONTROL:	STOP N/S

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Walker)			SOUTHBOUND (Walker)			EASTBOUND (Edison)			WESTBOUND (Edison)			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	3	2	10	1	2	3	42	2	17	88	24	194
	7:15 AM	1	1	2	2	2	1	2	55	0	19	85	35	205
	7:30 AM	0	3	0	3	0	1	3	50	0	22	90	38	210
	7:45 AM	2	1	1	0	3	2	2	48	1	38	68	40	206
	8:00 AM	0	5	2	4	4	0	5	49	1	17	94	22	203
	8:15 AM	0	4	1	6	4	5	1	51	3	20	94	24	213
	8:30 AM	0	1	2	5	3	1	6	43	4	15	60	29	169
	8:45 AM	1	3	3	8	3	3	7	39	2	16	59	16	160
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	4	21	13	38	20	15	29	377	13	164	638	228	1,560
	APPROACH %	11%	55%	34%	52%	27%	21%	7%	90%	3%	16%	62%	22%	
	APP/DEPART	38	/	277	73	/	197	419	/	428	1,030	/	658	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	2	13	4	13	11	8	11	198	5	97	346	124	832
	APPROACH %	11%	68%	21%	41%	34%	25%	5%	93%	2%	17%	61%	22%	
	PEAK HR FACTOR		0.679			0.533			0.973			0.945		0.977
	APP/DEPART	19	/	148	32	/	113	214	/	215	567	/	356	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	3	2	10	3	5	2	145	0	3	60	2	235
	4:15 PM	1	3	11	16	2	2	8	136	0	2	57	8	246
	4:30 PM	0	4	9	12	2	2	2	144	0	2	80	14	271
	4:45 PM	2	5	9	13	2	1	5	151	0	2	70	5	265
	5:00 PM	0	2	12	18	4	3	1	150	0	1	78	3	272
	5:15 PM	0	2	12	16	2	3	4	157	1	3	84	4	288
	5:30 PM	0	1	7	8	2	1	2	147	2	2	72	7	251
	5:45 PM	1	2	3	17	4	1	3	123	0	1	68	8	231
	VOLUMES	4	22	65	110	21	18	27	1,153	3	16	569	51	2,059
	APPROACH %	4%	24%	71%	74%	14%	12%	2%	97%	0%	3%	89%	8%	
	APP/DEPART	91	/	101	149	/	40	1,183	/	1,327	636	/	591	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	2	13	42	59	10	9	12	602	1	8	312	26	1,096
	APPROACH %	4%	23%	74%	76%	13%	12%	2%	98%	0%	2%	90%	8%	
	PEAK HR FACTOR		0.891			0.780			0.949			0.901		0.951
	APP/DEPART	57	/	51	78	/	19	615	/	703	346	/	323	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1

RTOR

NRR	SRR	ERR	WRR
X	X	X	X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Walker

NORTH SIDE

Edison WEST SIDE EAST SIDE **Edison**

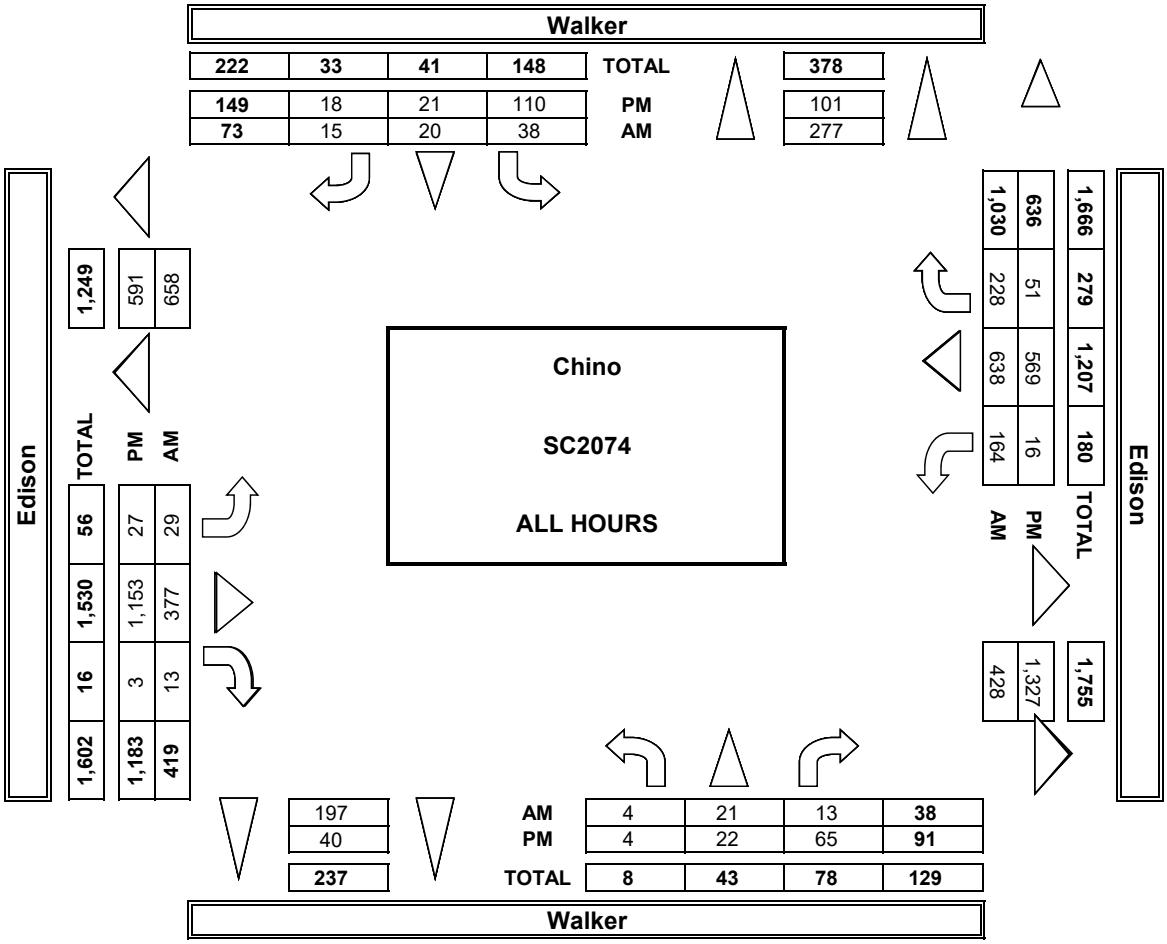
SOUTH SIDE

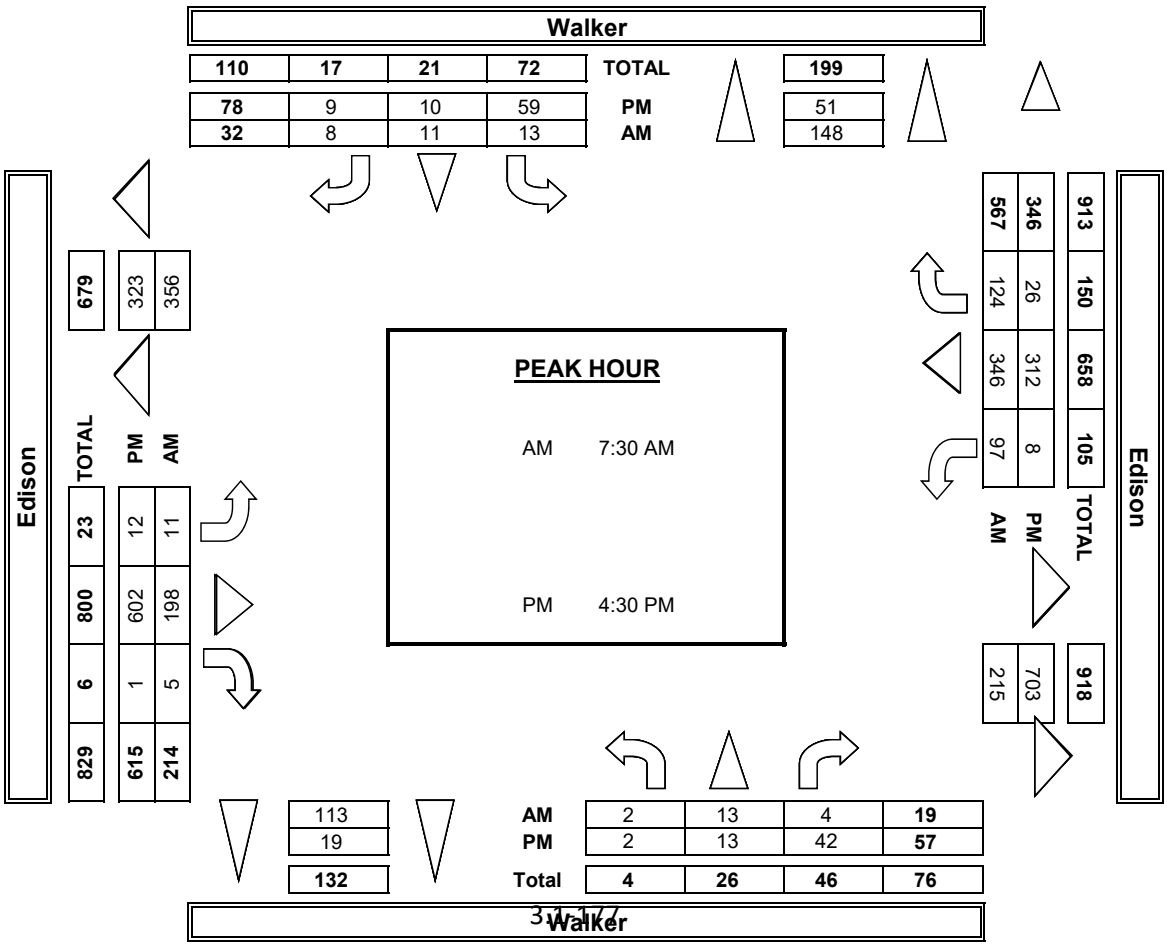
Walker

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Walker	LOCATION #:	36
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	STOP N/S

CLASS 2:	NOTES:	AM / PM / MD / OTHER / OTHER
2-AXLE WORK VEHICLES/ TRUCKS		▲ N ◄ W E ► S ▼

		NORTHBOUND (Walker)			SOUTHBOUND (Walker)			EASTBOUND (Edison)			WESTBOUND (Edison)			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	3	0	0	9	0	12
	7:15 AM	0	0	0	0	0	0	0	4	0	1	6	1	12
	7:30 AM	0	0	0	0	0	0	1	4	0	2	5	0	12
	7:45 AM	0	1	0	0	0	0	0	6	0	3	3	1	14
	8:00 AM	0	1	0	0	1	0	0	8	0	1	4	1	16
	8:15 AM	0	0	0	1	0	1	0	5	0	2	6	1	16
	8:30 AM	0	0	1	1	1	0	0	5	1	3	4	0	16
	8:45 AM	0	1	0	2	2	0	1	7	1	1	4	1	20
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	3	1	4	4	1	2	42	2	13	41	5	118
	APPROACH %	0%	75%	25%	44%	44%	11%	4%	91%	4%	22%	69%	8%	
	APP/DEPART	4	/	10	9	/	19	46	/	47	59	/	42	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	0	2	1	4	4	1	1	25	2	7	18	3	68
	APPROACH %	0%	67%	33%	44%	44%	11%	4%	89%	7%	25%	64%	11%	
	PEAK HR FACTOR		0.750			0.563			0.778			0.778		0.850
	APP/DEPART	3	/	6	9	/	13	28	/	30	28	/	19	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	1	0	0	1	0	10	0	0	5	0	17
	4:15 PM	0	1	0	2	0	0	2	7	0	1	3	1	17
	4:30 PM	0	0	1	0	0	0	0	10	0	0	8	1	20
	4:45 PM	0	0	3	1	0	0	2	5	0	0	3	1	15
	5:00 PM	0	0	1	1	0	1	0	5	0	0	6	0	14
	5:15 PM	0	0	0	0	0	0	0	4	0	0	3	0	7
	5:30 PM	0	0	0	1	0	0	0	2	0	0	0	0	3
	5:45 PM	0	0	0	0	1	0	0	0	0	0	2	1	4
	VOLUMES	0	1	6	5	1	2	4	43	0	1	30	4	97
	APPROACH %	0%	14%	86%	63%	13%	25%	9%	91%	0%	3%	86%	11%	
	APP/DEPART	7	/	9	8	/	2	47	/	54	35	/	32	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	1	5	3	0	1	4	32	0	1	19	3	69
	APPROACH %	0%	17%	83%	75%	0%	25%	11%	89%	0%	4%	83%	13%	
	PEAK HR FACTOR		0.500			0.500			0.900			0.639		0.863
	APP/DEPART	6	/	8	4	/	1	36	/	40	23	/	20	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

	Walker NORTH SIDE		
Edison WEST SIDE		EAST SIDE	**Edison**
	SOUTH SIDE **Walker**		

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Walker	LOCATION #:	36
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	STOP N/S

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Walker)			SOUTHBOUND (Walker)			EASTBOUND (Edison)			WESTBOUND (Edison)			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	1	0	0	0	1	0	2	0	0	0	0	4
	7:15 AM	0	0	0	0	1	1	0	2	0	0	2	0	6
	7:30 AM	0	1	0	0	0	0	0	2	0	0	0	0	3
	7:45 AM	0	0	0	0	1	0	0	2	0	1	1	1	6
	8:00 AM	0	1	0	0	0	0	1	2	0	0	2	0	6
	8:15 AM	0	0	0	0	1	1	0	2	0	0	0	1	5
	8:30 AM	0	0	0	0	0	0	0	3	1	1	1	0	6
	8:45 AM	0	1	1	2	1	0	0	2	0	1	2	4	14
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	4	1	2	4	3	1	17	1	3	8	6	50
	APPROACH %	0%	80%	20%	22%	44%	33%	5%	89%	5%	18%	47%	35%	
	APP/DEPART	5	/	11	9	/	8	19	/	20	17	/	11	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	0	2	1	2	2	1	1	9	1	2	5	5	31
	APPROACH %	0%	67%	33%	40%	40%	20%	9%	82%	9%	17%	42%	42%	
	PEAK HR FACTOR		0.375			0.417			0.688			0.429		0.554
	APP/DEPART	3	/	8	5	/	5	11	/	12	12	/	6	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	1	0	1	2	0	4
	4:15 PM	1	1	0	0	0	0	0	1	0	0	1	1	5
	4:30 PM	0	0	0	0	0	0	0	1	0	1	0	0	2
	4:45 PM	0	1	0	1	1	0	0	3	0	0	1	1	8
	5:00 PM	0	0	0	0	1	0	0	1	0	1	0	0	3
	5:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	2
	5:30 PM	0	0	0	0	0	0	0	2	0	1	0	0	3
	5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	VOLUMES	1	2	0	1	2	0	1	11	0	4	4	2	28
	APPROACH %	33%	67%	0%	33%	67%	0%	8%	92%	0%	40%	40%	20%	
	APP/DEPART	3	/	5	3	/	6	12	/	12	10	/	5	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	1	2	0	1	1	0	0	6	0	2	4	2	19
	APPROACH %	33%	67%	0%	50%	50%	0%	0%	100%	0%	25%	50%	25%	
	PEAK HR FACTOR		0.375			0.250			0.500			0.667		0.594
	APP/DEPART	3	/	4	2	/	3	6	/	7	8	/	5	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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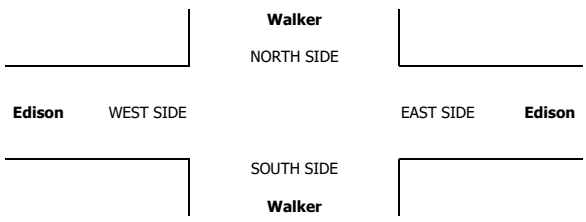
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

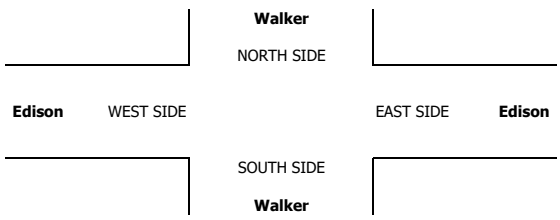
DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Walker	LOCATION #:	36
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	STOP N/S

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

		NORTHBOUND (Walker)			SOUTHBOUND (Walker)			EASTBOUND (Edison)			WESTBOUND (Edison)				U-TURNS					RTOR			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	0	0	0	1	0	1	0	4	0	0	2	0	8	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	1	2	0	0	0	3	0	2	3	0	11	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	4	0	0	4	0	8	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	1	0	3	0	1	2	0	7	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	1	0	0	0	0	2	0	0	4	1	8	0	0	0	0	0	0	0	0	0
	8:15 AM	0	1	0	1	1	0	0	0	0	1	4	2	10	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	1	0	0	0	0	1	2	3	0	7	0	0	0	0	0	0	0	0	0
	8:45 AM	1	0	0	2	0	1	2	3	0	1	5	1	16	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	1	2	7	1	3	2	19	1	7	27	4	75	0	0	0	0	0	0	0	0	0
	APPROACH %	25%	25%	50%	64%	9%	27%	9%	86%	5%	18%	71%	11%										
	APP/DEPART	4	/	7	11	/	9	22	/	28	38	/	31	0									
	BEGIN PEAK HR		8:00 AM																				
	VOLUMES	1	1	1	4	1	1	2	5	1	4	16	4	41						0	0	0	0
	APPROACH %	33%	33%	33%	67%	17%	17%	25%	63%	13%	17%	67%	17%										
	PEAK HR FACTOR		0.750			0.500			0.400			0.857		0.641									
	APP/DEPART	3	/	7	6	/	6	8	/	10	24	/	18	0									
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	4	0	1	4	1	10	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	1	0	0	0	0	4	0	1	3	0	9	0	0	0	0	0	0	0	0	0
	4:30 PM	0	1	1	0	1	0	1	1	0	0	5	0	10	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	1	4	0	1	3	0	9	0	0	0	0	0	0	0	0	0
	5:00 PM	0	1	0	1	0	0	1	6	0	0	2	0	11	0	0	0	0	0	0	0	0	0
	5:15 PM	0	1	0	0	0	0	0	2	0	1	1	0	5	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	6	1	1	0	0	8	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	1	0	1	0	0	5	0	0	3	0	10	0	0	0	0	0	0	0	0	0
	VOLUMES	0	3	3	1	2	0	3	32	1	5	21	1	72	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	50%	50%	33%	67%	0%	8%	89%	3%	19%	78%	4%										
	APP/DEPART	6	/	7	3	/	8	36	/	36	27	/	21	0									
	BEGIN PEAK HR		4:15 PM																				
	VOLUMES	0	2	2	1	1	0	3	15	0	2	13	0	39						0	0	0	0
	APPROACH %	0%	50%	50%	50%	50%	0%	17%	83%	0%	13%	87%	0%										
	PEAK HR FACTOR		0.500			0.500			0.643			0.750		0.886									
	APP/DEPART	4	/	5	2	/	3	18	/	18	15	/	13	0									



INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
Wed, Jan 30, 19	NORTH & SOUTH:	Walker	LOCATION #:	37
	EAST & WEST:	Eucalyptus	CONTROL:	STOP S

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N / ◄ W / E ► / S ▼

☐ Add U-Turns to Left Turns

		NORTHBOUND (Walker)			SOUTHBOUND (Walker)			EASTBOUND (Eucalyptus)			WESTBOUND (Eucalyptus)			
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	1	0	7	0	3	0	0	8	2	21
	7:15 AM	0	0	0	16	0	5	1	8	0	0	8	2	40
	7:30 AM	0	0	0	35	0	8	2	4	0	0	14	3	66
	7:45 AM	0	0	0	24	0	21	0	9	0	0	14	3	71
	8:00 AM	0	0	0	19	0	1	3	7	0	0	12	4	46
	8:15 AM	0	0	0	27	0	3	2	5	0	0	10	4	51
	8:30 AM	0	0	0	23	0	4	3	11	0	0	8	4	53
	8:45 AM	0	0	0	21	0	0	0	5	0	0	8	4	38
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	166	0	49	11	52	0	0	82	26	386
	APPROACH %	0%	0%	0%	77%	0%	23%	17%	83%	0%	0%	76%	24%	
	APP/DEPART	0	/	37	215	/	0	63	/	218	108	/	131	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	0	0	105	0	33	7	25	0	0	50	14	234
	APPROACH %	0%	0%	0%	76%	0%	24%	22%	78%	0%	0%	78%	22%	
	PEAK HR FACTOR		0.000			0.767			0.800			0.941		0.824
	APP/DEPART	0	/	21	138	/	0	32	/	130	64	/	83	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	4	0	2	2	8	0	0	3	3	22
	4:15 PM	0	0	0	5	0	0	10	16	0	0	6	4	41
	4:30 PM	0	0	0	4	0	1	8	8	0	0	6	7	34
	4:45 PM	0	0	0	1	0	2	11	11	0	0	7	2	34
	5:00 PM	0	0	0	3	0	0	9	17	0	0	5	6	40
	5:15 PM	0	0	0	2	0	3	8	13	0	0	3	3	32
	5:30 PM	0	0	0	3	0	2	5	8	0	0	5	4	27
	5:45 PM	0	0	0	2	0	0	3	9	0	0	2	1	17
	VOLUMES	0	0	0	24	0	10	56	90	0	0	37	30	248
	APPROACH %	0%	0%	0%	69%	0%	29%	38%	62%	0%	0%	55%	45%	
	APP/DEPART	0	/	87	35	/	0	146	/	114	67	/	47	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	0	0	0	13	0	3	38	52	0	0	24	19	150
	APPROACH %	0%	0%	0%	76%	0%	18%	42%	58%	0%	0%	56%	44%	
	PEAK HR FACTOR		0.000			0.850			0.865			0.827		0.915
	APP/DEPART	0	/	58	17	/	0	90	/	65	43	/	27	0

U-TURNS					
NB	SB	EB	WB	TTL	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	1	0	0	1	

RTOR			
NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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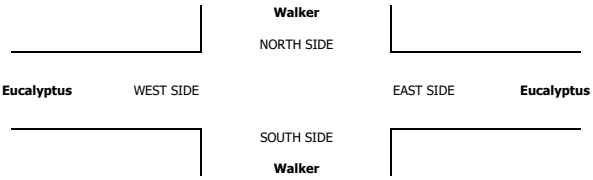
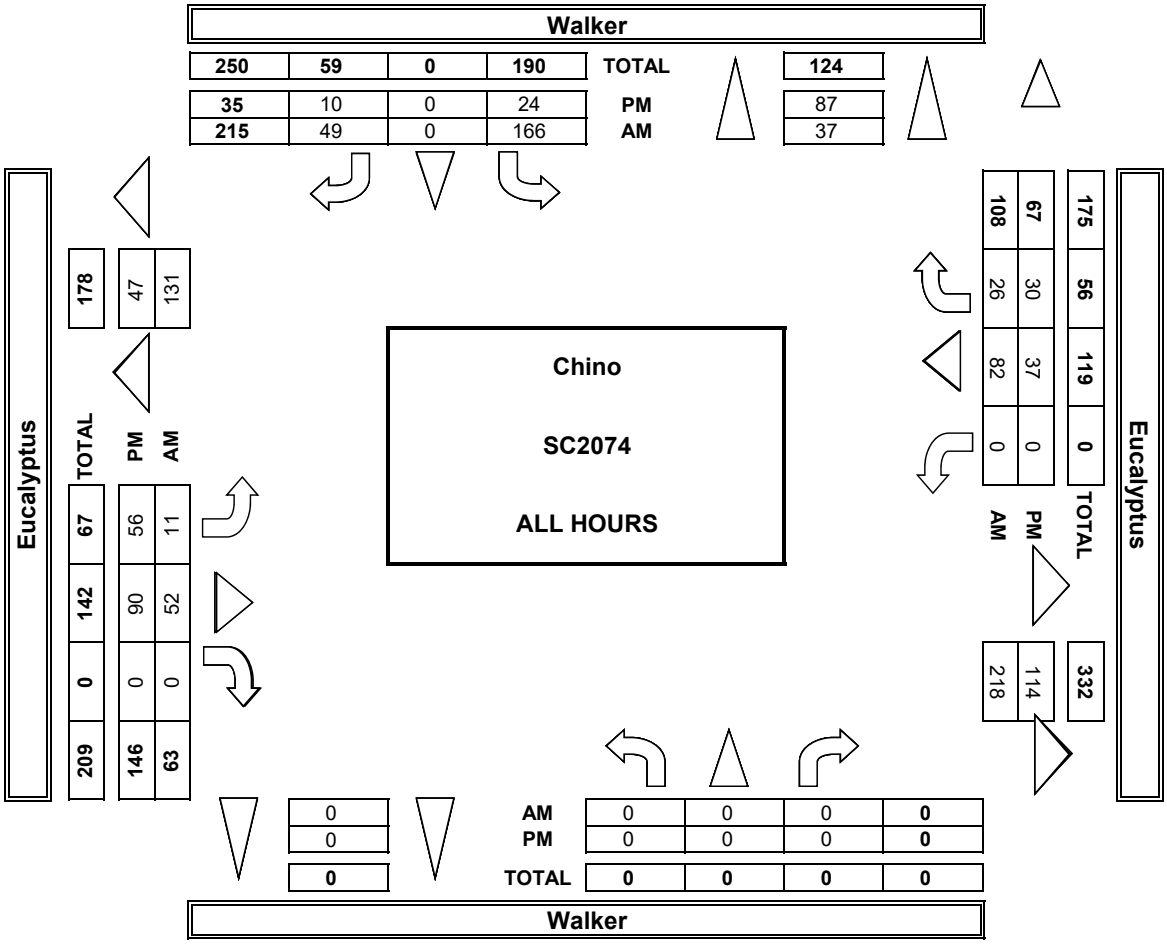
0	0	0	0

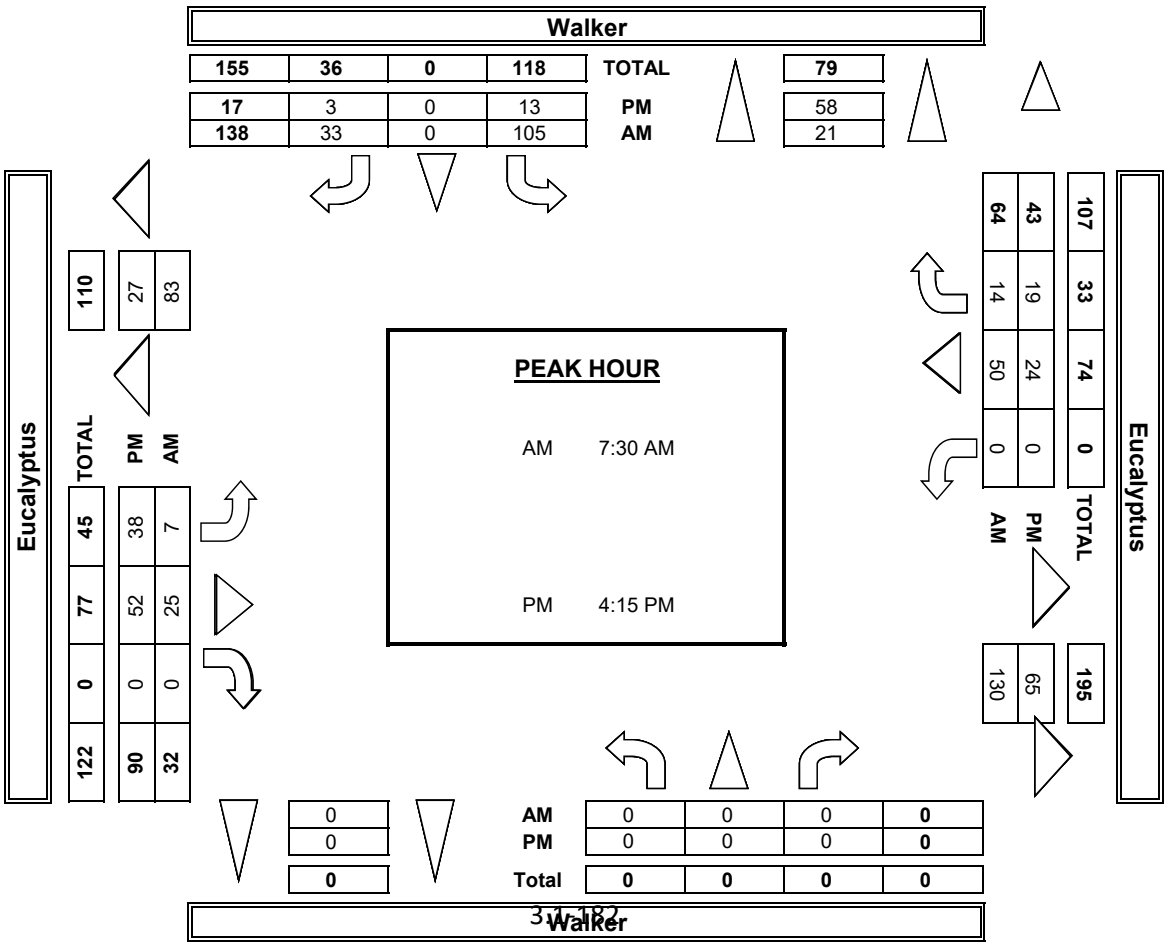


		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Walker	LOCATION #:	37
WEDNESDAY	EAST & WEST:	Eucalyptus	CONTROL:	STOP S

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Walker)			SOUTHBOUND (Walker)			EASTBOUND (Eucalyptus)			WESTBOUND (Eucalyptus)			
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
	7:15 AM	0	0	0	3	0	0	0	2	0	0	0	0	5
	7:30 AM	0	0	0	4	0	0	1	1	0	0	1	1	8
	7:45 AM	0	0	0	3	0	2	0	1	0	0	1	2	9
	8:00 AM	0	0	0	2	0	0	1	2	0	0	0	1	6
	8:15 AM	0	0	0	3	0	2	0	0	0	0	1	1	7
	8:30 AM	0	0	0	2	0	1	0	2	0	0	2	1	8
	8:45 AM	0	0	0	1	0	0	0	1	0	0	0	1	3
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	18	0	5	2	9	0	0	5	8	47
	APPROACH %	0%	0%	0%	78%	0%	22%	18%	82%	0%	0%	38%	62%	
	APP/DEPART	0	/	10	23	/	0	11	/	27	13	/	10	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	0	0	10	0	5	1	5	0	0	4	5	30
	APPROACH %	0%	0%	0%	67%	0%	33%	17%	83%	0%	0%	44%	56%	
	PEAK HR FACTOR		0.000			0.750			0.500			0.750		0.833
	APP/DEPART	0	/	6	15	/	0	6	/	15	9	/	9	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	3	0	0	0	0	3
	4:30 PM	0	0	0	1	0	0	0	0	0	0	1	0	2
	4:45 PM	0	0	0	0	0	0	3	0	0	0	1	0	4
	5:00 PM	0	0	0	0	0	0	0	1	0	0	0	1	2
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
	5:45 PM	0	0	0	1	0	0	0	0	0	0	1	0	2
	VOLUMES	0	0	0	2	0	0	3	4	0	0	3	2	14
	APPROACH %	0%	0%	0%	100%	0%	0%	43%	57%	0%	0%	60%	40%	
	APP/DEPART	0	/	5	2	/	0	7	/	6	5	/	3	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	0	0	0	1	0	0	3	4	0	0	2	1	11
	APPROACH %	0%	0%	0%	100%	0%	0%	43%	57%	0%	0%	67%	33%	
	PEAK HR FACTOR		0.000			0.250			0.583			0.750		0.688
	APP/DEPART	0	/	4	1	/	0	7	/	5	3	/	2	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
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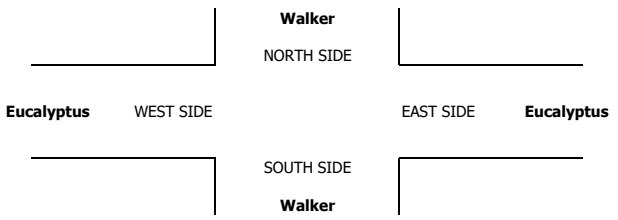
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Walker	LOCATION #:	37
WEDNESDAY	EAST & WEST:	Eucalyptus	CONTROL:	STOP S

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND Walker			SOUTHBOUND Walker			EASTBOUND Eucalyptus			WESTBOUND Eucalyptus			
LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 0	TOTAL
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:15 AM	0	0	0	1	0	0	0	0	0	0	3	1	5
7:30 AM	0	0	0	4	0	0	0	0	0	0	5	1	10
7:45 AM	0	0	0	1	0	0	0	5	0	0	1	0	7
8:00 AM	0	0	0	1	0	0	0	3	0	0	6	1	11
8:15 AM	0	0	0	0	0	0	0	2	0	0	2	1	5
8:30 AM	0	0	0	0	0	1	0	6	0	0	1	2	10
8:45 AM	0	0	0	0	0	0	0	3	0	0	6	0	9
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	7	0	1	0	20	0	0	24	6	58
APPROACH %	0%	0%	0%	88%	0%	13%	0%	100%	0%	0%	80%	20%	
APP/DEPART	0	/	6	8	/	0	20	/	27	30	/	25	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	0	0	0	1	0	1	0	14	0	0	15	4	35
APPROACH %	0%	0%	0%	50%	0%	50%	0%	100%	0%	0%	79%	21%	
PEAK HR FACTOR		0.000			0.500			0.583			0.679		0.795
APP/DEPART	0	/	4	2	/	0	14	/	15	19	/	16	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	1	0	0	0	0	0	0	1	0	2
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	2	3
4:30 PM	0	0	0	1	0	0	0	1	0	0	0	0	2
4:45 PM	0	0	0	1	0	0	0	0	0	0	0	1	2
5:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	1	0	1	0	0	0	0	1	0	3
5:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	6	0	1	0	2	0	0	2	3	14
APPROACH %	0%	0%	0%	86%	0%	14%	0%	100%	0%	0%	40%	60%	
APP/DEPART	0	/	3	7	/	0	2	/	8	5	/	3	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	0	0	3	0	0	0	2	0	0	1	3	9
APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	25%	75%	
PEAK HR FACTOR		0.000			0.750			0.500			0.500		0.750
APP/DEPART	0	/	3	3	/	0	2	/	5	4	/	1	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Walker

NORTH SIDE

Eucalyptus WEST SIDE EAST SIDE **Eucalyptus**

SOUTH SIDE

Walker

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Walker	LOCATION #:	37
WEDNESDAY	EAST & WEST:	Eucalyptus	CONTROL:	STOP S

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND Walker			SOUTHBOUND Walker			EASTBOUND Eucalyptus			WESTBOUND Eucalyptus			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	X	X	X	0	X	0	0	1	X	X	1	0	
AM	7:00 AM	0	0	0	0	0	1	0	1	0	0	1	0	3
AM	7:15 AM	0	0	0	0	0	0	0	2	0	0	0	0	2
AM	7:30 AM	0	0	0	3	0	0	0	0	0	0	1	0	4
AM	7:45 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
AM	8:15 AM	0	0	0	1	0	0	1	1	0	0	2	0	5
AM	8:30 AM	0	0	0	1	0	0	0	1	0	0	2	0	4
AM	8:45 AM	0	0	0	3	0	0	0	0	0	0	0	1	4
AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	VOLUMES	0	0	0	9	0	1	1	5	0	0	7	1	24
AM	APPROACH %	0%	0%	0%	90%	0%	10%	17%	83%	0%	0%	88%	13%	
AM	APP/DEPART	0	/	2	10	/	0	6	/	14	8	/	8	0
AM	BEGIN PEAK HR		8:00 AM											
AM	VOLUMES	0	0	0	5	0	0	1	2	0	0	5	1	14
AM	APPROACH %	0%	0%	0%	100%	0%	0%	33%	67%	0%	0%	83%	17%	
AM	PEAK HR FACTOR		0.000			0.417			0.375			0.750		0.700
AM	APP/DEPART	0	/	2	5	/	0	3	/	7	6	/	5	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	1	0	0	0	1	0	0	1	0	3
PM	4:15 PM	0	0	0	1	0	0	0	2	0	0	1	1	5
PM	4:30 PM	0	0	0	0	0	0	0	1	0	0	0	2	3
PM	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:00 PM	0	0	0	1	0	0	0	0	0	0	2	1	4
PM	5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
PM	5:30 PM	0	0	0	1	0	0	0	1	0	0	0	0	2
PM	5:45 PM	0	0	0	0	0	0	0	3	0	0	0	0	3
PM	VOLUMES	0	0	0	4	0	0	0	9	0	0	4	4	21
PM	APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	50%	50%	
PM	APP/DEPART	0	/	4	4	/	0	9	/	13	8	/	4	0
PM	BEGIN PEAK HR		4:15 PM											
PM	VOLUMES	0	0	0	2	0	0	0	3	0	0	3	4	12
PM	APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	43%	57%	
PM	PEAK HR FACTOR		0.000			0.500			0.375			0.583		0.600
PM	APP/DEPART	0	/	4	2	/	0	3	/	5	7	/	3	0

		U-TURNS					RTOR			
		NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
	LANES:						X	X	X	X
AM	7:00 AM	0	0	0	0	0	0	0	0	0
AM	7:15 AM	0	0	0	0	0	0	0	0	0
AM	7:30 AM	0	0	0	0	0	0	0	0	0
AM	7:45 AM	0	0	0	0	0	0	0	0	0
AM	8:00 AM	0	0	0	0	0	0	0	0	0
AM	8:15 AM	0	0	0	0	0	0	0	0	0
AM	8:30 AM	0	0	0	0	0	0	0	0	0
AM	8:45 AM	0	0	0	0	0	0	0	0	0
AM	9:00 AM	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0
AM	VOLUMES	0	0	0	0	0	0	0	0	0
AM	PEAK HR VOLUMES						0	0	0	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0	0	0	0	0
PM	4:30 PM	0	0	0	0	0	0	0	0	0
PM	4:45 PM	0	0	0	0	0	0	0	0	0
PM	5:00 PM	0	0	0	0	0	0	0	0	0
PM	5:15 PM	0	0	0	0	0	0	0	0	0
PM	5:30 PM	0	0	0	0	0	0	0	0	0
PM	5:45 PM	0	0	0	0	0	0	0	0	0
PM	VOLUMES	0	0	0	0	0	0	0	0	0
PM	PEAK HR VOLUMES						0	0	0	0

Walker

NORTH SIDE

Eucalyptus WEST SIDE

EAST SIDE **Eucalyptus**

SOUTH SIDE

Walker

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Jan 30, 19	LOCATION:	Chino		PROJECT #:	SC2074
	NORTH & SOUTH:	Flight		LOCATION #:	38
	EAST & WEST:	Merrill		CONTROL:	STOP N

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

☐ Add U-Turns to Left Turns

	NORTHBOUND Flight			SOUTHBOUND Flight			EASTBOUND Merrill			WESTBOUND Merrill			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0.5	X	0.5	X	X	X	X	1	1	1	1	X	
AM 7:00 AM	34	0	26	0	0	0	0	50	12	21	95	0	238
7:15 AM	45	0	20	0	0	0	0	24	12	24	124	0	249
7:30 AM	55	0	21	0	0	0	0	37	10	15	110	0	248
7:45 AM	35	0	12	0	0	0	0	49	21	30	110	0	257
8:00 AM	39	0	23	0	0	0	0	48	21	23	104	0	258
8:15 AM	24	0	27	0	0	0	0	53	20	18	123	0	265
8:30 AM	30	0	18	0	0	0	0	39	17	20	118	0	242
8:45 AM	26	0	14	0	0	0	0	39	17	18	101	0	215
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	288	0	161	0	0	0	0	339	130	169	885	0	1,972
APPROACH %	64%	0%	36%	0%	0%	0%	0%	72%	28%	16%	84%	0%	
APP/DEPART	449	/	0	0	/	299	469	/	501	1,054	/	1,172	0
BEGIN PEAK HR		7:30 AM											
VOLUMES	153	0	83	0	0	0	0	187	72	86	447	0	1,028
APPROACH %	65%	0%	35%	0%	0%	0%	0%	72%	28%	16%	84%	0%	
PEAK HR FACTOR		0.776			0.000			0.887			0.945		0.970
APP/DEPART	236	/	0	0	/	157	259	/	271	533	/	600	0
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	27	0	18	0	0	0	0	98	17	13	43	0	216
4:15 PM	13	0	22	0	0	0	0	87	21	6	36	0	185
4:30 PM	33	0	33	0	0	0	0	92	25	19	68	0	270
4:45 PM	18	0	20	0	0	0	0	105	33	16	61	0	253
5:00 PM	23	0	32	0	0	0	0	134	15	21	75	0	300
5:15 PM	19	0	24	0	0	0	0	119	26	22	63	0	273
5:30 PM	22	0	20	0	0	0	0	103	35	31	58	0	269
5:45 PM	14	0	26	0	0	0	0	116	29	24	43	0	252
VOLUMES	169	0	195	0	0	0	0	854	201	152	447	0	2,018
APPROACH %	46%	0%	54%	0%	0%	0%	0%	81%	19%	25%	75%	0%	
APP/DEPART	364	/	0	0	/	353	1,055	/	1,049	599	/	616	0
BEGIN PEAK HR		4:30 PM											
VOLUMES	93	0	109	0	0	0	0	450	99	78	267	0	1,096
APPROACH %	46%	0%	54%	0%	0%	0%	0%	82%	18%	23%	77%	0%	
PEAK HR FACTOR		0.765			0.000			0.921			0.898		0.913
APP/DEPART	202	/	0	0	/	177	549	/	559	345	/	360	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES	0	0	0	0		X	X	X	X
7:00 AM	1	0	0	0	1	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	1	1	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	1	0	0	1	2	0	0	0	0
AM PEAK HR						0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PM PEAK HR						0	0	0	0

Flight

NORTH SIDE

Merrill WEST SIDE

EAST SIDE **Merrill**

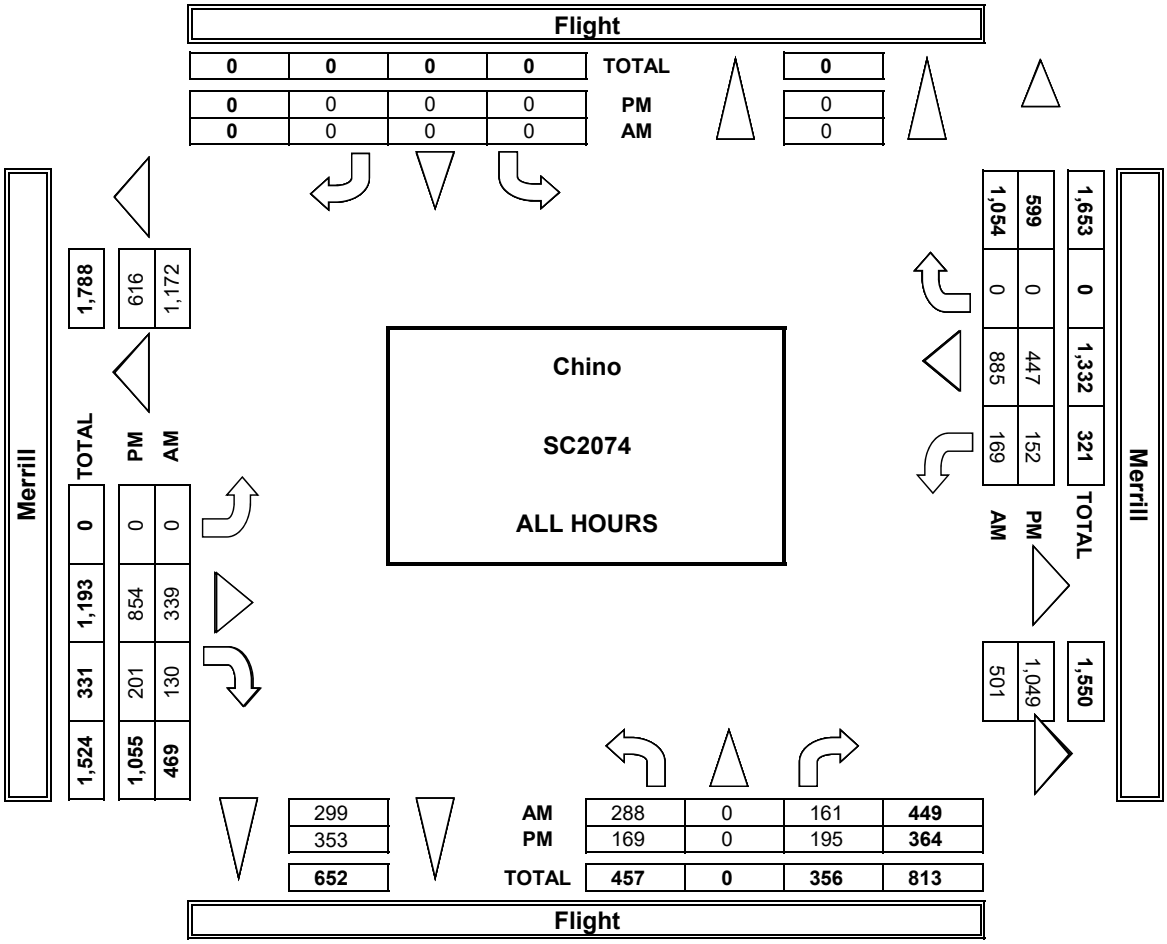
SOUTH SIDE

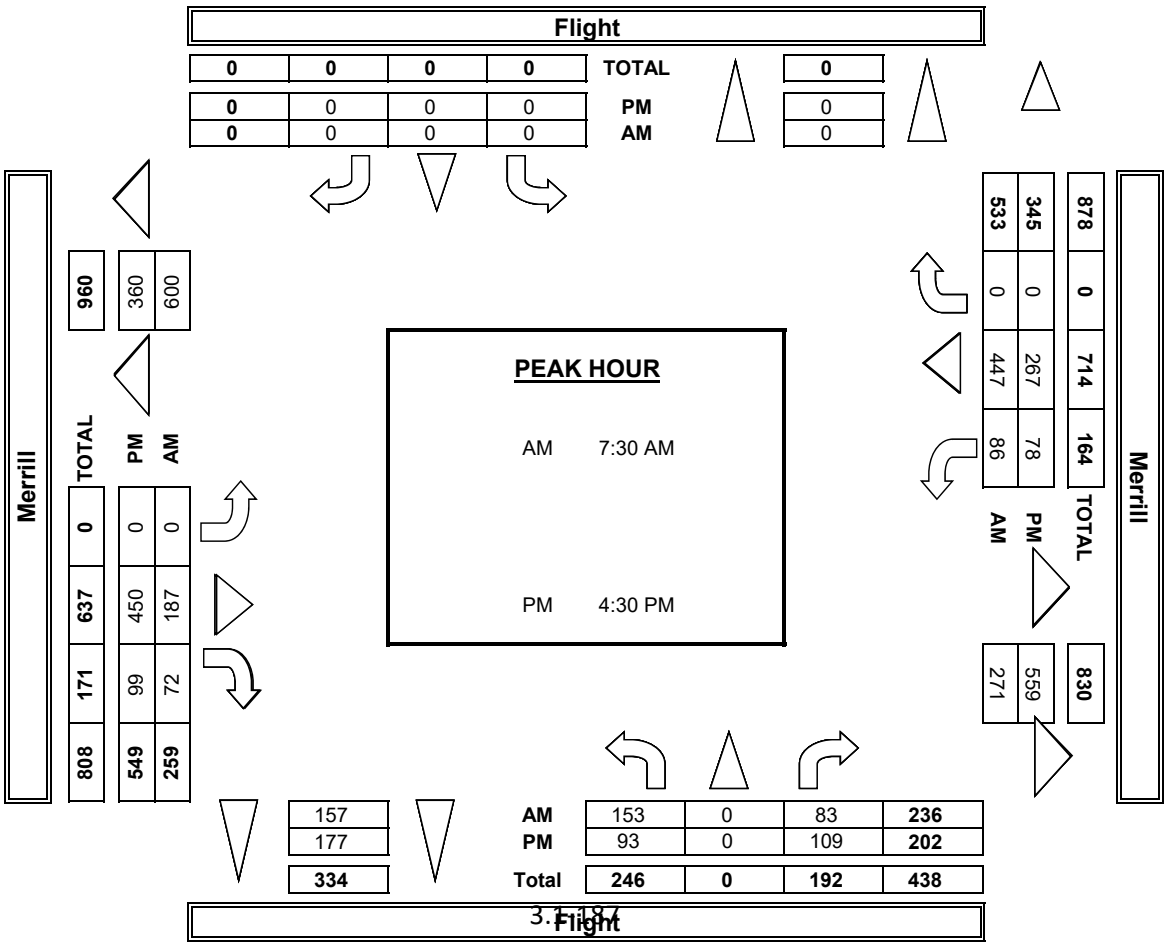
Flight

	ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Flight	LOCATION #:	38
WEDNESDAY	EAST & WEST:	Merrill	CONTROL:	STOP N

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:	AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / E ► / S ▼

		NORTHBOUND (Flight)			SOUTHBOUND (Flight)			EASTBOUND (Merrill)			WESTBOUND (Merrill)			
	LANES:	NL 0.5	NT X	NR 0.5	SL X	ST X	SR X	EL X	ET 1	ER 1	WL 1	WT 1	WR X	TOTAL
AM	7:00 AM	2	0	4	0	0	0	0	6	1	2	4	0	19
	7:15 AM	1	0	3	0	0	0	0	1	2	1	2	0	10
	7:30 AM	0	0	1	0	0	0	0	7	2	1	2	0	13
	7:45 AM	3	0	2	0	0	0	0	4	1	0	5	0	15
	8:00 AM	0	0	0	0	0	0	0	5	2	3	1	0	11
	8:15 AM	1	0	3	0	0	0	0	5	1	3	7	0	20
	8:30 AM	1	0	2	0	0	0	0	4	3	2	4	0	16
	8:45 AM	2	0	1	0	0	0	0	2	0	4	3	0	12
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	10	0	16	0	0	0	0	34	12	16	28	0	116
	APPROACH %	38%	0%	62%	0%	0%	0%	0%	74%	26%	36%	64%	0%	
	APP/DEPART	26	/	0	0	/	28	46	/	50	44	/	38	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	5	0	7	0	0	0	0	18	7	8	17	0	62
	APPROACH %	42%	0%	58%	0%	0%	0%	0%	72%	28%	32%	68%	0%	
	PEAK HR FACTOR		0.600			0.000			0.893			0.625		0.775
	APP/DEPART	12	/	0	0	/	15	25	/	25	25	/	22	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	0	1	0	0	0	0	2	0	0	1	0	5
	4:15 PM	1	0	0	0	0	0	0	5	1	2	1	0	10
	4:30 PM	4	0	0	0	0	0	0	4	1	0	2	0	11
	4:45 PM	1	0	0	0	0	0	0	7	1	1	4	0	14
	5:00 PM	2	0	4	0	0	0	0	2	1	0	1	0	10
	5:15 PM	2	0	2	0	0	0	0	4	2	0	2	0	12
	5:30 PM	1	0	2	0	0	0	0	4	0	1	1	0	9
	5:45 PM	0	0	3	0	0	0	0	2	1	0	2	0	8
	VOLUMES	12	0	12	0	0	0	0	30	7	4	14	0	79
	APPROACH %	50%	0%	50%	0%	0%	0%	0%	81%	19%	22%	78%	0%	
	APP/DEPART	24	/	0	0	/	11	37	/	42	18	/	26	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	9	0	6	0	0	0	0	17	5	1	9	0	47
	APPROACH %	60%	0%	40%	0%	0%	0%	0%	77%	23%	10%	90%	0%	
	PEAK HR FACTOR		0.625			0.000			0.688			0.500		0.839
	APP/DEPART	15	/	0	0	/	6	22	/	23	10	/	18	0

U-TURNS					
NB	SB	EB	WB	TTL	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
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0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	

RTOR			
NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Flight

NORTH SIDE

Merrill WEST SIDE EAST SIDE **Merrill**

SOUTH SIDE

Flight

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Flight	LOCATION #:	38
WEDNESDAY	EAST & WEST:	Merrill	CONTROL:	STOP N

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Flight)			SOUTHBOUND (Flight)			EASTBOUND (Merrill)			WESTBOUND (Merrill)			
	LANES:	NL 0.5	NT X	NR 0.5	SL X	ST X	SR X	EL X	ET 1	ER 1	WL 1	WT 1	WR X	TOTAL
AM	7:00 AM	1	0	0	0	0	0	0	2	0	0	3	0	6
	7:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
	7:30 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
	7:45 AM	0	0	0	0	0	0	0	2	0	0	1	0	3
	8:00 AM	0	0	0	0	0	0	0	0	1	0	1	0	2
	8:15 AM	1	0	0	0	0	0	0	3	0	1	2	0	7
	8:30 AM	1	0	0	0	0	0	0	4	0	0	2	0	7
	8:45 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	3	0	0	0	0	0	0	13	1	1	13	0	31
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	93%	7%	7%	93%	0%	
	APP/DEPART	3	/	0	0	/	2	14	/	13	14	/	16	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	2	0	0	0	0	0	0	9	1	1	6	0	19
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	90%	10%	14%	86%	0%	
	PEAK HR FACTOR		0.500			0.000			0.625			0.583		0.679
	APP/DEPART	2	/	0	0	/	2	10	/	9	7	/	8	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	0	1	0	0	0	0	2	0	0	2	0	6
	4:15 PM	0	0	1	0	0	0	0	1	0	1	0	0	3
	4:30 PM	0	0	0	0	0	0	0	2	1	1	0	0	4
	4:45 PM	0	0	1	0	0	0	0	1	1	0	1	0	4
	5:00 PM	0	0	2	0	0	0	0	2	1	0	2	0	7
	5:15 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
	5:30 PM	2	0	0	0	0	0	0	1	0	0	3	0	6
	5:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
	VOLUMES	3	0	5	0	0	0	0	10	4	2	9	0	33
	APPROACH %	38%	0%	63%	0%	0%	0%	0%	71%	29%	18%	82%	0%	
	APP/DEPART	8	/	0	0	/	6	14	/	15	11	/	12	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	2	0	3	0	0	0	0	5	2	0	7	0	19
	APPROACH %	40%	0%	60%	0%	0%	0%	0%	71%	29%	0%	100%	0%	
	PEAK HR FACTOR		0.625			0.000			0.583			0.583		0.679
	APP/DEPART	5	/	0	0	/	2	7	/	8	7	/	9	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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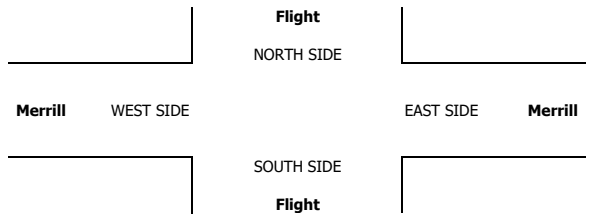
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Flight	LOCATION #:	38
WEDNESDAY	EAST & WEST:	Merrill	CONTROL:	STOP N

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

	NORTHBOUND (Flight)			SOUTHBOUND (Flight)			EASTBOUND (Merrill)			WESTBOUND (Merrill)			
LANES:	NL 0.5	NT X	NR 0.5	SL X	ST X	SR X	EL X	ET 1	ER 1	WL 1	WT 1	WR X	TOTAL
7:00 AM	0	0	1	0	0	0	0	5	2	3	6	0	17
7:15 AM	0	0	3	0	0	0	0	1	2	4	8	0	18
7:30 AM	1	0	3	0	0	0	0	4	0	0	2	0	10
7:45 AM	1	0	0	0	0	0	0	2	4	1	5	0	13
8:00 AM	2	0	0	0	0	0	0	6	3	1	5	0	17
8:15 AM	0	0	0	0	0	0	0	6	2	1	6	0	15
8:30 AM	1	0	1	0	0	0	0	6	2	2	8	0	20
8:45 AM	2	0	3	0	0	0	0	3	1	1	5	0	15
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	7	0	11	0	0	0	0	33	16	13	45	0	125
APPROACH %	39%	0%	61%	0%	0%	0%	0%	67%	33%	22%	78%	0%	
APP/DEPART	18	/	0	0	/	29	49	/	44	58	/	52	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	5	0	4	0	0	0	0	21	8	5	24	0	67
APPROACH %	56%	0%	44%	0%	0%	0%	0%	72%	28%	17%	83%	0%	
PEAK HR FACTOR		0.450			0.000			0.806			0.725		0.838
APP/DEPART	9	/	0	0	/	13	29	/	25	29	/	29	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	3	0	1	0	0	0	0	7	0	0	2	0	13
4:15 PM	0	0	1	0	0	0	0	2	3	1	3	0	10
4:30 PM	0	0	0	0	0	0	0	3	1	0	4	0	8
4:45 PM	0	0	0	0	0	0	0	8	0	2	3	0	13
5:00 PM	0	0	0	0	0	0	0	5	0	0	4	0	9
5:15 PM	1	0	0	0	0	0	0	8	1	0	8	0	18
5:30 PM	1	0	0	0	0	0	0	4	0	1	0	0	6
5:45 PM	0	0	2	0	0	0	0	1	1	0	1	0	5
VOLUMES	5	0	4	0	0	0	0	38	6	4	25	0	82
APPROACH %	56%	0%	44%	0%	0%	0%	0%	86%	14%	14%	86%	0%	
APP/DEPART	9	/	0	0	/	10	44	/	42	29	/	30	0
BEGIN PEAK HR		4:30 PM											
VOLUMES	1	0	0	0	0	0	0	24	2	2	19	0	48
APPROACH %	100%	0%	0%	0%	0%	0%	0%	92%	8%	10%	90%	0%	
PEAK HR FACTOR		0.250			0.000			0.722			0.656		0.667
APP/DEPART	1	/	0	0	/	4	26	/	24	21	/	20	0

U-TURNS

AM	NB	SB	EB	WB	TTL
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
PM					
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0

RTOR

AM	NRR X	SRR X	ERR X	WRR X
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
PM				
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
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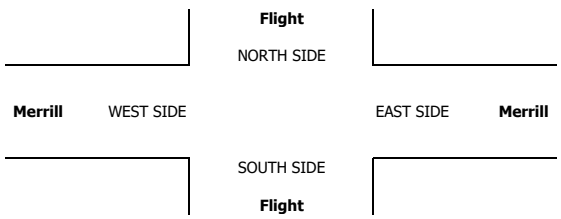
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
Wed, Jan 30, 19	NORTH & SOUTH:	Van Vliet	LOCATION #:	40
	EAST & WEST:	Merrill	CONTROL:	STOP N

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Van Vliet)			SOUTHBOUND (Van Vliet)			EASTBOUND (Merrill)			WESTBOUND (Merrill)			
	LANES:	NL 0.5	NT X	NR 0.5	SL X	ST X	SR X	EL X	ET 1	ER 1	WL 1	WT 1	WR X	TOTAL
AM	7:00 AM	1	0	4	0	0	0	0	58	8	0	115	0	186
	7:15 AM	1	0	3	0	0	0	0	42	2	2	141	0	191
	7:30 AM	1	0	3	0	0	0	0	53	2	1	132	0	192
	7:45 AM	2	0	4	0	0	0	0	64	4	5	139	0	218
	8:00 AM	2	0	4	0	0	0	0	61	6	3	123	0	199
	8:15 AM	1	0	4	0	0	0	0	76	4	2	145	0	232
	8:30 AM	6	0	11	0	0	0	0	48	3	1	122	0	191
	8:45 AM	0	0	3	0	0	0	0	54	2	1	119	0	179
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	14	0	36	0	0	0	0	456	31	15	1,036	0	1,588
	APPROACH %	28%	0%	72%	0%	0%	0%	0%	94%	6%	1%	99%	0%	
	APP/DEPART	50	/	0	0	/	45	487	/	493	1,051	/	1,050	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	6	0	15	0	0	0	0	254	16	11	539	0	841
	APPROACH %	29%	0%	71%	0%	0%	0%	0%	94%	6%	2%	98%	0%	
	PEAK HR FACTOR		0.875			0.000			0.844			0.935		0.906
	APP/DEPART	21	/	0	0	/	26	270	/	270	550	/	545	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	4	0	5	0	0	0	0	116	0	2	57	0	184
	4:15 PM	1	0	4	0	0	0	0	125	2	0	42	0	174
	4:30 PM	2	0	2	0	0	0	0	127	1	0	92	0	224
	4:45 PM	2	0	1	0	0	0	0	123	1	2	71	0	200
	5:00 PM	1	0	2	0	0	0	0	167	1	2	90	0	263
	5:15 PM	2	0	3	0	0	0	0	138	1	2	84	0	230
	5:30 PM	2	0	2	0	0	0	0	135	0	1	88	0	228
	5:45 PM	1	0	3	0	0	0	0	141	1	0	61	0	207
	VOLUMES	15	0	22	0	0	0	0	1,072	7	9	585	0	1,710
	APPROACH %	41%	0%	59%	0%	0%	0%	0%	99%	1%	2%	98%	0%	
	APP/DEPART	37	/	0	0	/	16	1,079	/	1,094	594	/	600	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	6	0	10	0	0	0	0	581	3	5	323	0	928
	APPROACH %	38%	0%	63%	0%	0%	0%	0%	99%	1%	2%	98%	0%	
	PEAK HR FACTOR		0.800			0.000			0.869			0.891		0.882
	APP/DEPART	16	/	0	0	/	8	584	/	591	328	/	329	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
X	X	X	X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Van Vliet

NORTH SIDE

Merrill WEST SIDE EAST SIDE **Merrill**

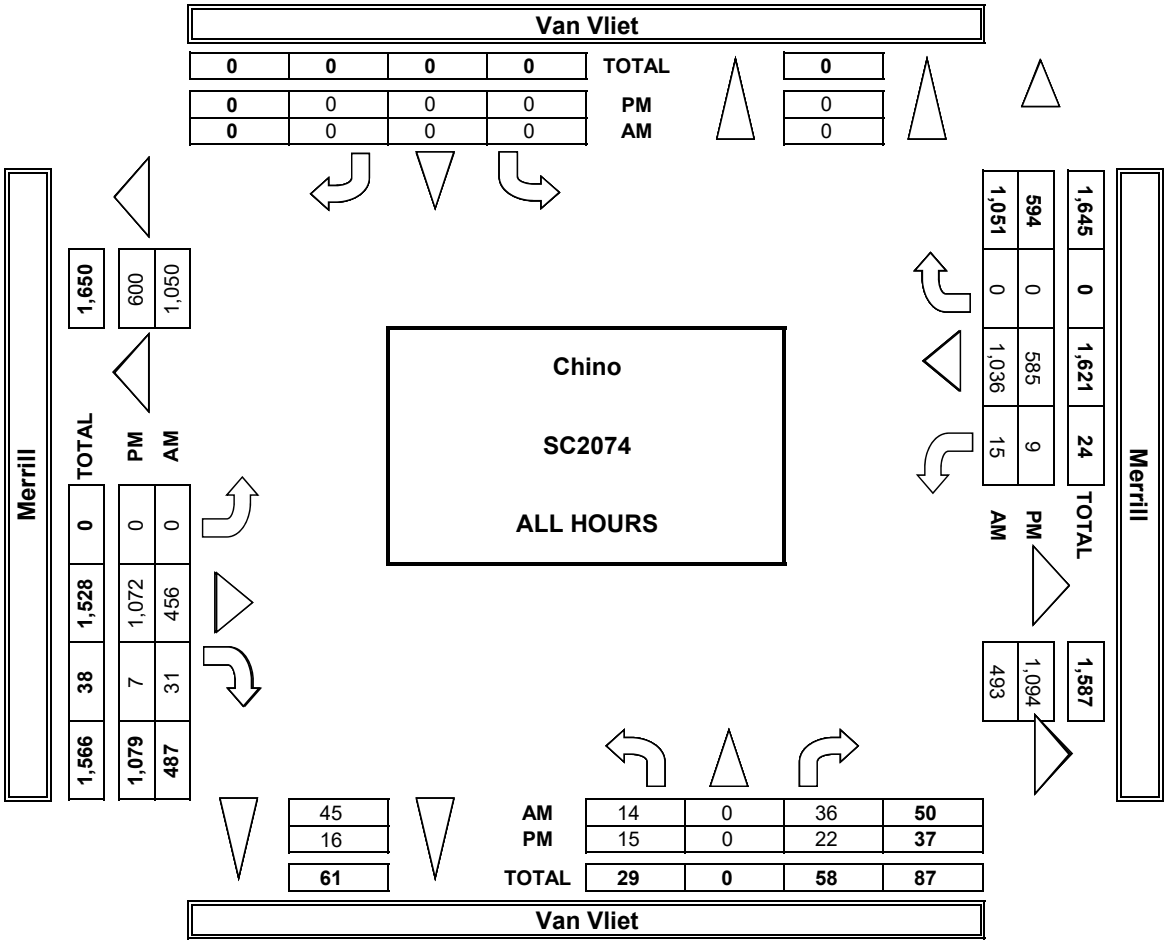
SOUTH SIDE

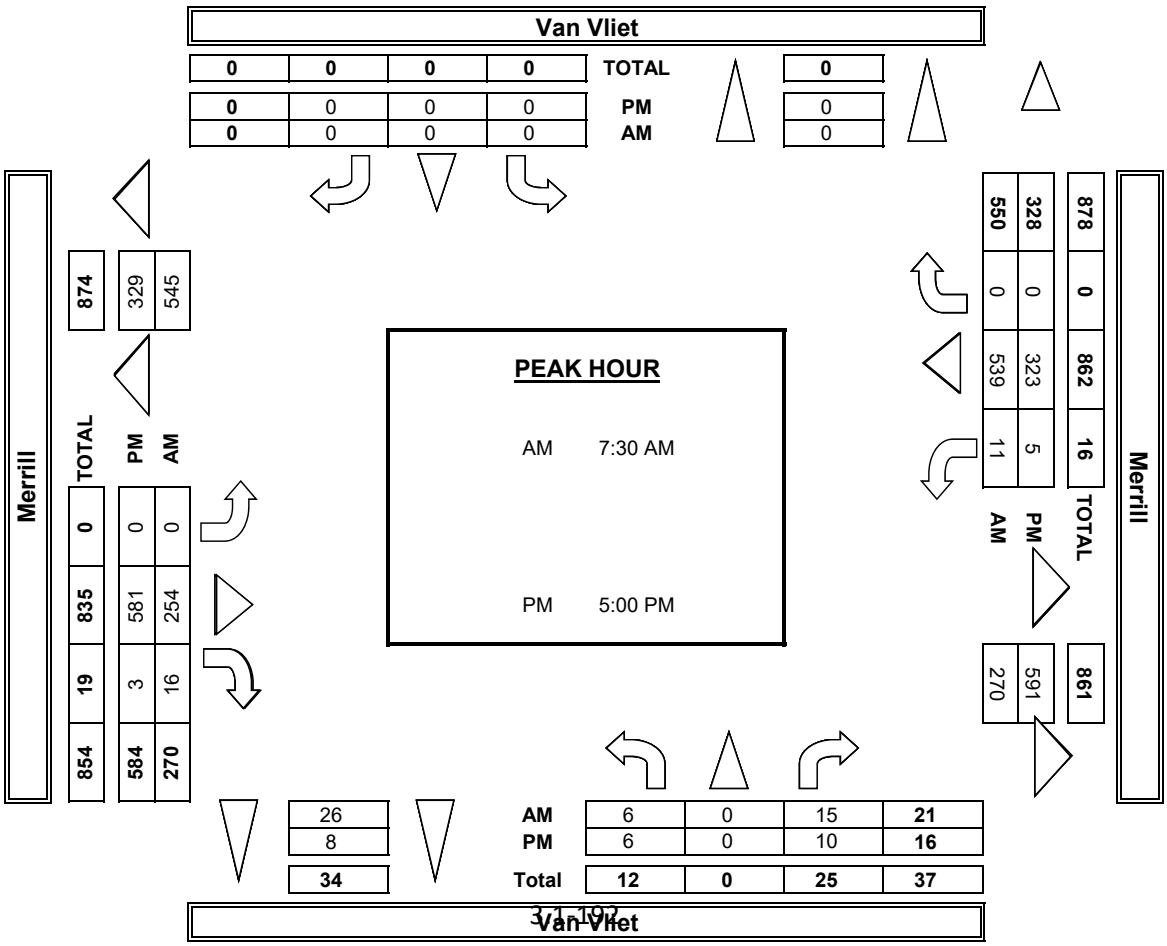
Van Vliet

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	2	0	2	0	0	0	0	0	0	0	2	0	2
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	2	0	2	0	0	0	0	0	0	0	2	0	2
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Van Vliet	LOCATION #:	40
WEDNESDAY	EAST & WEST:	Merrill	CONTROL:	STOP N

CLASS 2:	NOTES:		
2-AXLE		AM	▲ N
WORK		PM	◄ W E ►
VEHICLES/		MD	
TRUCKS		OTHER	S ▼
		OTHER	

		NORTHBOUND Van Vliet			SOUTHBOUND Van Vliet			EASTBOUND Merrill			WESTBOUND Merrill			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	0.5	X	0.5	X	X	X	X	1	1	1	1	X	
AM	7:00 AM	0	0	0	0	0	0	0	6	3	0	6	0	15
	7:15 AM	0	0	0	0	0	0	0	3	0	2	5	0	10
	7:30 AM	0	0	1	0	0	0	0	7	1	1	4	0	14
	7:45 AM	1	0	1	0	0	0	0	2	2	1	3	0	10
	8:00 AM	1	0	0	0	0	0	0	6	0	1	5	0	13
	8:15 AM	1	0	0	0	0	0	0	5	0	0	7	0	13
	8:30 AM	0	0	4	0	0	0	0	4	0	0	5	0	13
	8:45 AM	0	0	0	0	0	0	0	2	0	0	3	0	5
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	3	0	6	0	0	0	0	35	6	5	38	0	93
	APPROACH %	33%	0%	67%	0%	0%	0%	0%	85%	15%	12%	88%	0%	
	APP/DEPART	9	/	0	0	/	11	41	/	41	43	/	41	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	3	0	2	0	0	0	0	20	3	3	19	0	50
	APPROACH %	60%	0%	40%	0%	0%	0%	0%	87%	13%	14%	86%	0%	
	PEAK HR FACTOR		0.625			0.000			0.719			0.786		0.893
	APP/DEPART	5	/	0	0	/	6	23	/	22	22	/	22	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	5	0	0	4	0	9
	4:15 PM	0	0	0	0	0	0	0	4	1	0	2	0	7
	4:30 PM	0	0	0	0	0	0	0	4	0	0	3	0	7
	4:45 PM	1	0	0	0	0	0	0	6	1	0	2	0	10
	5:00 PM	0	0	0	0	0	0	0	5	0	0	2	0	7
	5:15 PM	0	0	1	0	0	0	0	4	0	0	3	0	8
	5:30 PM	1	0	0	0	0	0	0	7	0	0	1	0	9
	5:45 PM	0	0	1	0	0	0	0	2	0	0	1	0	4
	VOLUMES	2	0	2	0	0	0	0	37	2	0	18	0	61
	APPROACH %	50%	0%	50%	0%	0%	0%	0%	95%	5%	0%	100%	0%	
	APP/DEPART	4	/	0	0	/	2	39	/	39	18	/	20	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	2	0	1	0	0	0	0	22	1	0	8	0	34
	APPROACH %	67%	0%	33%	0%	0%	0%	0%	96%	4%	0%	100%	0%	
	PEAK HR FACTOR		0.750			0.000			0.821			0.667		0.850
	APP/DEPART	3	/	0	0	/	1	23	/	23	8	/	10	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:						X	X	X	X
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PEAK HR VOLUMES						0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PEAK HR VOLUMES						0	0	0	0

Van Vliet

NORTH SIDE

Merrill WEST SIDE

EAST SIDE **Merrill**

SOUTH SIDE

Van Vliet

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Van Vliet	LOCATION #:	40
WEDNESDAY	EAST & WEST:	Merrill	CONTROL:	STOP N

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

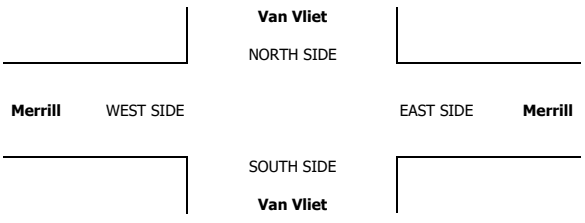
	NORTHBOUND Van Vliet			SOUTHBOUND Van Vliet			EASTBOUND Merrill			WESTBOUND Merrill			
LANES:	NL 0.5	NT X	NR 0.5	SL X	ST X	SR X	EL X	ET 1	ER 1	WL 1	WT 1	WR X	TOTAL
AM													
7:00 AM	0	0	0	0	0	0	0	1	0	0	2	0	3
7:15 AM	0	0	0	0	0	0	0	2	0	0	0	0	2
7:30 AM	0	0	0	0	0	0	0	1	0	0	2	0	3
7:45 AM	0	0	1	0	0	0	0	3	0	0	1	0	5
8:00 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
8:15 AM	0	0	1	0	0	0	0	4	0	0	3	0	8
8:30 AM	0	0	1	0	0	0	0	1	1	0	3	0	6
8:45 AM	0	0	0	0	0	0	0	1	0	0	2	0	3
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	3	0	0	0	0	14	1	0	14	0	32
APPROACH %	0%	0%	100%	0%	0%	0%	0%	93%	7%	0%	100%	0%	
APP/DEPART	3	/	0	0	/	1	15	/	17	14	/	14	0
BEGIN PEAK HR		7:45 AM											
VOLUMES	0	0	3	0	0	0	0	9	1	0	8	0	21
APPROACH %	0%	0%	100%	0%	0%	0%	0%	90%	10%	0%	100%	0%	
PEAK HR FACTOR		0.750			0.000			0.625			0.667		0.656
APP/DEPART	3	/	0	0	/	1	10	/	12	8	/	8	0
PM													
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	2	0	0	3	0	5
4:15 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	3	1	0	2	0	6
4:45 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	2	0	0	2	0	4
5:15 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
5:30 PM	0	0	0	0	0	0	0	1	0	0	2	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	14	1	0	10	0	25
APPROACH %	0%	0%	0%	0%	0%	0%	0%	93%	7%	0%	100%	0%	
APP/DEPART	0	/	0	0	/	1	15	/	14	10	/	10	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	0	0	0	0	0	0	9	1	0	5	0	15
APPROACH %	0%	0%	0%	0%	0%	0%	0%	90%	10%	0%	100%	0%	
PEAK HR FACTOR		0.000			0.000			0.625			0.417		0.625
APP/DEPART	0	/	0	0	/	1	10	/	9	5	/	5	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Van Vliet	LOCATION #:	40
WEDNESDAY	EAST & WEST:	Merrill	CONTROL:	STOP N

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND Van Vliet			SOUTHBOUND Van Vliet			EASTBOUND Merrill			WESTBOUND Merrill			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0.5	X	0.5	X	X	X	X	1	1	1	1	X	
AM													
7:00 AM	0	0	1	0	0	0	0	7	1	0	9	0	18
7:15 AM	0	0	0	0	0	0	0	4	0	0	10	0	14
7:30 AM	1	0	0	0	0	0	0	6	0	0	2	0	9
7:45 AM	0	0	0	0	0	0	0	3	0	3	4	0	10
8:00 AM	0	0	2	0	0	0	0	5	2	2	7	0	18
8:15 AM	0	0	0	0	0	0	0	3	2	2	9	0	16
8:30 AM	1	0	0	0	0	0	0	8	0	1	7	0	17
8:45 AM	0	0	1	0	0	0	0	4	0	1	8	0	14
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	2	0	4	0	0	0	0	40	5	9	56	0	116
APPROACH %	33%	0%	67%	0%	0%	0%	0%	89%	11%	14%	86%	0%	
APP/DEPART	6	/	0	0	/	13	45	/	45	65	/	58	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	1	0	3	0	0	0	0	20	4	6	31	0	65
APPROACH %	25%	0%	75%	0%	0%	0%	0%	83%	17%	16%	84%	0%	
PEAK HR FACTOR		0.500			0.000			0.750			0.841		0.903
APP/DEPART	4	/	0	0	/	10	24	/	23	37	/	32	0
PM													
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	1	0	0	0	0	0	0	6	0	2	3	0	12
4:15 PM	0	0	1	0	0	0	0	2	0	0	2	0	5
4:30 PM	1	0	1	0	0	0	0	6	0	0	3	0	11
4:45 PM	0	0	0	0	0	0	0	4	0	1	5	0	10
5:00 PM	0	0	0	0	0	0	0	9	0	1	4	0	14
5:15 PM	1	0	0	0	0	0	0	6	0	0	7	0	14
5:30 PM	0	0	1	0	0	0	0	4	0	0	2	0	7
5:45 PM	0	0	1	0	0	0	0	5	0	0	0	0	6
VOLUMES	3	0	4	0	0	0	0	42	0	4	26	0	79
APPROACH %	43%	0%	57%	0%	0%	0%	0%	100%	0%	13%	87%	0%	
APP/DEPART	7	/	0	0	/	4	42	/	46	30	/	29	0
BEGIN PEAK HR		4:30 PM											
VOLUMES	2	0	1	0	0	0	0	25	0	2	19	0	49
APPROACH %	67%	0%	33%	0%	0%	0%	0%	100%	0%	10%	90%	0%	
PEAK HR FACTOR		0.375			0.000			0.694			0.750		0.875
APP/DEPART	3	/	0	0	/	2	25	/	26	21	/	21	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:						X	X	X	X
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	1	1	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	1	1	0	0	0	0
AM PEAK HR VOLUMES						0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PM PEAK HR VOLUMES						0	0	0	0

Van Vliet

NORTH SIDE

Merrill WEST SIDE

EAST SIDE **Merrill**

SOUTH SIDE

Van Vliet

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Jan 30, 19

LOCATION: Chino
NORTH & SOUTH: Vineyard
EAST & WEST: Merrill

PROJECT #: SC2074
LOCATION #: 43
CONTROL: STOP N/S

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N
◄ W
E ►
S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Vineyard)			SOUTHBOUND (Vineyard)			EASTBOUND (Merrill)			WESTBOUND (Merrill)			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 2	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	69	0	0	117	0	186
	7:15 AM	0	0	0	0	0	0	0	40	0	0	149	0	189
	7:30 AM	0	0	0	0	0	0	0	59	0	0	124	0	183
	7:45 AM	0	0	0	0	0	0	0	61	0	0	145	0	206
	8:00 AM	0	0	0	0	0	0	0	68	0	0	130	0	198
	8:15 AM	0	0	0	0	0	0	0	78	0	0	139	0	217
	8:30 AM	0	0	0	0	0	0	0	63	0	0	127	0	190
	8:45 AM	0	0	0	0	0	0	0	55	0	0	121	0	176
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	493	0	0	1,052	0	1,545
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	0	/	0	0	/	0	493	/	493	1,052	/	1,052	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	0	0	0	0	0	0	270	0	0	541	0	811
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.000			0.865			0.933		0.934
	APP/DEPART	0	/	0	0	/	0	270	/	270	541	/	541	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	125	0	0	55	0	180
	4:15 PM	0	0	0	0	0	1	0	116	0	0	37	0	154
	4:30 PM	0	0	0	1	0	0	0	135	0	0	98	0	234
	4:45 PM	0	0	0	0	0	0	0	126	0	0	69	0	195
	5:00 PM	0	0	0	0	0	0	0	167	0	0	89	0	256
	5:15 PM	0	0	0	0	0	0	0	152	0	0	82	0	234
	5:30 PM	0	0	0	0	0	0	0	126	0	0	93	0	219
	5:45 PM	0	0	0	0	0	0	0	147	0	0	69	0	216
	VOLUMES	0	0	0	1	0	1	0	1,094	0	0	592	0	1,688
	APPROACH %	0%	0%	0%	50%	0%	50%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	0	/	0	2	/	0	1,094	/	1,095	592	/	593	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	0	0	0	0	592	0	0	333	0	925
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.000			0.886			0.895		0.903
	APP/DEPART	0	/	0	0	/	0	592	/	592	333	/	333	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Vineyard

NORTH SIDE

Merrill WEST SIDE EAST SIDE **Merrill**

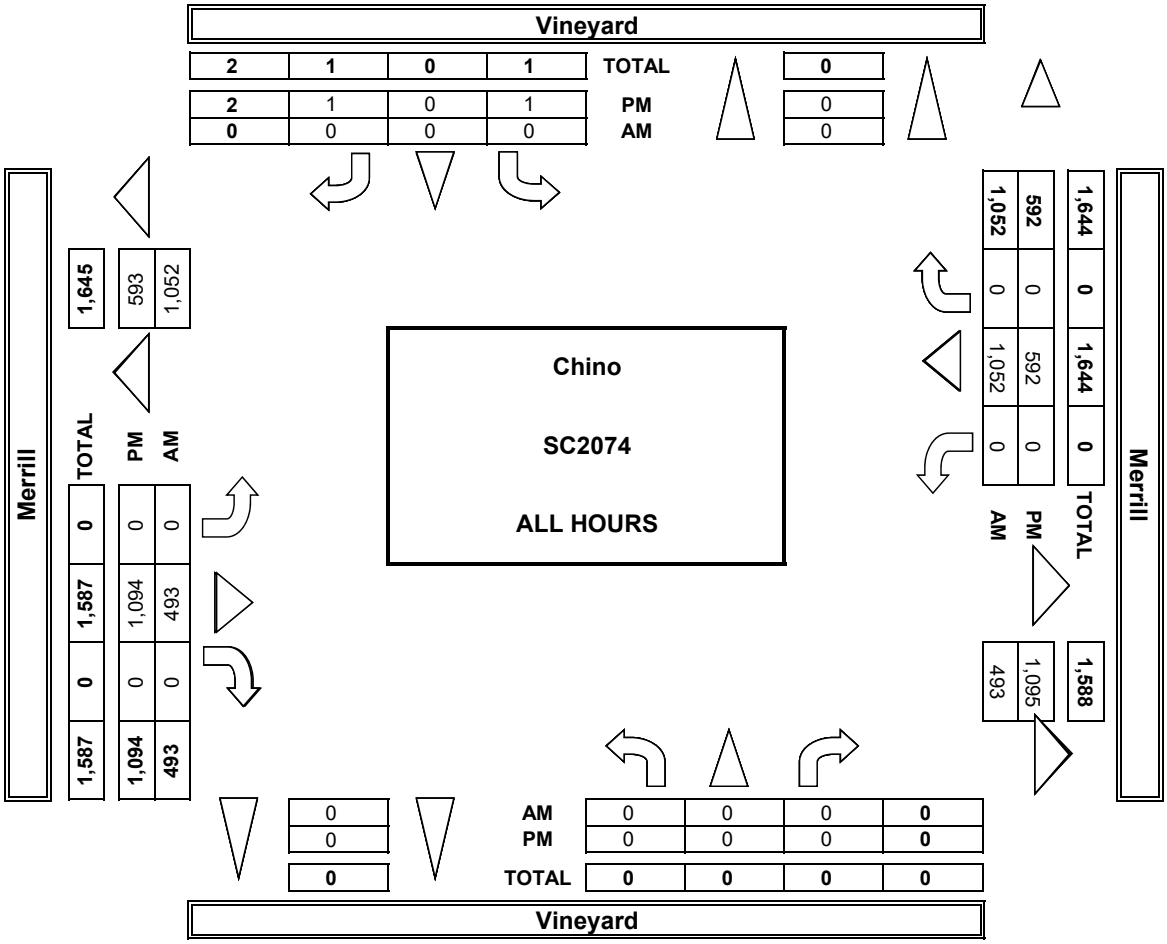
SOUTH SIDE

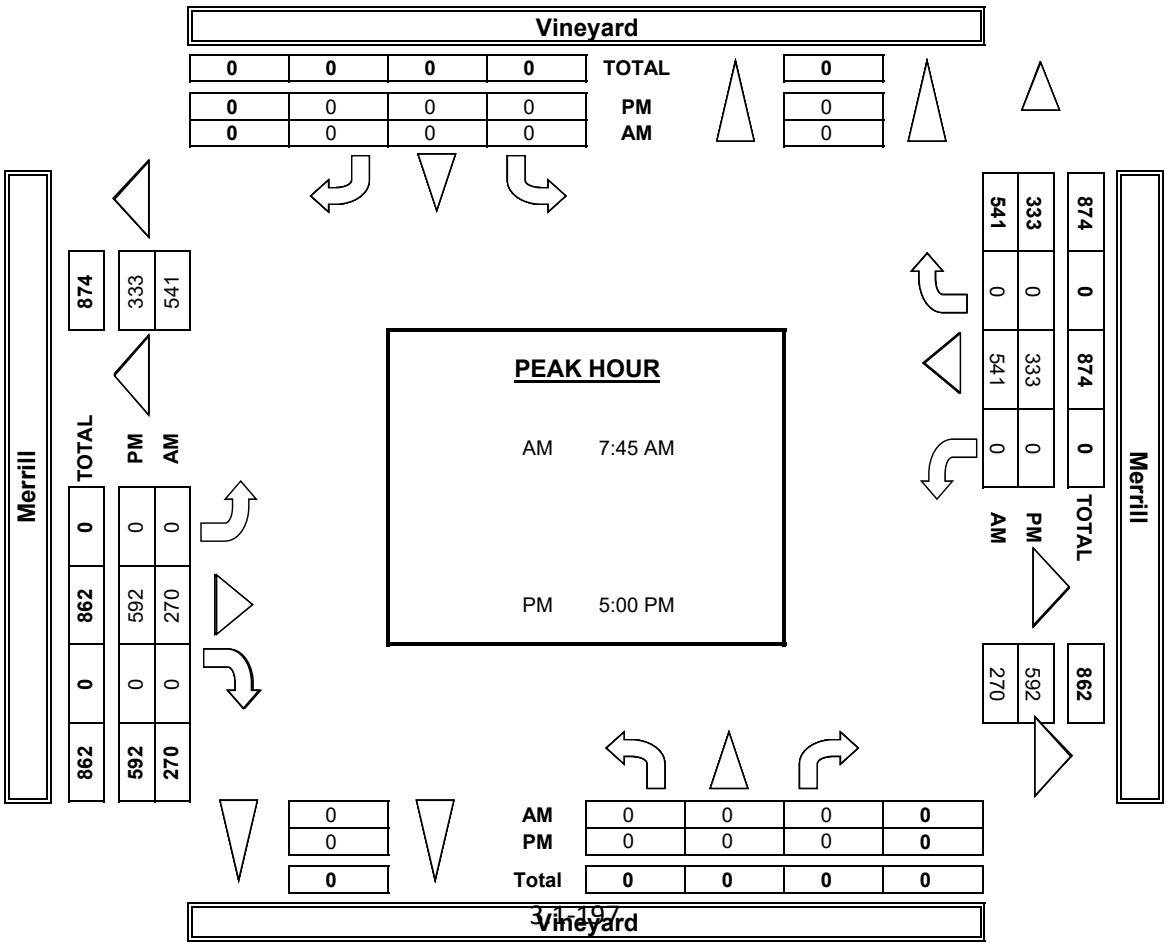
Vineyard

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	7:15 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	2	0	2	0	0	0	0	0	0	0	2	0	2
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Vineyard	LOCATION #:	43
WEDNESDAY	EAST & WEST:	Merrill	CONTROL:	STOP N/S

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Vineyard)			SOUTHBOUND (Vineyard)			EASTBOUND (Merrill)			WESTBOUND (Merrill)			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 2	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	7	0	0	7	0	14
	7:15 AM	0	0	0	0	0	0	0	3	0	0	6	0	9
	7:30 AM	0	0	0	0	0	0	0	6	0	0	4	0	10
	7:45 AM	0	0	0	0	0	0	0	3	0	0	4	0	7
	8:00 AM	0	0	0	0	0	0	0	5	0	0	5	0	10
	8:15 AM	0	0	0	0	0	0	0	4	0	0	7	0	11
	8:30 AM	0	0	0	0	0	0	0	9	0	0	6	0	15
	8:45 AM	0	0	0	0	0	0	0	4	0	0	4	0	8
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	41	0	0	43	0	84
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	0	/	0	0	/	0	41	/	41	43	/	43	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	0	0	0	0	0	0	0	22	0	0	22	0	44
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.000			0.611			0.786		0.733
	APP/DEPART	0	/	0	0	/	0	22	/	22	22	/	22	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	6	0	0	3	0	9
	4:15 PM	0	0	0	0	0	0	0	5	0	0	2	0	7
	4:30 PM	0	0	0	0	0	0	0	5	0	0	4	0	9
	4:45 PM	0	0	0	0	0	0	0	5	0	0	2	0	7
	5:00 PM	0	0	0	0	0	0	0	7	0	0	1	0	8
	5:15 PM	0	0	0	0	0	0	0	6	0	0	3	0	9
	5:30 PM	0	0	0	0	0	0	0	4	0	0	2	0	6
	5:45 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
	VOLUMES	0	0	0	0	0	0	0	39	0	0	18	0	57
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	0	/	0	0	/	0	39	/	39	18	/	18	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	0	0	0	0	0	0	23	0	0	10	0	33
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.000			0.821			0.625		0.917
	APP/DEPART	0	/	0	0	/	0	23	/	23	10	/	10	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

	Vineyard NORTH SIDE	
Merrill WEST SIDE		EAST SIDE **Merrill**
	SOUTH SIDE **Vineyard**	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Vineyard	LOCATION #:	43
WEDNESDAY	EAST & WEST:	Merrill	CONTROL:	STOP N/S

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Vineyard)			SOUTHBOUND (Vineyard)			EASTBOUND (Merrill)			WESTBOUND (Merrill)			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 2	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	3	0	0	3	0	6
	7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	7:30 AM	0	0	0	0	0	0	0	3	0	0	1	0	4
	7:45 AM	0	0	0	0	0	0	0	4	0	0	1	0	5
	8:00 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
	8:15 AM	0	0	0	0	0	0	0	3	0	0	3	0	6
	8:30 AM	0	0	0	0	0	0	0	3	0	0	2	0	5
	8:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	17	0	0	14	0	31
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	0	/	0	0	/	0	17	/	17	14	/	14	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	0	0	0	0	0	0	11	0	0	7	0	18
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.000			0.688			0.583		0.750
	APP/DEPART	0	/	0	0	/	0	11	/	11	7	/	7	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	1	0	0	2	0	3
	4:15 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
	4:30 PM	0	0	0	0	0	0	0	1	0	0	2	0	3
	4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	5:00 PM	0	0	0	0	0	0	0	4	0	0	2	0	6
	5:15 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
	5:30 PM	0	0	0	0	0	0	0	3	0	0	2	0	5
	5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	VOLUMES	0	0	0	0	0	0	0	14	0	0	10	0	24
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	0	/	0	0	/	0	14	/	14	10	/	10	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	0	0	0	0	0	0	9	0	0	5	0	14
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.000			0.563			0.625		0.583
	APP/DEPART	0	/	0	0	/	0	9	/	9	5	/	5	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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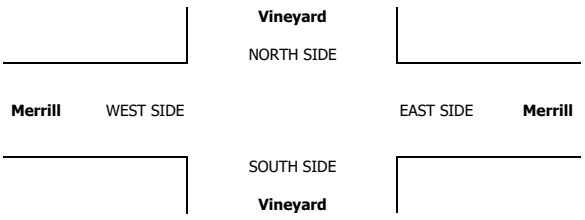
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Vineyard	LOCATION #:	43
WEDNESDAY	EAST & WEST:	Merrill	CONTROL:	STOP N/S

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

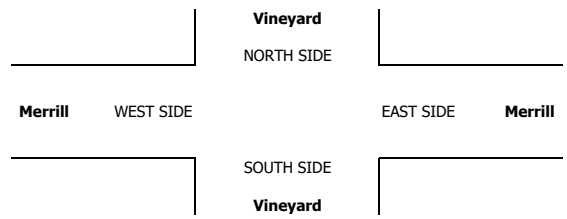
	NORTHBOUND (Vineyard)			SOUTHBOUND (Vineyard)			EASTBOUND (Merrill)			WESTBOUND (Merrill)			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 2	ER 0	WL 0	WT 1	WR 0	TOTAL
7:00 AM	0	0	0	0	0	0	0	6	0	0	5	0	11
7:15 AM	0	0	0	0	0	0	0	2	0	0	13	0	15
7:30 AM	0	0	0	0	0	0	0	7	0	0	4	0	11
7:45 AM	0	0	0	0	0	0	0	3	0	0	8	0	11
8:00 AM	0	0	0	0	0	0	0	4	0	0	9	0	13
8:15 AM	0	0	0	0	0	0	0	9	0	0	8	0	17
8:30 AM	0	0	0	0	0	0	0	8	0	0	11	0	19
8:45 AM	0	0	0	0	0	0	0	6	0	0	7	0	13
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	45	0	0	65	0	110
APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
APP/DEPART	0	/	0	0	/	0	45	/	45	65	/	65	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	0	0	0	0	0	0	0	27	0	0	35	0	62
APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
PEAK HR FACTOR		0.000			0.000			0.750			0.795		0.816
APP/DEPART	0	/	0	0	/	0	27	/	27	35	/	35	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	6	0	0	3	0	9
4:15 PM	0	0	0	0	0	0	0	4	0	0	4	0	8
4:30 PM	0	0	0	0	0	0	0	3	0	0	3	0	6
4:45 PM	0	0	0	0	0	0	0	9	0	0	6	0	15
5:00 PM	0	0	0	0	0	0	0	6	0	0	3	0	9
5:15 PM	0	0	0	0	0	0	0	8	0	0	9	0	17
5:30 PM	0	0	0	0	0	0	0	5	0	0	2	0	7
5:45 PM	0	0	0	0	0	0	0	5	0	0	0	0	5
VOLUMES	0	0	0	0	0	0	0	46	0	0	30	0	76
APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
APP/DEPART	0	/	0	0	/	0	46	/	46	30	/	30	0
BEGIN PEAK HR		4:45 PM											
VOLUMES	0	0	0	0	0	0	0	28	0	0	20	0	48
APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
PEAK HR FACTOR		0.000			0.000			0.778			0.556		0.706
APP/DEPART	0	/	0	0	/	0	28	/	28	20	/	20	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
Thu, Jan 24, 19	NORTH & SOUTH:	Hellman	LOCATION #:	32
	EAST & WEST:	Kimball	CONTROL:	SIGNAL

NOTES:

E-leg closed. Traffic lights - OFF

AM / PM / MD / OTHER / OTHER — ▲ N / ◄ W / E ► / S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Hellman)			SOUTHBOUND (Hellman)			EASTBOUND (Kimball)			WESTBOUND (Kimball)			
	LANES:	NL 1	NT 2	NR X	SL X	ST 2	SR 0	EL 1	ET X	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	207	6	0	0	1	0	4	0	57	0	0	0	275
	7:15 AM	211	4	0	0	3	3	5	0	60	0	0	0	286
	7:30 AM	192	6	0	0	2	3	2	0	59	0	0	0	264
	7:45 AM	191	11	0	0	5	1	2	0	49	0	0	0	259
	8:00 AM	175	10	0	0	6	4	7	0	66	0	0	0	268
	8:15 AM	137	10	0	0	10	1	8	0	85	0	0	0	251
	8:30 AM	117	12	0	0	5	1	7	0	55	0	0	0	197
	8:45 AM	97	7	0	0	3	2	24	0	55	0	0	0	188
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1,327	66	0	0	35	15	59	0	486	0	0	0	1,995
	APPROACH %	95%	5%	0%	0%	69%	29%	11%	0%	88%	0%	0%	0%	
	APP/DEPART	1,394	/	126	51	/	522	550	/	0	0	/	1,347	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	801	27	0	0	11	7	13	0	225	0	0	0	1,089
	APPROACH %	97%	3%	0%	0%	61%	39%	5%	0%	93%	0%	0%	0%	
	PEAK HR FACTOR		0.963			0.750			0.920			0.000		0.949
	APP/DEPART	828	/	40	18	/	236	243	/	0	0	/	813	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	41	1	0	0	14	18	5	0	123	0	0	0	202
	4:15 PM	47	10	0	0	8	5	2	0	161	0	0	0	233
	4:30 PM	48	5	0	0	14	7	3	0	150	0	0	0	227
	4:45 PM	57	5	0	0	7	6	3	0	168	0	0	0	246
	5:00 PM	62	5	0	0	12	34	3	0	169	0	0	0	285
	5:15 PM	79	2	0	0	9	12	4	0	190	0	0	0	296
	5:30 PM	76	3	0	0	8	18	2	0	177	0	0	0	284
	5:45 PM	58	5	0	0	9	11	3	0	181	0	0	0	267
	VOLUMES	468	36	0	0	81	111	25	0	1,319	0	0	0	2,060
	APPROACH %	89%	7%	0%	0%	42%	58%	2%	0%	98%	0%	0%	0%	
	APP/DEPART	524	/	61	192	/	1,420	1,344	/	0	0	/	579	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	275	15	0	0	38	75	12	0	717	0	0	0	1,142
	APPROACH %	92%	5%	0%	0%	34%	66%	2%	0%	98%	0%	0%	0%	
	PEAK HR FACTOR		0.882			0.614			0.939			0.000		0.952
	APP/DEPART	300	/	27	113	/	765	729	/	0	0	/	350	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	2	0	2
0	0	1	0	1
0	0	2	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	1	0	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	1	5	0	7
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
3	0	0	0	3
1	0	0	0	1
2	0	0	0	2
4	0	0	0	4
0	0	0	0	0
4	0	0	0	4
2	0	0	0	2
4	0	0	0	4
20	0	0	0	20
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Hellman

NORTH SIDE

Kimball WEST SIDE — EAST SIDE **Kimball**

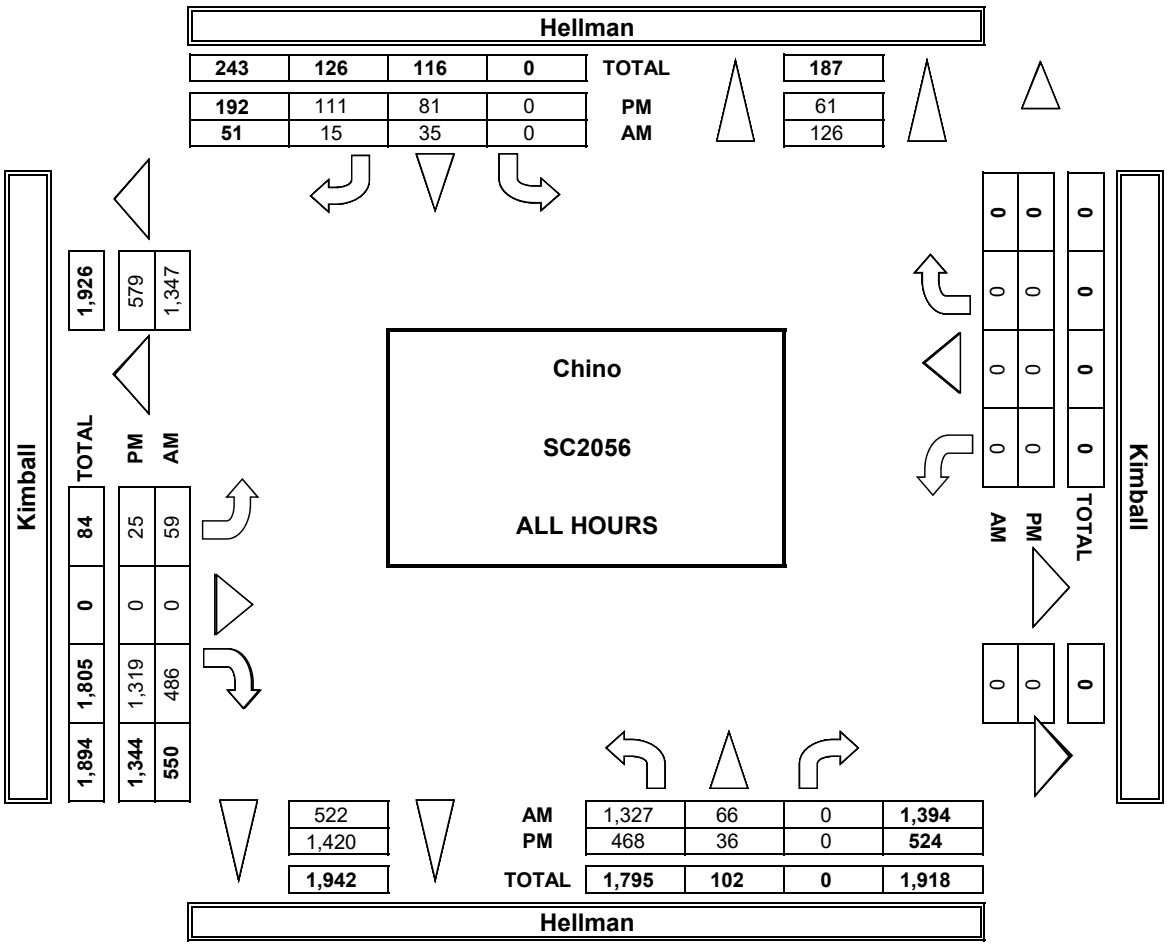
SOUTH SIDE

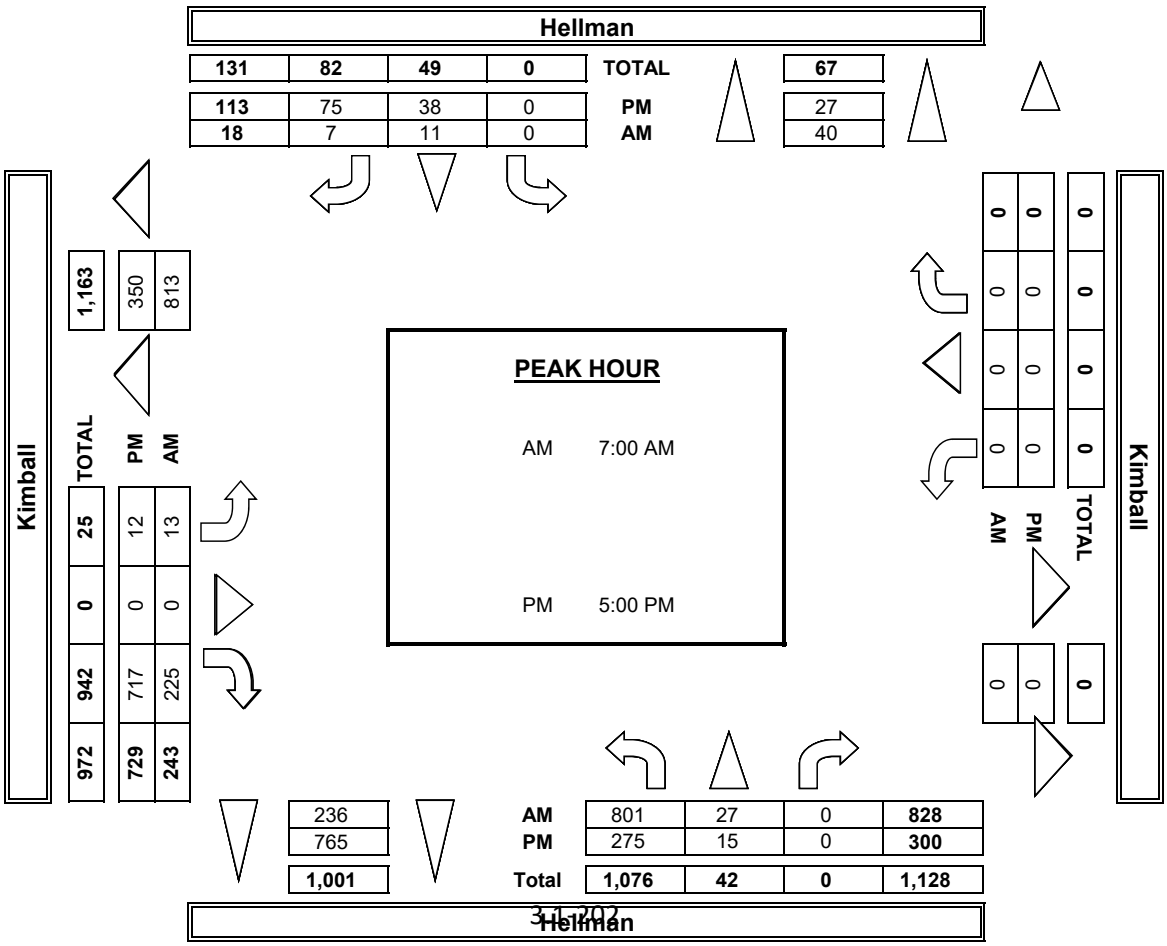
Hellman

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/24/19	NORTH & SOUTH:	Hellman	LOCATION #:	32
THURSDAY	EAST & WEST:	Kimball	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Hellman)			SOUTHBOUND (Hellman)			EASTBOUND (Kimball)			WESTBOUND (Kimball)			
	LANES:	NL 1	NT 2	NR X	SL X	ST 2	SR 0	EL 1	ET X	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	11	0	0	0	0	0	1	0	5	0	0	0	17
	7:15 AM	7	1	0	0	0	1	0	0	8	0	0	0	17
	7:30 AM	10	1	0	0	0	1	0	0	5	0	0	0	17
	7:45 AM	7	0	0	0	1	1	0	0	3	0	0	0	12
	8:00 AM	4	0	0	0	1	1	2	0	8	0	0	0	16
	8:15 AM	3	0	0	0	0	0	0	0	6	0	0	0	9
	8:30 AM	5	1	0	0	1	0	0	0	4	0	0	0	11
	8:45 AM	3	0	0	0	0	1	1	0	6	0	0	0	11
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	50	3	0	0	3	5	4	0	45	0	0	0	112
	APPROACH %	94%	6%	0%	0%	38%	63%	8%	0%	88%	0%	0%	0%	
	APP/DEPART	53	/	7	8	/	48	51	/	0	0	/	57	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	35	2	0	0	1	3	1	0	21	0	0	0	65
	APPROACH %	95%	5%	0%	0%	25%	75%	4%	0%	88%	0%	0%	0%	
	PEAK HR FACTOR		0.841			0.500			0.667			0.000		0.903
	APP/DEPART	37	/	3	4	/	22	24	/	0	0	/	40	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	4	1	0	0	0	1	0	0	3	0	0	0	9
	4:15 PM	1	1	0	0	0	0	0	0	8	0	0	0	10
	4:30 PM	4	2	0	0	1	1	2	0	2	0	0	0	12
	4:45 PM	3	1	0	0	1	1	1	0	4	0	0	0	11
	5:00 PM	1	0	0	0	0	2	0	0	3	0	0	0	6
	5:15 PM	2	0	0	0	0	1	1	0	6	0	0	0	10
	5:30 PM	5	0	0	0	0	0	0	0	4	0	0	0	9
	5:45 PM	0	0	0	0	1	0	0	0	5	0	0	0	6
	VOLUMES	20	5	0	0	3	6	4	0	35	0	0	0	73
	APPROACH %	80%	20%	0%	0%	33%	67%	10%	0%	90%	0%	0%	0%	
	APP/DEPART	25	/	9	9	/	38	39	/	0	0	/	26	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	12	5	0	0	2	3	3	0	17	0	0	0	42
	APPROACH %	71%	29%	0%	0%	40%	60%	15%	0%	85%	0%	0%	0%	
	PEAK HR FACTOR		0.708			0.625			0.625			0.000		0.875
	APP/DEPART	17	/	8	5	/	19	20	/	0	0	/	15	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	1	0	1
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	2	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Hellman

NORTH SIDE

Kimball WEST SIDE EAST SIDE **Kimball**

SOUTH SIDE

Hellman

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/24/19	NORTH & SOUTH:	Hellman	LOCATION #:	32
THURSDAY	EAST & WEST:	Kimball	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

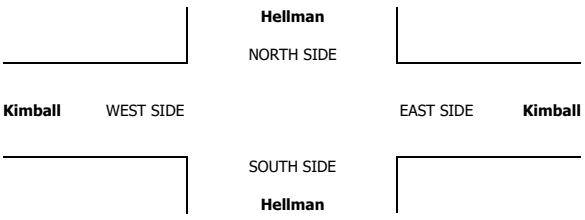
		NORTHBOUND Hellman			SOUTHBOUND Hellman			EASTBOUND Kimball			WESTBOUND Kimball			
	LANES:	NL 1	NT 2	NR X	SL X	ST 2	SR 0	EL 1	ET X	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	1	0	0	0	1	0	0	0	0	0	0	0	2
	7:15 AM	2	0	0	0	0	0	0	0	0	0	0	0	2
	7:30 AM	2	0	0	0	0	0	0	0	0	0	0	0	2
	7:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	1	0	0	0	1	0	0	0	2
	8:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
	8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	5	2	0	0	3	0	0	0	2	0	0	0	13
	APPROACH %	71%	29%	0%	0%	100%	0%	0%	0%	67%	0%	0%	0%	
	APP/DEPART	7	/	2	3	/	5	3	/	0	0	/	6	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	5	1	0	0	2	0	0	0	0	0	0	0	9
	APPROACH %	83%	17%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.750			0.500			0.250			0.000		0.750
	APP/DEPART	6	/	1	2	/	2	1	/	0	0	/	6	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	1	1	0	0	0	0	0	2
	4:15 PM	0	1	0	0	0	1	0	0	1	0	0	0	3
	4:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
	4:45 PM	2	0	0	0	0	0	0	0	0	0	0	0	2
	5:00 PM	2	0	0	0	0	1	0	0	0	0	0	0	3
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	1	1	0	0	0	0	0	2
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	5	1	0	0	0	4	2	0	1	0	0	0	13
	APPROACH %	83%	17%	0%	0%	0%	100%	67%	0%	33%	0%	0%	0%	
	APP/DEPART	6	/	3	4	/	1	3	/	0	0	/	9	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	5	1	0	0	0	2	0	0	1	0	0	0	9
	APPROACH %	83%	17%	0%	0%	0%	100%	0%	0%	100%	0%	0%	0%	
	PEAK HR FACTOR		0.750			0.500			0.250			0.000		0.750
	APP/DEPART	6	/	1	2	/	1	1	/	0	0	/	7	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/24/19	NORTH & SOUTH:	Hellman	LOCATION #:	32
THURSDAY	EAST & WEST:	Kimball	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

		NORTHBOUND (Hellman)			SOUTHBOUND (Hellman)			EASTBOUND (Kimball)			WESTBOUND (Kimball)			
	LANES:	NL 1	NT 2	NR X	SL X	ST 2	SR 0	EL 1	ET X	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	2	1	0	0	0	0	0	0	4	0	0	0	7
	7:15 AM	1	0	0	0	2	0	1	0	6	0	0	0	10
	7:30 AM	5	0	0	0	2	0	0	0	8	0	0	0	15
	7:45 AM	10	3	0	0	1	0	1	0	7	0	0	0	22
	8:00 AM	4	1	0	0	2	1	0	0	5	0	0	0	13
	8:15 AM	6	1	0	0	3	0	1	0	9	0	0	0	20
	8:30 AM	8	5	0	0	1	1	0	0	5	0	0	0	20
	8:45 AM	6	0	0	0	1	0	4	0	6	0	0	0	17
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	42	11	0	0	12	2	7	0	50	0	0	0	125
	APPROACH %	79%	21%	0%	0%	86%	14%	12%	0%	86%	0%	0%	0%	
	APP/DEPART	53	/	18	14	/	62	58	/	0	0	/	45	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	28	10	0	0	7	2	2	0	26	0	0	0	75
	APPROACH %	74%	26%	0%	0%	78%	22%	7%	0%	93%	0%	0%	0%	
	PEAK HR FACTOR		0.731			0.750			0.700			0.000		0.852
	APP/DEPART	38	/	12	9	/	33	28	/	0	0	/	30	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	4	0	0	1	0	0	0	5
	4:15 PM	0	0	0	0	1	2	0	0	2	0	0	0	5
	4:30 PM	1	0	0	0	2	0	0	0	0	0	0	0	3
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
	5:15 PM	0	0	0	0	0	0	3	0	1	0	0	0	4
	5:30 PM	0	0	0	0	0	1	1	0	0	0	0	0	2
	5:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
	VOLUMES	1	0	0	0	3	8	5	0	4	0	0	0	21
	APPROACH %	100%	0%	0%	0%	27%	73%	56%	0%	44%	0%	0%	0%	
	APP/DEPART	1	/	5	11	/	7	9	/	0	0	/	9	0
	BEGIN PEAK HR		3:45 PM											
	VOLUMES	1	0	0	0	3	6	0	0	3	0	0	0	13
	APPROACH %	100%	0%	0%	0%	33%	67%	0%	0%	100%	0%	0%	0%	
	PEAK HR FACTOR		0.250			0.563			0.375			0.000		0.650
	APP/DEPART	1	/	0	9	/	6	3	/	0	0	/	7	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
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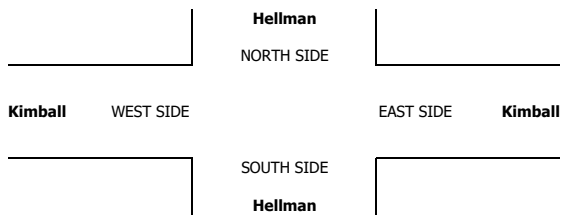
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Jan 30, 19	LOCATION:	Chino	PROJECT #:	SC2074
	NORTH & SOUTH:	Carpenter	LOCATION #:	46
	EAST & WEST:	Merrill	CONTROL:	STOP ALL

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

Add U-Turns to Left Turns

		NORTHBOUND Carpenter			SOUTHBOUND Carpenter			EASTBOUND Merrill			WESTBOUND Merrill		
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	0	1	0	0	1	0	1	1	1	1	1	0	
AM	7:00 AM	2	0	18	1	1	0	0	48	5	16	119	10	220
	7:15 AM	3	1	13	12	0	0	1	43	1	23	137	8	242
	7:30 AM	0	0	10	38	0	3	5	55	5	18	117	6	257
	7:45 AM	1	0	14	22	0	0	1	45	3	34	151	12	283
	8:00 AM	5	0	16	17	0	1	0	64	3	13	128	5	252
	8:15 AM	4	0	20	23	0	3	2	75	3	15	132	10	287
	8:30 AM	3	0	7	25	0	0	1	70	1	11	125	10	253
	8:45 AM	4	0	8	20	0	0	1	47	1	8	125	3	217
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	22	1	106	158	1	7	11	447	22	138	1,034	64	2,011
	APPROACH %	17%	1%	82%	95%	1%	4%	2%	93%	5%	11%	84%	5%	
	APP/DEPART	129	/	76	166	/	174	480	/	711	1,236	/	1,050	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	10	0	60	100	0	7	8	239	14	80	528	33	1,079
	APPROACH %	14%	0%	86%	93%	0%	7%	3%	92%	5%	12%	82%	5%	
	PEAK HR FACTOR		0.729			0.652			0.816			0.813		0.940
	APP/DEPART	70	/	41	107	/	102	261	/	399	641	/	537	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	3	0	20	9	1	2	0	126	3	5	45	6	220
	4:15 PM	1	0	9	13	1	0	0	119	2	0	37	3	185
	4:30 PM	7	0	19	10	0	0	2	148	3	2	73	1	265
	4:45 PM	1	2	17	10	1	1	0	128	1	6	69	2	238
	5:00 PM	9	0	31	10	2	0	1	144	4	2	66	0	269
	5:15 PM	9	2	24	13	1	0	1	165	9	2	69	1	296
	5:30 PM	1	0	11	9	0	1	1	132	1	5	83	2	246
	5:45 PM	1	1	9	7	1	1	2	153	1	2	57	1	236
	VOLUMES	32	5	140	81	7	5	7	1,115	24	24	499	16	1,955
	APPROACH %	18%	3%	79%	87%	8%	5%	1%	97%	2%	4%	93%	3%	
	APP/DEPART	177	/	27	93	/	55	1,146	/	1,336	539	/	537	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	26	4	91	43	4	1	4	585	17	12	277	4	1,068
	APPROACH %	21%	3%	75%	90%	8%	2%	1%	97%	3%	4%	95%	1%	
	PEAK HR FACTOR		0.756			0.857			0.866			0.951		0.902
	APP/DEPART	121	/	12	48	/	33	606	/	719	293	/	304	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES	0	0	0	0		X	X	X	X
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	1	0	0	0	1	0	0	0	0
8:00 AM	4	0	0	0	4	0	0	0	0
8:15 AM	3	0	0	0	3	0	0	0	0
8:30 AM	3	0	0	0	3	0	0	0	0
8:45 AM	2	0	0	0	2	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	13	0	0	0	13	0	0	0	0
PEAK HR VOLUMES						0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	1	0	1	0	0	0	0
VOLUMES	0	0	1	0	1	0	0	0	0
PEAK HR VOLUMES						0	0	0	0

Carpenter

NORTH SIDE

Merrill WEST SIDE EAST SIDE **Merrill**

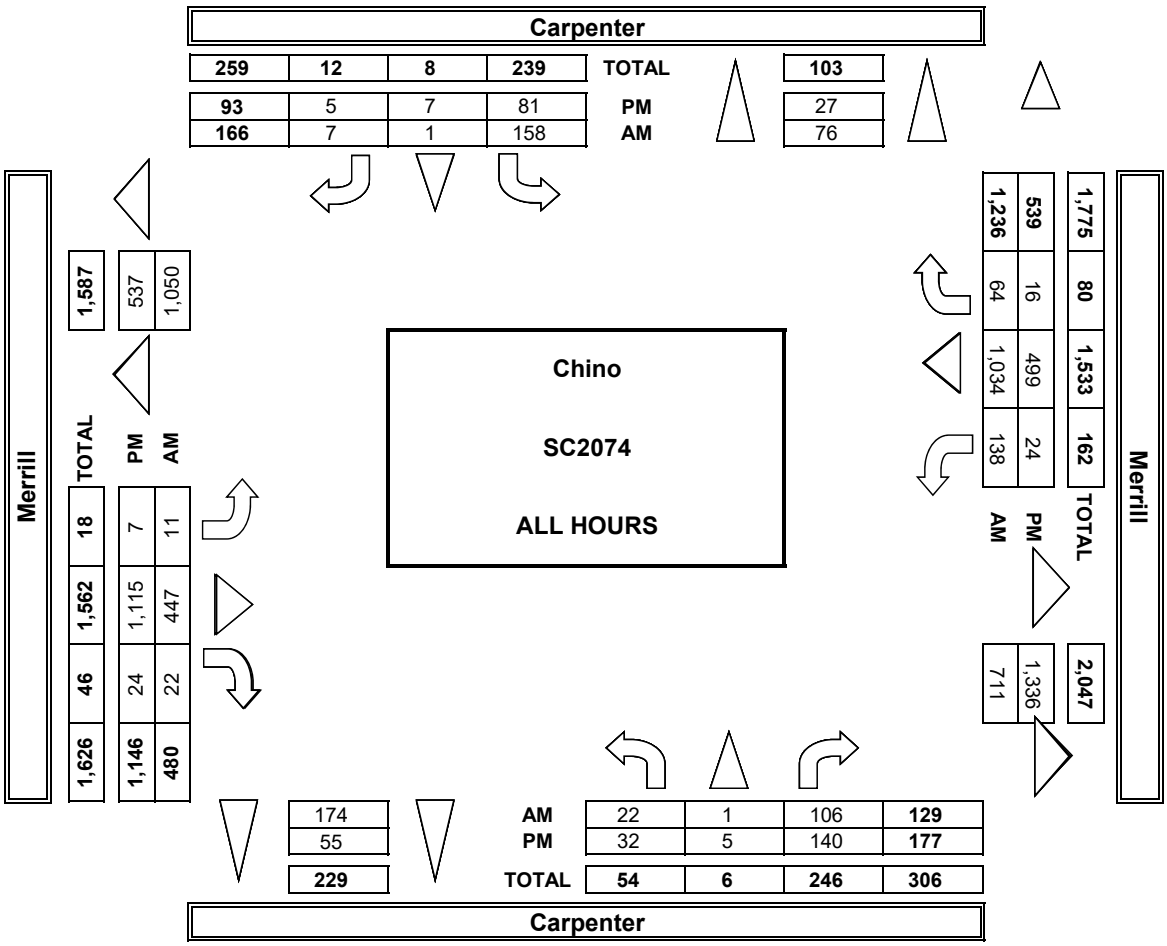
SOUTH SIDE

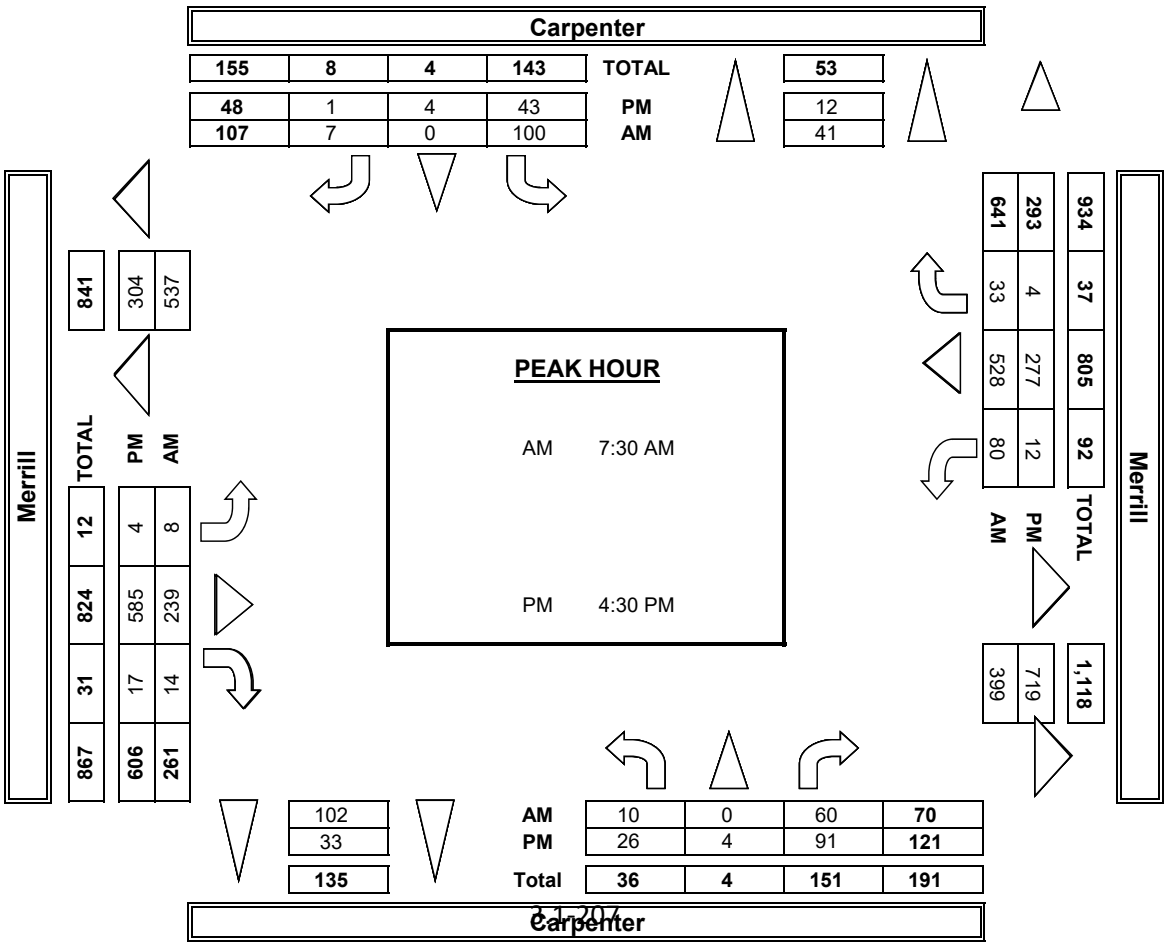
Carpenter

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Carpenter	LOCATION #:	46
WEDNESDAY	EAST & WEST:	Merrill	CONTROL:	STOP ALL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Carpenter)			SOUTHBOUND (Carpenter)			EASTBOUND (Merrill)			WESTBOUND (Merrill)			
	LANES:	NL 1	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	2	1	0	0	0	4	0	2	7	0	16
	7:15 AM	0	0	1	2	0	0	0	2	0	2	7	0	14
	7:30 AM	0	0	0	4	0	0	2	5	2	0	2	1	16
	7:45 AM	1	0	1	0	0	0	0	2	0	4	5	0	13
	8:00 AM	4	0	1	2	0	1	0	4	2	0	5	1	20
	8:15 AM	3	0	3	1	0	0	1	8	0	2	9	1	28
	8:30 AM	3	0	3	2	0	0	0	8	1	1	4	2	24
	8:45 AM	2	0	2	2	0	0	0	4	0	0	7	0	17
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	13	0	13	14	0	1	3	37	5	11	46	5	148
	APPROACH %	50%	0%	50%	93%	0%	7%	7%	82%	11%	18%	74%	8%	
	APP/DEPART	26	/	8	15	/	29	45	/	64	62	/	47	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	0	0	9	7	0	1	1	24	3	3	25	4	89
	APPROACH %	0%	0%	43%	88%	0%	13%	4%	86%	11%	9%	78%	13%	
	PEAK HR FACTOR		0.875			0.667			0.778			0.667		0.795
	APP/DEPART	21	/	5	8	/	18	28	/	40	32	/	26	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	0	0	1	0	0	0	7	0	1	3	2	15
	4:15 PM	0	0	0	3	0	0	0	8	1	0	4	0	16
	4:30 PM	0	0	2	0	0	0	0	10	0	0	1	0	13
	4:45 PM	1	0	2	0	0	0	0	8	0	1	1	0	13
	5:00 PM	1	0	0	0	0	0	1	4	0	0	0	0	6
	5:15 PM	0	0	1	2	0	0	0	6	1	0	2	0	12
	5:30 PM	0	0	2	0	0	0	0	4	0	0	4	1	11
	5:45 PM	1	0	0	1	0	0	0	4	0	0	1	0	7
	VOLUMES	4	0	7	7	0	0	1	51	2	2	16	3	93
	APPROACH %	36%	0%	64%	100%	0%	0%	2%	94%	4%	10%	76%	14%	
	APP/DEPART	11	/	4	7	/	4	54	/	65	21	/	20	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	2	0	4	4	0	0	0	33	1	2	9	2	57
	APPROACH %	33%	0%	67%	100%	0%	0%	0%	97%	3%	15%	69%	15%	
	PEAK HR FACTOR		0.500			0.333			0.850			0.542		0.891
	APP/DEPART	6	/	2	4	/	3	34	/	41	13	/	11	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
4	0	0	0	4
3	0	0	0	3
3	0	0	0	3
2	0	0	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
13	0	0	0	13
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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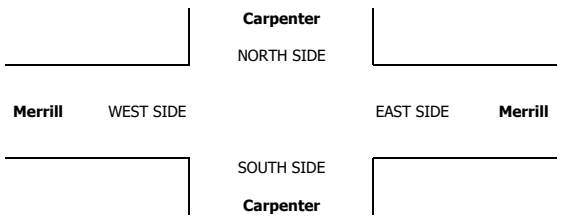
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Carpenter	LOCATION #:	46
WEDNESDAY	EAST & WEST:	Merrill	CONTROL:	STOP ALL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Carpenter)			SOUTHBOUND (Carpenter)			EASTBOUND (Merrill)			WESTBOUND (Merrill)			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	9	0	1	0	0	0	0	2	0	4	16
	7:15 AM	0	0	9	0	0	0	0	2	0	0	0	2	13
	7:30 AM	0	0	7	3	0	0	0	2	0	0	2	0	14
	7:45 AM	0	0	6	0	0	0	0	1	1	3	1	1	13
	8:00 AM	0	0	9	0	0	0	0	1	0	0	1	0	11
	8:15 AM	1	0	14	0	0	0	0	1	2	1	2	1	22
	8:30 AM	0	0	4	0	0	0	0	4	0	1	4	1	14
	8:45 AM	1	0	6	0	0	0	0	1	0	0	2	0	10
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	2	0	64	3	1	0	0	12	3	7	12	9	113
	APPROACH %	3%	0%	97%	75%	25%	0%	0%	80%	20%	25%	43%	32%	
	APP/DEPART	66	/	9	4	/	11	15	/	79	28	/	14	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	1	0	33	0	0	0	0	7	3	5	8	3	60
	APPROACH %	3%	0%	97%	0%	0%	0%	0%	70%	30%	31%	50%	19%	
	PEAK HR FACTOR		0.567			0.000			0.625			0.667		0.682
	APP/DEPART	34	/	3	0	/	8	10	/	40	16	/	9	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	0	3	1	1	0	0	2	1	0	2	0	11
	4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	4:30 PM	0	0	0	1	0	0	0	0	0	0	1	0	2
	4:45 PM	0	0	1	1	0	0	0	0	0	0	0	0	2
	5:00 PM	1	0	0	1	0	0	0	6	0	0	1	0	9
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
	5:45 PM	0	0	0	0	0	0	0	1	0	0	0	1	2
	VOLUMES	2	0	4	4	1	0	0	10	1	0	6	1	29
	APPROACH %	33%	0%	67%	80%	20%	0%	0%	91%	9%	0%	86%	14%	
	APP/DEPART	6	/	1	5	/	2	11	/	18	7	/	8	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	1	0	4	3	1	0	0	3	1	0	3	0	16
	APPROACH %	20%	0%	80%	75%	25%	0%	0%	75%	25%	0%	100%	0%	
	PEAK HR FACTOR		0.313			0.500			0.333			0.375		0.364
	APP/DEPART	5	/	0	4	/	2	4	/	10	3	/	4	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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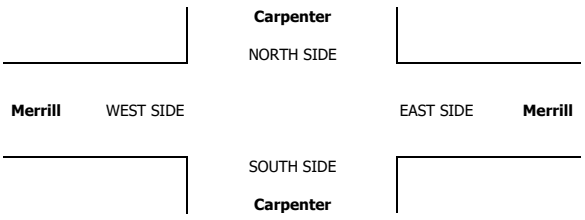
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Carpenter	LOCATION #:	46
WEDNESDAY	EAST & WEST:	Merrill	CONTROL:	STOP ALL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

		NORTHBOUND (Carpenter)			SOUTHBOUND (Carpenter)			EASTBOUND (Merrill)			WESTBOUND (Merrill)			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL
AM	7:00 AM	2	0	0	0	0	0	0	4	3	7	6	0	22
	7:15 AM	2	0	0	0	0	0	0	3	0	14	5	1	25
	7:30 AM	0	0	1	4	0	1	0	6	0	10	2	0	24
	7:45 AM	0	0	3	1	0	0	0	3	0	13	5	0	25
	8:00 AM	0	0	5	0	0	0	0	1	0	7	5	0	18
	8:15 AM	0	0	1	2	0	0	0	7	0	6	6	1	23
	8:30 AM	0	0	0	1	0	0	1	4	0	5	11	2	24
	8:45 AM	0	0	0	3	0	0	0	3	1	7	11	0	25
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	4	0	10	11	0	1	1	31	4	69	51	4	186
	APPROACH %	29%	0%	71%	92%	0%	8%	3%	86%	11%	56%	41%	3%	
	APP/DEPART	14	/	5	12	/	73	36	/	52	124	/	56	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	4	0	4	5	0	1	0	16	3	44	18	1	96
	APPROACH %	50%	0%	50%	83%	0%	17%	0%	84%	16%	70%	29%	2%	
	PEAK HR FACTOR		0.667			0.300			0.679			0.788		0.960
	APP/DEPART	8	/	1	6	/	47	19	/	25	63	/	23	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	1	0	0	0	0	5	0	2	2	1	11
	4:15 PM	0	0	1	0	0	0	0	4	0	0	6	1	12
	4:30 PM	0	0	0	1	0	0	0	5	1	2	4	0	13
	4:45 PM	0	0	0	1	0	0	0	2	0	3	9	1	16
	5:00 PM	0	0	1	0	0	0	0	4	0	1	6	0	12
	5:15 PM	2	0	0	0	0	0	0	6	0	0	6	0	14
	5:30 PM	0	0	0	0	0	0	0	2	0	0	2	0	4
	5:45 PM	0	0	2	0	0	0	0	2	0	0	0	0	4
	VOLUMES	2	0	5	2	0	0	0	30	1	8	35	3	86
	APPROACH %	29%	0%	71%	100%	0%	0%	0%	97%	3%	17%	76%	7%	
	APP/DEPART	7	/	3	2	/	9	31	/	37	46	/	37	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	2	0	1	2	0	0	0	17	1	6	25	1	55
	APPROACH %	67%	0%	33%	100%	0%	0%	0%	94%	6%	19%	78%	3%	
	PEAK HR FACTOR		0.375			0.500			0.750			0.615		0.859
	APP/DEPART	3	/	1	2	/	7	18	/	20	32	/	27	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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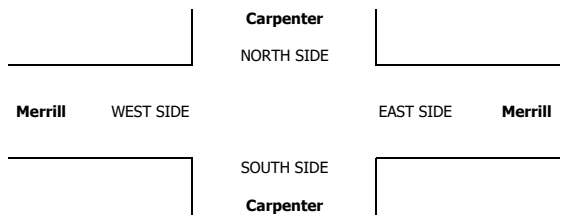


INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

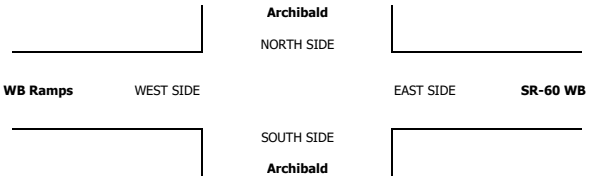
DATE:	LOCATION:	Chino	PROJECT #:	SC2074
Wed, Jan 30, 19	NORTH & SOUTH:	Archibald	LOCATION #:	49
	EAST & WEST:	SR-60 WB Ramps	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N / ◄ W / E ► / S ▼

Add U-Turns to Left Turns

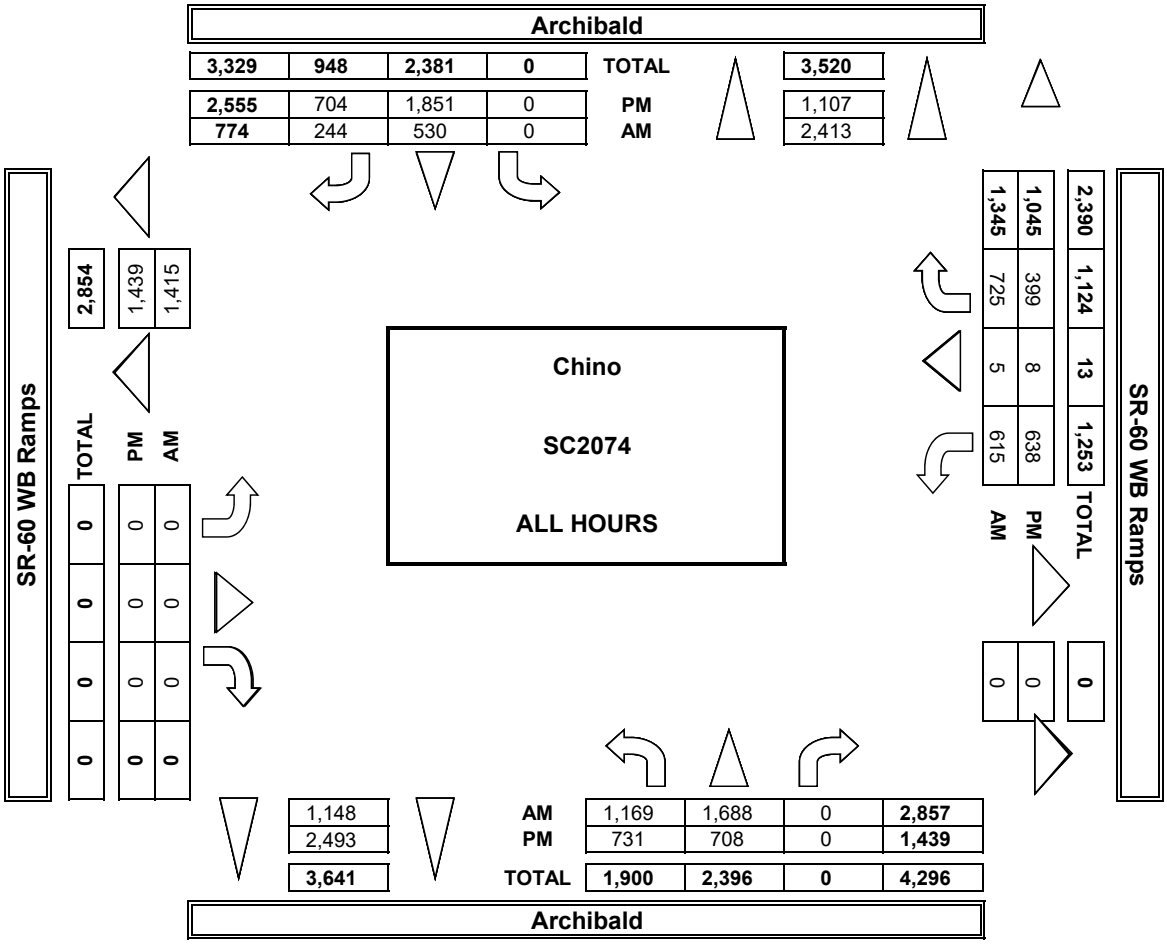
		NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (SR-60 WB Ramps)			WESTBOUND (SR-60 WB Ramps)				U-TURNS					RTOR			
	LANES:	NL 1	NT 3	NR X	SL X	ST 4	SR 0	EL X	ET X	ER X	WL 0.5	WT 0.5	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL	NRR X	SRR 0	ERR X	WRR 0
AM	7:00 AM	152	180	0	0	68	45	0	0	0	75	0	81	601	1	0	0	0	1	0	9	0	44
	7:15 AM	158	205	0	0	55	47	0	0	0	74	0	83	622	0	0	0	0	0	0	3	0	37
	7:30 AM	144	246	0	0	91	36	0	0	0	89	1	90	697	1	0	0	0	1	0	4	0	47
	7:45 AM	152	269	0	0	89	13	0	0	0	87	2	123	735	0	0	0	0	0	0	1	0	44
	8:00 AM	148	180	0	0	71	28	0	0	0	76	0	102	605	0	0	0	0	0	0	1	0	40
	8:15 AM	127	202	0	0	46	21	0	0	0	74	2	89	561	0	0	0	0	0	0	1	0	49
	8:30 AM	142	224	0	0	64	30	0	0	0	64	0	78	602	0	0	0	0	0	0	5	0	42
	8:45 AM	146	182	0	0	46	24	0	0	0	76	0	79	553	1	0	0	0	1	0	6	0	30
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1,169	1,688	0	0	530	244	0	0	0	615	5	725	4,976	3	0	0	0	3	0	30	0	333
	APPROACH %	41%	59%	0%	0%	68%	32%	0%	0%	0%	46%	0%	54%										
	APP/DEPART	2,857	/	2,413	774	/	1,148	0	/	0	1,345	/	1,415	0									
	BEGIN PEAK HR		7:15 AM																				
	VOLUMES	602	900	0	0	306	124	0	0	0	326	3	398	2,659						0	9	0	168
	APPROACH %	40%	60%	0%	0%	71%	29%	0%	0%	0%	45%	0%	55%										
	PEAK HR FACTOR		0.892			0.846			0.000			0.857		0.904									
	APP/DEPART	1,502	/	1,298	430	/	633	0	/	0	727	/	728	0									
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	90	79	0	0	200	78	0	0	0	75	1	29	552	1	0	0	0	1	0	28	0	16
	4:15 PM	94	81	0	0	197	67	0	0	0	72	0	41	552	1	0	0	0	1	0	20	0	26
	4:30 PM	104	98	0	0	262	100	0	0	0	75	0	41	680	1	0	0	0	1	0	33	0	27
	4:45 PM	88	120	0	0	221	74	0	0	0	78	1	67	649	0	0	0	0	0	0	25	0	43
	5:00 PM	85	116	0	0	236	109	0	0	0	93	2	66	707	0	0	0	0	0	0	30	0	42
	5:15 PM	86	83	0	0	262	114	0	0	0	81	2	50	678	0	0	0	0	0	0	42	0	27
	5:30 PM	93	52	0	0	245	98	0	0	0	78	0	43	609	1	0	0	0	1	0	28	0	23
	5:45 PM	91	79	0	0	228	64	0	0	0	86	2	62	612	0	0	0	0	0	0	12	0	38
	VOLUMES	731	708	0	0	1,851	704	0	0	0	638	8	399	5,039	4	0	0	0	4	0	218	0	242
	APPROACH %	51%	49%	0%	0%	72%	28%	0%	0%	0%	61%	1%	38%										
	APP/DEPART	1,439	/	1,107	2,555	/	2,493	0	/	0	1,045	/	1,439	0									
	BEGIN PEAK HR		4:30 PM																				
	VOLUMES	363	417	0	0	981	397	0	0	0	327	5	224	2,714						0	130	0	139
	APPROACH %	47%	53%	0%	0%	71%	29%	0%	0%	0%	59%	1%	40%										
	PEAK HR FACTOR		0.938			0.916			0.000			0.863		0.960									
	APP/DEPART	780	/	641	1,378	/	1,309	0	/	0	556	/	764	0									

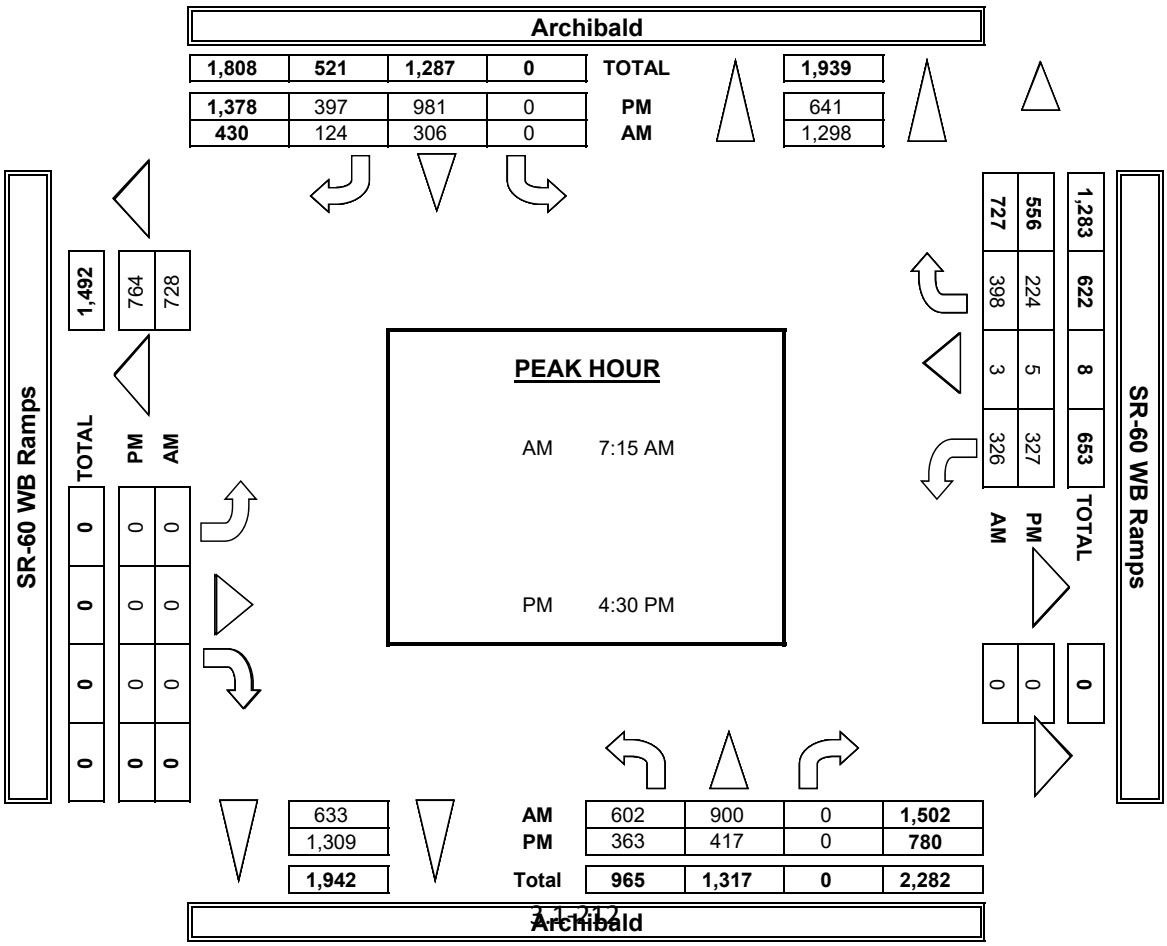


		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	2	0	0	0	2	1	0	0	0	1	1	0	0	0	1
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	2	1	0	0	3	1	1	0	0	2	1	0	0	0	1
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	4:15 PM	1	1	0	0	2	0	1	0	0	1	1	0	0	0	1
	4:30 PM	2	0	0	0	2	2	0	0	0	2	0	0	0	0	0
	4:45 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	5:00 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	4	3	0	0	7	3	0	0	0	4	0	1	0	0	3

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 1/30/19 WEDNESDAY			
LOCATION:	Chino	PROJECT #:	SC2074
NORTH & SOUTH:	Archibald	LOCATION #:	49
EAST & WEST:	SR-60 WB Ramps	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND SR-60 WB Ramps			WESTBOUND SR-60 WB Ramps			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	X	X	4	0	X	X	X	0.5	0.5	1	
AM 7:00 AM	11	6	0	0	4	3	0	0	0	8	0	0	32
7:15 AM	5	3	0	0	2	4	0	0	0	4	0	1	19
7:30 AM	5	7	0	0	0	6	0	0	0	9	0	5	32
7:45 AM	3	4	0	0	7	5	0	0	0	5	0	4	28
8:00 AM	5	2	0	0	12	2	0	0	0	7	0	4	32
8:15 AM	8	0	0	0	0	6	0	0	0	7	1	6	28
8:30 AM	5	7	0	0	2	6	0	0	0	5	0	5	30
8:45 AM	7	10	0	0	5	7	0	0	0	6	0	4	39
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	49	39	0	0	32	39	0	0	0	51	1	29	240
APPROACH %	56%	44%	0%	0%	45%	55%	0%	0%	0%	63%	1%	36%	
APP/DEPART	88	/	68	71	/	83	0	/	0	81	/	89	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	25	19	0	0	19	21	0	0	0	25	1	19	129
APPROACH %	57%	43%	0%	0%	48%	53%	0%	0%	0%	56%	2%	42%	
PEAK HR FACTOR		0.647			0.714			0.000			0.804		0.827
APP/DEPART	44	/	38	40	/	44	0	/	0	45	/	47	0
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	3	4	0	0	3	3	0	0	0	5	0	2	20
4:15 PM	2	5	0	0	7	3	0	0	0	2	0	4	23
4:30 PM	5	7	0	0	8	3	0	0	0	1	0	5	29
4:45 PM	2	5	0	0	7	2	0	0	0	1	0	3	20
5:00 PM	2	0	0	0	2	3	0	0	0	5	0	5	17
5:15 PM	2	9	0	0	8	4	0	0	0	3	0	1	27
5:30 PM	4	9	0	0	6	2	0	0	0	1	0	7	29
5:45 PM	2	8	0	0	7	2	0	0	0	3	0	4	26
VOLUMES	22	47	0	0	48	22	0	0	0	21	0	31	191
APPROACH %	32%	68%	0%	0%	69%	31%	0%	0%	0%	40%	0%	60%	
APP/DEPART	69	/	78	70	/	69	0	/	0	52	/	44	0
BEGIN PEAK HR		5:00 PM											
VOLUMES	10	26	0	0	23	11	0	0	0	12	0	17	99
APPROACH %	28%	72%	0%	0%	68%	32%	0%	0%	0%	41%	0%	59%	
PEAK HR FACTOR		0.692			0.708			0.000			0.725		0.853
APP/DEPART	36	/	43	34	/	35	0	/	0	29	/	21	0

U-TURNS

	NB	SB	EB	WB	TTL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
03:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0

RTOR

	NRR	SRR	ERR	WRR
LANES:	X	0	X	0
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	2	0	2
7:45 AM	0	0	0	1
8:00 AM	0	0	0	2
8:15 AM	0	0	0	3
8:30 AM	0	1	0	1
8:45 AM	0	2	0	1
9:00 AM	0	0	0	0
9:15 AM	0	0	0	0
9:30 AM	0	0	0	0
9:45 AM	0	0	0	0
VOLUMES	0	5	0	10
PEAK HR VOLUMES	0	3	0	7
03:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	1
4:15 PM	0	1	0	4
4:30 PM	0	1	0	2
4:45 PM	0	1	0	3
5:00 PM	0	2	0	4
5:15 PM	0	1	0	0
5:30 PM	0	2	0	4
5:45 PM	0	1	0	2
VOLUMES	0	9	0	20
PEAK HR VOLUMES	0	6	0	10

Archibald

NORTH SIDE

SR-60 WB Ramps WEST SIDE

EAST SIDE **SR-60 WB Ramps**

SOUTH SIDE

Archibald

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Archibald	LOCATION #:	49
WEDNESDAY	EAST & WEST:	SR-60 WB Ramps	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND SR-60 WB Ramps			WESTBOUND SR-60 WB Ramps			
	LANES:	NL 1	NT 3	NR X	SL X	ST 4	SR 0	EL X	ET X	ER X	WL 0.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	2	1	0	0	0	2	0	1	6
	7:15 AM	0	1	0	0	0	1	0	0	0	2	0	0	4
	7:30 AM	1	2	0	0	1	0	0	0	0	2	0	1	7
	7:45 AM	2	5	0	0	3	0	0	0	0	3	0	0	13
	8:00 AM	1	8	0	0	1	0	0	0	0	3	0	0	13
	8:15 AM	0	2	0	0	3	0	0	0	0	4	0	0	9
	8:30 AM	2	7	0	0	4	1	0	0	0	1	0	3	18
	8:45 AM	0	1	0	0	0	0	0	0	0	3	0	1	5
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	6	26	0	0	14	3	0	0	0	20	0	6	75
	APPROACH %	19%	81%	0%	0%	82%	18%	0%	0%	0%	77%	0%	23%	
	APP/DEPART	32	/	32	17	/	34	0	/	0	26	/	9	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	5	22	0	0	11	1	0	0	0	11	0	3	53
	APPROACH %	19%	81%	0%	0%	92%	8%	0%	0%	0%	79%	0%	21%	
	PEAK HR FACTOR		0.750			0.600			0.000			0.875		0.736
	APP/DEPART	27	/	25	12	/	22	0	/	0	14	/	6	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	2	0	0	1	2	0	0	0	0	0	0	5
	4:15 PM	0	2	0	0	0	1	0	0	0	0	0	2	5
	4:30 PM	0	0	0	0	0	1	0	0	0	0	0	1	2
	4:45 PM	1	2	0	0	2	0	0	0	0	2	0	0	7
	5:00 PM	0	1	0	0	0	1	0	0	0	2	0	1	5
	5:15 PM	0	0	0	0	1	0	0	0	0	1	0	1	3
	5:30 PM	0	1	0	0	0	1	0	0	0	0	0	2	4
	5:45 PM	0	0	0	0	3	0	0	0	0	1	0	2	6
	VOLUMES	1	8	0	0	7	6	0	0	0	6	0	9	37
	APPROACH %	11%	89%	0%	0%	54%	46%	0%	0%	0%	40%	0%	60%	
	APP/DEPART	9	/	17	13	/	13	0	/	0	15	/	7	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	1	4	0	0	3	2	0	0	0	5	0	4	19
	APPROACH %	20%	80%	0%	0%	60%	40%	0%	0%	0%	56%	0%	44%	
	PEAK HR FACTOR		0.417			0.417			0.000			0.750		0.679
	APP/DEPART	5	/	8	5	/	8	0	/	0	9	/	3	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	1	0	1
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	3

0	0	0	1

0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	1	0	2
0	0	0	1
0	0	0	0
0	1	0	1
0	0	0	1
0	0	0	1
0	0	0	1
0	3	0	7

0	1	0	3

Archibald

NORTH SIDE

SR-60 WB Ramps WEST SIDE EAST SIDE **SR-60 WB Ramps**

SOUTH SIDE

Archibald

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Archibald	LOCATION #:	49
WEDNESDAY	EAST & WEST:	SR-60 WB Ramps	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

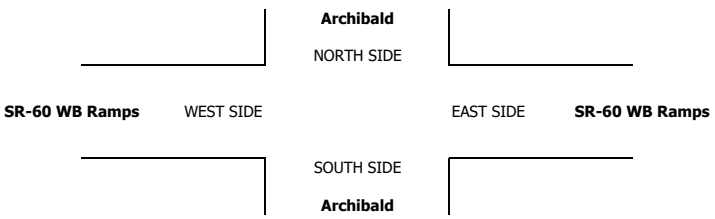
		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND SR-60 WB Ramps			WESTBOUND SR-60 WB Ramps			
	LANES:	NL 1	NT 3	NR X	SL X	ST 4	SR 0	EL X	ET X	ER X	WL 0.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	1	7	0	0	12	3	0	0	0	6	0	3	32
	7:15 AM	3	4	0	0	3	6	0	0	0	5	0	4	25
	7:30 AM	0	4	0	0	9	2	0	0	0	6	0	4	25
	7:45 AM	2	5	0	0	5	3	0	0	0	3	0	4	22
	8:00 AM	1	7	0	0	6	8	0	0	0	1	0	9	32
	8:15 AM	3	7	0	0	2	2	0	0	0	3	0	5	22
	8:30 AM	1	12	0	0	9	12	0	0	0	7	0	7	48
	8:45 AM	0	10	0	0	4	4	0	0	0	7	0	9	34
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	11	56	0	0	50	40	0	0	0	38	0	45	240
	APPROACH %	16%	84%	0%	0%	56%	44%	0%	0%	0%	46%	0%	54%	
	APP/DEPART	67	/	101	90	/	88	0	/	0	83	/	51	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	5	36	0	0	21	26	0	0	0	18	0	30	136
	APPROACH %	12%	88%	0%	0%	45%	55%	0%	0%	0%	38%	0%	63%	
	PEAK HR FACTOR		0.788			0.560			0.000			0.750		0.708
	APP/DEPART	41	/	66	47	/	39	0	/	0	48	/	31	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	7	0	0	2	4	0	0	0	3	0	2	18
	4:15 PM	5	4	0	0	8	4	0	0	0	3	0	3	27
	4:30 PM	0	5	0	0	6	4	0	0	0	6	0	3	24
	4:45 PM	0	2	0	0	8	3	0	0	0	7	0	0	20
	5:00 PM	0	0	0	0	0	2	0	0	0	1	0	4	7
	5:15 PM	0	8	0	0	2	4	0	0	0	2	0	6	22
	5:30 PM	0	5	0	0	3	3	0	0	0	4	0	3	18
	5:45 PM	2	4	0	0	5	5	0	0	0	5	0	2	23
	VOLUMES	7	35	0	0	34	29	0	0	0	31	0	23	159
	APPROACH %	17%	83%	0%	0%	54%	46%	0%	0%	0%	57%	0%	43%	
	APP/DEPART	42	/	58	63	/	65	0	/	0	54	/	36	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	5	18	0	0	24	15	0	0	0	19	0	8	89
	APPROACH %	22%	78%	0%	0%	62%	38%	0%	0%	0%	70%	0%	30%	
	PEAK HR FACTOR		0.639			0.813			0.000			0.750		0.824
	APP/DEPART	23	/	26	39	/	43	0	/	0	27	/	20	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	1	0	1
0	0	0	1
0	0	0	1
0	0	0	1
0	0	0	3
0	0	0	1
0	2	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	4	0	8
0	3	0	4
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	8	0	14
0	4	0	4



INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
Wed, Jan 30, 19	NORTH & SOUTH:	Archibald	LOCATION #:	50
	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (SR-60 EB Ramps)			WESTBOUND (SR-60 EB Ramps)			
	LANES:	NL X	NT 4	NR 0	SL 1	ST 3	SR X	EL 0.5	ET 0.5	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	290	130	24	120	0	42	0	80	0	0	0	686
	7:15 AM	0	312	133	22	107	0	51	0	107	0	0	0	732
	7:30 AM	0	330	127	34	147	0	60	1	101	0	0	0	800
	7:45 AM	0	309	119	16	159	0	111	0	102	0	0	0	816
	8:00 AM	0	266	126	28	119	0	61	0	113	0	0	0	713
	8:15 AM	0	262	93	12	106	0	67	0	94	0	0	0	634
	8:30 AM	0	283	85	15	112	0	82	1	97	0	0	0	675
	8:45 AM	0	241	98	12	111	0	87	1	84	0	0	0	634
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	2,293	911	163	981	0	561	3	778	0	0	0	5,692
	APPROACH %	0%	72%	28%	14%	86%	0%	42%	0%	58%	0%	0%	0%	
	APP/DEPART	3,204	/	2,856	1,146	/	1,759	1,342	/	1,077	0	/	0	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	1,217	505	100	532	0	283	1	423	0	0	0	3,062
	APPROACH %	0%	71%	29%	16%	84%	0%	40%	0%	60%	0%	0%	0%	
	PEAK HR FACTOR		0.942			0.874			0.830			0.000		0.937
	APP/DEPART	1,722	/	1,501	633	/	955	707	/	606	0	/	0	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	153	115	73	202	0	16	0	91	0	0	0	650
	4:15 PM	0	150	137	59	211	0	25	0	120	0	0	0	702
	4:30 PM	0	180	131	98	240	0	22	0	129	0	0	0	800
	4:45 PM	0	190	115	70	228	0	19	0	126	0	0	0	748
	5:00 PM	0	185	111	81	248	0	16	0	129	0	0	0	770
	5:15 PM	0	151	109	90	253	0	18	0	137	0	0	0	758
	5:30 PM	0	128	105	67	257	0	17	0	124	0	0	0	698
	5:45 PM	0	154	107	53	261	0	16	0	153	0	0	0	744
	VOLUMES	0	1,291	930	591	1,900	0	149	0	1,009	0	0	0	5,872
	APPROACH %	0%	58%	42%	24%	76%	0%	13%	0%	87%	0%	0%	0%	
	APP/DEPART	2,222	/	1,441	2,492	/	2,910	1,158	/	1,521	0	/	0	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	706	466	339	969	0	75	0	521	0	0	0	3,078
	APPROACH %	0%	60%	40%	26%	74%	0%	13%	0%	87%	0%	0%	0%	
	PEAK HR FACTOR		0.943			0.954			0.961			0.000		0.962
	APP/DEPART	1,173	/	782	1,309	/	1,491	596	/	805	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	2	0	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	1	0	0	2

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
393	0	369	0
217	0	204	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
42	0	48	0
54	0	61	0
49	0	60	0
41	0	53	0
40	0	58	0
37	0	69	0
34	0	50	0
32	0	51	0
329	0	450	0
167	0	240	0

Archibald

NORTH SIDE

SR-60 EB Ramps WEST SIDE EAST SIDE **SR-60 EB Ramps**

SOUTH SIDE

Archibald

ALL PED AND BIKE

	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	1	0	0	0	1
7:30 AM	1	0	0	0	1
7:45 AM	0	0	0	0	0
8:00 AM	0	1	0	0	1
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
TOTAL	2	1	0	0	3
3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	2	0	0	2
4:15 PM	1	0	0	0	1
4:30 PM	1	0	0	0	1
4:45 PM	1	1	0	0	2
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	3	3	0	0	6

PEDESTRIAN CROSSINGS

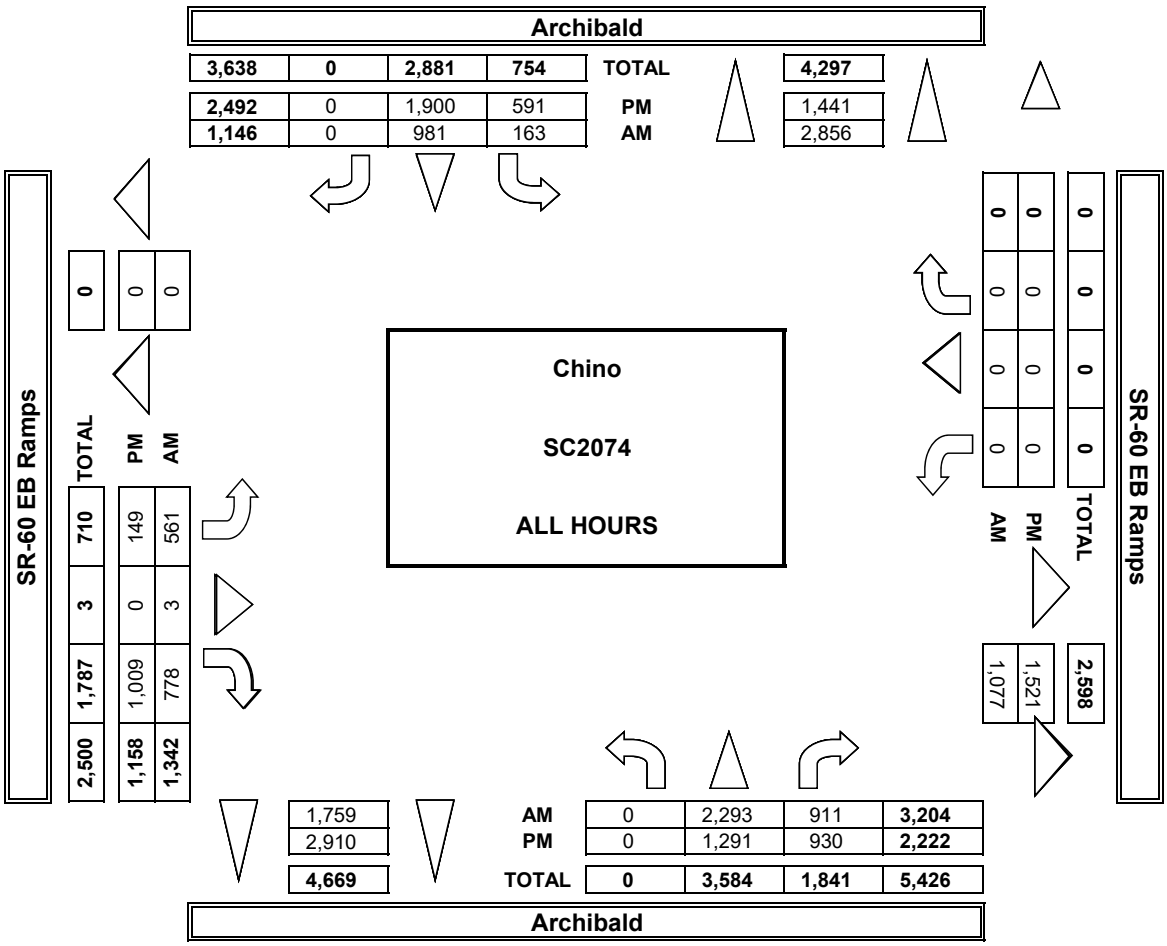
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	1	0	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
1	0	0	0	1
1	0	0	0	1
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
2	0	0	0	3

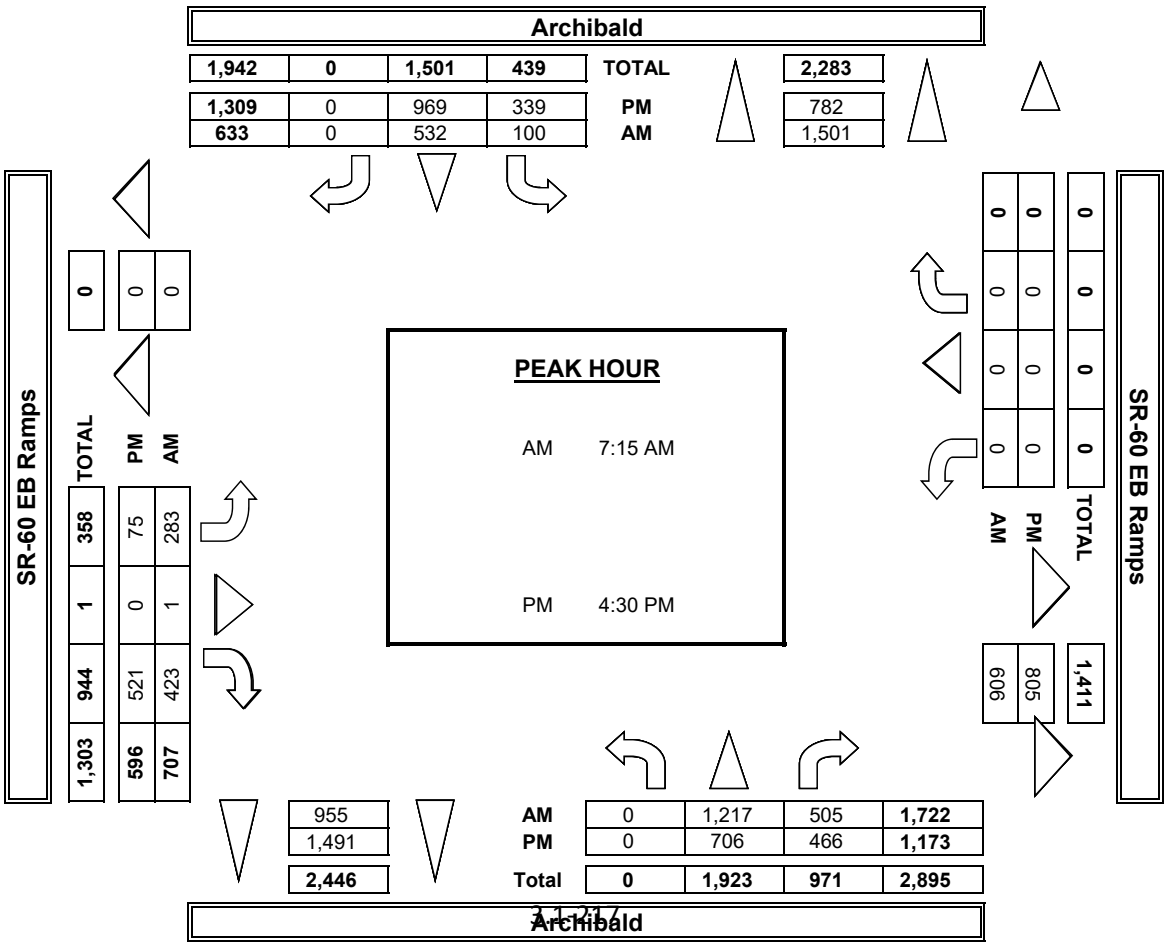
BICYCLE CROSSINGS

ES	WS	SS	NS	TOTAL
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
1	0	0	0	1
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	3

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Archibald	LOCATION #:	50
WEDNESDAY	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

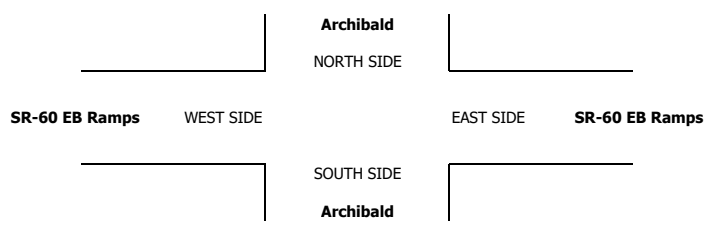
		NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (SR-60 EB Ramps)			WESTBOUND (SR-60 EB Ramps)			
	LANES:	NL X	NT 4	NR 0	SL 1	ST 3	SR X	EL 0.5	ET 0.5	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	12	7	3	9	0	5	0	5	0	0	0	41
	7:15 AM	0	6	11	2	4	0	2	0	9	0	0	0	34
	7:30 AM	0	6	4	4	5	0	6	0	3	0	0	0	28
	7:45 AM	0	3	10	5	7	0	4	0	8	0	0	0	37
	8:00 AM	0	4	9	5	14	0	3	0	12	0	0	0	47
	8:15 AM	0	6	6	3	4	0	2	0	17	0	0	0	38
	8:30 AM	0	6	2	3	4	0	6	1	8	0	0	0	30
	8:45 AM	0	10	11	3	8	0	7	1	6	0	0	0	46
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	53	60	28	55	0	35	2	68	0	0	0	301
	APPROACH %	0%	47%	53%	34%	66%	0%	33%	2%	65%	0%	0%	0%	
	APP/DEPART	113	/	88	83	/	123	105	/	90	0	/	0	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	0	26	28	14	30	0	18	2	43	0	0	0	161
	APPROACH %	0%	48%	52%	32%	68%	0%	29%	3%	68%	0%	0%	0%	
	PEAK HR FACTOR		0.643			0.579			0.829			0.000		0.856
	APP/DEPART	54	/	44	44	/	73	63	/	44	0	/	0	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	6	6	1	7	0	1	0	6	0	0	0	27
	4:15 PM	0	4	8	1	8	0	3	0	6	0	0	0	30
	4:30 PM	0	10	2	1	8	0	2	0	6	0	0	0	29
	4:45 PM	0	7	6	3	5	0	0	0	2	0	0	0	23
	5:00 PM	0	2	4	2	5	0	0	0	2	0	0	0	15
	5:15 PM	0	9	1	1	10	0	2	0	4	0	0	0	27
	5:30 PM	0	10	5	1	6	0	3	0	2	0	0	0	27
	5:45 PM	0	6	3	1	9	0	4	0	2	0	0	0	25
	VOLUMES	0	54	35	11	58	0	15	0	30	0	0	0	203
	APPROACH %	0%	61%	39%	16%	84%	0%	33%	0%	67%	0%	0%	0%	
	APP/DEPART	89	/	69	69	/	88	45	/	46	0	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	27	22	6	28	0	6	0	20	0	0	0	109
	APPROACH %	0%	55%	45%	18%	82%	0%	23%	0%	77%	0%	0%	0%	
	PEAK HR FACTOR		0.942			0.944			0.722			0.000		0.908
	APP/DEPART	49	/	33	34	/	48	26	/	28	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR X	ERR 0	WRR X
1	0	0	0
6	0	4	0
1	0	1	0
5	0	5	0
4	0	5	0
5	0	8	0
1	0	5	0
5	0	3	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
28	0	31	0
15	0	21	0
0	0	0	0
0	0	0	0
0	0	0	0
3	0	2	0
2	0	2	0
0	0	3	0
2	0	0	0
1	0	0	0
0	0	2	0
3	0	0	0
1	0	0	0
12	0	9	0
7	0	7	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 1/30/19 WEDNESDAY	LOCATION:	Chino	PROJECT #:	SC2074
	NORTH & SOUTH:	Archibald	LOCATION #:	50
	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND SR-60 EB Ramps			WESTBOUND SR-60 EB Ramps				U-TURNS					RTOR			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:	X	4	0	1	3	X	0.5	0.5	1	X	X	X							0	X	0	X
AM 7:00 AM	0	0	5	1	3	0	0	0	3	0	0	0	12	0	0	0	0	0	3	0	1	0
7:15 AM	0	0	4	0	2	0	1	0	2	0	0	0	9	0	0	0	0	0	3	0	1	0
7:30 AM	0	3	3	1	2	0	0	0	2	0	0	0	11	0	0	0	0	0	1	0	1	0
7:45 AM	0	5	2	0	6	0	2	0	0	0	0	0	15	0	0	0	0	0	1	0	0	0
8:00 AM	0	9	7	0	4	0	0	0	2	0	0	0	22	0	0	0	0	0	3	0	1	0
8:15 AM	0	2	1	1	6	0	0	0	1	0	0	0	11	0	0	0	0	0	0	0	0	0
8:30 AM	0	8	3	2	3	0	1	0	2	0	0	0	19	0	0	0	0	0	1	0	2	0
8:45 AM	0	0	4	0	3	0	1	0	1	0	0	0	9	0	0	0	0	0	2	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	27	29	5	29	0	5	0	13	0	0	0	108	0	0	0	0	0	14	0	6	0
APPROACH %	0%	48%	52%	15%	85%	0%	28%	0%	72%	0%	0%	0%										
APP/DEPART	56	/	32	34	/	42	18	/	34	0	/	0	0									
BEGIN PEAK HR		7:45 AM																				
VOLUMES	0	24	13	3	19	0	3	0	5	0	0	0	67						5	0	3	0
APPROACH %	0%	65%	35%	14%	86%	0%	38%	0%	63%	0%	0%	0%										
PEAK HR FACTOR		0.578			0.786			0.667			0.000		0.761									
APP/DEPART	37	/	27	22	/	24	8	/	16	0	/	0	0									
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	2	1	0	1	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
4:15 PM	0	1	3	0	0	0	1	0	0	0	0	0	5	0	0	0	0	0	1	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	3	0	2	2	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0
5:00 PM	0	1	0	1	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	2	0	2	0	0	0	1	0	0	0	5	0	0	0	0	0	1	0	1	0
5:30 PM	0	0	0	0	0	0	1	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	1	1	3	0	0	0	0	0	0	0	5	0	0	0	0	0	1	0	0	0
VOLUMES	0	7	7	4	9	0	2	0	3	0	0	0	32	0	0	0	0	0	3	0	1	0
APPROACH %	0%	50%	50%	31%	69%	0%	40%	0%	60%	0%	0%	0%										
APP/DEPART	14	/	9	13	/	12	5	/	11	0	/	0	0									
BEGIN PEAK HR		4:45 PM																				
VOLUMES	0	4	2	3	5	0	1	0	3	0	0	0	18						1	0	1	0
APPROACH %	0%	67%	33%	38%	63%	0%	25%	0%	75%	0%	0%	0%										
PEAK HR FACTOR		0.500			0.500			0.333			0.000		0.643									
APP/DEPART	6	/	5	8	/	8	4	/	5	0	/	0	0									

Archibald

NORTH SIDE

SR-60 EB Ramps WEST SIDE

EAST SIDE **SR-60 EB Ramps**

SOUTH SIDE

Archibald

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Archibald	LOCATION #:	50
WEDNESDAY	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

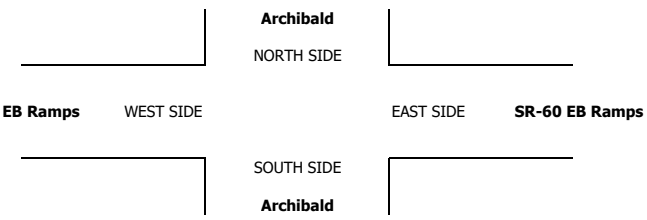
		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND SR-60 EB Ramps			WESTBOUND SR-60 EB Ramps			
	LANES:	NL X	NT 4	NR 0	SL 1	ST 3	SR X	EL 0.5	ET 0.5	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	2	6	9	9	0	6	0	3	0	0	0	35
	7:15 AM	0	3	7	3	5	0	4	0	5	0	0	0	27
	7:30 AM	0	1	4	6	9	0	3	0	0	0	0	0	23
	7:45 AM	0	1	5	3	5	0	6	0	2	0	0	0	22
	8:00 AM	0	1	3	6	1	0	7	0	1	0	0	0	19
	8:15 AM	0	3	3	2	3	0	7	0	1	0	0	0	19
	8:30 AM	0	2	5	3	13	0	11	0	4	0	0	0	38
	8:45 AM	0	1	6	2	9	0	9	0	2	0	0	0	29
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	14	39	34	54	0	53	0	18	0	0	0	212
	APPROACH %	0%	26%	74%	39%	61%	0%	75%	0%	25%	0%	0%	0%	
	APP/DEPART	53	/	67	88	/	72	71	/	73	0	/	0	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	0	7	22	21	28	0	19	0	10	0	0	0	107
	APPROACH %	0%	24%	76%	43%	57%	0%	66%	0%	34%	0%	0%	0%	
	PEAK HR FACTOR		0.725			0.681			0.806			0.000		0.764
	APP/DEPART	29	/	26	49	/	38	29	/	43	0	/	0	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	4	3	1	4	0	3	0	0	0	0	0	15
	4:15 PM	0	5	4	6	5	0	4	0	0	0	0	0	24
	4:30 PM	0	3	3	4	8	0	2	0	0	0	0	0	20
	4:45 PM	0	0	6	1	14	0	2	0	0	0	0	0	23
	5:00 PM	0	0	3	0	1	0	0	0	0	0	0	0	4
	5:15 PM	0	2	2	2	2	0	6	0	0	0	0	0	14
	5:30 PM	0	0	2	2	5	0	5	0	1	0	0	0	15
	5:45 PM	0	4	0	2	8	0	2	0	1	0	0	0	17
	VOLUMES	0	18	23	18	47	0	24	0	2	0	0	0	132
	APPROACH %	0%	44%	56%	28%	72%	0%	92%	0%	8%	0%	0%	0%	
	APP/DEPART	41	/	42	65	/	49	26	/	41	0	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	12	16	12	31	0	11	0	0	0	0	0	82
	APPROACH %	0%	43%	57%	28%	72%	0%	100%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.778			0.717			0.688			0.000		0.854
	APP/DEPART	28	/	23	43	/	31	11	/	28	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR X	ERR 0	WRR X
3	0	3	0
2	0	2	0
2	0	0	0
1	0	0	0
2	0	0	0
1	0	0	0
3	0	2	0
3	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
17	0	8	0
8	0	5	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
7	0	0	0
5	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Jan 30, 19

LOCATION: Chino
NORTH & SOUTH: Archibald
EAST & WEST: Riverside

PROJECT #: SC2074
LOCATION #: 51
CONTROL: SIGNAL

NOTES:

AM PM MD OTHER OTHER

▲ N
◄ W E ►
S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	62	216	8	30	78	29	31	76	40	15	111	54	750
	7:15 AM	78	254	14	37	90	40	30	66	44	22	105	41	821
	7:30 AM	70	228	10	24	100	60	67	90	62	19	116	53	899
	7:45 AM	81	241	8	35	100	64	59	58	56	14	120	33	869
	8:00 AM	75	219	4	20	87	49	52	62	54	18	100	34	774
	8:15 AM	79	256	14	22	79	44	37	70	46	8	76	28	759
	8:30 AM	82	257	9	34	92	40	30	58	24	10	81	23	740
	8:45 AM	79	202	13	25	90	30	38	46	35	21	67	20	666
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	606	1,873	80	227	716	356	344	526	361	127	776	286	6,278
	APPROACH %	24%	73%	3%	17%	55%	27%	28%	43%	29%	11%	65%	24%	
	APP/DEPART	2,559	/	2,502	1,299	/	1,221	1,231	/	834	1,189	/	1,721	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	304	942	36	116	377	213	208	276	216	73	441	161	3,363
	APPROACH %	24%	73%	3%	16%	53%	30%	30%	39%	31%	11%	65%	24%	
	PEAK HR FACTOR		0.926			0.887			0.799			0.898		0.935
	APP/DEPART	1,282	/	1,311	706	/	678	700	/	429	675	/	945	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	60	117	14	43	146	35	60	138	80	24	89	23	829
	4:15 PM	74	143	10	52	152	41	35	113	69	19	84	24	816
	4:30 PM	60	163	9	63	172	52	56	128	74	23	87	21	908
	4:45 PM	70	168	10	58	174	52	63	130	86	19	79	29	938
	5:00 PM	65	119	6	64	194	54	57	139	64	33	99	22	916
	5:15 PM	58	138	12	67	193	56	47	157	102	40	124	25	1,019
	5:30 PM	68	126	10	68	179	51	59	154	70	24	94	30	933
	5:45 PM	70	125	15	69	214	58	38	131	84	34	82	30	950
	VOLUMES	525	1,099	86	484	1,424	399	415	1,090	629	216	738	204	7,309
	APPROACH %	31%	64%	5%	21%	62%	17%	19%	51%	29%	19%	64%	18%	
	APP/DEPART	1,710	/	1,719	2,307	/	2,327	2,134	/	1,661	1,158	/	1,602	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	261	508	43	268	780	219	201	581	320	131	399	107	3,818
	APPROACH %	32%	63%	5%	21%	62%	17%	18%	53%	29%	21%	63%	17%	
	PEAK HR FACTOR		0.967			0.929			0.900			0.843		0.937
	APP/DEPART	812	/	816	1,267	/	1,262	1,102	/	893	637	/	847	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
1	0	1	0	2
3	0	0	0	3
2	0	0	1	3
5	0	0	0	5
1	0	0	0	1
3	0	0	0	3
1	0	0	0	1
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
18	0	1	1	20
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
6	0	0	0	6
7	0	0	0	7
4	0	0	0	4
11	1	0	1	13
10	0	0	0	10
6	0	0	1	7
9	0	0	0	9
7	0	0	0	7
60	1	0	2	63

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
2	13	28	23
2	16	30	19
0	25	37	27
1	13	26	15
0	19	33	16
4	19	26	9
2	8	13	12
3	11	23	17
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
14	124	216	138
3	73	126	77
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
2	10	42	13
0	16	44	9
1	4	52	11
1	14	56	6
2	13	27	12
1	11	43	14
3	24	37	16
2	12	41	13
12	104	342	94
8	60	148	55

Archibald

NORTH SIDE

Riverside WEST SIDE EAST SIDE **Riverside**

SOUTH SIDE

Archibald

ALL PED AND BIKE

	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	1	0	6	1	8
7:15 AM	1	0	4	1	6
7:30 AM	1	0	0	1	2
7:45 AM	0	0	2	0	2
8:00 AM	0	1	0	4	5
8:15 AM	0	1	3	0	4
8:30 AM	3	0	1	2	6
8:45 AM	0	0	0	1	1
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
TOTAL	6	2	16	10	34
3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	1	1	2	1	5
4:15 PM	2	1	2	2	7
4:30 PM	2	2	0	1	5
4:45 PM	2	1	2	4	9
5:00 PM	3	4	2	2	11
5:15 PM	0	2	3	1	6
5:30 PM	1	0	2	0	3
5:45 PM	0	2	3	0	5
TOTAL	11	13	16	11	51

PEDESTRIAN CROSSINGS

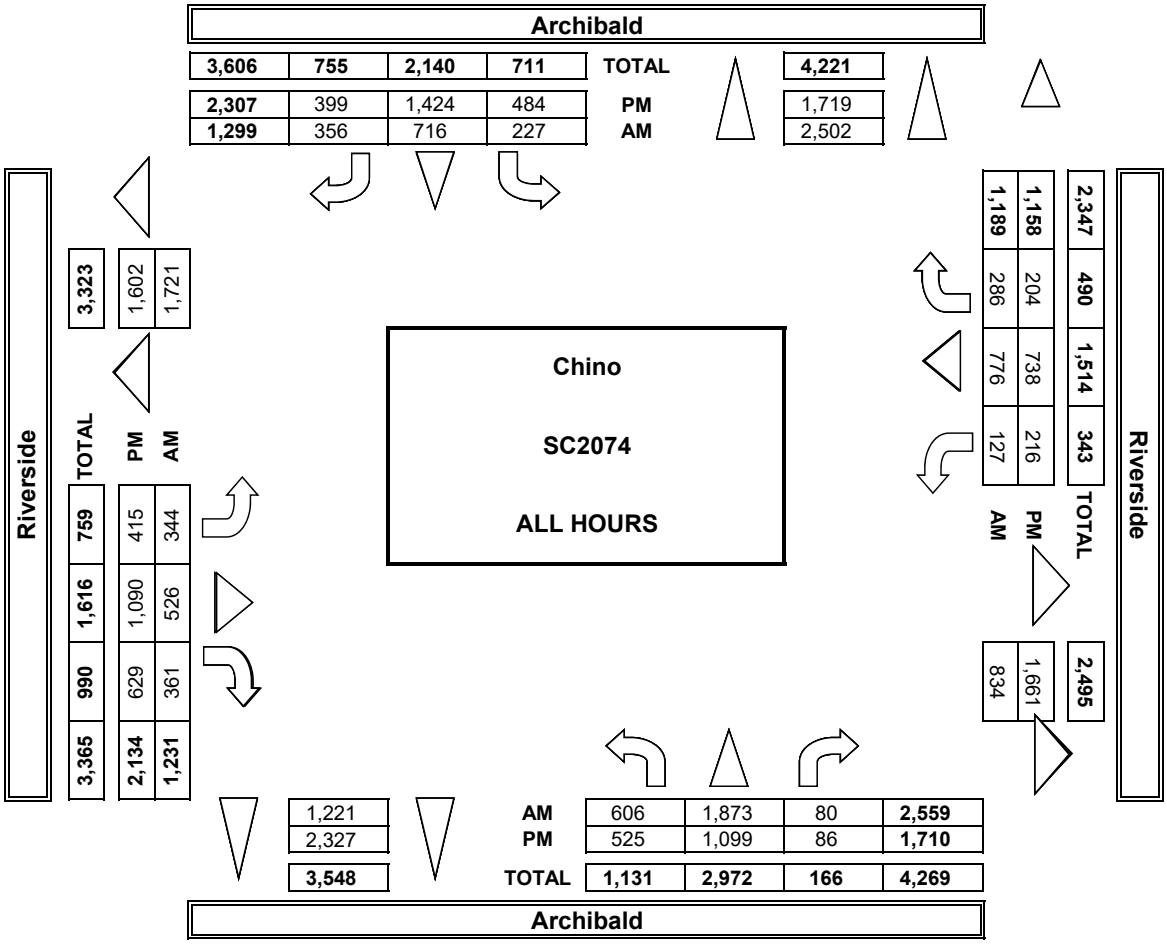
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
1	0	5	0	6
1	0	3	1	5
1	0	0	1	2
0	0	2	0	2
0	1	0	3	4
0	1	3	0	4
2	0	1	0	3
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
2	1	5	5	27
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	2	0	3
1	0	1	2	4
1	2	0	0	3
1	1	2	3	7
2	4	2	2	10
0	2	3	1	6
1	0	1	0	2
0	2	1	0	3
3	8	7	3	38

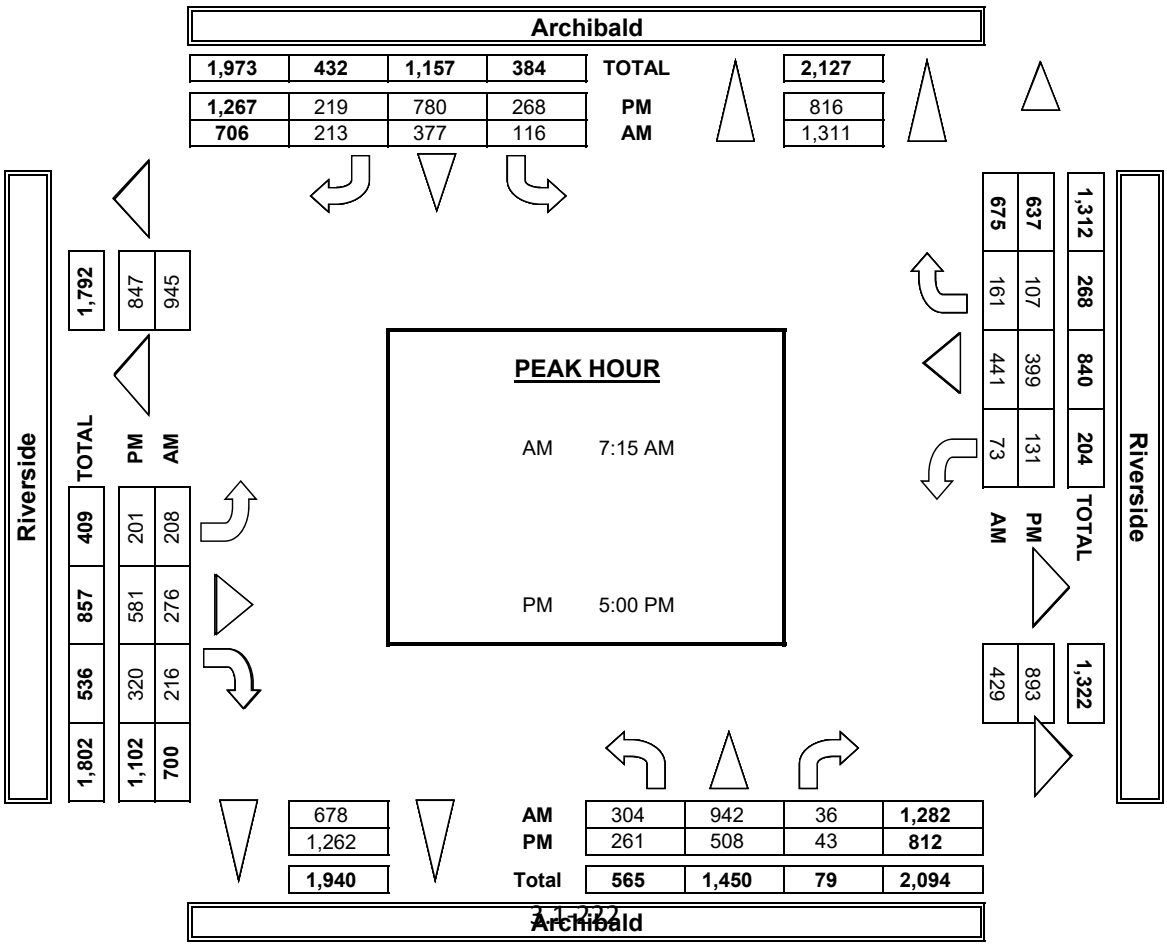
BICYCLE CROSSINGS

ES	WS	SS	NS	TOTAL
0	0	1	1	2
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
1	0	0	2	3
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	1	7
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	1	2
1	1	1	0	3
1	0	0	1	2
1	0	0	1	2
1	0	0	0	1
0	0	0	0	0
0	0	1	0	1
0	0	2	0	2
1	0	0	1	2

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Archibald	LOCATION #:	51
WEDNESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

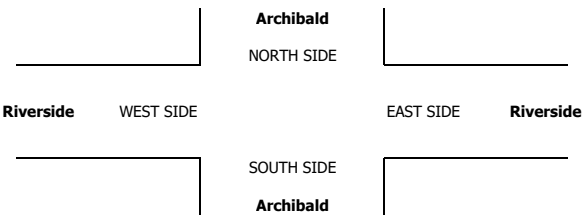
		NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	3	6	0	2	8	3	2	2	2	1	4	1	34
	7:15 AM	2	12	0	3	15	2	2	2	4	1	3	0	46
	7:30 AM	2	6	0	1	10	0	4	6	6	1	5	2	43
	7:45 AM	4	9	0	4	10	2	3	4	13	0	5	0	54
	8:00 AM	2	6	0	1	10	1	4	6	4	5	8	1	48
	8:15 AM	4	9	0	3	11	4	1	7	6	0	4	2	51
	8:30 AM	6	6	1	0	9	2	0	4	2	0	9	2	41
	8:45 AM	5	10	1	2	8	2	3	3	4	2	7	2	49
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	28	64	2	16	81	16	19	34	41	10	45	10	366
	APPROACH %	30%	68%	2%	14%	72%	14%	20%	36%	44%	15%	69%	15%	
	APP/DEPART	94	/	93	113	/	133	94	/	52	65	/	88	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	11	30	0	9	41	7	12	23	29	6	22	5	196
	APPROACH %	26%	71%	0%	16%	72%	12%	19%	36%	45%	18%	67%	15%	
	PEAK HR FACTOR		0.808			0.792			0.800			0.589		0.907
	APP/DEPART	42	/	47	57	/	77	64	/	32	33	/	40	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	2	9	1	2	9	0	3	8	5	1	4	1	45
	4:15 PM	3	12	0	1	4	1	0	7	1	2	6	1	38
	4:30 PM	2	11	1	1	6	2	4	4	1	0	1	0	33
	4:45 PM	0	11	0	1	5	4	3	2	3	0	1	0	30
	5:00 PM	3	10	1	2	4	3	5	5	2	0	2	0	37
	5:15 PM	2	8	0	3	13	2	4	4	4	0	3	1	44
	5:30 PM	3	6	0	1	4	0	4	4	4	0	3	0	29
	5:45 PM	0	7	1	1	7	2	1	3	8	1	2	0	33
	VOLUMES	15	74	4	12	52	14	24	37	28	4	22	3	289
	APPROACH %	16%	80%	4%	15%	67%	18%	27%	42%	31%	14%	76%	10%	
	APP/DEPART	93	/	101	78	/	84	89	/	53	29	/	51	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	7	43	2	5	24	7	10	21	10	3	12	2	146
	APPROACH %	13%	83%	4%	14%	67%	19%	24%	51%	24%	18%	71%	12%	
	PEAK HR FACTOR		0.867			0.818			0.641			0.472		0.811
	APP/DEPART	52	/	55	36	/	37	41	/	28	17	/	26	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	1	2	0
0	1	2	0
0	0	4	1
0	0	8	0
0	0	1	1
0	0	2	0
1	0	2	1
0	0	2	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	2	23	4
0	0	15	2
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	2	0
0	0	2	0
0	0	3	0
0	1	11	1
0	1	4	1



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Archibald	LOCATION #:	51
WEDNESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Riverside			WESTBOUND Riverside			
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	2	0	0	2	2	2	1	0	0	0	0	9
	7:15 AM	1	0	0	0	2	1	2	1	1	1	2	0	11
	7:30 AM	0	6	0	0	2	0	2	1	0	0	0	1	12
	7:45 AM	0	7	1	0	4	1	1	1	2	1	0	0	18
	8:00 AM	2	11	0	0	4	1	1	1	0	0	0	0	20
	8:15 AM	2	4	0	2	4	2	1	1	0	0	0	0	16
	8:30 AM	0	10	0	0	6	2	0	1	0	0	0	0	19
	8:45 AM	2	5	0	1	3	1	3	0	1	2	0	0	18
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	7	45	1	3	27	10	12	7	4	4	2	1	123
	APPROACH %	13%	85%	2%	8%	68%	25%	52%	30%	17%	57%	29%	14%	
	APP/DEPART	53	/	58	40	/	35	23	/	11	7	/	19	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	6	30	0	3	17	6	5	3	1	2	0	0	73
	APPROACH %	17%	83%	0%	12%	65%	23%	56%	33%	11%	100%	0%	0%	
	PEAK HR FACTOR		0.692			0.813			0.563			0.250		0.913
	APP/DEPART	36	/	35	26	/	20	9	/	6	2	/	12	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	1	0	1	0	0	0	0	1	0	0	0	3
	4:15 PM	1	0	0	0	0	0	1	0	0	0	0	0	2
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	2	1	0	2	0	0	0	1	0	1	0	7
	5:00 PM	0	0	0	0	1	2	2	1	1	0	0	1	8
	5:15 PM	1	1	0	0	0	1	0	1	0	0	0	0	4
	5:30 PM	1	0	0	0	1	1	0	0	0	0	0	0	3
	5:45 PM	2	0	0	0	1	2	0	0	0	0	0	0	5
	VOLUMES	5	4	1	1	5	6	3	2	3	0	1	1	32
	APPROACH %	50%	40%	10%	8%	42%	50%	38%	25%	38%	0%	50%	50%	
	APP/DEPART	10	/	8	12	/	8	8	/	4	2	/	12	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	2	3	1	0	4	4	2	2	2	0	1	1	22
	APPROACH %	33%	50%	17%	0%	50%	50%	33%	33%	33%	0%	50%	50%	
	PEAK HR FACTOR		0.500			0.667			0.375			0.500		0.688
	APP/DEPART	6	/	6	8	/	6	6	/	3	2	/	7	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	1	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	3	1	0
0	2	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	1	1	0
0	1	1	0

Archibald

NORTH SIDE

Riverside WEST SIDE EAST SIDE **Riverside**

SOUTH SIDE

Archibald

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Archibald	LOCATION #:	51
WEDNESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

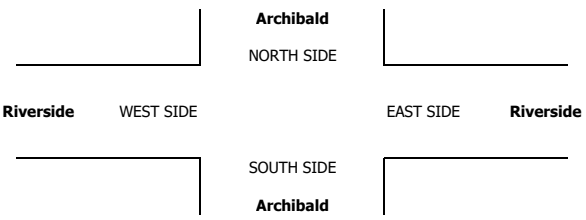
		NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	1	5	0	1	14	0	3	0	2	1	0	1	28
	7:15 AM	0	5	0	0	10	2	0	1	0	0	0	0	18
	7:30 AM	0	7	1	0	4	3	0	0	1	0	0	0	16
	7:45 AM	0	7	3	1	6	0	1	0	1	1	0	0	20
	8:00 AM	0	3	0	0	2	0	1	1	0	0	2	1	10
	8:15 AM	0	3	2	0	3	0	4	1	1	1	1	1	17
	8:30 AM	1	6	0	0	12	3	1	3	0	0	1	0	27
	8:45 AM	3	3	2	0	7	3	0	1	0	0	3	0	22
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	5	39	8	2	58	11	10	7	5	3	7	3	158
	APPROACH %	10%	75%	15%	3%	82%	15%	45%	32%	23%	23%	54%	23%	
	APP/DEPART	52	/	52	71	/	66	22	/	17	13	/	23	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	1	24	4	2	34	5	4	1	4	2	0	1	82
	APPROACH %	3%	83%	14%	5%	83%	12%	44%	11%	44%	67%	0%	33%	
	PEAK HR FACTOR		0.725			0.683			0.450			0.375		0.732
	APP/DEPART	29	/	29	41	/	40	9	/	7	3	/	6	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	9	0	0	3	0	2	1	0	0	3	1	20
	4:15 PM	0	2	0	0	3	2	0	0	0	0	2	0	9
	4:30 PM	1	6	1	1	4	1	0	0	1	2	3	0	20
	4:45 PM	0	4	0	0	12	1	1	1	1	1	2	0	23
	5:00 PM	0	3	0	0	4	2	0	0	1	0	0	0	10
	5:15 PM	1	2	0	0	1	1	0	0	0	0	0	0	5
	5:30 PM	0	2	0	0	2	1	0	1	0	1	2	0	9
	5:45 PM	0	4	1	0	7	3	0	2	0	0	1	0	18
	VOLUMES	3	32	2	1	36	11	3	5	3	4	13	1	114
	APPROACH %	8%	86%	5%	2%	75%	23%	27%	45%	27%	22%	72%	6%	
	APP/DEPART	37	/	36	48	/	43	11	/	8	18	/	27	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	2	21	1	1	22	4	3	2	2	3	10	1	72
	APPROACH %	8%	88%	4%	4%	81%	15%	43%	29%	29%	21%	71%	7%	
	PEAK HR FACTOR		0.600			0.519			0.583			0.700		0.783
	APP/DEPART	24	/	25	27	/	27	7	/	4	14	/	16	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	1	1
0	0	0	0
0	1	1	0
1	0	0	0
0	0	0	0
1	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
2	2	2	1
1	1	2	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	2	1	0
0	1	1	0



INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Jan 30, 19

LOCATION: Chino
NORTH & SOUTH: Archibald
EAST & WEST: Chino

PROJECT #: SC2074
LOCATION #: 52
CONTROL: SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

▲ N
◄ W
E ►
S ▼

Add U-Turns to Left Turns

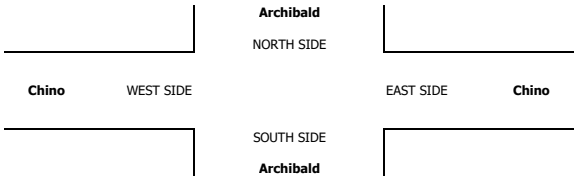
		NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Chino)			WESTBOUND (Chino)			
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 1	TOTAL
AM	7:00 AM	7	230	11	11	113	9	5	0	2	7	1	40	436
	7:15 AM	8	205	9	15	130	2	9	0	2	6	1	39	426
	7:30 AM	10	209	15	30	142	7	17	1	4	21	0	66	522
	7:45 AM	18	230	10	46	149	5	14	0	4	22	1	84	583
	8:00 AM	20	227	5	16	149	4	11	1	7	15	1	53	509
	8:15 AM	49	251	2	14	104	2	38	1	8	7	0	29	505
	8:30 AM	28	265	0	6	106	0	27	3	5	5	0	28	473
	8:45 AM	28	224	1	17	112	3	18	0	5	4	0	22	434
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	168	1,841	53	155	1,005	32	139	6	37	87	4	361	3,888
	APPROACH %	8%	89%	3%	13%	84%	3%	76%	3%	20%	19%	1%	80%	
	APP/DEPART	2,062	/	2,341	1,192	/	1,179	182	/	214	452	/	154	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	97	917	32	106	544	18	80	3	23	65	2	232	2,119
	APPROACH %	9%	88%	3%	16%	81%	3%	75%	3%	22%	22%	1%	78%	
	PEAK HR FACTOR		0.866			0.835			0.564			0.699		0.909
	APP/DEPART	1,046	/	1,229	668	/	664	106	/	141	299	/	85	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	134	8	29	211	2	5	1	4	3	2	19	419
	4:15 PM	7	172	6	24	208	1	6	1	3	9	0	19	456
	4:30 PM	3	164	8	34	204	2	7	0	0	5	0	26	453
	4:45 PM	3	177	9	33	232	3	4	0	2	3	0	27	493
	5:00 PM	5	140	5	33	236	3	3	1	2	2	0	21	451
	5:15 PM	4	160	12	35	284	2	3	0	1	8	0	31	540
	5:30 PM	9	138	5	33	227	3	3	1	1	5	0	26	451
	5:45 PM	1	130	11	34	232	3	7	2	2	1	1	23	447
	VOLUMES	33	1,215	64	255	1,834	19	38	6	15	36	3	192	3,710
	APPROACH %	3%	93%	5%	12%	87%	1%	64%	10%	25%	16%	1%	83%	
	APP/DEPART	1,312	/	1,445	2,108	/	1,906	59	/	325	231	/	34	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	15	641	34	135	956	10	17	1	5	18	0	105	1,937
	APPROACH %	2%	93%	5%	12%	87%	1%	74%	4%	22%	15%	0%	85%	
	PEAK HR FACTOR		0.913			0.857			0.821			0.788		0.897
	APP/DEPART	690	/	763	1,101	/	988	23	/	170	123	/	16	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
3	0	0	0	3
4	0	0	0	4
7	0	0	0	7
7	0	0	0	7
9	0	0	0	9
9	0	0	0	9
6	0	0	0	6
5	0	0	0	5
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
50	0	0	0	50
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
5	0	0	0	5
1	0	0	0	1
3	0	0	0	3
3	0	0	0	3
2	0	0	0	2
3	0	0	0	3
7	0	0	0	7
0	0	0	0	0
21	0	0	0	21

RTOR

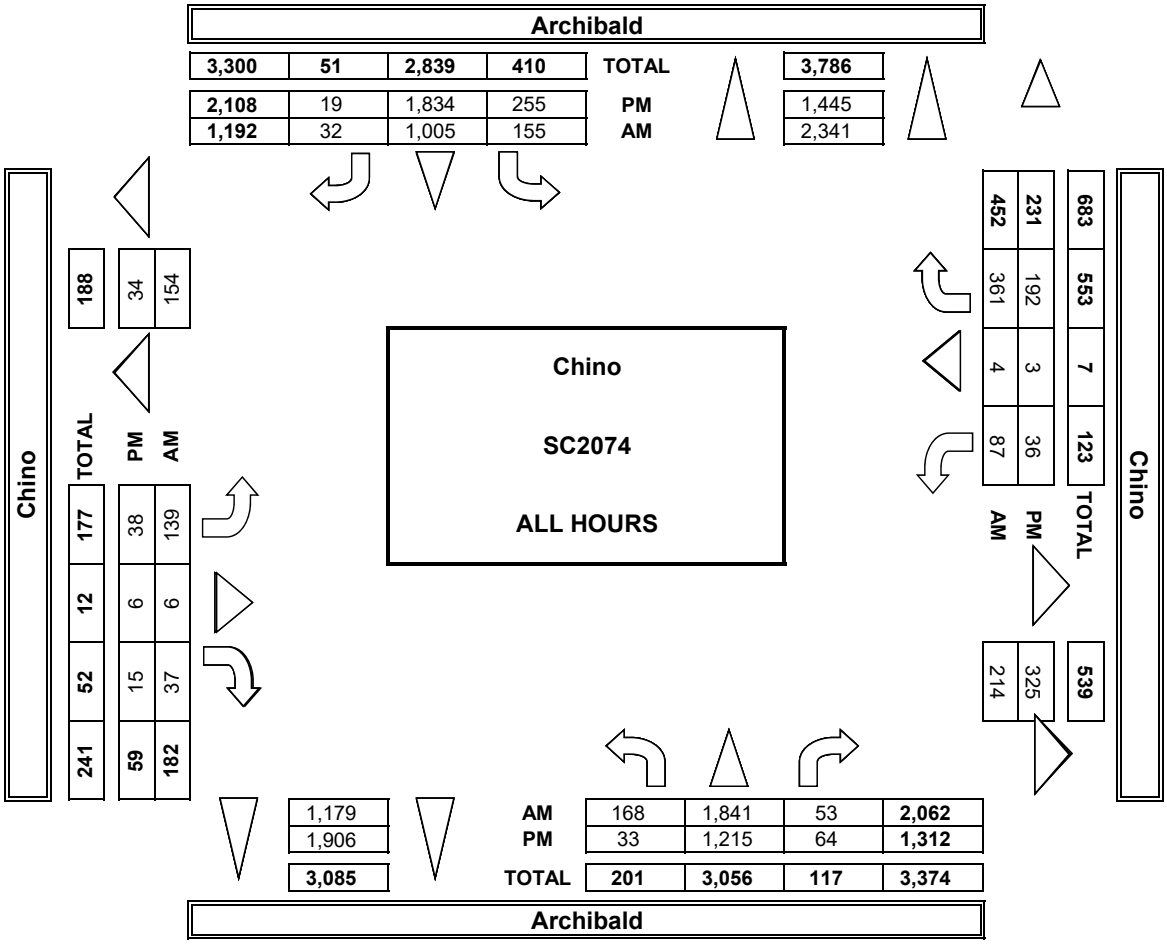
NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	25
1	1	1	27
1	0	2	30
0	0	4	49
1	1	6	28
0	1	4	18
0	0	4	17
0	0	2	20
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
3	3	23	214
2	2	16	125
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	8
1	0	1	11
3	0	0	20
1	0	0	18
3	1	1	17
1	0	1	21
1	0	1	14
3	1	1	11
13	2	6	120
8	1	2	76

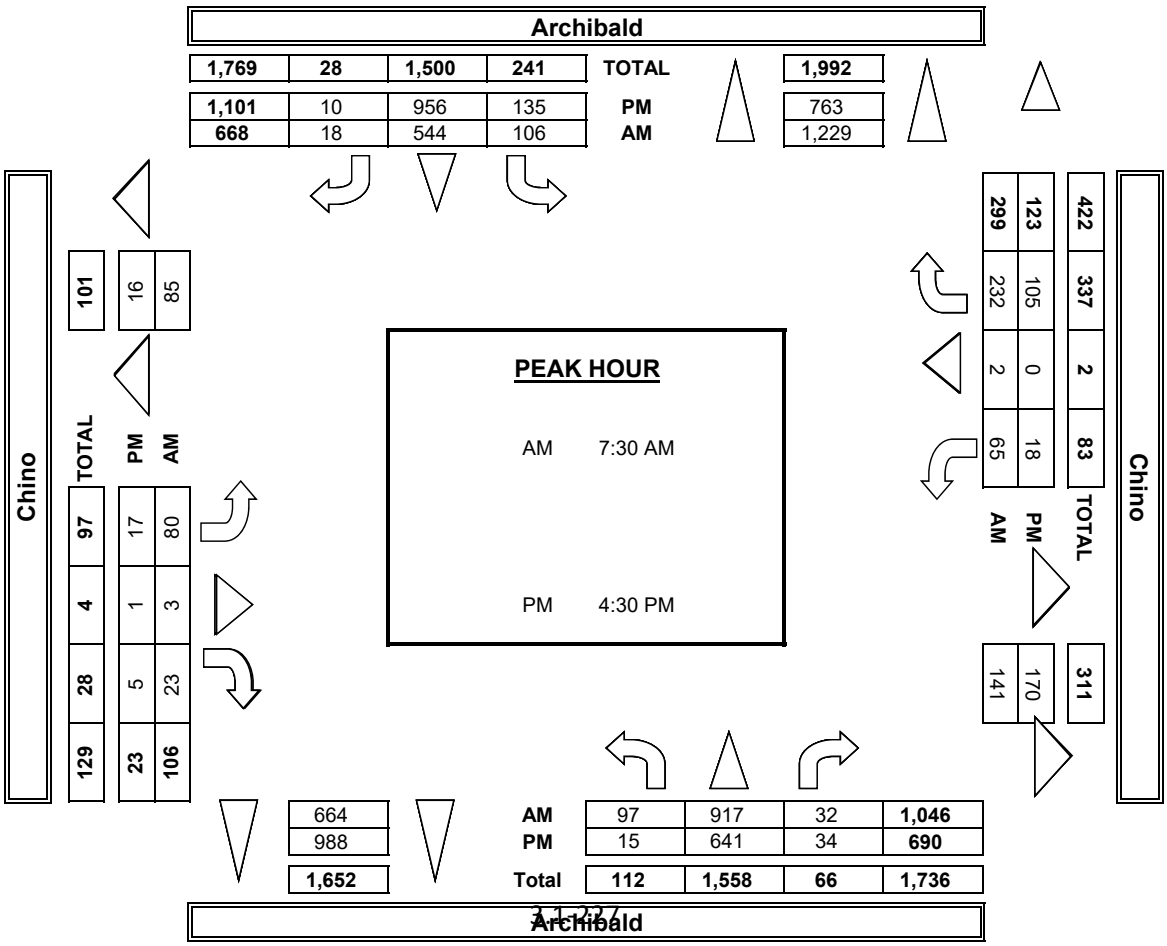


		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	1	0	2	0	3	1	0	2	0	3	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	1	0	2	0	3	1	0	2	0	3	0	0	0	0	0
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	4:15 PM	1	1	0	0	2	0	0	0	0	0	1	1	0	0	2
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	4	1	0	0	5	2	0	0	0	3	0	0	0	0	2

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Archibald	LOCATION #:	52
WEDNESDAY	EAST & WEST:	Chino	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

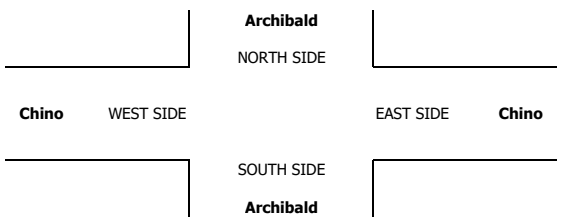
	NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Chino)			WESTBOUND (Chino)			
LANES:	NL 1	NT 3	NR 0	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 1	TOTAL
7:00 AM	1	8	0	0	11	5	2	0	1	0	0	1	29
7:15 AM	0	9	0	1	6	0	0	0	0	0	0	0	16
7:30 AM	1	5	2	2	16	1	0	0	2	0	0	1	30
7:45 AM	1	9	1	2	18	2	2	0	1	0	0	1	37
8:00 AM	0	7	0	1	22	0	2	0	0	1	0	2	35
8:15 AM	4	4	0	2	11	0	2	0	1	1	0	1	26
8:30 AM	2	12	0	0	10	0	1	0	1	0	0	1	27
8:45 AM	1	12	0	1	10	0	0	0	0	1	0	0	25
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	10	66	3	9	104	8	9	0	6	3	0	7	225
APPROACH %	13%	84%	4%	7%	86%	7%	60%	0%	40%	30%	0%	70%	
APP/DEPART	79	/	82	121	/	113	15	/	12	10	/	18	0
BEGIN PEAK HR	7:30 AM												
VOLUMES	6	25	3	7	67	3	6	0	4	2	0	5	128
APPROACH %	18%	74%	9%	9%	87%	4%	60%	0%	40%	29%	0%	71%	
PEAK HR FACTOR		0.773			0.837			0.833			0.583		0.865
APP/DEPART	34	/	36	77	/	73	10	/	10	7	/	9	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	9	1	2	10	0	0	0	1	0	0	0	23
4:15 PM	1	14	0	0	8	0	0	0	0	1	0	1	25
4:30 PM	0	10	0	0	7	0	0	0	0	0	0	0	17
4:45 PM	0	13	1	1	7	0	0	0	0	1	0	2	25
5:00 PM	0	6	0	2	8	0	0	0	0	0	0	1	17
5:15 PM	0	12	0	0	12	0	0	0	0	0	0	0	24
5:30 PM	1	6	0	1	8	0	1	0	0	0	0	0	17
5:45 PM	0	8	1	3	8	0	0	0	0	0	0	0	20
VOLUMES	2	78	3	9	68	0	1	0	1	2	0	4	168
APPROACH %	2%	94%	4%	12%	88%	0%	50%	0%	50%	33%	0%	67%	
APP/DEPART	83	/	83	77	/	71	2	/	12	6	/	2	0
BEGIN PEAK HR	4:00 PM												
VOLUMES	1	46	2	3	32	0	0	0	1	2	0	3	90
APPROACH %	2%	94%	4%	9%	91%	0%	0%	0%	100%	40%	0%	60%	
PEAK HR FACTOR		0.817			0.729			0.250			0.417		0.900
APP/DEPART	49	/	49	35	/	35	1	/	5	5	/	1	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	1
0	0	0	0
1	0	0	1
0	0	1	1
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	1	4
1	0	1	3
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	3
0	0	0	2



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Archibald	LOCATION #:	52
WEDNESDAY	EAST & WEST:	Chino	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Chino			WESTBOUND Chino			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	2	0	1	1	0	1	1	1	
AM 7:00 AM	0	2	0	0	1	0	0	0	0	0	0	0	3
7:15 AM	0	0	0	0	6	0	0	0	0	0	0	0	6
7:30 AM	0	7	1	0	5	0	0	0	0	0	0	0	13
7:45 AM	0	7	0	0	5	1	0	0	0	0	0	0	13
8:00 AM	0	11	0	0	3	0	1	0	0	0	0	0	15
8:15 AM	0	6	0	0	2	0	0	0	0	0	0	0	8
8:30 AM	0	9	0	1	5	0	1	0	0	0	0	0	16
8:45 AM	2	5	0	0	5	0	2	0	0	0	0	0	14
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	2	47	1	1	32	1	4	0	0	0	0	0	88
APPROACH %	4%	94%	2%	3%	94%	3%	100%	0%	0%	0%	0%	0%	
APP/DEPART	50	/	51	34	/	32	4	/	2	0	/	3	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	2	31	0	1	15	0	4	0	0	0	0	0	53
APPROACH %	6%	94%	0%	6%	94%	0%	100%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.750			0.667			0.500			0.000		0.828
APP/DEPART	33	/	35	16	/	15	4	/	1	0	/	2	0
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	1	1	0	0	1	0	0	0	0	0	0	3
4:15 PM	0	0	0	0	0	0	1	0	1	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	4	0	0	2	0	0	0	0	0	0	0	6
5:00 PM	0	1	0	0	2	1	0	0	0	0	0	0	4
5:15 PM	1	1	0	0	0	0	1	0	0	0	0	0	3
5:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	2
5:45 PM	0	1	0	0	1	0	0	0	1	0	0	0	3
VOLUMES	1	9	1	0	5	3	2	0	2	0	0	0	23
APPROACH %	9%	82%	9%	0%	63%	38%	50%	0%	50%	0%	0%	0%	
APP/DEPART	11	/	11	8	/	7	4	/	1	0	/	4	0
BEGIN PEAK HR		4:45 PM											
VOLUMES	1	7	0	0	4	2	1	0	0	0	0	0	15
APPROACH %	13%	88%	0%	0%	67%	33%	100%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.500			0.500			0.250			0.000		0.625
APP/DEPART	8	/	8	6	/	4	1	/	0	0	/	3	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:						0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
AM PEAK HR VOLUMES						0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	1	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	1	0	0
PM PEAK HR VOLUMES						0	1	0	0

Archibald

NORTH SIDE

Chino WEST SIDE

EAST SIDE **Chino**

SOUTH SIDE

Archibald

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Archibald	LOCATION #:	52
WEDNESDAY	EAST & WEST:	Chino	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Chino			WESTBOUND Chino			
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 1	TOTAL
AM	7:00 AM	0	5	0	0	11	2	0	0	0	0	1	0	19
	7:15 AM	0	6	0	0	10	0	0	0	0	0	0	0	16
	7:30 AM	0	5	0	0	7	0	2	0	0	0	0	0	14
	7:45 AM	0	11	0	0	7	0	0	0	0	0	0	0	18
	8:00 AM	0	2	0	0	4	0	0	0	0	0	0	1	7
	8:15 AM	0	7	0	0	6	0	0	0	0	0	0	0	13
	8:30 AM	0	5	0	0	10	0	0	0	0	0	0	0	15
	8:45 AM	0	9	0	0	10	0	0	0	0	0	0	0	19
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	50	0	0	65	2	2	0	0	0	1	1	121
	APPROACH %	0%	100%	0%	0%	97%	3%	100%	0%	0%	0%	50%	50%	
	APP/DEPART	50	/	53	67	/	65	2	/	0	2	/	3	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	0	27	0	0	35	2	2	0	0	0	1	0	67
	APPROACH %	0%	100%	0%	0%	95%	5%	100%	0%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.614			0.712			0.250			0.250		0.882
	APP/DEPART	27	/	29	37	/	35	2	/	0	1	/	3	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	11	0	0	5	0	0	0	0	0	0	0	16
	4:15 PM	0	1	0	0	3	0	0	0	0	0	0	0	4
	4:30 PM	1	7	0	0	7	0	1	0	0	0	0	0	16
	4:45 PM	0	4	0	0	14	0	0	0	0	0	0	0	18
	5:00 PM	0	4	0	0	5	0	0	0	0	0	0	0	9
	5:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
	5:30 PM	0	3	0	0	3	0	0	0	0	0	0	0	6
	5:45 PM	0	3	0	0	6	1	1	0	0	0	0	0	11
	VOLUMES	1	34	0	0	44	1	2	0	0	0	0	0	82
	APPROACH %	3%	97%	0%	0%	98%	2%	100%	0%	0%	0%	0%	0%	
	APP/DEPART	35	/	36	45	/	44	2	/	0	0	/	2	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	1	23	0	0	29	0	1	0	0	0	0	0	54
	APPROACH %	4%	96%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.545			0.518			0.250			0.000		0.750
	APP/DEPART	24	/	24	29	/	29	1	/	0	0	/	1	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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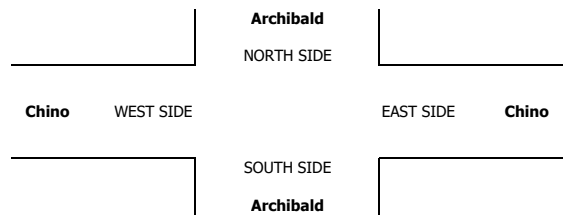
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
Tue, Jan 22, 19	NORTH & SOUTH:	Archibald	LOCATION #:	34
	EAST & WEST:	Edison	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Edison)			WESTBOUND (Edison)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 2	ET 2	ER 1	WL 2	WT 1	WR 1	TOTAL
AM	7:00 AM	38	198	80	22	87	18	5	34	7	74	92	30	685
AM	7:15 AM	37	225	85	6	80	14	4	39	7	74	101	36	708
AM	7:30 AM	39	213	77	12	72	25	5	38	8	40	111	19	659
AM	7:45 AM	25	218	68	17	91	21	7	45	11	78	94	28	703
AM	8:00 AM	38	196	68	12	100	12	5	24	11	66	74	24	630
AM	8:15 AM	28	183	80	16	95	14	2	34	14	40	76	26	608
AM	8:30 AM	34	166	81	16	85	14	8	44	13	39	61	23	584
AM	8:45 AM	15	195	57	14	87	15	7	25	12	54	61	26	568
AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	VOLUMES	254	1,594	596	115	697	133	43	283	83	465	670	212	5,145
AM	APPROACH %	10%	65%	24%	12%	74%	14%	11%	69%	20%	35%	50%	16%	
AM	APP/DEPART	2,444	/	1,851	945	/	1,244	409	/	993	1,347	/	1,057	0
AM	BEGIN PEAK HR		7:00 AM											
AM	VOLUMES	139	854	310	57	330	78	21	156	33	266	398	113	2,755
AM	APPROACH %	11%	66%	24%	12%	71%	17%	10%	74%	16%	34%	51%	15%	
AM	PEAK HR FACTOR		0.939			0.901			0.833			0.921		0.973
AM	APP/DEPART	1,303	/	988	465	/	629	210	/	523	777	/	615	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	17	95	68	28	144	12	7	145	20	43	46	16	641
PM	4:15 PM	12	120	74	20	161	11	20	120	23	47	42	12	662
PM	4:30 PM	10	129	62	24	144	13	15	122	29	66	53	25	692
PM	4:45 PM	7	105	67	32	183	18	12	143	23	59	35	17	701
PM	5:00 PM	17	136	78	31	171	15	17	129	18	60	34	14	720
PM	5:15 PM	13	131	50	24	219	10	12	123	27	46	45	17	717
PM	5:30 PM	17	128	66	29	181	18	19	127	28	66	48	16	743
PM	5:45 PM	15	91	59	41	154	15	25	118	41	83	44	16	702
PM	VOLUMES	108	935	524	229	1,357	112	127	1,027	209	470	347	133	5,578
PM	APPROACH %	7%	60%	33%	13%	80%	7%	9%	75%	15%	49%	37%	14%	
PM	APP/DEPART	1,567	/	1,199	1,698	/	2,036	1,363	/	1,776	950	/	567	0
PM	BEGIN PEAK HR		5:00 PM											
PM	VOLUMES	62	486	253	125	725	58	73	497	114	255	171	63	2,882
PM	APPROACH %	8%	61%	32%	14%	80%	6%	11%	73%	17%	52%	35%	13%	
PM	PEAK HR FACTOR		0.867			0.897			0.929			0.855		0.970
PM	APP/DEPART	801	/	624	908	/	1,094	684	/	873	489	/	291	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	1	2
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	2	0	1	3
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	1	0	0	1
0	0	0	0	0
0	1	0	0	1
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	4	0	0	4

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	7	0	12
0	9	0	15
0	8	0	11
0	8	0	14
0	7	0	7
0	8	0	18
0	7	0	11
0	5	0	12
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	59	0	100
0	32	0	52
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	4	0	10
0	3	0	8
0	5	0	14
0	6	0	9
0	3	0	6
0	2	0	10
0	8	0	10
0	8	0	7
0	39	0	74
0	21	0	33

Archibald

NORTH SIDE

Edison WEST SIDE EAST SIDE **Edison**

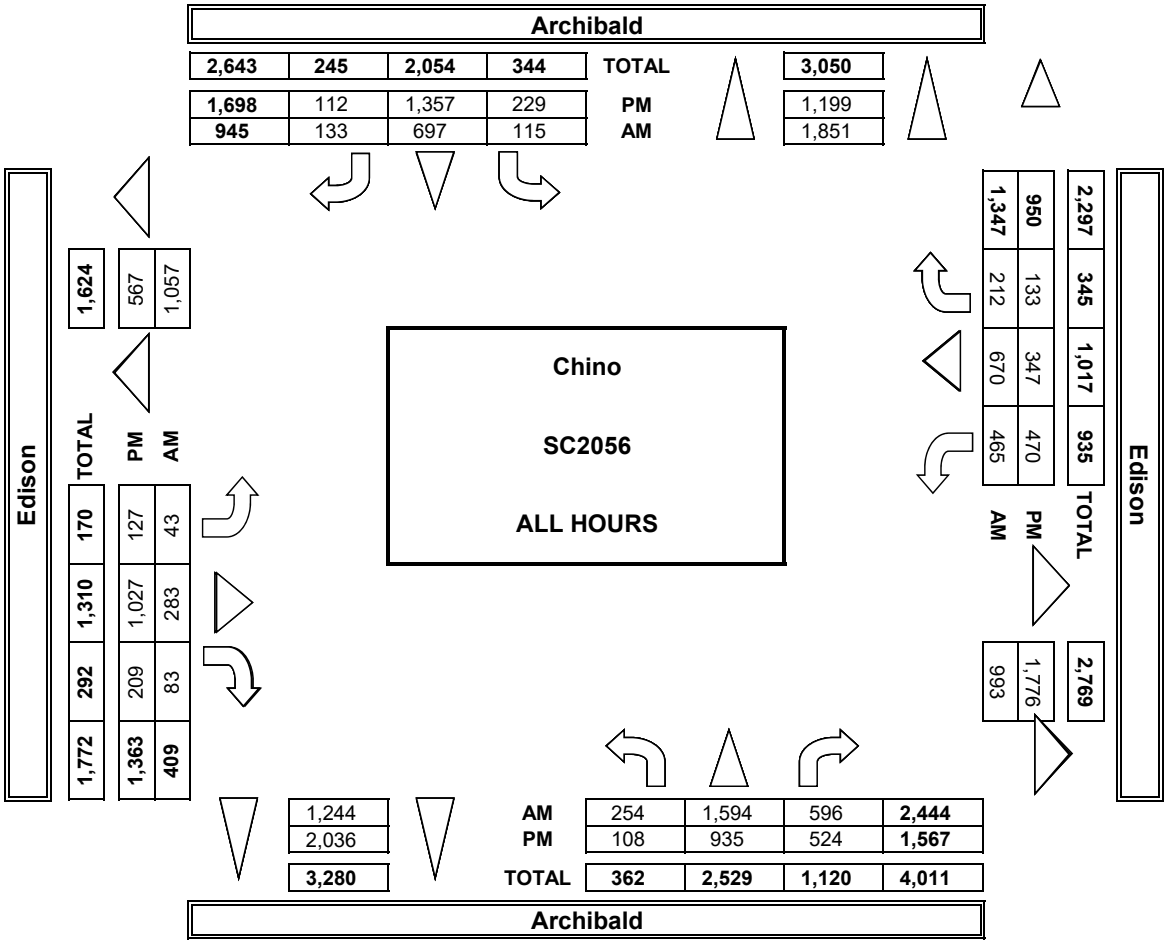
SOUTH SIDE

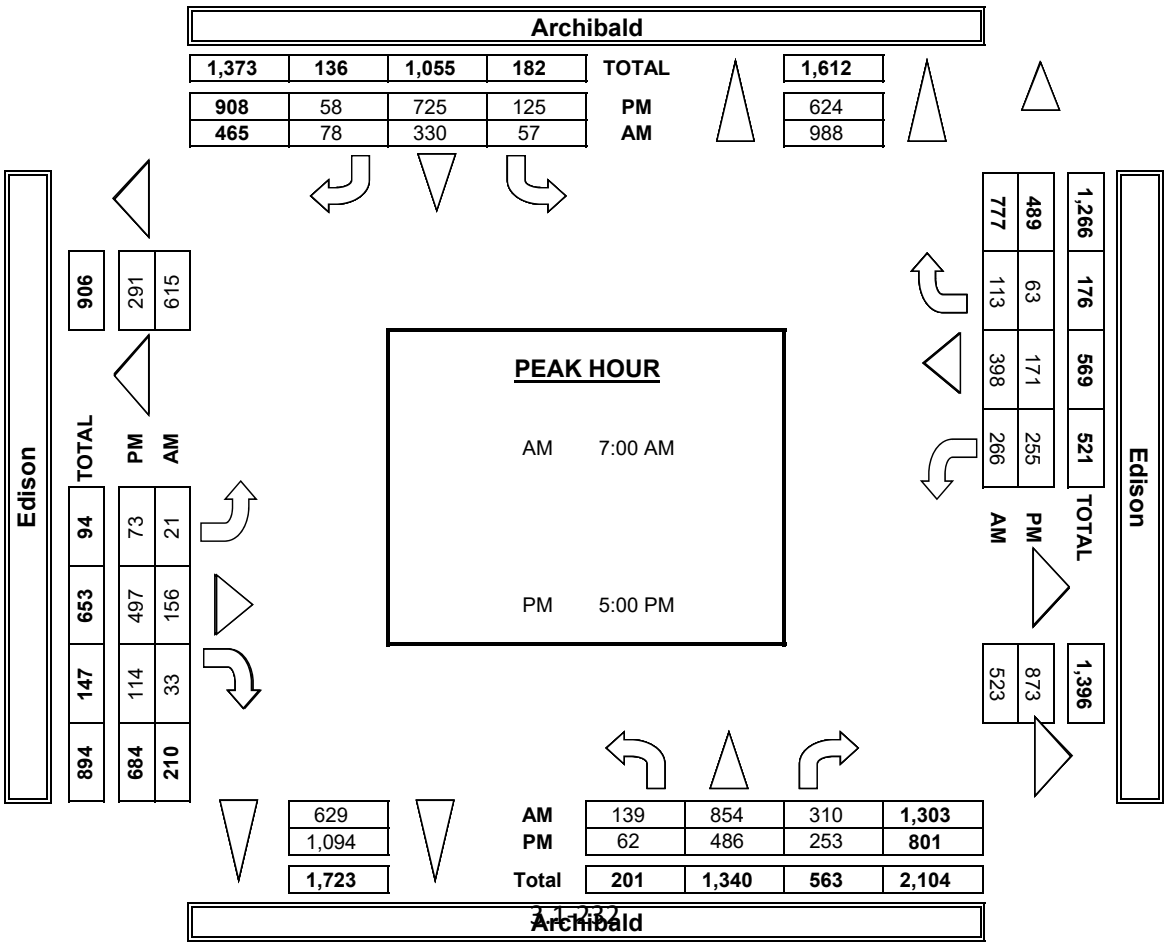
Archibald

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:30 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
AM	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	TOTAL	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:15 PM	2	0	0	0	2	2	0	0	0	2	0	0	0	0	0
PM	5:30 PM	0	2	0	0	2	0	1	0	0	1	0	1	0	0	1
PM	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	TOTAL	2	2	0	0	4	2	1	0	0	3	0	1	0	0	1

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Archibald	LOCATION #:	34
TUESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Edison)			WESTBOUND (Edison)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 2	ET 2	ER 1	WL 2	WT 1	WR 1	TOTAL
AM	7:00 AM	2	4	5	2	7	1	0	1	1	12	8	3	46
	7:15 AM	0	4	5	1	3	0	0	4	0	7	9	2	35
	7:30 AM	0	3	7	2	6	2	0	3	1	5	4	1	34
	7:45 AM	0	6	3	2	3	1	0	4	1	10	5	4	39
	8:00 AM	0	8	4	3	12	1	0	2	2	5	9	2	48
	8:15 AM	0	5	9	4	6	1	1	5	3	3	2	3	42
	8:30 AM	1	8	2	3	6	0	1	7	2	7	8	2	47
	8:45 AM	1	6	3	3	9	0	0	5	3	5	3	3	41
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	4	44	38	20	52	6	2	31	13	54	48	20	332
	APPROACH %	5%	51%	44%	26%	67%	8%	4%	67%	28%	44%	39%	16%	
	APP/DEPART	86	/	67	78	/	119	46	/	88	122	/	58	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	2	27	18	12	33	2	2	19	10	20	22	10	178
	APPROACH %	4%	57%	38%	25%	69%	4%	6%	61%	32%	38%	42%	19%	
	PEAK HR FACTOR		0.839			0.750			0.775			0.765		0.927
	APP/DEPART	47	/	40	48	/	63	31	/	49	52	/	26	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	2	6	2	1	1	0	1	9	1	4	0	0	27
	4:15 PM	1	5	3	0	4	1	2	4	2	4	5	0	31
	4:30 PM	0	8	7	1	3	1	1	9	1	3	2	1	37
	4:45 PM	0	4	2	1	4	2	2	4	2	0	3	0	24
	5:00 PM	2	7	5	1	2	0	1	9	0	1	0	2	30
	5:15 PM	1	8	0	0	5	2	1	6	0	2	2	0	27
	5:30 PM	2	4	4	2	4	1	1	5	1	1	0	0	25
	5:45 PM	0	3	3	1	3	0	0	6	3	2	4	3	28
	VOLUMES	8	45	26	7	26	7	9	52	10	17	16	6	229
	APPROACH %	10%	57%	33%	18%	65%	18%	13%	73%	14%	44%	41%	15%	
	APP/DEPART	79	/	60	40	/	53	71	/	85	39	/	31	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	3	24	17	3	13	4	6	26	5	8	10	3	122
	APPROACH %	7%	55%	39%	15%	65%	20%	16%	70%	14%	38%	48%	14%	
	PEAK HR FACTOR		0.733			0.714			0.841			0.583		0.824
	APP/DEPART	44	/	33	20	/	26	37	/	46	21	/	17	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	1	0	2
0	0	0	2
0	1	0	1
0	1	0	3
0	0	0	1
0	1	0	3
0	0	0	1
0	0	0	2
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	4	0	15
0	1	0	7
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	1	0	0
0	0	0	1
0	0	0	0
0	1	0	0
0	0	0	1
0	3	0	2
0	2	0	1

Archibald

NORTH SIDE

Edison WEST SIDE EAST SIDE **Edison**

SOUTH SIDE

Archibald

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Archibald	LOCATION #:	34
TUESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Edison			WESTBOUND Edison			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 2	ET 2	ER 1	WL 2	WT 1	WR 1	TOTAL
AM	7:00 AM	0	1	1	0	1	1	0	2	1	6	1	1	15
	7:15 AM	0	2	1	0	2	0	0	1	0	3	4	0	13
	7:30 AM	2	1	1	0	3	0	1	1	0	1	2	0	12
	7:45 AM	0	1	0	0	1	1	0	0	0	2	0	0	5
	8:00 AM	1	2	0	0	1	0	0	0	0	2	1	0	7
	8:15 AM	0	1	1	0	0	1	0	1	1	0	1	0	6
	8:30 AM	0	1	1	0	1	0	0	2	0	0	5	0	10
	8:45 AM	1	2	2	0	2	1	0	1	0	0	3	0	12
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	4	11	7	0	11	4	1	8	2	14	17	1	80
	APPROACH %	18%	50%	32%	0%	73%	27%	9%	73%	18%	44%	53%	3%	
	APP/DEPART	22	/	13	15	/	27	11	/	15	32	/	25	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	2	5	3	0	7	2	1	4	1	12	7	1	45
	APPROACH %	20%	50%	30%	0%	78%	22%	17%	67%	17%	60%	35%	5%	
	PEAK HR FACTOR		0.625			0.750			0.500			0.625		0.750
	APP/DEPART	10	/	7	9	/	20	6	/	7	20	/	11	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	3	1	0	0	0	0	3	0	0	4	0	12
	4:15 PM	0	1	4	0	1	1	0	3	0	0	3	0	13
	4:30 PM	1	0	0	0	0	0	0	4	0	2	0	0	7
	4:45 PM	0	0	1	0	0	0	0	0	0	0	3	0	4
	5:00 PM	0	0	1	0	1	0	0	0	0	0	1	0	3
	5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
	5:30 PM	0	1	0	0	1	0	0	0	0	1	1	0	4
	5:45 PM	0	1	0	0	0	1	0	1	0	1	0	1	5
	VOLUMES	2	6	8	0	3	2	0	11	0	4	12	1	49
	APPROACH %	13%	38%	50%	0%	60%	40%	0%	100%	0%	24%	71%	6%	
	APP/DEPART	16	/	7	5	/	7	11	/	19	17	/	16	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	2	4	6	0	1	1	0	10	0	2	10	0	36
	APPROACH %	17%	33%	50%	0%	50%	50%	0%	100%	0%	17%	83%	0%	
	PEAK HR FACTOR		0.600			0.250			0.625			0.750		0.692
	APP/DEPART	12	/	4	2	/	3	10	/	16	12	/	13	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

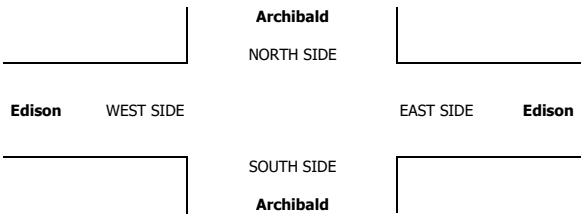
NRR X	SRR 0	ERR X	WRR 0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1

NRR X	SRR 0	ERR X	WRR 0
0	0	0	1

NRR X	SRR 0	ERR X	WRR 0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0

NRR X	SRR 0	ERR X	WRR 0
0	1	0	0

NRR X	SRR 0	ERR X	WRR 0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Archibald	LOCATION #:	34
TUESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

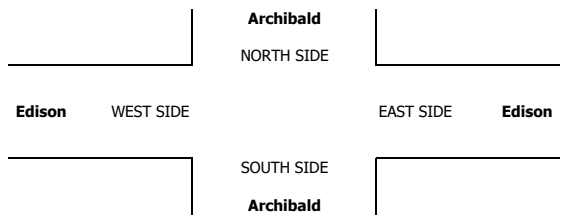
		NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Edison)			WESTBOUND (Edison)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 2	ET 2	ER 1	WL 2	WT 1	WR 1	TOTAL
AM	7:00 AM	1	3	2	1	1	0	0	4	0	7	3	2	24
	7:15 AM	0	2	1	0	3	1	0	4	1	4	3	1	20
	7:30 AM	1	3	6	0	1	1	0	2	0	2	3	1	20
	7:45 AM	1	6	1	0	0	1	0	2	1	7	7	3	29
	8:00 AM	0	0	1	1	1	1	0	5	1	3	2	0	15
	8:15 AM	0	4	4	1	2	1	0	3	2	2	2	3	24
	8:30 AM	1	0	5	0	1	2	1	4	0	4	3	1	22
	8:45 AM	0	4	4	2	2	0	1	3	1	7	1	1	26
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	4	22	24	5	11	7	2	27	6	36	24	12	180
	APPROACH %	8%	44%	48%	22%	48%	30%	6%	77%	17%	50%	33%	17%	
	APP/DEPART	50	/	36	23	/	53	35	/	56	72	/	35	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	3	14	10	1	5	3	0	12	2	20	16	7	93
	APPROACH %	11%	52%	37%	11%	56%	33%	0%	86%	14%	47%	37%	16%	
	PEAK HR FACTOR		0.675			0.563			0.700			0.632		0.802
	APP/DEPART	27	/	21	9	/	27	14	/	23	43	/	22	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	2	6	0	1	1	1	7	0	0	8	0	26
	4:15 PM	0	0	0	1	3	2	0	0	0	3	6	0	15
	4:30 PM	0	1	2	0	3	0	1	3	0	2	4	0	16
	4:45 PM	0	2	3	0	5	0	1	8	0	2	1	1	23
	5:00 PM	0	2	2	0	4	3	0	4	1	2	3	0	21
	5:15 PM	1	5	1	0	6	0	0	3	0	0	2	1	19
	5:30 PM	0	3	4	1	1	1	2	1	0	3	4	1	21
	5:45 PM	0	2	0	1	3	0	2	3	1	2	3	0	17
	VOLUMES	1	17	18	3	26	7	7	29	2	14	31	3	158
	APPROACH %	3%	47%	50%	8%	72%	19%	18%	76%	5%	29%	65%	6%	
	APP/DEPART	36	/	27	36	/	42	38	/	50	48	/	39	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	1	12	10	1	16	4	3	16	1	7	10	3	84
	APPROACH %	4%	52%	43%	5%	76%	19%	15%	80%	5%	35%	50%	15%	
	PEAK HR FACTOR		0.821			0.750			0.556			0.625		0.913
	APP/DEPART	23	/	18	21	/	24	20	/	27	20	/	15	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	0	0	1
0	1	0	0
0	0	0	0
0	0	0	2
0	1	0	0
0	0	0	2
0	0	0	1
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	2	0	7
0	1	0	3
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	2	0	2
0	1	0	2



INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Jan 22, 19

LOCATION: Chino
NORTH & SOUTH: Archibald
EAST & WEST: Eucaliptus

PROJECT #: SC2056
LOCATION #: 35
CONTROL: SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

▲ N
◄ W
E ►
S ▼

Add U-Turns to Left Turns

	NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Eucaliptus)			WESTBOUND (Eucaliptus)			
LANES:	NL X	NT 2	NR 0	SL 1	ST 2	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
7:00 AM	0	360	3	9	166	0	0	0	0	3	0	3	544
7:15 AM	0	349	2	3	148	0	0	0	0	2	0	3	507
7:30 AM	0	360	1	4	156	0	0	0	0	1	0	4	526
7:45 AM	0	298	2	3	149	0	0	0	0	1	0	3	456
8:00 AM	0	270	4	2	181	0	0	0	0	0	0	4	461
8:15 AM	0	316	0	2	153	0	0	0	0	1	0	3	475
8:30 AM	0	284	0	1	128	0	0	0	0	0	0	4	417
8:45 AM	0	236	2	5	164	0	0	0	0	0	0	3	410
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	2,473	14	29	1,245	0	0	0	0	8	0	27	3,798
APPROACH %	0%	99%	1%	2%	98%	0%	0%	0%	0%	23%	0%	77%	
APP/DEPART	2,488	/	2,501	1,275	/	1,254	0	/	43	35	/	0	0
BEGIN PEAK HR		7:00 AM											
VOLUMES	0	1,367	8	19	619	0	0	0	0	7	0	13	2,033
APPROACH %	0%	99%	1%	3%	97%	0%	0%	0%	0%	35%	0%	65%	
PEAK HR FACTOR		0.947			0.911			0.000			0.833		0.934
APP/DEPART	1,375	/	1,380	638	/	626	0	/	27	20	/	0	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	196	1	0	201	0	0	0	0	1	0	2	401
4:15 PM	0	201	3	2	234	0	0	0	0	0	0	0	440
4:30 PM	0	197	0	1	227	0	0	0	0	1	0	2	428
4:45 PM	0	183	0	3	269	0	0	0	0	0	0	1	456
5:00 PM	0	241	1	0	262	0	0	0	0	2	0	3	509
5:15 PM	0	183	0	3	271	0	0	0	0	0	0	1	458
5:30 PM	0	209	0	3	256	0	0	0	0	0	0	2	470
5:45 PM	0	168	0	3	300	0	0	0	0	0	0	2	473
VOLUMES	0	1,578	5	15	2,020	0	0	0	0	4	0	13	3,635
APPROACH %	0%	100%	0%	1%	99%	0%	0%	0%	0%	24%	0%	76%	
APP/DEPART	1,583	/	1,591	2,035	/	2,024	0	/	20	17	/	0	0
BEGIN PEAK HR		5:00 PM											
VOLUMES	0	801	1	9	1,089	0	0	0	0	2	0	8	1,910
APPROACH %	0%	100%	0%	1%	99%	0%	0%	0%	0%	20%	0%	80%	
PEAK HR FACTOR		0.829			0.906			0.000			0.500		0.938
APP/DEPART	802	/	809	1,098	/	1,091	0	/	10	10	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	1	0	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	X	X	0
2	0	0	3
0	0	0	2
0	0	0	2
1	0	0	3
0	0	0	4
0	0	0	3
0	0	0	4
2	0	0	3
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
5	0	0	24
3	0	0	10
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	2
0	0	0	0
0	0	0	2
0	0	0	1
0	0	0	3
0	0	0	1
0	0	0	2
0	0	0	2
0	0	0	13
0	0	0	8

Archibald

NORTH SIDE

Eucaliptus WEST SIDE EAST SIDE **Eucaliptus**

SOUTH SIDE

Archibald

ALL PED AND BIKE

	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	1	0	0	0	1
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
TOTAL	1	0	0	0	1
3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	1	0	0	1
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	1	0	0	1	2
5:45 PM	0	0	0	1	1
TOTAL	1	1	0	2	4

PEDESTRIAN CROSSINGS

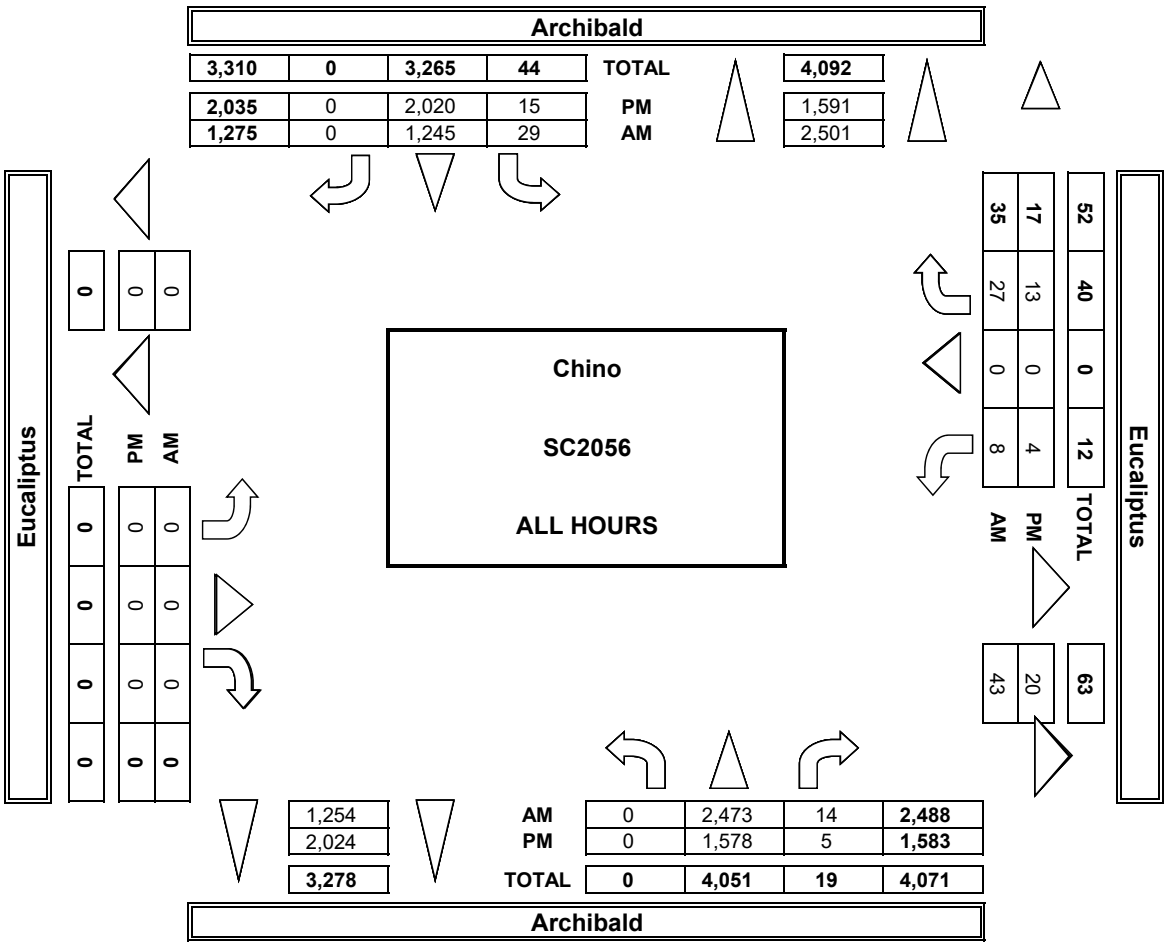
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	1	2
0	0	0	1	1
1	0	0	1	2

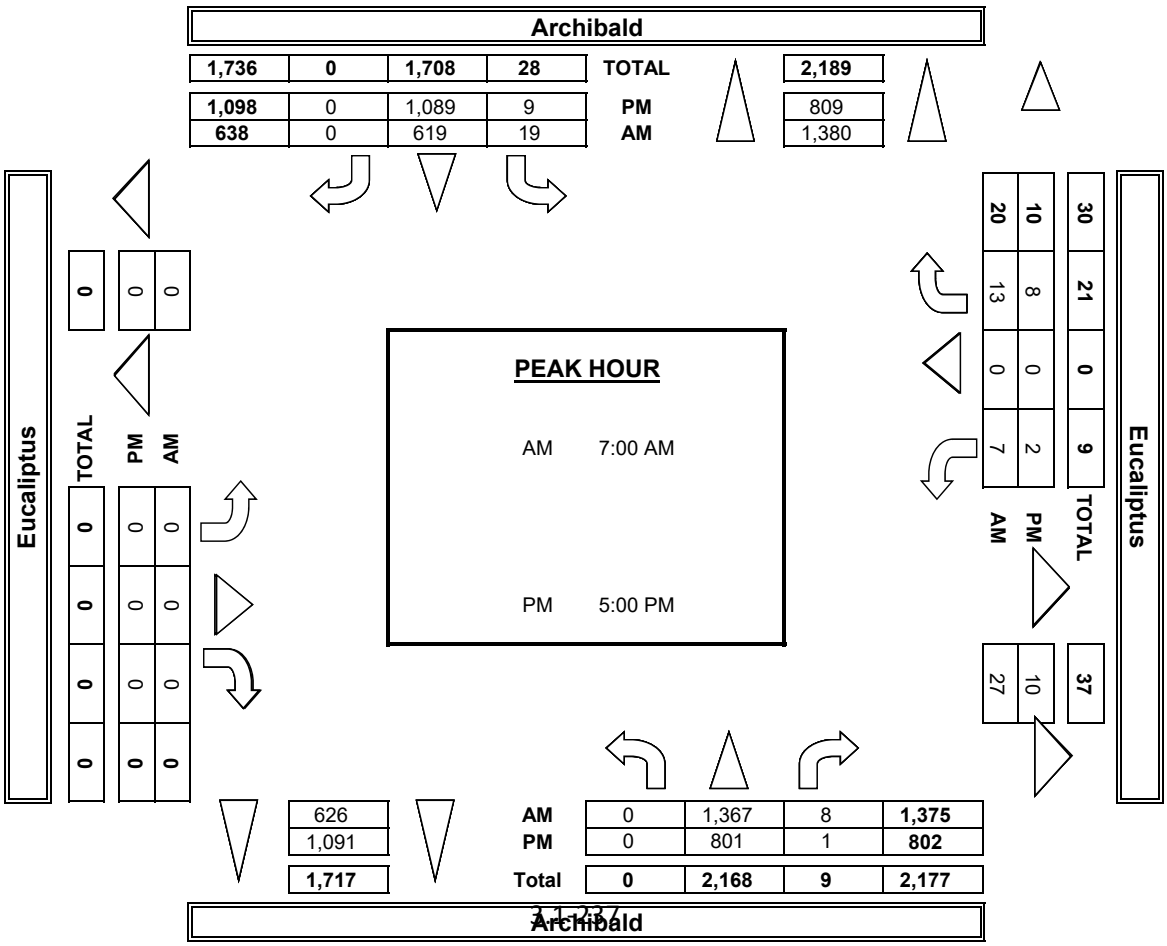
BICYCLE CROSSINGS

ES	WS	SS	NS	TOTAL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	1	0	1	2

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Archibald	LOCATION #:	35
TUESDAY	EAST & WEST:	Eucaliptus	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

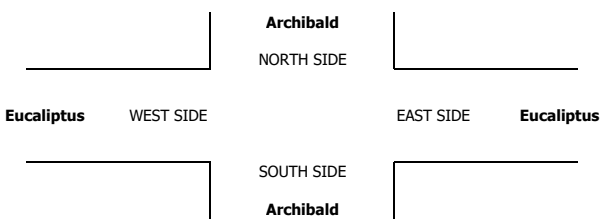
		NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Eucaliptus)			WESTBOUND (Eucaliptus)			
	LANES:	NL X	NT 2	NR 0	SL 1	ST 2	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
AM	7:00 AM	0	10	0	3	14	0	0	0	0	1	0	0	28
	7:15 AM	0	15	0	2	18	0	0	0	0	0	0	0	35
	7:30 AM	0	11	0	2	15	0	0	0	0	1	0	3	32
	7:45 AM	0	11	0	1	18	0	0	0	0	1	0	1	32
	8:00 AM	0	11	1	0	9	0	0	0	0	0	0	0	21
	8:15 AM	0	9	0	0	9	0	0	0	0	0	0	2	20
	8:30 AM	0	7	0	0	15	0	0	0	0	0	0	0	22
	8:45 AM	0	5	0	1	12	0	0	0	0	0	0	0	18
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	79	1	9	110	0	0	0	0	3	0	6	208
	APPROACH %	0%	99%	1%	8%	92%	0%	0%	0%	0%	33%	0%	67%	
	APP/DEPART	80	/	85	119	/	113	0	/	10	9	/	0	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	0	47	0	8	65	0	0	0	0	3	0	4	127
	APPROACH %	0%	100%	0%	11%	89%	0%	0%	0%	0%	43%	0%	57%	
	PEAK HR FACTOR		0.783			0.913			0.000			0.438		0.907
	APP/DEPART	47	/	51	73	/	68	0	/	8	7	/	0	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	13	0	0	6	0	0	0	0	0	0	0	19
	4:15 PM	0	8	0	0	12	0	0	0	0	0	0	0	20
	4:30 PM	0	16	0	0	8	0	0	0	0	1	0	0	25
	4:45 PM	0	6	0	0	5	0	0	0	0	0	0	0	11
	5:00 PM	0	10	0	0	5	0	0	0	0	0	0	0	15
	5:15 PM	0	9	0	0	4	0	0	0	0	0	0	0	13
	5:30 PM	0	6	0	0	5	0	0	0	0	0	0	0	11
	5:45 PM	0	10	0	0	6	0	0	0	0	0	0	0	16
	VOLUMES	0	78	0	0	51	0	0	0	0	1	0	0	130
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	APP/DEPART	78	/	78	51	/	52	0	/	0	1	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	43	0	0	31	0	0	0	0	1	0	0	75
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.672			0.646			0.000			0.250		0.750
	APP/DEPART	43	/	43	31	/	32	0	/	0	1	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR X	ERR X	WRR 0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	1
0	0	0	0
0	0	0	2
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	4
0	0	0	2
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Archibald	LOCATION #:	35
TUESDAY	EAST & WEST:	Eucaliptus	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

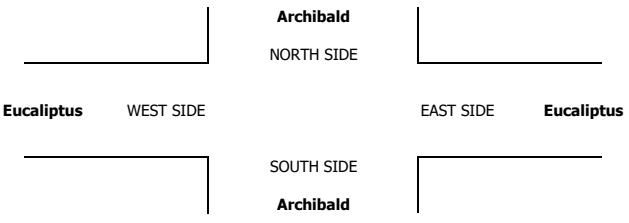
	NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Eucaliptus)			WESTBOUND (Eucaliptus)			
LANES:	NL X	NT 2	NR 0	SL 1	ST 2	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
7:00 AM	0	2	0	0	3	0	0	0	0	0	0	0	5
7:15 AM	0	2	0	0	3	0	0	0	0	0	0	0	5
7:30 AM	0	2	0	0	5	0	0	0	0	0	0	0	7
7:45 AM	0	3	0	0	4	0	0	0	0	0	0	0	7
8:00 AM	0	5	0	0	2	0	0	0	0	0	0	0	7
8:15 AM	0	3	0	0	4	0	0	0	0	0	0	0	7
8:30 AM	0	2	0	0	2	0	0	0	0	0	0	0	4
8:45 AM	0	2	0	1	2	0	0	0	0	0	0	1	6
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	21	0	1	25	0	0	0	0	0	0	1	48
APPROACH %	0%	100%	0%	4%	96%	0%	0%	0%	0%	0%	0%	100%	
APP/DEPART	21	/	22	26	/	25	0	/	1	1	/	0	0
BEGIN PEAK HR		7:30 AM											
VOLUMES	0	13	0	0	15	0	0	0	0	0	0	0	28
APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.650			0.750			0.000			0.000		1.000
APP/DEPART	13	/	13	15	/	15	0	/	0	0	/	0	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	4	0	0	0	0	0	0	0	0	0	0	4
4:15 PM	0	3	0	0	0	0	0	0	0	0	0	0	3
4:30 PM	0	1	0	0	2	0	0	0	0	0	0	0	3
4:45 PM	0	2	0	0	1	0	0	0	0	0	0	0	3
5:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
5:15 PM	0	3	0	0	0	0	0	0	0	0	0	0	3
5:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
5:45 PM	0	1	0	0	2	0	0	0	0	0	0	0	3
VOLUMES	0	16	0	0	7	0	0	0	0	0	0	0	23
APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
APP/DEPART	16	/	16	7	/	7	0	/	0	0	/	0	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	10	0	0	3	0	0	0	0	0	0	0	13
APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.625			0.375			0.000			0.000		0.813
APP/DEPART	10	/	10	3	/	3	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR X	ERR X	WRR 0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Archibald	LOCATION #:	35
TUESDAY	EAST & WEST:	Eucaliptus	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N / ◄ W / E ► / S ▼

	NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Eucaliptus			WESTBOUND Eucaliptus			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	X	2	0	1	2	X	X	X	X	0	X	0	
AM 7:00 AM	0	3	0	0	10	0	0	0	0	1	0	0	14
7:15 AM	0	5	0	0	4	0	0	0	0	0	0	0	9
7:30 AM	0	7	0	0	8	0	0	0	0	0	0	0	15
7:45 AM	0	4	0	0	2	0	0	0	0	0	0	0	6
8:00 AM	0	5	0	0	6	0	0	0	0	0	0	1	12
8:15 AM	0	6	0	0	9	0	0	0	0	0	0	0	15
8:30 AM	0	6	0	0	5	0	0	0	0	0	0	1	12
8:45 AM	0	10	0	0	8	0	0	0	0	0	0	0	18
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	46	0	0	52	0	0	0	0	1	0	2	102
APPROACH %	0%	100%	0%	0%	98%	0%	0%	0%	0%	33%	0%	67%	
APP/DEPART	46	/	49	53	/	53	0	/	0	3	/	0	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	0	27	0	0	28	0	0	0	0	0	0	2	58
APPROACH %	0%	100%	0%	0%	97%	0%	0%	0%	0%	0%	0%	100%	
PEAK HR FACTOR		0.675			0.806			0.000			0.500		0.806
APP/DEPART	27	/	30	29	/	28	0	/	0	2	/	0	0
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	6	0	0	3	0	0	0	0	0	0	1	10
4:15 PM	0	3	0	0	6	0	0	0	0	0	0	0	9
4:30 PM	0	3	0	0	4	0	0	0	0	0	0	0	7
4:45 PM	0	4	0	1	5	0	0	0	0	0	0	0	10
5:00 PM	0	5	0	0	6	0	0	0	0	0	0	0	11
5:15 PM	0	6	0	0	4	0	0	0	0	0	0	1	11
5:30 PM	0	5	0	0	5	0	0	0	0	0	0	0	10
5:45 PM	0	2	0	0	5	0	0	0	0	0	0	0	7
VOLUMES	0	34	0	1	38	0	0	0	0	0	0	2	75
APPROACH %	0%	100%	0%	3%	97%	0%	0%	0%	0%	0%	0%	100%	
APP/DEPART	34	/	36	39	/	38	0	/	1	2	/	0	0
BEGIN PEAK HR		4:45 PM											
VOLUMES	0	20	0	1	20	0	0	0	0	0	0	1	42
APPROACH %	0%	100%	0%	5%	95%	0%	0%	0%	0%	0%	0%	100%	
PEAK HR FACTOR		0.833			0.875			0.000			0.250		0.955
APP/DEPART	20	/	21	21	/	20	0	/	1	1	/	0	0

U-TURNS

	NB	SB	EB	WB	TTL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	1	0	0	1
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
VOLUMES	0	1	0	0	1
03:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0

RTOR

	NRR	SRR	ERR	WRR
LANES	0	X	X	0
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	1
8:15 AM	0	0	0	0
8:30 AM	0	0	0	1
8:45 AM	0	0	0	0
9:00 AM	0	0	0	0
9:15 AM	0	0	0	0
9:30 AM	0	0	0	0
9:45 AM	0	0	0	0
VOLUMES	0	0	0	2
PEAK HR VOLUMES	0	0	0	2
03:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	1
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	1
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
VOLUMES	0	0	0	2
PEAK HR VOLUMES	0	0	0	1

Archibald

NORTH SIDE

Eucaliptus WEST SIDE

EAST SIDE **Eucaliptus**

SOUTH SIDE

Archibald

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Jan 22, 19

LOCATION: Chino
NORTH & SOUTH: Archibald
EAST & WEST: Merrill

PROJECT #: SC2056
LOCATION #: 36
CONTROL: SIGNAL

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Merrill)			WESTBOUND (Merrill)			
	LANES:	NL 1	NT 2	NR 1	SL 2	ST 2	SR 0	EL 1	ET 1	ER 1	WL 1	WT 1	WR 1	TOTAL
AM	7:00 AM	74	283	4	4	107	45	33	4	16	19	7	39	635
AM	7:15 AM	105	271	5	7	95	37	49	4	23	21	11	25	653
AM	7:30 AM	101	284	13	8	98	42	24	4	18	17	8	26	643
AM	7:45 AM	93	227	10	10	109	35	37	3	24	12	15	27	602
AM	8:00 AM	90	228	8	14	114	32	28	3	30	17	7	26	597
AM	8:15 AM	91	240	8	10	120	35	57	2	31	13	7	10	624
AM	8:30 AM	97	225	9	8	97	29	32	6	28	11	11	18	571
AM	8:45 AM	44	180	4	12	107	34	33	7	16	7	9	12	465
AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	VOLUMES	695	1,938	61	73	847	289	293	33	186	117	75	183	4,790
AM	APPROACH %	26%	72%	2%	6%	70%	24%	57%	6%	36%	31%	20%	49%	
AM	APP/DEPART	2,694	/	2,415	1,209	/	1,151	512	/	168	375	/	1,056	0
AM	BEGIN PEAK HR		7:00 AM											
AM	VOLUMES	373	1,065	32	29	409	159	143	15	81	69	41	117	2,533
AM	APPROACH %	25%	72%	2%	5%	69%	27%	60%	6%	34%	30%	18%	52%	
AM	PEAK HR FACTOR		0.923			0.957			0.786			0.873		0.970
AM	APP/DEPART	1,470	/	1,326	597	/	558	239	/	77	227	/	572	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	19	128	9	7	171	18	59	7	50	14	2	2	486
PM	4:15 PM	24	127	9	15	179	22	61	14	71	9	3	12	546
PM	4:30 PM	26	141	10	11	203	20	57	6	67	11	2	7	561
PM	4:45 PM	25	121	8	16	223	30	49	13	113	9	6	10	623
PM	5:00 PM	21	151	9	15	199	35	65	15	89	14	11	15	639
PM	5:15 PM	29	126	10	13	254	33	46	17	86	8	2	10	634
PM	5:30 PM	30	135	9	23	191	24	39	21	93	11	3	11	590
PM	5:45 PM	25	127	15	12	227	33	43	14	72	8	2	6	584
PM	VOLUMES	199	1,056	79	112	1,647	215	419	107	641	84	31	73	4,663
PM	APPROACH %	15%	79%	6%	6%	83%	11%	36%	9%	55%	45%	16%	39%	
PM	APP/DEPART	1,334	/	1,548	1,974	/	2,379	1,167	/	298	188	/	438	0
PM	BEGIN PEAK HR		4:45 PM											
PM	VOLUMES	105	533	36	67	867	122	199	66	381	42	22	46	2,486
PM	APPROACH %	16%	79%	5%	6%	82%	12%	31%	10%	59%	38%	20%	42%	
PM	PEAK HR FACTOR		0.931			0.880			0.923			0.688		0.973
PM	APP/DEPART	674	/	778	1,056	/	1,291	646	/	169	110	/	248	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
0	0	0	1	1
1	0	0	0	1
0	0	0	1	1
0	1	0	0	1
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
3	1	0	2	6
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
4	0	0	0	4
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
2	0	0	0	2
7	0	0	0	7

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
3	21	13	31
4	12	14	19
8	18	11	19
3	13	15	23
3	6	24	16
3	13	22	7
7	3	23	17
1	19	7	10
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
32	105	129	142
18	64	53	92
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
4	5	29	1
9	4	35	9
3	4	39	5
3	16	52	9
4	18	38	11
3	10	47	10
4	12	42	8
5	4	31	4
35	73	313	57
14	56	179	38

Archibald

NORTH SIDE

Merrill WEST SIDE EAST SIDE **Merrill**

SOUTH SIDE

Archibald

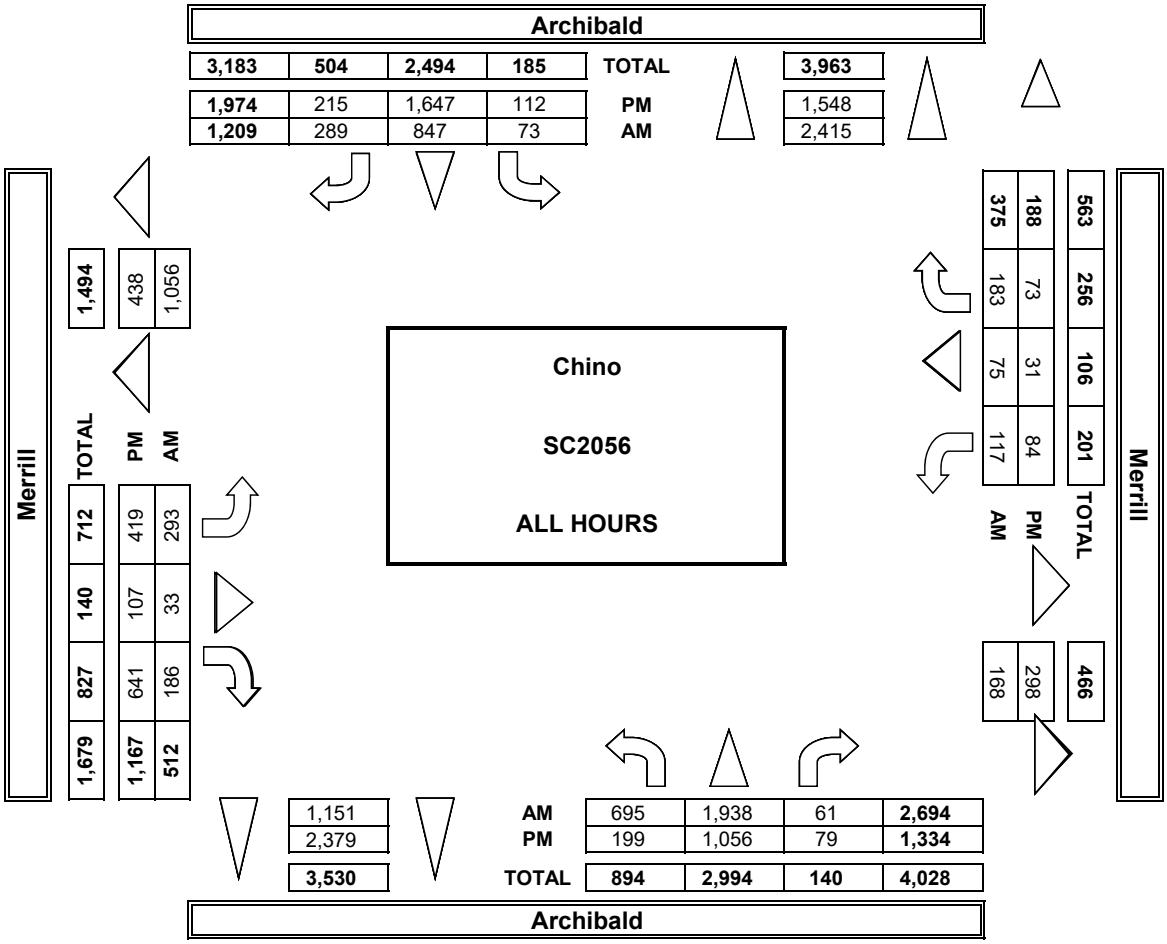
		ALL PED AND BIKE				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
AM	7:00 AM	0	0	0	0	0
AM	7:15 AM	0	0	0	0	0
AM	7:30 AM	0	0	0	0	0
AM	7:45 AM	0	0	0	0	0
AM	8:00 AM	0	0	0	0	0
AM	8:15 AM	1	0	0	0	1
AM	8:30 AM	0	0	0	0	0
AM	8:45 AM	0	0	0	0	0
AM	9:00 AM	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0
	TOTAL	1	0	0	0	1
PM	3:00 PM	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0
PM	4:30 PM	0	0	0	1	1
PM	4:45 PM	0	0	0	0	0
PM	5:00 PM	0	0	0	0	0
PM	5:15 PM	0	0	0	0	0
PM	5:30 PM	1	0	0	0	1
PM	5:45 PM	2	0	0	0	2
	TOTAL	3	0	0	1	4

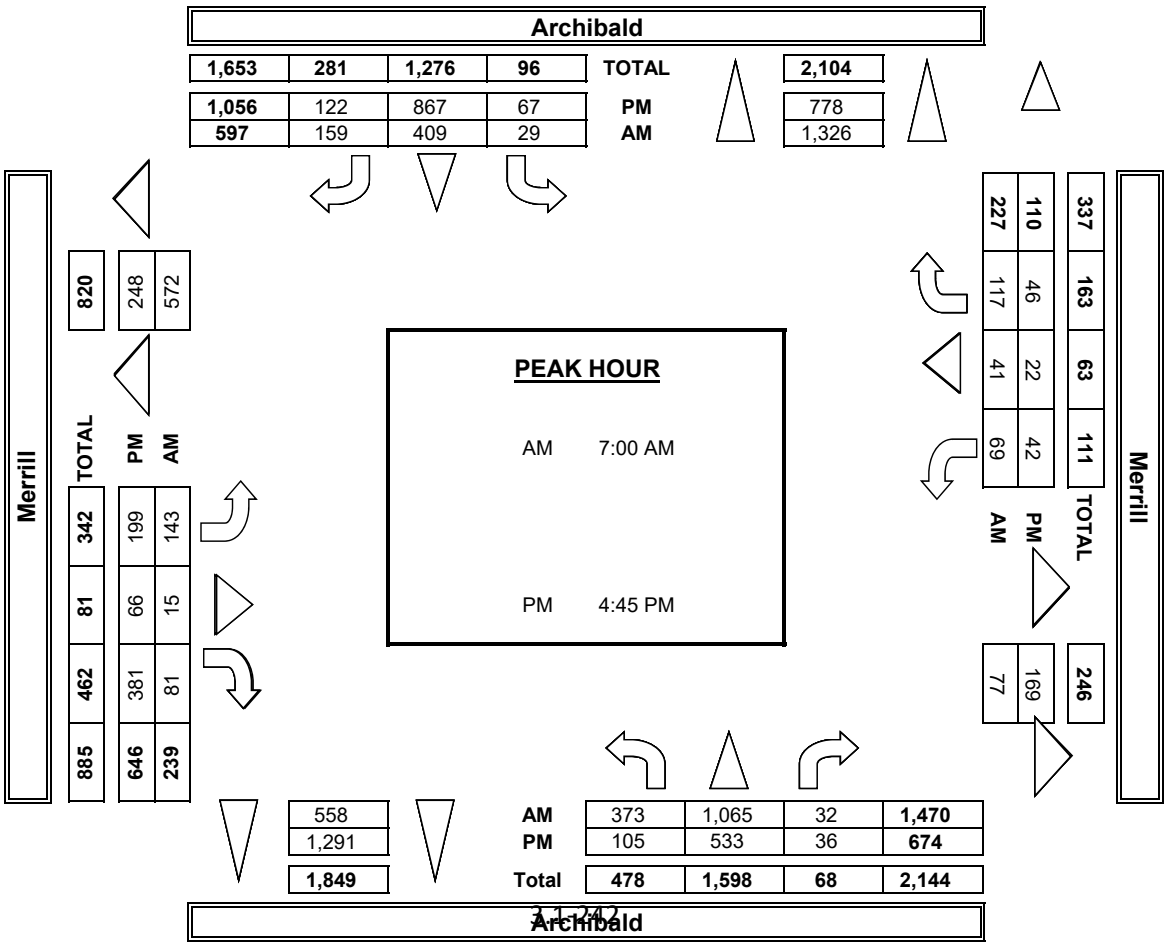
		PEDESTRIAN CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
AM	7:00 AM	0	0	0	0	0
AM	7:15 AM	0	0	0	0	0
AM	7:30 AM	0	0	0	0	0
AM	7:45 AM	0	0	0	0	0
AM	8:00 AM	0	0	0	0	0
AM	8:15 AM	1	0	0	0	1
AM	8:30 AM	0	0	0	0	0
AM	8:45 AM	0	0	0	0	0
AM	9:00 AM	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0
	TOTAL	1	0	0	0	1
PM	3:00 PM	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0
PM	4:30 PM	0	0	0	0	0
PM	4:45 PM	0	0	0	0	0
PM	5:00 PM	0	0	0	0	0
PM	5:15 PM	0	0	0	0	0
PM	5:30 PM	0	0	0	0	0
PM	5:45 PM	2	0	0	0	2
	TOTAL	2	0	0	0	2

		BICYCLE CROSSINGS				
		ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0
AM	7:15 AM	0	0	0	0	0
AM	7:30 AM	0	0	0	0	0
AM	7:45 AM	0	0	0	0	0
AM	8:00 AM	0	0	0	0	0
AM	8:15 AM	0	0	0	0	0
AM	8:30 AM	0	0	0	0	0
AM	8:45 AM	0	0	0	0	0
AM	9:00 AM	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0
	TOTAL	0	0	0	0	0
PM	3:00 PM	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0
PM	4:30 PM	0	0	0	1	1
PM	4:45 PM	0	0	0	0	0
PM	5:00 PM	0	0	0	0	0
PM	5:15 PM	0	0	0	0	0
PM	5:30 PM	1	0	0	0	1
PM	5:45 PM	0	0	0	0	0
	TOTAL	1	0	0	1	2

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Archibald	LOCATION #:	36
TUESDAY	EAST & WEST:	Merrill	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

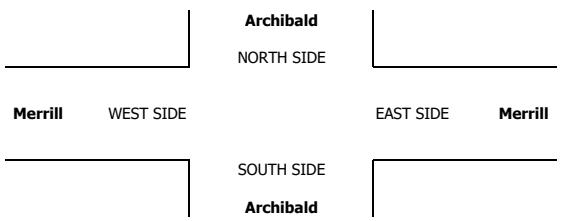
	NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Merrill)			WESTBOUND (Merrill)			
LANES:	NL 1	NT 2	NR 1	SL 2	ST 2	SR 0	EL 1	ET 1	ER 1	WL 1	WT 1	WR 1	TOTAL
7:00 AM	3	14	1	1	8	4	2	0	2	0	0	1	36
7:15 AM	4	12	0	3	8	1	3	0	4	1	1	0	37
7:30 AM	4	8	1	2	16	1	1	0	2	1	0	0	36
7:45 AM	0	10	2	2	16	2	3	0	2	0	0	1	38
8:00 AM	1	4	2	0	5	1	1	0	3	3	0	1	21
8:15 AM	3	8	2	0	10	1	2	0	2	1	0	0	29
8:30 AM	1	9	0	3	14	4	0	0	1	1	0	0	33
8:45 AM	2	7	2	2	12	4	4	0	2	0	0	0	35
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	18	72	10	13	89	18	16	0	18	7	1	3	265
APPROACH %	18%	72%	10%	11%	74%	15%	47%	0%	53%	64%	9%	27%	
APP/DEPART	100	/	91	120	/	114	34	/	23	11	/	37	0
BEGIN PEAK HR	7:00 AM												
VOLUMES	11	44	4	8	48	8	9	0	10	2	1	2	147
APPROACH %	19%	75%	7%	13%	75%	13%	47%	0%	53%	40%	20%	40%	
PEAK HR FACTOR		0.819			0.800			0.679			0.625		0.967
APP/DEPART	59	/	55	64	/	60	19	/	12	5	/	20	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	4	14	0	0	5	1	2	0	2	0	0	0	28
4:15 PM	1	9	0	0	8	2	4	1	3	1	0	0	29
4:30 PM	1	6	1	1	7	1	5	0	2	0	1	2	27
4:45 PM	2	4	0	0	7	1	0	0	5	1	0	2	22
5:00 PM	2	5	0	0	0	2	4	1	4	0	0	1	19
5:15 PM	0	7	0	0	4	2	1	0	2	0	0	1	17
5:30 PM	0	3	0	1	3	1	2	0	1	2	0	1	14
5:45 PM	1	4	1	0	7	1	2	0	2	0	0	0	18
VOLUMES	11	52	2	2	41	11	20	2	21	4	1	7	174
APPROACH %	17%	80%	3%	4%	76%	20%	47%	5%	49%	33%	8%	58%	
APP/DEPART	65	/	79	54	/	67	43	/	6	12	/	22	0
BEGIN PEAK HR	4:00 PM												
VOLUMES	7	33	1	1	27	5	11	1	12	2	1	4	106
APPROACH %	17%	79%	2%	3%	82%	15%	46%	4%	50%	29%	14%	57%	
PEAK HR FACTOR		0.583			0.825			0.750			0.583		0.914
APP/DEPART	42	/	48	33	/	42	24	/	3	7	/	13	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1

RTOR

NRR 0	SRR 0	ERR 0	WRR 0
0	1	1	1
0	1	3	0
0	1	0	0
2	0	0	1
0	0	3	0
2	0	2	0
0	0	1	0
1	2	2	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
5	5	12	2
2	3	4	2
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	2	0
0	1	2	0
1	0	2	2
0	1	3	2
0	1	3	0
0	1	2	1
0	0	1	1
0	0	0	0
1	5	15	6
1	3	9	4



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Archibald	LOCATION #:	36
TUESDAY	EAST & WEST:	Merrill	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Merrill			WESTBOUND Merrill			
	LANES:	NL 1	NT 2	NR 1	SL 2	ST 2	SR 0	EL 1	ET 1	ER 1	WL 1	WT 1	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	2	1	0	0	0	0	0	3
	7:15 AM	0	0	0	0	3	0	1	0	1	0	0	0	5
	7:30 AM	0	2	0	0	3	1	1	0	0	0	0	0	7
	7:45 AM	1	2	0	0	2	0	2	0	0	0	0	0	7
	8:00 AM	1	4	0	0	3	0	1	0	1	0	0	0	10
	8:15 AM	2	2	0	0	2	2	0	0	0	0	0	0	8
	8:30 AM	0	2	0	0	1	3	0	0	2	0	0	0	8
	8:45 AM	0	0	0	0	2	2	1	1	0	0	0	1	7
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	4	12	0	0	16	10	7	1	4	0	0	1	55
	APPROACH %	25%	75%	0%	0%	62%	38%	58%	8%	33%	0%	0%	100%	
	APP/DEPART	16	/	20	26	/	20	12	/	1	1	/	14	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	3	8	0	0	8	7	2	1	3	0	0	1	33
	APPROACH %	27%	73%	0%	0%	53%	47%	33%	17%	50%	0%	0%	100%	
	PEAK HR FACTOR		0.550			0.938			0.750			0.250		0.825
	APP/DEPART	11	/	11	15	/	11	6	/	1	1	/	10	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	2	0	0	0	0	2	0	0	0	0	0	4
	4:15 PM	0	1	0	0	0	0	5	0	1	0	0	0	7
	4:30 PM	2	0	0	0	1	3	0	0	0	0	0	0	6
	4:45 PM	0	0	0	0	0	0	1	0	1	0	0	0	2
	5:00 PM	0	0	0	0	0	1	1	0	1	0	0	0	3
	5:15 PM	0	1	0	0	0	0	3	0	0	0	0	0	4
	5:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
	5:45 PM	0	0	0	0	1	1	1	0	0	0	0	0	3
	VOLUMES	2	5	0	0	3	5	13	0	3	0	0	0	31
	APPROACH %	29%	71%	0%	0%	38%	63%	81%	0%	19%	0%	0%	0%	
	APP/DEPART	7	/	18	8	/	6	16	/	0	0	/	7	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	2	3	0	0	1	3	8	0	2	0	0	0	19
	APPROACH %	40%	60%	0%	0%	25%	75%	80%	0%	20%	0%	0%	0%	
	PEAK HR FACTOR		0.625			0.250			0.417			0.000		0.679
	APP/DEPART	5	/	11	4	/	3	10	/	0	0	/	5	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	2	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	1	0
0	2	0	0
0	1	2	0
0	1	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	7	3	1
0	4	3	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0

Archibald

NORTH SIDE

Merrill WEST SIDE EAST SIDE **Merrill**

SOUTH SIDE

Archibald

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Archibald	LOCATION #:	36
TUESDAY	EAST & WEST:	Merrill	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

	NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Merrill)			WESTBOUND (Merrill)			
LANES:	NL 1	NT 2	NR 1	SL 2	ST 2	SR 0	EL 1	ET 1	ER 1	WL 1	WT 1	WR 1	TOTAL
7:00 AM	1	1	1	1	3	7	3	0	0	0	0	0	17
7:15 AM	0	0	0	0	2	4	2	2	0	0	0	1	11
7:30 AM	0	0	0	0	3	4	5	0	1	0	0	0	13
7:45 AM	0	2	0	1	1	2	3	0	0	1	0	0	10
8:00 AM	2	3	0	0	0	4	4	0	0	0	0	0	13
8:15 AM	1	1	0	0	4	8	3	0	2	1	0	0	20
8:30 AM	0	5	0	0	2	0	2	0	2	0	0	0	11
8:45 AM	1	3	1	0	2	5	7	0	0	0	0	0	19
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	5	15	2	2	17	34	29	2	5	2	0	1	114
APPROACH %	23%	68%	9%	4%	32%	64%	81%	6%	14%	67%	0%	33%	
APP/DEPART	22	/	46	53	/	24	36	/	5	3	/	39	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	4	12	1	0	8	17	16	0	4	1	0	0	63
APPROACH %	24%	71%	6%	0%	32%	68%	80%	0%	20%	100%	0%	0%	
PEAK HR FACTOR		0.850			0.521			0.714			0.250		0.788
APP/DEPART	17	/	28	25	/	13	20	/	1	1	/	21	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	2	0	0	1	0	5	0	1	0	0	0	9
4:15 PM	0	0	0	0	1	5	2	0	0	0	0	0	8
4:30 PM	1	1	0	0	2	3	2	0	2	0	0	0	11
4:45 PM	0	2	0	0	2	4	5	0	2	0	0	0	15
5:00 PM	0	0	0	0	3	4	1	0	1	0	0	0	9
5:15 PM	0	5	1	0	0	4	3	0	0	0	0	0	13
5:30 PM	1	0	0	0	2	3	4	0	0	0	0	1	11
5:45 PM	1	0	0	0	0	4	2	0	0	1	0	0	8
VOLUMES	3	10	1	0	11	27	24	0	6	1	0	1	84
APPROACH %	21%	71%	7%	0%	29%	71%	80%	0%	20%	50%	0%	50%	
APP/DEPART	14	/	35	38	/	18	30	/	1	2	/	30	0
BEGIN PEAK HR		4:30 PM											
VOLUMES	1	7	1	0	7	15	13	0	3	0	0	1	48
APPROACH %	11%	78%	11%	0%	32%	68%	81%	0%	19%	0%	0%	100%	
PEAK HR FACTOR		0.375			0.786			0.571			0.250		0.800
APP/DEPART	9	/	21	22	/	10	16	/	1	1	/	16	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
1	3	0	0
0	0	0	0
0	1	1	0
0	0	0	0
0	1	0	0
0	2	1	0
0	0	2	0
0	3	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	10	4	0
0	6	3	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	1	0	0
0	0	2	0
0	1	1	0
0	3	0	0
0	1	0	0
0	1	0	1
0	1	0	0
0	8	4	1
0	6	1	1

Archibald

NORTH SIDE

Merrill WEST SIDE EAST SIDE **Merrill**

SOUTH SIDE

Archibald

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
Tue, Jan 22, 19	NORTH & SOUTH:	Archibald	LOCATION #:	37
	EAST & WEST:	Limonite	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Limonite)			WESTBOUND (Limonite)			
	LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 1	WT X	WR 1	TOTAL
AM	7:00 AM	0	197	51	35	115	0	0	0	0	56	0	156	610
	7:15 AM	0	216	69	35	107	0	0	0	0	66	0	168	661
	7:30 AM	0	181	67	38	106	0	0	0	0	50	0	198	640
	7:45 AM	0	173	68	47	92	0	0	0	0	65	0	179	624
	8:00 AM	0	169	56	43	118	0	0	0	0	54	0	160	600
	8:15 AM	0	197	64	49	105	0	0	0	0	32	0	141	588
	8:30 AM	0	163	55	54	99	0	0	0	0	57	0	152	580
	8:45 AM	0	142	34	40	93	0	0	0	0	56	0	92	457
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	1,438	464	341	835	0	0	0	0	436	0	1,246	4,760
	APPROACH %	0%	76%	24%	29%	71%	0%	0%	0%	0%	26%	0%	74%	
	APP/DEPART	1,902	/	2,684	1,176	/	1,271	0	/	805	1,682	/	0	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	0	767	255	155	420	0	0	0	0	237	0	701	2,535
	APPROACH %	0%	75%	25%	27%	73%	0%	0%	0%	0%	25%	0%	75%	
	PEAK HR FACTOR		0.896			0.958			0.000			0.946		0.959
	APP/DEPART	1,022	/	1,468	575	/	657	0	/	410	938	/	0	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	110	48	81	158	0	0	0	0	62	0	63	522
	4:15 PM	0	118	58	90	172	0	0	0	0	58	0	54	550
	4:30 PM	0	95	60	104	162	0	0	0	0	79	0	68	568
	4:45 PM	0	109	79	149	197	0	0	0	0	78	0	53	665
	5:00 PM	0	118	69	115	210	0	0	0	0	63	0	61	636
	5:15 PM	0	114	88	121	200	0	0	0	0	73	0	55	651
	5:30 PM	0	147	76	123	196	0	0	0	0	70	0	51	663
	5:45 PM	0	88	64	123	176	0	0	0	0	73	0	62	586
	VOLUMES	0	899	542	906	1,471	0	0	0	0	556	0	467	4,841
	APPROACH %	0%	62%	38%	38%	62%	0%	0%	0%	0%	54%	0%	46%	
	APP/DEPART	1,441	/	1,366	2,377	/	2,026	0	/	1,449	1,023	/	0	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	488	312	508	803	0	0	0	0	284	0	220	2,615
	APPROACH %	0%	61%	39%	39%	61%	0%	0%	0%	0%	56%	0%	44%	
	PEAK HR FACTOR		0.897			0.947			0.000			0.962		0.983
	APP/DEPART	800	/	708	1,311	/	1,086	0	/	821	504	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	1	1

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
8	0	0	13
10	0	0	13
19	0	0	15
8	0	0	13
8	0	0	14
15	0	0	19
7	0	0	8
6	0	0	14
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
81	0	0	109
45	0	0	54
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
6	0	0	20
8	0	0	17
10	0	0	17
6	0	0	11
5	0	0	19
5	0	0	15
5	0	0	4
7	0	0	14
52	0	0	117
21	0	0	49

Archibald

NORTH SIDE

Limonite WEST SIDE EAST SIDE **Limonite**

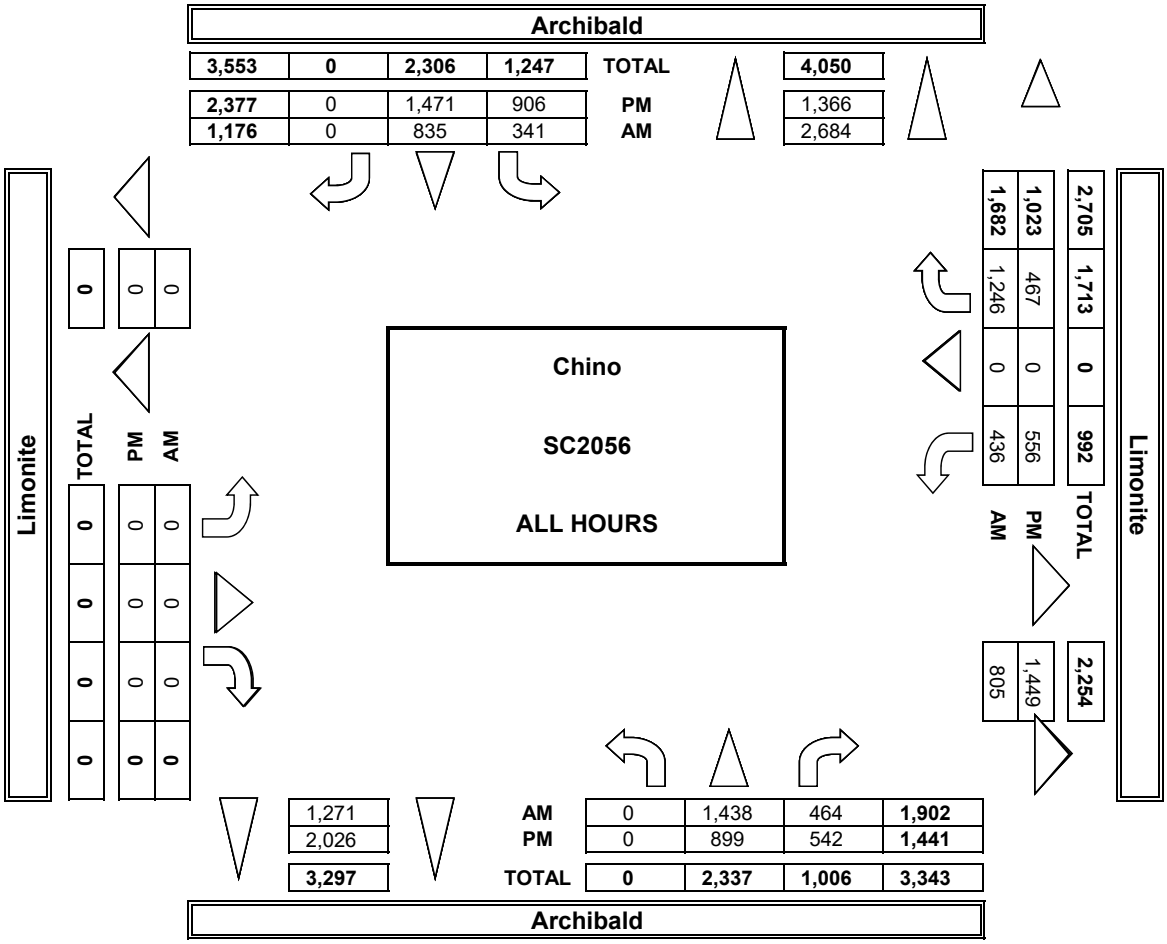
SOUTH SIDE

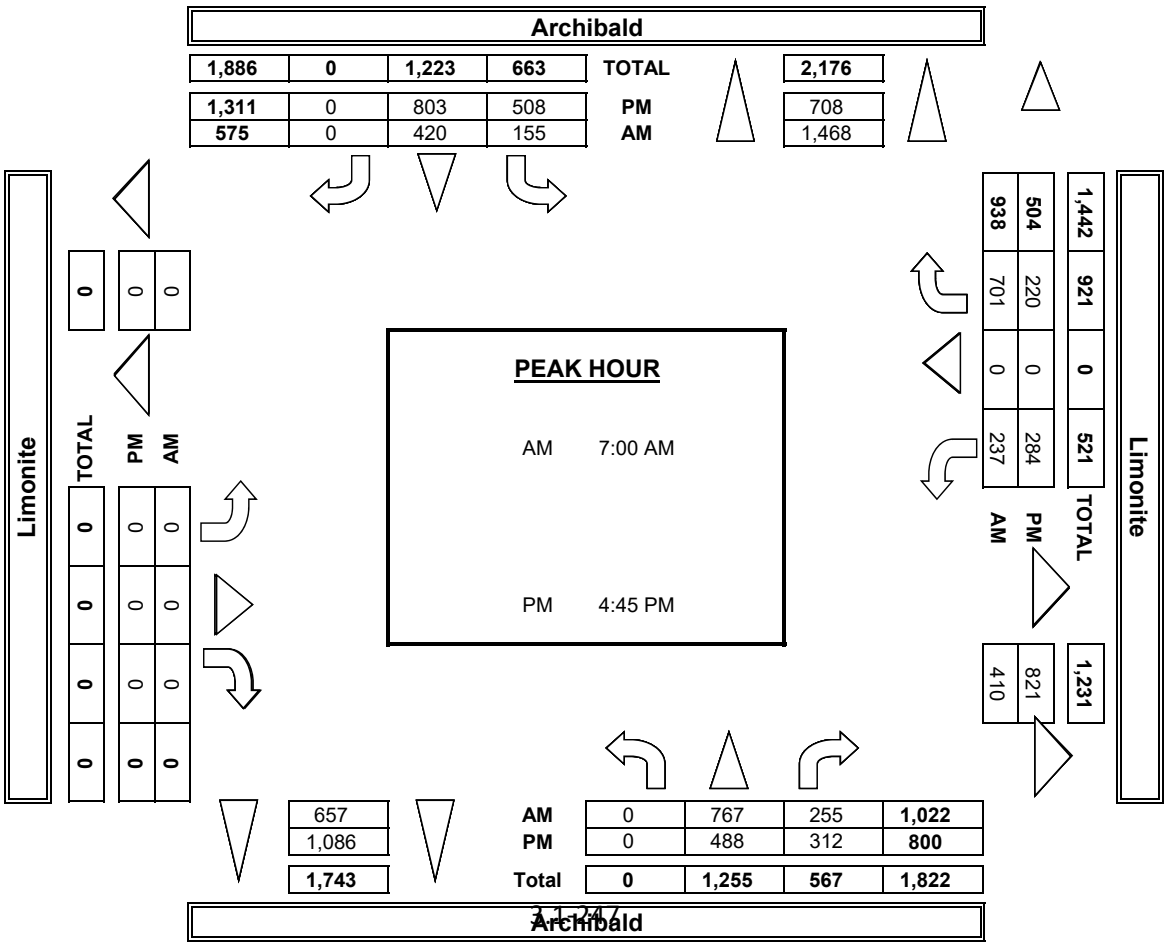
Archibald

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	1	0	0	1	2	1	0	0	0	1	0	0	0	1	1
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Archibald	LOCATION #:	37
TUESDAY	EAST & WEST:	Limonite	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

	NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Limonite)			WESTBOUND (Limonite)			
LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 1	WT X	WR 1	TOTAL
7:00 AM	0	9	1	3	5	0	0	0	0	3	0	11	32
7:15 AM	0	7	0	3	9	0	0	0	0	7	0	7	33
7:30 AM	0	5	1	5	11	0	0	0	0	1	0	6	29
7:45 AM	0	8	2	9	7	0	0	0	0	11	0	4	41
8:00 AM	0	5	2	3	11	0	0	0	0	4	0	3	28
8:15 AM	0	6	4	8	5	0	0	0	0	3	0	10	36
8:30 AM	0	8	4	4	15	0	0	0	0	6	0	4	41
8:45 AM	0	7	2	5	11	0	0	0	0	5	0	9	39
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	55	16	40	74	0	0	0	0	40	0	54	279
APPROACH %	0%	77%	23%	35%	65%	0%	0%	0%	0%	43%	0%	57%	
APP/DEPART	71	/	109	114	/	114	0	/	56	94	/	0	0
BEGIN PEAK HR		7:45 AM											
VOLUMES	0	27	12	24	38	0	0	0	0	24	0	21	146
APPROACH %	0%	69%	31%	39%	61%	0%	0%	0%	0%	53%	0%	47%	
PEAK HR FACTOR		0.813			0.816			0.000			0.750		0.890
APP/DEPART	39	/	48	62	/	62	0	/	36	45	/	0	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	14	3	2	8	0	0	0	0	2	0	6	35
4:15 PM	0	6	1	6	11	0	0	0	0	0	0	5	29
4:30 PM	0	8	7	3	9	0	0	0	0	7	0	0	34
4:45 PM	0	6	6	7	7	0	0	0	0	2	0	4	32
5:00 PM	0	4	3	2	3	0	0	0	0	1	0	2	15
5:15 PM	0	8	2	0	3	0	0	0	0	1	0	1	15
5:30 PM	0	6	0	0	3	0	0	0	0	2	0	1	12
5:45 PM	0	3	1	2	6	0	0	0	0	2	0	1	15
VOLUMES	0	55	23	22	50	0	0	0	0	17	0	20	187
APPROACH %	0%	71%	29%	31%	69%	0%	0%	0%	0%	46%	0%	54%	
APP/DEPART	78	/	75	72	/	67	0	/	45	37	/	0	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	34	17	18	35	0	0	0	0	11	0	15	130
APPROACH %	0%	67%	33%	34%	66%	0%	0%	0%	0%	42%	0%	58%	
PEAK HR FACTOR		0.750			0.779			0.000			0.813		0.929
APP/DEPART	51	/	49	53	/	46	0	/	35	26	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR X	ERR X	WRR 0
0	0	0	2
0	0	0	1
1	0	0	0
0	0	0	0
0	0	0	0
1	0	0	1
2	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
4	0	0	4
3	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
3	0	0	4
3	0	0	3

Archibald

NORTH SIDE

Limonite WEST SIDE EAST SIDE **Limonite**

SOUTH SIDE

Archibald

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Archibald	LOCATION #:	37
TUESDAY	EAST & WEST:	Limonite	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

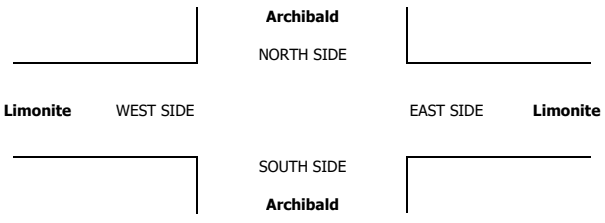
		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Limonite			WESTBOUND Limonite			
	LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 1	WT X	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
	7:15 AM	0	0	0	2	1	0	0	0	0	1	0	1	5
	7:30 AM	0	0	0	2	3	0	0	0	0	0	0	0	5
	7:45 AM	0	4	0	0	2	0	0	0	0	0	0	3	9
	8:00 AM	0	1	3	0	2	0	0	0	0	1	0	2	9
	8:15 AM	0	2	0	1	0	0	0	0	0	1	0	2	6
	8:30 AM	0	1	0	2	2	0	0	0	0	1	0	0	6
	8:45 AM	0	1	0	0	2	0	0	0	0	2	0	0	5
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	9	3	7	14	0	0	0	0	6	0	8	47
	APPROACH %	0%	75%	25%	33%	67%	0%	0%	0%	0%	43%	0%	57%	
	APP/DEPART	12	/	17	21	/	20	0	/	10	14	/	0	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	8	3	3	6	0	0	0	0	3	0	7	30
	APPROACH %	0%	73%	27%	33%	67%	0%	0%	0%	0%	30%	0%	70%	
	PEAK HR FACTOR		0.688			0.563			0.000			0.833		0.833
	APP/DEPART	11	/	15	9	/	9	0	/	6	10	/	0	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
	4:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
	4:30 PM	0	0	0	0	1	0	0	0	0	0	0	2	3
	4:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
	5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
	5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
	5:30 PM	0	1	1	0	1	0	0	0	0	1	0	1	5
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	5	1	1	4	0	0	0	0	1	0	3	15
	APPROACH %	0%	83%	17%	20%	80%	0%	0%	0%	0%	25%	0%	75%	
	APP/DEPART	6	/	8	5	/	5	0	/	2	4	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	2	1	1	2	0	0	0	0	1	0	1	8
	APPROACH %	0%	67%	33%	33%	67%	0%	0%	0%	0%	50%	0%	50%	
	PEAK HR FACTOR		0.375			0.750			0.000			0.250		0.400
	APP/DEPART	3	/	3	3	/	3	0	/	2	2	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR X	ERR X	WRR 0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Archibald	LOCATION #:	37
TUESDAY	EAST & WEST:	Limonite	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Limonite			WESTBOUND Limonite				U-TURNS					RTOR			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:	X	1	1	1	1	X	X	X	X	1	X	1							0	X	X	0
AM																						
7:00 AM	0	1	0	0	2	0	0	0	0	3	0	1	7	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	1	1	2	0	0	0	0	1	0	1	6	0	0	0	0	0	1	0	0	0
7:45 AM	0	0	1	1	1	0	0	0	0	0	0	3	6	0	0	0	0	0	0	0	0	0
8:00 AM	0	2	2	0	0	0	0	0	0	1	0	3	8	0	0	0	0	0	1	0	0	0
8:15 AM	0	3	1	0	9	0	0	0	0	2	0	0	15	0	0	0	0	0	1	0	0	0
8:30 AM	0	4	1	2	3	0	0	0	0	3	0	1	14	0	0	0	0	0	0	0	0	0
8:45 AM	0	3	0	0	2	0	0	0	0	2	0	1	8	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	13	6	4	20	0	0	0	0	12	0	10	65	0	0	0	0	0	3	0	0	0
APPROACH %	0%	68%	32%	17%	83%	0%	0%	0%	0%	55%	0%	45%										
APP/DEPART	19	/	23	24	/	32	0	/	10	22	/	0	0									
BEGIN PEAK HR		8:00 AM																				
VOLUMES	0	12	4	2	14	0	0	0	0	8	0	5	45						2	0	0	0
APPROACH %	0%	75%	25%	13%	88%	0%	0%	0%	0%	62%	0%	38%										
PEAK HR FACTOR		0.800			0.444			0.000			0.813		0.750									
APP/DEPART	16	/	17	16	/	22	0	/	6	13	/	0	0									
PM																						
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	2	0	0	2	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	1	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	1	3	0	0	0	0	1	0	1	7	0	0	0	0	0	0	0	0	0
4:45 PM	0	2	0	0	4	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	1	3	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
5:15 PM	0	5	0	0	0	0	0	0	0	0	0	1	6	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	1	0	2	0	0	0	0	1	0	0	4	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	1	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	1
VOLUMES	0	10	1	3	15	0	0	0	0	3	0	3	35	0	0	0	0	0	0	0	0	1
APPROACH %	0%	91%	9%	17%	83%	0%	0%	0%	0%	50%	0%	50%										
APP/DEPART	11	/	13	18	/	18	0	/	4	6	/	0	0									
BEGIN PEAK HR		4:30 PM																				
VOLUMES	0	8	0	2	10	0	0	0	0	1	0	2	23						0	0	0	0
APPROACH %	0%	100%	0%	17%	83%	0%	0%	0%	0%	33%	0%	67%										
PEAK HR FACTOR		0.400			0.750			0.000			0.375		0.821									
APP/DEPART	8	/	10	12	/	11	0	/	2	3	/	0	0									

Archibald

NORTH SIDE

Limonite WEST SIDE

EAST SIDE **Limonite**

SOUTH SIDE

Archibald

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
Tue, Jan 22, 19	NORTH & SOUTH:	Archibald	LOCATION #:	39
	EAST & WEST:	Schleisman	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N / ◄ W / E ► / S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Schleisman)			WESTBOUND (Schleisman)			
	LANES:	NL 2	NT 3	NR 1	SL 2	ST 3	SR 1	EL 2	ET 3	ER 1	WL 2	WT 3	WR 1	TOTAL
AM	7:00 AM	35	166	65	26	75	86	85	105	28	44	149	31	895
	7:15 AM	66	231	74	38	115	110	92	94	30	77	147	34	1,108
	7:30 AM	65	191	37	21	103	95	105	96	32	99	202	48	1,094
	7:45 AM	63	163	32	12	122	106	86	69	20	24	180	20	897
	8:00 AM	54	122	16	15	92	105	108	134	28	28	142	30	874
	8:15 AM	48	102	15	32	103	92	84	116	44	24	117	21	798
	8:30 AM	57	123	15	19	103	96	80	76	32	17	132	14	764
	8:45 AM	41	91	21	17	90	78	68	71	32	18	107	4	638
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	429	1,189	275	180	803	768	708	761	246	331	1,176	202	7,068
	APPROACH %	23%	63%	15%	10%	46%	44%	41%	44%	14%	19%	69%	12%	
	APP/DEPART	1,893	/	2,002	1,751	/	1,382	1,715	/	1,218	1,709	/	2,466	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	229	751	208	97	415	397	368	364	110	244	678	133	3,994
	APPROACH %	19%	63%	18%	11%	46%	44%	44%	43%	13%	23%	64%	13%	
	PEAK HR FACTOR		0.801			0.864			0.903			0.756		0.901
	APP/DEPART	1,188	/	1,221	909	/	770	842	/	670	1,055	/	1,333	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	41	86	18	30	142	68	100	206	33	25	66	9	824
	4:15 PM	61	97	34	39	120	68	96	212	49	21	78	11	886
	4:30 PM	53	107	30	33	127	63	85	229	45	21	65	9	867
	4:45 PM	39	153	28	32	163	73	91	213	39	35	66	13	945
	5:00 PM	45	114	29	38	156	76	99	275	50	21	79	13	995
	5:15 PM	44	183	26	43	149	75	95	227	37	24	70	14	987
	5:30 PM	48	124	24	43	152	72	79	261	43	26	87	10	969
	5:45 PM	48	111	26	22	132	77	101	253	43	32	76	8	929
	VOLUMES	379	975	215	280	1,141	572	746	1,876	339	205	587	87	7,402
	APPROACH %	24%	62%	14%	14%	57%	29%	25%	63%	11%	23%	67%	10%	
	APP/DEPART	1,569	/	1,756	1,993	/	1,691	2,961	/	2,375	879	/	1,580	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	176	574	107	156	620	296	364	976	169	106	302	50	3,896
	APPROACH %	21%	67%	12%	15%	58%	28%	24%	65%	11%	23%	66%	11%	
	PEAK HR FACTOR		0.847			0.993			0.890			0.931		0.979
	APP/DEPART	857	/	957	1,072	/	898	1,509	/	1,241	458	/	800	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	7	0	7
1	0	7	0	8
0	0	7	0	7
1	0	10	1	12
1	0	15	0	16
1	0	20	0	21
0	0	16	1	17
0	0	15	0	15
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
4	0	97	2	103
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	4	0	4
2	1	4	0	7
2	0	8	2	12
1	0	7	1	9
2	0	11	0	13
0	0	9	0	9
2	0	4	1	7
2	0	6	1	9
11	1	53	5	70

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
24	35	13	16
21	27	15	18
12	26	19	24
9	22	11	11
4	30	7	14
4	24	24	11
8	24	19	9
7	27	13	2
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
89	215	121	105
66	110	58	69
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
5	15	14	4
12	29	25	4
15	28	15	3
9	28	24	10
8	29	20	6
6	28	18	6
13	27	18	3
10	49	16	0
78	233	150	36
36	112	80	25

Archibald

NORTH SIDE

Schleisman WEST SIDE EAST SIDE **Schleisman**

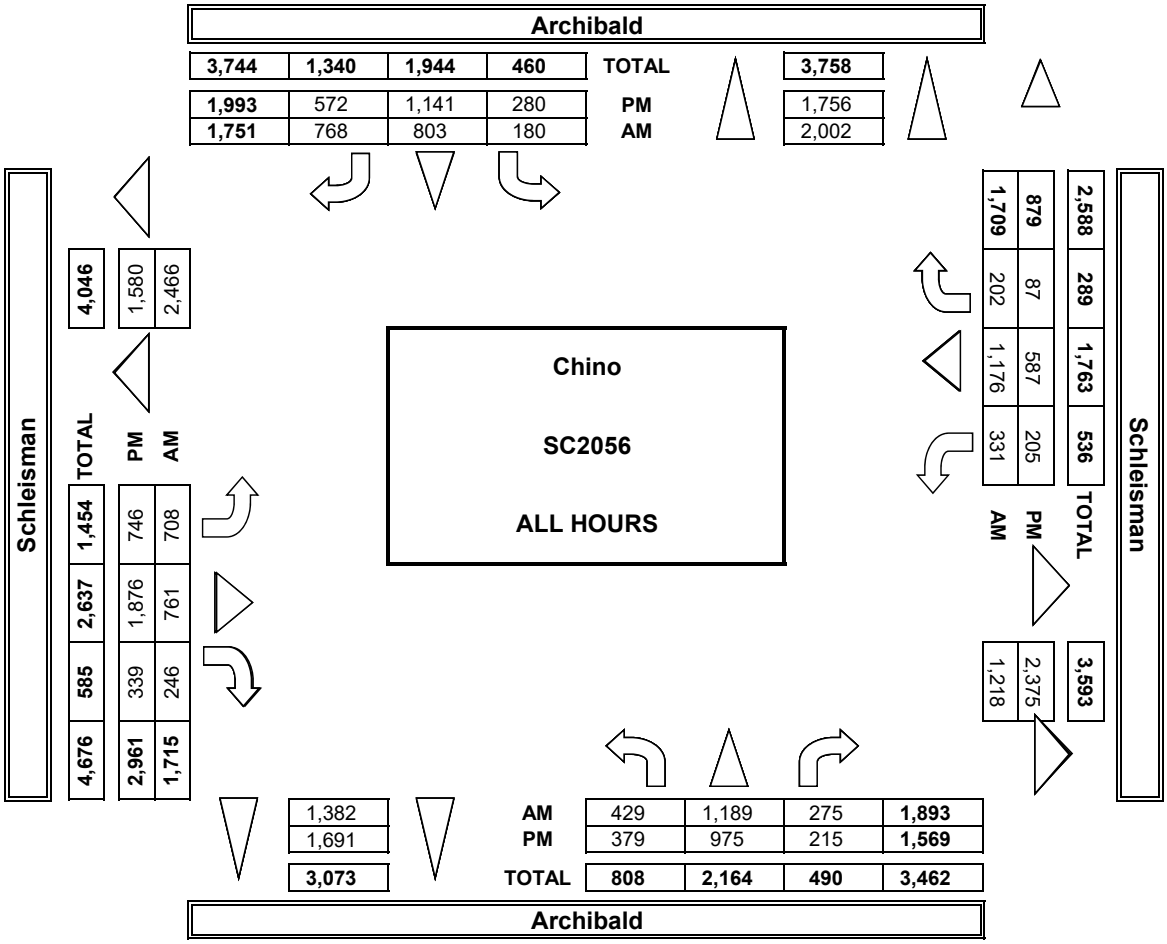
SOUTH SIDE

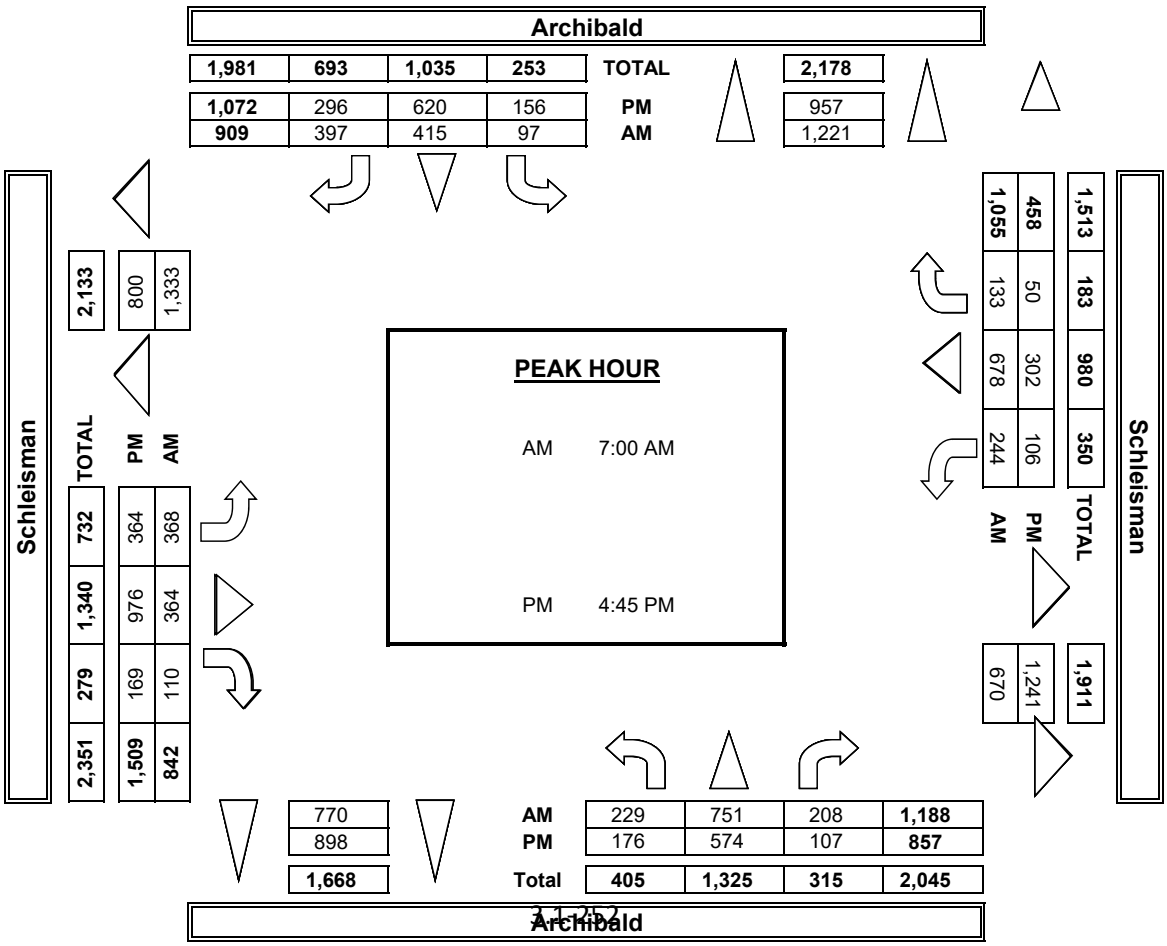
Archibald

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	1	5	0	6	0	1	4	0	5	0	0	1	0	1
	7:15 AM	0	1	1	1	3	0	0	0	0	0	0	1	1	1	3
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	2	0	0	0	2	2	0	0	0	2	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	2	2	6	2	12	2	1	4	0	7	0	1	2	2	5
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	0	1	2	4	1	0	1	2	4	0	0	0	0	0
	4:15 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	4:30 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	4:45 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	5:00 PM	0	2	0	2	4	0	2	0	2	4	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	1	1	0	2	0	1	1	0	2	0	0	0	0	0
	TOTAL	2	4	2	5	13	1	4	2	5	12	1	0	0	0	1

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Archibald	LOCATION #:	39
TUESDAY	EAST & WEST:	Schleisman	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Schleisman)			WESTBOUND (Schleisman)			
	LANES:	NL 2	NT 3	NR 1	SL 2	ST 3	SR 1	EL 2	ET 3	ER 1	WL 2	WT 3	WR 1	TOTAL
AM	7:00 AM	0	8	0	0	4	1	2	3	2	0	2	2	24
	7:15 AM	3	6	0	3	8	7	3	5	0	3	1	0	39
	7:30 AM	4	6	2	3	7	5	7	6	2	2	7	2	53
	7:45 AM	4	11	0	1	11	7	2	4	2	1	4	0	47
	8:00 AM	0	8	2	2	11	4	3	6	2	0	8	1	47
	8:15 AM	3	5	0	3	7	4	3	6	0	1	4	0	36
	8:30 AM	1	7	2	1	11	4	4	4	2	1	4	0	41
	8:45 AM	2	6	3	1	9	3	3	1	2	1	4	0	35
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	17	57	9	14	68	35	27	35	12	9	34	5	322
	APPROACH %	20%	69%	11%	12%	58%	30%	36%	47%	16%	19%	71%	10%	
	APP/DEPART	83	/	86	117	/	89	74	/	58	48	/	89	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	11	31	4	9	37	23	13	21	6	6	20	3	186
	APPROACH %	24%	67%	9%	13%	54%	33%	31%	50%	14%	21%	69%	10%	
	PEAK HR FACTOR		0.767			0.908			0.700			0.659		0.877
	APP/DEPART	46	/	47	69	/	49	42	/	34	29	/	56	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	9	1	0	10	2	5	11	2	1	2	0	44
	4:15 PM	3	5	0	1	7	1	5	3	0	0	0	0	25
	4:30 PM	0	8	1	2	5	2	4	3	2	1	2	0	30
	4:45 PM	1	7	1	1	6	1	4	7	4	1	2	0	35
	5:00 PM	0	6	1	1	3	1	2	2	1	1	1	0	19
	5:15 PM	1	6	1	1	4	0	2	5	0	0	3	1	24
	5:30 PM	0	4	0	0	2	1	1	5	1	1	0	0	15
	5:45 PM	0	3	0	1	3	2	0	4	3	0	3	0	19
	VOLUMES	6	48	5	7	40	10	23	40	13	5	13	1	211
	APPROACH %	10%	81%	8%	12%	70%	18%	30%	53%	17%	26%	68%	5%	
	APP/DEPART	59	/	73	57	/	58	76	/	51	19	/	29	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	5	29	3	3	28	6	18	24	8	3	6	0	134
	APPROACH %	14%	78%	8%	8%	74%	16%	36%	48%	16%	33%	67%	0%	
	PEAK HR FACTOR		0.841			0.792			0.694			0.750		0.761
	APP/DEPART	37	/	48	38	/	39	50	/	30	9	/	17	0

U-TURNS					RTOR			
NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
0	0	0	0	0	0	0	1	1
0	0	1	0	1	0	1	0	0
0	0	1	0	1	0	0	1	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0	1
0	0	0	0	0	0	1	0	0
0	0	1	0	1	2	0	1	0
0	0	0	0	0	0	1	2	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	3	0	3	2	4	5	2
					0	2	1	1
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	1	0	0	1	1	5	5	0
					1	2	2	0

Archibald

NORTH SIDE

Schleisman WEST SIDE EAST SIDE **Schleisman**

SOUTH SIDE

Archibald

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Archibald	LOCATION #:	39
TUESDAY	EAST & WEST:	Schleisman	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Schleisman			WESTBOUND Schleisman			
LANES:	NL 2	NT 3	NR 1	SL 2	ST 3	SR 1	EL 2	ET 3	ER 1	WL 2	WT 3	WR 1	TOTAL
AM													
7:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
7:15 AM	1	0	0	0	0	1	1	0	0	0	1	0	4
7:30 AM	1	0	0	0	2	2	0	0	0	0	0	0	5
7:45 AM	0	1	0	0	0	2	1	0	0	0	1	0	5
8:00 AM	0	1	0	0	2	0	2	2	0	1	0	0	8
8:15 AM	0	0	0	0	0	1	1	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	1	1	1	0	0	0	0	3
8:45 AM	0	0	0	0	3	4	0	1	0	0	0	0	8
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	2	2	0	0	7	11	6	4	0	2	2	0	36
APPROACH %	50%	50%	0%	0%	39%	61%	60%	40%	0%	50%	50%	0%	
APP/DEPART	4	/	8	18	/	9	10	/	4	4	/	15	0
BEGIN PEAK HR		7:15 AM											
VOLUMES	2	2	0	0	4	5	4	2	0	1	2	0	22
APPROACH %	50%	50%	0%	0%	44%	56%	67%	33%	0%	33%	67%	0%	
PEAK HR FACTOR		1.000			0.563			0.375			0.750		0.688
APP/DEPART	4	/	6	9	/	5	6	/	2	3	/	9	0
PM													
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	1	0	0	1	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:30 PM	1	1	0	0	0	2	1	0	0	0	0	0	5
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	1	1	0	0	2	2	1	3	0	0	1	0	11
APPROACH %	50%	50%	0%	0%	50%	50%	25%	75%	0%	0%	100%	0%	
APP/DEPART	2	/	2	4	/	3	4	/	3	1	/	3	0
BEGIN PEAK HR		4:45 PM											
VOLUMES	0	1	0	0	1	2	1	1	0	0	1	0	8
APPROACH %	0%	50%	0%	0%	33%	67%	50%	50%	0%	0%	100%	0%	
PEAK HR FACTOR		0.250			0.375			0.500			0.250		0.400
APP/DEPART	2	/	2	3	/	2	2	/	1	1	/	3	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
1	0	0	0	1

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	1	0	0
0	2	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	4	0	0

0	3	0	0

0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	1	0	0

0	1	0	0

Archibald

NORTH SIDE

Schleisman WEST SIDE EAST SIDE **Schleisman**

SOUTH SIDE

Archibald

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Archibald	LOCATION #:	39
TUESDAY	EAST & WEST:	Schleisman	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

	NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Schleisman			WESTBOUND Schleisman			
LANES:	NL 2	NT 3	NR 1	SL 2	ST 3	SR 1	EL 2	ET 3	ER 1	WL 2	WT 3	WR 1	TOTAL
7:00 AM	1	1	1	0	2	1	0	1	0	0	1	0	8
7:15 AM	1	2	0	0	1	3	1	0	0	0	0	0	8
7:30 AM	0	1	1	1	1	0	1	0	0	0	2	0	7
7:45 AM	0	0	1	0	0	0	1	0	0	0	4	1	7
8:00 AM	0	0	0	0	0	0	1	0	0	0	1	0	2
8:15 AM	0	1	0	0	3	2	3	3	0	0	0	0	12
8:30 AM	1	1	0	0	5	3	2	1	0	0	0	0	13
8:45 AM	0	1	0	0	2	1	0	0	1	0	0	0	5
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	3	7	3	1	14	10	9	5	1	0	8	1	62
APPROACH %	23%	54%	23%	4%	56%	40%	60%	33%	7%	0%	89%	11%	
APP/DEPART	13	/	17	25	/	15	15	/	9	9	/	21	0
BEGIN PEAK HR		7:45 AM											
VOLUMES	1	2	1	0	8	5	7	4	0	0	5	1	34
APPROACH %	25%	50%	25%	0%	62%	38%	64%	36%	0%	0%	83%	17%	
PEAK HR FACTOR		0.500			0.406			0.458			0.300		0.654
APP/DEPART	4	/	10	13	/	8	11	/	5	6	/	11	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	4	0	1	1	0	0	0	0	0	1	0	7
4:15 PM	0	0	0	0	3	0	1	2	0	0	0	0	6
4:30 PM	0	1	0	0	3	0	0	2	1	0	0	0	7
4:45 PM	0	0	0	0	2	0	0	0	0	0	0	1	3
5:00 PM	0	0	0	1	2	0	0	2	0	0	0	0	5
5:15 PM	0	1	0	0	1	0	1	0	0	0	1	1	5
5:30 PM	0	2	0	0	1	0	0	1	0	0	0	0	4
5:45 PM	1	0	0	0	0	1	0	1	0	0	0	0	3
VOLUMES	1	8	0	2	13	1	2	8	1	0	2	2	40
APPROACH %	11%	89%	0%	13%	81%	6%	18%	73%	9%	0%	50%	50%	
APP/DEPART	9	/	12	16	/	14	11	/	10	4	/	4	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	5	0	1	9	0	1	4	1	0	1	1	23
APPROACH %	0%	100%	0%	10%	90%	0%	17%	67%	17%	0%	50%	50%	
PEAK HR FACTOR		0.313			0.833			0.500			0.500		0.821
APP/DEPART	5	/	7	10	/	10	6	/	5	2	/	1	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	2	0	0

0	2	0	0

0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	1	0	1

0	0	0	1

Archibald

NORTH SIDE

Schleisman WEST SIDE EAST SIDE **Schleisman**

SOUTH SIDE

Archibald

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Jan 30, 19

LOCATION: Chino
NORTH & SOUTH: Turner
EAST & WEST: Edison

PROJECT #: SC2074
LOCATION #: 59
CONTROL: SIGNAL

NOTES:

AM PM MD OTHER OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Turner)			SOUTHBOUND (Turner)			EASTBOUND (Edison)			WESTBOUND (Edison)			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
AM	7:00 AM	10	2	10	5	1	3	5	123	9	9	195	7	379
	7:15 AM	13	4	9	8	2	20	8	122	7	7	220	3	423
	7:30 AM	15	11	6	10	3	13	6	96	6	7	195	2	370
	7:45 AM	10	6	8	5	8	19	4	96	5	11	179	3	354
	8:00 AM	12	1	9	9	8	9	3	95	3	1	148	0	298
	8:15 AM	9	2	6	5	2	10	2	86	6	2	144	2	276
	8:30 AM	13	3	5	2	0	13	5	97	5	10	119	6	278
	8:45 AM	8	1	5	10	3	6	3	76	4	9	124	0	249
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	90	30	58	54	27	93	36	791	45	56	1,324	23	2,627
	APPROACH %	51%	17%	33%	31%	16%	53%	4%	91%	5%	4%	94%	2%	
	APP/DEPART	178	/	83	174	/	124	872	/	907	1,403	/	1,513	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	48	23	33	28	14	55	23	437	27	34	789	15	1,526
	APPROACH %	46%	22%	32%	29%	14%	57%	5%	90%	6%	4%	94%	2%	
	PEAK HR FACTOR		0.813			0.758			0.889			0.911		0.902
	APP/DEPART	104	/	59	97	/	72	487	/	501	838	/	894	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	5	1	15	6	0	4	13	227	13	9	93	4	390
	4:15 PM	9	2	12	5	3	6	6	186	8	6	105	3	351
	4:30 PM	5	0	10	9	0	7	9	199	11	10	119	2	381
	4:45 PM	7	4	7	5	1	4	9	254	6	4	127	5	433
	5:00 PM	6	2	4	4	3	4	10	197	7	12	119	3	371
	5:15 PM	6	1	11	7	3	5	13	253	13	2	136	2	452
	5:30 PM	5	0	11	6	3	9	16	185	11	8	112	4	370
	5:45 PM	5	2	8	9	0	5	8	195	10	10	116	2	370
	VOLUMES	48	12	78	51	13	44	84	1,696	79	61	927	25	3,118
	APPROACH %	35%	9%	57%	47%	12%	41%	5%	91%	4%	6%	92%	2%	
	APP/DEPART	138	/	119	108	/	148	1,859	/	1,830	1,013	/	1,021	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	24	7	32	25	7	20	41	903	37	28	501	12	1,637
	APPROACH %	38%	11%	51%	48%	13%	38%	4%	92%	4%	5%	93%	2%	
	PEAK HR FACTOR		0.875			0.813			0.879			0.966		0.905
	APP/DEPART	63	/	59	52	/	69	981	/	963	541	/	546	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	1	3	4
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	1	0	1
0	0	2	1	3
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	6	4	10
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	1	1
0	0	0	1	1
0	0	1	1	2
0	0	1	1	2
0	0	0	0	0
0	0	1	1	2
0	0	0	0	0
0	0	2	5	7

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
4	2	1	2
5	11	2	3
0	5	3	2
3	3	4	1
4	6	0	0
3	6	3	0
1	8	2	3
2	4	2	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
22	45	17	11
12	21	10	8
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
5	3	2	1
5	3	6	2
4	4	3	1
6	2	2	1
1	3	3	0
6	4	3	1
6	6	3	1
1	2	1	0
34	27	23	7
17	13	11	3

Turner

NORTH SIDE

Edison WEST SIDE — EAST SIDE **Edison**

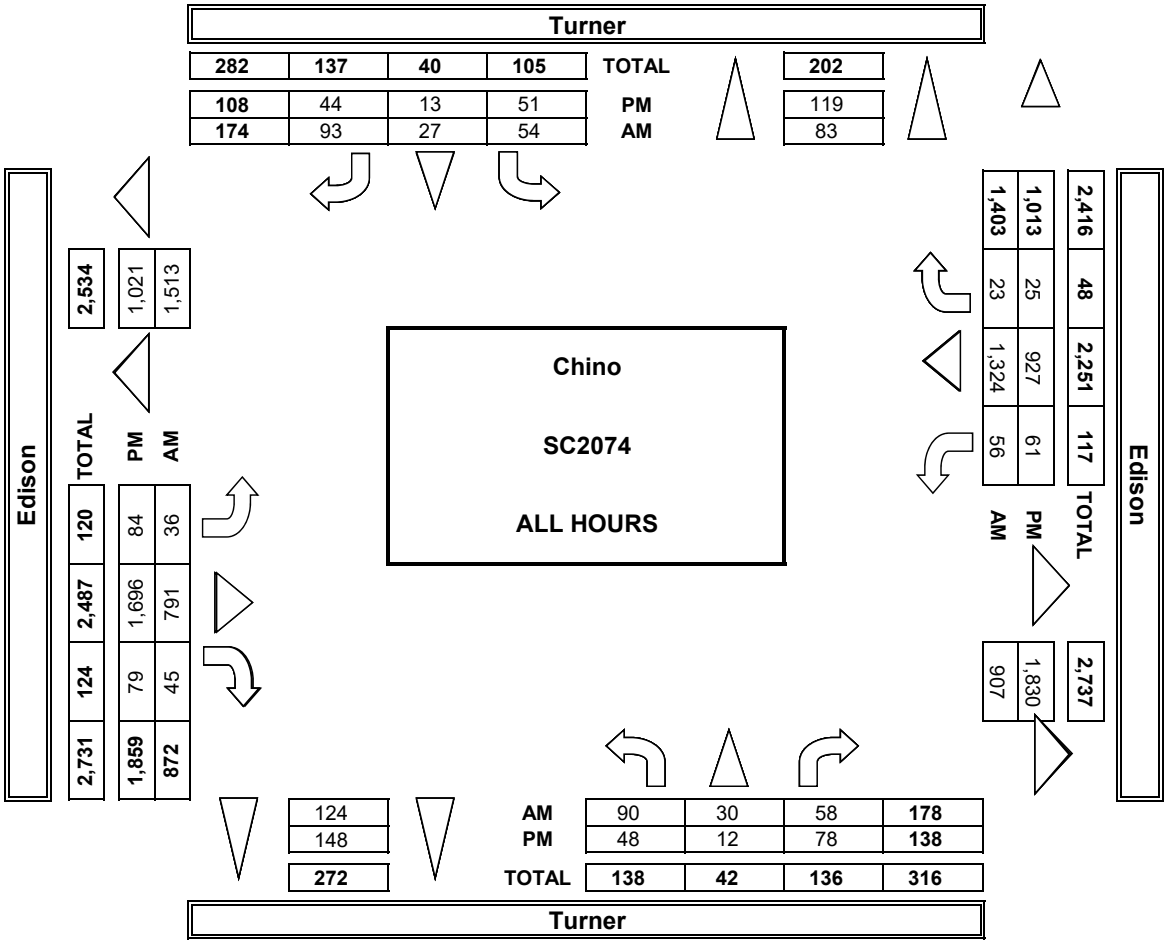
SOUTH SIDE

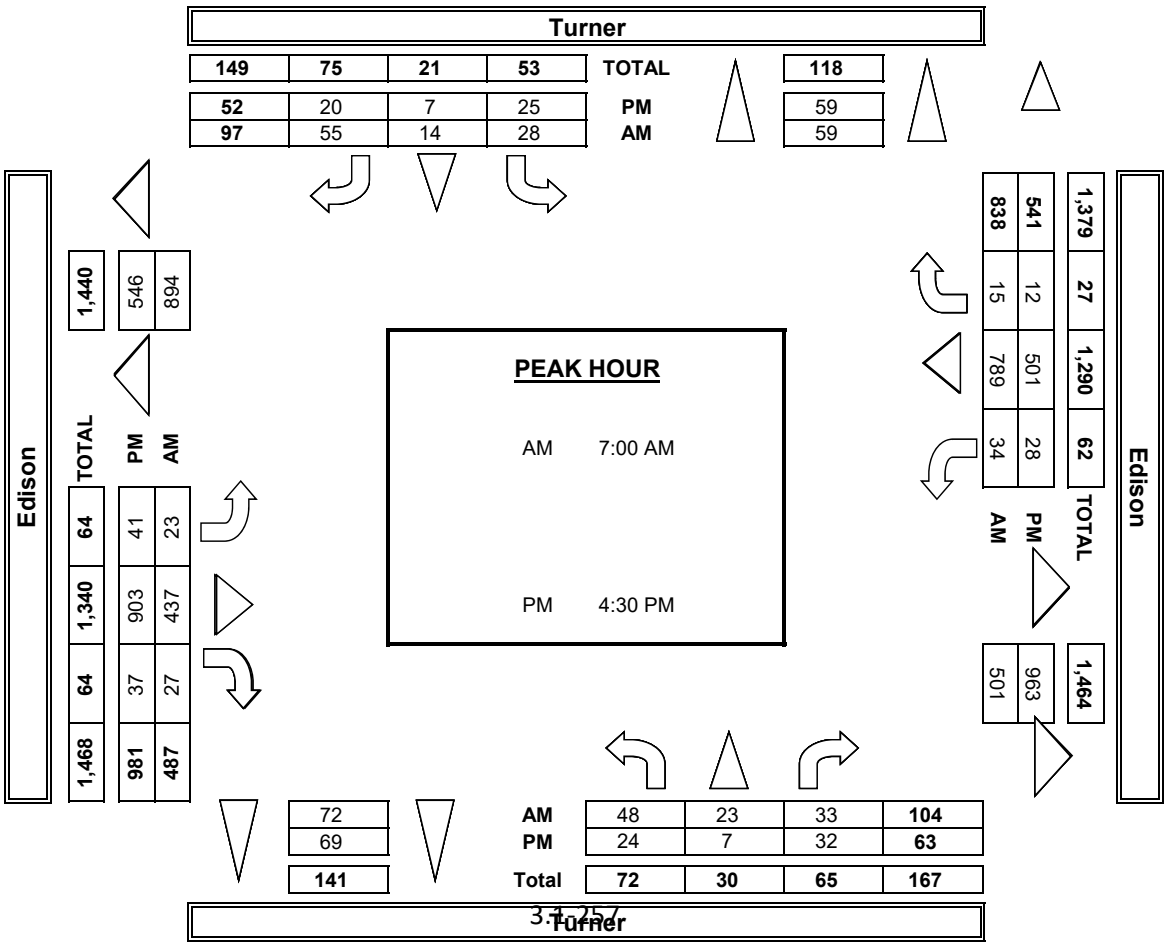
Turner

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	2	0	0	0	2	2	0	0	0	2	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	2	0	0	0	2	2	0	0	0	2	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	2	0	1	0	3	2	0	0	0	2	0	0	1	0	1
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	7	0	1	0	8	4	0	0	0	7	0	0	0	0	1

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Turner	LOCATION #:	59
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

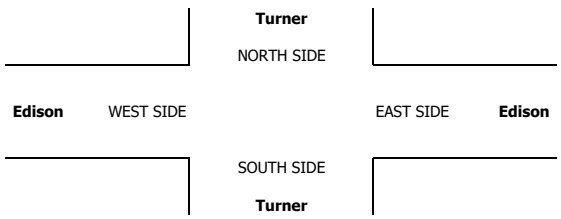
	NORTHBOUND (Turner)			SOUTHBOUND (Turner)			EASTBOUND (Edison)			WESTBOUND (Edison)			
LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
7:00 AM	0	0	0	0	1	1	1	12	1	1	7	1	25
7:15 AM	0	0	0	2	0	0	1	3	0	1	15	0	22
7:30 AM	1	0	1	2	0	1	0	1	0	1	13	0	20
7:45 AM	1	1	0	0	0	0	1	4	0	2	8	0	17
8:00 AM	0	0	0	0	1	1	0	7	0	1	11	0	21
8:15 AM	0	1	0	1	1	0	0	4	2	0	12	0	21
8:30 AM	1	0	0	0	0	0	3	7	0	1	13	1	26
8:45 AM	2	0	2	1	0	1	1	6	1	5	15	0	34
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	5	2	3	6	3	4	7	44	4	12	94	2	186
APPROACH %	50%	20%	30%	46%	23%	31%	13%	80%	7%	11%	87%	2%	
APP/DEPART	10	/	8	13	/	19	55	/	53	108	/	106	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	3	1	2	2	2	2	1	24	3	7	51	1	102
APPROACH %	50%	17%	33%	33%	33%	33%	3%	77%	10%	12%	86%	2%	
PEAK HR FACTOR		0.375			0.750			0.775			0.738		0.750
APP/DEPART	6	/	3	6	/	12	31	/	28	59	/	59	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	1	3	0	1	0	13	1	1	5	1	26
4:15 PM	2	0	2	0	0	0	0	10	0	0	5	0	19
4:30 PM	0	0	0	0	0	0	0	13	0	0	4	0	17
4:45 PM	0	0	1	0	0	0	0	11	1	0	6	0	19
5:00 PM	0	0	0	0	0	0	1	7	0	0	8	0	16
5:15 PM	0	0	1	0	0	0	0	11	0	0	4	0	16
5:30 PM	0	0	0	0	0	2	0	9	1	0	2	1	15
5:45 PM	0	0	0	1	0	0	0	10	0	0	5	0	16
VOLUMES	2	0	5	4	0	3	1	84	3	1	39	2	144
APPROACH %	29%	0%	71%	57%	0%	43%	1%	95%	3%	2%	93%	5%	
APP/DEPART	7	/	3	7	/	4	88	/	93	42	/	44	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	2	0	4	3	0	1	0	47	2	1	20	1	81
APPROACH %	33%	0%	67%	75%	0%	25%	0%	96%	4%	5%	91%	5%	
PEAK HR FACTOR		0.375			0.250			0.875			0.786		0.779
APP/DEPART	6	/	1	4	/	3	49	/	54	22	/	23	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	2	0	2
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	3	0	3
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	1	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	1
1	1	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	3	2	1
1	1	2	1
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
2	0	0	0
0	0	0	0
1	0	0	0
0	0	0	0
1	0	0	0
0	2	0	1
0	0	0	0
4	3	0	1
3	1	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Turner	LOCATION #:	59
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

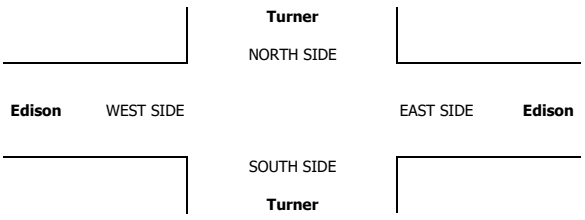
		NORTHBOUND (Turner)			SOUTHBOUND (Turner)			EASTBOUND (Edison)			WESTBOUND (Edison)			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	1	15	1	0	7	0	24
	7:15 AM	0	0	0	0	0	0	0	6	0	0	3	0	9
	7:30 AM	2	0	0	0	0	0	0	6	1	0	3	0	12
	7:45 AM	0	0	0	0	0	0	1	4	0	0	5	0	10
	8:00 AM	1	0	1	0	0	0	0	5	0	0	5	0	12
	8:15 AM	0	0	1	0	0	0	0	6	0	0	4	0	11
	8:30 AM	1	0	0	0	0	1	0	7	0	0	4	0	13
	8:45 AM	0	0	1	0	1	0	0	3	0	0	3	0	8
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	4	0	3	0	1	1	2	52	2	0	34	0	99
	APPROACH %	57%	0%	43%	0%	50%	50%	4%	93%	4%	0%	100%	0%	
	APP/DEPART	7	/	0	2	/	3	56	/	55	34	/	41	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	2	0	0	0	0	0	0	31	2	0	18	0	55
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	89%	6%	0%	100%	0%	
	PEAK HR FACTOR		0.250			0.000			0.515			0.643		0.573
	APP/DEPART	2	/	0	0	/	2	35	/	31	18	/	22	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	5	0	0	3	0	8
	4:15 PM	0	0	0	0	0	0	0	4	0	0	2	0	6
	4:30 PM	0	0	0	0	0	0	0	3	0	0	2	0	5
	4:45 PM	0	0	0	0	0	0	0	5	0	0	3	0	8
	5:00 PM	0	0	0	0	0	0	0	5	0	0	1	0	6
	5:15 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
	5:30 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
	5:45 PM	0	0	0	0	0	0	0	3	0	0	2	0	5
	VOLUMES	0	0	0	0	0	0	0	29	0	0	14	0	43
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	0	/	0	0	/	0	29	/	29	14	/	14	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	0	0	0	0	17	0	0	10	0	27
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.000			0.850			0.833		0.844
	APP/DEPART	0	/	0	0	/	0	17	/	17	10	/	10	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	2	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Turner	LOCATION #:	59
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 4:	NOTES:	AM / PM / MD / OTHER / OTHER	▲ N ◄ W E ► S ▼
4 OR MORE AXLE TRUCKS			

	NORTHBOUND Turner			SOUTHBOUND Turner			EASTBOUND Edison			WESTBOUND Edison			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	1	1	0	1	2	1	1	2	1	
AM 7:00 AM	0	0	0	1	0	0	1	4	0	0	20	1	27
7:15 AM	0	0	0	1	0	0	0	7	0	0	15	0	23
7:30 AM	1	0	0	0	0	0	0	5	1	0	22	0	29
7:45 AM	1	0	1	0	0	0	0	8	0	2	16	0	28
8:00 AM	0	0	0	0	0	0	0	7	0	0	14	0	21
8:15 AM	0	0	0	0	0	0	0	6	0	0	18	1	25
8:30 AM	0	0	0	1	0	0	0	5	0	0	14	1	21
8:45 AM	0	0	0	0	0	0	0	5	0	0	18	0	23
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	2	0	1	3	0	0	1	47	1	2	137	3	197
APPROACH %	67%	0%	33%	100%	0%	0%	2%	96%	2%	1%	96%	2%	
APP/DEPART	3	/	4	3	/	3	49	/	51	142	/	139	0
BEGIN PEAK HR		7:00 AM											
VOLUMES	2	0	1	2	0	0	1	24	1	2	73	1	107
APPROACH %	67%	0%	33%	100%	0%	0%	4%	92%	4%	3%	96%	1%	
PEAK HR FACTOR		0.375			0.500			0.813			0.864		0.922
APP/DEPART	3	/	2	2	/	3	26	/	27	76	/	75	0
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	1	0	0	0	0	7	0	0	4	0	12
4:15 PM	0	0	1	0	0	0	0	4	0	0	11	0	16
4:30 PM	0	0	0	0	0	0	0	7	0	1	8	0	16
4:45 PM	0	0	1	0	0	0	0	6	0	0	7	0	14
5:00 PM	0	0	0	0	0	0	0	8	0	0	2	0	10
5:15 PM	0	0	1	0	0	0	0	12	0	0	6	0	19
5:30 PM	0	0	0	0	0	0	0	2	0	0	2	0	4
5:45 PM	0	0	0	0	0	0	0	8	0	0	1	0	9
VOLUMES	0	0	4	0	0	0	0	54	0	1	41	0	100
APPROACH %	0%	0%	100%	0%	0%	0%	0%	100%	0%	2%	98%	0%	
APP/DEPART	4	/	0	0	/	1	54	/	58	42	/	41	0
BEGIN PEAK HR		4:30 PM											
VOLUMES	0	0	2	0	0	0	0	33	0	1	23	0	59
APPROACH %	0%	0%	100%	0%	0%	0%	0%	100%	0%	4%	96%	0%	
PEAK HR FACTOR		0.500			0.000			0.688			0.667		0.776
APP/DEPART	2	/	0	0	/	1	33	/	35	24	/	23	0

U-TURNS					
	NB	SB	EB	WB	TTL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
03:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0

RTOR				
	NRR	SRR	ERR	WRR
LANES	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
9:00 AM	0	0	0	0
9:15 AM	0	0	0	0
9:30 AM	0	0	0	0
9:45 AM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0
03:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	1	0	0	0
4:30 PM	0	0	0	0
4:45 PM	1	0	0	0
5:00 PM	0	0	0	0
5:15 PM	1	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
VOLUMES	3	0	0	0
PEAK HR VOLUMES	2	0	0	0

Turner

NORTH SIDE

Edison WEST SIDE

EAST SIDE **Edison**

SOUTH SIDE

Turner

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
Tue, Jan 22, 19	NORTH & SOUTH:	Harrison	LOCATION #:	40
	EAST & WEST:	Limonite	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N / ◄ W / E ► / S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Harrison)			SOUTHBOUND (Harrison)			EASTBOUND (Limonite)			WESTBOUND (Limonite)			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 1	ET 3	ER 0	WL 1	WT 2	WR 1	TOTAL
AM	7:00 AM	37	16	37	4	23	14	10	60	4	23	216	16	460
	7:15 AM	41	18	53	1	35	24	11	90	3	39	167	4	486
	7:30 AM	38	34	55	8	15	14	8	87	4	25	196	6	490
	7:45 AM	34	24	44	3	25	18	9	88	4	30	158	3	440
	8:00 AM	20	23	48	6	33	11	8	94	7	39	171	3	463
	8:15 AM	31	25	35	2	12	16	13	108	1	23	150	2	418
	8:30 AM	18	8	41	3	3	15	11	89	3	16	133	4	344
	8:45 AM	14	5	37	2	7	9	9	73	6	19	127	3	311
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	233	153	350	29	153	121	79	689	32	214	1,318	41	3,412
	APPROACH %	32%	21%	48%	10%	50%	40%	10%	86%	4%	14%	84%	3%	
	APP/DEPART	736	/	270	303	/	389	800	/	1,078	1,573	/	1,675	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	133	99	200	18	108	67	36	359	18	133	692	16	1,879
	APPROACH %	31%	23%	46%	9%	56%	35%	9%	87%	4%	16%	82%	2%	
	PEAK HR FACTOR		0.850			0.804			0.947			0.926		0.959
	APP/DEPART	432	/	148	193	/	252	413	/	584	841	/	895	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	11	14	36	4	7	13	12	104	9	50	103	1	364
	4:15 PM	10	16	50	6	10	6	9	131	7	47	103	2	397
	4:30 PM	14	7	29	6	11	6	13	142	8	47	122	2	407
	4:45 PM	5	19	30	6	11	7	23	184	12	41	113	0	451
	5:00 PM	8	9	40	2	8	5	15	171	13	59	107	2	439
	5:15 PM	9	7	37	2	13	8	19	174	15	48	106	1	439
	5:30 PM	5	7	40	5	12	7	16	156	11	54	127	2	442
	5:45 PM	9	9	38	2	11	5	18	152	18	59	109	2	432
	VOLUMES	71	88	300	33	83	57	125	1,214	93	405	890	12	3,371
	APPROACH %	15%	19%	65%	19%	48%	33%	9%	85%	6%	31%	68%	1%	
	APP/DEPART	459	/	223	173	/	574	1,432	/	1,554	1,307	/	1,020	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	27	42	147	15	44	27	73	685	51	202	453	5	1,771
	APPROACH %	13%	19%	68%	17%	51%	31%	9%	85%	6%	31%	69%	1%	
	PEAK HR FACTOR		0.947			0.896			0.924			0.902		0.982
	APP/DEPART	216	/	118	86	/	296	809	/	848	660	/	509	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	1	3	4
0	0	1	0	1
0	0	1	4	5
0	0	0	0	0
0	0	0	2	2
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	3	10	13
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	1	1
0	0	0	1	1
0	0	0	1	1
0	0	1	0	1
0	0	0	0	0
0	0	0	1	1
0	0	0	1	1
0	0	0	1	1
0	0	1	0	1
0	0	0	1	1
0	0	0	3	3
0	0	2	7	9

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
14	6	0	3
29	8	2	1
36	7	0	0
22	8	2	0
26	5	3	1
20	13	1	0
27	10	2	1
21	6	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
195	63	10	7
113	28	7	2
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
18	5	1	1
18	2	0	2
17	0	1	0
18	2	4	0
21	1	0	1
22	4	0	0
22	2	1	1
18	2	0	0
154	18	7	5
83	9	5	2

Harrison

NORTH SIDE

Limonite WEST SIDE — EAST SIDE **Limonite**

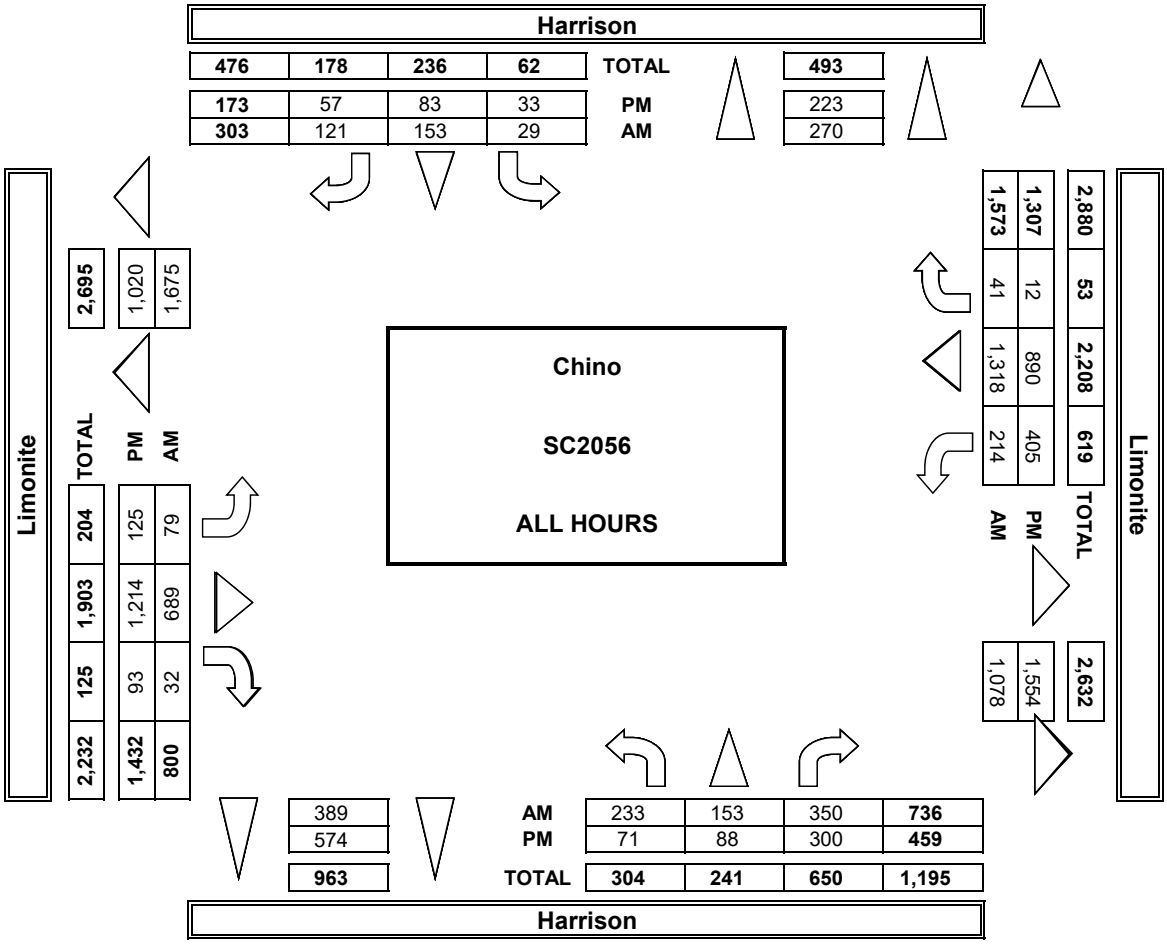
SOUTH SIDE

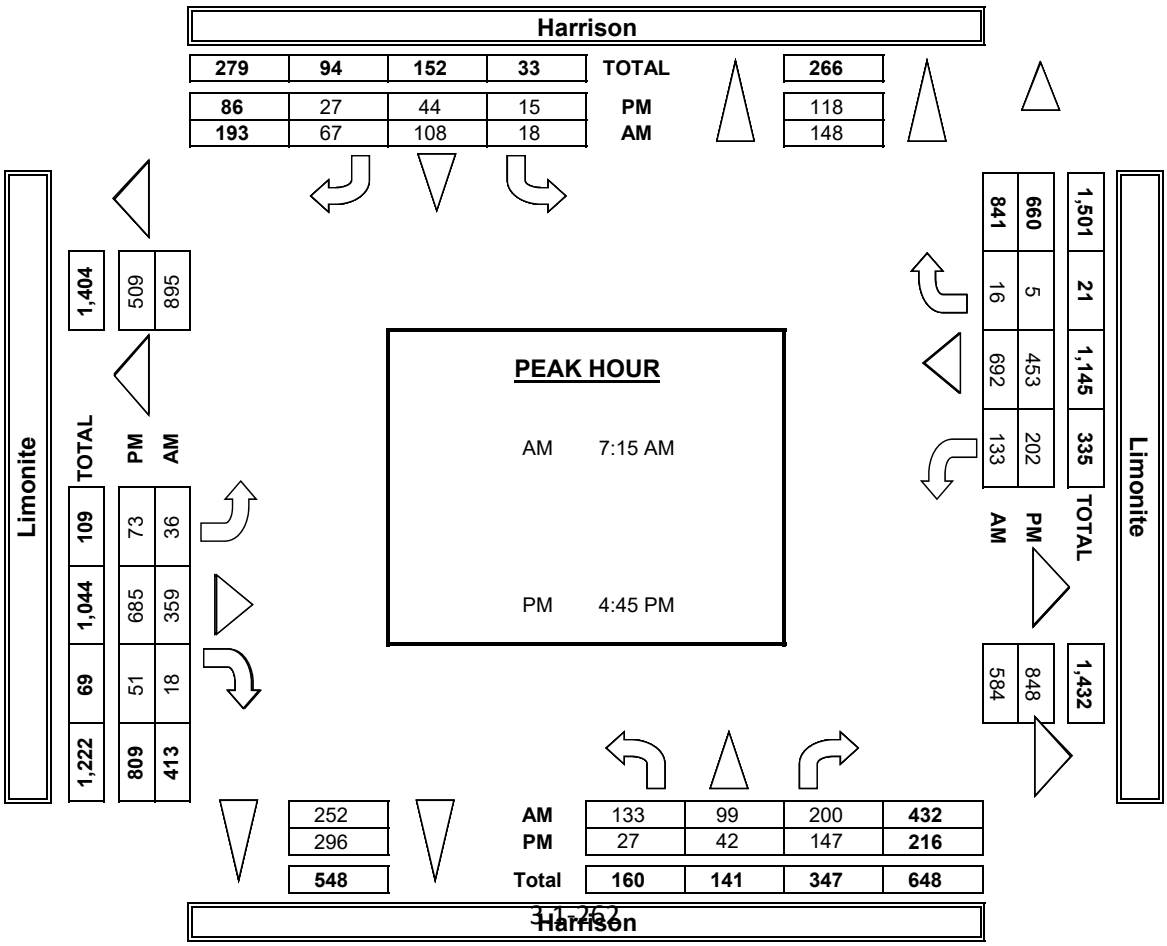
Harrison

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	6	1	7	0	0	2	1	3	0	0	4	0	4
	7:15 AM	2	0	1	2	5	2	0	1	1	4	0	0	0	1	1
	7:30 AM	0	0	3	0	3	0	0	1	0	1	0	0	2	0	2
	7:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	8:00 AM	0	0	2	1	3	0	0	2	1	3	0	0	0	0	0
	8:15 AM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	1	0	0	1	2	1	0	0	1	2	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	3	0	14	5	22	3	0	7	4	14	0	0	7	1	8
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	1	0	2	0	3	1	0	2	0	3	0	0	0	0	0
	4:30 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	5:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	TOTAL	2	0	4	0	6	1	0	2	0	3	1	0	2	0	3

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Harrison	LOCATION #:	40
TUESDAY	EAST & WEST:	Limonite	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

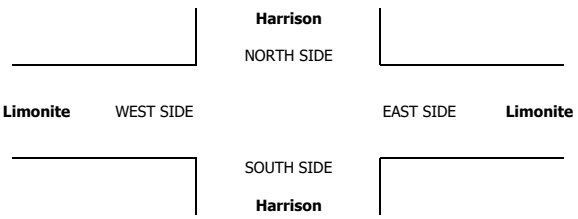
	NORTHBOUND (Harrison)			SOUTHBOUND (Harrison)			EASTBOUND (Limonite)			WESTBOUND (Limonite)			
LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 1	ET 3	ER 0	WL 1	WT 2	WR 1	TOTAL
7:00 AM	2	0	0	0	0	1	1	2	0	1	11	5	23
7:15 AM	1	1	1	1	0	4	2	2	1	0	9	0	22
7:30 AM	0	0	1	0	0	1	0	8	0	0	11	2	23
7:45 AM	0	2	5	0	1	3	1	5	0	0	9	0	26
8:00 AM	0	0	1	0	0	1	1	5	0	0	9	1	18
8:15 AM	0	0	1	0	0	0	1	3	0	0	9	0	14
8:30 AM	0	0	2	2	0	0	5	5	0	1	7	2	24
8:45 AM	2	1	1	0	1	1	3	10	1	2	12	0	34
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	5	4	12	3	2	11	14	40	2	4	77	10	184
APPROACH %	24%	19%	57%	19%	13%	69%	25%	71%	4%	4%	85%	11%	
APP/DEPART	21	/	28	16	/	8	56	/	55	91	/	93	0
BEGIN PEAK HR		7:00 AM											
VOLUMES	3	3	7	1	1	9	4	17	1	1	40	7	94
APPROACH %	23%	23%	54%	9%	9%	82%	18%	77%	5%	2%	83%	15%	
PEAK HR FACTOR		0.464			0.550			0.688			0.706		0.904
APP/DEPART	13	/	14	11	/	3	22	/	25	48	/	52	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	1	1	1	0	0	1	0	4	0	0	8	0	16
4:15 PM	2	0	0	1	0	1	1	8	0	0	4	0	17
4:30 PM	0	0	1	0	0	1	0	8	0	0	5	0	15
4:45 PM	1	0	1	1	1	2	0	10	0	0	1	0	17
5:00 PM	0	0	1	0	1	0	1	4	0	0	1	0	8
5:15 PM	0	0	0	1	0	0	1	3	0	0	3	0	8
5:30 PM	0	0	1	0	0	0	0	1	0	0	3	0	5
5:45 PM	0	0	0	0	0	0	0	4	0	0	3	0	7
VOLUMES	4	1	5	3	2	5	3	42	0	0	28	0	93
APPROACH %	40%	10%	50%	30%	20%	50%	7%	93%	0%	0%	100%	0%	
APP/DEPART	10	/	4	10	/	2	45	/	50	28	/	37	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	4	1	3	2	1	5	1	30	0	0	18	0	65
APPROACH %	50%	13%	38%	25%	13%	63%	3%	97%	0%	0%	100%	0%	
PEAK HR FACTOR		0.667			0.500			0.775			0.563		0.956
APP/DEPART	8	/	2	8	/	1	31	/	35	18	/	27	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	1
1	2	0	0
1	0	0	0
1	0	0	0
1	0	0	1
1	0	0	0
2	0	0	0
1	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
8	3	0	2
3	2	0	1
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
3	1	0	0
1	1	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Harrison	LOCATION #:	40
TUESDAY	EAST & WEST:	Limonite	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND Harrison			SOUTHBOUND Harrison			EASTBOUND Limonite			WESTBOUND Limonite			
LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 1	ET 3	ER 0	WL 1	WT 2	WR 1	TOTAL
7:00 AM	0	0	0	0	0	0	1	0	0	0	4	0	5
7:15 AM	0	0	0	0	0	0	0	2	0	0	2	1	5
7:30 AM	0	0	0	0	1	1	0	0	0	0	2	0	4
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
8:00 AM	0	0	0	1	0	0	1	1	0	2	1	0	6
8:15 AM	0	0	0	0	0	0	0	2	0	0	1	0	3
8:30 AM	0	0	0	0	0	0	0	1	0	0	1	1	3
8:45 AM	0	0	0	0	0	0	0	1	0	1	2	0	4
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	1	1	1	2	8	0	3	13	2	31
APPROACH %	0%	0%	0%	33%	33%	33%	20%	80%	0%	17%	72%	11%	
APP/DEPART	0	/	4	3	/	4	10	/	9	18	/	14	0
BEGIN PEAK HR		7:15 AM											
VOLUMES	0	0	0	1	0	0	1	5	0	3	5	1	16
APPROACH %	0%	0%	0%	100%	0%	0%	17%	83%	0%	33%	56%	11%	
PEAK HR FACTOR		0.000			0.125			0.750			0.750		0.667
APP/DEPART	0	/	2	1	/	3	6	/	6	9	/	5	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
4:30 PM	0	0	0	0	0	0	0	0	1	0	1	0	2
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	2	1	0	3	0	6
APPROACH %	0%	0%	0%	0%	0%	0%	0%	67%	33%	0%	100%	0%	
APP/DEPART	0	/	0	0	/	1	3	/	2	3	/	3	0
BEGIN PEAK HR		4:15 PM											
VOLUMES	0	0	0	0	0	0	0	2	1	0	2	0	5
APPROACH %	0%	0%	0%	0%	0%	0%	0%	67%	33%	0%	100%	0%	
PEAK HR FACTOR		0.000			0.000			0.750			0.500		0.625
APP/DEPART	0	/	0	0	/	1	3	/	2	2	/	2	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	1
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	2
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Harrison

NORTH SIDE

Limonite WEST SIDE EAST SIDE **Limonite**

SOUTH SIDE

Harrison

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Harrison	LOCATION #:	40
TUESDAY	EAST & WEST:	Limonite	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND Harrison			SOUTHBOUND Harrison			EASTBOUND Limonite			WESTBOUND Limonite			TOTAL
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	LANES:	1	1	1	1	1	0	1	3	0	1	2	1	
AM	7:00 AM	0	0	0	0	0	0	0	1	0	0	3	1	5
AM	7:15 AM	0	0	0	0	0	0	0	1	0	0	3	0	4
AM	7:30 AM	0	0	0	2	0	0	0	2	0	0	4	0	8
AM	7:45 AM	0	1	0	0	0	0	0	3	0	0	3	0	7
AM	8:00 AM	1	0	0	0	0	0	0	1	0	0	2	0	4
AM	8:15 AM	0	0	0	1	0	0	0	0	0	0	4	0	5
AM	8:30 AM	0	0	1	0	0	0	0	1	0	0	2	0	4
AM	8:45 AM	0	0	1	0	1	0	0	1	0	0	0	0	3
AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	VOLUMES	1	1	2	3	1	0	0	10	0	0	21	1	40
AM	APPROACH %	25%	25%	50%	75%	25%	0%	0%	100%	0%	0%	95%	5%	
AM	APP/DEPART	4	/	2	4	/	1	10	/	15	22	/	22	0
AM	BEGIN PEAK HR		7:00 AM											
AM	VOLUMES	1	1	0	3	0	0	0	6	0	0	13	0	24
AM	APPROACH %	50%	50%	0%	100%	0%	0%	0%	100%	0%	0%	100%	0%	
AM	PEAK HR FACTOR		0.500			0.375			0.500			0.813		0.750
AM	APP/DEPART	2	/	1	3	/	0	6	/	9	13	/	14	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
PM	4:30 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
PM	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:15 PM	0	0	1	0	0	0	0	0	0	0	1	0	2
PM	5:30 PM	1	0	0	0	0	0	0	2	0	0	1	0	4
PM	5:45 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
PM	VOLUMES	1	0	1	0	0	0	0	4	0	0	5	0	11
PM	APPROACH %	50%	0%	50%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
PM	APP/DEPART	2	/	0	0	/	0	4	/	5	5	/	6	0
PM	BEGIN PEAK HR		5:00 PM											
PM	VOLUMES	1	0	1	0	0	0	0	3	0	0	3	0	8
PM	APPROACH %	50%	0%	50%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
PM	PEAK HR FACTOR		0.500			0.000			0.375			0.750		0.500
PM	APP/DEPART	2	/	0	0	/	0	3	/	4	3	/	4	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:						0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	1	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	1	0	0	1
AM PEAK HR VOLUMES						0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	1	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	1	0	0	0
PM PEAK HR VOLUMES						1	0	0	0

Harrison

NORTH SIDE

Limonite WEST SIDE

EAST SIDE **Limonite**

SOUTH SIDE

Harrison

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
Wed, Feb 6, 19	NORTH & SOUTH:	Haven	LOCATION #:	61
	EAST & WEST:	Ontario Ranch	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (Ontario Ranch)			WESTBOUND (Ontario Ranch)			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 1	EL 1	ET 3	ER 1	WL 1	WT 2	WR 1	TOTAL
AM	7:00 AM	11	39	21	14	14	8	38	98	7	4	165	12	431
	7:15 AM	16	38	13	41	11	18	40	141	3	5	150	27	503
	7:30 AM	16	48	23	36	12	15	28	120	5	4	166	24	497
	7:45 AM	11	57	16	20	14	16	19	106	10	4	170	14	457
	8:00 AM	16	34	9	22	14	18	31	87	10	4	127	10	382
	8:15 AM	5	39	7	21	11	18	26	94	7	1	123	19	371
	8:30 AM	11	34	5	26	17	14	36	104	6	4	124	13	394
	8:45 AM	9	41	4	19	9	14	16	73	3	2	101	13	304
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	95	330	98	199	102	121	234	823	51	28	1,126	132	3,339
	APPROACH %	18%	63%	19%	47%	24%	29%	21%	74%	5%	2%	88%	10%	
	APP/DEPART	523	/	704	422	/	178	1,108	/	1,115	1,286	/	1,342	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	54	182	73	111	51	57	125	465	25	17	651	77	1,888
	APPROACH %	17%	59%	24%	51%	23%	26%	20%	76%	4%	2%	87%	10%	
	PEAK HR FACTOR		0.888			0.782			0.836			0.960		0.938
	APP/DEPART	309	/	387	219	/	91	615	/	648	745	/	762	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	8	16	5	20	36	17	24	184	9	9	103	22	453
	4:15 PM	9	18	12	27	43	24	35	189	6	12	93	28	496
	4:30 PM	5	14	5	36	44	30	20	197	9	10	97	26	493
	4:45 PM	9	15	5	33	59	16	28	190	9	18	110	31	523
	5:00 PM	3	18	7	34	53	25	27	192	18	14	101	24	516
	5:15 PM	2	19	6	51	64	21	26	194	16	11	116	32	558
	5:30 PM	10	22	5	29	67	27	23	172	15	9	110	36	525
	5:45 PM	5	25	4	47	64	32	32	167	13	17	94	32	532
	VOLUMES	51	147	49	277	430	192	215	1,485	95	100	824	231	4,096
	APPROACH %	21%	60%	20%	31%	48%	21%	12%	83%	5%	9%	71%	20%	
	APP/DEPART	247	/	594	899	/	623	1,795	/	1,811	1,155	/	1,068	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	20	84	22	161	248	105	108	725	62	51	421	124	2,131
	APPROACH %	16%	67%	17%	31%	48%	20%	12%	81%	7%	9%	71%	21%	
	PEAK HR FACTOR		0.851			0.899			0.944			0.937		0.955
	APP/DEPART	126	/	315	514	/	361	895	/	908	596	/	547	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	2	2
0	1	0	0	1
0	2	0	0	2
0	0	0	0	0
0	1	0	1	2
0	2	0	0	2
0	1	0	0	1
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	8	0	3	11
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	2	1	2	5

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
14	3	2	6
9	10	2	17
17	7	3	14
7	11	5	5
7	13	1	4
4	10	4	10
2	8	3	7
1	11	1	5
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
61	73	21	68
47	31	12	42
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
5	8	2	8
5	15	1	15
3	20	3	6
2	10	2	16
3	19	10	13
4	11	8	18
2	22	7	20
4	18	5	20
28	123	38	116
13	70	30	71

ALL PED AND BIKE

	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
TOTAL	0	0	0	0	0
3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	1	0	1
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	0	1	0	1

PEDESTRIAN CROSSINGS

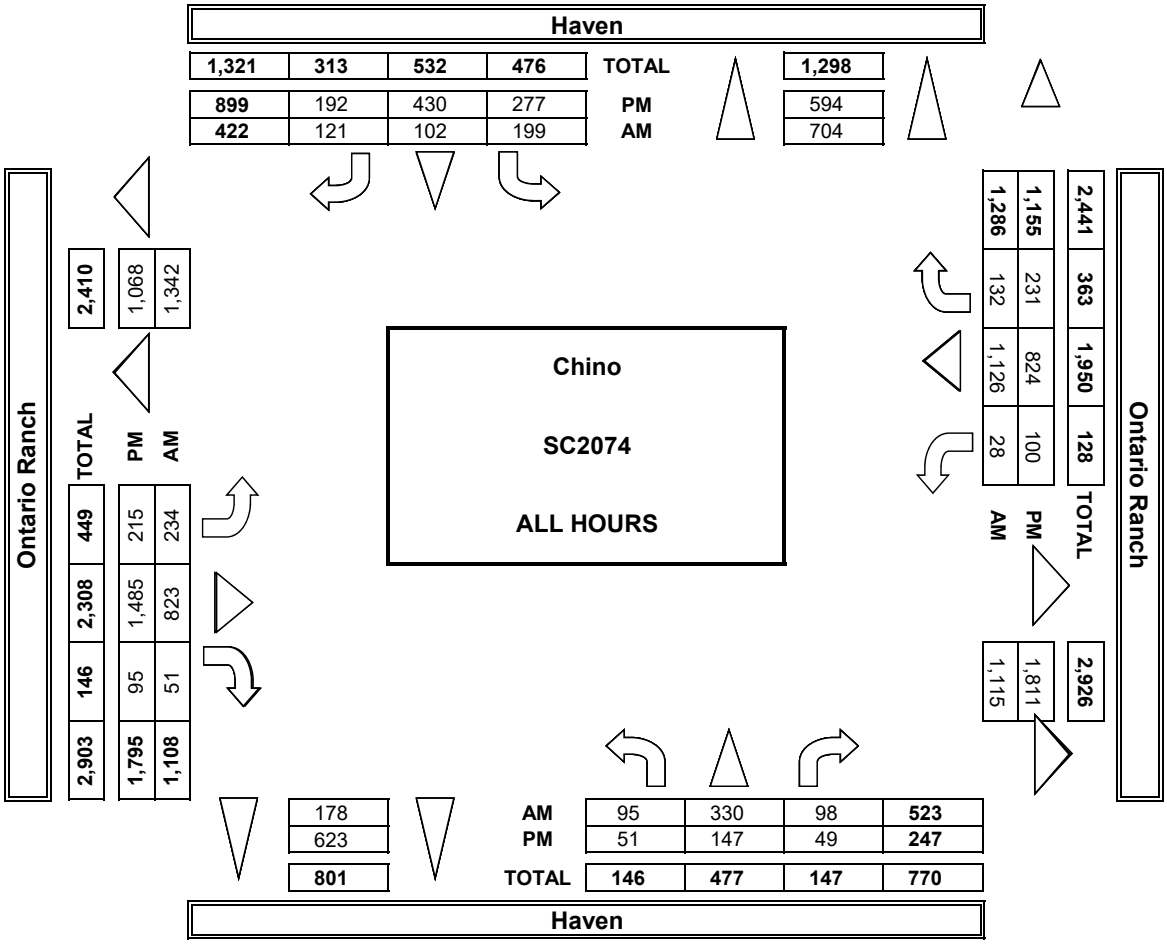
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	1

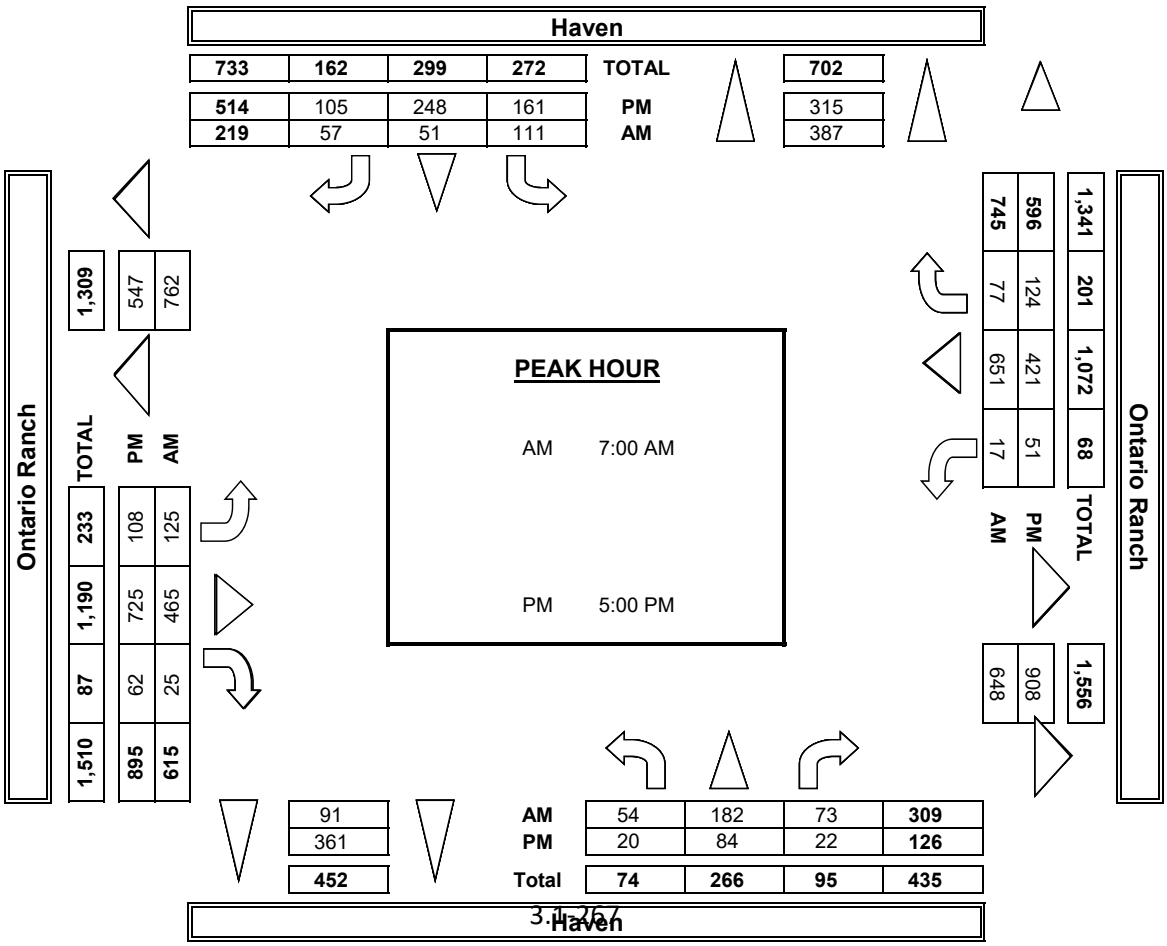
BICYCLE CROSSINGS

ES	WS	SS	NS	TOTAL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
2/6/19	NORTH & SOUTH:	Haven	LOCATION #:	61
WEDNESDAY	EAST & WEST:	Ontario Ranch	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:	AM / PM / MD / OTHER / OTHER	◄ W	▲ N / S ▼	E ►

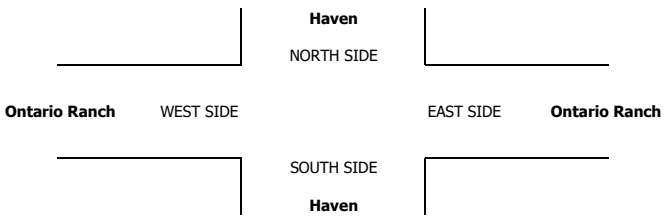
		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (Ontario Ranch)			WESTBOUND (Ontario Ranch)			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 1	EL 1	ET 3	ER 1	WL 1	WT 2	WR 1	TOTAL
AM	7:00 AM	1	0	1	0	1	0	0	7	1	1	21	1	34
	7:15 AM	0	0	0	2	0	0	0	4	0	1	6	0	13
	7:30 AM	1	0	1	2	0	0	1	5	0	0	10	0	20
	7:45 AM	2	1	1	2	0	2	0	8	1	0	11	0	28
	8:00 AM	1	2	0	1	1	2	1	6	0	1	8	0	23
	8:15 AM	1	0	1	0	3	1	1	5	2	0	16	0	30
	8:30 AM	1	0	0	0	1	3	1	8	0	1	17	0	32
	8:45 AM	1	2	0	1	1	1	0	4	0	1	16	0	27
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	8	5	4	8	7	9	4	47	4	5	105	1	207
	APPROACH %	47%	29%	24%	33%	29%	38%	7%	85%	7%	5%	95%	1%	
	APP/DEPART	17	/	10	24	/	15	55	/	60	111	/	122	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	5	3	2	3	5	8	3	27	3	1	52	0	113
	APPROACH %	50%	30%	20%	19%	31%	50%	9%	82%	9%	2%	96%	0%	
	PEAK HR FACTOR		0.625			1.000			0.917			0.750		0.883
	APP/DEPART	10	/	6	16	/	9	33	/	33	54	/	65	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	1	0	1	0	3	4	8	0	0	5	0	23
	4:15 PM	0	0	0	0	0	1	0	12	0	0	6	2	21
	4:30 PM	0	1	0	1	2	1	0	14	0	1	4	0	24
	4:45 PM	0	1	0	0	0	0	3	8	0	1	3	0	16
	5:00 PM	0	1	0	1	0	1	2	10	1	0	4	0	20
	5:15 PM	0	1	0	1	1	0	0	13	0	0	5	0	21
	5:30 PM	1	1	0	0	2	0	2	7	1	0	7	2	23
	5:45 PM	0	1	1	0	1	1	6	6	1	1	3	1	22
	VOLUMES	2	7	1	4	6	7	17	78	3	3	37	5	170
	APPROACH %	20%	70%	10%	24%	35%	41%	17%	80%	3%	7%	82%	11%	
	APP/DEPART	10	/	29	17	/	12	98	/	83	45	/	46	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	1	4	1	2	4	2	10	36	3	1	19	3	86
	APPROACH %	17%	67%	17%	25%	50%	25%	20%	73%	6%	4%	83%	13%	
	PEAK HR FACTOR		0.750			1.000			0.942			0.639		0.935
	APP/DEPART	6	/	17	8	/	8	49	/	39	23	/	22	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
1	0	0	0
1	1	0	0
0	2	0	0
1	1	1	0
0	1	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
4	6	1	0
2	5	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	2	0	0
0	1	0	1
0	1	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	1	1
1	0	0	0
1	5	1	2
1	1	1	1



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:			
2/6/19 WEDNESDAY	LOCATION: Chino	PROJECT #:	SC2074
	NORTH & SOUTH: Haven	LOCATION #:	61
	EAST & WEST: Ontario Ranch	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND Haven			SOUTHBOUND Haven			EASTBOUND Ontario Ranch			WESTBOUND Ontario Ranch				U-TURNS					RTOR			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:	1	1	0	1	1	1	1	3	1	1	2	1							0	0	0	0
AM 7:00 AM	0	0	0	0	0	0	0	6	2	0	3	0	11	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	5	0	0	3	1	9	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	6	0	1	5	0	12	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	7	0	0	2	0	9	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	6	1	0	2	0	9	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	1	0	6	0	0	6	0	13	0	0	0	0	0	0	0	0	0
8:30 AM	1	0	0	0	0	0	1	6	0	0	2	1	11	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	5	0	0	1	0	6	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	1	0	0	0	0	1	1	47	3	1	24	2	80	0	0	0	0	0	0	0	0	2
APPROACH %	100%	0%	0%	0%	0%	100%	2%	92%	6%	4%	89%	7%										
APP/DEPART	1	/	3	1	/	4	51	/	47	27	/	26	0									
BEGIN PEAK HR		7:30 AM																				
VOLUMES	0	0	0	0	0	1	0	25	1	1	15	0	43						0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	100%	0%	96%	4%	6%	94%	0%										
PEAK HR FACTOR		0.000			0.250			0.929			0.667		0.827									
APP/DEPART	0	/	0	1	/	2	26	/	25	16	/	16	0									
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	1	0	0	0	0	0	0	7	0	0	2	0	10	0	0	0	0	0	0	0	0	0
4:15 PM	1	0	0	0	1	0	0	3	0	0	1	0	6	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	6	0	0	2	0	8	0	0	0	0	0	0	0	0	0
4:45 PM	1	0	0	0	0	0	1	2	1	0	3	0	8	0	0	0	0	0	0	0	1	0
5:00 PM	0	1	0	0	0	0	0	3	0	0	1	0	5	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	1	0	0	1	0	2	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	3	0	0	2	0	5	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	1	0	0	1	0	2	0	0	0	0	0	0	0	0	0
VOLUMES	3	1	0	0	1	0	1	26	1	0	13	0	46	0	0	0	0	0	0	0	1	0
APPROACH %	75%	25%	0%	0%	100%	0%	4%	93%	4%	0%	100%	0%										
APP/DEPART	4	/	2	1	/	2	28	/	26	13	/	16	0									
BEGIN PEAK HR		4:00 PM																				
VOLUMES	3	0	0	0	1	0	1	18	1	0	8	0	32						0	0	1	0
APPROACH %	100%	0%	0%	0%	100%	0%	5%	90%	5%	0%	100%	0%										
PEAK HR FACTOR		0.750			0.250			0.714			0.667		0.800									
APP/DEPART	3	/	1	1	/	2	20	/	18	8	/	11	0									

Haven

NORTH SIDE

Ontario Ranch WEST SIDE

EAST SIDE **Ontario Ranch**

SOUTH SIDE

Haven

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
2/6/19	NORTH & SOUTH:	Haven	LOCATION #:	61
WEDNESDAY	EAST & WEST:	Ontario Ranch	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

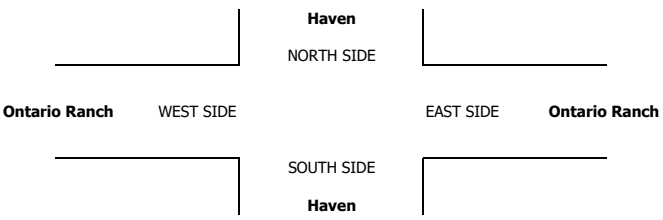
		NORTHBOUND Haven			SOUTHBOUND Haven			EASTBOUND Ontario Ranch			WESTBOUND Ontario Ranch			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 1	EL 1	ET 3	ER 1	WL 1	WT 2	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	6	0	1	16	0	23
	7:15 AM	1	0	0	0	0	0	0	6	0	1	16	1	25
	7:30 AM	1	0	1	1	0	0	0	5	0	0	19	0	27
	7:45 AM	2	0	1	0	0	0	0	4	0	0	12	0	19
	8:00 AM	0	0	1	0	0	1	0	5	0	0	15	0	22
	8:15 AM	0	0	0	0	0	0	0	8	0	0	10	1	19
	8:30 AM	1	0	0	0	0	0	1	9	0	0	17	0	28
	8:45 AM	1	0	0	1	1	1	0	6	0	1	18	0	29
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	6	0	3	2	1	2	1	49	0	3	123	2	192
	APPROACH %	67%	0%	33%	40%	20%	40%	2%	98%	0%	2%	96%	2%	
	APP/DEPART	9	/	3	5	/	3	50	/	55	128	/	131	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	2	0	1	1	1	2	1	28	0	1	60	1	98
	APPROACH %	67%	0%	33%	25%	25%	50%	3%	97%	0%	2%	97%	2%	
	PEAK HR FACTOR		0.750			0.333			0.725			0.816		0.845
	APP/DEPART	3	/	2	4	/	2	29	/	30	62	/	64	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	1	0	11	0	0	3	0	15
	4:15 PM	1	0	2	1	0	0	0	4	0	2	8	0	18
	4:30 PM	0	0	0	0	0	0	0	8	0	2	5	0	15
	4:45 PM	1	0	0	0	0	0	0	4	0	3	4	0	12
	5:00 PM	1	0	0	0	0	0	0	5	0	1	9	0	16
	5:15 PM	0	0	0	0	0	0	0	7	0	0	7	0	14
	5:30 PM	1	0	0	0	0	0	0	6	0	0	6	0	13
	5:45 PM	0	0	0	0	1	0	0	10	0	3	5	0	19
	VOLUMES	4	0	2	1	1	1	0	55	0	11	47	0	122
	APPROACH %	67%	0%	33%	33%	33%	33%	0%	100%	0%	19%	81%	0%	
	APP/DEPART	6	/	0	3	/	12	55	/	58	58	/	52	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	2	0	0	0	1	0	0	28	0	4	27	0	62
	APPROACH %	100%	0%	0%	0%	100%	0%	0%	100%	0%	13%	87%	0%	
	PEAK HR FACTOR		0.500			0.250			0.700			0.775		0.816
	APP/DEPART	2	/	0	1	/	5	28	/	28	31	/	29	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	1	0	0
0	0	0	1
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	2	0	1
1	2	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Jan 22, 19

LOCATION: Chino
NORTH & SOUTH: Sumner
EAST & WEST: Limonite

PROJECT #: SC2056
LOCATION #: 41
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N / ◄ W / E ► / S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Sumner)			SOUTHBOUND (Sumner)			EASTBOUND (Limonite)			WESTBOUND (Limonite)			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 2	ET 3	ER 0	WL 2	WT 3	WR 1	TOTAL
AM	7:00 AM	30	84	27	16	65	31	42	81	6	15	145	8	550
	7:15 AM	36	85	15	9	74	47	70	100	6	26	146	4	618
	7:30 AM	50	116	18	13	43	44	51	85	5	18	127	4	574
	7:45 AM	39	94	35	22	16	27	63	103	10	23	140	9	581
	8:00 AM	43	71	35	46	44	23	46	119	3	35	140	11	616
	8:15 AM	42	84	25	21	56	23	31	87	10	21	109	5	514
	8:30 AM	21	55	38	19	35	21	31	119	4	26	105	12	486
	8:45 AM	19	42	22	19	25	22	29	74	4	13	99	7	375
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	280	631	215	165	358	238	363	768	48	177	1,011	60	4,314
	APPROACH %	25%	56%	19%	22%	47%	31%	31%	65%	4%	14%	81%	5%	
	APP/DEPART	1,126	/	1,048	761	/	557	1,179	/	1,175	1,248	/	1,534	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	168	366	103	90	177	141	230	407	24	102	553	28	2,389
	APPROACH %	26%	57%	16%	22%	43%	35%	35%	62%	4%	15%	81%	4%	
	PEAK HR FACTOR		0.865			0.785			0.939			0.918		0.966
	APP/DEPART	637	/	620	408	/	288	661	/	615	683	/	866	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	10	51	21	18	90	49	33	116	10	42	93	8	541
	4:15 PM	11	45	35	21	89	35	54	128	9	48	106	14	595
	4:30 PM	11	34	22	27	101	49	37	122	6	39	111	5	564
	4:45 PM	7	58	26	18	101	44	56	153	21	44	112	7	647
	5:00 PM	14	50	37	28	104	54	44	143	18	55	101	10	658
	5:15 PM	9	37	30	23	103	46	52	127	23	43	111	15	619
	5:30 PM	9	62	37	17	97	44	50	144	19	59	132	10	680
	5:45 PM	6	51	28	42	117	42	59	127	15	48	126	8	669
	VOLUMES	77	388	236	194	802	363	385	1,060	121	378	892	77	4,973
	APPROACH %	11%	55%	34%	14%	59%	27%	25%	68%	8%	28%	66%	6%	
	APP/DEPART	701	/	843	1,359	/	1,252	1,566	/	1,539	1,347	/	1,339	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	38	200	132	110	421	186	205	541	75	205	470	43	2,626
	APPROACH %	10%	54%	36%	15%	59%	26%	25%	66%	9%	29%	65%	6%	
	PEAK HR FACTOR		0.856			0.892			0.964			0.893		0.965
	APP/DEPART	370	/	445	717	/	674	821	/	810	718	/	697	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	2	2
0	0	2	0	2
0	0	1	2	3
0	0	0	5	5
0	0	1	8	9
0	0	1	4	5
0	0	0	2	2
1	0	1	4	6
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	6	27	34
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	7	7
0	0	2	7	9
0	0	0	5	5
0	0	2	3	5
0	0	0	8	8
0	0	1	2	3
0	0	1	7	8
0	0	1	10	11
0	0	7	49	56

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
20	19	0	1
10	29	0	0
15	33	4	1
26	20	2	0
21	12	0	3
16	15	0	1
21	12	2	1
15	12	1	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
144	152	9	8
72	94	6	4
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
10	20	3	0
22	20	0	1
9	29	1	1
17	27	5	0
22	25	3	1
13	30	0	4
19	20	5	2
15	20	4	1
127	191	21	10
69	95	12	8

ALL PED AND BIKE

	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	1	0	0	1	2
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
TOTAL	1	0	0	1	2
3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	2	2	2	0	6
4:15 PM	1	2	1	0	4
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	2	0	0	0	2
5:30 PM	1	0	1	0	2
5:45 PM	2	0	0	0	2
TOTAL	8	4	4	0	16

PEDESTRIAN CROSSINGS

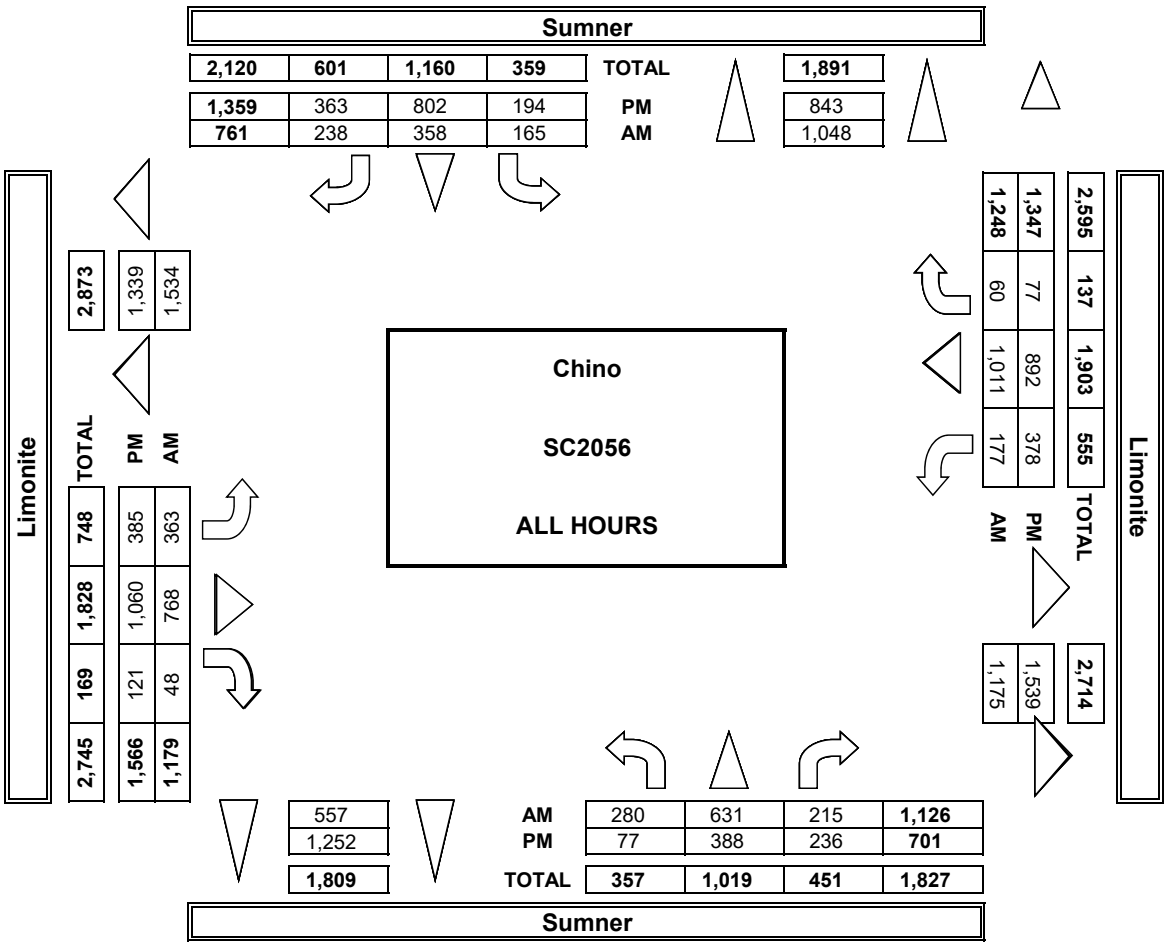
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
2	1	2	0	5
1	1	1	0	3
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
2	0	0	0	2
1	0	1	0	2
0	0	0	0	0
6	2	4	0	12

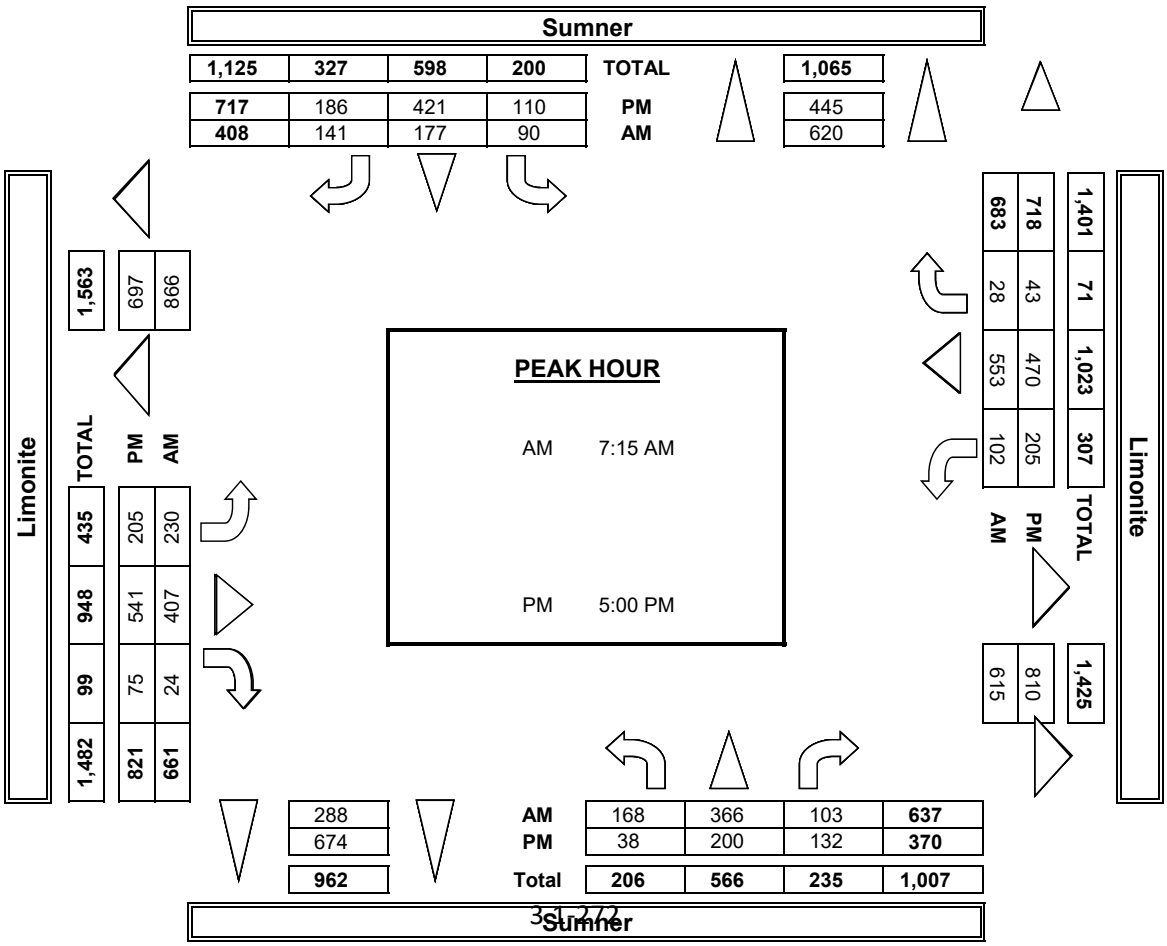
BICYCLE CROSSINGS

ES	WS	SS	NS	TOTAL
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
2	0	0	0	2
2	2	0	0	4

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Sumner	LOCATION #:	41
TUESDAY	EAST & WEST:	Limonite	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

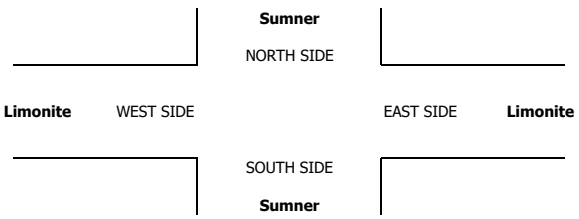
		NORTHBOUND (Sumner)			SOUTHBOUND (Sumner)			EASTBOUND (Limonite)			WESTBOUND (Limonite)			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 2	ET 3	ER 0	WL 2	WT 3	WR 1	TOTAL
AM	7:00 AM	1	1	0	1	3	2	0	6	0	1	8	1	24
	7:15 AM	1	1	0	0	2	3	2	5	1	2	8	0	25
	7:30 AM	0	0	0	0	2	2	3	5	0	0	6	0	18
	7:45 AM	1	0	2	0	0	5	2	5	0	0	15	0	30
	8:00 AM	1	1	4	0	5	2	0	9	0	0	10	1	33
	8:15 AM	0	1	2	1	3	3	1	6	0	1	6	0	24
	8:30 AM	1	0	0	1	2	1	0	5	0	1	13	1	25
	8:45 AM	0	2	1	2	0	1	5	6	0	1	10	0	28
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	5	6	9	5	17	19	13	47	1	6	76	3	207
	APPROACH %	25%	30%	45%	12%	41%	46%	21%	77%	2%	7%	89%	4%	
	APP/DEPART	20	/	22	41	/	23	61	/	62	85	/	100	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	3	2	8	2	10	11	3	25	0	1	44	2	112
	APPROACH %	23%	15%	62%	9%	43%	48%	11%	89%	0%	2%	92%	4%	
	PEAK HR FACTOR		0.542			0.821			0.778			0.800		0.848
	APP/DEPART	13	/	7	23	/	11	28	/	36	48	/	58	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	3	1	0	1	3	3	7	0	0	7	0	26
	4:15 PM	2	4	0	1	4	1	2	6	0	2	1	1	24
	4:30 PM	0	1	0	2	3	1	1	8	0	2	5	0	23
	4:45 PM	0	1	1	0	2	1	1	9	1	0	2	0	18
	5:00 PM	0	1	0	1	4	0	1	4	0	0	2	0	13
	5:15 PM	0	1	1	1	1	0	2	2	0	0	3	0	11
	5:30 PM	0	4	1	2	1	1	0	2	0	0	3	0	14
	5:45 PM	0	0	0	0	3	1	1	2	1	0	1	0	9
	VOLUMES	3	15	4	7	19	8	11	40	2	4	24	1	138
	APPROACH %	14%	68%	18%	21%	56%	24%	21%	75%	4%	14%	83%	3%	
	APP/DEPART	22	/	26	34	/	24	53	/	52	29	/	36	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	3	9	2	3	10	6	6	30	1	3	15	1	91
	APPROACH %	21%	64%	14%	16%	53%	32%	16%	79%	3%	15%	75%	5%	
	PEAK HR FACTOR		0.583			0.792			0.864			0.714		0.875
	APP/DEPART	14	/	16	19	/	14	38	/	36	20	/	25	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	1	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	1	2

RTOR

NRR	SRR	ERR	WRR
0	2	0	0
0	1	0	0
0	2	0	0
0	3	0	0
1	1	0	1
1	2	0	0
0	1	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
2	13	0	1
2	7	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
0	1	0	0
0	1	0	0
1	1	1	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	1	0
2	4	2	0
2	3	1	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Sumner	LOCATION #:	41
TUESDAY	EAST & WEST:	Limonite	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND Sumner			SOUTHBOUND Sumner			EASTBOUND Limonite			WESTBOUND Limonite			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 2	ET 3	ER 0	WL 2	WT 3	WR 1	TOTAL
AM													
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	1	0	3	0	0	0	0	4
7:30 AM	0	0	0	0	0	0	0	0	1	0	1	0	2
7:45 AM	1	0	0	0	0	0	0	1	0	0	3	0	5
8:00 AM	0	0	0	0	0	1	0	1	0	0	3	0	5
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
8:30 AM	0	0	0	0	0	0	0	2	0	1	1	0	4
8:45 AM	0	0	0	0	0	1	0	0	0	0	1	0	2
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	1	0	0	0	0	3	0	7	1	1	10	0	23
APPROACH %	100%	0%	0%	0%	0%	100%	0%	88%	13%	9%	91%	0%	
APP/DEPART	1	/	0	3	/	2	8	/	7	11	/	14	0
BEGIN PEAK HR		7:15 AM											
VOLUMES	1	0	0	0	0	2	0	5	1	0	7	0	16
APPROACH %	100%	0%	0%	0%	0%	100%	0%	83%	17%	0%	100%	0%	
PEAK HR FACTOR		0.250			0.500			0.500			0.583		0.800
APP/DEPART	1	/	0	2	/	1	6	/	5	7	/	10	0
PM													
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	1	0	0	0	0	1	0	0	0	2
4:45 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	1	1	0	1	0	0	0	2	1	0	0	0	6
APPROACH %	50%	50%	0%	100%	0%	0%	0%	67%	33%	0%	0%	0%	
APP/DEPART	2	/	1	1	/	1	3	/	3	0	/	1	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	1	1	0	1	0	0	0	1	1	0	0	0	5
APPROACH %	50%	50%	0%	100%	0%	0%	0%	50%	50%	0%	0%	0%	
PEAK HR FACTOR		0.500			0.250			0.500			0.000		0.625
APP/DEPART	2	/	1	1	/	1	2	/	2	0	/	1	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

NRR	SRR	ERR	WRR
0	0	1	0

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

NRR	SRR	ERR	WRR
0	0	1	0

Sumner

NORTH SIDE

Limonite WEST SIDE EAST SIDE **Limonite**

SOUTH SIDE

Sumner

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Sumner	LOCATION #:	41
TUESDAY	EAST & WEST:	Limonite	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N / ◄ W / E ► / S ▼

		NORTHBOUND Sumner			SOUTHBOUND Sumner			EASTBOUND Limonite			WESTBOUND Limonite			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	1	2	0	1	2	0	2	3	0	2	3	1	
AM	7:00 AM	0	0	0	2	0	1	0	1	0	0	3	0	7
AM	7:15 AM	0	1	0	0	0	1	0	1	0	0	1	0	4
AM	7:30 AM	0	0	0	1	0	0	0	1	0	1	2	0	5
AM	7:45 AM	0	0	0	0	0	0	0	0	0	0	3	0	3
AM	8:00 AM	0	0	0	1	0	0	0	3	0	0	2	0	6
AM	8:15 AM	0	0	0	0	0	0	0	1	1	0	3	0	5
AM	8:30 AM	0	0	0	0	1	0	0	2	0	1	3	1	8
AM	8:45 AM	0	0	0	0	0	1	0	1	0	0	3	0	5
AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	VOLUMES	0	1	0	4	1	3	0	10	1	2	20	1	43
AM	APPROACH %	0%	100%	0%	50%	13%	38%	0%	91%	9%	9%	87%	4%	
AM	APP/DEPART	1	/	2	8	/	4	11	/	14	23	/	23	0
AM	BEGIN PEAK HR		8:00 AM											
AM	VOLUMES	0	0	0	1	1	1	0	7	1	1	11	1	24
AM	APPROACH %	0%	0%	0%	33%	33%	33%	0%	88%	13%	8%	85%	8%	
AM	PEAK HR FACTOR		0.000			0.750			0.667			0.650		0.750
AM	APP/DEPART	0	/	1	3	/	3	8	/	8	13	/	12	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	1	1	0	1	0	0	0	0	0	0	0	3
PM	4:15 PM	0	0	0	0	0	0	0	0	0	0	3	0	3
PM	4:30 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
PM	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
PM	5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
PM	5:30 PM	0	1	0	0	0	0	0	1	0	0	1	0	3
PM	5:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	2
PM	VOLUMES	0	2	1	0	1	1	0	4	0	0	6	0	15
PM	APPROACH %	0%	67%	33%	0%	50%	50%	0%	100%	0%	0%	100%	0%	
PM	APP/DEPART	3	/	2	2	/	1	4	/	5	6	/	7	0
PM	BEGIN PEAK HR		3:45 PM											
PM	VOLUMES	0	1	1	0	1	0	0	1	0	0	4	0	8
PM	APPROACH %	0%	50%	50%	0%	100%	0%	0%	100%	0%	0%	100%	0%	
PM	PEAK HR FACTOR		0.250			0.250			0.250			0.333		0.667
PM	APP/DEPART	2	/	1	1	/	1	1	/	2	4	/	4	0

		U-TURNS					RTOR			
		NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
	LANES:						0	0	0	0
AM	7:00 AM	0	0	0	0	0	0	1	0	0
AM	7:15 AM	0	0	0	0	0	0	0	0	0
AM	7:30 AM	0	0	0	0	0	0	0	0	0
AM	7:45 AM	0	0	0	0	0	0	0	0	0
AM	8:00 AM	0	0	0	0	0	0	0	0	0
AM	8:15 AM	0	0	0	0	0	0	0	0	0
AM	8:30 AM	0	0	0	0	0	0	0	0	1
AM	8:45 AM	0	0	0	0	0	0	0	0	0
AM	9:00 AM	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0
AM	VOLUMES	0	0	0	0	0	0	1	0	1
AM	PEAK HR VOLUMES						0	0	0	1
PM	03:00 PM	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0	0	0	0	0
PM	4:30 PM	0	0	0	0	0	0	0	0	0
PM	4:45 PM	0	0	0	0	0	0	0	0	0
PM	5:00 PM	0	0	0	0	0	0	0	0	0
PM	5:15 PM	0	0	0	0	0	0	0	0	0
PM	5:30 PM	0	0	0	0	0	0	0	0	0
PM	5:45 PM	0	0	0	0	0	0	1	0	0
PM	VOLUMES	0	0	0	0	0	0	1	0	0
PM	PEAK HR VOLUMES						0	0	0	0

Sumner

NORTH SIDE

Limonite WEST SIDE

EAST SIDE **Limonite**

SOUTH SIDE

Sumner

INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Jan 22, 19

LOCATION: Chino
NORTH & SOUTH: Scholar
EAST & WEST: Limonite

PROJECT #: SC2056
LOCATION #: 42
CONTROL: SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

▲ N
◄ W
E ►
S ▼

Add U-Turns to Left Turns

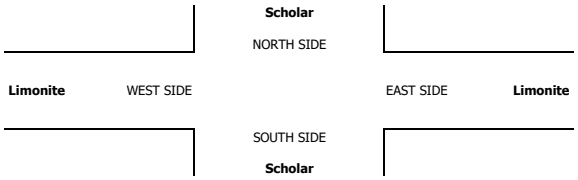
		NORTHBOUND (Scholar)			SOUTHBOUND (Scholar)			EASTBOUND (Limonite)			WESTBOUND (Limonite)			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 2	SR 1	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
AM	7:00 AM	18	24	25	11	43	7	5	133	12	15	162	4	459
	7:15 AM	22	47	14	12	54	11	2	118	4	16	121	11	432
	7:30 AM	19	40	25	12	22	6	10	131	3	11	123	7	409
	7:45 AM	19	37	17	6	51	6	10	151	17	8	135	6	463
	8:00 AM	30	38	22	18	78	4	5	147	30	8	130	2	512
	8:15 AM	24	46	27	12	42	12	7	145	11	14	120	10	470
	8:30 AM	19	45	28	13	11	5	6	174	3	8	122	6	440
	8:45 AM	9	13	20	10	8	7	3	119	3	10	113	7	322
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	160	290	178	94	309	58	48	1,118	83	90	1,026	53	3,507
	APPROACH %	25%	46%	28%	20%	67%	13%	4%	90%	7%	8%	88%	5%	
	APP/DEPART	628	/	388	461	/	481	1,249	/	1,391	1,169	/	1,247	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	92	166	94	49	182	27	28	617	61	38	507	24	1,885
	APPROACH %	26%	47%	27%	19%	71%	10%	4%	87%	9%	7%	89%	4%	
	PEAK HR FACTOR		0.907			0.645			0.964			0.955		0.920
	APP/DEPART	352	/	215	258	/	280	706	/	761	569	/	629	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	6	22	30	6	18	4	5	145	9	19	140	15	419
	4:15 PM	13	14	30	14	31	3	5	160	12	26	164	8	480
	4:30 PM	6	23	21	11	30	8	10	149	14	17	131	8	428
	4:45 PM	11	22	30	5	37	2	11	178	10	26	172	13	517
	5:00 PM	7	24	31	5	20	6	7	199	6	30	151	9	495
	5:15 PM	7	21	30	10	39	13	9	157	12	30	152	15	495
	5:30 PM	16	24	28	7	32	7	10	175	12	33	187	17	548
	5:45 PM	7	9	17	8	20	5	11	175	20	37	153	12	474
	VOLUMES	73	159	217	66	227	48	68	1,338	95	218	1,250	97	3,856
	APPROACH %	16%	35%	48%	19%	67%	14%	5%	89%	6%	14%	80%	6%	
	APP/DEPART	449	/	319	341	/	539	1,501	/	1,622	1,565	/	1,376	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	41	91	119	27	128	28	37	709	40	119	662	54	2,055
	APPROACH %	16%	36%	47%	15%	70%	15%	5%	90%	5%	14%	79%	6%	
	PEAK HR FACTOR		0.923			0.738			0.927			0.881		0.938
	APP/DEPART	251	/	181	183	/	287	786	/	855	835	/	732	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	1	0	1
0	0	0	0	0
0	0	1	1	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	3	1	4
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	1	1	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	2	0	2
0	0	5	1	6

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
14	1	6	1
9	2	4	6
8	2	1	5
8	0	11	1
14	0	15	1
8	2	3	5
9	0	2	3
13	1	1	4
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
83	8	43	26
39	2	31	10
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
9	1	3	8
14	1	7	2
13	1	10	6
21	1	1	6
19	3	0	4
17	3	7	5
18	0	5	8
11	3	9	7
122	13	42	46
75	7	13	23



ALL PED AND BIKE

	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	0	6	0	1	7
7:15 AM	0	6	0	0	6
7:30 AM	1	1	0	0	2
7:45 AM	0	4	0	0	4
8:00 AM	0	13	0	0	13
8:15 AM	0	3	1	0	4
8:30 AM	1	2	0	0	3
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
TOTAL	2	35	1	1	39
3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	11	1	0	12
4:15 PM	0	1	0	0	1
4:30 PM	0	7	0	0	7
4:45 PM	0	0	0	0	0
5:00 PM	0	4	0	0	4
5:15 PM	0	1	0	0	1
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	24	1	0	25

PEDESTRIAN CROSSINGS

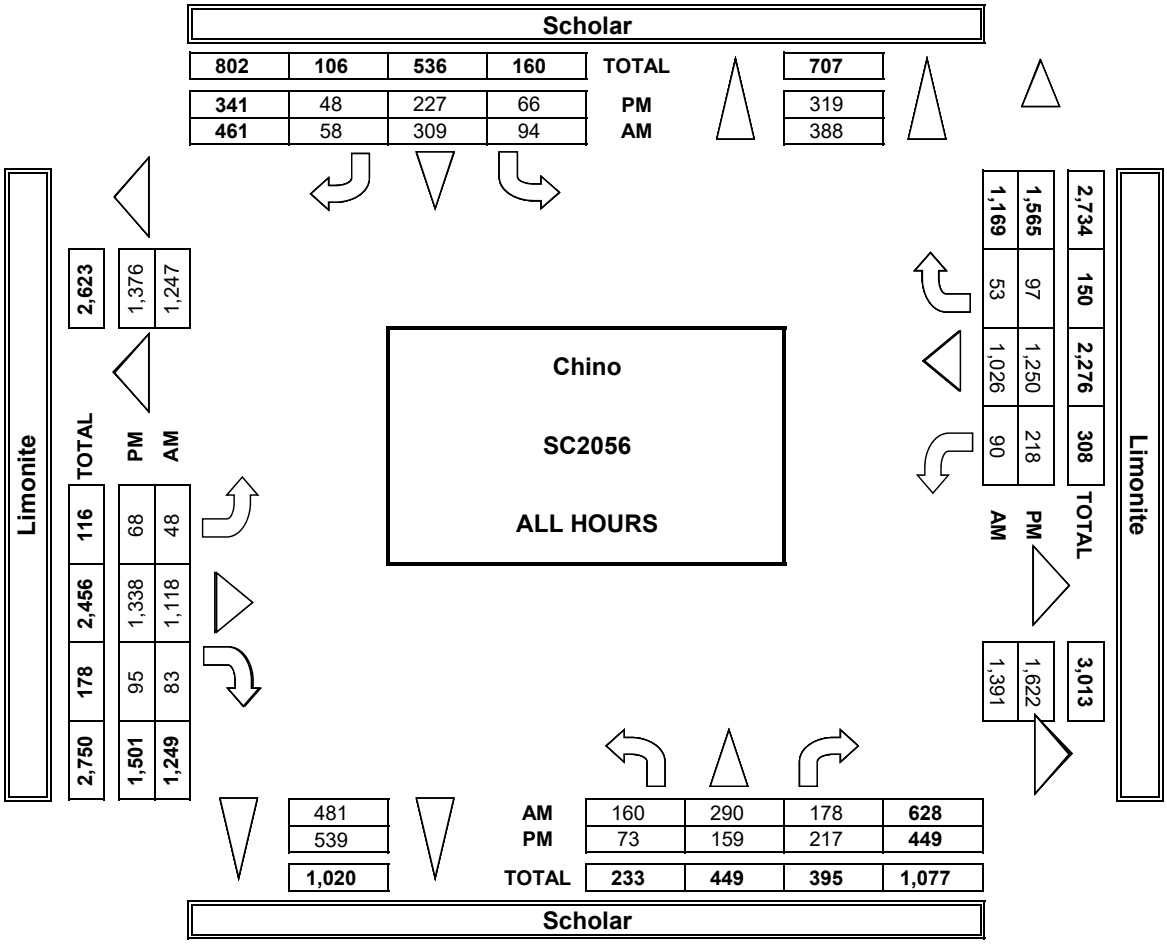
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
0	2	0	0	2
0	4	0	0	4
1	0	0	0	1
0	2	0	0	2
0	9	0	0	9
0	1	1	0	2
1	2	0	0	3
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
2	20	1	0	23
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	9	1	0	10
0	1	0	0	1
0	6	0	0	6
0	0	0	0	0
0	4	0	0	4
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	20	1	0	21

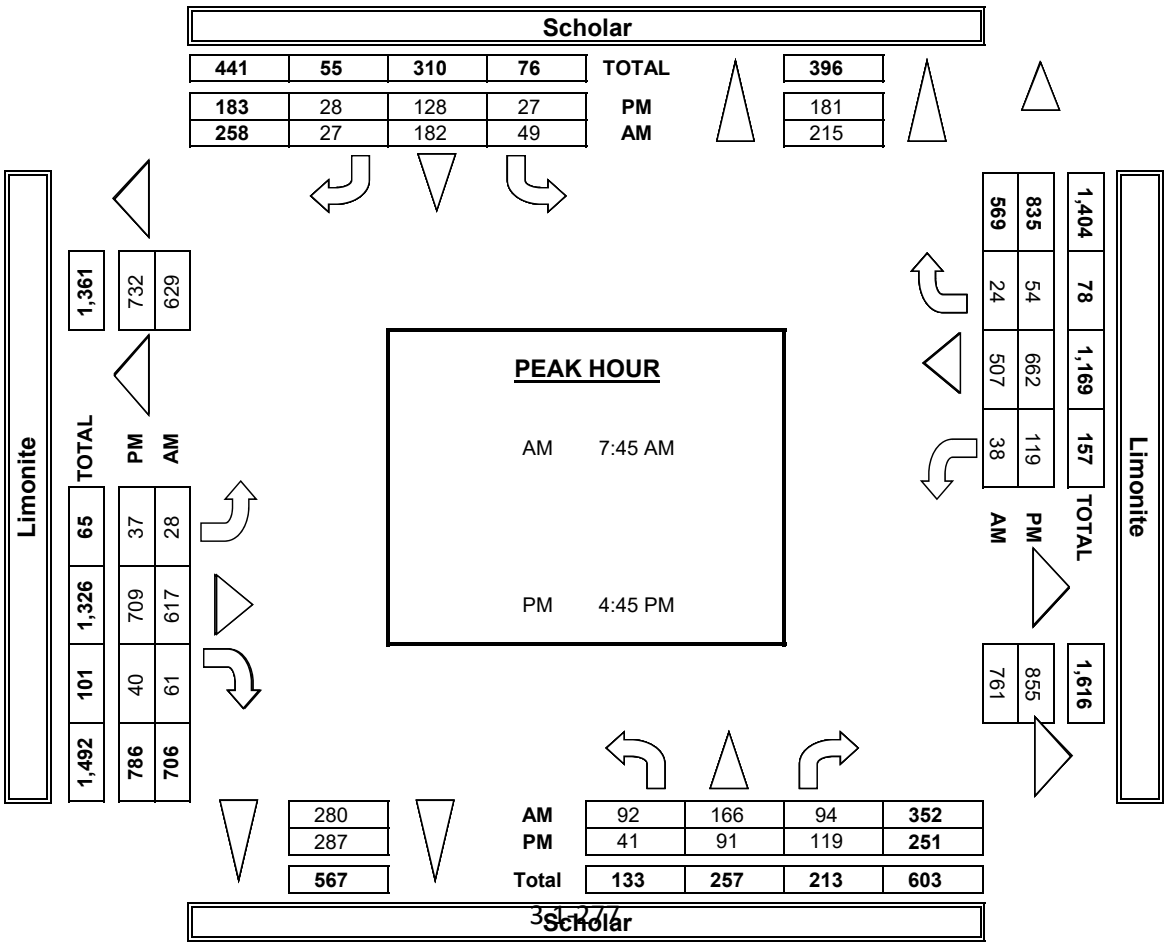
BICYCLE CROSSINGS

ES	WS	SS	NS	TOTAL
0	4	0	1	5
0	2	0	0	2
0	1	0	0	1
0	2	0	0	2
0	4	0	0	4
0	2	0	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	15	0	1	16
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	2	0	0	2
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	4	0	0	4

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Scholar	LOCATION #:	42
TUESDAY	EAST & WEST:	Limonite	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N / ◄ W / E ► / S ▼

	NORTHBOUND Scholar			SOUTHBOUND Scholar			EASTBOUND Limonite			WESTBOUND Limonite				U-TURNS					RTOR			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:	1	1	1	1	2	1	1	2	1	1	2	1							0	0	0	0
AM 7:00 AM	1	0	1	0	0	0	0	6	0	1	13	0	22	0	0	0	0	0	0	0	0	0
7:15 AM	1	1	1	0	1	0	0	4	0	0	12	1	21	0	0	0	0	0	1	0	0	0
7:30 AM	1	0	0	1	0	0	1	3	0	3	10	0	19	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	0	1	0	0	6	0	1	8	0	17	0	0	0	0	0	0	0	0	0
8:00 AM	0	1	1	0	1	0	1	11	1	0	11	0	27	0	0	0	0	0	0	0	0	0
8:15 AM	0	1	0	0	0	0	2	7	0	1	13	0	24	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	1	0	0	0	0	6	0	1	9	1	18	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	1	0	0	7	0	1	13	0	22	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	3	4	4	1	4	0	4	50	1	8	89	2	170	0	0	0	0	0	1	0	0	0
APPROACH %	27%	36%	36%	20%	80%	0%	7%	91%	2%	8%	90%	2%										
APP/DEPART	11	/	10	5	/	13	55	/	55	99	/	92	0									
BEGIN PEAK HR		8:00 AM																				
VOLUMES	0	2	2	0	2	0	3	31	1	3	46	1	91						0	0	0	0
APPROACH %	0%	50%	50%	0%	100%	0%	9%	89%	3%	6%	92%	2%										
PEAK HR FACTOR		0.500			0.500			0.673			0.893		0.843									
APP/DEPART	4	/	6	2	/	6	35	/	33	50	/	46	0									
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	1	1	0	0	1	0	0	8	0	0	3	0	14	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	3	0	0	0	0	7	0	0	3	0	13	0	0	0	0	0	1	0	0	0
4:30 PM	0	0	0	1	0	1	1	8	0	0	3	0	14	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	1	7	0	0	1	0	9	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	1	0	10	1	0	3	0	15	0	0	0	0	0	0	1	0	0
5:15 PM	0	0	0	0	0	0	0	5	0	0	2	0	7	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	1	0	0	4	0	0	6	1	12	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	2	0	1	3	0	6	0	0	0	0	0	0	0	0	0
VOLUMES	1	1	3	1	2	2	2	51	1	1	24	1	90	0	0	0	0	0	1	1	0	0
APPROACH %	20%	20%	60%	20%	40%	40%	4%	94%	2%	4%	92%	4%										
APP/DEPART	5	/	4	5	/	4	54	/	55	26	/	27	0									
BEGIN PEAK HR		4:15 PM																				
VOLUMES	0	0	3	1	0	2	2	32	1	0	10	0	51						1	1	0	0
APPROACH %	0%	0%	100%	33%	0%	67%	6%	91%	3%	0%	100%	0%										
PEAK HR FACTOR		0.250			0.375			0.795			0.833		0.850									
APP/DEPART	3	/	2	3	/	1	35	/	36	10	/	12	0									

Scholar

NORTH SIDE

Limonite WEST SIDE

EAST SIDE **Limonite**

SOUTH SIDE

Scholar

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Scholar	LOCATION #:	42
TUESDAY	EAST & WEST:	Limonite	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND Scholar			SOUTHBOUND Scholar			EASTBOUND Limonite			WESTBOUND Limonite			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	1	1	2	1	1	2	1	1	2	1	
AM 7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	2	0	0	2	0	4
7:30 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
8:00 AM	0	0	0	0	0	0	0	1	0	0	3	0	4
8:15 AM	0	0	1	0	0	0	0	0	0	0	1	0	2
8:30 AM	0	0	0	0	0	0	0	2	0	0	2	0	4
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	1	0	0	0	0	7	0	0	11	0	19
APPROACH %	0%	0%	100%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
APP/DEPART	1	/	0	0	/	0	7	/	8	11	/	11	0
BEGIN PEAK HR		7:15 AM											
VOLUMES	0	0	1	0	0	0	0	3	0	0	7	0	11
APPROACH %	0%	0%	100%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
PEAK HR FACTOR		0.250			0.000			0.375			0.583		0.688
APP/DEPART	1	/	0	0	/	0	3	/	4	7	/	7	0
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	1	0	0	0	0	3	0	0	0	0	4
APPROACH %	0%	0%	100%	0%	0%	0%	0%	100%	0%	0%	0%	0%	
APP/DEPART	1	/	0	0	/	0	3	/	4	0	/	0	0
BEGIN PEAK HR		4:15 PM											
VOLUMES	0	0	1	0	0	0	0	2	0	0	0	0	3
APPROACH %	0%	0%	100%	0%	0%	0%	0%	100%	0%	0%	0%	0%	
PEAK HR FACTOR		0.250			0.000			0.500			0.000		0.750
APP/DEPART	1	/	0	0	/	0	2	/	3	0	/	0	0

U-TURNS / **RTOR**

	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:						0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PEAK HR VOLUMES						0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	1	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	1	0	0	0
PEAK HR VOLUMES						1	0	0	0

Scholar

NORTH SIDE

Limonite WEST SIDE

EAST SIDE **Limonite**

SOUTH SIDE

Scholar

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Scholar	LOCATION #:	42
TUESDAY	EAST & WEST:	Limonite	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◀ W E ▶ S ▼

		NORTHBOUND Scholar			SOUTHBOUND Scholar			EASTBOUND Limonite			WESTBOUND Limonite		
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	1	1	1	1	2	1	1	2	1	1	2	1	
AM	7:00 AM	0	0	0	0	0	0	0	1	0	0	4	0	5
	7:15 AM	0	0	0	0	0	0	0	1	0	0	2	0	3
	7:30 AM	0	0	0	0	0	0	0	2	0	0	2	0	4
	7:45 AM	0	1	0	0	0	0	0	3	0	0	3	0	7
	8:00 AM	1	0	0	0	0	0	0	2	0	0	1	0	4
	8:15 AM	0	0	0	0	1	0	0	1	0	0	3	0	5
	8:30 AM	0	0	0	0	0	0	0	3	0	0	4	0	7
	8:45 AM	0	0	0	0	0	0	0	1	0	0	3	0	4
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	1	0	0	1	0	0	14	0	0	22	0	39
	APPROACH %	50%	50%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	2	/	1	1	/	1	14	/	14	22	/	23	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	1	1	0	0	1	0	0	9	0	0	11	0	23
	APPROACH %	50%	50%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.500			0.250			0.750			0.688		0.821
	APP/DEPART	2	/	1	1	/	1	9	/	9	11	/	12	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	4:15 PM	0	1	0	0	0	0	0	0	0	0	2	0	3
	4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
	5:30 PM	0	0	0	0	0	0	0	3	0	0	1	0	4
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	1	0	0	0	0	0	5	0	0	6	0	12
	APPROACH %	0%	100%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	1	/	1	0	/	0	5	/	5	6	/	6	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	0	0	0	0	0	0	4	0	0	3	0	7
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.000			0.333			0.375		0.438
	APP/DEPART	0	/	0	0	/	0	4	/	4	3	/	3	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:						0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PEAK HR VOLUMES						0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PEAK HR VOLUMES						0	0	0	0

Scholar

NORTH SIDE

Limonite WEST SIDE

EAST SIDE **Limonite**

SOUTH SIDE

Scholar

T1218

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
Wed, Jan 30, 19	NORTH & SOUTH:	Hamner	LOCATION #:	64
	EAST & WEST:	Ontario Ranch	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N — ◄ W — E ► — S ▼

Add U-Turns to Left Turns

		NORTHBOUND Hamner			SOUTHBOUND Hamner			EASTBOUND Ontario Ranch			WESTBOUND Ontario Ranch			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	2	3	1	2	2	1	2	4	0	2	2	1	
AM	7:00 AM	28	151	104	27	39	10	10	127	17	36	176	37	762
AM	7:15 AM	49	195	139	31	45	22	28	128	13	56	161	41	908
AM	7:30 AM	50	169	106	29	37	15	24	99	20	63	139	43	794
AM	7:45 AM	30	136	104	31	56	9	18	88	25	71	128	43	739
AM	8:00 AM	32	127	75	28	71	7	12	89	21	57	113	44	676
AM	8:15 AM	31	126	79	32	87	4	12	70	18	58	99	45	661
AM	8:30 AM	29	124	81	27	41	2	7	93	23	72	103	35	637
AM	8:45 AM	22	105	79	23	40	6	14	63	20	38	84	32	526
AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	271	1,133	767	228	416	75	125	757	157	451	1,003	320	5,703
	APPROACH %	12%	52%	35%	32%	58%	10%	12%	73%	15%	25%	57%	18%	
	APP/DEPART	2,171	/	1,578	719	/	1,029	1,039	/	1,752	1,774	/	1,344	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	157	651	453	118	177	56	80	442	75	226	604	164	3,203
	APPROACH %	12%	52%	36%	34%	50%	16%	13%	74%	13%	23%	61%	16%	
	PEAK HR FACTOR		0.823			0.895			0.883			0.963		0.882
	APP/DEPART	1,261	/	895	351	/	481	597	/	1,013	994	/	814	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	38	90	59	45	170	8	21	164	49	131	76	18	869
PM	4:15 PM	38	100	35	61	150	10	11	164	67	147	82	30	895
PM	4:30 PM	40	92	60	88	152	18	22	133	56	129	80	25	895
PM	4:45 PM	37	85	66	124	178	23	19	199	72	140	84	17	1,044
PM	5:00 PM	52	85	66	89	197	25	15	144	58	143	88	15	977
PM	5:15 PM	40	92	55	102	213	26	14	163	61	161	96	18	1,041
PM	5:30 PM	62	91	39	105	177	15	10	151	69	116	85	25	945
PM	5:45 PM	54	78	56	78	190	16	12	127	73	155	97	21	957
	VOLUMES	361	713	436	692	1,427	141	124	1,245	505	1,122	688	169	7,623
	APPROACH %	24%	47%	29%	31%	63%	6%	7%	66%	27%	57%	35%	9%	
	APP/DEPART	1,510	/	1,006	2,260	/	3,067	1,874	/	2,373	1,979	/	1,177	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	191	353	226	420	765	89	58	657	260	560	353	75	4,007
	APPROACH %	25%	46%	29%	33%	60%	7%	6%	67%	27%	57%	36%	8%	
	PEAK HR FACTOR		0.948			0.934			0.841			0.898		0.960
	APP/DEPART	770	/	486	1,274	/	1,595	975	/	1,303	988	/	623	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES	0	0	0	0		0	0	0	0
7:00 AM	0	0	0	0	0	40	3	3	20
7:15 AM	1	0	0	0	1	33	8	5	20
7:30 AM	2	0	0	0	2	25	1	10	16
7:45 AM	0	0	0	0	0	37	4	15	16
8:00 AM	0	0	0	0	0	33	3	10	18
8:15 AM	0	0	0	0	0	36	3	10	17
8:30 AM	2	0	0	0	2	28	0	13	10
8:45 AM	0	0	0	0	0	25	3	11	16
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	5	0	0	0	5	257	25	77	133
PEAK HR VOLUMES						135	16	33	72
03:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	23	2	18	9
4:15 PM	0	0	0	0	0	19	6	21	8
4:30 PM	1	0	0	0	1	26	10	10	10
4:45 PM	1	0	0	0	1	17	13	10	9
5:00 PM	4	0	0	0	4	28	13	15	9
5:15 PM	0	0	0	0	0	18	16	11	9
5:30 PM	5	0	0	0	5	13	11	19	6
5:45 PM	2	0	0	0	2	29	10	20	9
VOLUMES	13	0	0	0	13	173	81	124	69
PEAK HR VOLUMES						76	53	55	33

Hamner

NORTH SIDE

Ontario Ranch WEST SIDE — EAST SIDE **Ontario Ranch**

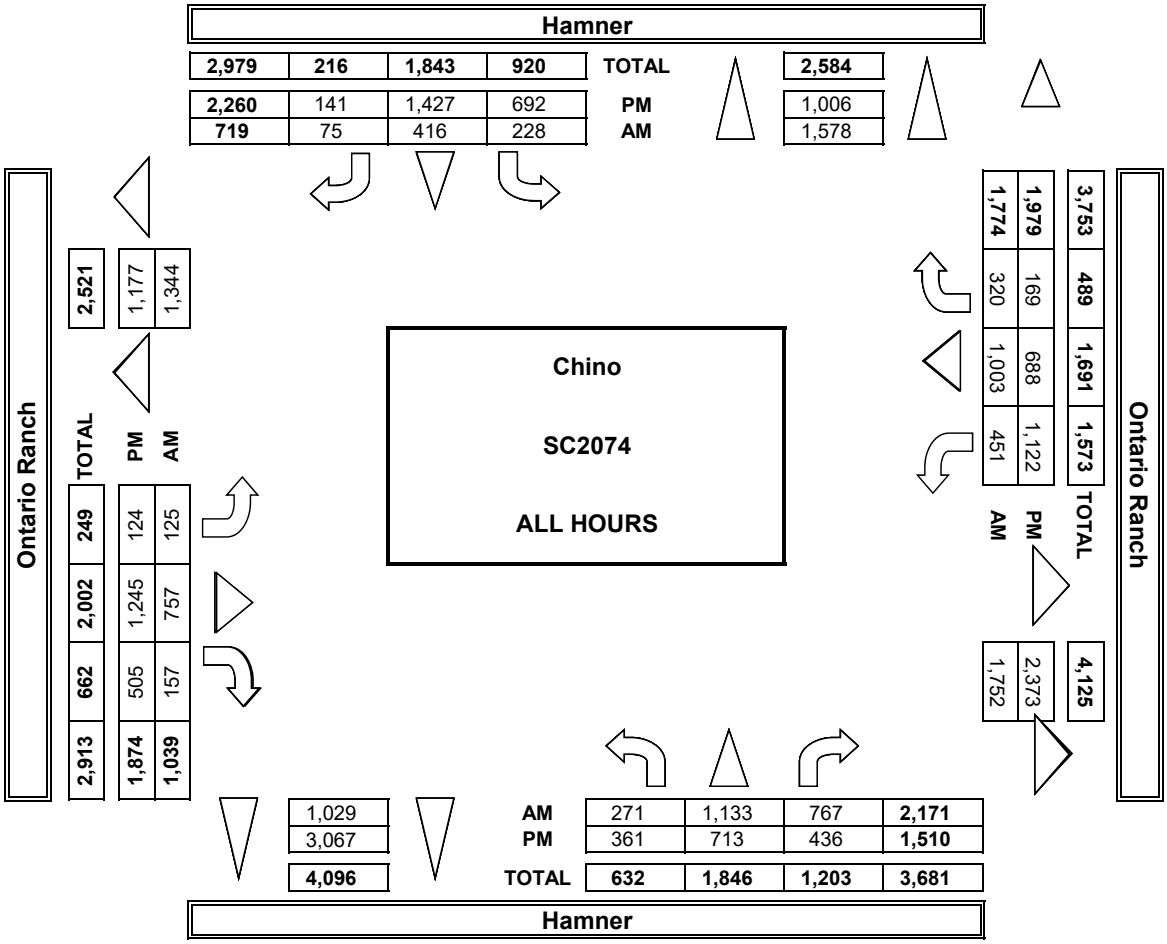
SOUTH SIDE

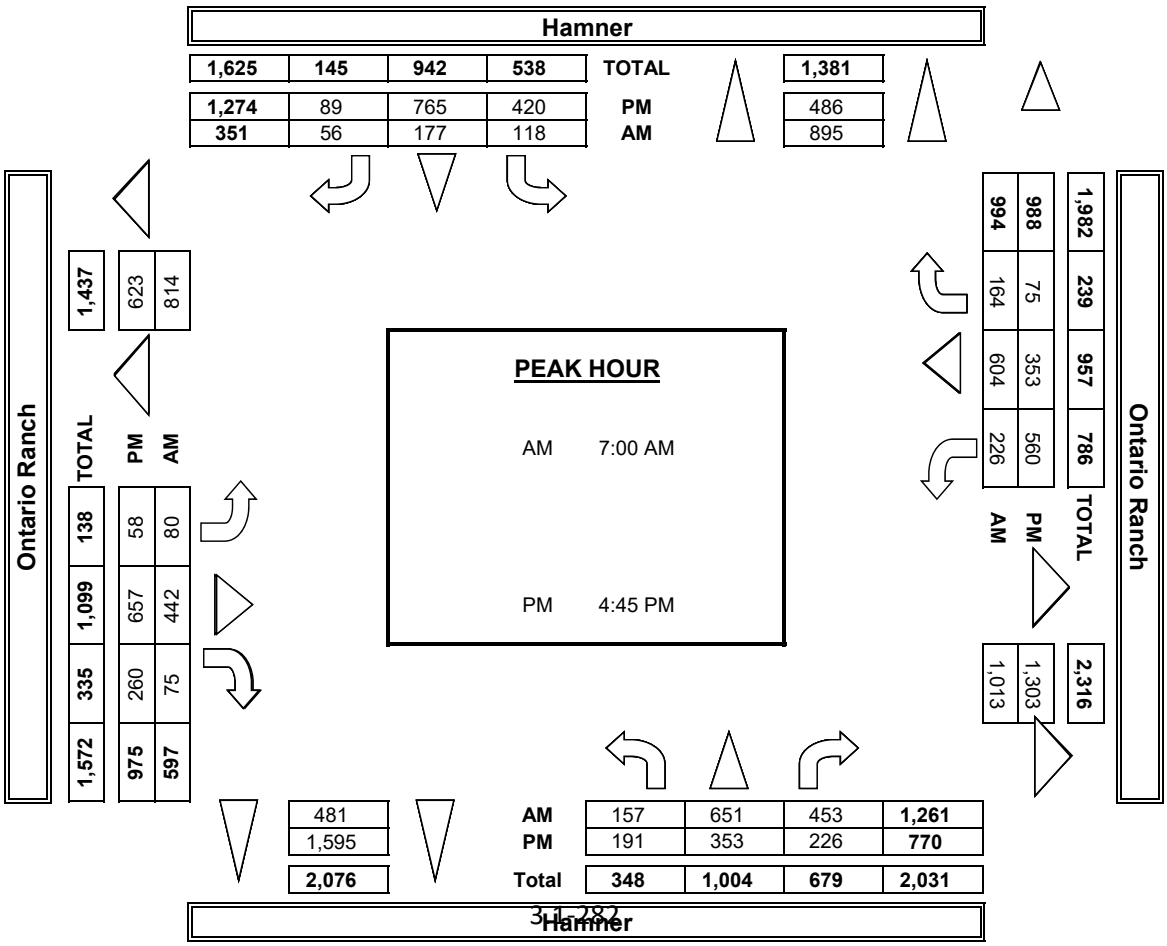
Hamner

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
AM	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:30 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
AM	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	2	0	0	0	2	2	0	0	0	2	0	0	0	0	0
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	1	0	0	1	2	0	0	0	0	0	1	0	0	1	2
PM	4:15 PM	2	0	0	0	2	2	0	0	0	2	0	0	0	0	0
PM	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:15 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
PM	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:45 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	TOTAL	5	0	0	1	6	1	0	0	0	4	0	0	0	0	2

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Hamner	LOCATION #:	64
WEDNESDAY	EAST & WEST:	Ontario Ranch	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

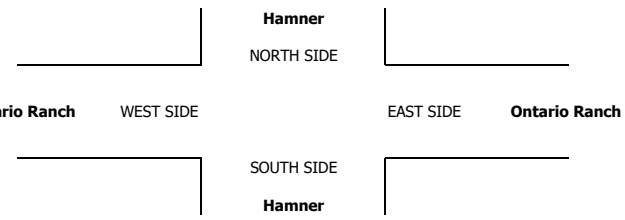
	NORTHBOUND (Hamner)			SOUTHBOUND (Hamner)			EASTBOUND (Ontario Ranch)			WESTBOUND (Ontario Ranch)			
LANES:	NL 2	NT 3	NR 1	SL 2	ST 2	SR 1	EL 2	ET 4	ER 0	WL 2	WT 2	WR 1	TOTAL
7:00 AM	1	8	0	3	3	1	0	14	0	1	12	2	45
7:15 AM	2	13	5	1	3	2	1	7	1	2	12	5	54
7:30 AM	1	5	6	1	1	1	1	0	2	2	14	1	35
7:45 AM	3	4	2	3	2	0	1	1	1	5	11	0	33
8:00 AM	1	9	1	4	5	2	1	6	0	4	13	4	50
8:15 AM	2	3	3	3	7	0	0	4	0	6	8	0	36
8:30 AM	3	3	5	3	3	0	0	8	2	5	16	4	52
8:45 AM	4	6	3	4	3	0	0	10	0	1	11	0	42
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	17	51	25	22	27	6	4	50	6	26	97	16	347
APPROACH %	18%	55%	27%	40%	49%	11%	7%	83%	10%	19%	70%	12%	
APP/DEPART	93	/	71	55	/	60	60	/	97	139	/	119	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	9	21	12	14	18	2	1	28	2	16	48	8	180
APPROACH %	21%	49%	28%	41%	53%	6%	3%	90%	6%	22%	67%	11%	
PEAK HR FACTOR		0.827			0.773			0.775			0.720		0.865
APP/DEPART	43	/	30	34	/	37	31	/	54	72	/	59	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	3	6	2	1	6	1	3	15	1	2	5	2	47
4:15 PM	1	7	3	4	6	0	0	15	0	6	3	0	45
4:30 PM	1	2	2	5	9	2	7	5	4	7	2	2	48
4:45 PM	2	6	5	5	4	1	2	9	0	4	5	0	43
5:00 PM	0	3	2	5	5	1	0	8	2	3	7	2	38
5:15 PM	1	6	1	4	7	1	0	9	0	1	3	2	35
5:30 PM	2	3	0	4	1	0	1	11	4	3	2	1	32
5:45 PM	2	1	1	1	4	2	1	10	1	1	4	0	28
VOLUMES	12	34	16	29	42	8	14	82	12	27	31	9	316
APPROACH %	19%	55%	26%	37%	53%	10%	13%	76%	11%	40%	46%	13%	
APP/DEPART	62	/	57	79	/	81	108	/	127	67	/	51	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	7	21	12	15	25	4	12	44	5	19	15	4	183
APPROACH %	18%	53%	30%	34%	57%	9%	20%	72%	8%	50%	39%	11%	
PEAK HR FACTOR		0.769			0.688			0.803			0.864		0.953
APP/DEPART	40	/	37	44	/	49	61	/	71	38	/	26	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	1
2	2	0	3
4	1	0	0
0	0	1	0
1	1	0	3
2	0	0	0
2	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
12	4	1	7
6	1	0	3
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	1
0	0	0	0
1	0	0	0
2	1	0	0
2	0	0	1
0	1	0	0
0	0	1	0
0	1	0	0
5	3	2	2
3	1	1	1



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Hamner	LOCATION #:	64
WEDNESDAY	EAST & WEST:	Ontario Ranch	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Hamner			SOUTHBOUND Hamner			EASTBOUND Ontario Ranch			WESTBOUND Ontario Ranch			
	LANES:	NL 2	NT 3	NR 1	SL 2	ST 2	SR 1	EL 2	ET 4	ER 0	WL 2	WT 2	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	1	0	0	10	0	0	3	0	14
	7:15 AM	0	0	0	0	0	3	0	8	0	1	1	0	13
	7:30 AM	0	0	0	1	0	0	0	7	0	0	3	0	11
	7:45 AM	1	0	1	3	1	0	0	4	0	0	4	0	14
	8:00 AM	0	1	0	0	0	0	0	4	0	1	6	1	13
	8:15 AM	0	0	0	0	1	0	0	7	0	0	3	0	11
	8:30 AM	0	1	0	0	2	0	2	8	1	1	2	2	19
	8:45 AM	0	0	1	0	0	0	0	3	0	0	1	1	6
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	2	2	4	5	3	2	51	1	3	23	4	101
	APPROACH %	20%	40%	40%	33%	42%	25%	4%	94%	2%	10%	77%	13%	
	APP/DEPART	5	/	8	12	/	9	54	/	57	30	/	27	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	1	2	1	3	4	0	2	23	1	2	15	3	57
	APPROACH %	25%	50%	25%	43%	57%	0%	8%	88%	4%	10%	75%	15%	
	PEAK HR FACTOR		0.500			0.438			0.591			0.625		0.750
	APP/DEPART	4	/	7	7	/	7	26	/	27	20	/	16	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	1	0	0	1	4	0	1	3	0	10
	4:15 PM	0	0	0	0	2	0	0	6	0	0	3	0	11
	4:30 PM	0	0	1	0	1	0	1	4	0	0	2	0	9
	4:45 PM	0	0	0	0	1	0	1	5	0	1	3	0	11
	5:00 PM	0	1	0	0	1	1	1	3	0	0	1	0	8
	5:15 PM	0	1	0	1	0	0	1	2	0	0	2	0	7
	5:30 PM	0	1	0	0	0	1	0	2	0	0	1	0	5
	5:45 PM	1	0	0	0	0	0	0	1	0	0	0	0	2
	VOLUMES	1	3	1	2	5	2	5	27	0	2	15	0	63
	APPROACH %	20%	60%	20%	22%	56%	22%	16%	84%	0%	12%	88%	0%	
	APP/DEPART	5	/	8	9	/	7	32	/	30	17	/	18	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	1	1	4	0	3	19	0	2	11	0	41
	APPROACH %	0%	0%	100%	20%	80%	0%	14%	86%	0%	15%	85%	0%	
	PEAK HR FACTOR		0.250			0.625			0.917			0.813		0.932
	APP/DEPART	1	/	3	5	/	6	22	/	21	13	/	11	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	1
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	2

0	0	1	1

0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

0	0	0	0

Hamner

NORTH SIDE

Ontario Ranch WEST SIDE EAST SIDE **Ontario Ranch**

SOUTH SIDE

Hamner

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	Hamner	LOCATION #:	64
WEDNESDAY	EAST & WEST:	Ontario Ranch	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

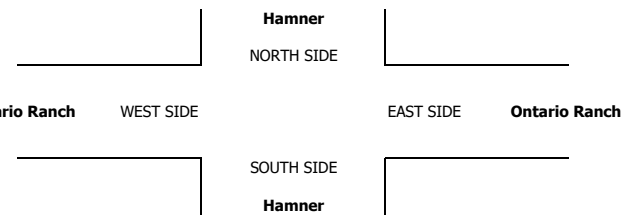
	NORTHBOUND Hamner			SOUTHBOUND Hamner			EASTBOUND Ontario Ranch			WESTBOUND Ontario Ranch			
LANES:	NL 2	NT 3	NR 1	SL 2	ST 2	SR 1	EL 2	ET 4	ER 0	WL 2	WT 2	WR 1	TOTAL
7:00 AM	1	2	0	2	2	0	1	5	0	0	20	4	37
7:15 AM	0	1	3	2	0	5	2	4	0	5	13	2	37
7:30 AM	0	1	3	3	1	3	1	4	0	1	17	2	36
7:45 AM	1	2	3	1	2	2	1	6	0	5	12	5	40
8:00 AM	0	1	3	4	2	1	1	7	1	3	16	3	42
8:15 AM	1	0	2	3	2	1	1	7	0	0	12	4	33
8:30 AM	0	1	3	5	1	1	1	4	0	4	12	2	34
8:45 AM	0	0	4	1	2	2	0	4	0	1	17	2	33
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	3	8	21	21	12	15	8	41	1	19	119	24	292
APPROACH %	9%	25%	66%	44%	25%	31%	16%	82%	2%	12%	73%	15%	
APP/DEPART	32	/	40	48	/	32	50	/	83	162	/	137	0
BEGIN PEAK HR		7:15 AM											
VOLUMES	1	5	12	10	5	11	5	21	1	14	58	12	155
APPROACH %	6%	28%	67%	38%	19%	42%	19%	78%	4%	17%	69%	14%	
PEAK HR FACTOR		0.750			0.929			0.750			0.955		0.923
APP/DEPART	18	/	22	26	/	20	27	/	43	84	/	70	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	3	1	0	0	2	3	0	0	4	4	17
4:15 PM	0	0	0	2	2	1	3	5	0	1	13	4	31
4:30 PM	0	2	0	1	1	2	1	3	0	1	6	3	20
4:45 PM	0	1	0	5	0	3	4	5	0	1	4	5	28
5:00 PM	0	1	0	3	1	2	2	6	0	1	2	3	21
5:15 PM	0	0	0	1	1	2	1	10	0	1	2	1	19
5:30 PM	0	1	0	2	0	0	1	5	0	0	0	2	11
5:45 PM	0	0	1	3	1	0	3	3	0	0	3	2	16
VOLUMES	0	5	4	18	6	10	17	40	0	5	34	24	163
APPROACH %	0%	56%	44%	53%	18%	29%	30%	70%	0%	8%	54%	38%	
APP/DEPART	9	/	46	34	/	11	57	/	62	63	/	44	0
BEGIN PEAK HR		4:15 PM											
VOLUMES	0	4	0	11	4	8	10	19	0	4	25	15	100
APPROACH %	0%	100%	0%	48%	17%	35%	34%	66%	0%	9%	57%	34%	
PEAK HR FACTOR		0.500			0.719			0.806			0.611		0.806
APP/DEPART	4	/	29	23	/	8	29	/	30	44	/	33	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
1	3	0	0
0	0	0	1
1	0	0	0
0	0	0	1
0	1	0	2
1	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
3	4	0	5
2	3	0	2
0	0	0	0
0	0	0	0
0	0	0	0
0	2	0	1
0	1	0	2
0	0	0	0
0	0	0	0
1	0	0	0
1	4	0	5
0	4	0	3



INTERSECTION TURNING MOVEMENT COUNTS

T1218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
Tue, Jan 22, 19	NORTH & SOUTH:	Hamner	LOCATION #:	43
	EAST & WEST:	Limonite	CONTROL:	SIGNAL

NOTES:

AM PM MD OTHER OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Hamner)			SOUTHBOUND (Hamner)			EASTBOUND (Limonite)			WESTBOUND (Limonite)			
	LANES:	NL 2	NT 3	NR 1	SL 2	ST 2	SR 1	EL 2	ET 3	ER 1	WL 2	WT 2	WR 1	TOTAL
AM	7:00 AM	34	108	66	23	62	20	34	111	13	50	109	14	644
	7:15 AM	25	161	73	28	80	27	31	129	7	54	111	22	748
	7:30 AM	50	182	62	36	68	13	34	121	5	39	71	24	705
	7:45 AM	44	158	53	35	86	34	47	107	8	25	77	17	691
	8:00 AM	30	142	51	41	104	24	36	97	18	36	63	13	655
	8:15 AM	34	136	69	56	87	23	51	106	11	35	77	17	702
	8:30 AM	26	127	72	40	73	32	52	134	12	39	62	23	692
	8:45 AM	19	89	55	45	69	23	43	82	7	43	76	20	571
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	262	1,103	501	304	629	196	328	887	81	321	646	150	5,408
	APPROACH %	14%	59%	27%	27%	56%	17%	25%	68%	6%	29%	58%	13%	
	APP/DEPART	1,866	/	1,581	1,129	/	1,078	1,296	/	1,692	1,117	/	1,057	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	149	643	239	140	338	98	148	454	38	154	322	76	2,799
	APPROACH %	14%	62%	23%	24%	59%	17%	23%	71%	6%	28%	58%	14%	
	PEAK HR FACTOR		0.877			0.852			0.958			0.738		0.935
	APP/DEPART	1,031	/	868	576	/	555	640	/	831	552	/	545	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	39	120	37	49	106	34	55	93	14	89	74	25	735
	4:15 PM	36	111	53	56	135	53	76	85	14	94	94	38	845
	4:30 PM	23	123	40	39	116	48	70	92	18	81	87	35	772
	4:45 PM	40	138	40	39	166	52	74	121	14	90	101	34	909
	5:00 PM	33	132	39	42	124	41	61	116	17	88	98	40	831
	5:15 PM	54	152	43	51	167	52	65	102	20	83	86	30	905
	5:30 PM	55	124	43	48	141	63	69	121	12	91	95	35	897
	5:45 PM	57	112	38	43	185	44	90	99	17	89	86	33	893
	VOLUMES	337	1,012	333	367	1,140	387	560	829	126	705	721	270	6,787
	APPROACH %	20%	60%	20%	19%	60%	20%	37%	55%	8%	42%	43%	16%	
	APP/DEPART	1,682	/	1,841	1,894	/	2,058	1,515	/	1,567	1,696	/	1,321	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	182	546	165	180	598	208	269	460	63	352	380	139	3,542
	APPROACH %	20%	61%	18%	18%	61%	21%	34%	58%	8%	40%	44%	16%	
	PEAK HR FACTOR		0.897			0.913			0.947			0.963		0.974
	APP/DEPART	893	/	952	986	/	1,069	792	/	825	871	/	696	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
3	0	1	1	5
3	0	0	0	3
7	1	0	0	8
9	1	1	0	11
6	0	0	0	6
9	0	0	0	9
6	0	0	1	7
6	0	0	0	6
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
49	2	2	2	55
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
11	1	0	4	16
11	0	0	2	13
8	0	0	5	13
17	1	1	4	23
17	1	1	10	29
21	0	2	6	29
23	0	0	2	25
21	1	1	9	32
129	4	5	42	180

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
25	8	11	3
27	5	2	3
25	8	3	8
22	17	1	3
18	8	6	10
23	13	4	3
26	15	4	3
28	9	1	9
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
194	83	32	42
92	38	12	24
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
25	10	7	12
15	17	1	14
14	10	4	8
21	13	3	12
23	12	4	11
16	16	6	9
21	20	7	12
19	8	5	10
154	106	37	88
81	61	20	44

Hamner

NORTH SIDE

Limonite WEST SIDE EAST SIDE **Limonite**

SOUTH SIDE

Hamner

ALL PED AND BIKE

	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	1	0	1	0	2
7:15 AM	0	0	0	0	0
7:30 AM	1	0	1	0	2
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	1	0	1
8:30 AM	0	2	0	1	3
8:45 AM	0	2	0	2	4
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
TOTAL	2	4	3	3	12
3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	1	0	0	0	1
4:15 PM	2	0	0	0	2
4:30 PM	0	0	2	0	2
4:45 PM	2	2	0	1	5
5:00 PM	1	1	1	0	3
5:15 PM	5	2	0	2	9
5:30 PM	0	1	1	0	2
5:45 PM	1	2	3	2	8
TOTAL	12	8	7	5	32

PEDESTRIAN CROSSINGS

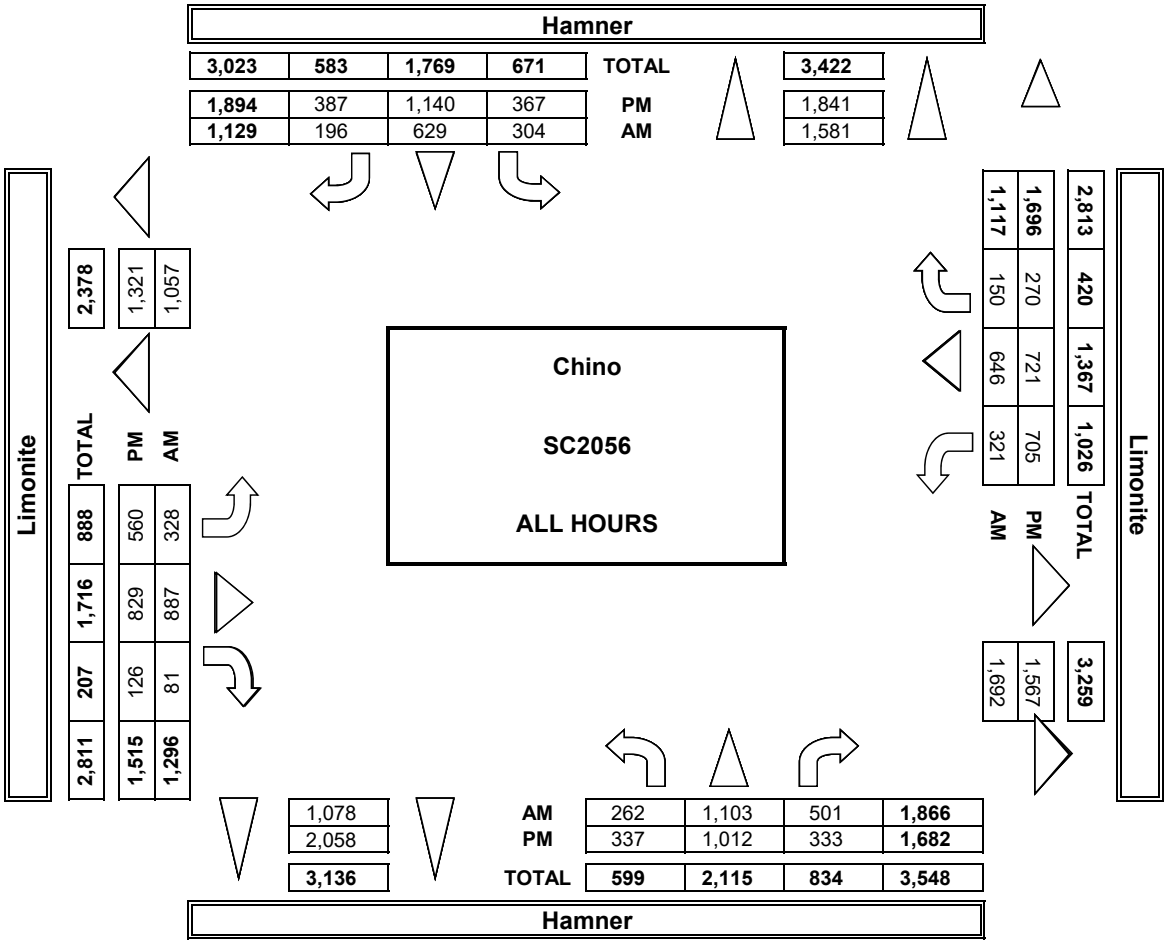
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
1	0	1	0	2
0	0	0	0	0
1	0	1	0	2
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	2	0	1	3
0	2	0	2	4
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
2	4	3	3	12
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
2	0	0	0	2
0	0	2	0	2
2	1	0	0	3
0	0	1	0	1
4	2	0	2	8
0	1	1	0	2
1	0	3	0	4
10	4	7	2	23

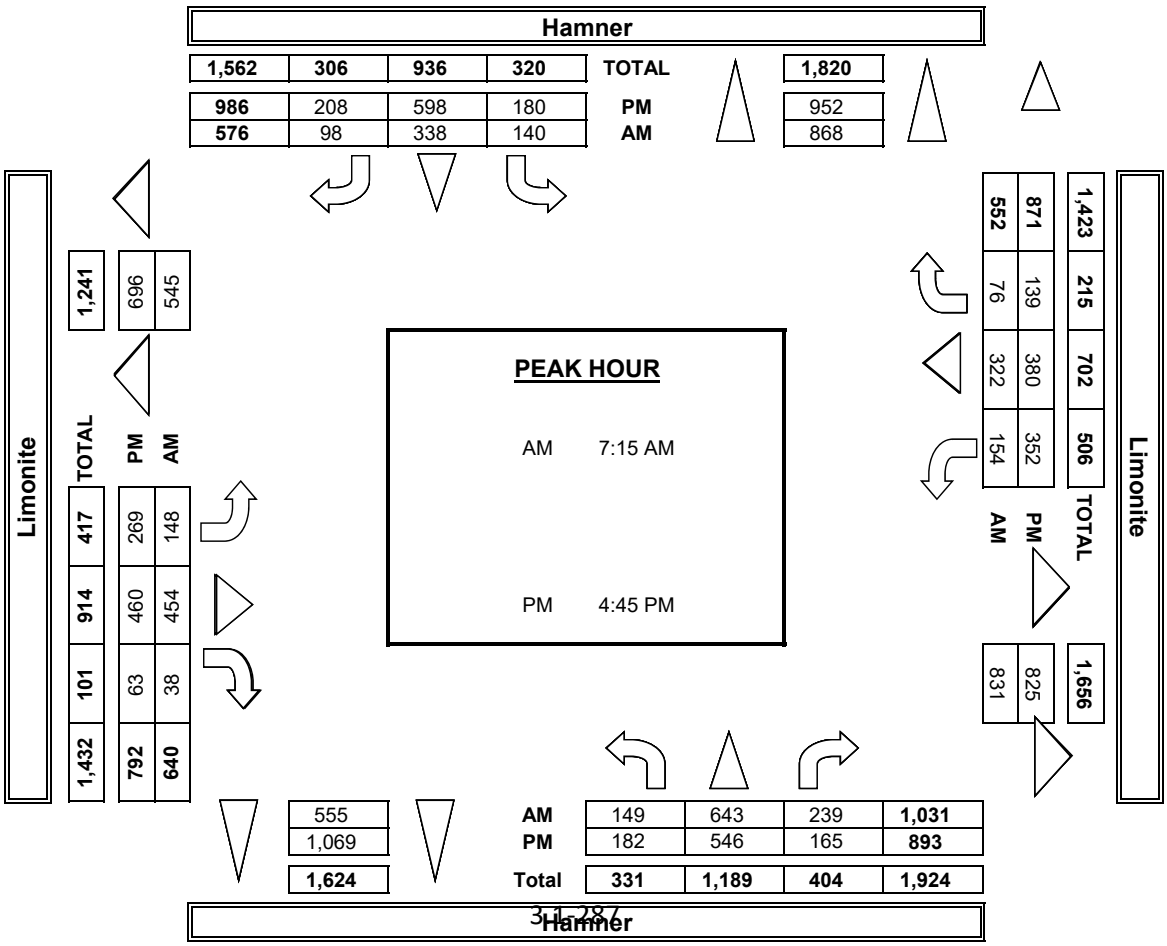
BICYCLE CROSSINGS

ES	WS	SS	NS	TOTAL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	1	2
1	1	0	0	2
0	0	0	0	0
0	2	0	2	4
0	4	0	3	9

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Hamner	LOCATION #:	43
TUESDAY	EAST & WEST:	Limonite	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

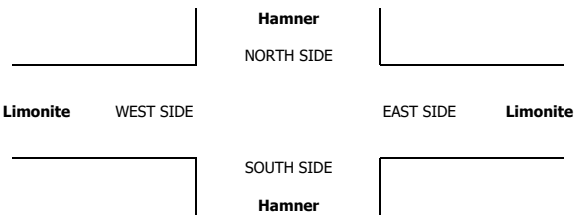
		NORTHBOUND (Hamner)			SOUTHBOUND (Hamner)			EASTBOUND (Limonite)			WESTBOUND (Limonite)			
	LANES:	NL 2	NT 3	NR 1	SL 2	ST 2	SR 1	EL 2	ET 3	ER 1	WL 2	WT 2	WR 1	TOTAL
AM	7:00 AM	2	8	1	4	6	4	2	3	1	1	6	0	38
	7:15 AM	0	10	0	0	9	5	2	3	0	4	11	0	44
	7:30 AM	2	6	3	2	5	3	6	1	0	3	8	2	41
	7:45 AM	2	8	4	1	5	3	2	4	1	0	5	1	36
	8:00 AM	1	13	3	1	5	2	1	6	2	2	3	1	40
	8:15 AM	3	4	3	0	5	4	1	4	1	0	3	1	29
	8:30 AM	0	9	4	0	1	3	2	5	2	2	3	3	34
	8:45 AM	1	8	3	4	4	3	5	4	1	2	6	0	41
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	11	66	21	12	40	27	21	30	8	14	45	8	303
	APPROACH %	11%	67%	21%	15%	51%	34%	36%	51%	14%	21%	67%	12%	
	APP/DEPART	98	/	94	79	/	63	59	/	63	67	/	83	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	4	37	10	4	24	13	11	14	3	9	27	4	161
	APPROACH %	8%	71%	19%	10%	59%	32%	39%	50%	11%	23%	68%	10%	
	PEAK HR FACTOR		0.765			0.732			0.778			0.667		0.915
	APP/DEPART	52	/	52	41	/	37	28	/	28	40	/	44	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	2	5	4	2	3	0	4	3	2	0	1	2	28
	4:15 PM	2	5	4	2	2	0	2	3	1	2	2	0	25
	4:30 PM	0	5	6	0	3	2	2	7	0	1	2	2	30
	4:45 PM	0	4	2	0	5	0	2	6	1	3	0	2	25
	5:00 PM	0	3	3	0	5	0	1	7	0	0	3	0	22
	5:15 PM	0	4	0	2	3	2	1	4	0	0	1	0	17
	5:30 PM	2	3	0	2	3	0	3	3	0	0	1	0	17
	5:45 PM	1	3	1	1	5	1	2	3	0	1	0	0	18
	VOLUMES	7	32	20	9	29	5	17	36	4	7	10	6	182
	APPROACH %	12%	54%	34%	21%	67%	12%	30%	63%	7%	30%	43%	26%	
	APP/DEPART	59	/	56	43	/	41	57	/	64	23	/	21	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	3	19	16	3	13	2	10	19	4	6	5	6	108
	APPROACH %	8%	49%	41%	16%	68%	11%	30%	58%	12%	35%	29%	35%	
	PEAK HR FACTOR		0.886			0.950			0.917			0.850		0.900
	APP/DEPART	39	/	36	19	/	24	33	/	38	17	/	10	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	1	0	1
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	1	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	1	0	0	2

RTOR

NRR	SRR	ERR	WRR
0	2	0	0
0	0	0	0
2	3	0	1
2	1	0	1
2	1	0	1
2	2	1	0
3	1	0	0
2	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
13	11	1	3
6	5	0	3
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
3	0	0	0
2	0	0	0
2	1	0	1
1	0	1	0
3	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
11	2	1	1
8	1	1	1



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Hamner	LOCATION #:	43
TUESDAY	EAST & WEST:	Limonite	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND Hamner			SOUTHBOUND Hamner			EASTBOUND Limonite			WESTBOUND Limonite			
LANES:	NL 2	NT 3	NR 1	SL 2	ST 2	SR 1	EL 2	ET 3	ER 1	WL 2	WT 2	WR 1	TOTAL
AM													
7:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	1	0	0	2	0	3
7:30 AM	0	0	0	0	0	1	0	0	0	0	1	0	2
7:45 AM	0	0	0	1	0	0	0	0	0	0	2	0	3
8:00 AM	1	0	0	1	3	1	1	1	0	1	1	0	10
8:15 AM	0	0	0	0	0	0	1	1	0	1	0	0	3
8:30 AM	0	0	0	0	0	1	0	1	0	0	1	0	3
8:45 AM	0	1	0	0	0	0	0	0	0	0	1	0	2
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	1	1	0	2	3	3	2	4	1	2	8	0	27
APPROACH %	50%	50%	0%	25%	38%	38%	29%	57%	14%	20%	80%	0%	
APP/DEPART	2	/	3	8	/	6	7	/	6	10	/	12	0
BEGIN PEAK HR		7:45 AM											
VOLUMES	1	0	0	2	3	2	2	3	0	2	4	0	19
APPROACH %	100%	0%	0%	29%	43%	29%	40%	60%	0%	33%	67%	0%	
PEAK HR FACTOR		0.250			0.350			0.625			0.750		0.475
APP/DEPART	1	/	2	7	/	5	5	/	5	6	/	7	0
PM													
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	1	0	1	0	2
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
VOLUMES	0	1	0	0	1	0	1	3	1	1	1	0	9
APPROACH %	0%	100%	0%	0%	100%	0%	20%	60%	20%	50%	50%	0%	
APP/DEPART	1	/	2	1	/	3	5	/	3	2	/	1	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	0	0	0	0	0	1	2	1	1	1	0	6
APPROACH %	0%	0%	0%	0%	0%	0%	25%	50%	25%	50%	50%	0%	
PEAK HR FACTOR		0.000			0.000			1.000			0.500		0.750
APP/DEPART	0	/	1	0	/	2	4	/	2	2	/	1	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	1	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	1	0

0	0	0	0

0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

0	0	0	0

Hamner — NORTH SIDE

Limonite WEST SIDE — EAST SIDE **Limonite**

SOUTH SIDE — **Hamner**

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2056
1/22/19	NORTH & SOUTH:	Hamner	LOCATION #:	43
TUESDAY	EAST & WEST:	Limonite	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

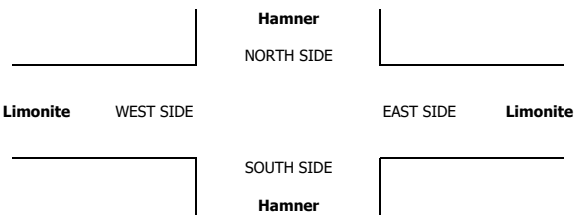
	NORTHBOUND (Hamner)			SOUTHBOUND (Hamner)			EASTBOUND (Limonite)			WESTBOUND (Limonite)			
LANES:	NL 2	NT 3	NR 1	SL 2	ST 2	SR 1	EL 2	ET 3	ER 1	WL 2	WT 2	WR 1	TOTAL
7:00 AM	0	0	0	0	0	0	1	1	0	0	3	0	5
7:15 AM	0	1	0	0	0	0	0	1	0	0	4	2	8
7:30 AM	2	1	0	0	0	0	0	0	0	1	1	1	6
7:45 AM	0	1	0	1	0	0	2	3	0	3	2	0	12
8:00 AM	0	1	0	1	2	0	2	1	0	0	0	1	8
8:15 AM	0	1	0	2	1	0	0	1	0	0	3	0	8
8:30 AM	0	0	0	0	0	1	0	2	0	1	2	1	7
8:45 AM	0	0	0	1	0	2	0	1	0	0	3	1	8
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	2	5	0	5	3	3	5	10	0	5	18	6	62
APPROACH %	29%	71%	0%	45%	27%	27%	33%	67%	0%	17%	62%	21%	
APP/DEPART	7	/	16	11	/	9	15	/	15	29	/	22	0
BEGIN PEAK HR		7:45 AM											
VOLUMES	0	3	0	4	3	1	4	7	0	4	7	2	35
APPROACH %	0%	100%	0%	50%	38%	13%	36%	64%	0%	31%	54%	15%	
PEAK HR FACTOR		0.750			0.667			0.550			0.650		0.729
APP/DEPART	3	/	9	8	/	7	11	/	11	13	/	8	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	1	0	0	1	0	0	0	1	3
4:15 PM	0	1	0	0	0	0	0	0	0	0	2	0	3
4:30 PM	0	0	0	0	1	1	0	0	0	0	0	0	2
4:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:15 PM	1	1	0	0	0	0	0	0	0	0	2	1	5
5:30 PM	0	0	0	0	0	0	0	3	0	0	0	0	3
5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
VOLUMES	1	3	0	1	2	1	0	5	0	0	4	2	19
APPROACH %	25%	75%	0%	25%	50%	25%	0%	100%	0%	0%	67%	33%	
APP/DEPART	4	/	5	4	/	2	5	/	6	6	/	6	0
BEGIN PEAK HR		4:45 PM											
VOLUMES	1	2	0	0	0	0	0	4	0	0	2	1	10
APPROACH %	33%	67%	0%	0%	0%	0%	0%	100%	0%	0%	67%	33%	
PEAK HR FACTOR		0.375			0.000			0.333			0.250		0.500
APP/DEPART	3	/	3	0	/	0	4	/	4	3	/	3	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	1	0	0
0	1	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	2	0	2
0	1	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0



T1218

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
Wed, Jan 30, 19	NORTH & SOUTH:	I-15 SB Ramps	LOCATION #:	66
	EAST & WEST:	Cantu-Galleano Ranch	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

Add U-Turns to Left Turns

	NORTHBOUND I-15 SB Ramps			SOUTHBOUND I-15 SB Ramps			EASTBOUND Cantu-Galleano Ranch			WESTBOUND Cantu-Galleano Ranch			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	X	X	X	2	X	1	X	3	1	X	2	1	
AM 7:00 AM	0	0	0	65	0	248	0	189	65	0	124	27	718
7:15 AM	0	0	0	74	0	232	0	234	69	0	136	33	778
7:30 AM	0	0	0	54	0	205	0	214	73	0	118	36	700
7:45 AM	0	0	0	54	0	199	0	175	57	0	79	29	593
8:00 AM	0	0	0	73	0	162	0	146	56	0	85	32	554
8:15 AM	0	0	0	63	0	163	0	149	55	0	82	25	537
8:30 AM	0	0	0	67	0	142	0	167	48	0	84	25	533
8:45 AM	0	0	0	68	0	127	0	133	42	0	48	36	454
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	518	0	1,478	0	1,407	465	0	756	243	4,867
APPROACH %	0%	0%	0%	26%	0%	74%	0%	75%	25%	0%	76%	24%	
APP/DEPART	0	/	243	1,996	/	465	1,872	/	1,925	999	/	2,234	0
BEGIN PEAK HR		7:00 AM											
VOLUMES	0	0	0	247	0	884	0	812	264	0	457	125	2,789
APPROACH %	0%	0%	0%	22%	0%	78%	0%	75%	25%	0%	79%	21%	
PEAK HR FACTOR		0.000			0.903			0.888			0.861		0.896
APP/DEPART	0	/	125	1,131	/	264	1,076	/	1,059	582	/	1,341	0
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	67	0	147	0	217	85	0	76	45	637
4:15 PM	0	0	0	57	0	161	0	230	108	0	75	34	665
4:30 PM	0	0	0	90	0	194	0	198	117	0	72	67	738
4:45 PM	0	0	0	64	0	193	0	272	147	0	68	53	797
5:00 PM	0	0	0	70	0	192	0	232	112	0	85	94	785
5:15 PM	0	0	0	64	0	230	0	229	115	0	85	111	834
5:30 PM	0	0	0	59	0	200	0	268	118	0	110	87	842
5:45 PM	0	0	0	58	0	230	0	198	113	0	120	94	813
VOLUMES	0	0	0	529	0	1,547	0	1,844	915	0	691	585	6,111
APPROACH %	0%	0%	0%	25%	0%	75%	0%	67%	33%	0%	54%	46%	
APP/DEPART	0	/	585	2,076	/	915	2,759	/	2,373	1,276	/	2,238	0
BEGIN PEAK HR		5:00 PM											
VOLUMES	0	0	0	251	0	852	0	927	458	0	400	386	3,274
APPROACH %	0%	0%	0%	23%	0%	77%	0%	67%	33%	0%	51%	49%	
PEAK HR FACTOR		0.000			0.938			0.897			0.918		0.972
APP/DEPART	0	/	386	1,103	/	458	1,385	/	1,178	786	/	1,252	0

U-TURNS

	NB	SB	EB	WB	TTL
	0	0	0	0	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
03:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0

RTOR

	NRR	SRR	ERR	WRR
	X	0	X	X
7:00 AM	0	70	0	0
7:15 AM	0	66	0	0
7:30 AM	0	58	0	0
7:45 AM	0	74	0	0
8:00 AM	0	57	0	0
8:15 AM	0	72	0	0
8:30 AM	0	59	0	0
8:45 AM	0	49	0	0
9:00 AM	0	0	0	0
9:15 AM	0	0	0	0
9:30 AM	0	0	0	0
9:45 AM	0	0	0	0
VOLUMES	0	505	0	0
PEAK HR VOLUMES	0	268	0	0
03:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	62	0	0
4:15 PM	0	73	0	0
4:30 PM	0	88	0	0
4:45 PM	0	89	0	0
5:00 PM	0	67	0	0
5:15 PM	0	94	0	0
5:30 PM	0	86	0	0
5:45 PM	0	75	0	0
VOLUMES	0	634	0	0
PEAK HR VOLUMES	0	322	0	0

I-15 SB Ramps

NORTH SIDE

Cantu-Galleano Ranch WEST SIDE EAST SIDE **Cantu-Galleano Ranch**

SOUTH SIDE

I-15 SB Ramps

ALL PED AND BIKE

	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
AM 7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	2	2
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
TOTAL	0	0	0	2	2
PM 3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0

PEDESTRIAN CROSSINGS

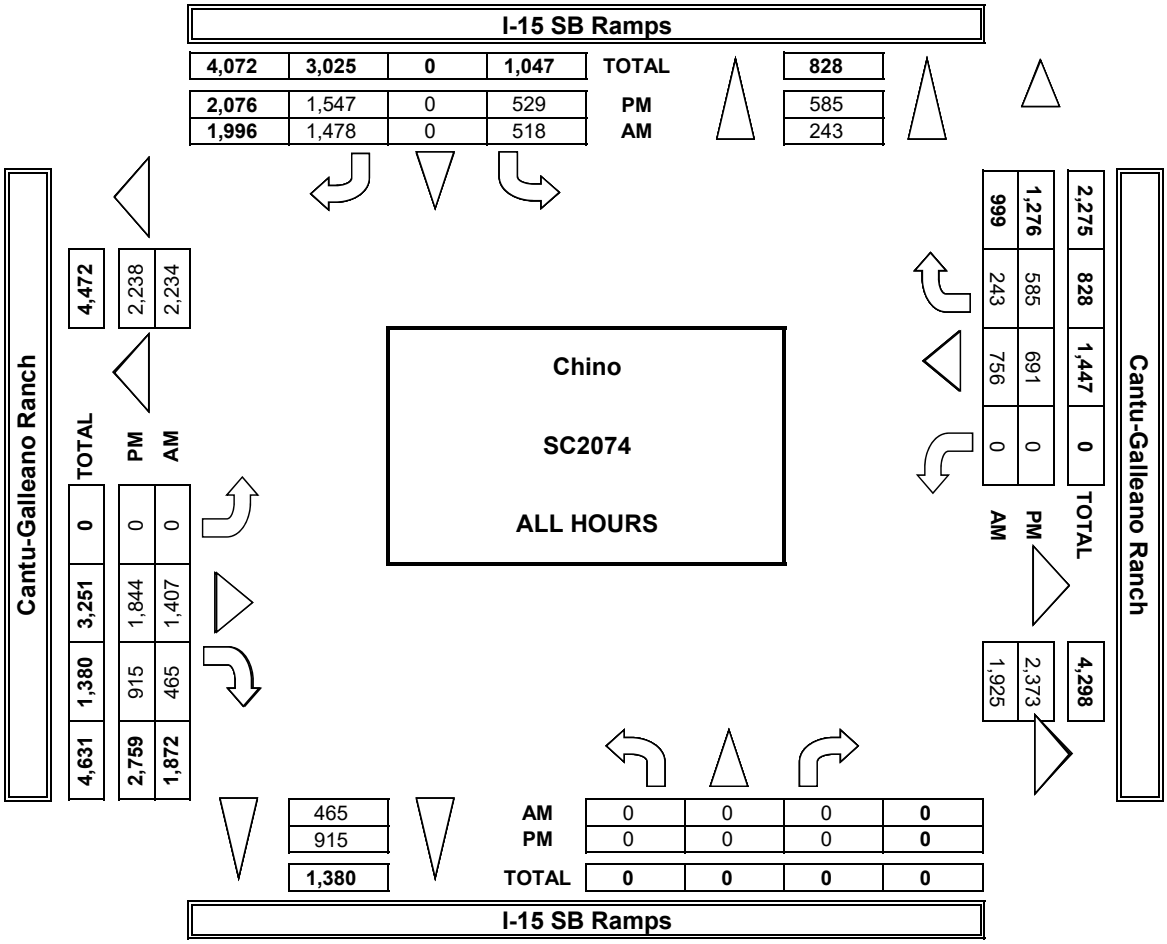
	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
AM 7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
TOTAL	0	0	0	0	0
PM 3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0

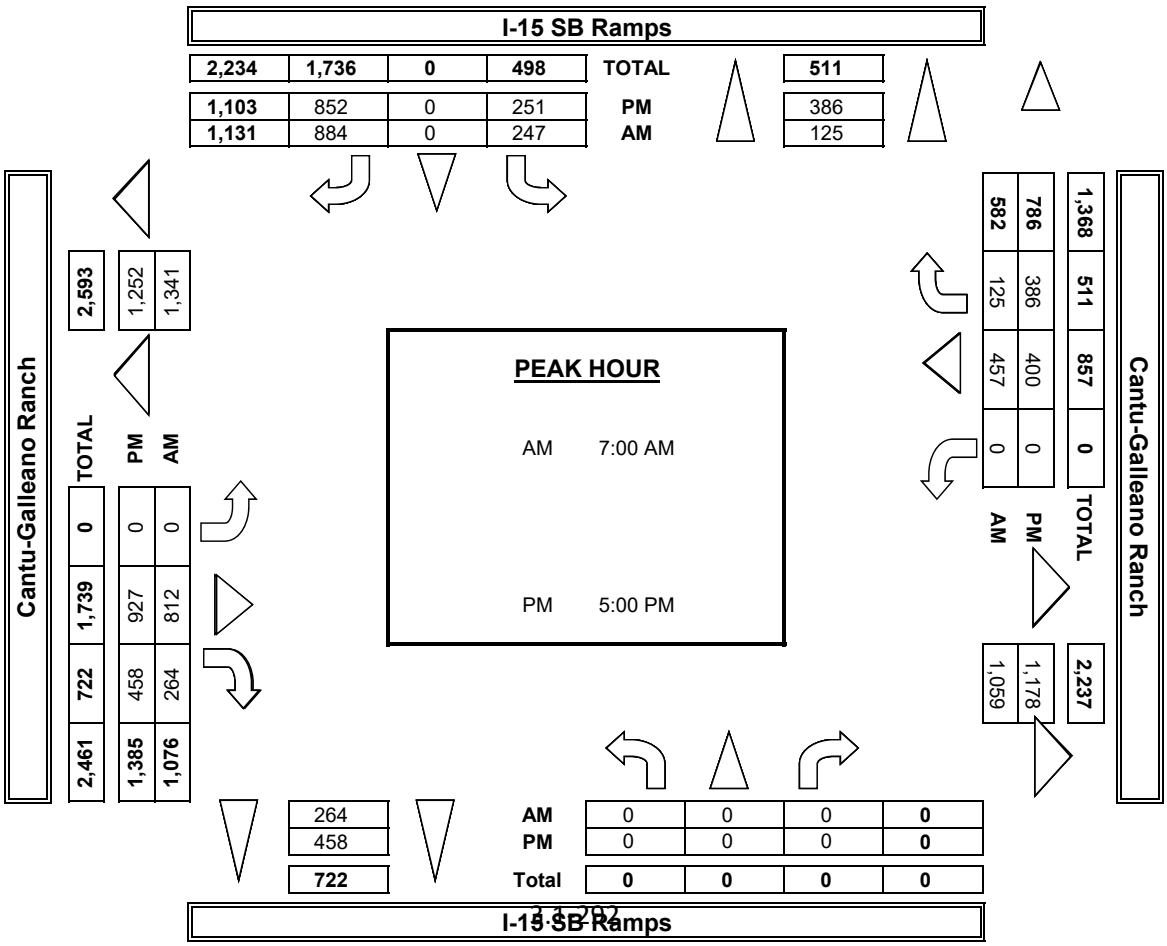
BICYCLE CROSSINGS

	ES	WS	SS	NS	TOTAL
AM 7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	2	2
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	0	0
9:30 AM	0	0	0	0	0
9:45 AM	0	0	0	0	0
TOTAL	0	0	0	2	2
PM 3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	I-15 SB Ramps	LOCATION #:	66
WEDNESDAY	EAST & WEST:	Cantu-Galleano Ranch	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

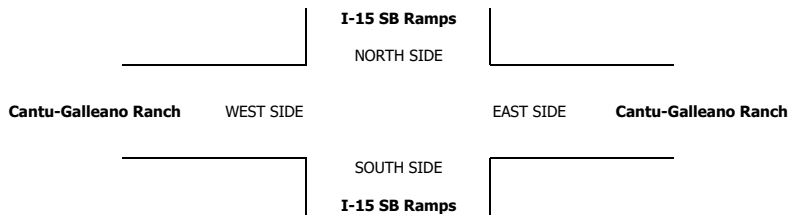
	NORTHBOUND I-15 SB Ramps			SOUTHBOUND I-15 SB Ramps			EASTBOUND Cantu-Galleano Ranch			WESTBOUND Cantu-Galleano Ranch			
LANES:	NL X	NT X	NR X	SL 2	ST X	SR 1	EL X	ET 3	ER 1	WL X	WT 2	WR 1	TOTAL
7:00 AM	0	0	0	8	0	10	0	9	14	0	9	2	52
7:15 AM	0	0	0	4	0	15	0	9	7	0	8	3	46
7:30 AM	0	0	0	3	0	14	0	5	2	0	6	2	32
7:45 AM	0	0	0	3	0	11	0	5	2	0	6	3	30
8:00 AM	0	0	0	1	0	8	0	4	9	0	10	4	36
8:15 AM	0	0	0	4	0	13	0	5	3	0	6	2	33
8:30 AM	0	0	0	3	0	12	0	7	3	0	12	1	38
8:45 AM	0	0	0	4	0	11	0	7	3	0	3	4	32
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	30	0	94	0	51	43	0	60	21	299
APPROACH %	0%	0%	0%	24%	0%	76%	0%	54%	46%	0%	74%	26%	
APP/DEPART	0	/	21	124	/	43	94	/	81	81	/	154	0
BEGIN PEAK HR		7:00 AM											
VOLUMES	0	0	0	18	0	50	0	28	25	0	29	10	160
APPROACH %	0%	0%	0%	26%	0%	74%	0%	53%	47%	0%	74%	26%	
PEAK HR FACTOR		0.000			0.895			0.576			0.886		0.769
APP/DEPART	0	/	10	68	/	25	53	/	46	39	/	79	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	3	0	6	0	10	10	0	9	3	41
4:15 PM	0	0	0	3	0	12	0	13	9	0	2	1	40
4:30 PM	0	0	0	2	0	8	0	8	5	0	2	3	28
4:45 PM	0	0	0	7	0	9	0	12	9	0	2	0	39
5:00 PM	0	0	0	3	0	3	0	12	6	0	9	7	40
5:15 PM	0	0	0	3	0	3	0	11	8	0	2	6	33
5:30 PM	0	0	0	2	0	4	0	11	2	0	2	6	27
5:45 PM	0	0	0	2	0	5	0	5	4	0	1	5	22
VOLUMES	0	0	0	25	0	50	0	82	53	0	29	31	270
APPROACH %	0%	0%	0%	33%	0%	67%	0%	61%	39%	0%	48%	52%	
APP/DEPART	0	/	31	75	/	53	135	/	107	60	/	79	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	0	0	15	0	35	0	43	33	0	15	7	148
APPROACH %	0%	0%	0%	30%	0%	70%	0%	57%	43%	0%	68%	32%	
PEAK HR FACTOR		0.000			0.781			0.864			0.458		0.902
APP/DEPART	0	/	7	50	/	33	76	/	58	22	/	50	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR X
0	2	0	0
0	1	0	0
0	4	0	0
0	3	0	0
0	3	0	0
0	7	0	0
0	7	0	0
0	6	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	33	0	0
0	10	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	3	0	0
0	3	0	0
0	2	0	0
0	1	0	0
0	1	0	0
0	0	0	0
0	1	0	0
0	2	0	0
0	13	0	0
0	9	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	I-15 SB Ramps	LOCATION #:	66
WEDNESDAY	EAST & WEST:	Cantu-Galleano Ranch	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

	NORTHBOUND I-15 SB Ramps			SOUTHBOUND I-15 SB Ramps			EASTBOUND Cantu-Galleano Ranch			WESTBOUND Cantu-Galleano Ranch			
LANES:	NL X	NT X	NR X	SL 2	ST X	SR 1	EL X	ET 3	ER 1	WL X	WT 2	WR 1	TOTAL
7:00 AM	0	0	0	2	0	2	0	7	2	0	2	0	15
7:15 AM	0	0	0	2	0	5	0	12	2	0	0	1	22
7:30 AM	0	0	0	2	0	4	0	6	1	0	2	0	15
7:45 AM	0	0	0	2	0	2	0	8	2	0	3	2	19
8:00 AM	0	0	0	0	0	5	0	6	0	0	1	1	13
8:15 AM	0	0	0	1	0	1	0	5	0	0	1	1	9
8:30 AM	0	0	0	4	0	4	0	10	1	0	2	1	22
8:45 AM	0	0	0	0	0	1	0	5	0	0	0	0	6
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	13	0	24	0	59	8	0	11	6	121
APPROACH %	0%	0%	0%	35%	0%	65%	0%	88%	12%	0%	65%	35%	
APP/DEPART	0	/	6	37	/	8	67	/	72	17	/	35	0
BEGIN PEAK HR		7:00 AM											
VOLUMES	0	0	0	8	0	13	0	33	7	0	7	3	71
APPROACH %	0%	0%	0%	38%	0%	62%	0%	83%	18%	0%	70%	30%	
PEAK HR FACTOR		0.000			0.750			0.714			0.500		0.807
APP/DEPART	0	/	3	21	/	7	40	/	41	10	/	20	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	3	0	2	2	0	1	0	8
4:15 PM	0	0	0	2	0	3	0	7	0	0	0	1	13
4:30 PM	0	0	0	1	0	3	0	4	1	0	0	0	9
4:45 PM	0	0	0	0	0	3	0	6	2	0	1	1	13
5:00 PM	0	0	0	2	0	3	0	5	1	0	0	0	11
5:15 PM	0	0	0	0	0	1	0	5	1	0	0	3	10
5:30 PM	0	0	0	0	0	0	0	2	0	0	1	1	4
5:45 PM	0	0	0	1	0	0	0	0	0	0	1	0	2
VOLUMES	0	0	0	6	0	16	0	31	7	0	4	6	70
APPROACH %	0%	0%	0%	27%	0%	73%	0%	82%	18%	0%	40%	60%	
APP/DEPART	0	/	6	22	/	7	38	/	37	10	/	20	0
BEGIN PEAK HR		4:15 PM											
VOLUMES	0	0	0	5	0	12	0	22	4	0	1	2	46
APPROACH %	0%	0%	0%	29%	0%	71%	0%	85%	15%	0%	33%	67%	
PEAK HR FACTOR		0.000			0.850			0.813			0.375		0.885
APP/DEPART	0	/	2	17	/	4	26	/	27	3	/	13	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR X
0	1	0	0
0	3	0	0
0	3	0	0
0	1	0	0
0	1	0	0
0	0	0	0
0	2	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	11	0	0
0	8	0	0
0	0	0	0
0	0	0	0
0	2	0	0
0	2	0	0
0	1	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	6	0	0
0	4	0	0

I-15 SB Ramps

NORTH SIDE

Cantu-Galleano Ranch WEST SIDE EAST SIDE **Cantu-Galleano Ranch**

SOUTH SIDE

I-15 SB Ramps

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	I-15 SB Ramps	LOCATION #:	66
WEDNESDAY	EAST & WEST:	Cantu-Galleano Ranch	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

		NORTHBOUND I-15 SB Ramps			SOUTHBOUND I-15 SB Ramps			EASTBOUND Cantu-Galleano Ranch			WESTBOUND Cantu-Galleano Ranch			
	LANES:	NL X	NT X	NR X	SL 2	ST X	SR 1	EL X	ET 3	ER 1	WL X	WT 2	WR 1	TOTAL
AM	7:00 AM	0	0	0	5	0	19	0	5	3	0	5	8	45
	7:15 AM	0	0	0	4	0	19	0	3	5	0	3	5	39
	7:30 AM	0	0	0	7	0	16	0	9	4	0	6	10	52
	7:45 AM	0	0	0	4	0	14	0	5	2	0	5	4	34
	8:00 AM	0	0	0	5	0	20	0	15	4	0	2	7	53
	8:15 AM	0	0	0	5	0	15	0	10	4	0	3	5	42
	8:30 AM	0	0	0	5	0	15	0	7	7	0	4	4	42
	8:45 AM	0	0	0	8	0	14	0	9	2	0	7	5	45
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	43	0	132	0	63	31	0	35	48	352
	APPROACH %	0%	0%	0%	25%	0%	75%	0%	67%	33%	0%	42%	58%	
	APP/DEPART	0	/	48	175	/	31	94	/	106	83	/	167	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	0	0	0	23	0	64	0	41	17	0	16	21	182
	APPROACH %	0%	0%	0%	26%	0%	74%	0%	71%	29%	0%	43%	57%	
	PEAK HR FACTOR		0.000			0.870			0.763			0.771		0.858
	APP/DEPART	0	/	21	87	/	17	58	/	64	37	/	80	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	4	0	8	0	8	1	0	2	4	27
	4:15 PM	0	0	0	3	0	10	0	7	1	0	7	3	31
	4:30 PM	0	0	0	5	0	1	0	7	2	0	6	5	26
	4:45 PM	0	0	0	1	0	10	0	3	2	0	2	1	19
	5:00 PM	0	0	0	6	0	3	0	8	0	0	2	2	21
	5:15 PM	0	0	0	5	0	3	0	13	2	0	1	3	27
	5:30 PM	0	0	0	2	0	1	0	7	0	0	2	9	21
	5:45 PM	0	0	0	7	0	1	0	5	2	0	5	5	25
	VOLUMES	0	0	0	33	0	37	0	58	10	0	27	32	197
	APPROACH %	0%	0%	0%	47%	0%	53%	0%	85%	15%	0%	46%	54%	
	APP/DEPART	0	/	32	70	/	10	68	/	91	59	/	64	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	13	0	29	0	25	6	0	17	13	103
	APPROACH %	0%	0%	0%	31%	0%	69%	0%	81%	19%	0%	57%	43%	
	PEAK HR FACTOR		0.000			0.808			0.861			0.682		0.831
	APP/DEPART	0	/	13	42	/	6	31	/	38	30	/	46	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR X
0	4	0	0
0	1	0	0
0	2	0	0
0	3	0	0
0	5	0	0
0	10	0	0
0	9	0	0
0	2	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	36	0	0
0	26	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	13	0	0
0	12	0	0

I-15 SB Ramps

NORTH SIDE

Cantu-Galleano Ranch WEST SIDE EAST SIDE **Cantu-Galleano Ranch**

SOUTH SIDE

I-15 SB Ramps

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Eastvale
N/S: I-15 Southbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 26_ESV_15S_Limonite AM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	I-15 Southbound Off Ramp Southbound					Limonite Avenue Westbound					I-15 Southbound On Ramp Northbound					Limonite Avenue Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	36	0	129	87	165	153	123	0	0	276	0	0	0	0	0	0	262	109	18	371	105	812	917
07:15 AM	42	0	102	80	144	166	148	0	0	314	0	0	0	0	0	0	265	119	22	384	102	842	944
07:30 AM	38	0	84	54	122	144	138	0	0	282	0	0	0	0	0	0	242	126	33	368	87	772	859
07:45 AM	18	0	66	59	84	137	158	0	0	295	0	0	0	0	0	0	227	127	42	354	101	733	834
Total	134	0	381	280	515	600	567	0	0	1167	0	0	0	0	0	0	996	481	115	1477	395	3159	3554
08:00 AM	32	0	91	69	123	123	152	0	0	275	0	0	0	0	0	0	221	107	32	328	101	726	827
08:15 AM	34	0	89	64	123	126	187	0	0	313	0	0	0	0	0	0	182	114	37	296	101	732	833
08:30 AM	47	0	108	66	155	126	196	0	0	322	0	0	0	0	0	0	255	93	23	348	89	825	914
08:45 AM	46	0	93	62	139	126	170	0	0	296	0	0	0	0	0	0	200	95	27	295	89	730	819
Total	159	0	381	261	540	501	705	0	0	1206	0	0	0	0	0	0	858	409	119	1267	380	3013	3393
Grand Total	293	0	762	541	1055	1101	1272	0	0	2373	0	0	0	0	0	0	1854	890	234	2744	775	6172	6947
Apprch %	27.8	0	72.2			46.4	53.6	0			0	0	0			0	67.6	32.4					
Total %	4.7	0	12.3		17.1	17.8	20.6	0		38.4	0	0	0		0	0	30	14.4		44.5	11.2	88.8	
Passenger Vehicles	273	0	734		1529	1059	1226	0		2285	0	0	0		0	0	1810	856		2891	0	0	6705
% Passenger Vehicles	93.2	0	96.3	96.5	95.8	96.2	96.4	0	0	96.3	0	0	0	0	0	0	97.6	96.2	96.2	97.1	0	0	96.5
Large 2 Axle Vehicles	13	0	23		51	29	38	0		67	0	0	0		0	0	34	25		65	0	0	183
% Large 2 Axle Vehicles	4.4	0	3	2.8	3.2	2.6	3	0	0	2.8	0	0	0	0	0	0	1.8	2.8	2.6	2.2	0	0	2.6
3 Axle Vehicles	3	0	0		3	5	0	0		5	0	0	0		0	0	1	3		6	0	0	14
% 3 Axle Vehicles	1	0	0	0	0.2	0.5	0	0	0	0.2	0	0	0	0	0	0	0.1	0.3	0.9	0.2	0	0	0.2
4+ Axle Trucks	4	0	5		13	8	8	0		16	0	0	0		0	0	9	6		16	0	0	45
% 4+ Axle Trucks	1.4	0	0.7	0.7	0.8	0.7	0.6	0	0	0.7	0	0	0	0	0	0	0.5	0.7	0.4	0.5	0	0	0.6

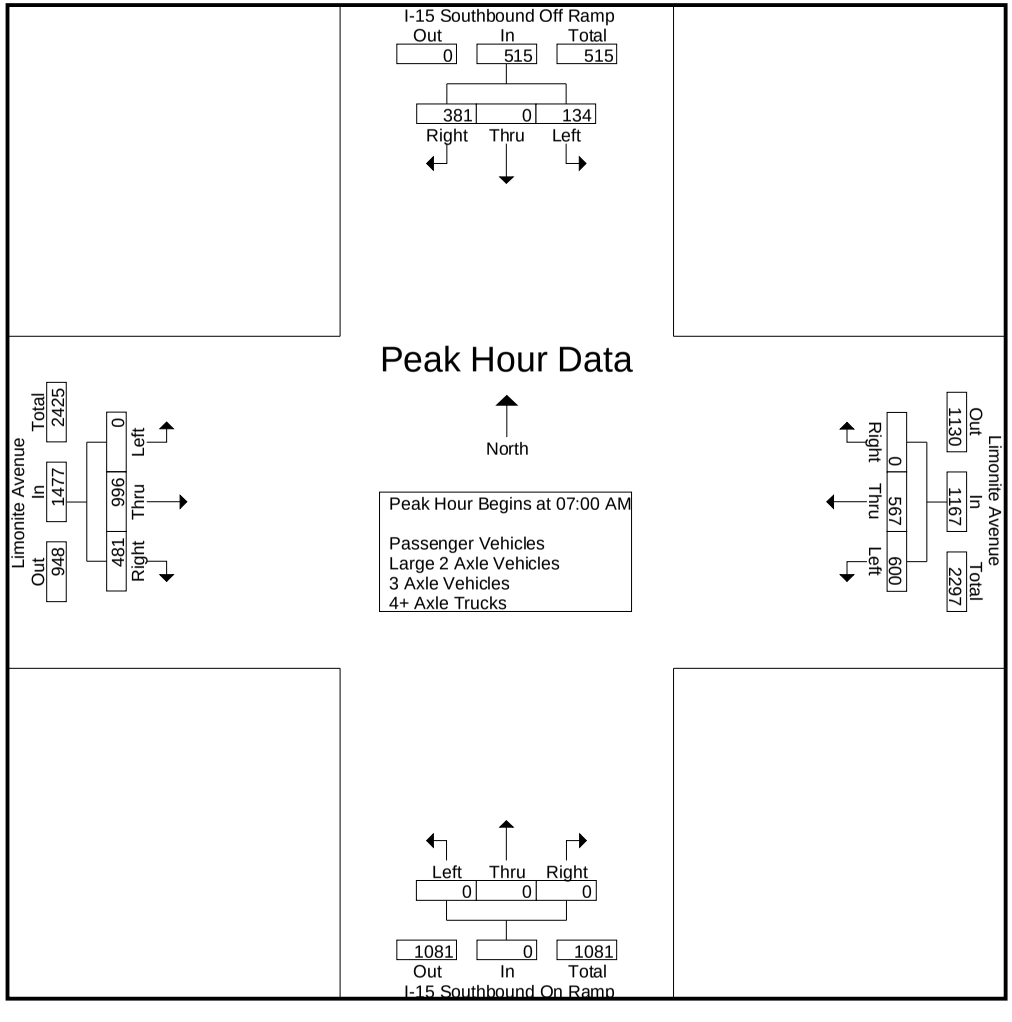
ESV-15S-26

	I-15 Southbound Off Ramp Southbound				Limonite Avenue Westbound				I-15 Southbound On Ramp Northbound				Limonite Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	36	0	**129**	**165**	153	123	0	276	0	0	0	0	0	262	109	371	812
07:15 AM	**42**	0	102	144	**166**	148	0	**314**	0	0	0	0	0	**265**	119	**384**	**842**
07:30 AM	38	0	84	122	144	138	0	282	0	0	0	0	0	242	126	368	772
07:45 AM	18	0	66	84	137	**158**	0	295	0	0	0	0	0	227	**127**	354	733
Total Volume	134	0	381	515	600	567	0	1167	0	0	0	0	0	996	481	1477	3159
% App. Total	26	0	74		51.4	48.6	0		0	0	0		0	67.4	32.6		
PHF	.798	.000	.738	.780	.904	.897	.000	.929	.000	.000	.000	.000	.000	.940	.947	.962	.938

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Eastvale
N/S: I-15 Southbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 26_ESV_15S_Limonite AM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 2



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PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Eastvale
N/S: I-15 Southbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 26_ESV_15S_Limonite AM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 1

Groups Printed- Large 2 Axle Vehicles

	I-15 Southbound Off Ramp Southbound					Limonite Avenue Westbound					I-15 Southbound On Ramp Northbound					Limonite Avenue Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	5	0	3	2	8	7	2	0	0	9	0	0	0	0	0	0	3	4	0	7	2	24	26
07:15 AM	0	0	2	1	2	4	5	0	0	9	0	0	0	0	0	0	8	3	1	11	2	22	24
07:30 AM	1	0	4	2	5	2	6	0	0	8	0	0	0	0	0	0	6	3	0	9	2	22	24
07:45 AM	0	0	2	2	2	0	8	0	0	8	0	0	0	0	0	0	5	4	3	9	5	19	24
Total	6	0	11	7	17	13	21	0	0	34	0	0	0	0	0	0	22	14	4	36	11	87	98
08:00 AM	2	0	5	2	7	6	2	0	0	8	0	0	0	0	0	0	2	1	0	3	2	18	20
08:15 AM	0	0	2	2	2	3	6	0	0	9	0	0	0	0	0	0	5	5	1	10	3	21	24
08:30 AM	2	0	3	2	5	3	6	0	0	9	0	0	0	0	0	0	1	3	0	4	2	18	20
08:45 AM	3	0	2	2	5	4	3	0	0	7	0	0	0	0	0	0	4	2	1	6	3	18	21
Total	7	0	12	8	19	16	17	0	0	33	0	0	0	0	0	0	12	11	2	23	10	75	85
Grand Total	13	0	23	15	36	29	38	0	0	67	0	0	0	0	0	0	34	25	6	59	21	162	183
Apprch %	36.1	0	63.9			43.3	56.7	0			0	0	0			0	57.6	42.4					
Total %	8	0	14.2		22.2	17.9	23.5	0		41.4	0	0	0		0	0	21	15.4		36.4	11.5	88.5	

	I-15 Southbound Off Ramp Southbound				Limonite Avenue Westbound				I-15 Southbound On Ramp Northbound				Limonite Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	**5**	0	3	**8**	**7**	2	0	**9**	0	0	0	0	0	3	**4**	7	**24**
07:15 AM	0	0	2	2	4	5	0	9	0	0	0	0	0	**8**	3	**11**	22
07:30 AM	1	0	**4**	5	2	6	0	8	0	0	0	0	0	6	3	9	22
07:45 AM	0	0	2	2	0	**8**	0	8	0	0	0	0	0	5	4	9	19
Total Volume	6	0	11	17	13	21	0	34	0	0	0	0	0	22	14	36	87
% App. Total	35.3	0	64.7		38.2	61.8	0		0	0	0		0	61.1	38.9		
PHF	.300	.000	.688	.531	.464	.656	.000	.944	.000	.000	.000	.000	.000	.688	.875	.818	.906

Counts Unlimited
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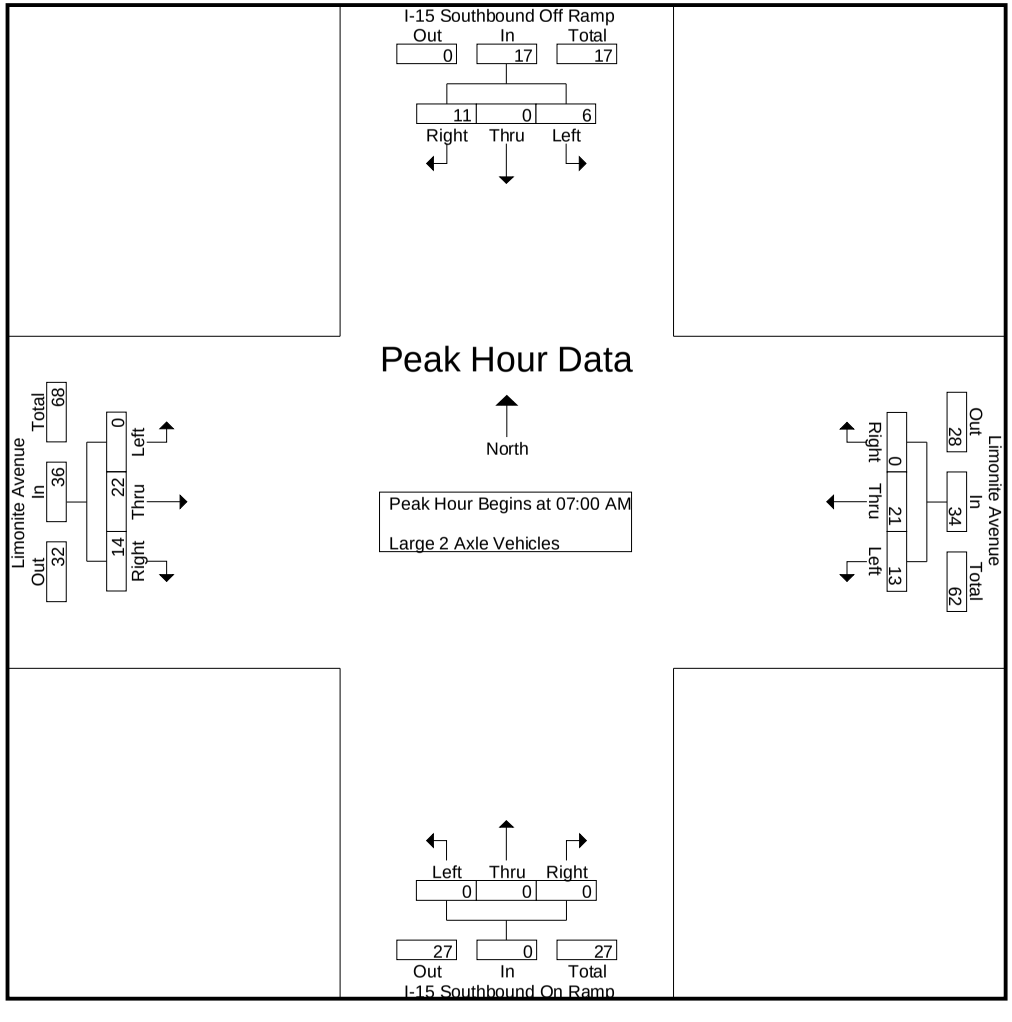
Corona, CA 92878
(951) 268-6268

City of Eastvale
N/S: I-15 Southbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 26_ESV_15S_Limonite AM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 2



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City of Eastvale
N/S: I-15 Southbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 26_ESV_15S_Limonite AM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 1

Groups Printed- 3 Axle Vehicles

	I-15 Southbound Off Ramp Southbound					Limonite Avenue Westbound					I-15 Southbound On Ramp Northbound					Limonite Avenue Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	3
07:15 AM	1	0	0	0	1	3	0	0	0	3	0	0	0	0	0	0	1	0	0	1	0	5	5
07:30 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	2	1	2	1	4	5
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3	0	0	0	3	4	0	0	0	4	0	0	0	0	0	0	1	3	2	4	2	11	13
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
Grand Total	3	0	0	0	3	5	0	0	0	5	0	0	0	0	0	0	1	3	2	4	2	12	14
Apprch %	100	0	0			100	0	0			0	0	0			0	25	75					
Total %	25	0	0		25	41.7	0	0		41.7	0	0	0		0	0	8.3	25		33.3	14.3	85.7	

3.1-300

	I-15 Southbound Off Ramp Southbound				Limonite Avenue Westbound				I-15 Southbound On Ramp Northbound				Limonite Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	0	1	1	2
07:15 AM	1	0	0	1	**3**	0	0	**3**	0	0	0	0	0	**1**	0	1	**5**
07:30 AM	1	0	0	1	1	0	0	1	0	0	0	0	0	0	**2**	**2**	4
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	3	0	0	3	4	0	0	4	0	0	0	0	0	1	3	4	11
% App. Total	100	0	0		100	0	0		0	0	0		0	25	75		
PHF	.750	.000	.000	.750	.333	.000	.000	.333	.000	.000	.000	.000	.000	.250	.375	.500	.550

Counts Unlimited
PO Box 1178
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City of Eastvale
N/S: I-15 Southbound Ramps
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File Name : 26_ESV_15S_Limonite AM
Site Code : 05118278
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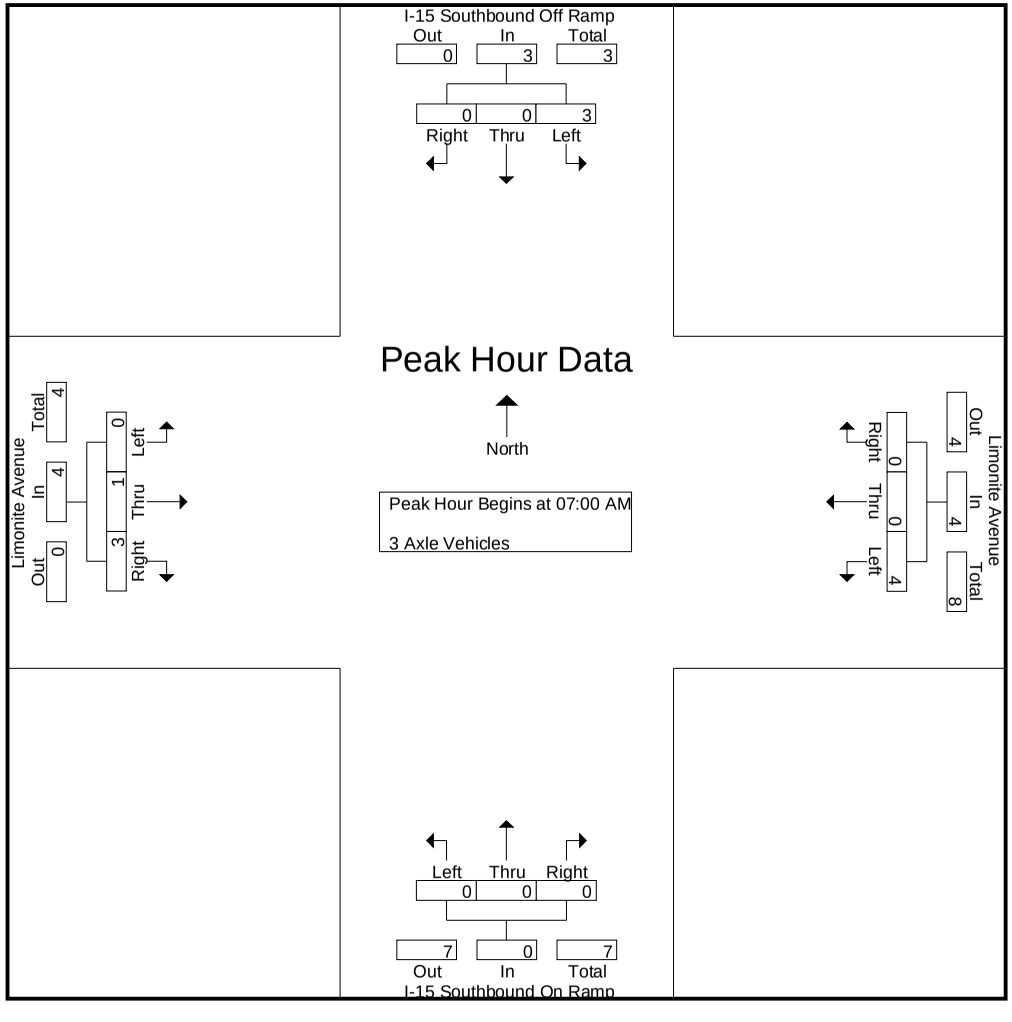

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City of Eastvale
N/S: I-15 Southbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 26_ESV_15S_Limonite AM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 1

Groups Printed- 4+ Axle Trucks

	I-15 Southbound Off Ramp Southbound					Limonite Avenue Westbound					I-15 Southbound On Ramp Northbound					Limonite Avenue Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	2
07:15 AM	0	0	1	0	1	1	1	0	0	2	0	0	0	0	0	0	2	0	0	2	0	5	5
07:30 AM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	0	2	0	2	0	4	4
07:45 AM	1	0	0	0	1	3	0	0	0	3	0	0	0	0	0	0	1	3	0	4	0	8	8
Total	1	0	1	0	2	6	3	0	0	9	0	0	0	0	0	0	3	5	0	8	0	19	19
08:00 AM	1	0	2	2	3	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	2	6	8
08:15 AM	1	0	2	2	3	1	1	0	0	2	0	0	0	0	0	0	1	0	0	1	2	6	8
08:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1	1	2	1	3	4
08:45 AM	1	0	0	0	1	1	1	0	0	2	0	0	0	0	0	0	3	0	0	3	0	6	6
Total	3	0	4	4	7	2	5	0	0	7	0	0	0	0	0	0	6	1	1	7	5	21	26
Grand Total	4	0	5	4	9	8	8	0	0	16	0	0	0	0	0	0	9	6	1	15	5	40	45
Apprch %	44.4	0	55.6			50	50	0			0	0	0			0	60	40					
Total %	10	0	12.5		22.5	20	20	0		40	0	0	0		0	0	22.5	15		37.5	11.1	88.9	

3.1-302

	I-15 Southbound Off Ramp Southbound				Limonite Avenue Westbound				I-15 Southbound On Ramp Northbound				Limonite Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	1	**1**	0	2	0	0	0	0	0	0	0	0	2
07:15 AM	0	0	**1**	**1**	1	1	0	2	0	0	0	0	0	**2**	0	2	5
07:30 AM	0	0	0	0	1	1	0	2	0	0	0	0	0	0	2	2	4
07:45 AM	**1**	0	0	1	**3**	0	0	**3**	0	0	0	0	0	1	**3**	**4**	**8**
Total Volume	1	0	1	2	6	3	0	9	0	0	0	0	0	3	5	8	19
% App. Total	50	0	50		66.7	33.3	0		0	0	0		0	37.5	62.5		
PHF	.250	.000	.250	.500	.500	.750	.000	.750	.000	.000	.000	.000	.000	.375	.417	.500	.594

Counts Unlimited
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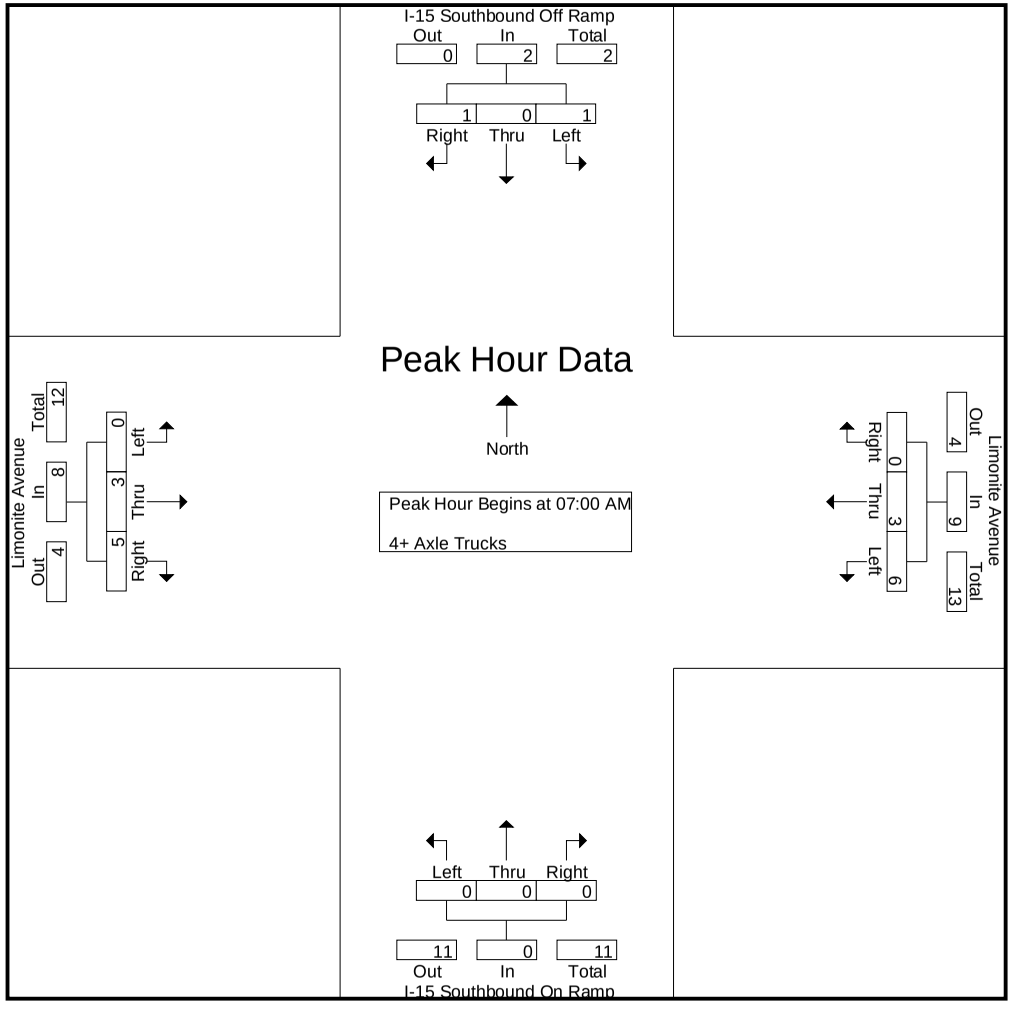

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File Name : 26_ESV_15S_Limonite PM
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

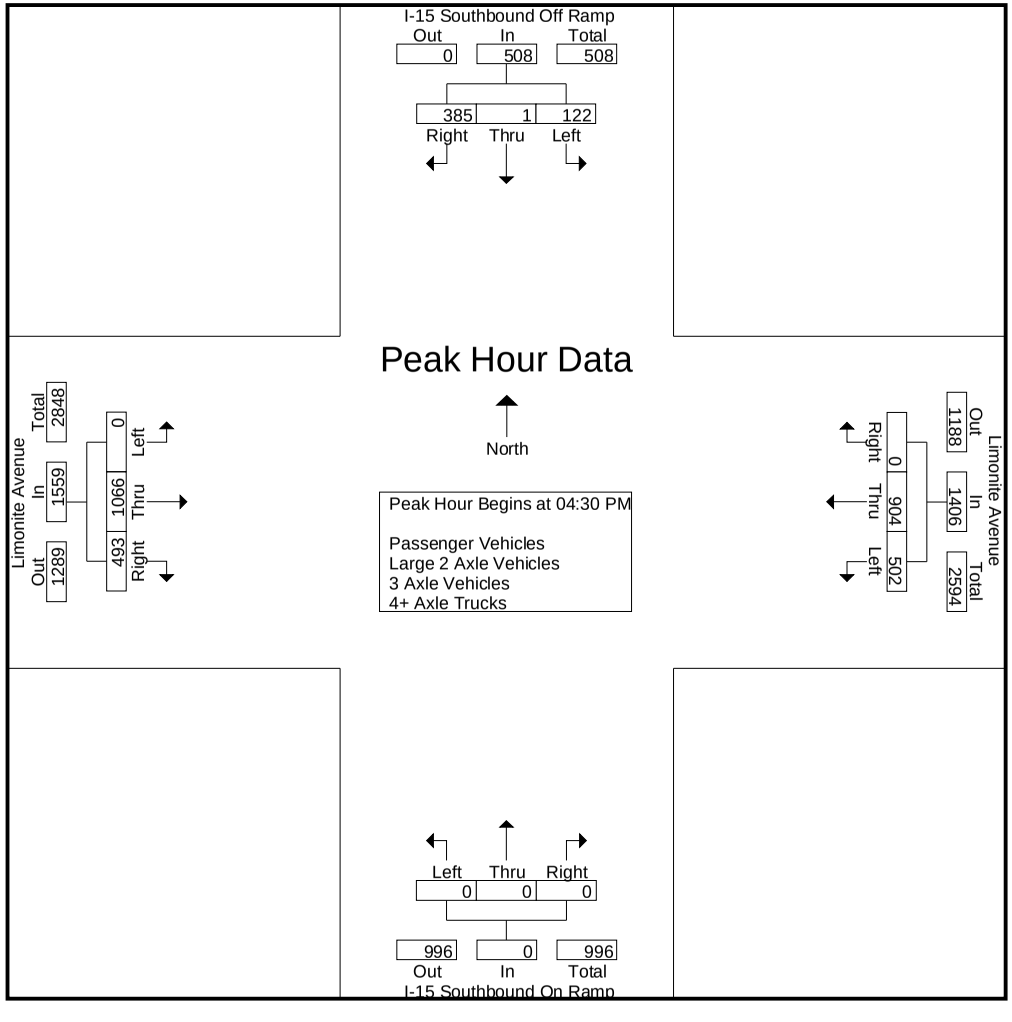
	I-15 Southbound Off Ramp Southbound					Limonite Avenue Westbound					I-15 Southbound On Ramp Northbound					Limonite Avenue Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	31	0	35	30	66	93	221	0	0	314	0	0	0	0	0	0	280	102	29	382	59	762	821
04:15 PM	20	0	57	47	77	129	188	0	0	317	0	0	0	0	0	0	262	109	31	371	78	765	843
04:30 PM	27	0	91	56	118	143	210	0	0	353	0	0	0	0	0	0	249	122	28	371	84	842	926
04:45 PM	28	0	111	63	139	134	215	0	0	349	0	0	0	0	0	0	281	119	41	400	104	888	992
Total	106	0	294	196	400	499	834	0	0	1333	0	0	0	0	0	0	1072	452	129	1524	325	3257	3582
05:00 PM	30	0	83	54	113	109	245	0	0	354	0	0	0	0	0	0	267	129	32	396	86	863	949
05:15 PM	37	1	100	56	138	116	234	0	0	350	0	0	0	0	0	0	269	123	42	392	98	880	978
05:30 PM	42	0	99	59	141	106	226	0	0	332	0	0	0	0	0	0	231	130	48	361	107	834	941
05:45 PM	27	2	85	53	114	103	257	0	0	360	0	0	0	0	0	0	225	109	36	334	89	808	897
Total	136	3	367	222	506	434	962	0	0	1396	0	0	0	0	0	0	992	491	158	1483	380	3385	3765
Grand Total	242	3	661	418	906	933	1796	0	0	2729	0	0	0	0	0	0	2064	943	287	3007	705	6642	7347
Apprch %	26.7	0.3	73			34.2	65.8	0			0	0	0			0	68.6	31.4					
Total %	3.6	0	10		13.6	14	27	0		41.1	0	0	0		0	0	31.1	14.2		45.3	9.6	90.4	
Passenger Vehicles	232	3	651		1300	915	1761	0		2676	0	0	0		0	0	2017	937		3239	0	0	7215
% Passenger Vehicles	95.9	100	98.5	99	98.2	98.1	98.1	0	0	98.1	0	0	0	0	0	0	97.7	99.4	99.3	98.3	0	0	98.2
Large 2 Axle Vehicles	7	0	4		13	11	17	0		28	0	0	0		0	0	24	5		31	0	0	72
% Large 2 Axle Vehicles	2.9	0	0.6	0.5	1	1.2	0.9	0	0	1	0	0	0	0	0	0	1.2	0.5	0.7	0.9	0	0	1
3 Axle Vehicles	0	0	0		0	1	16	0		17	0	0	0		0	0	9	0		9	0	0	26
% 3 Axle Vehicles	0	0	0	0	0	0.1	0.9	0	0	0.6	0	0	0	0	0	0	0.4	0	0	0.3	0	0	0.4
4+ Axle Trucks	3	0	6		11	6	2	0		8	0	0	0		0	0	14	1		15	0	0	34
% 4+ Axle Trucks	1.2	0	0.9	0.5	0.8	0.6	0.1	0	0	0.3	0	0	0	0	0	0	0.7	0.1	0	0.5	0	0	0.5

	I-15 Southbound Off Ramp Southbound				Limonite Avenue Westbound				I-15 Southbound On Ramp Northbound				Limonite Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	27	0	91	118	**143**	210	0	353	0	0	0	0	0	249	122	371	842
04:45 PM	28	0	**111**	**139**	134	215	0	349	0	0	0	0	0	**281**	119	**400**	**888**
05:00 PM	30	0	83	113	109	**245**	0	**354**	0	0	0	0	0	267	**129**	396	863
05:15 PM	**37**	**1**	100	138	116	234	0	350	0	0	0	0	0	269	123	392	880
Total Volume	122	1	385	508	502	904	0	1406	0	0	0	0	0	1066	493	1559	3473
% App. Total	24	0.2	75.8		35.7	64.3	0		0	0	0		0	68.4	31.6		
PHF	.824	.250	.867	.914	.878	.922	.000	.993	.000	.000	.000	.000	.000	.948	.955	.974	.978

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Eastvale
N/S: I-15 Southbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 26_ESV_15S_Limonite PM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 2



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Corona, CA 92878
(951) 268-6268

City of Eastvale
N/S: I-15 Southbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 26_ESV_15S_Limonite PM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 1

Groups Printed- Large 2 Axle Vehicles

	I-15 Southbound Off Ramp Southbound					Limonite Avenue Westbound					I-15 Southbound On Ramp Northbound					Limonite Avenue Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	1	0	1	1	2	1	5	0	0	6	0	0	0	0	0	0	6	0	0	6	1	14	15
04:15 PM	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	4	2	0	6	0	8	8
04:30 PM	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	2	0	0	2	0	5	5
04:45 PM	0	0	2	1	2	3	3	0	0	6	0	0	0	0	0	0	4	1	1	5	2	13	15
Total	2	0	3	2	5	5	11	0	0	16	0	0	0	0	0	0	16	3	1	19	3	40	43
05:00 PM	3	0	1	0	4	1	2	0	0	3	0	0	0	0	0	0	1	1	1	2	1	9	10
05:15 PM	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	1	0	0	1	0	3	3
05:30 PM	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	5	0	0	5	0	7	7
05:45 PM	2	0	0	0	2	1	4	0	0	5	0	0	0	0	0	0	1	1	0	2	0	9	9
Total	5	0	1	0	6	6	6	0	0	12	0	0	0	0	0	0	8	2	1	10	1	28	29
Grand Total	7	0	4	2	11	11	17	0	0	28	0	0	0	0	0	0	24	5	2	29	4	68	72
Apprch %	63.6	0	36.4			39.3	60.7	0			0	0	0			0	82.8	17.2					
Total %	10.3	0	5.9		16.2	16.2	25	0		41.2	0	0	0		0	0	35.3	7.4		42.6	5.6	94.4	

3.1-306

	I-15 Southbound Off Ramp Southbound				Limonite Avenue Westbound				I-15 Southbound On Ramp Northbound				Limonite Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	1	2	0	3	0	0	0	0	0	2	0	2	5
04:45 PM	0	0	**2**	2	**3**	**3**	0	**6**	0	0	0	0	0	**4**	**1**	**5**	**13**
05:00 PM	**3**	0	1	**4**	1	2	0	3	0	0	0	0	0	1	1	2	9
05:15 PM	0	0	0	0	2	0	0	2	0	0	0	0	0	1	0	1	3
Total Volume	3	0	3	6	7	7	0	14	0	0	0	0	0	8	2	10	30
% App. Total	50	0	50		50	50	0		0	0	0		0	80	20		
PHF	.250	.000	.375	.375	.583	.583	.000	.583	.000	.000	.000	.000	.000	.500	.500	.500	.577

Counts Unlimited
PO Box 1178
Corona, CA 92878
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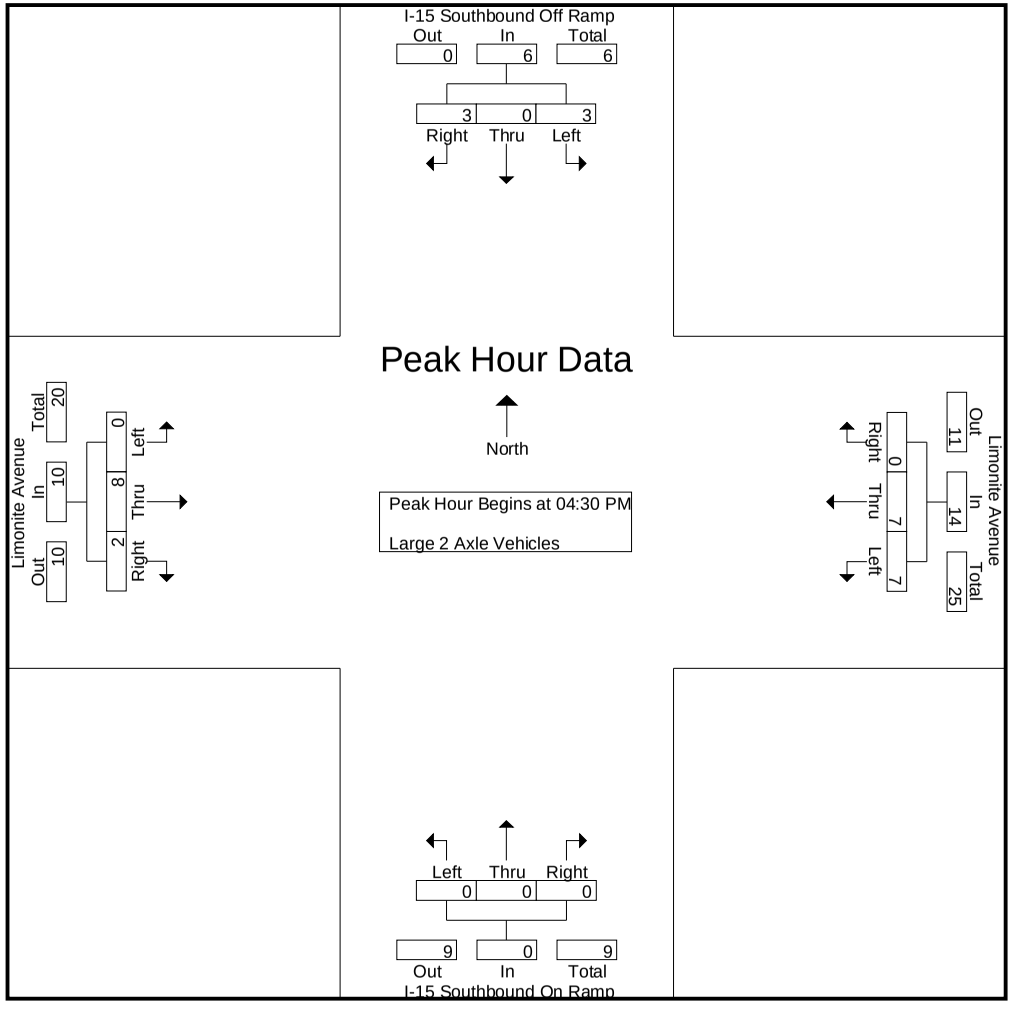
City of Eastvale
N/S: I-15 Southbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 26_ESV_15S_Limonite PM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 2



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City of Eastvale
N/S: I-15 Southbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 26_ESV_15S_Limonite PM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 1

Groups Printed- 3 Axle Vehicles

	I-15 Southbound Off Ramp Southbound					Limonite Avenue Westbound					I-15 Southbound On Ramp Northbound					Limonite Avenue Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3	3
04:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	2	2
04:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	2
04:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	4	4
Total	0	0	0	0	0	1	6	0	0	7	0	0	0	0	0	0	4	0	0	4	0	11	11
05:00 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	4	4
05:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	4	4
05:30 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	0	5	5
05:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	2	2
Total	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	5	0	0	5	0	15	15
Grand Total	0	0	0	0	0	1	16	0	0	17	0	0	0	0	0	0	9	0	0	9	0	26	26
Apprch %	0	0	0			5.9	94.1	0			0	0	0			0	100	0					
Total %	0	0	0		0	3.8	61.5	0		65.4	0	0	0		0	0	34.6	0		34.6	0	100	

	I-15 Southbound Off Ramp Southbound				Limonite Avenue Westbound				I-15 Southbound On Ramp Northbound				Limonite Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	**3**	0	**3**	**4**
05:00 PM	0	0	0	0	0	**3**	0	**3**	0	0	0	0	0	1	0	1	4
05:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
Total Volume	0	0	0	0	0	8	0	8	0	0	0	0	0	6	0	6	14
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.667	.000	.667	.000	.000	.000	.000	.000	.500	.000	.500	.875

Counts Unlimited
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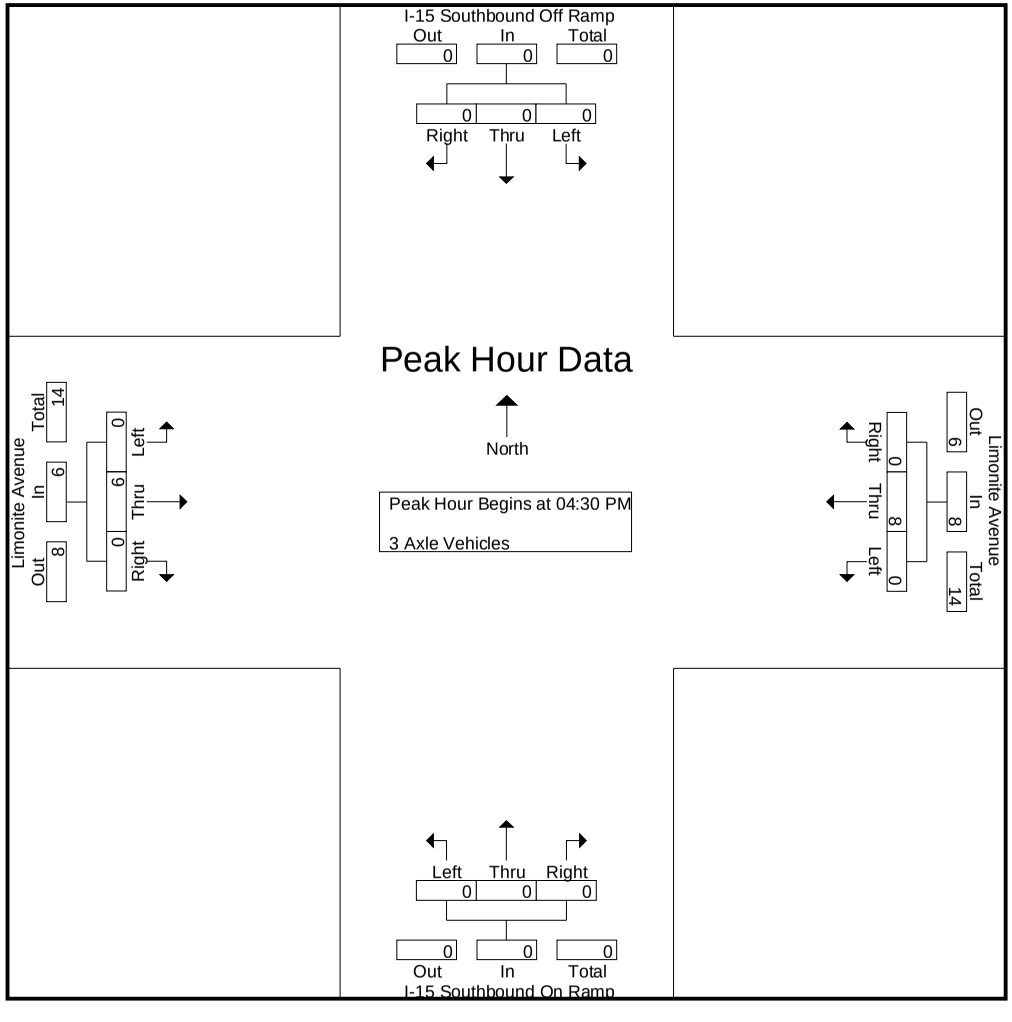
Corona, CA 92878
(951) 268-6268

City of Eastvale
N/S: I-15 Southbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 26_ESV_15S_Limonite PM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 2



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(951) 268-6268

City of Eastvale
N/S: I-15 Southbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 26_ESV_15S_Limonite PM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 1

Groups Printed- 4+ Axle Trucks

	I-15 Southbound Off Ramp Southbound					Limonite Avenue Westbound					I-15 Southbound On Ramp Northbound					Limonite Avenue Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	1	0	0	0	1	3	0	0	0	3	0	0	0	0	0	0	3	0	0	3	0	7	7
04:15 PM	0	0	1	0	1	2	0	0	0	2	0	0	0	0	0	0	2	0	0	2	0	5	5
04:30 PM	2	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	6	6
04:45 PM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	3	3
Total	3	0	4	0	7	6	0	0	0	6	0	0	0	0	0	0	8	0	0	8	0	21	21
05:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	3	3
05:15 PM	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	3	3
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3	0	3	3
Total	0	0	2	2	2	0	2	0	0	2	0	0	0	0	0	0	6	1	0	7	2	11	13
Grand Total	3	0	6	2	9	6	2	0	0	8	0	0	0	0	0	0	14	1	0	15	2	32	34
Apprch %	33.3	0	66.7			75	25	0			0	0	0			0	93.3	6.7					
Total %	9.4	0	18.8		28.1	18.8	6.2	0		25	0	0	0		0	0	43.8	3.1		46.9	5.9	94.1	

3.1-310

	I-15 Southbound Off Ramp Southbound				Limonite Avenue Westbound				I-15 Southbound On Ramp Northbound				Limonite Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**2**	0	**2**	**4**	0	0	0	0	0	0	0	0	0	**2**	0	**2**	**6**
04:45 PM	0	0	1	1	**1**	0	0	1	0	0	0	0	0	1	0	1	3
05:00 PM	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	1	0	1	3
05:15 PM	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	2	0	5	7	1	2	0	3	0	0	0	0	0	4	0	4	14
% App. Total	28.6	0	71.4		33.3	66.7	0		0	0	0		0	100	0		
PHF	.250	.000	.625	.438	.250	.250	.000	.375	.000	.000	.000	.000	.000	.500	.000	.500	.583

Counts Unlimited
PO Box 1178
Corona, CA 92878
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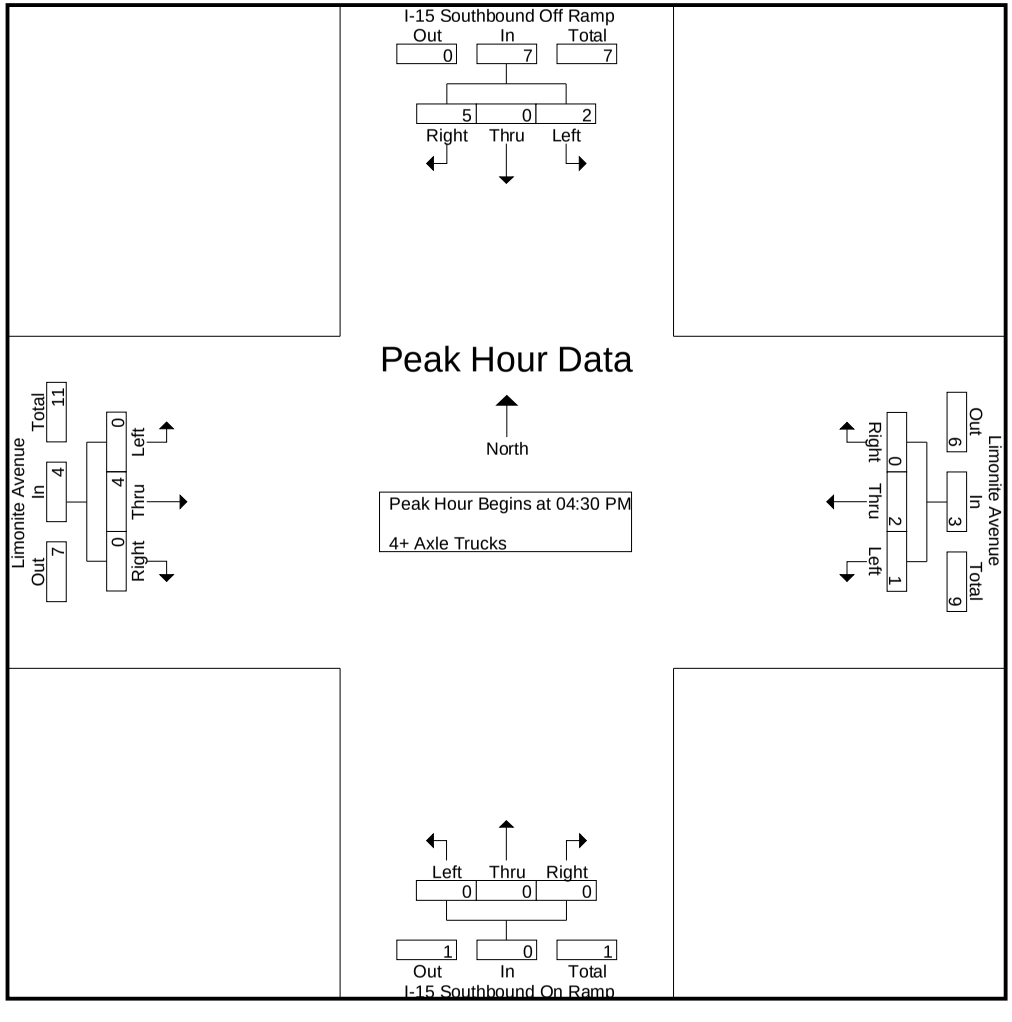
City of Eastvale
N/S: I-15 Southbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 26_ESV_15S_Limonite PM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 2



Location: Eastvale
N/S: I-15 Southbound Ramps
E/W: Limonite Avenue

Date: 4/12/2018
Day: Thursday

PEDESTRIANS

	North Leg I-15 Southbound Ramps	East Leg Limonite Avenue	South Leg I-15 Southbound Ramps	West Leg Limonite Avenue	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	0	1	0	1
7:15 AM	1	0	0	0	1
7:30 AM	0	0	0	0	0
7:45 AM	1	0	0	0	1
8:00 AM	1	0	0	0	1
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	3	0	1	0	4

	North Leg I-15 Southbound Ramps	East Leg Limonite Avenue	South Leg I-15 Southbound Ramps	West Leg Limonite Avenue	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

Location: Eastvale
N/S: I-15 Southbound Ramps
E/W: Limonite Avenue

Date: 4/12/2018
Day: Thursday

BICYCLES

	Southbound I-15 Southbound Ramps			Westbound Limonite Avenue			Northbound I-15 Southbound Ramps			Eastbound Limonite Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	3	0	0	0	0	0	1	0	4

	Southbound I-15 Southbound Ramps			Westbound Limonite Avenue			Northbound I-15 Southbound Ramps			Eastbound Limonite Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

T1218

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
Wed, Jan 30, 19	NORTH & SOUTH:	I-15 NB Ramps	LOCATION #:	68
	EAST & WEST:	Cantu-Galleano Ranch	CONTROL:	SIGNAL

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

Add U-Turns to Left Turns

	NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Cantu-Galleano Ranch			WESTBOUND Cantu-Galleano Ranch			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	X	1.5	X	X	X	X	3	1	2	3	X	
AM 7:00 AM	58	0	37	0	0	0	0	76	178	85	93	0	527
7:15 AM	67	0	40	0	0	0	0	81	227	76	102	0	593
7:30 AM	45	0	70	0	0	0	0	88	180	79	109	0	571
7:45 AM	49	0	83	0	0	0	0	108	121	56	59	0	476
8:00 AM	35	0	72	0	0	0	0	103	116	49	82	0	457
8:15 AM	48	0	72	0	0	0	0	82	130	51	59	0	442
8:30 AM	51	0	51	0	0	0	0	101	130	64	58	0	455
8:45 AM	32	0	39	0	0	0	0	97	104	67	53	0	392
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	385	0	464	0	0	0	0	736	1,186	527	615	0	3,913
APPROACH %	45%	0%	55%	0%	0%	0%	0%	38%	62%	46%	54%	0%	
APP/DEPART	849	/	0	0	/	1,713	1,922	/	1,200	1,142	/	1,000	0
BEGIN PEAK HR		7:00 AM											
VOLUMES	219	0	230	0	0	0	0	353	706	296	363	0	2,167
APPROACH %	49%	0%	51%	0%	0%	0%	0%	33%	67%	45%	55%	0%	
PEAK HR FACTOR		0.850			0.000			0.860			0.876		0.914
APP/DEPART	449	/	0	0	/	1,002	1,059	/	583	659	/	582	0
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	39	0	37	0	0	0	0	118	166	53	82	0	495
4:15 PM	42	0	35	0	0	0	0	114	173	71	70	0	505
4:30 PM	34	0	36	0	0	0	0	141	147	62	105	0	525
4:45 PM	33	0	38	0	0	0	0	147	189	59	88	0	554
5:00 PM	26	0	46	0	0	0	0	128	174	66	153	0	593
5:15 PM	39	0	52	0	0	0	0	127	166	55	157	0	596
5:30 PM	53	0	37	0	0	0	0	148	179	68	144	0	629
5:45 PM	63	0	49	0	0	0	0	124	132	53	151	0	572
VOLUMES	329	0	330	0	0	0	0	1,047	1,326	487	950	0	4,469
APPROACH %	50%	0%	50%	0%	0%	0%	0%	44%	56%	34%	66%	0%	
APP/DEPART	659	/	0	0	/	1,813	2,373	/	1,377	1,437	/	1,279	0
BEGIN PEAK HR		5:00 PM											
VOLUMES	181	0	184	0	0	0	0	527	651	242	605	0	2,390
APPROACH %	50%	0%	50%	0%	0%	0%	0%	45%	55%	29%	71%	0%	
PEAK HR FACTOR		0.815			0.000			0.901			0.967		0.950
APP/DEPART	365	/	0	0	/	893	1,178	/	711	847	/	786	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES	0	0	0	0		0	X	0	X
7:00 AM	0	0	0	0	0	25	0	85	0
7:15 AM	0	0	0	0	0	15	0	100	0
7:30 AM	0	0	0	0	0	40	0	77	0
7:45 AM	0	0	0	0	0	54	0	42	0
8:00 AM	0	0	0	0	0	39	0	38	0
8:15 AM	0	0	0	0	0	34	0	70	0
8:30 AM	0	0	0	0	0	34	0	69	0
8:45 AM	0	0	0	0	0	28	0	28	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	269	0	509	0
PEAK HR						134	0	304	0
3:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	23	0	39	0
4:15 PM	0	0	0	0	0	21	0	50	0
4:30 PM	0	0	0	0	0	23	0	65	0
4:45 PM	0	0	0	0	0	20	0	31	0
5:00 PM	0	0	0	0	0	27	0	56	0
5:15 PM	0	0	0	0	0	31	0	44	0
5:30 PM	0	0	0	0	0	18	0	66	0
5:45 PM	0	0	0	0	0	22	0	39	0
VOLUMES	0	0	0	0	0	185	0	390	0
PEAK HR						98	0	205	0

I-15 NB Ramps

NORTH SIDE

Cantu-Galleano Ranch WEST SIDE

EAST SIDE **Cantu-Galleano Ranch**

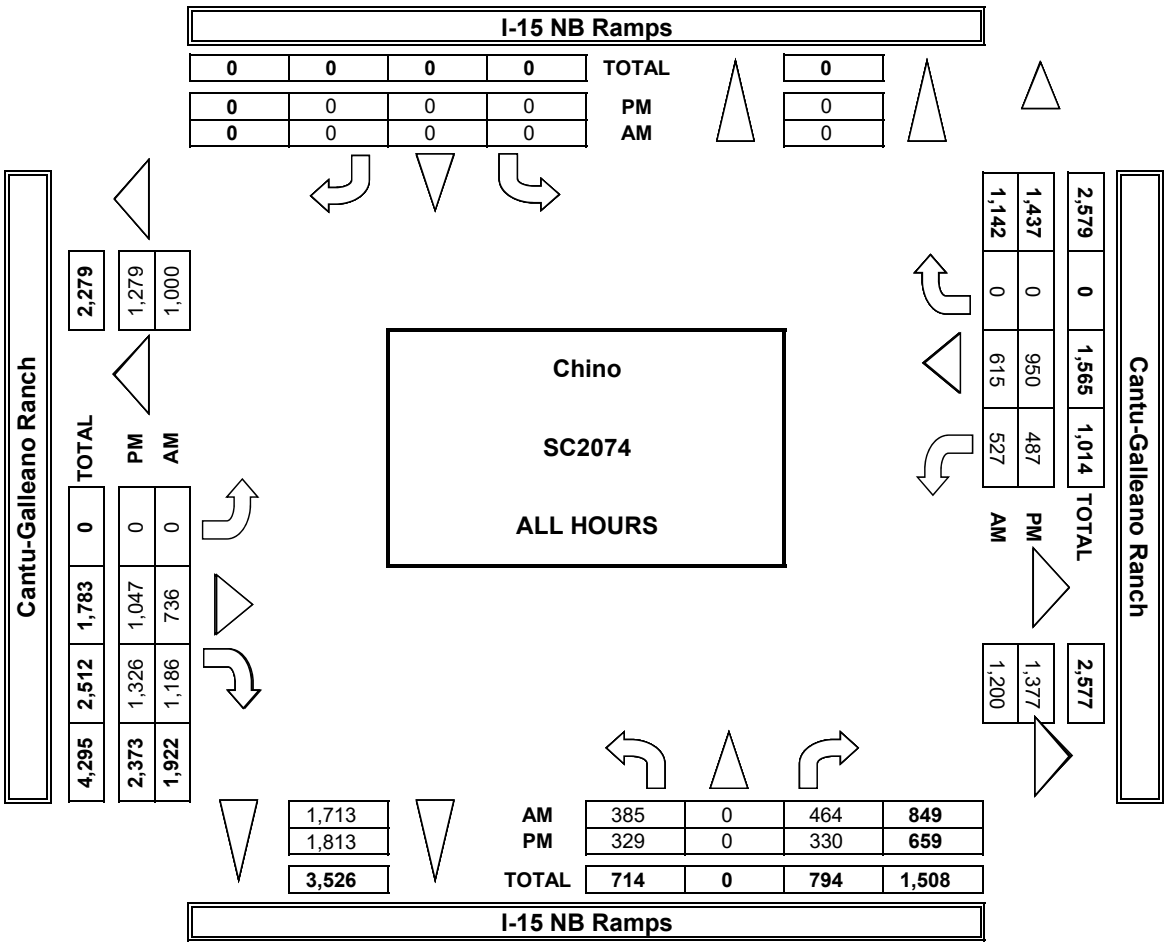
SOUTH SIDE

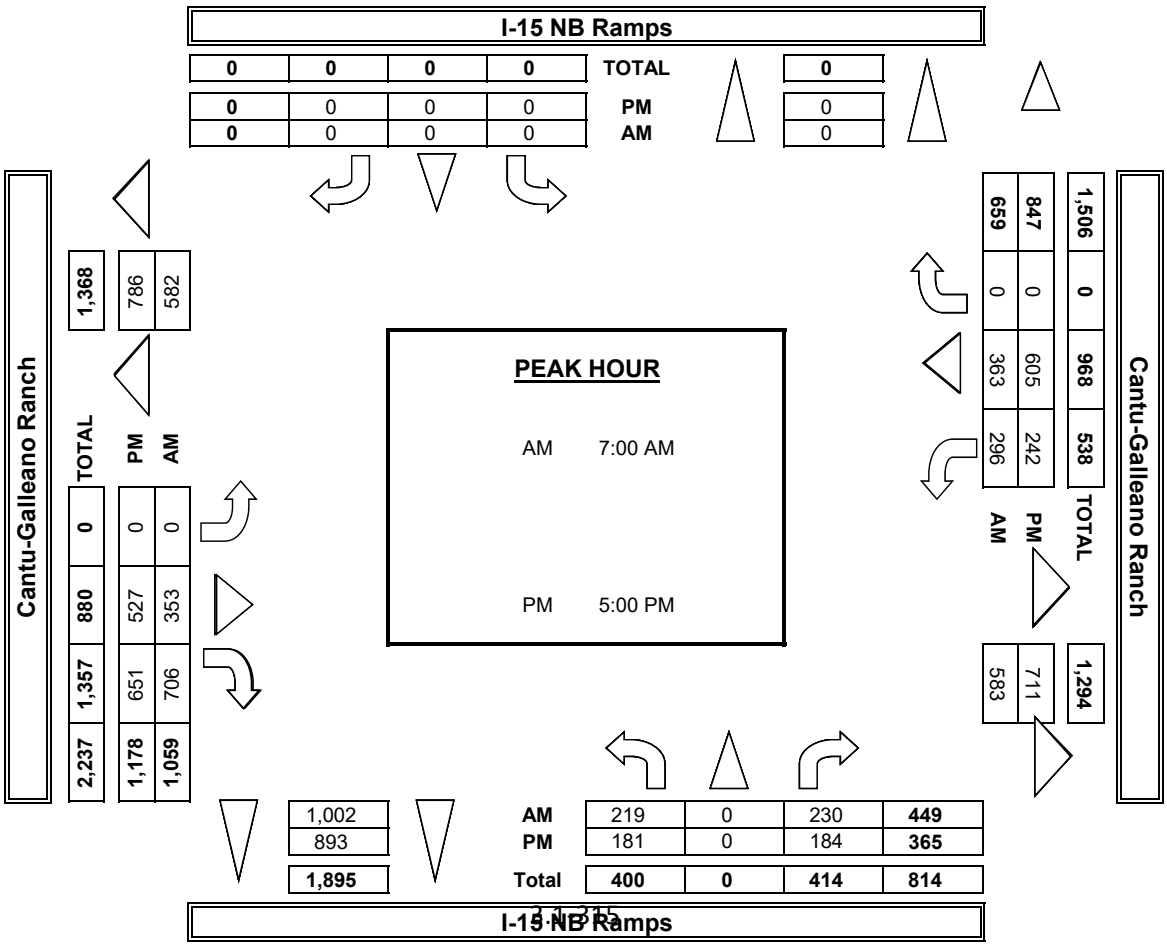
I-15 NB Ramps

	ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	I-15 NB Ramps	LOCATION #:	68
WEDNESDAY	EAST & WEST:	Cantu-Galleano Ranch	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

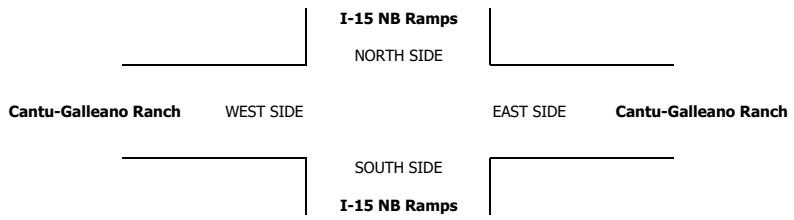
	NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Cantu-Galleano Ranch			WESTBOUND Cantu-Galleano Ranch			
LANES:	NL 1.5	NT X	NR 1.5	SL X	ST X	SR X	EL X	ET 3	ER 1	WL 2	WT 3	WR X	TOTAL
7:00 AM	4	0	3	0	0	0	0	11	6	6	7	0	37
7:15 AM	3	0	0	0	0	0	0	4	9	1	8	0	25
7:30 AM	3	0	2	0	0	0	0	1	7	1	5	0	19
7:45 AM	6	0	8	0	0	0	0	2	6	4	3	0	29
8:00 AM	3	0	5	0	0	0	0	3	2	2	11	0	26
8:15 AM	5	0	5	0	0	0	0	1	8	1	3	0	23
8:30 AM	6	0	3	0	0	0	0	4	6	5	7	0	31
8:45 AM	0	0	3	0	0	0	0	6	5	7	7	0	28
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	30	0	29	0	0	0	0	32	49	27	51	0	218
APPROACH %	51%	0%	49%	0%	0%	0%	0%	40%	60%	35%	65%	0%	
APP/DEPART	59	/	0	0	/	76	81	/	61	78	/	81	0
BEGIN PEAK HR	7:00 AM												
VOLUMES	16	0	13	0	0	0	0	18	28	12	23	0	110
APPROACH %	55%	0%	45%	0%	0%	0%	0%	39%	61%	34%	66%	0%	
PEAK HR FACTOR		0.518			0.000			0.676			0.673		0.743
APP/DEPART	29	/	0	0	/	40	46	/	31	35	/	39	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	5	0	4	0	0	0	0	4	9	3	7	0	32
4:15 PM	3	0	1	0	0	0	0	8	8	4	0	0	24
4:30 PM	0	0	1	0	0	0	0	0	10	2	5	0	18
4:45 PM	2	0	2	0	0	0	0	8	11	3	0	0	26
5:00 PM	2	0	5	0	0	0	0	6	9	0	14	0	36
5:15 PM	2	0	5	0	0	0	0	6	8	2	6	0	29
5:30 PM	1	0	3	0	0	0	0	6	7	2	7	0	26
5:45 PM	2	0	3	0	0	0	0	4	3	6	4	0	22
VOLUMES	17	0	24	0	0	0	0	42	65	22	43	0	213
APPROACH %	41%	0%	59%	0%	0%	0%	0%	39%	61%	34%	66%	0%	
APP/DEPART	41	/	0	0	/	87	107	/	66	65	/	60	0
BEGIN PEAK HR	4:45 PM												
VOLUMES	7	0	15	0	0	0	0	26	35	7	27	0	117
APPROACH %	32%	0%	68%	0%	0%	0%	0%	43%	57%	21%	79%	0%	
PEAK HR FACTOR		0.786			0.000			0.803			0.607		0.813
APP/DEPART	22	/	0	0	/	42	61	/	41	34	/	34	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR X	ERR 0	WRR X
2	0	1	0
0	0	5	0
2	0	6	0
7	0	1	0
2	0	0	0
4	0	4	0
2	0	5	0
3	0	3	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
22	0	25	0
11	0	13	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
10	0	18	0
8	0	7	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	I-15 NB Ramps	LOCATION #:	68
WEDNESDAY	EAST & WEST:	Cantu-Galleano Ranch	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (I-15 NB Ramps)			SOUTHBOUND (I-15 NB Ramps)			EASTBOUND (Cantu-Galleano Ranch)			WESTBOUND (Cantu-Galleano Ranch)			
	LANES:	NL 1.5	NT X	NR 1.5	SL X	ST X	SR X	EL X	ET 3	ER 1	WL 2	WT 3	WR X	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	7	2	2	2	0	13
	7:15 AM	0	0	1	0	0	0	0	12	2	3	1	0	19
	7:30 AM	0	0	0	0	0	0	0	8	0	0	2	0	10
	7:45 AM	0	0	1	0	0	0	0	8	2	1	5	0	17
	8:00 AM	0	0	0	0	0	0	0	3	3	0	2	0	8
	8:15 AM	1	0	0	0	0	0	0	5	1	0	1	0	8
	8:30 AM	0	0	0	0	0	0	0	10	4	1	3	0	18
	8:45 AM	0	0	0	0	0	0	0	3	2	0	0	0	5
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	0	2	0	0	0	0	56	16	7	16	0	98
	APPROACH %	33%	0%	67%	0%	0%	0%	0%	78%	22%	30%	70%	0%	
	APP/DEPART	3	/	0	0	/	23	72	/	58	23	/	17	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	0	0	2	0	0	0	0	35	6	6	10	0	59
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	85%	15%	38%	63%	0%	
	PEAK HR FACTOR		0.500			0.000			0.732			0.667		0.776
	APP/DEPART	2	/	0	0	/	12	41	/	37	16	/	10	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	2	0	1	0	3
	4:15 PM	1	0	0	0	0	0	0	8	1	1	0	0	11
	4:30 PM	0	0	0	0	0	0	0	3	2	0	0	0	5
	4:45 PM	0	0	1	0	0	0	0	6	0	2	2	0	11
	5:00 PM	0	0	0	0	0	0	0	6	1	1	0	0	8
	5:15 PM	0	0	0	0	0	0	0	5	0	0	3	0	8
	5:30 PM	0	0	0	0	0	0	0	0	2	1	2	0	5
	5:45 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
	VOLUMES	1	0	1	0	0	0	0	29	8	5	9	0	53
	APPROACH %	50%	0%	50%	0%	0%	0%	0%	78%	22%	36%	64%	0%	
	APP/DEPART	2	/	0	0	/	13	37	/	30	14	/	10	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	1	0	1	0	0	0	0	23	4	4	2	0	35
	APPROACH %	50%	0%	50%	0%	0%	0%	0%	85%	15%	67%	33%	0%	
	PEAK HR FACTOR		0.500			0.000			0.750			0.375		0.795
	APP/DEPART	2	/	0	0	/	8	27	/	24	6	/	3	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR X	ERR 0	WRR X
0	0	0	0
1	0	1	0
0	0	0	0
1	0	0	0
0	0	2	0
0	0	1	0
0	0	4	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
2	0	9	0
2	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	4	0
1	0	2	0

I-15 NB Ramps

NORTH SIDE

Cantu-Galleano Ranch WEST SIDE EAST SIDE **Cantu-Galleano Ranch**

SOUTH SIDE

I-15 NB Ramps

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino	PROJECT #:	SC2074
1/30/19	NORTH & SOUTH:	I-15 NB Ramps	LOCATION #:	68
WEDNESDAY	EAST & WEST:	Cantu-Galleano Ranch	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

		NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Cantu-Galleano Ranch			WESTBOUND Cantu-Galleano Ranch			
	LANES:	NL 1.5	NT X	NR 1.5	SL X	ST X	SR X	EL X	ET 3	ER 1	WL 2	WT 3	WR X	TOTAL
AM	7:00 AM	2	0	3	0	0	0	0	3	7	6	11	0	32
	7:15 AM	4	0	4	0	0	0	0	4	3	1	4	0	20
	7:30 AM	1	0	4	0	0	0	0	11	5	2	15	0	38
	7:45 AM	2	0	0	0	0	0	0	4	5	5	7	0	23
	8:00 AM	2	0	5	0	0	0	0	15	5	5	7	0	39
	8:15 AM	2	0	8	0	0	0	0	8	7	3	6	0	34
	8:30 AM	2	0	5	0	0	0	0	6	6	7	6	0	32
	8:45 AM	2	0	7	0	0	0	0	12	5	7	10	0	43
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	17	0	36	0	0	0	0	63	43	36	66	0	261
	APPROACH %	32%	0%	68%	0%	0%	0%	0%	59%	41%	35%	65%	0%	
	APP/DEPART	53	/	0	0	/	79	106	/	99	102	/	83	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	8	0	25	0	0	0	0	41	23	22	29	0	148
	APPROACH %	24%	0%	76%	0%	0%	0%	0%	64%	36%	43%	57%	0%	
	PEAK HR FACTOR		0.825			0.000			0.800			0.750		0.860
	APP/DEPART	33	/	0	0	/	45	64	/	66	51	/	37	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	3	0	0	0	0	1	11	5	6	0	26
	4:15 PM	4	0	5	0	0	0	0	6	4	5	6	0	30
	4:30 PM	1	0	6	0	0	0	0	3	9	3	10	0	32
	4:45 PM	1	0	2	0	0	0	0	0	4	3	2	0	12
	5:00 PM	1	0	3	0	0	0	0	10	4	5	3	0	26
	5:15 PM	1	0	3	0	0	0	0	12	6	6	3	0	31
	5:30 PM	1	0	5	0	0	0	0	7	2	6	10	0	31
	5:45 PM	0	0	7	0	0	0	0	7	5	4	10	0	33
	VOLUMES	9	0	34	0	0	0	0	46	45	37	50	0	221
	APPROACH %	21%	0%	79%	0%	0%	0%	0%	51%	49%	43%	57%	0%	
	APP/DEPART	43	/	0	0	/	82	91	/	80	87	/	59	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	3	0	18	0	0	0	0	36	17	21	26	0	121
	APPROACH %	14%	0%	86%	0%	0%	0%	0%	68%	32%	45%	55%	0%	
	PEAK HR FACTOR		0.750			0.000			0.736			0.734		0.917
	APP/DEPART	21	/	0	0	/	38	53	/	54	47	/	29	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR X	ERR 0	WRR X
1	0	2	0
2	0	2	0
2	0	1	0
0	0	0	0
2	0	4	0
4	0	2	0
3	0	3	0
4	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
18	0	15	0
13	0	10	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	1	0
1	0	0	0
2	0	2	0
11	0	17	0
5	0	5	0

I-15 NB Ramps

NORTH SIDE

Cantu-Galleano Ranch WEST SIDE EAST SIDE **Cantu-Galleano Ranch**

SOUTH SIDE

I-15 NB Ramps

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Jurupa Valley
N/S: I-15 Northbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 27_JVY_15N_Limonite AM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

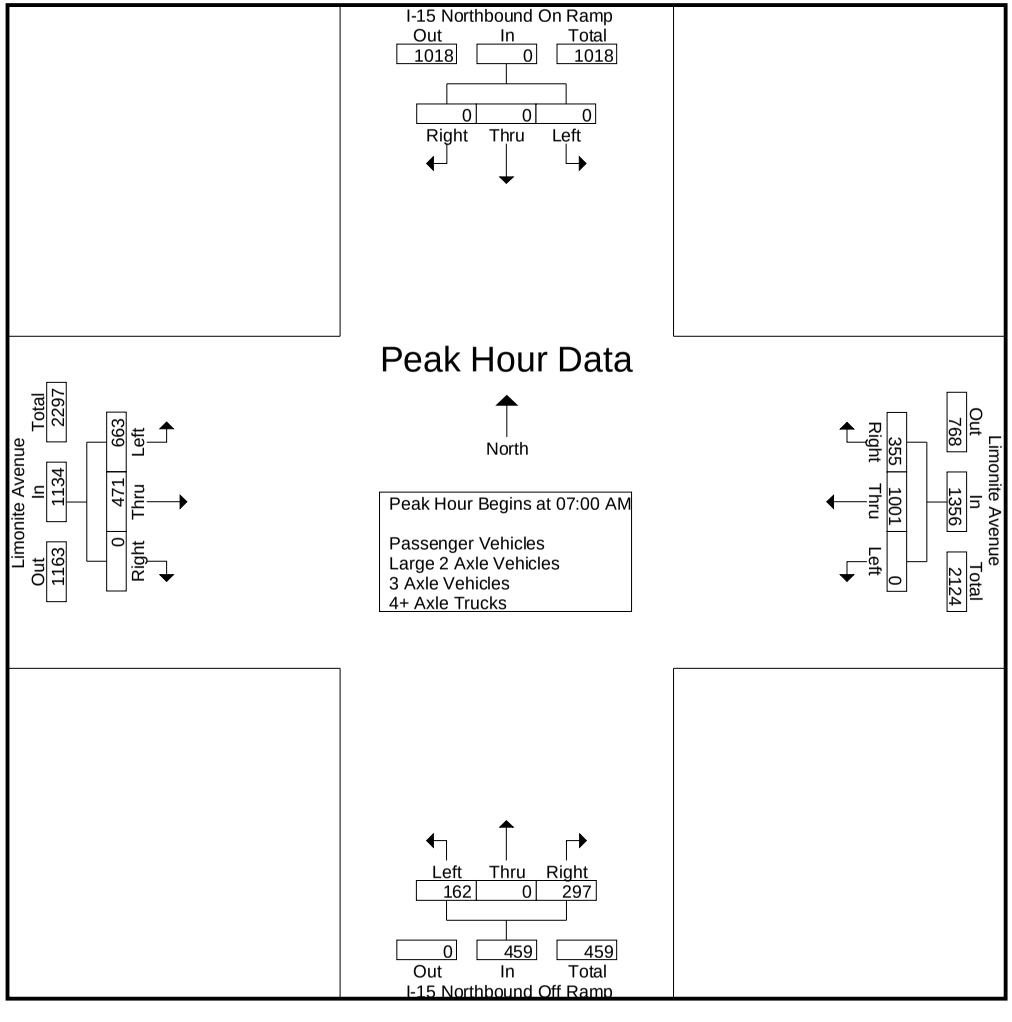
	I-15 Northbound On Ramp Southbound					Limonite Avenue Westbound					I-15 Northbound Off Ramp Northbound					Limonite Avenue Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	245	89	31	334	36	0	49	32	85	177	122	0	0	299	63	718	781
07:15 AM	0	0	0	0	0	0	256	100	27	356	37	0	69	49	106	176	131	0	0	307	76	769	845
07:30 AM	0	0	0	0	0	0	242	88	26	330	39	0	86	59	125	173	113	0	0	286	85	741	826
07:45 AM	0	0	0	0	0	0	258	78	31	336	50	0	93	65	143	137	105	0	0	242	96	721	817
Total	0	0	0	0	0	0	1001	355	115	1356	162	0	297	205	459	663	471	0	0	1134	320	2949	3269
08:00 AM	0	0	0	0	0	0	231	73	25	304	57	0	85	54	142	149	107	0	0	256	79	702	781
08:15 AM	0	0	0	0	0	0	259	70	36	329	64	1	65	47	130	118	102	0	0	220	83	679	762
08:30 AM	0	0	0	0	0	0	232	82	29	314	80	0	76	49	156	154	152	0	0	306	78	776	854
08:45 AM	0	0	0	0	0	0	227	72	26	299	61	0	85	56	146	139	114	0	0	253	82	698	780
Total	0	0	0	0	0	0	949	297	116	1246	262	1	311	206	574	560	475	0	0	1035	322	2855	3177
Grand Total	0	0	0	0	0	0	1950	652	231	2602	424	1	608	411	1033	1223	946	0	0	2169	642	5804	6446
Apprch %	0	0	0			0	74.9	25.1			41	0.1	58.9			56.4	43.6	0					
Total %	0	0	0		0	0	33.6	11.2		44.8	7.3	0	10.5		17.8	21.1	16.3	0		37.4	10	90	
Passenger Vehicles	0	0	0		0	0	1866	624		2711	402	0	586		1386	1181	910	0		2091	0	0	6188
% Passenger Vehicles	0	0	0	0	0	0	95.7	95.7	95.7	95.7	94.8	0	96.4	96.8	96	96.6	96.2	0	0	96.4	0	0	96
Large 2 Axle Vehicles	0	0	0		0	0	63	14		83	11	1	16		40	24	27	0		51	0	0	174
% Large 2 Axle Vehicles	0	0	0	0	0	0	3.2	2.1	2.6	2.9	2.6	100	2.6	2.9	2.8	2	2.9	0	0	2.4	0	0	2.7
3 Axle Vehicles	0	0	0		0	0	9	3		12	4	0	2		6	10	3	0		13	0	0	31
% 3 Axle Vehicles	0	0	0	0	0	0	0.5	0.5	0	0.4	0.9	0	0.3	0	0.4	0.8	0.3	0	0	0.6	0	0	0.5
4+ Axle Trucks	0	0	0		0	0	12	11		27	7	0	4		12	8	6	0		14	0	0	53
% 4+ Axle Trucks	0	0	0	0	0	0	0.6	1.7	1.7	1	1.7	0	0.7	0.2	0.8	0.7	0.6	0	0	0.6	0	0	0.8

	I-15 Northbound On Ramp Southbound				Limonite Avenue Westbound				I-15 Northbound Off Ramp Northbound				Limonite Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	245	89	334	36	0	49	85	**177**	122	0	299	718
07:15 AM	0	0	0	0	0	256	**100**	**356**	37	0	69	106	176	**131**	0	**307**	**769**
07:30 AM	0	0	0	0	0	242	88	330	39	0	86	125	173	113	0	286	741
07:45 AM	0	0	0	0	0	**258**	78	336	**50**	0	**93**	**143**	137	105	0	242	721
Total Volume	0	0	0	0	0	1001	355	1356	162	0	297	459	663	471	0	1134	2949
% App. Total	0	0	0		0	73.8	26.2		35.3	0	64.7		58.5	41.5	0		
PHF	.000	.000	.000	.000	.000	.970	.888	.952	.810	.000	.798	.802	.936	.899	.000	.923	.959

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Jurupa Valley
N/S: I-15 Northbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 27_JVY_15N_Limonite AM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 2



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City of Jurupa Valley
N/S: I-15 Northbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 27_JVY_15N_Limonite AM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 1

Groups Printed- Large 2 Axle Vehicles

	I-15 Northbound On Ramp Southbound					Limonite Avenue Westbound					I-15 Northbound Off Ramp Northbound					Limonite Avenue Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	12	1	1	13	2	0	3	3	5	2	6	0	0	8	4	26	30
07:15 AM	0	0	0	0	0	0	7	3	0	10	1	0	2	1	3	5	4	0	0	9	1	22	23
07:30 AM	0	0	0	0	0	0	9	6	2	15	0	0	0	0	0	3	4	0	0	7	2	22	24
07:45 AM	0	0	0	0	0	0	8	1	1	9	1	0	2	1	3	4	1	0	0	5	2	17	19
Total	0	0	0	0	0	0	36	11	4	47	4	0	7	5	11	14	15	0	0	29	9	87	96
08:00 AM	0	0	0	0	0	0	6	1	0	7	2	0	3	3	5	2	3	0	0	5	3	17	20
08:15 AM	0	0	0	0	0	0	9	1	1	10	2	1	2	2	5	1	3	0	0	4	3	19	22
08:30 AM	0	0	0	0	0	0	7	1	1	8	1	0	3	1	4	3	2	0	0	5	2	17	19
08:45 AM	0	0	0	0	0	0	5	0	0	5	2	0	1	1	3	4	4	0	0	8	1	16	17
Total	0	0	0	0	0	0	27	3	2	30	7	1	9	7	17	10	12	0	0	22	9	69	78
Grand Total	0	0	0	0	0	0	63	14	6	77	11	1	16	12	28	24	27	0	0	51	18	156	174
Apprch %	0	0	0			0	81.8	18.2			39.3	3.6	57.1			47.1	52.9	0					
Total %	0	0	0		0	0	40.4	9		49.4	7.1	0.6	10.3		17.9	15.4	17.3	0		32.7	10.3	89.7	

	I-15 Northbound On Ramp Southbound				Limonite Avenue Westbound				I-15 Northbound Off Ramp Northbound				Limonite Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	**12**	1	13	**2**	0	**3**	**5**	2	**6**	0	8	**26**
07:15 AM	0	0	0	0	0	7	3	10	1	0	2	3	**5**	4	0	**9**	22
07:30 AM	0	0	0	0	0	9	**6**	**15**	0	0	0	0	3	4	0	7	22
07:45 AM	0	0	0	0	0	8	1	9	1	0	2	3	4	1	0	5	17
Total Volume	0	0	0	0	0	36	11	47	4	0	7	11	14	15	0	29	87
% App. Total	0	0	0		0	76.6	23.4		36.4	0	63.6		48.3	51.7	0		
PHF	.000	.000	.000	.000	.000	.750	.458	.783	.500	.000	.583	.550	.700	.625	.000	.806	.837

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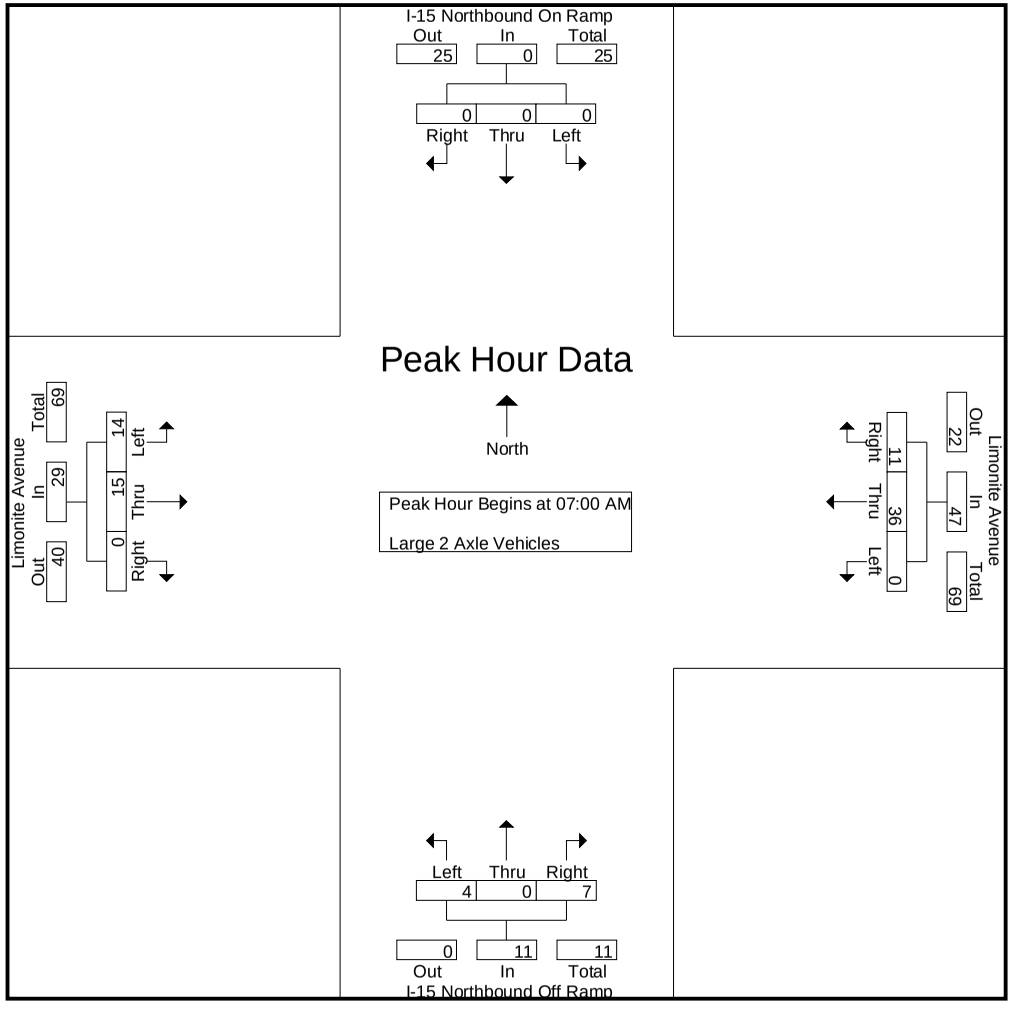
(951) 268-6268

City of Jurupa Valley
N/S: I-15 Northbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 27_JVY_15N_Limonite AM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 2



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City of Jurupa Valley
N/S: I-15 Northbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 27_JVY_15N_Limonite AM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 1

Groups Printed- 3 Axle Vehicles

	I-15 Northbound On Ramp Southbound					Limonite Avenue Westbound					I-15 Northbound Off Ramp Northbound					Limonite Avenue Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	3	0	0	3	1	0	0	0	1	0	0	0	0	0	0	4	4
07:15 AM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	1	0	0	0	1	0	3	3
07:30 AM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	1	0	0	0	1	0	3	3
07:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	1	0	0	3	0	4	4
Total	0	0	0	0	0	0	6	2	0	8	1	0	0	0	1	4	1	0	0	5	0	14	14
08:00 AM	0	0	0	0	0	0	1	0	0	1	1	0	1	0	2	1	0	0	0	1	0	4	4
08:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	2	0	4	4
08:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	1	0	0	0	1	0	3	3
08:45 AM	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	2	2	0	0	4	0	6	6
Total	0	0	0	0	0	0	3	1	0	4	3	0	2	0	5	6	2	0	0	8	0	17	17
Grand Total	0	0	0	0	0	0	9	3	0	12	4	0	2	0	6	10	3	0	0	13	0	31	31
Apprch %	0	0	0			0	75	25			66.7	0	33.3			76.9	23.1	0					
Total %	0	0	0		0	0	29	9.7		38.7	12.9	0	6.5		19.4	32.3	9.7	0		41.9	0	100	

	I-15 Northbound On Ramp Southbound				Limonite Avenue Westbound				I-15 Northbound Off Ramp Northbound				Limonite Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	**3**	0	**3**	**1**	0	0	**1**	0	0	0	0	**4**
07:15 AM	0	0	0	0	0	1	**1**	2	0	0	0	0	1	0	0	1	3
07:30 AM	0	0	0	0	0	1	1	2	0	0	0	0	1	0	0	1	3
07:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	**2**	**1**	0	**3**	4
Total Volume	0	0	0	0	0	6	2	8	1	0	0	1	4	1	0	5	14
% App. Total	0	0	0		0	75	25		100	0	0		80	20	0		
PHF	.000	.000	.000	.000	.000	.500	.500	.667	.250	.000	.000	.250	.500	.250	.000	.417	.875

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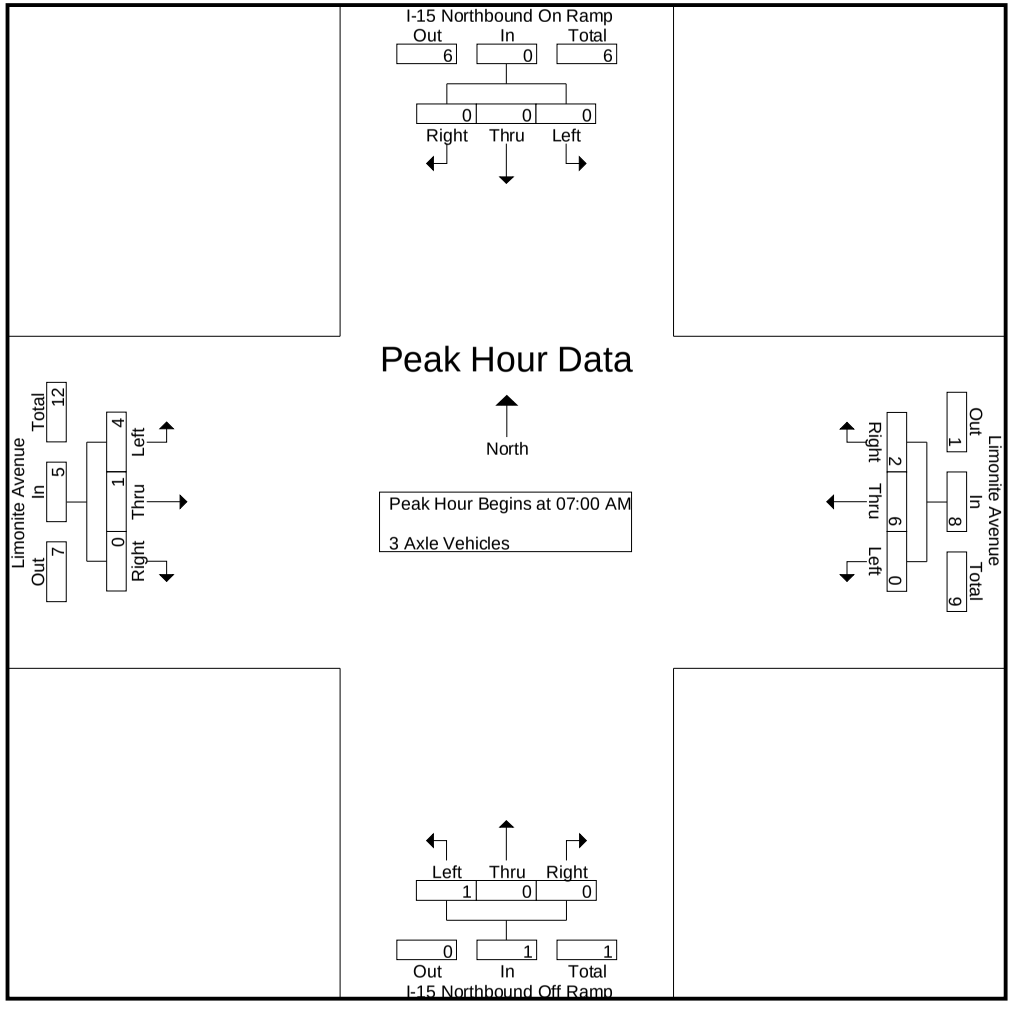
City of Jurupa Valley
N/S: I-15 Northbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 27_JVY_15N_Limonite AM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 2



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(951) 268-6268

City of Jurupa Valley
N/S: I-15 Northbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 27_JVY_15N_Limonite AM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 1

Groups Printed- 4+ Axle Trucks

	I-15 Northbound On Ramp Southbound					Limonite Avenue Westbound					I-15 Northbound Off Ramp Northbound					Limonite Avenue Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	3	2	0	5	1	0	0	0	1	1	0	0	0	1	0	7	7
07:15 AM	0	0	0	0	0	0	1	1	0	2	0	0	1	0	1	1	1	0	0	2	0	5	5
07:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	1	1	1	0	0	0	0	0	1	3	4
07:45 AM	0	0	0	0	0	0	3	3	1	6	0	0	0	0	0	1	1	0	0	2	1	8	9
Total	0	0	0	0	0	0	9	6	1	15	1	0	2	1	3	3	2	0	0	5	2	23	25
08:00 AM	0	0	0	0	0	0	1	1	0	2	2	0	0	0	2	1	1	0	0	2	0	6	6
08:15 AM	0	0	0	0	0	0	0	2	2	2	1	0	0	0	1	1	1	0	0	2	2	5	7
08:30 AM	0	0	0	0	0	0	1	2	1	3	2	0	0	0	2	1	0	0	0	1	1	6	7
08:45 AM	0	0	0	0	0	0	1	0	0	1	1	0	2	0	3	2	2	0	0	4	0	8	8
Total	0	0	0	0	0	0	3	5	3	8	6	0	2	0	8	5	4	0	0	9	3	25	28
Grand Total	0	0	0	0	0	0	12	11	4	23	7	0	4	1	11	8	6	0	0	14	5	48	53
Apprch %	0	0	0			0	52.2	47.8			63.6	0	36.4			57.1	42.9	0					
Total %	0	0	0		0	0	25	22.9		47.9	14.6	0	8.3		22.9	16.7	12.5	0		29.2	9.4	90.6	

3.1-325

	I-15 Northbound On Ramp Southbound				Limonite Avenue Westbound				I-15 Northbound Off Ramp Northbound				Limonite Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	**3**	2	5	**1**	0	0	**1**	**1**	0	0	1	7
07:15 AM	0	0	0	0	0	1	1	2	0	0	**1**	1	1	**1**	0	**2**	5
07:30 AM	0	0	0	0	0	2	0	2	0	0	1	1	0	0	0	0	3
07:45 AM	0	0	0	0	0	3	**3**	**6**	0	0	0	0	1	1	0	2	**8**
Total Volume	0	0	0	0	0	9	6	15	1	0	2	3	3	2	0	5	23
% App. Total	0	0	0		0	60	40		33.3	0	66.7		60	40	0		
PHF	.000	.000	.000	.000	.000	.750	.500	.625	.250	.000	.500	.750	.750	.500	.000	.625	.719

Counts Unlimited
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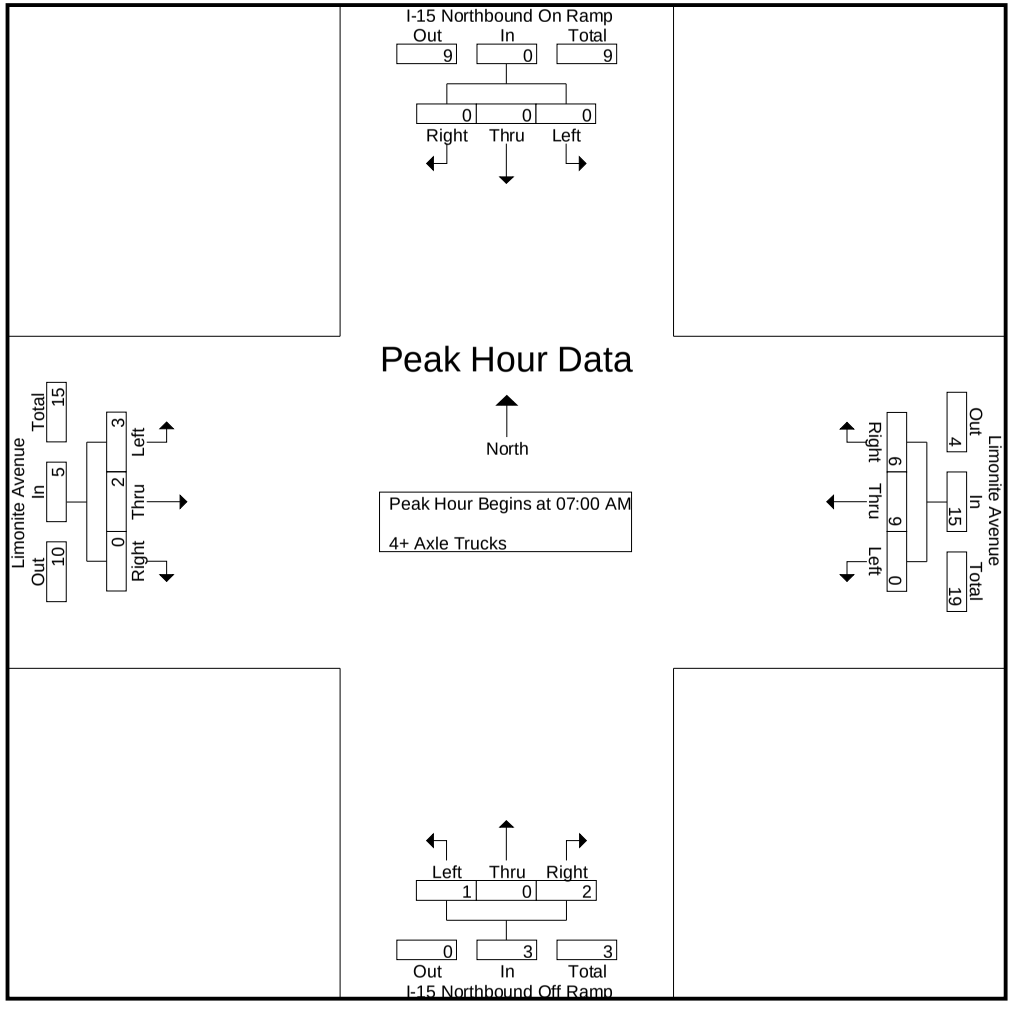
(951) 268-6268

City of Jurupa Valley
N/S: I-15 Northbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 27_JVY_15N_Limonite AM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 2



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Corona, CA 92878
(951) 268-6268

City of Jurupa Valley
N/S: I-15 Northbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 27_JVY_15N_Limonite PM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	I-15 Northbound On Ramp Southbound					Limonite Avenue Westbound					I-15 Northbound Off Ramp Northbound					Limonite Avenue Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	0	0	0	0	0	239	58	30	297	85	2	143	71	230	122	186	0	0	308	101	835	936
04:15 PM	0	0	0	0	0	0	264	55	38	319	67	1	182	73	250	101	193	0	0	294	111	863	974
04:30 PM	0	0	0	0	0	0	245	46	28	291	104	0	161	79	265	108	169	0	0	277	107	833	940
04:45 PM	0	0	0	0	0	0	257	41	19	298	82	1	180	71	263	120	188	0	0	308	90	869	959
Total	0	0	0	0	0	0	1005	200	115	1205	338	4	666	294	1008	451	736	0	0	1187	409	3400	3809
05:00 PM	0	0	0	0	0	0	257	44	17	301	86	1	186	77	273	123	177	0	0	300	94	874	968
05:15 PM	0	0	0	0	0	0	258	48	24	306	89	0	177	80	266	111	192	0	0	303	104	875	979
05:30 PM	0	0	0	0	0	0	263	50	30	313	82	0	179	62	261	75	195	0	0	270	92	844	936
05:45 PM	0	0	0	0	0	0	262	48	29	310	96	0	180	73	276	99	157	0	0	256	102	842	944
Total	0	0	0	0	0	0	1040	190	100	1230	353	1	722	292	1076	408	721	0	0	1129	392	3435	3827
Grand Total	0	0	0	0	0	0	2045	390	215	2435	691	5	1388	586	2084	859	1457	0	0	2316	801	6835	7636
Apprch %	0	0	0			0	84	16			33.2	0.2	66.6			37.1	62.9	0					
Total %	0	0	0		0	0	29.9	5.7		35.6	10.1	0.1	20.3		30.5	12.6	21.3	0		33.9	10.5	89.5	
Passenger Vehicles	0	0	0		0	0	2006	380		2601	685	5	1330		2580	831	1431	0		2262	0	0	7443
% Passenger Vehicles	0	0	0	0	0	0	98.1	97.4	100	98.2	99.1	100	95.8	95.6	96.6	96.7	98.2	0	0	97.7	0	0	97.5
Large 2 Axle Vehicles	0	0	0		0	0	24	6		30	5	0	44		69	15	18	0		33	0	0	132
% Large 2 Axle Vehicles	0	0	0	0	0	0	1.2	1.5	0	1.1	0.7	0	3.2	3.4	2.6	1.7	1.2	0	0	1.4	0	0	1.7
3 Axle Vehicles	0	0	0		0	0	5	0		5	0	0	7		8	2	2	0		4	0	0	17
% 3 Axle Vehicles	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0.5	0.2	0.3	0.2	0.1	0	0	0.2	0	0	0.2
4+ Axle Trucks	0	0	0		0	0	10	4		14	1	0	7		13	11	6	0		17	0	0	44
% 4+ Axle Trucks	0	0	0	0	0	0	0.5	1	0	0.5	0.1	0	0.5	0.9	0.5	1.3	0.4	0	0	0.7	0	0	0.6

	I-15 Northbound On Ramp Southbound				Limonite Avenue Westbound				I-15 Northbound Off Ramp Northbound				Limonite Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	257	41	298	82	**1**	180	263	120	188	0	**308**	869
05:00 PM	0	0	0	0	0	257	44	301	86	1	**186**	**273**	**123**	177	0	300	874
05:15 PM	0	0	0	0	0	258	48	306	**89**	0	177	266	111	192	0	303	**875**
05:30 PM	0	0	0	0	0	**263**	**50**	**313**	82	0	179	261	75	**195**	0	270	844
Total Volume	0	0	0	0	0	1035	183	1218	339	2	722	1063	429	752	0	1181	3462
% App. Total	0	0	0		0	85	15		31.9	0.2	67.9		36.3	63.7	0		
PHF	.000	.000	.000	.000	.000	.984	.915	.973	.952	.500	.970	.973	.872	.964	.000	.959	.989

3-15-337

Counts Unlimited
PO Box 1178
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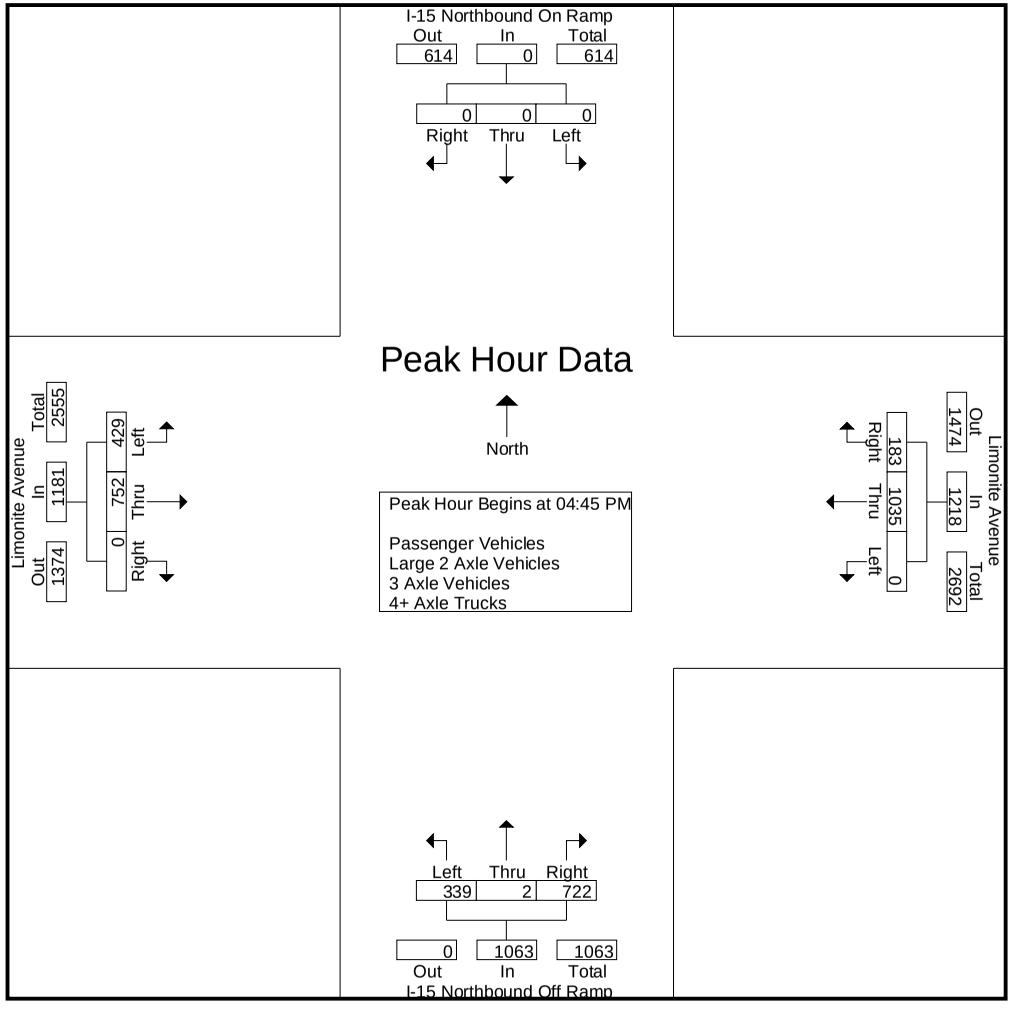
(951) 268-6268

City of Jurupa Valley
N/S: I-15 Northbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 27_JVY_15N_Limonite PM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 2



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(951) 268-6268

City of Jurupa Valley
N/S: I-15 Northbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 27_JVY_15N_Limonite PM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 1

Groups Printed- Large 2 Axle Vehicles

	I-15 Northbound On Ramp Southbound					Limonite Avenue Westbound					I-15 Northbound Off Ramp Northbound					Limonite Avenue Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	0	0	0	0	0	4	1	0	5	1	0	5	1	6	4	4	0	0	8	1	19	20
04:15 PM	0	0	0	0	0	0	1	2	0	3	0	0	6	2	6	3	2	0	0	5	2	14	16
04:30 PM	0	0	0	0	0	0	2	1	0	3	2	0	4	2	6	0	2	0	0	2	2	11	13
04:45 PM	0	0	0	0	0	0	6	1	0	7	0	0	4	2	4	2	2	0	0	4	2	15	17
Total	0	0	0	0	0	0	13	5	0	18	3	0	19	7	22	9	10	0	0	19	7	59	66
05:00 PM	0	0	0	0	0	0	3	0	0	3	0	0	10	6	10	1	2	0	0	3	6	16	22
05:15 PM	0	0	0	0	0	0	2	1	0	3	0	0	6	3	6	1	2	0	0	3	3	12	15
05:30 PM	0	0	0	0	0	0	3	0	0	3	0	0	3	3	3	2	2	0	0	4	3	10	13
05:45 PM	0	0	0	0	0	0	3	0	0	3	2	0	6	1	8	2	2	0	0	4	1	15	16
Total	0	0	0	0	0	0	11	1	0	12	2	0	25	13	27	6	8	0	0	14	13	53	66
Grand Total	0	0	0	0	0	0	24	6	0	30	5	0	44	20	49	15	18	0	0	33	20	112	132
Apprch %	0	0	0			0	80	20			10.2	0	89.8			45.5	54.5	0					
Total %	0	0	0		0	0	21.4	5.4		26.8	4.5	0	39.3		43.8	13.4	16.1	0		29.5	15.2	84.8	

	I-15 Northbound On Ramp Southbound				Limonite Avenue Westbound				I-15 Northbound Off Ramp Northbound				Limonite Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	**6**	**1**	**7**	0	0	4	4	**2**	**2**	0	**4**	15
05:00 PM	0	0	0	0	0	3	0	3	0	0	**10**	**10**	1	2	0	3	**16**
05:15 PM	0	0	0	0	0	2	1	3	0	0	6	6	1	2	0	3	12
05:30 PM	0	0	0	0	0	3	0	3	0	0	3	3	2	2	0	4	10
Total Volume	0	0	0	0	0	14	2	16	0	0	23	23	6	8	0	14	53
% App. Total	0	0	0		0	87.5	12.5		0	0	100		42.9	57.1	0		
PHF	.000	.000	.000	.000	.000	.583	.500	.571	.000	.000	.575	.575	.750	1.00	.000	.875	.828

Counts Unlimited
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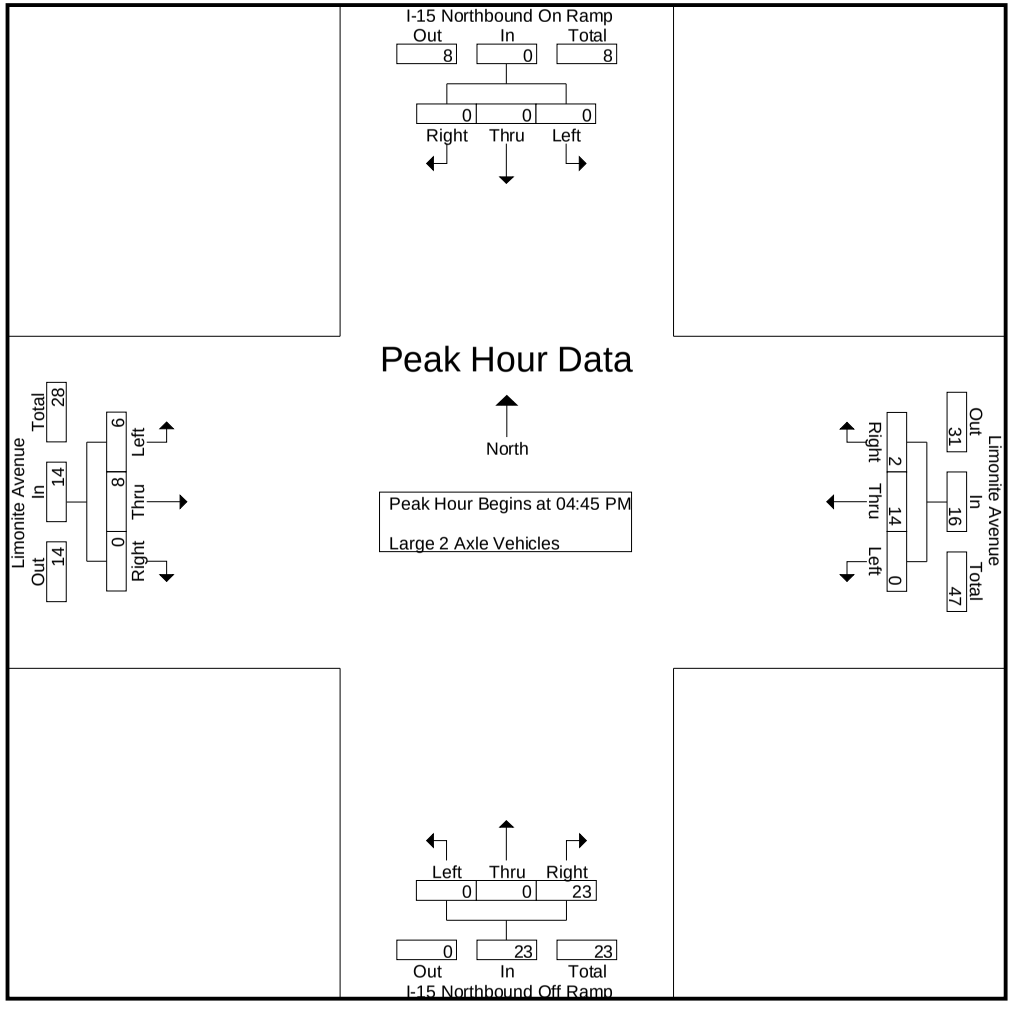
City of Jurupa Valley
N/S: I-15 Northbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 27_JVY_15N_Limonite PM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 2



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City of Jurupa Valley
N/S: I-15 Northbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 27_JVY_15N_Limonite PM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 1

Groups Printed- 3 Axle Vehicles

	I-15 Northbound On Ramp Southbound					Limonite Avenue Westbound					I-15 Northbound Off Ramp Northbound					Limonite Avenue Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	1	1	0	0	2	0	5	5
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	3	3
Total	0	0	0	0	0	0	3	0	0	3	0	0	3	0	3	1	2	0	0	3	0	9	9
05:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	0	2	2
05:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	1	1	1	0	0	0	0	0	1	2	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	0	2	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	0	2	0	0	2	0	0	4	1	4	1	0	0	0	1	1	7	8
Grand Total	0	0	0	0	0	0	5	0	0	5	0	0	7	1	7	2	2	0	0	4	1	16	17
Apprch %	0	0	0			0	100	0			0	0	100			50	50	0					
Total %	0	0	0		0	0	31.2	0		31.2	0	0	43.8		43.8	12.5	12.5	0		25	5.9	94.1	

	I-15 Northbound On Ramp Southbound				Limonite Avenue Westbound				I-15 Northbound Off Ramp Northbound				Limonite Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	0	0	0	0	**3**	**3**	0	0	0	0	**3**
05:00 PM	0	0	0	0	0	**1**	0	**1**	0	0	1	1	0	0	0	0	2
05:15 PM	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	1	1	**1**	0	0	**1**	2
Total Volume	0	0	0	0	0	2	0	2	0	0	6	6	1	0	0	1	9
% App. Total	0	0	0		0	100	0		0	0	100		100	0	0		
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.500	.500	.250	.000	.000	.250	.750

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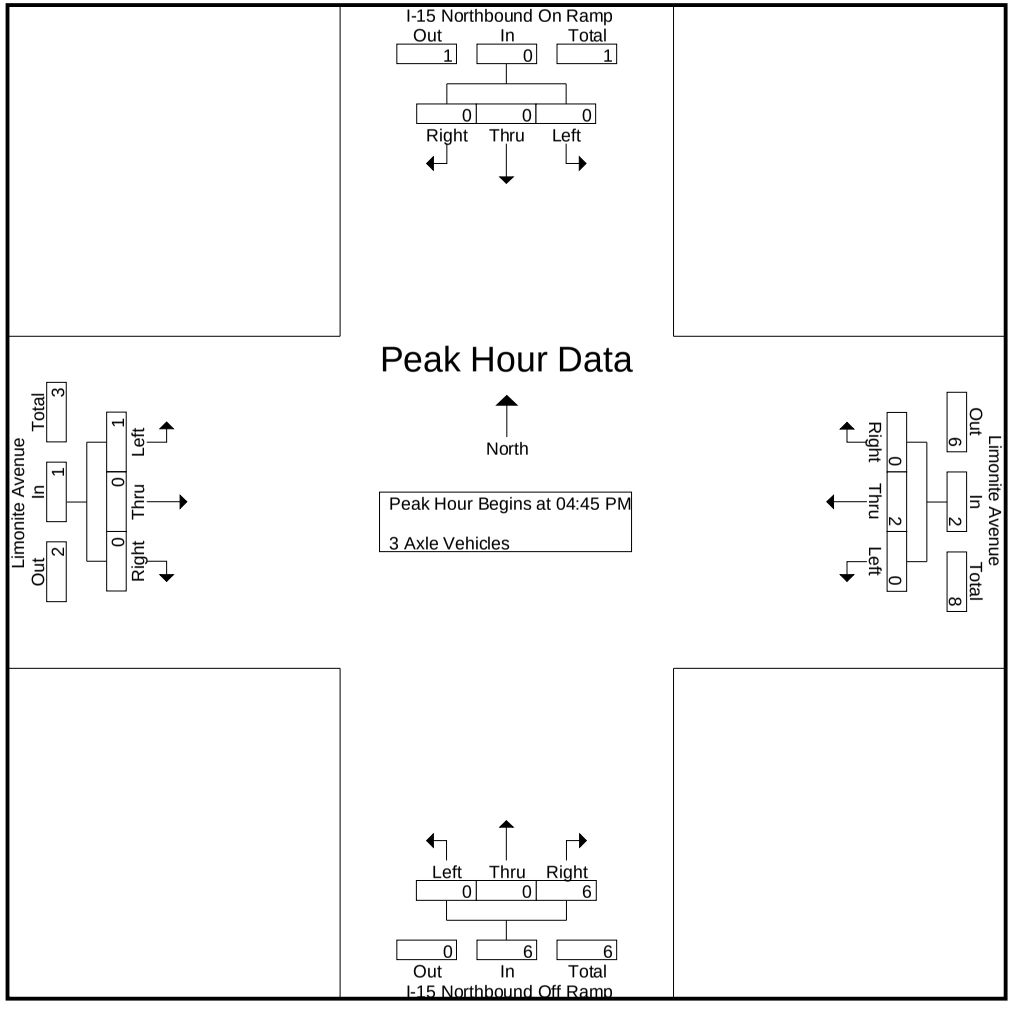
City of Jurupa Valley
N/S: I-15 Northbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 27_JVY_15N_Limonite PM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 2



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City of Jurupa Valley
N/S: I-15 Northbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 27_JVY_15N_Limonite PM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 1

Groups Printed- 4+ Axle Trucks

	I-15 Northbound On Ramp Southbound					Limonite Avenue Westbound					I-15 Northbound Off Ramp Northbound					Limonite Avenue Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	0	0	0	0	0	3	2	0	5	0	0	1	0	1	3	1	0	0	4	0	10	10
04:15 PM	0	0	0	0	0	0	3	1	0	4	0	0	1	1	1	1	1	0	0	2	1	7	8
04:30 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	2	2	0	0	4	0	7	7
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	1	2	3
Total	0	0	0	0	0	0	9	3	0	12	0	0	3	2	3	7	4	0	0	11	2	26	28
05:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	1	2	0	2	0	0	2	1	4	5
05:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	1	1	1	0	0	0	0	0	1	2	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	2	0	0	0	2	1	4	5
05:45 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	0	0	2	0	3	3
Total	0	0	0	0	0	0	1	1	0	2	1	0	4	3	5	4	2	0	0	6	3	13	16
Grand Total	0	0	0	0	0	0	10	4	0	14	1	0	7	5	8	11	6	0	0	17	5	39	44
Apprch %	0	0	0			0	71.4	28.6			12.5	0	87.5			64.7	35.3	0					
Total %	0	0	0		0	0	25.6	10.3		35.9	2.6	0	17.9		20.5	28.2	15.4	0		43.6	11.4	88.6	

	I-15 Northbound On Ramp Southbound				Limonite Avenue Westbound				I-15 Northbound Off Ramp Northbound				Limonite Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	2
05:00 PM	0	0	0	0	0	0	0	0	**1**	0	1	**2**	0	**2**	0	**2**	**4**
05:15 PM	0	0	0	0	0	**1**	0	**1**	0	0	1	1	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	**2**	2	**2**	0	0	2	4
Total Volume	0	0	0	0	0	1	0	1	1	0	5	6	3	2	0	5	12
% App. Total	0	0	0		0	100	0		16.7	0	83.3		60	40	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.250	.000	.625	.750	.375	.250	.000	.625	.750

Counts Unlimited
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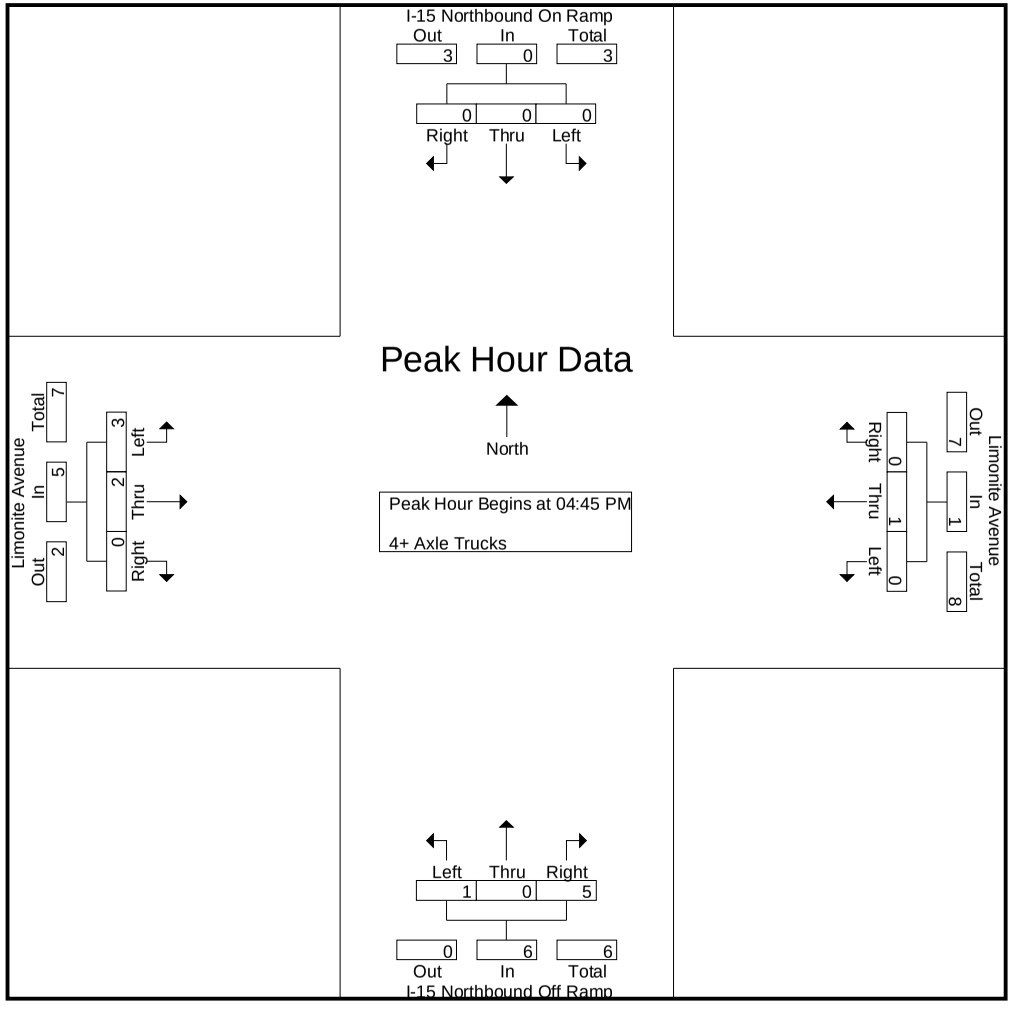
City of Jurupa Valley
N/S: I-15 Northbound Ramps
E/W: Limonite Avenue
Weather: Clear

File Name : 27_JVY_15N_Limonite PM
Site Code : 05118278
Start Date : 4/12/2018
Page No : 2



Location: Jurupa Valley
N/S: I-15 Northbound Ramps
E/W: Limonite Avenue

Date: 4/12/2018
Day: Thursday

PEDESTRIANS

	North Leg I-15 Northbound Ramps	East Leg Limonite Avenue	South Leg I-15 Northbound Ramps	West Leg Limonite Avenue	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0

	North Leg I-15 Northbound Ramps	East Leg Limonite Avenue	South Leg I-15 Northbound Ramps	West Leg Limonite Avenue	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	0	0	0
4:15 PM	1	0	0	0	1
4:30 PM	0	0	0	0	0
4:45 PM	1	0	0	0	1
5:00 PM	1	0	0	0	1
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	3	0	0	0	3

Location: Jurupa Valley
N/S: I-15 Northbound Ramps
E/W: Limonite Avenue

Date: 4/12/2018
Day: Thursday

BICYCLES

	Southbound I-15 Northbound Ramps			Westbound Limonite Avenue			Northbound I-15 Northbound Ramps			Eastbound Limonite Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	2	0	0	0	0	0	0	0	2

	Southbound I-15 Northbound Ramps			Westbound Limonite Avenue			Northbound I-15 Northbound Ramps			Eastbound Limonite Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	1	0	0	0	0	0	2	0	3
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	3	0	0	0	0	0	2	0	5

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, January 29, 2019 **CITY:** Chino

JOB #: SC2074 **LOCATION:** Central south of Edison

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	25	0	0	0	0	0	25	12:00	189	21	2	5	0	1	218
0:15	15	0	0	2	0	0	17	12:15	201	19	3	10	0	2	235
0:30	22	0	0	0	0	0	22	12:30	194	19	3	2	0	5	223
0:45	15	0	0	0	0	0	15	12:45	150	21	3	13	0	3	190
1:00	6	1	1	1	0	0	9	13:00	211	19	3	5	0	2	240
1:15	16	0	0	0	0	0	16	13:15	189	16	1	6	0	2	214
1:30	12	1	0	0	0	0	13	13:30	235	22	3	4	0	3	267
1:45	11	2	0	0	0	0	13	13:45	250	20	3	10	0	4	287
2:00	20	1	0	0	0	0	21	14:00	269	20	5	11	0	3	308
2:15	13	0	0	1	0	0	14	14:15	206	15	2	7	0	1	231
2:30	10	0	1	1	0	0	12	14:30	287	22	2	7	0	3	321
2:45	11	0	0	4	0	0	15	14:45	288	17	3	4	0	4	316
3:00	6	1	0	1	0	0	8	15:00	257	26	6	8	0	3	300
3:15	10	0	1	1	0	0	12	15:15	263	26	6	11	0	2	308
3:30	8	0	0	0	0	0	8	15:30	234	25	2	4	0	2	267
3:45	18	0	0	0	0	0	18	15:45	329	21	3	7	0	2	362
4:00	17	0	0	0	0	0	17	16:00	313	22	3	8	0	6	352
4:15	29	0	0	0	0	0	29	16:15	317	12	0	3	0	3	335
4:30	26	5	0	3	0	0	34	16:30	290	18	1	6	0	1	316
4:45	39	3	0	0	0	0	42	16:45	288	15	1	7	0	1	312
5:00	42	2	0	4	0	0	48	17:00	323	18	1	5	0	6	353
5:15	33	2	0	0	0	0	35	17:15	311	14	0	5	0	4	334
5:30	35	3	0	0	0	0	38	17:30	306	9	3	3	0	1	322
5:45	94	5	1	1	0	0	101	17:45	294	11	1	4	0	1	311
6:00	118	4	1	3	0	0	126	18:00	291	10	2	3	0	0	306
6:15	109	11	0	2	0	0	122	18:15	253	11	0	0	0	0	264
6:30	111	10	3	1	0	3	128	18:30	206	12	0	2	0	1	221
6:45	119	9	0	0	0	4	132	18:45	192	5	0	5	0	0	202
7:00	188	16	0	2	0	1	207	19:00	190	2	1	3	0	0	196
7:15	220	7	1	3	0	1	232	19:15	191	2	0	0	0	0	193
7:30	261	17	1	1	0	1	281	19:30	151	4	0	3	0	1	159
7:45	257	16	0	4	0	6	283	19:45	159	4	0	1	0	0	164
8:00	208	14	1	4	0	2	229	20:00	147	2	1	1	0	0	151
8:15	222	13	1	4	1	3	244	20:15	131	2	0	0	0	0	133
8:30	174	12	0	5	0	2	193	20:30	115	2	0	1	0	1	119
8:45	214	26	0	3	0	8	251	20:45	103	2	0	0	0	0	105
9:00	209	16	2	11	1	2	241	21:00	119	3	1	0	0	0	123
9:15	144	10	2	6	0	0	162	21:15	89	1	0	0	0	0	90
9:30	171	15	1	5	0	2	194	21:30	106	0	0	0	0	1	107
9:45	164	14	3	3	0	0	184	21:45	95	0	0	1	0	0	96
10:00	176	11	2	7	0	0	196	22:00	109	1	0	1	0	0	111
10:15	126	8	1	4	0	0	139	22:15	92	1	0	0	0	0	93
10:30	139	27	2	3	0	1	172	22:30	57	2	0	0	0	0	59
10:45	152	16	2	7	0	0	177	22:45	43	0	1	1	0	0	45
11:00	178	26	2	6	0	0	212	23:00	43	2	0	1	0	0	46
11:15	154	19	1	5	0	1	180	23:15	28	1	0	0	0	0	29
11:30	150	21	1	9	0	2	183	23:30	44	1	0	0	0	0	45
11:45	150	23	4	6	0	1	184	23:45	37	0	0	0	0	0	37
TOTAL	4,647	387	35	123	2	40	5,234	**TOTAL**	9,185	518	66	178	0	69	10,016
				AM PEAK HOUR			7:30 AM						**AM PEAK HOUR**		3:45 PM
				AM PEAK VOLUME			1,037						**AM PEAK VOLUME**		1,365

CLASS 1	PASSENGER VEHICLES	**TOTAL: AM+PM**	13,832	905	101	301	2	109	15,250
CLASS 2	2-AXLE TRUCKS	**% OF TOTAL**	90.7%	5.9%	0.7%	2.0%	0.0%	0.7%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV	**TOTAL: ALL**	26,512	1,726	186	563	3	205	29,195
CLASS 6	Buses	**% OF TOTAL**	90.8%	5.9%	0.6%	1.9%	0.0%	0.7%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, January 29, 2019
JOB #: SC2074
CITY: Chino
LOCATION: Central south of Edison

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	18	1	0	0	0	0	19	12:00	151	10	1	7	0	1	170
0:15	15	2	0	0	0	0	17	12:15	182	13	2	9	0	0	206
0:30	16	0	0	0	0	0	16	12:30	140	12	1	5	0	0	158
0:45	9	0	0	0	0	0	9	12:45	170	19	3	5	0	2	199
1:00	6	0	0	0	0	0	6	13:00	186	20	1	2	0	4	213
1:15	9	0	0	0	0	0	9	13:15	207	14	2	2	0	7	232
1:30	6	0	0	2	0	0	8	13:30	165	8	1	6	0	1	181
1:45	8	2	0	0	0	0	10	13:45	201	12	0	2	0	5	220
2:00	6	1	0	0	0	0	7	14:00	170	16	3	1	0	3	193
2:15	8	0	0	3	0	0	11	14:15	163	17	1	5	0	2	188
2:30	10	0	0	1	0	0	11	14:30	193	24	2	11	0	0	230
2:45	10	0	0	1	0	0	11	14:45	189	21	1	8	1	3	223
3:00	9	1	0	1	0	0	11	15:00	237	13	2	10	0	2	264
3:15	22	0	0	0	0	0	22	15:15	217	16	2	6	0	1	242
3:30	30	2	1	2	0	0	35	15:30	198	16	2	8	0	2	226
3:45	73	0	0	0	0	0	73	15:45	227	17	2	4	0	1	251
4:00	73	0	1	1	0	0	75	16:00	238	14	1	3	0	1	257
4:15	59	0	0	1	0	0	60	16:15	240	12	1	3	0	2	258
4:30	70	1	0	2	0	0	73	16:30	216	13	0	1	0	0	230
4:45	140	4	1	0	0	0	145	16:45	257	12	1	1	0	1	272
5:00	96	3	1	4	0	0	104	17:00	244	15	0	1	0	2	262
5:15	113	7	0	2	0	0	122	17:15	217	15	0	3	0	2	237
5:30	180	12	2	3	0	0	197	17:30	210	10	2	1	0	0	223
5:45	285	10	2	2	0	0	299	17:45	203	7	1	1	0	1	213
6:00	169	11	0	0	0	4	184	18:00	235	0	0	5	0	2	242
6:15	136	9	0	6	0	6	157	18:15	194	3	0	4	0	0	201
6:30	179	15	2	1	0	7	204	18:30	189	6	0	2	0	0	197
6:45	274	19	1	1	0	7	302	18:45	206	3	0	0	0	0	209
7:00	239	24	4	3	0	5	275	19:00	148	2	0	0	0	1	151
7:15	262	16	1	4	0	2	285	19:15	113	3	0	2	0	0	118
7:30	247	11	2	5	0	2	267	19:30	103	1	2	1	0	0	107
7:45	268	14	2	1	0	3	288	19:45	113	1	1	1	0	0	116
8:00	272	20	1	3	0	2	298	20:00	104	0	0	0	0	1	105
8:15	226	30	2	2	0	0	260	20:15	111	0	0	0	0	0	111
8:30	216	18	1	5	0	1	241	20:30	100	3	1	2	0	0	106
8:45	202	17	3	3	0	0	225	20:45	87	2	1	1	0	0	91
9:00	163	18	0	4	0	1	186	21:00	83	0	1	0	0	1	85
9:15	158	17	3	10	0	0	188	21:15	59	0	0	1	0	0	60
9:30	125	12	0	7	0	0	144	21:30	80	0	3	0	0	0	83
9:45	137	18	2	5	0	0	162	21:45	89	0	1	0	0	0	90
10:00	133	14	1	2	0	1	151	22:00	51	2	0	0	0	0	53
10:15	128	17	1	8	0	0	154	22:15	35	1	0	1	0	0	37
10:30	117	13	1	12	0	0	143	22:30	27	1	0	0	0	0	28
10:45	129	14	1	2	0	1	147	22:45	35	2	0	0	0	0	37
11:00	132	17	1	5	0	1	156	23:00	25	2	1	1	0	0	29
11:15	125	18	1	8	0	4	156	23:15	19	2	0	1	0	0	22
11:30	137	20	1	7	0	1	166	23:30	14	0	0	0	0	0	14
11:45	171	13	3	5	0	0	192	23:45	23	0	0	1	0	0	24
TOTAL	5,616	441	42	134	0	48	6,281	TOTAL	7,064	380	43	128	1	48	7,664
				AM PEAK HOUR			7:15 AM					AM PEAK HOUR			4:15 PM
				AM PEAK VOLUME			1,138					AM PEAK VOLUME			1,022

TOTAL: AM+PM	12,680	821	85	262	1	96	13,945
% OF TOTAL	90.9%	5.9%	0.6%	1.9%	0.0%	0.7%	100.0%

CLASS 1 PASSENGER VEHICLES
CLASS 2 2-AXLE TRUCKS
CLASS 3 3-AXLE TRUCKS
CLASS 4 4 OR MORE AXLE TRUCKS
CLASS 5 RV
CLASS 6 BUS

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, January 29, 2019 **CITY:** Chino

JOB #: SC2074 **LOCATION:** Edison east of Central

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	22	0	0	1	0	0	23	12:00	138	18	6	13	0	0	175
0:15	16	0	0	1	0	0	17	12:15	124	11	3	11	0	1	150
0:30	11	0	0	1	0	0	12	12:30	156	11	7	10	0	0	184
0:45	13	0	2	0	0	0	15	12:45	117	9	4	14	0	2	146
1:00	7	0	1	2	0	0	10	13:00	138	6	3	16	0	0	163
1:15	7	0	0	0	0	0	7	13:15	139	10	0	14	0	0	163
1:30	5	0	0	2	0	0	7	13:30	196	13	5	17	0	0	231
1:45	9	0	0	2	0	0	11	13:45	173	11	2	16	0	0	202
2:00	9	0	0	1	0	0	10	14:00	190	10	3	20	0	0	223
2:15	4	0	0	0	0	0	4	14:15	154	17	4	13	1	1	190
2:30	7	1	1	1	0	0	10	14:30	203	12	2	13	0	2	232
2:45	2	0	2	2	0	0	6	14:45	277	15	3	24	0	1	320
3:00	4	0	1	1	0	0	6	15:00	223	12	8	16	0	0	259
3:15	2	0	0	2	0	0	4	15:15	247	17	7	12	0	1	284
3:30	6	0	1	2	0	0	9	15:30	234	17	2	14	0	0	267
3:45	11	0	1	2	0	0	14	15:45	231	19	3	22	0	0	275
4:00	8	0	1	0	0	0	9	16:00	247	12	10	10	0	0	279
4:15	8	3	0	3	0	0	14	16:15	261	12	3	17	0	0	293
4:30	11	1	1	5	0	0	18	16:30	249	11	4	13	0	0	277
4:45	20	1	0	1	0	0	22	16:45	238	6	6	20	0	0	270
5:00	22	1	0	8	0	0	31	17:00	267	12	6	14	0	0	299
5:15	13	3	0	3	0	0	19	17:15	259	9	5	13	0	1	287
5:30	21	1	0	2	0	0	24	17:30	249	10	5	11	0	0	275
5:45	59	3	3	2	0	0	67	17:45	241	8	3	9	0	0	261
6:00	57	2	1	9	0	1	70	18:00	253	13	2	14	0	0	282
6:15	49	5	2	2	0	3	61	18:15	235	13	3	10	0	0	261
6:30	69	8	3	4	0	2	86	18:30	239	5	1	4	0	0	249
6:45	67	11	2	6	0	2	88	18:45	213	1	1	3	0	0	218
7:00	92	14	3	4	0	0	113	19:00	203	5	0	9	0	0	217
7:15	141	9	1	9	0	2	162	19:15	219	1	0	3	0	0	223
7:30	162	11	4	9	0	3	189	19:30	179	2	1	5	0	0	187
7:45	160	11	0	5	0	2	178	19:45	162	1	1	2	0	0	166
8:00	137	11	4	9	1	0	162	20:00	160	3	2	8	0	0	173
8:15	121	12	4	11	0	0	148	20:15	160	1	0	4	0	0	165
8:30	104	12	3	7	1	0	127	20:30	152	1	0	3	0	0	156
8:45	117	10	0	3	0	1	131	20:45	131	1	2	6	0	0	140
9:00	121	12	4	15	0	0	152	21:00	120	0	3	3	0	0	126
9:15	92	6	5	3	0	0	106	21:15	97	2	1	2	0	0	102
9:30	74	5	3	11	0	0	93	21:30	110	0	1	1	0	0	112
9:45	79	6	7	15	0	0	107	21:45	78	0	3	1	0	0	82
10:00	73	16	6	15	1	0	111	22:00	65	0	2	4	0	0	71
10:15	58	12	3	8	0	1	82	22:15	65	1	0	2	0	0	68
10:30	69	10	5	9	0	1	94	22:30	52	1	1	0	0	0	54
10:45	99	13	4	18	0	0	134	22:45	46	1	1	1	0	0	49
11:00	88	13	4	11	0	1	117	23:00	42	1	1	2	0	0	46
11:15	101	10	0	9	0	0	120	23:15	34	1	1	0	0	0	36
11:30	116	11	4	16	0	0	147	23:30	28	1	1	2	0	0	32
11:45	138	14	5	14	0	0	171	23:45	27	0	0	0	0	0	27
TOTAL	2,681	258	91	266	3	19	3,318	**TOTAL**	8,021	343	132	441	1	9	8,947

AM PEAK HOUR	7:15 AM
AM PEAK VOLUME	691

AM PEAK HOUR	4:15 PM
AM PEAK VOLUME	1,139

CLASS 1	PASSENGER VEHICLES	**TOTAL: AM+PM**	10,702	601	223	707	4	28	12,265
CLASS 2	2-AXLE TRUCKS	**% OF TOTAL**	87.3%	4.9%	1.8%	5.8%	0.0%	0.2%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV	**TOTAL: ALL**	20,750	1,223	453	1,433	5	56	23,920
CLASS 6	Buses	**% OF TOTAL**	86.7%	5.1%	1.9%	6.0%	0.0%	0.2%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, January 29, 2019
JOB #: SC2074
CITY: Chino
LOCATION: Edison east of Central

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	15	0	0	1	0	0	16	12:00	119	9	6	21	0	0	155
0:15	3	0	3	0	0	0	6	12:15	100	12	4	18	0	1	135
0:30	6	1	1	0	0	0	8	12:30	90	3	1	10	0	0	104
0:45	0	0	0	1	0	0	1	12:45	100	7	6	11	0	1	125
1:00	8	0	1	1	0	0	10	13:00	120	19	1	9	0	2	151
1:15	7	0	1	0	0	0	8	13:15	100	13	2	16	0	1	132
1:30	2	1	1	4	0	0	8	13:30	102	6	1	14	0	1	124
1:45	5	1	0	3	0	0	9	13:45	121	9	1	8	0	1	140
2:00	1	0	1	3	0	0	5	14:00	127	14	4	7	0	0	152
2:15	5	0	0	4	0	0	9	14:15	120	12	5	15	0	1	153
2:30	7	0	2	1	0	0	10	14:30	147	17	1	12	0	0	177
2:45	6	0	1	4	0	0	11	14:45	165	20	3	21	0	2	211
3:00	8	0	2	6	0	0	16	15:00	167	16	4	13	0	1	201
3:15	12	0	1	2	0	0	15	15:15	141	18	4	18	0	1	182
3:30	14	0	2	3	0	0	19	15:30	172	15	4	16	0	1	208
3:45	31	0	4	1	0	0	36	15:45	184	18	8	13	0	2	225
4:00	44	0	2	4	0	0	50	16:00	180	12	3	14	0	0	209
4:15	46	0	2	4	0	0	52	16:15	154	7	4	8	0	0	173
4:30	44	1	1	3	0	0	49	16:30	152	7	5	5	0	0	169
4:45	101	2	0	5	0	0	108	16:45	219	7	2	8	0	0	236
5:00	107	4	1	5	0	0	117	17:00	181	9	3	9	0	1	203
5:15	146	13	1	8	0	0	168	17:15	159	9	2	8	0	0	178
5:30	168	10	3	5	0	0	186	17:30	162	6	6	4	0	0	178
5:45	238	11	7	5	0	0	261	17:45	174	5	0	2	0	0	181
6:00	196	7	1	5	0	0	209	18:00	178	3	2	6	0	0	189
6:15	166	8	9	11	0	0	194	18:15	130	4	1	9	0	0	144
6:30	182	9	3	3	0	0	197	18:30	113	0	3	7	0	0	123
6:45	254	12	8	9	0	2	285	18:45	132	0	3	3	0	0	138
7:00	280	13	9	11	0	0	313	19:00	128	0	1	4	0	0	133
7:15	273	10	2	9	0	1	295	19:15	84	4	0	4	0	1	93
7:30	256	14	9	15	0	0	294	19:30	72	1	2	3	0	0	78
7:45	262	11	3	12	0	3	291	19:45	73	0	3	0	0	0	76
8:00	248	14	4	17	0	0	283	20:00	72	0	0	1	0	0	73
8:15	216	19	2	12	1	2	252	20:15	85	0	1	4	0	0	90
8:30	167	14	3	11	0	1	196	20:30	71	1	0	1	0	0	73
8:45	155	9	7	23	0	1	195	20:45	58	1	1	0	0	0	60
9:00	140	17	3	14	0	0	174	21:00	45	1	1	1	0	0	48
9:15	115	10	3	18	0	0	146	21:15	30	0	1	2	0	0	33
9:30	127	7	2	14	0	0	150	21:30	31	0	2	1	0	0	34
9:45	137	14	0	8	0	0	159	21:45	48	0	0	2	0	0	50
10:00	116	12	1	20	0	0	149	22:00	39	1	1	1	0	0	42
10:15	105	16	3	13	0	0	137	22:15	20	1	1	3	0	0	25
10:30	92	11	1	15	0	0	119	22:30	15	0	0	1	0	0	16
10:45	112	13	4	10	0	0	139	22:45	22	1	0	3	0	0	26
11:00	119	13	3	14	0	0	149	23:00	12	0	4	3	0	0	19
11:15	115	13	0	11	0	1	140	23:15	18	0	0	1	0	0	19
11:30	107	12	4	15	0	0	138	23:30	8	0	0	1	0	0	9
11:45	136	12	2	20	0	0	170	23:45	8	0	0	2	0	0	10
TOTAL	5,100	334	123	383	1	11	5,952	TOTAL	4,948	288	107	343	0	17	5,703
				AM PEAK HOUR			7:00 AM						AM PEAK HOUR		3:15 PM
				AM PEAK VOLUME			1,193						AM PEAK VOLUME		824

TOTAL: AM+PM	10,048	622	230	726	1	28	11,655
% OF TOTAL	86.2%	5.3%	2.0%	6.2%	0.0%	0.2%	100.0%

CLASS 1 PASSENGER VEHICLES
CLASS 2 2-AXLE TRUCKS
CLASS 3 3-AXLE TRUCKS
CLASS 4 4 OR MORE AXLE TRUCKS
CLASS 5 RV
CLASS 6 BUS

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Wednesday, January 30, 2019 **CITY:** Chino

JOB #: SC2074 **LOCATION:** Grove south of Walnut

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	9	1	0	3	0	0	13	12:00	78	7	8	13	0	0	106
0:15	7	1	1	4	0	0	13	12:15	70	12	6	11	0	0	99
0:30	7	0	2	0	0	0	9	12:30	74	6	3	12	0	0	95
0:45	14	0	3	3	0	0	20	12:45	52	6	2	17	0	0	77
1:00	7	0	0	3	0	0	10	13:00	77	10	5	14	1	0	107
1:15	3	2	3	4	0	0	12	13:15	70	10	5	10	0	0	95
1:30	6	0	0	5	0	0	11	13:30	73	6	5	11	0	0	95
1:45	3	0	1	1	0	0	5	13:45	98	8	8	12	0	0	126
2:00	2	0	3	0	0	0	5	14:00	90	6	2	5	0	0	103
2:15	6	0	0	5	0	0	11	14:15	82	5	3	10	0	0	100
2:30	8	2	1	6	0	0	17	14:30	112	12	3	12	0	0	139
2:45	6	2	1	7	0	0	16	14:45	124	18	8	8	0	0	158
3:00	5	0	0	8	0	0	13	15:00	114	10	0	14	0	0	138
3:15	6	3	2	11	0	0	22	15:15	97	14	5	7	0	0	123
3:30	3	1	0	3	0	0	7	15:30	107	12	1	12	0	0	132
3:45	7	1	2	3	0	0	13	15:45	149	13	2	4	0	1	169
4:00	11	1	1	2	0	0	15	16:00	114	15	0	6	0	0	135
4:15	10	0	2	7	0	0	19	16:15	140	11	3	5	0	0	159
4:30	16	1	2	9	0	0	28	16:30	113	11	4	6	0	0	134
4:45	20	3	1	8	0	0	32	16:45	130	12	3	4	0	0	149
5:00	22	2	1	12	0	0	37	17:00	115	12	1	5	0	0	133
5:15	19	1	0	8	0	0	28	17:15	138	8	3	4	0	0	153
5:30	27	1	0	6	0	0	34	17:30	122	16	3	7	0	0	148
5:45	43	0	6	13	0	0	62	17:45	114	8	7	4	0	0	133
6:00	42	2	2	11	0	0	57	18:00	133	6	3	4	0	0	146
6:15	41	6	3	14	0	0	64	18:15	91	4	1	7	0	0	103
6:30	45	11	1	8	0	0	65	18:30	84	5	1	3	0	0	93
6:45	79	8	4	13	0	1	105	18:45	83	4	0	2	0	0	89
7:00	91	8	7	9	0	0	115	19:00	71	4	4	5	0	0	84
7:15	103	5	2	13	0	0	123	19:15	66	3	2	2	0	0	73
7:30	120	12	2	17	0	1	152	19:30	50	0	0	1	0	0	51
7:45	99	4	1	9	0	2	115	19:45	36	2	1	2	0	0	41
8:00	80	8	7	11	0	0	106	20:00	50	0	3	2	0	0	55
8:15	92	11	6	10	0	0	119	20:15	34	2	1	2	0	0	39
8:30	105	14	4	14	0	0	137	20:30	38	0	1	3	0	0	42
8:45	89	8	10	13	0	0	120	20:45	37	2	2	4	0	0	45
9:00	70	6	3	10	0	0	89	21:00	28	0	2	1	0	0	31
9:15	55	12	1	15	0	0	83	21:15	25	0	1	3	0	0	29
9:30	57	7	3	4	0	1	72	21:30	29	4	1	6	0	0	40
9:45	64	8	1	11	0	1	85	21:45	15	0	1	2	0	0	18
10:00	51	5	6	15	0	0	77	22:00	23	1	2	4	0	0	30
10:15	57	17	6	7	0	0	87	22:15	14	2	2	3	0	0	21
10:30	58	7	7	8	0	0	80	22:30	14	2	1	1	0	0	18
10:45	55	12	3	12	0	1	83	22:45	12	1	0	3	0	0	16
11:00	63	9	1	12	0	0	85	23:00	16	0	2	2	0	0	20
11:15	64	9	9	11	0	1	94	23:15	13	0	0	2	0	0	15
11:30	82	2	3	15	0	0	102	23:30	17	0	1	1	0	0	19
11:45	73	4	3	11	0	0	91	23:45	13	1	0	1	0	0	15
TOTAL	2,002	217	127	404	0	8	2,758	TOTAL	3,445	291	122	279	1	1	4,139
				AM PEAK HOUR			7:00 AM					AM PEAK HOUR			3:45 PM
				AM PEAK VOLUME			505					AM PEAK VOLUME			597

CLASS 1	PASSENGER VEHICLES	TOTAL: AM+PM	5,447	508	249	683	1	9	6,897
CLASS 2	2-AXLE TRUCKS	% OF TOTAL	79.0%	7.4%	3.6%	9.9%	0.0%	0.1%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV	TOTAL: ALL	11,345	986	541	1,372	4	16	14,264
CLASS 6	Buses	% OF TOTAL	79.5%	6.9%	3.8%	9.6%	0.0%	0.1%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Wednesday, January 30, 2019
JOB #: SC2074
CITY: Chino
LOCATION: Grove south of Walnut

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	14	0	1	3	0	0	18	12:00	67	10	10	7	0	0	94
0:15	10	0	0	1	0	0	11	12:15	95	12	10	12	0	0	129
0:30	10	2	0	2	0	0	14	12:30	74	8	6	13	0	0	101
0:45	11	2	1	2	0	0	16	12:45	71	5	5	6	0	1	88
1:00	9	0	3	2	0	0	14	13:00	91	11	5	12	0	0	119
1:15	8	0	0	2	0	0	10	13:15	81	7	6	10	0	0	104
1:30	8	0	1	2	0	0	11	13:30	80	5	10	10	1	0	106
1:45	6	0	1	0	0	0	7	13:45	94	8	3	5	0	0	110
2:00	11	0	1	2	0	0	14	14:00	79	9	7	20	0	0	115
2:15	7	1	4	6	0	0	18	14:15	87	13	8	11	0	1	120
2:30	9	0	0	1	0	0	10	14:30	85	4	2	13	0	0	104
2:45	17	0	0	1	0	0	18	14:45	115	8	8	13	0	0	144
3:00	6	1	1	4	0	0	12	15:00	95	5	1	18	0	0	119
3:15	15	0	2	4	0	0	21	15:15	75	8	5	10	1	1	100
3:30	21	0	1	2	0	0	24	15:30	114	11	6	12	0	1	144
3:45	17	0	0	1	0	0	18	15:45	126	9	2	13	0	0	150
4:00	22	0	3	3	0	0	28	16:00	120	12	2	14	0	0	148
4:15	30	0	2	2	0	0	34	16:15	121	10	5	12	0	0	148
4:30	41	0	1	1	0	0	43	16:30	115	7	3	15	0	0	140
4:45	42	0	3	2	0	0	47	16:45	128	7	2	12	0	0	149
5:00	46	5	2	1	0	0	54	17:00	111	8	5	9	0	0	133
5:15	62	2	3	2	0	0	69	17:15	142	10	5	9	0	0	166
5:30	92	1	0	6	0	0	99	17:30	143	6	2	6	0	0	157
5:45	122	6	2	7	0	0	137	17:45	151	2	4	5	0	0	162
6:00	95	2	3	3	0	0	103	18:00	103	5	4	6	1	0	119
6:15	79	6	4	4	0	0	93	18:15	91	5	2	14	0	0	112
6:30	76	8	4	3	0	1	92	18:30	86	2	2	7	0	0	97
6:45	86	9	2	6	0	0	103	18:45	79	4	3	11	0	0	97
7:00	68	13	4	5	0	0	90	19:00	70	6	1	7	0	0	84
7:15	61	11	3	6	0	0	81	19:15	67	3	3	2	0	0	75
7:30	96	11	9	5	0	1	122	19:30	51	2	1	13	0	0	67
7:45	96	9	3	11	0	0	119	19:45	51	3	0	11	0	0	65
8:00	93	4	5	9	0	0	111	20:00	53	4	3	6	0	0	66
8:15	83	9	5	11	0	0	108	20:15	58	0	3	5	0	0	66
8:30	61	9	2	5	0	0	77	20:30	45	0	3	6	0	0	54
8:45	61	9	3	14	0	0	87	20:45	53	3	2	10	0	0	68
9:00	56	7	5	8	0	0	76	21:00	41	1	3	6	0	0	51
9:15	45	10	3	11	0	0	69	21:15	49	0	0	5	0	0	54
9:30	58	13	4	8	0	0	83	21:30	32	0	2	5	0	0	39
9:45	54	9	4	7	0	0	74	21:45	51	0	0	4	0	0	55
10:00	47	9	7	11	0	0	74	22:00	29	0	1	9	0	0	39
10:15	61	11	4	10	0	0	86	22:15	19	1	1	2	0	0	23
10:30	63	17	6	7	0	0	93	22:30	17	2	1	4	0	0	24
10:45	68	13	2	14	0	0	97	22:45	17	1	2	3	0	0	23
11:00	62	5	4	11	0	0	82	23:00	16	0	1	3	0	0	20
11:15	72	10	2	13	0	0	97	23:15	22	0	0	4	0	0	26
11:30	68	8	6	17	0	1	100	23:30	10	1	0	8	0	0	19
11:45	67	7	6	11	0	0	91	23:45	16	1	0	2	0	0	19
TOTAL	2,312	239	132	269	0	3	2,955	TOTAL	3,586	239	160	420	3	4	4,412
			AM PEAK HOUR				7:30 AM					AM PEAK HOUR			5:00 PM
			AM PEAK VOLUME				460					AM PEAK VOLUME			618

TOTAL: AM+PM	5,898	478	292	689	3	7	7,367
% OF TOTAL	80.1%	6.5%	4.0%	9.4%	0.0%	0.1%	100.0%

CLASS 1 PASSENGER VEHICLES
CLASS 2 2-AXLE TRUCKS
CLASS 3 3-AXLE TRUCKS
CLASS 4 4 OR MORE AXLE TRUCKS
CLASS 5 RV
CLASS 6 BUS

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Wednesday, February 06, 2019 **CITY:** Chino

JOB #: SC2074 **LOCATION:** CLASS4 Euclid between Eucalyptus and Merrill

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	18	0	0	3	0	0	21	12:00	114	31	4	16	0	0	165
0:15	40	10	0	1	0	0	51	12:15	109	25	6	15	0	2	157
0:30	69	10	1	1	0	0	81	12:30	118	24	5	16	0	2	165
0:45	24	5	0	1	0	0	30	12:45	100	24	1	14	0	3	142
1:00	18	2	0	3	0	0	23	13:00	96	24	2	8	0	5	135
1:15	25	3	0	1	0	0	29	13:15	102	17	3	12	0	5	139
1:30	31	2	1	2	0	0	36	13:30	163	24	5	8	0	2	202
1:45	16	0	0	2	0	0	18	13:45	169	27	1	13	0	1	211
2:00	29	1	1	4	0	0	35	14:00	144	32	5	12	0	0	193
2:15	51	5	1	1	0	0	58	14:15	153	31	3	17	0	0	204
2:30	39	5	1	4	0	1	50	14:30	201	33	1	14	0	2	251
2:45	28	7	2	4	0	1	42	14:45	202	26	2	14	0	2	246
3:00	23	5	0	6	0	0	34	15:00	197	26	4	10	0	2	239
3:15	16	3	2	2	0	0	23	15:15	168	34	3	9	0	0	214
3:30	17	4	1	8	0	1	31	15:30	231	31	6	12	0	1	281
3:45	23	3	1	4	0	2	33	15:45	177	35	6	9	0	1	228
4:00	35	5	1	3	0	0	44	16:00	188	17	2	11	0	0	218
4:15	27	4	2	5	0	1	39	16:15	214	27	2	8	0	2	253
4:30	24	6	3	6	0	0	39	16:30	257	27	2	12	0	2	300
4:45	59	13	0	10	0	0	82	16:45	249	38	6	8	0	1	302
5:00	86	9	0	10	0	0	105	17:00	233	26	2	11	0	0	272
5:15	97	10	1	3	0	0	111	17:15	236	26	4	9	0	0	275
5:30	127	14	0	10	0	2	153	17:30	211	19	2	8	0	0	240
5:45	120	7	2	6	0	0	135	17:45	213	16	2	8	0	0	239
6:00	126	12	4	8	0	1	151	18:00	176	23	1	4	0	0	204
6:15	120	14	1	9	0	2	146	18:15	178	22	2	5	0	1	208
6:30	155	13	1	1	0	1	171	18:30	167	16	1	4	0	0	188
6:45	186	18	2	9	0	0	215	18:45	136	10	3	1	0	0	150
7:00	233	14	3	13	0	1	264	19:00	122	13	2	4	0	2	143
7:15	245	16	5	14	0	0	280	19:15	87	10	1	7	0	1	106
7:30	217	28	4	10	0	1	260	19:30	101	25	0	12	0	0	138
7:45	255	26	5	13	0	2	301	19:45	92	8	2	7	0	0	109
8:00	248	25	3	11	0	0	287	20:00	76	16	2	7	0	0	101
8:15	249	21	3	10	0	2	285	20:15	69	8	1	9	0	0	87
8:30	241	39	5	11	0	0	296	20:30	66	7	2	2	0	0	77
8:45	206	20	7	8	0	1	242	20:45	78	7	1	4	0	0	90
9:00	182	32	2	11	0	1	228	21:00	67	10	3	3	0	0	83
9:15	130	22	3	13	0	1	169	21:15	57	11	1	6	0	0	75
9:30	101	28	2	11	0	5	147	21:30	57	8	0	4	0	0	69
9:45	105	19	4	13	0	2	143	21:45	69	11	1	6	0	0	87
10:00	91	19	3	7	0	2	122	22:00	63	7	1	2	0	0	73
10:15	86	21	2	10	0	0	119	22:15	54	3	1	8	0	0	66
10:30	101	15	1	18	0	2	137	22:30	46	10	0	7	0	0	63
10:45	111	19	2	11	0	2	145	22:45	41	7	0	5	0	0	53
11:00	88	20	2	11	0	1	122	23:00	47	4	0	2	0	0	53
11:15	79	13	1	15	0	2	110	23:15	41	1	1	5	0	0	48
11:30	102	15	3	13	0	0	133	23:30	83	11	1	5	0	0	100
11:45	105	22	4	8	0	2	141	23:45	35	5	0	3	0	0	43
TOTAL	4,804	624	92	358	0	39	5,917	TOTAL	6,253	893	106	396	0	37	7,685
				AM PEAK HOUR			7:45 AM					AM PEAK HOUR			4:30 PM
				AM PEAK VOLUME			1,169					AM PEAK VOLUME			1,149

CLASS 1	PASSENGER VEHICLES	TOTAL: AM+PM	11,057	1,517	198	754	0	76	13,602
CLASS 2	2-AXLE TRUCKS	% OF TOTAL	81.3%	11.2%	1.5%	5.5%	0.0%	0.6%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV	TOTAL: ALL	21,917	2,912	405	1,562	0	140	26,936
CLASS 6	Buses	% OF TOTAL	81.4%	10.8%	1.5%	5.8%	0.0%	0.5%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Wednesday, February 06, 2019
JOB #: SC2074
CITY: Chino
LOCATION: CLASS4 Euclid between Eucalyptus and Merrill

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	8	2	0	2	0	0	12	12:00	96	11	1	8	0	1	117
0:15	26	2	1	1	0	0	30	12:15	92	5	3	14	0	1	115
0:30	26	3	0	3	0	0	32	12:30	121	20	2	9	0	3	155
0:45	7	4	0	1	0	0	12	12:45	119	9	2	11	0	1	142
1:00	9	2	0	2	0	1	14	13:00	121	12	4	17	0	1	155
1:15	9	1	0	4	0	4	18	13:15	110	13	3	9	0	2	137
1:30	6	2	0	2	0	2	12	13:30	99	13	8	12	0	1	133
1:45	13	3	0	2	0	2	20	13:45	121	17	3	16	0	2	159
2:00	17	1	1	3	0	1	23	14:00	136	4	2	12	0	4	158
2:15	9	2	0	7	0	0	18	14:15	118	19	2	13	0	1	153
2:30	19	4	0	9	0	0	32	14:30	133	20	2	11	0	0	166
2:45	15	3	0	4	0	1	23	14:45	143	11	4	8	0	0	166
3:00	10	1	2	10	0	1	24	15:00	175	17	4	12	0	1	209
3:15	22	2	0	3	0	0	27	15:15	201	11	1	7	0	0	220
3:30	39	2	0	14	0	0	55	15:30	210	10	4	10	0	1	235
3:45	46	10	0	7	0	0	63	15:45	212	17	2	12	0	5	248
4:00	44	9	0	4	0	0	57	16:00	206	14	1	14	0	1	236
4:15	57	21	3	7	0	0	88	16:15	229	24	2	19	0	0	274
4:30	110	7	0	13	0	0	130	16:30	246	11	3	8	0	0	268
4:45	130	16	4	7	0	0	157	16:45	276	19	2	8	0	0	305
5:00	97	21	0	8	0	1	127	17:00	272	18	1	6	0	0	297
5:15	93	22	5	13	0	0	133	17:15	303	19	4	7	0	0	333
5:30	144	25	6	7	0	0	182	17:30	275	24	2	11	0	1	313
5:45	224	27	2	11	0	1	265	17:45	285	17	4	3	0	0	309
6:00	174	29	5	7	0	1	216	18:00	200	11	4	7	0	0	222
6:15	184	33	2	9	0	0	228	18:15	196	16	2	6	0	0	220
6:30	162	29	4	8	0	0	203	18:30	126	17	1	3	0	0	147
6:45	241	34	7	9	0	1	292	18:45	120	18	2	9	0	0	149
7:00	186	25	5	7	0	2	225	19:00	99	21	4	9	0	0	133
7:15	198	49	7	10	0	1	265	19:15	114	15	0	5	0	1	135
7:30	184	26	3	14	0	1	228	19:30	111	18	2	4	0	0	135
7:45	207	30	2	10	0	0	249	19:45	116	14	0	6	0	0	136
8:00	187	24	3	12	0	1	227	20:00	80	20	2	3	0	1	106
8:15	198	37	5	9	0	1	250	20:15	77	19	0	3	0	0	99
8:30	149	18	3	15	0	1	186	20:30	91	9	3	5	0	0	108
8:45	182	24	2	14	0	0	222	20:45	91	13	2	2	0	0	108
9:00	132	28	1	9	0	1	171	21:00	61	12	1	2	0	0	76
9:15	92	20	6	12	0	1	131	21:15	66	10	0	2	0	0	78
9:30	86	18	4	10	0	2	120	21:30	60	11	0	3	0	0	74
9:45	82	23	3	17	0	2	127	21:45	53	5	1	4	0	0	63
10:00	93	22	2	14	0	0	131	22:00	26	6	1	7	0	0	40
10:15	98	6	4	23	0	1	132	22:15	36	11	0	6	0	0	53
10:30	104	19	2	15	0	1	141	22:30	20	4	1	6	0	0	31
10:45	102	6	1	14	0	1	124	22:45	34	3	0	5	0	0	42
11:00	99	20	3	17	0	1	140	23:00	28	1	2	5	0	0	36
11:15	109	15	2	19	0	1	146	23:15	33	5	1	4	0	0	43
11:30	125	16	5	8	0	0	154	23:30	31	12	1	1	0	0	45
11:45	115	23	6	13	0	2	159	23:45	23	3	0	5	0	0	31
TOTAL	4,669	766	111	439	0	36	6,021	TOTAL	6,191	629	96	369	0	28	7,313
				AM PEAK HOUR			6:45 AM					AM PEAK HOUR			5:00 PM
				AM PEAK VOLUME			1,010					AM PEAK VOLUME			1,252

CLASS 1	PASSENGER VEHICLES	**TOTAL: AM+PM**	10,860	1,395	207	808	0	64	13,334
CLASS 2	2-AXLE TRUCKS	**% OF TOTAL**	81.4%	10.5%	1.6%	6.1%	0.0%	0.5%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV								
CLASS 6	BUS								

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Wednesday, February 06, 2019 **CITY:** Chino

JOB #: SC2074 **LOCATION:** Kimball west of Rincon Meadows

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	8	0	0	0	0	0	8	12:00	80	5	0	5	0	0	90
0:15	13	1	0	2	0	0	16	12:15	88	0	0	6	0	0	94
0:30	12	0	0	0	0	0	12	12:30	92	4	0	1	0	1	98
0:45	9	1	0	0	0	0	10	12:45	76	6	0	0	0	0	82
1:00	7	2	0	0	0	0	9	13:00	82	5	0	5	0	1	93
1:15	4	0	0	1	0	0	5	13:15	102	3	0	4	0	0	109
1:30	7	0	0	0	0	0	7	13:30	97	1	0	4	0	1	103
1:45	8	0	0	1	0	0	9	13:45	99	3	0	6	0	0	108
2:00	7	0	0	0	0	0	7	14:00	96	7	3	4	0	2	112
2:15	8	0	0	1	0	0	9	14:15	105	5	2	0	0	0	112
2:30	7	0	0	1	0	0	8	14:30	123	7	0	2	0	5	137
2:45	8	1	0	0	0	0	9	14:45	155	8	1	1	0	0	165
3:00	5	0	0	1	0	0	6	15:00	163	5	0	4	0	0	172
3:15	3	0	0	0	0	0	3	15:15	168	3	0	5	0	0	176
3:30	16	0	0	2	0	0	18	15:30	185	10	1	2	0	0	198
3:45	12	0	0	1	0	0	13	15:45	199	7	4	3	0	1	214
4:00	4	1	0	0	0	0	5	16:00	182	4	0	3	0	0	189
4:15	1	0	3	1	0	0	5	16:15	184	9	1	2	0	0	196
4:30	4	0	1	0	0	0	5	16:30	250	5	0	2	0	0	257
4:45	12	0	0	1	0	0	13	16:45	250	8	0	0	0	0	258
5:00	23	1	2	1	0	0	27	17:00	243	9	1	1	0	0	254
5:15	21	1	1	0	0	0	23	17:15	233	7	1	1	0	0	242
5:30	36	1	1	0	0	0	38	17:30	261	4	1	3	0	0	269
5:45	51	1	3	1	0	0	56	17:45	278	6	0	1	0	0	285
6:00	52	5	1	1	0	1	60	18:00	270	7	0	1	0	0	278
6:15	47	2	0	3	0	3	55	18:15	231	3	0	1	0	0	235
6:30	44	5	1	0	0	2	52	18:30	211	5	0	4	0	0	220
6:45	53	2	2	1	0	2	60	18:45	218	2	0	5	1	0	226
7:00	66	8	1	0	0	0	75	19:00	178	3	0	0	0	0	181
7:15	80	6	2	1	0	2	91	19:15	160	1	0	1	0	0	162
7:30	97	4	0	3	0	2	106	19:30	145	2	0	1	0	0	148
7:45	72	4	1	2	0	1	80	19:45	148	1	0	2	0	0	151
8:00	118	5	0	1	0	0	124	20:00	115	2	0	2	0	0	119
8:15	90	15	0	0	0	0	105	20:15	142	2	0	0	0	0	144
8:30	71	6	1	5	0	0	83	20:30	120	3	0	2	0	0	125
8:45	81	4	1	0	0	0	86	20:45	122	2	0	4	0	0	128
9:00	68	4	1	1	0	0	74	21:00	111	2	0	0	0	0	113
9:15	52	5	3	1	0	0	61	21:15	101	1	0	2	0	0	104
9:30	51	8	0	5	0	0	64	21:30	65	0	0	3	0	0	68
9:45	47	5	1	5	0	0	58	21:45	78	0	0	3	0	0	81
10:00	52	0	0	2	0	0	54	22:00	62	2	0	1	0	0	65
10:15	58	7	0	5	0	2	72	22:15	62	1	0	2	0	0	65
10:30	43	3	0	2	0	0	48	22:30	37	1	0	0	0	0	38
10:45	59	6	0	0	0	0	65	22:45	36	1	0	1	0	0	38
11:00	56	3	1	2	0	1	63	23:00	38	0	0	1	0	0	39
11:15	58	7	0	5	0	0	70	23:15	41	0	0	1	0	0	42
11:30	61	5	1	1	0	0	68	23:30	23	1	1	0	0	0	25
11:45	73	0	0	2	0	0	75	23:45	10	0	0	0	0	0	10
TOTAL	1,835	129	28	62	0	16	2,070	TOTAL	6,515	173	16	102	1	11	6,818
				AM PEAK HOUR			7:30 AM					AM PEAK HOUR			5:15 PM
				AM PEAK VOLUME			415					AM PEAK VOLUME			1,074

CLASS 1	PASSENGER VEHICLES	TOTAL: AM+PM	8,350	302	44	164	1	27	8,888
CLASS 2	2-AXLE TRUCKS	% OF TOTAL	93.9%	3.4%	0.5%	1.8%	0.0%	0.3%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV	TOTAL: ALL	15,927	580	92	309	2	56	16,966
CLASS 6	Buses	% OF TOTAL	93.9%	3.4%	0.5%	1.8%	0.0%	0.3%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Wednesday, February 06, 2019
JOB #: SC2074
CITY: Chino
LOCATION: Kimball west of Rincon Meadows

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	6	0	0	0	0	0	6	12:00	75	4	2	1	0	1	83
0:15	4	1	0	0	0	0	5	12:15	70	4	1	3	0	2	80
0:30	3	0	0	0	0	0	3	12:30	67	7	0	5	0	0	79
0:45	7	0	0	2	0	0	9	12:45	63	2	0	1	0	0	66
1:00	1	0	1	0	0	0	2	13:00	69	4	0	4	0	1	78
1:15	1	0	0	0	0	0	1	13:15	60	4	1	3	0	0	68
1:30	4	0	0	0	0	0	4	13:30	83	4	0	3	0	0	90
1:45	4	0	1	0	0	0	5	13:45	74	8	0	4	0	0	86
2:00	2	0	0	0	0	0	2	14:00	69	4	1	3	0	0	77
2:15	3	0	0	0	0	0	3	14:15	88	2	0	5	0	0	95
2:30	5	0	2	0	0	0	7	14:30	90	10	2	1	0	3	106
2:45	5	0	2	0	0	0	7	14:45	91	7	0	2	0	3	103
3:00	12	0	0	0	0	0	12	15:00	108	5	2	3	0	0	118
3:15	11	0	1	0	0	0	12	15:15	103	4	0	2	0	0	109
3:30	10	2	1	0	0	0	13	15:30	147	6	0	2	0	0	155
3:45	15	0	0	0	0	0	15	15:45	110	5	0	4	1	1	121
4:00	27	1	1	1	0	0	30	16:00	96	4	0	2	0	1	103
4:15	33	0	0	0	0	0	33	16:15	104	5	1	2	0	1	113
4:30	50	1	0	0	0	0	51	16:30	129	4	1	0	0	0	134
4:45	85	3	0	0	0	0	88	16:45	103	3	0	4	0	0	110
5:00	84	3	0	0	0	0	87	17:00	125	3	2	2	0	0	132
5:15	123	2	0	0	0	0	125	17:15	107	1	0	5	0	0	113
5:30	140	3	0	3	0	0	146	17:30	106	3	2	1	0	0	112
5:45	147	1	0	2	0	0	150	17:45	106	3	0	0	0	0	109
6:00	164	6	0	2	0	0	172	18:00	97	4	0	1	0	0	102
6:15	167	6	1	1	0	2	177	18:15	87	4	1	1	0	0	93
6:30	228	3	2	3	0	4	240	18:30	91	2	0	1	0	0	94
6:45	255	3	1	0	0	2	261	18:45	78	2	0	1	0	0	81
7:00	245	4	3	2	0	0	254	19:00	89	3	1	5	0	0	98
7:15	238	4	1	0	0	0	243	19:15	61	2	1	2	0	0	66
7:30	251	5	2	2	0	2	262	19:30	44	0	0	1	0	0	45
7:45	251	6	1	1	0	1	260	19:45	45	2	0	2	0	0	49
8:00	211	5	0	1	0	0	217	20:00	30	0	1	1	0	0	32
8:15	236	5	0	3	0	0	244	20:15	42	1	0	2	0	0	45
8:30	170	6	0	1	0	1	178	20:30	29	3	0	0	0	0	32
8:45	172	2	0	2	0	0	176	20:45	20	3	0	0	0	0	23
9:00	135	7	0	2	0	0	144	21:00	26	0	0	2	0	0	28
9:15	115	3	1	4	0	0	123	21:15	24	2	0	1	0	0	27
9:30	106	6	2	3	0	0	117	21:30	19	1	1	1	0	0	22
9:45	93	8	0	1	0	0	102	21:45	23	1	0	1	0	0	25
10:00	90	0	0	2	0	0	92	22:00	13	0	0	4	0	0	17
10:15	82	7	0	1	0	0	90	22:15	12	1	0	2	0	0	15
10:30	101	8	1	2	0	0	112	22:30	10	1	0	2	0	0	13
10:45	83	0	1	2	0	0	86	22:45	13	0	0	0	0	0	13
11:00	73	5	1	0	0	0	79	23:00	9	0	0	0	0	0	9
11:15	62	7	0	4	0	0	73	23:15	9	1	0	0	0	0	10
11:30	59	4	0	1	0	3	67	23:30	7	0	0	0	0	0	7
11:45	81	11	2	5	0	1	100	23:45	6	1	0	0	0	0	7
TOTAL	4,450	138	28	53	0	16	4,685	TOTAL	3,127	140	20	92	1	13	3,393
				AM PEAK HOUR			6:45 AM						AM PEAK HOUR		3:00 PM
				AM PEAK VOLUME			1,020						AM PEAK VOLUME		503

CLASS 1	PASSENGER VEHICLES	**TOTAL: AM+PM**	7,577	278	48	145	1	29	8,078
CLASS 2	2-AXLE TRUCKS	**% OF TOTAL**	93.8%	3.4%	0.6%	1.8%	0.0%	0.4%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV								
CLASS 6	BUS								

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Wednesday, February 06, 2019 **CITY:** Chino

JOB #: SC2074 **LOCATION:** CLASS7 Riverside between Colonial and Archibald

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	1	4	0	0	0	0	5	12:00	168	17	0	1	0	1	187
0:15	2	6	0	0	0	0	8	12:15	180	13	1	0	0	2	196
0:30	7	4	0	0	0	0	11	12:30	159	9	0	0	0	0	168
0:45	0	6	0	0	0	0	6	12:45	184	15	1	6	0	0	206
1:00	5	1	0	0	0	0	6	13:00	171	21	0	1	0	0	193
1:15	0	2	0	0	0	0	2	13:15	167	16	2	2	0	0	187
1:30	3	2	0	0	0	0	5	13:30	178	8	0	1	0	2	189
1:45	3	0	0	0	0	0	3	13:45	178	11	1	0	0	0	190
2:00	0	0	0	0	0	0	0	14:00	167	8	0	3	0	1	179
2:15	1	1	0	0	0	0	2	14:15	160	10	1	1	0	0	172
2:30	1	0	0	0	0	0	1	14:30	174	10	1	1	0	2	188
2:45	0	2	0	0	0	0	2	14:45	167	0	0	3	0	1	171
3:00	0	0	0	0	0	0	0	15:00	190	15	1	1	0	1	208
3:15	0	2	0	0	0	0	2	15:15	170	21	0	1	0	0	192
3:30	2	2	1	0	0	0	5	15:30	223	13	1	2	0	2	241
3:45	1	1	0	1	0	0	3	15:45	210	8	0	0	0	1	219
4:00	6	4	0	0	0	0	10	16:00	238	14	0	2	0	0	254
4:15	13	3	0	0	0	0	16	16:15	247	16	2	2	0	1	268
4:30	5	4	0	0	0	1	10	16:30	249	11	0	2	0	0	262
4:45	12	5	0	0	0	0	17	16:45	268	14	2	0	0	1	285
5:00	9	8	0	0	0	0	17	17:00	242	10	1	1	0	0	254
5:15	13	12	0	0	0	1	26	17:15	259	13	1	0	0	1	274
5:30	35	7	0	1	0	0	43	17:30	269	9	0	2	0	0	280
5:45	55	10	1	2	0	1	69	17:45	202	7	1	2	0	0	212
6:00	76	5	1	0	0	0	82	18:00	192	11	1	0	0	1	205
6:15	116	8	0	2	0	1	127	18:15	194	12	0	2	0	0	208
6:30	124	12	1	1	0	5	143	18:30	167	14	0	1	0	0	182
6:45	118	13	2	1	0	1	135	18:45	147	13	1	2	0	1	164
7:00	137	10	4	1	0	1	153	19:00	133	9	2	0	0	0	144
7:15	126	16	2	2	0	3	149	19:15	118	10	0	1	0	1	130
7:30	132	14	3	3	0	2	154	19:30	89	12	0	0	0	1	102
7:45	133	13	4	1	0	0	151	19:45	62	9	0	1	0	0	72
8:00	137	18	1	3	0	3	162	20:00	64	8	0	0	0	0	72
8:15	130	12	2	4	0	1	149	20:15	32	6	0	1	0	0	39
8:30	129	13	1	1	0	1	145	20:30	24	4	0	0	0	1	29
8:45	135	11	3	2	0	0	151	20:45	15	11	0	0	0	0	26
9:00	128	8	1	1	0	0	138	21:00	25	5	0	0	0	0	30
9:15	141	16	1	1	0	2	161	21:15	15	6	0	0	0	0	21
9:30	134	12	3	3	0	1	153	21:30	17	7	1	0	0	1	26
9:45	131	15	2	0	0	0	148	21:45	15	9	0	0	0	0	24
10:00	125	17	0	2	0	0	144	22:00	9	10	1	0	0	0	20
10:15	122	20	2	1	0	0	145	22:15	3	7	0	1	0	0	11
10:30	136	12	0	0	0	0	148	22:30	8	11	0	0	0	0	19
10:45	146	22	1	2	0	0	171	22:45	11	6	0	0	0	0	17
11:00	140	23	2	0	0	2	167	23:00	4	7	0	0	0	0	11
11:15	138	36	0	0	0	1	175	23:15	5	6	0	0	0	0	11
11:30	137	28	1	0	0	1	167	23:30	5	10	0	0	0	0	15
11:45	145	25	1	3	0	1	175	23:45	10	8	0	0	0	0	18
TOTAL	3,290	465	40	38	0	29	3,862	TOTAL	6,184	500	22	43	0	22	6,771

AM PEAK HOUR	11:00 AM	AM PEAK HOUR	4:45 PM
AM PEAK VOLUME	684	AM PEAK VOLUME	1,093

CLASS 1	PASSENGER VEHICLES	TOTAL: AM+PM	9,474	965	62	81	0	51	10,633
CLASS 2	2-AXLE TRUCKS	% OF TOTAL	89.1%	9.1%	0.6%	0.8%	0.0%	0.5%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV	TOTAL: ALL	18,533	1,604	194	233	0	83	20,647
CLASS 6	Buses	% OF TOTAL	89.8%	7.8%	0.9%	1.1%	0.0%	0.4%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Wednesday, February 06, 2019
JOB #: SC2074
CITY: Chino
LOCATION: CLASS7 Riverside between Colonial and Archibald

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	12	2	1	1	0	0	16	12:00	113	12	1	0	0	0	126
0:15	19	2	0	0	0	0	21	12:15	104	17	2	1	0	0	124
0:30	9	0	0	0	0	0	9	12:30	85	16	3	2	0	1	107
0:45	10	1	0	0	0	0	11	12:45	117	6	1	1	0	1	126
1:00	7	0	0	1	0	0	8	13:00	96	3	1	2	0	0	102
1:15	3	2	0	0	0	0	5	13:15	107	10	4	4	0	0	125
1:30	10	1	0	0	0	0	11	13:30	164	17	3	1	0	0	185
1:45	5	1	0	0	0	0	6	13:45	168	20	1	3	0	0	192
2:00	4	1	1	0	0	0	6	14:00	124	10	1	5	0	0	140
2:15	3	1	1	0	0	0	5	14:15	119	4	2	3	0	0	128
2:30	9	1	0	0	0	0	10	14:30	153	10	4	4	0	1	172
2:45	6	2	0	1	0	0	9	14:45	157	9	6	1	0	1	174
3:00	7	2	0	0	0	0	9	15:00	162	6	4	3	0	0	175
3:15	8	0	0	0	0	0	8	15:15	145	13	4	4	0	0	166
3:30	6	2	0	0	0	0	8	15:30	146	11	2	4	0	1	164
3:45	10	5	0	0	0	0	15	15:45	158	10	3	2	0	0	173
4:00	10	3	0	5	0	0	18	16:00	157	7	1	5	0	1	171
4:15	25	9	0	2	0	0	36	16:15	167	3	4	2	0	0	176
4:30	38	8	0	0	0	0	46	16:30	164	14	1	7	0	0	186
4:45	30	8	2	0	0	0	40	16:45	161	12	3	3	0	0	179
5:00	49	6	0	1	0	0	56	17:00	188	10	3	3	0	1	205
5:15	71	4	1	0	0	0	76	17:15	212	6	2	4	0	0	224
5:30	92	7	5	1	0	0	105	17:30	207	5	0	4	0	0	216
5:45	122	5	0	1	0	0	128	17:45	211	7	2	3	0	0	223
6:00	112	6	2	0	0	0	120	18:00	191	10	0	3	0	0	204
6:15	102	3	1	1	0	2	109	18:15	179	3	0	1	0	0	183
6:30	136	9	2	2	0	0	149	18:30	142	4	2	0	0	1	149
6:45	163	13	0	1	0	0	177	18:45	145	1	2	3	0	0	151
7:00	163	8	4	3	0	2	180	19:00	103	2	0	0	0	0	105
7:15	210	13	2	3	0	2	230	19:15	91	4	2	0	0	0	97
7:30	249	12	4	1	0	1	267	19:30	74	3	1	1	0	0	79
7:45	249	19	3	4	0	3	278	19:45	79	2	2	1	0	1	85
8:00	207	14	1	6	0	1	229	20:00	84	3	2	0	0	0	89
8:15	166	8	4	1	0	2	181	20:15	78	7	1	1	0	0	87
8:30	153	9	2	4	0	0	168	20:30	67	10	1	0	0	1	79
8:45	150	13	0	0	0	1	164	20:45	45	6	0	0	0	0	51
9:00	119	9	0	2	0	0	130	21:00	51	4	0	0	0	0	55
9:15	120	6	1	0	0	0	127	21:15	35	5	0	0	0	0	40
9:30	111	1	2	3	0	2	119	21:30	38	1	0	1	0	0	40
9:45	100	7	3	4	0	2	116	21:45	41	3	0	0	0	0	44
10:00	90	15	0	4	0	0	109	22:00	35	3	0	0	0	0	38
10:15	86	8	5	3	0	0	102	22:15	29	4	0	0	0	0	33
10:30	92	10	4	4	0	1	111	22:30	26	4	0	0	0	0	30
10:45	85	15	3	2	0	1	106	22:45	16	4	0	0	0	0	20
11:00	116	10	1	0	0	0	127	23:00	11	2	0	0	0	0	13
11:15	114	7	0	4	0	0	125	23:15	10	3	0	0	0	0	13
11:30	121	2	3	1	0	2	129	23:30	14	5	0	0	0	0	19
11:45	96	18	3	3	0	0	120	23:45	15	0	0	1	0	0	16
TOTAL	3,875	308	61	69	0	22	4,335	TOTAL	5,184	331	71	83	0	10	5,679
				AM PEAK HOUR			7:15 AM					PM PEAK HOUR			5:00 PM
				AM PEAK VOLUME			1,004					AM PEAK VOLUME			868

TOTAL: AM+PM	9,059	639	132	152	0	32	10,014
% OF TOTAL	90.5%	6.4%	1.3%	1.5%	0.0%	0.3%	100.0%

CLASS 1 PASSENGER VEHICLES
CLASS 2 2-AXLE TRUCKS
CLASS 3 3-AXLE TRUCKS
CLASS 4 4 OR MORE AXLE TRUCKS
CLASS 5 RV
CLASS 6 BUS

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Wednesday, February 06, 2019 **CITY:** Chino

JOB #: SC2074 **LOCATION:** CLASS8 Ontario Ranch east of Haven

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	16	0	0	0	0	0	16	12:00	59	8	1	3	0	0	71
0:15	11	0	0	1	0	0	12	12:15	60	11	3	8	0	0	82
0:30	7	0	0	1	0	0	8	12:30	65	11	1	12	0	0	89
0:45	6	0	0	0	0	0	6	12:45	76	4	6	8	0	0	94
1:00	6	0	0	0	0	0	6	13:00	64	5	3	7	0	0	79
1:15	3	1	1	1	0	0	6	13:15	59	16	5	8	0	0	88
1:30	1	0	1	0	0	0	2	13:30	87	12	3	9	0	0	111
1:45	6	0	1	0	0	0	7	13:45	90	12	3	8	0	0	113
2:00	4	0	1	1	0	0	6	14:00	116	12	2	1	0	1	132
2:15	10	1	0	2	0	0	13	14:15	111	9	1	9	0	0	130
2:30	7	0	0	0	0	0	7	14:30	130	6	2	7	0	0	145
2:45	7	0	2	0	0	0	9	14:45	166	8	3	4	0	0	181
3:00	3	2	0	1	0	0	6	15:00	156	21	1	11	0	0	189
3:15	5	0	0	0	0	0	5	15:15	196	14	5	12	0	0	227
3:30	5	1	0	0	0	0	6	15:30	163	13	0	10	0	0	186
3:45	4	1	0	0	0	0	5	15:45	182	13	6	5	0	0	206
4:00	8	0	2	4	0	0	14	16:00	182	9	7	11	0	0	209
4:15	9	1	0	1	0	0	11	16:15	206	12	3	7	0	0	228
4:30	23	3	1	0	0	0	27	16:30	210	15	6	8	0	0	239
4:45	18	2	0	6	0	0	26	16:45	215	8	2	4	0	0	229
5:00	18	2	2	2	0	0	24	17:00	214	11	3	5	0	0	233
5:15	26	1	1	5	0	0	33	17:15	229	14	1	7	0	0	251
5:30	29	5	1	4	0	0	39	17:30	190	7	3	6	0	0	206
5:45	32	3	4	5	0	0	44	17:45	198	7	1	10	0	0	216
6:00	43	8	5	3	0	0	59	18:00	152	11	1	6	0	0	170
6:15	51	6	0	6	0	0	63	18:15	124	4	1	8	0	0	137
6:30	78	7	3	3	0	0	91	18:30	101	3	1	5	0	0	110
6:45	93	4	4	6	0	0	107	18:45	83	2	3	1	0	0	89
7:00	106	8	6	7	0	0	127	19:00	55	4	2	2	0	0	63
7:15	178	6	5	6	0	0	195	19:15	48	5	1	1	0	0	55
7:30	158	8	6	7	0	0	179	19:30	54	5	0	2	0	0	61
7:45	119	11	7	5	0	0	142	19:45	52	1	1	0	0	0	54
8:00	99	8	6	6	0	0	119	20:00	45	1	1	4	0	0	51
8:15	102	6	6	8	0	0	122	20:15	42	0	0	1	0	0	43
8:30	112	8	6	9	0	0	135	20:30	44	0	0	5	0	0	49
8:45	79	5	5	7	0	0	96	20:45	41	3	3	3	0	0	50
9:00	66	8	5	3	0	0	82	21:00	33	2	1	3	0	0	39
9:15	63	7	3	5	0	0	78	21:15	27	3	0	1	0	0	31
9:30	55	7	3	8	0	0	73	21:30	22	1	0	0	0	0	23
9:45	66	8	5	5	0	0	84	21:45	24	2	1	4	0	0	31
10:00	53	5	3	6	0	0	67	22:00	35	1	0	3	0	0	39
10:15	43	4	5	7	0	0	59	22:15	31	2	0	1	0	0	34
10:30	65	5	3	11	0	0	84	22:30	20	0	0	2	0	0	22
10:45	60	4	6	8	0	0	78	22:45	16	0	1	3	0	0	20
11:00	59	14	4	7	0	0	84	23:00	22	1	1	1	0	0	25
11:15	47	8	2	5	0	0	62	23:15	24	0	0	2	0	0	26
11:30	72	12	1	8	0	0	93	23:30	33	1	0	2	0	0	36
11:45	50	8	0	4	0	0	62	23:45	19	1	0	0	0	0	20
TOTAL	2,181	198	116	184	0	0	2,679	**TOTAL**	4,571	311	89	240	0	1	5,212
				AM PEAK HOUR			7:00 AM					**AM PEAK HOUR**			4:30 PM
				AM PEAK VOLUME			643					**AM PEAK VOLUME**			952

CLASS 1	PASSENGER VEHICLES	**TOTAL: AM+PM**	6,752	509	205	424	0	1	7,891
CLASS 2	2-AXLE TRUCKS	**% OF TOTAL**	85.6%	6.5%	2.6%	5.4%	0.0%	0.0%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV	**TOTAL: ALL**	13,038	933	325	957	1	4	15,258
CLASS 6	Buses	**% OF TOTAL**	85.5%	6.1%	2.1%	6.3%	0.0%	0.0%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Wednesday, February 06, 2019
JOB #: SC2074
CITY: Chino
LOCATION: CLASS8 Ontario Ranch east of Haver

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	13	0	1	1	0	0	15	12:00	42	11	2	6	0	0	61
0:15	10	0	0	0	0	0	10	12:15	52	4	3	7	0	0	66
0:30	4	0	0	1	0	0	5	12:30	53	9	0	8	0	0	70
0:45	8	1	1	0	0	0	10	12:45	62	7	0	6	0	0	75
1:00	4	0	0	1	0	0	5	13:00	54	7	3	11	0	0	75
1:15	4	1	0	0	0	0	5	13:15	66	6	3	4	0	0	79
1:30	4	0	1	1	0	0	6	13:30	65	6	3	7	0	0	81
1:45	9	0	0	1	0	0	10	13:45	65	7	2	7	0	0	81
2:00	4	1	0	1	0	0	6	14:00	76	10	2	5	0	0	93
2:15	6	1	1	0	0	0	8	14:15	91	2	2	3	0	0	98
2:30	4	0	1	2	0	0	7	14:30	88	3	4	6	0	0	101
2:45	9	0	0	1	0	0	10	14:45	79	5	3	10	0	0	97
3:00	6	0	0	1	0	0	7	15:00	73	6	0	6	0	0	85
3:15	14	0	0	1	0	0	15	15:15	79	8	2	8	0	0	97
3:30	4	1	0	0	0	0	5	15:30	73	3	4	5	0	0	85
3:45	21	0	0	1	0	0	22	15:45	98	4	1	7	1	0	111
4:00	16	0	0	6	0	0	22	16:00	122	5	2	3	0	0	132
4:15	26	1	0	3	0	0	30	16:15	113	8	1	10	0	1	133
4:30	47	2	0	1	0	0	50	16:30	120	5	2	7	0	0	134
4:45	92	1	0	3	0	0	96	16:45	146	4	3	7	0	0	160
5:00	78	3	1	1	0	0	83	17:00	123	4	1	10	0	1	139
5:15	92	3	0	1	0	0	96	17:15	146	5	1	7	0	0	159
5:30	148	4	0	2	0	0	154	17:30	138	9	2	6	0	0	155
5:45	171	8	1	3	0	0	183	17:45	129	5	1	8	0	0	143
6:00	140	10	1	3	0	0	154	18:00	121	2	0	5	0	0	128
6:15	135	8	1	5	0	0	149	18:15	84	4	1	7	0	0	96
6:30	208	14	2	9	0	0	233	18:30	99	0	0	3	0	0	102
6:45	135	17	1	14	0	0	167	18:45	82	2	0	2	0	0	86
7:00	137	22	3	17	0	1	180	19:00	64	1	1	2	0	0	68
7:15	153	7	4	18	0	0	182	19:15	69	1	0	4	0	0	74
7:30	159	10	6	19	0	0	194	19:30	68	1	1	1	0	0	71
7:45	163	11	2	12	0	0	188	19:45	40	0	1	5	0	0	46
8:00	115	10	2	15	0	0	142	20:00	58	1	2	1	0	0	62
8:15	110	16	6	11	0	0	143	20:15	51	0	1	2	0	0	54
8:30	103	18	3	17	0	0	141	20:30	39	0	0	3	0	0	42
8:45	79	17	1	19	0	0	116	20:45	35	0	0	4	0	0	39
9:00	66	12	2	6	0	0	86	21:00	38	0	1	2	0	0	41
9:15	47	4	2	11	0	0	64	21:15	57	1	1	1	0	0	60
9:30	47	7	1	9	0	0	64	21:30	39	0	0	1	0	0	40
9:45	35	6	2	8	0	0	51	21:45	25	1	0	2	0	0	28
10:00	43	7	2	15	0	0	67	22:00	21	0	0	0	0	0	21
10:15	42	9	3	10	0	0	64	22:15	24	0	1	3	0	0	28
10:30	51	5	1	5	0	0	62	22:30	15	0	0	1	0	0	16
10:45	43	6	2	12	0	0	63	22:45	21	0	0	0	0	0	21
11:00	45	5	3	11	0	0	64	23:00	14	0	0	2	0	0	16
11:15	59	5	1	12	0	0	77	23:15	18	0	1	1	0	0	20
11:30	42	5	1	8	0	0	56	23:30	17	1	0	1	0	0	19
11:45	64	8	3	15	0	0	90	23:45	19	0	0	3	0	0	22
TOTAL	3,015	266	62	313	0	1	3,657	TOTAL	3,271	158	58	220	1	2	3,710
				AM PEAK HOUR			6:30 AM						AM PEAK HOUR		4:45 PM
				AM PEAK VOLUME			762						AM PEAK VOLUME		613
TOTAL: AM+PM	6,286	424	120	533	1	3	7,367								
% OF TOTAL	85.3%	5.8%	1.6%	7.2%	0.0%	0.0%	100.0%								

CLASS 1 PASSENGER VEHICLES
CLASS 2 2-AXLE TRUCKS
CLASS 3 3-AXLE TRUCKS
CLASS 4 4 OR MORE AXLE TRUCKS
CLASS 5 RV
CLASS 6 BUS

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Wednesday, February 06, 2019 **CITY:** Chino

JOB #: SC2074 **LOCATION:** CLASS9 Grove between Eucalyptus and Merrill

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	2	0	0	0	0	0	2	12:00	14	9	0	2	0	2	27
0:15	0	0	0	1	0	0	1	12:15	26	6	0	2	0	1	35
0:30	2	3	0	0	0	0	5	12:30	11	10	1	2	0	0	24
0:45	10	0	1	0	0	0	11	12:45	22	9	0	4	0	1	36
1:00	2	1	0	0	0	0	3	13:00	12	4	1	2	0	0	19
1:15	1	1	0	0	0	0	2	13:15	12	9	1	5	0	0	27
1:30	0	0	0	0	0	0	0	13:30	27	6	1	3	0	0	37
1:45	1	0	0	0	0	0	1	13:45	35	7	0	2	0	2	46
2:00	2	1	0	0	0	0	3	14:00	37	6	1	3	0	0	47
2:15	6	0	0	0	0	0	6	14:15	41	5	2	1	0	0	49
2:30	2	1	0	0	0	0	3	14:30	75	3	0	4	0	0	82
2:45	2	0	0	0	0	0	2	14:45	38	5	3	2	0	1	49
3:00	2	0	0	0	0	0	2	15:00	50	8	0	2	0	0	60
3:15	0	0	0	1	0	0	1	15:15	45	7	1	6	0	0	59
3:30	1	0	0	1	0	0	2	15:30	52	3	0	1	0	0	56
3:45	1	1	0	0	0	0	2	15:45	48	4	0	1	0	1	54
4:00	0	0	0	0	0	0	0	16:00	50	7	1	3	0	0	61
4:15	2	1	0	0	0	0	3	16:15	57	5	2	3	0	1	68
4:30	2	2	0	0	0	0	4	16:30	63	8	0	0	0	0	71
4:45	6	1	0	0	0	0	7	16:45	55	5	0	1	0	0	61
5:00	5	0	0	0	0	0	5	17:00	69	7	0	2	0	0	78
5:15	5	1	1	0	0	0	7	17:15	66	5	2	1	0	0	74
5:30	16	1	0	1	0	0	18	17:30	49	4	1	2	0	0	56
5:45	19	2	0	1	0	0	22	17:45	45	5	0	1	0	0	51
6:00	21	3	1	1	0	0	26	18:00	42	8	0	2	0	0	52
6:15	26	1	2	0	0	0	29	18:15	34	2	0	2	0	0	38
6:30	32	2	0	2	0	0	36	18:30	25	2	0	1	0	0	28
6:45	41	3	1	2	0	1	48	18:45	21	6	0	0	0	0	27
7:00	54	1	2	2	0	0	59	19:00	11	1	0	1	0	0	13
7:15	64	2	2	3	0	0	71	19:15	11	4	0	0	0	0	15
7:30	59	3	1	2	0	0	65	19:30	13	0	0	1	0	0	14
7:45	62	5	0	0	0	0	67	19:45	10	1	0	0	0	0	11
8:00	44	2	2	2	0	2	52	20:00	9	1	0	0	0	0	10
8:15	54	3	1	3	0	1	62	20:15	12	1	0	0	0	0	13
8:30	50	4	1	2	0	0	57	20:30	3	1	1	1	0	0	6
8:45	46	2	1	2	0	0	51	20:45	3	0	0	0	0	0	3
9:00	28	3	0	0	0	0	31	21:00	6	0	0	1	0	0	7
9:15	28	5	2	2	0	0	37	21:15	8	3	0	0	0	0	11
9:30	24	3	1	1	0	0	29	21:30	6	0	0	0	0	0	6
9:45	27	1	0	0	0	1	29	21:45	10	3	0	0	0	0	13
10:00	13	5	2	3	0	0	23	22:00	8	2	0	0	0	0	10
10:15	16	4	0	0	0	0	20	22:15	6	0	0	0	0	0	6
10:30	20	6	1	4	0	1	32	22:30	1	2	0	0	0	0	3
10:45	14	7	0	4	0	1	26	22:45	4	2	0	0	0	0	6
11:00	19	3	0	0	0	0	22	23:00	12	0	0	0	0	0	12
11:15	16	4	0	3	0	0	23	23:15	3	1	0	0	0	1	5
11:30	20	3	0	3	0	0	26	23:30	18	1	0	0	0	0	19
11:45	22	5	0	3	0	1	31	23:45	3	2	0	0	0	0	5
TOTAL	889	96	22	49	0	8	1,064	**TOTAL**	1,278	190	18	64	0	10	1,560
				AM PEAK HOUR			7:00 AM					**AM PEAK HOUR**			4:30 PM
				AM PEAK VOLUME			262					**AM PEAK VOLUME**			284

CLASS 1	PASSENGER VEHICLES	**TOTAL: AM+PM**	2,167	286	40	113	0	18	2,624
CLASS 2	2-AXLE TRUCKS	**% OF TOTAL**	82.6%	10.9%	1.5%	4.3%	0.0%	0.7%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV	**TOTAL: ALL**	4,089	649	82	249	0	27	5,096
CLASS 6	Buses	**% OF TOTAL**	80.2%	12.7%	1.6%	4.9%	0.0%	0.5%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Wednesday, February 06, 2019
JOB #: SC2074
CITY: Chino
LOCATION: CLASS9 Grove between Eucalyptus and Merrill

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	2	0	0	0	0	0	2	12:00	23	6	2	1	0	0	32
0:15	4	0	0	0	0	0	4	12:15	21	1	1	4	0	0	27
0:30	0	0	0	1	0	0	1	12:30	22	10	2	4	0	0	38
0:45	2	0	0	0	0	0	2	12:45	35	7	1	2	0	0	45
1:00	3	1	0	0	0	0	4	13:00	18	11	0	3	0	1	33
1:15	0	0	0	0	0	0	0	13:15	22	4	1	3	0	0	30
1:30	3	0	0	1	0	0	4	13:30	22	9	0	3	0	0	34
1:45	1	0	0	0	0	0	1	13:45	30	14	1	1	0	0	46
2:00	1	0	0	0	0	0	1	14:00	17	5	1	4	0	0	27
2:15	0	1	0	2	0	0	3	14:15	29	4	2	2	0	1	38
2:30	1	0	0	1	0	0	2	14:30	26	7	0	3	0	0	36
2:45	2	0	0	0	0	0	2	14:45	33	4	0	1	0	0	38
3:00	0	0	0	2	0	0	2	15:00	23	3	1	1	0	0	28
3:15	7	1	0	2	0	0	10	15:15	26	8	0	2	0	0	36
3:30	13	1	0	0	0	0	14	15:30	28	5	1	1	0	0	35
3:45	12	2	0	0	0	0	14	15:45	30	4	0	0	0	0	34
4:00	4	2	0	0	0	0	6	16:00	37	9	0	3	0	0	49
4:15	20	1	1	1	0	0	23	16:15	52	2	1	1	0	0	56
4:30	12	2	1	1	0	0	16	16:30	54	7	0	2	0	0	63
4:45	23	9	0	0	0	0	32	16:45	46	4	0	1	0	1	52
5:00	28	2	0	2	0	0	32	17:00	47	3	0	2	0	0	52
5:15	16	7	0	0	0	0	23	17:15	64	2	0	0	0	0	66
5:30	36	6	1	2	0	0	45	17:30	60	4	0	0	0	0	64
5:45	65	10	0	1	0	0	76	17:45	42	1	1	0	0	0	44
6:00	42	7	0	0	0	0	49	18:00	31	6	0	0	0	0	37
6:15	45	6	0	1	0	1	53	18:15	26	9	0	0	0	0	35
6:30	50	8	0	2	0	0	60	18:30	29	3	0	0	0	0	32
6:45	55	11	3	1	0	0	70	18:45	20	4	0	1	0	0	25
7:00	30	5	2	4	0	1	42	19:00	11	0	0	0	0	0	11
7:15	29	6	2	2	0	0	39	19:15	15	1	0	0	0	0	16
7:30	23	8	0	3	0	0	34	19:30	16	1	0	0	0	0	17
7:45	46	7	0	1	0	0	54	19:45	7	3	0	0	0	0	10
8:00	31	9	1	3	0	0	44	20:00	6	0	0	0	0	0	6
8:15	25	5	1	2	0	0	33	20:15	10	2	1	0	0	0	13
8:30	32	4	0	3	0	0	39	20:30	7	2	0	0	0	0	9
8:45	20	4	1	6	0	0	31	20:45	9	2	0	2	0	0	13
9:00	20	4	1	2	0	0	27	21:00	11	1	0	1	0	0	13
9:15	12	7	0	5	0	1	25	21:15	12	0	0	0	0	0	12
9:30	13	3	0	2	0	1	19	21:30	8	2	0	0	0	0	10
9:45	10	7	0	3	0	0	20	21:45	9	1	1	0	0	0	11
10:00	13	4	1	2	0	0	20	22:00	6	0	0	0	0	0	6
10:15	11	8	2	4	0	0	25	22:15	4	2	0	0	0	0	6
10:30	13	3	0	3	0	1	20	22:30	4	0	0	1	0	0	5
10:45	16	6	2	1	0	0	25	22:45	2	1	0	0	0	0	3
11:00	13	5	2	3	0	0	23	23:00	5	0	0	1	0	0	6
11:15	13	4	0	5	0	0	22	23:15	5	0	0	0	0	0	5
11:30	18	9	2	6	0	0	35	23:30	5	0	0	1	0	0	6
11:45	20	4	2	3	0	1	30	23:45	2	0	0	2	0	0	4
TOTAL	855	189	25	83	0	6	1,158	TOTAL	1,067	174	17	53	0	3	1,314
				AM PEAK HOUR			5:45 AM					PM PEAK HOUR			4:45 PM
				AM PEAK VOLUME			238					PM PEAK VOLUME			234

TOTAL: AM+PM	1,922	363	42	136	0	9	2,472
% OF TOTAL	77.8%	14.7%	1.7%	5.5%	0.0%	0.4%	100.0%

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS
CLASS 5	RV
CLASS 6	BUS

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Wednesday, February 06, 2019 **CITY:** Chino

JOB #: SC2074 **LOCATION:** CLASS10 Merrill between Grove and Flight

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	5	1	0	0	0	0	6	12:00	29	6	4	1	0	0	40
0:15	9	0	0	0	0	0	9	12:15	37	2	1	5	0	0	45
0:30	6	1	0	1	0	0	8	12:30	51	1	2	8	0	0	62
0:45	4	0	0	2	0	0	6	12:45	49	9	0	8	0	0	66
1:00	4	1	0	1	0	0	6	13:00	59	4	0	6	0	1	70
1:15	2	0	0	1	0	0	3	13:15	72	1	1	8	0	0	82
1:30	3	0	0	1	0	0	4	13:30	75	1	2	7	0	1	86
1:45	4	1	0	0	0	0	5	13:45	80	1	1	7	0	0	89
2:00	1	1	0	2	0	0	4	14:00	93	4	1	5	0	0	103
2:15	5	2	0	4	0	0	11	14:15	97	1	2	5	0	0	105
2:30	2	1	0	3	0	0	6	14:30	101	0	2	4	0	0	107
2:45	2	0	0	1	0	0	3	14:45	117	3	1	2	0	0	123
3:00	2	1	1	3	0	0	7	15:00	101	1	5	5	0	0	112
3:15	7	0	0	0	0	0	7	15:15	88	2	0	5	0	1	96
3:30	17	0	0	2	0	0	19	15:30	107	4	1	2	0	0	114
3:45	16	6	0	0	0	0	22	15:45	121	2	1	2	0	0	126
4:00	3	0	0	2	0	0	5	16:00	104	6	1	5	0	0	116
4:15	7	5	0	1	0	0	13	16:15	118	4	1	7	0	0	130
4:30	9	1	0	0	0	0	10	16:30	122	8	2	3	0	0	135
4:45	25	7	0	2	0	0	34	16:45	131	5	0	4	0	0	140
5:00	20	1	0	2	0	0	23	17:00	123	6	1	4	0	1	135
5:15	26	3	0	0	0	0	29	17:15	132	4	0	8	0	0	144
5:30	46	3	1	1	0	0	51	17:30	110	0	3	4	0	0	117
5:45	78	7	3	0	0	0	88	17:45	120	2	4	5	0	0	131
6:00	57	5	0	2	0	0	64	18:00	115	2	2	3	0	0	122
6:15	47	6	0	3	0	1	57	18:15	107	1	2	1	0	0	111
6:30	49	6	0	4	0	0	59	18:30	91	3	3	0	0	0	97
6:45	62	4	3	3	0	1	73	18:45	84	5	2	4	0	0	95
7:00	37	7	1	4	0	0	49	19:00	76	4	1	6	0	0	87
7:15	41	4	2	3	0	0	50	19:15	67	6	0	0	0	0	73
7:30	53	9	1	5	0	0	68	19:30	59	4	0	2	0	0	65
7:45	53	3	1	6	0	0	63	19:45	47	3	0	1	0	0	51
8:00	51	8	2	4	0	0	65	20:00	33	3	0	2	0	0	38
8:15	51	3	1	7	0	0	62	20:15	30	8	0	2	0	1	41
8:30	49	5	3	4	0	0	61	20:30	19	5	0	1	0	0	25
8:45	42	2	1	3	0	1	49	20:45	25	2	0	3	0	0	30
9:00	48	0	0	7	0	0	55	21:00	29	6	0	2	0	0	37
9:15	34	1	2	4	0	0	41	21:15	20	3	0	0	0	0	23
9:30	27	3	0	1	0	1	32	21:30	24	4	0	1	0	0	29
9:45	37	1	2	7	0	0	47	21:45	25	2	1	0	0	0	28
10:00	39	1	1	2	0	0	43	22:00	9	2	0	1	0	0	12
10:15	28	5	1	5	0	0	39	22:15	15	4	0	1	0	0	20
10:30	34	1	0	4	0	1	40	22:30	6	0	0	3	0	0	9
10:45	37	3	0	1	0	0	41	22:45	9	3	0	1	0	0	13
11:00	24	5	0	2	0	0	31	23:00	11	1	0	1	0	0	13
11:15	21	3	1	2	0	0	27	23:15	9	0	0	0	0	0	9
11:30	25	9	0	1	0	0	35	23:30	16	1	0	1	0	0	18
11:45	23	5	1	5	0	0	34	23:45	9	0	0	2	0	0	11
TOTAL	1,272	141	28	118	0	5	1,564	**TOTAL**	3,172	149	47	158	0	5	3,531
				AM PEAK HOUR			5:45 AM						**AM PEAK HOUR**		4:30 PM
				AM PEAK VOLUME			268						**AM PEAK VOLUME**		554

CLASS 1	PASSENGER VEHICLES	**TOTAL: AM+PM**	4,444	290	75	276	0	10	5,095
CLASS 2	2-AXLE TRUCKS	**% OF TOTAL**	87.2%	5.7%	1.5%	5.4%	0.0%	0.2%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV	**TOTAL: ALL**	8,970	611	129	586	0	46	10,342
CLASS 6	Buses	**% OF TOTAL**	86.7%	5.9%	1.2%	5.7%	0.0%	0.4%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Wednesday, February 06, 2019
JOB #: SC2074
CITY: Chino
LOCATION: CLASS10 Merrill between Grove and Flight

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	1	0	0	0	0	0	1	12:00	34	5	0	7	0	2	48
0:15	2	1	0	0	0	0	3	12:15	37	4	0	13	0	4	58
0:30	5	2	0	0	0	0	7	12:30	22	3	0	6	0	1	32
0:45	9	2	1	0	0	0	12	12:45	25	1	0	9	0	1	36
1:00	3	2	0	0	0	0	5	13:00	33	2	2	6	0	0	43
1:15	3	0	1	0	0	0	4	13:15	28	4	0	5	0	0	37
1:30	2	0	1	1	0	0	4	13:30	48	2	0	5	0	1	56
1:45	5	0	0	3	0	0	8	13:45	46	4	0	8	0	1	59
2:00	3	0	0	2	0	0	5	14:00	74	5	0	6	0	0	85
2:15	4	0	0	0	0	0	4	14:15	76	0	3	6	0	0	85
2:30	3	1	0	2	0	0	6	14:30	92	2	0	8	0	0	102
2:45	4	0	0	0	0	0	4	14:45	86	1	2	6	0	1	96
3:00	3	1	0	3	0	0	7	15:00	78	2	1	5	0	6	92
3:15	3	0	0	3	0	0	6	15:15	64	4	1	6	0	0	75
3:30	7	5	0	2	0	0	14	15:30	87	4	1	4	0	2	98
3:45	14	4	0	1	0	0	19	15:45	68	8	0	4	0	0	80
4:00	20	0	1	5	0	0	26	16:00	62	2	2	6	0	0	72
4:15	26	0	1	2	0	0	29	16:15	59	5	3	1	0	1	69
4:30	27	6	1	2	0	0	36	16:30	83	4	0	3	0	0	90
4:45	34	4	0	3	0	0	41	16:45	65	3	1	2	0	0	71
5:00	48	6	0	3	0	0	57	17:00	90	6	2	3	0	1	102
5:15	66	4	0	2	0	0	72	17:15	65	9	3	9	0	1	87
5:30	91	5	0	5	0	1	102	17:30	60	3	0	1	0	1	65
5:45	92	0	1	5	0	0	98	17:45	65	5	1	3	0	0	74
6:00	80	6	0	3	0	0	89	18:00	60	2	0	2	0	0	64
6:15	87	9	1	2	0	1	100	18:15	57	1	0	4	0	0	62
6:30	109	2	1	5	0	1	118	18:30	62	3	0	2	0	0	67
6:45	139	7	1	4	0	1	152	18:45	54	6	0	1	0	0	61
7:00	135	5	3	6	0	0	149	19:00	39	4	1	2	0	0	46
7:15	146	2	2	8	0	1	159	19:15	24	2	0	4	0	0	30
7:30	140	6	0	4	0	0	150	19:30	22	1	0	5	0	0	28
7:45	155	8	1	6	0	0	170	19:45	19	3	0	2	0	0	24
8:00	119	6	2	8	0	1	136	20:00	11	0	2	1	0	0	14
8:15	126	9	0	4	0	0	139	20:15	17	2	1	0	0	0	20
8:30	112	5	3	7	0	1	128	20:30	7	0	0	1	0	0	8
8:45	105	4	2	5	0	0	116	20:45	16	1	0	1	0	0	18
9:00	80	3	1	4	0	0	88	21:00	13	0	0	1	0	0	14
9:15	72	7	0	2	0	0	81	21:15	15	1	0	0	0	0	16
9:30	58	2	1	6	0	1	68	21:30	11	0	0	3	0	0	14
9:45	62	8	0	7	0	1	78	21:45	12	2	0	0	0	0	14
10:00	53	5	0	2	0	1	61	22:00	13	1	0	0	0	0	14
10:15	51	8	0	4	0	1	64	22:15	9	1	0	0	0	0	10
10:30	55	7	0	3	0	1	66	22:30	6	2	0	1	0	0	9
10:45	64	5	0	2	0	1	72	22:45	6	2	0	0	0	0	8
11:00	39	9	0	2	0	0	50	23:00	13	3	0	1	0	0	17
11:15	26	7	1	1	0	0	35	23:15	6	1	1	0	0	0	8
11:30	38	6	0	4	0	0	48	23:30	10	5	1	0	0	0	16
11:45	42	7	0	3	0	0	52	23:45	9	4	0	1	0	0	14
TOTAL	2,568	186	26	146	0	13	2,939	TOTAL	1,958	135	28	164	0	23	2,308

AM PEAK HOUR	7:00 AM	PM PEAK HOUR	2:15 PM
AM PEAK VOLUME	628	AM PEAK VOLUME	375

TOTAL: AM+PM	4,526	321	54	310	0	36	5,247
% OF TOTAL	86.3%	6.1%	1.0%	5.9%	0.0%	0.7%	100.0%

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS
CLASS 5	RV
CLASS 6	BUS

APPENDIX 3.2:

EXISTING (2019) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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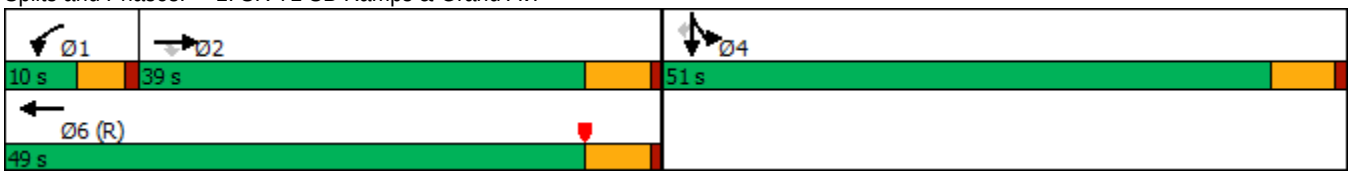
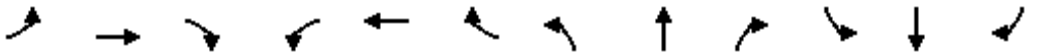
Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	734	200	63	1324	794	3	307
Future Volume (vph)	734	200	63	1324	794	3	307
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	39.0	39.0	10.0	49.0	51.0	51.0	51.0
Total Split (%)	39.0%	39.0%	10.0%	49.0%	51.0%	51.0%	51.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	734	200	63	1324	0	0	0	0	794	3	307
Future Volume (veh/h)	0	734	200	63	1324	0	0	0	0	794	3	307
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	864	146	74	1558	0				937	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85				0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1869	580	174	2334	0				1133	0	
Arrive On Green	0.00	0.36	0.36	0.05	0.45	0.00				0.31	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	864	146	74	1558	0				937	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	12.8	6.4	2.0	23.6	0.0				24.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	12.8	6.4	2.0	23.6	0.0				24.0	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1869	580	174	2334	0				1133	0	
V/C Ratio(X)	0.00	0.46	0.25	0.43	0.67	0.00				0.83	0.00	
Avail Cap(c_a), veh/h	0	1869	580	211	2334	0				1701	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.50	0.50	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	24.5	22.5	46.1	21.6	0.0				31.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	1.0	0.3	0.8	0.0				2.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.0	2.4	0.9	8.9	0.0				10.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	25.4	23.5	46.4	22.4	0.0				34.0	0.0	0.0
LnGrp LOS	A	C	C	D	C	A				C	A	
Approach Vol, veh/h		1010			1632						937	A
Approach Delay, s/veh		25.1			23.5						34.0	
Approach LOS		C			C						C	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	9.0	40.0		35.3		49.0						
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8						
Max Green Setting (Gmax), s	5.4	33.2		45.2		43.2						
Max Q Clear Time (g_c+I1), s	4.0	14.8		26.0		25.6						
Green Ext Time (p_c), s	0.0	5.8		3.5		9.8						

Intersection Summary												
HCM 6th Ctrl Delay			26.7									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

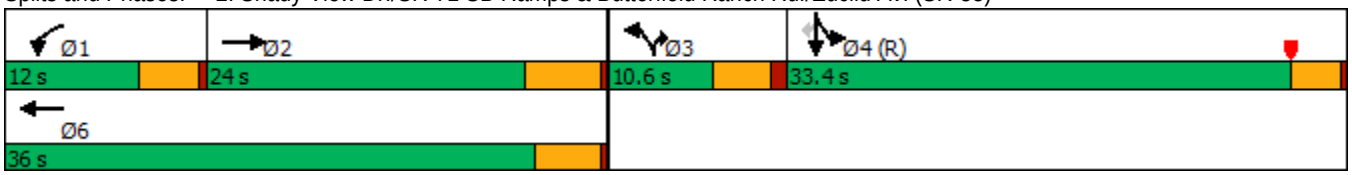
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

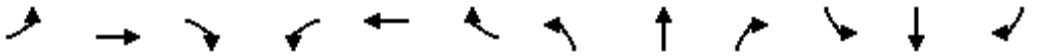
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	685	195	275	19	288	628	26	40
Future Volume (vph)	685	195	275	19	288	628	26	40
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	24.0	12.0	36.0	10.6	10.6	33.4	33.4	33.4
Total Split (%)	30.0%	15.0%	45.0%	13.3%	13.3%	41.8%	41.8%	41.8%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	685	31	195	275	0	19	0	288	628	26	40
Future Volume (veh/h)	0	685	31	195	275	0	19	0	288	628	26	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	699	23	199	281	0	19	0	225	660	0	25
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	791	26	181	1342		0	0	0	1889	0	840
Arrive On Green	0.00	0.22	0.22	0.03	0.12	0.00	0.00	0.00	0.00	0.52	0.00	0.52
Sat Flow, veh/h	0	3662	117	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	354	368	199	281	0		0.0		660	0	25
Grp Sat Flow(s),veh/h/ln	0	1805	1879	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	15.2	15.2	8.0	5.6	0.0				8.5	0.0	0.6
Cycle Q Clear(g_c), s	0.0	15.2	15.2	8.0	5.6	0.0				8.5	0.0	0.6
Prop In Lane	0.00		0.06	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	400	417	181	1342					1889	0	840
V/C Ratio(X)	0.00	0.88	0.88	1.10	0.21					0.35	0.00	0.03
Avail Cap(c_a), veh/h	0	429	446	181	1421					1889	0	840
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.95	0.95	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	30.1	30.1	38.7	24.5	0.0				11.2	0.0	9.3
Incr Delay (d2), s/veh	0.0	17.3	16.9	94.4	0.1	0.0				0.5	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.0	8.2	8.3	2.3	0.0				3.0	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	47.5	47.0	133.1	24.6	0.0				11.7	0.0	9.4
LnGrp LOS	A	D	D	F	C					B	A	A
Approach Vol, veh/h		722			480	A					685	
Approach Delay, s/veh		47.2			69.6						11.6	
Approach LOS		D			E						B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	12.0	22.7		45.3		34.7						
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5						
Max Green Setting (Gmax), s	8.0	19.0		29.9		* 32						
Max Q Clear Time (g_c+I1), s	10.0	17.2		10.5		7.6						
Green Ext Time (p_c), s	0.0	0.6		2.4		1.3						

Intersection Summary												
HCM 6th Ctrl Delay			40.0									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

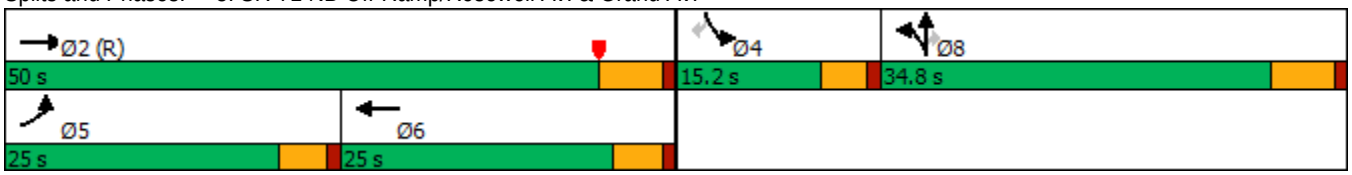
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

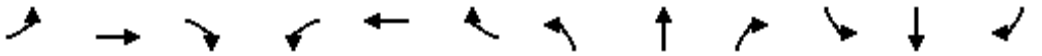
Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	319	1036	173	1050	468	70	65	41	671
Future Volume (vph)	319	1036	173	1050	468	70	65	41	671
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.6	34.8		14.7	34.8	34.8	34.8	9.5	9.5
Total Split (s)	25.0	50.0		25.0	34.8	34.8	34.8	15.2	15.2
Total Split (%)	25.0%	50.0%		25.0%	34.8%	34.8%	34.8%	15.2%	15.2%
Yellow Time (s)	3.6	4.8		3.7	4.8	4.8	4.8	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8		-0.7	-1.8	-1.8	-1.8	-0.5	-0.5
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	Max	Max	Max	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	319	1036	173	0	1050	25	468	70	65	41	0	671
Future Volume (veh/h)	319	1036	173	0	1050	25	468	70	65	41	0	671
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	347	1126	0	0	1141	27	563	0	31	45	0	453
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	380	3174		0	2323	55	1115	0	496	0	0	0
Arrive On Green	0.21	0.61	0.00	0.00	0.35	0.34	0.31	0.00	0.31	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6884	156	3619	0	1610		0	
Grp Volume(v), veh/h	347	1126	0	0	845	323	563	0	31		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1872	1810	0	1610			
Q Serve(g_s), s	18.7	10.8	0.0	0.0	13.5	13.6	12.7	0.0	1.4			
Cycle Q Clear(g_c), s	18.7	10.8	0.0	0.0	13.5	13.6	12.7	0.0	1.4			
Prop In Lane	1.00		1.00	0.00		0.08	1.00		1.00			
Lane Grp Cap(c), veh/h	380	3174		0	1721	657	1115	0	496			
V/C Ratio(X)	0.91	0.35		0.00	0.49	0.49	0.51	0.00	0.06			
Avail Cap(c_a), veh/h	380	3174		0	1721	657	1115	0	496			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.87	0.87	0.00	0.00	0.91	0.91	1.00	0.00	1.00			
Uniform Delay (d), s/veh	38.6	9.6	0.0	0.0	25.4	25.5	28.4	0.0	24.4			
Incr Delay (d2), s/veh	22.9	0.3	0.0	0.0	0.2	0.5	1.6	0.0	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	10.3	3.5	0.0	0.0	5.1	5.9	5.5	0.0	0.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.6	9.9	0.0	0.0	25.6	26.0	30.0	0.0	24.7			
LnGrp LOS	E	A		A	C	C	C	A	C			
Approach Vol, veh/h		1473	A		1168			594				
Approach Delay, s/veh		22.1			25.7			29.7				
Approach LOS		C			C			C				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		65.2			25.0	40.2		34.8				
Change Period (Y+Rc), s		5.8			4.6	* 5.8		5.8				
Max Green Setting (Gmax), s		44.2			20.4	* 20		29.0				
Max Q Clear Time (g_c+I1), s		12.8			20.7	15.6		14.7				
Green Ext Time (p_c), s		8.6			0.0	2.9		1.8				

Intersection Summary	
HCM 6th Ctrl Delay	24.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

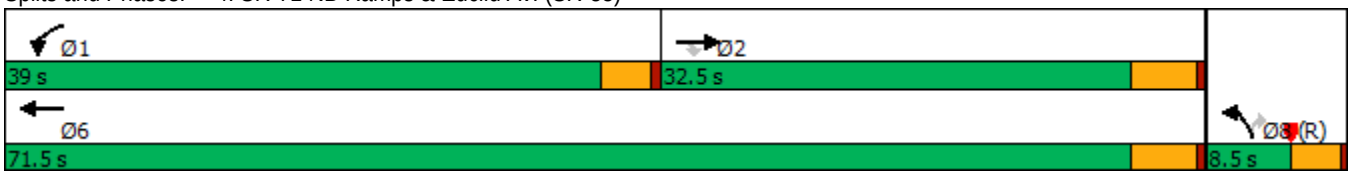
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	657	289	740	917	43	627
Future Volume (vph)	657	289	740	917	43	627
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	32.5	32.5	39.0	71.5	8.5	8.5
Total Split (%)	40.6%	40.6%	48.8%	89.4%	10.6%	10.6%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	657	289	740	917	43	627
Future Volume (veh/h)	657	289	740	917	43	627
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	699	0	787	976	46	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	898		803	2658	575	
Arrive On Green	0.08	0.00	0.44	0.74	0.16	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	699	0	787	976	46	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	15.2	0.0	34.3	7.8	0.9	0.0
Cycle Q Clear(g_c), s	15.2	0.0	34.3	7.8	0.9	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	898		803	2658	575	
V/C Ratio(X)	0.78		0.98	0.37	0.08	
Avail Cap(c_a), veh/h	1264		803	3023	575	
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.45	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.6	0.0	21.9	3.8	28.3	0.0
Incr Delay (d2), s/veh	0.8	0.0	26.8	0.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	0.0	17.6	1.3	0.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.3	0.0	48.7	3.9	28.6	0.0
LnGrp LOS	D		D	A	C	
Approach Vol, veh/h	699	A		1763	46	A
Approach Delay, s/veh	35.3			23.9	28.6	
Approach LOS	D			C	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	39.0	24.4				63.4	16.6
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	35.5	28.0				67.0	5.0
Max Q Clear Time (g_c+I1), s	36.3	17.2				9.8	2.9
Green Ext Time (p_c), s	0.0	2.7				7.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

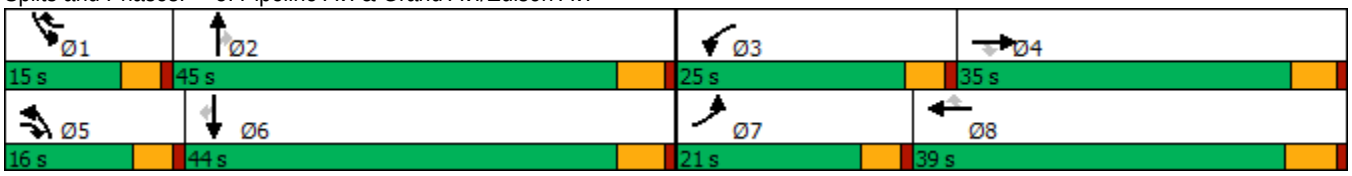
Notes

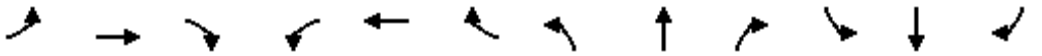
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	781	142	150	793	42	142	195	98	57	317	67
Future Volume (vph)	106	781	142	150	793	42	142	195	98	57	317	67
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	21.0	35.0	16.0	25.0	39.0	15.0	16.0	45.0	45.0	15.0	44.0	44.0
Total Split (%)	17.5%	29.2%	13.3%	20.8%	32.5%	12.5%	13.3%	37.5%	37.5%	12.5%	36.7%	36.7%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 87.1
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	781	142	150	793	42	142	195	98	57	317	67
Future Volume (veh/h)	106	781	142	150	793	42	142	195	98	57	317	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	109	805	103	155	818	28	146	201	32	59	327	35
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	211	2150	771	257	2267	762	236	704	313	89	618	271
Arrive On Green	0.07	0.44	0.43	0.08	0.46	0.45	0.08	0.21	0.21	0.05	0.18	0.18
Sat Flow, veh/h	3141	4914	1505	3141	4914	1522	2956	3420	1519	1619	3420	1498
Grp Volume(v), veh/h	109	805	103	155	818	28	146	201	32	59	327	35
Grp Sat Flow(s),veh/h/ln	1570	1638	1505	1570	1638	1522	1478	1710	1519	1619	1710	1498
Q Serve(g_s), s	2.5	8.4	2.7	3.6	8.2	0.7	3.6	3.8	1.3	2.7	6.6	1.5
Cycle Q Clear(g_c), s	2.5	8.4	2.7	3.6	8.2	0.7	3.6	3.8	1.3	2.7	6.6	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	211	2150	771	257	2267	762	236	704	313	89	618	271
V/C Ratio(X)	0.52	0.37	0.13	0.60	0.36	0.04	0.62	0.29	0.10	0.66	0.53	0.13
Avail Cap(c_a), veh/h	704	2150	771	869	2267	762	468	1848	821	235	1803	790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.2	14.4	9.7	33.7	13.2	9.7	33.8	25.4	24.4	35.2	28.2	26.1
Incr Delay (d2), s/veh	0.7	0.5	0.4	0.9	0.4	0.1	1.0	0.2	0.1	3.2	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.9	0.8	1.3	2.6	0.2	1.3	1.5	0.4	1.1	2.6	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.9	14.9	10.1	34.5	13.7	9.7	34.8	25.6	24.6	38.3	28.9	26.3
LnGrp LOS	C	B	B	C	B	A	C	C	C	D	C	C
Approach Vol, veh/h		1017			1001			379			421	
Approach Delay, s/veh		16.5			16.8			29.1			30.0	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	19.6	10.2	37.9	10.1	17.7	9.1	39.0
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	10.4	39.6	20.4	* 30	11.4	38.6	16.4	33.2
Max Q Clear Time (g_c+I1), s	4.7	5.8	5.6	10.4	5.6	8.6	4.5	10.2
Green Ext Time (p_c), s	0.0	1.3	0.2	5.7	0.1	2.2	0.1	5.4

Intersection Summary	
HCM 6th Ctrl Delay	20.3
HCM 6th LOS	C

Notes

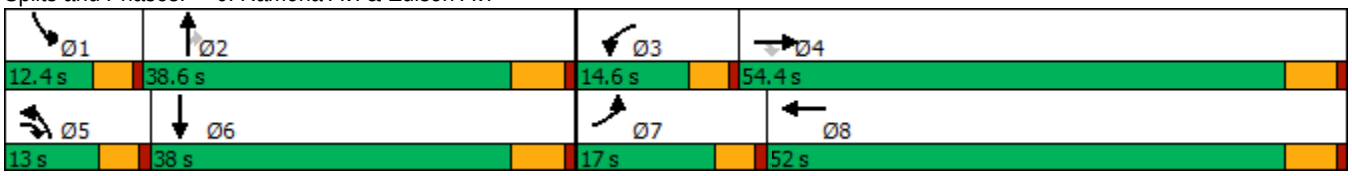
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	91	735	55	48	916	41	285	54	40	419
Future Volume (vph)	91	735	55	48	916	41	285	54	40	419
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	17.0	54.4	13.0	14.6	52.0	13.0	38.6	38.6	12.4	38.0
Total Split (%)	14.2%	45.3%	10.8%	12.2%	43.3%	10.8%	32.2%	32.2%	10.3%	31.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 104
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Ramona Av. & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	735	55	48	916	61	41	285	54	40	419	86
Future Volume (veh/h)	91	735	55	48	916	61	41	285	54	40	419	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1700	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	101	817	57	53	1018	64	46	317	29	44	466	84
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	134	1803	1385	75	1603	101	69	756	336	68	636	114
Arrive On Green	0.08	0.53	0.51	0.05	0.49	0.47	0.04	0.22	0.22	0.04	0.22	0.20
Sat Flow, veh/h	1619	3420	2481	1619	3265	205	1619	3420	1521	1619	2891	518
Grp Volume(v), veh/h	101	817	57	53	533	549	46	317	29	44	274	276
Grp Sat Flow(s),veh/h/ln	1619	1710	1240	1619	1710	1760	1619	1710	1521	1619	1710	1699
Q Serve(g_s), s	6.0	14.5	1.0	3.2	22.6	22.6	2.7	7.8	1.5	2.6	14.6	14.8
Cycle Q Clear(g_c), s	6.0	14.5	1.0	3.2	22.6	22.6	2.7	7.8	1.5	2.6	14.6	14.8
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	134	1803	1385	75	839	864	69	756	336	68	376	374
V/C Ratio(X)	0.75	0.45	0.04	0.70	0.64	0.64	0.67	0.42	0.09	0.65	0.73	0.74
Avail Cap(c_a), veh/h	215	1803	1385	176	839	864	149	1210	538	139	595	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	14.4	9.8	46.0	18.4	18.5	46.1	32.7	30.2	46.1	35.4	35.8
Incr Delay (d2), s/veh	3.2	0.8	0.1	4.4	3.7	3.6	4.1	0.4	0.1	3.9	2.7	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	5.2	0.3	1.3	8.8	9.1	1.1	3.1	0.5	1.1	6.0	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.1	15.2	9.9	50.4	22.1	22.1	50.2	33.1	30.4	50.0	38.1	38.6
LnGrp LOS	D	B	A	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		975			1135			392			594	
Approach Delay, s/veh		18.2			23.4			34.9			39.2	
Approach LOS		B			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	25.6	8.5	55.5	8.2	25.5	12.1	52.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	7.8	32.8	10.0	48.6	8.4	32.2	12.4	46.2
Max Q Clear Time (g_c+I1), s	4.6	9.8	5.2	16.5	4.7	16.8	8.0	24.6
Green Ext Time (p_c), s	0.0	1.9	0.0	6.1	0.0	2.6	0.0	6.7

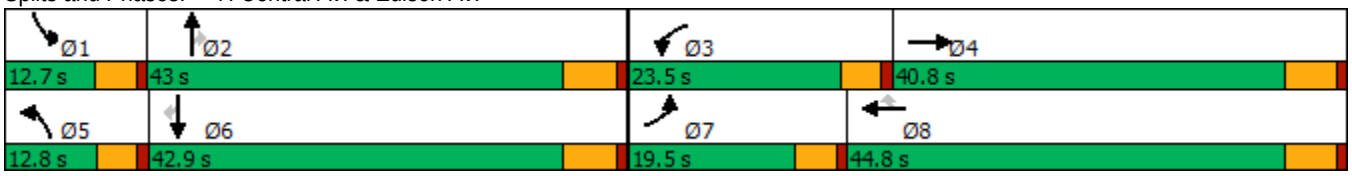
Intersection Summary	
HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

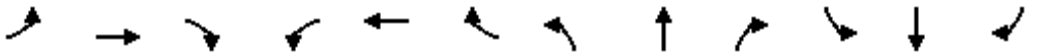
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	141	424	300	937	104	69	732	292	68	866	237
Future Volume (vph)	141	424	300	937	104	69	732	292	68	866	237
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	19.5	40.8	23.5	44.8	44.8	12.8	43.0	43.0	12.7	42.9	42.9
Total Split (%)	16.3%	34.0%	19.6%	37.3%	37.3%	10.7%	35.8%	35.8%	10.6%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 112.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	424	50	300	937	104	69	732	292	68	866	237
Future Volume (veh/h)	141	424	50	300	937	104	69	732	292	68	866	237
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	147	442	46	312	976	80	72	762	122	71	902	189
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	181	1117	116	387	1261	555	98	1078	474	97	1076	473
Arrive On Green	0.11	0.36	0.34	0.12	0.37	0.37	0.06	0.32	0.32	0.06	0.31	0.31
Sat Flow, veh/h	1619	3128	324	3141	3420	1505	1619	3420	1503	1619	3420	1504
Grp Volume(v), veh/h	147	241	247	312	976	80	72	762	122	71	902	189
Grp Sat Flow(s),veh/h/ln	1619	1710	1742	1570	1710	1505	1619	1710	1503	1619	1710	1504
Q Serve(g_s), s	9.8	11.7	11.8	10.7	27.9	3.9	4.8	21.7	6.7	4.8	27.2	10.9
Cycle Q Clear(g_c), s	9.8	11.7	11.8	10.7	27.9	3.9	4.8	21.7	6.7	4.8	27.2	10.9
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	181	611	622	387	1261	555	98	1078	474	97	1076	473
V/C Ratio(X)	0.81	0.39	0.40	0.81	0.77	0.14	0.73	0.71	0.26	0.73	0.84	0.40
Avail Cap(c_a), veh/h	227	611	622	554	1261	555	129	1206	530	127	1202	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.0	26.6	26.8	47.2	30.8	23.3	51.1	33.4	28.2	51.1	35.3	29.7
Incr Delay (d2), s/veh	13.3	1.9	1.9	3.7	4.7	0.5	8.9	1.7	0.3	8.9	4.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	4.9	5.0	4.2	11.6	1.4	2.1	8.8	2.4	2.1	11.5	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.3	28.5	28.7	50.9	35.5	23.8	60.0	35.0	28.5	60.0	40.2	30.3
LnGrp LOS	E	C	C	D	D	C	E	D	C	E	D	C
Approach Vol, veh/h		635			1368			956			1162	
Approach Delay, s/veh		36.2			38.3			36.1			39.8	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	38.9	17.6	43.5	10.7	38.8	16.3	44.8
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	8.1	37.2	18.9	35.0	8.2	37.1	14.9	39.0
Max Q Clear Time (g_c+I1), s	6.8	23.7	12.7	13.8	6.8	29.2	11.8	29.9
Green Ext Time (p_c), s	0.0	4.3	0.3	2.5	0.0	3.8	0.0	4.3

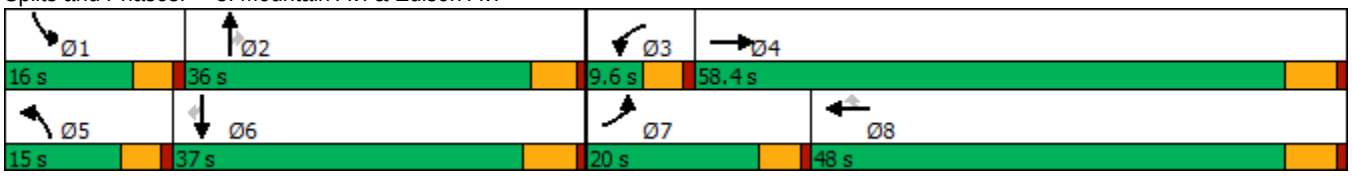
Intersection Summary	
HCM 6th Ctrl Delay	37.9
HCM 6th LOS	D

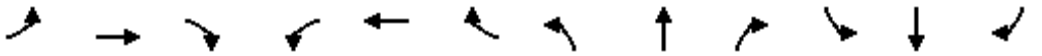
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	134	464	10	951	99	80	146	39	90	75	250
Future Volume (vph)	134	464	10	951	99	80	146	39	90	75	250
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	20.0	58.4	9.6	48.0	48.0	15.0	36.0	36.0	16.0	37.0	37.0
Total Split (%)	16.7%	48.7%	8.0%	40.0%	40.0%	12.5%	30.0%	30.0%	13.3%	30.8%	30.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 101.1
Natural Cycle: 85
Control Type: Actuated-Uncoordinated

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	464	38	10	951	99	80	146	39	90	75	250
Future Volume (veh/h)	134	464	38	10	951	99	80	146	39	90	75	250
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	146	504	37	11	1034	97	87	159	12	98	82	134
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	185	2757	200	32	1698	756	118	228	193	131	257	213
Arrive On Green	0.11	0.59	0.57	0.02	0.50	0.50	0.07	0.13	0.13	0.08	0.14	0.14
Sat Flow, veh/h	1619	4667	339	1619	3420	1524	1619	1800	1525	1619	1800	1495
Grp Volume(v), veh/h	146	352	189	11	1034	97	87	159	12	98	82	134
Grp Sat Flow(s),veh/h/ln	1619	1638	1730	1619	1710	1524	1619	1800	1525	1619	1800	1495
Q Serve(g_s), s	8.1	4.5	4.7	0.6	20.1	3.2	4.8	7.8	0.6	5.5	3.8	7.8
Cycle Q Clear(g_c), s	8.1	4.5	4.7	0.6	20.1	3.2	4.8	7.8	0.6	5.5	3.8	7.8
Prop In Lane	1.00		0.20	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	185	1935	1022	32	1698	756	118	228	193	131	257	213
V/C Ratio(X)	0.79	0.18	0.18	0.34	0.61	0.13	0.74	0.70	0.06	0.75	0.32	0.63
Avail Cap(c_a), veh/h	281	1935	1022	98	1698	756	193	626	530	211	645	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.7	8.6	8.7	44.5	16.7	12.5	41.8	38.5	35.4	41.4	35.5	37.2
Incr Delay (d2), s/veh	4.0	0.2	0.4	2.3	1.6	0.3	3.3	3.8	0.1	3.1	0.7	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	1.4	1.6	0.3	7.3	1.0	2.0	3.6	0.2	2.2	1.6	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.7	8.8	9.1	46.9	18.4	12.8	45.1	42.3	35.5	44.5	36.2	40.2
LnGrp LOS	D	A	A	D	B	B	D	D	D	D	D	D
Approach Vol, veh/h		687			1142			258			314	
Approach Delay, s/veh		16.3			18.2			42.9			40.5	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	16.4	5.8	58.4	10.7	17.1	14.5	49.7
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	11.4	* 31	5.0	52.6	10.4	31.2	15.4	42.2
Max Q Clear Time (g_c+I1), s	7.5	9.8	2.6	6.7	6.8	9.8	10.1	22.1
Green Ext Time (p_c), s	0.0	0.8	0.0	3.4	0.0	0.8	0.1	7.1

Intersection Summary	
HCM 6th Ctrl Delay	23.2
HCM 6th LOS	C

Notes

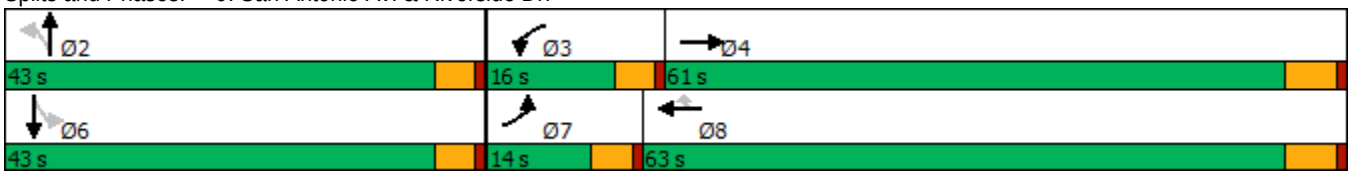
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

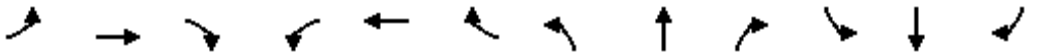
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	16	451	34	793	4	110	2	15	5
Future Volume (vph)	16	451	34	793	4	110	2	15	5
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	14.0	61.0	16.0	63.0	63.0	43.0	43.0	43.0	43.0
Total Split (%)	11.7%	50.8%	13.3%	52.5%	52.5%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 93.3
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	451	55	34	793	4	110	2	42	15	5	48
Future Volume (veh/h)	16	451	55	34	793	4	110	2	42	15	5	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	17	485	55	37	853	3	118	2	22	16	5	35
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	43	2084	235	67	2351	1026	246	19	207	260	28	199
Arrive On Green	0.03	0.67	0.65	0.04	0.69	0.69	0.15	0.15	0.14	0.15	0.15	0.14
Sat Flow, veh/h	1619	3097	350	1619	3420	1492	1312	128	1413	1328	194	1361
Grp Volume(v), veh/h	17	267	273	37	853	3	118	0	24	16	0	40
Grp Sat Flow(s),veh/h/ln	1619	1710	1737	1619	1710	1492	1312	0	1542	1328	0	1555
Q Serve(g_s), s	0.9	5.2	5.3	1.9	8.9	0.1	7.4	0.0	1.2	0.9	0.0	1.9
Cycle Q Clear(g_c), s	0.9	5.2	5.3	1.9	8.9	0.1	9.4	0.0	1.2	2.1	0.0	1.9
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.92	1.00		0.88
Lane Grp Cap(c), veh/h	43	1150	1169	67	2351	1026	246	0	226	260	0	227
V/C Ratio(X)	0.40	0.23	0.23	0.56	0.36	0.00	0.48	0.00	0.11	0.06	0.00	0.18
Avail Cap(c_a), veh/h	189	1150	1169	226	2351	1026	650	0	701	669	0	707
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.1	5.4	5.5	40.4	5.6	4.2	36.2	0.0	32.0	32.7	0.0	32.3
Incr Delay (d2), s/veh	2.2	0.5	0.5	2.7	0.4	0.0	1.4	0.0	0.2	0.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.5	1.5	0.8	2.3	0.0	2.5	0.0	0.4	0.3	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.3	5.9	6.0	43.1	6.0	4.2	37.7	0.0	32.2	32.8	0.0	32.7
LnGrp LOS	D	A	A	D	A	A	D	A	C	C	A	C
Approach Vol, veh/h		557			893			142			56	
Approach Delay, s/veh		7.1			7.5			36.7			32.7	
Approach LOS		A			A			D			C	

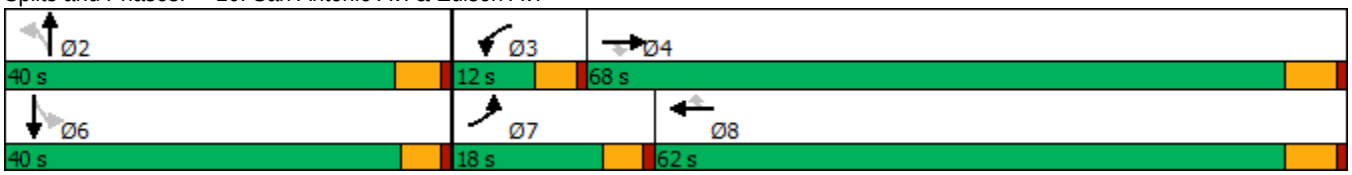
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.6	7.5	61.7		16.6	6.3	63.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		38.4	11.4	55.2		38.4	9.4	57.2				
Max Q Clear Time (g_c+I1), s		11.4	3.9	7.3		4.1	2.9	10.9				
Green Ext Time (p_c), s		0.5	0.0	3.2		0.3	0.0	6.4				

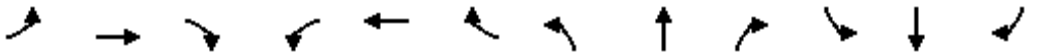
Intersection Summary												
HCM 6th Ctrl Delay			10.8									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	44	525	26	3	844	19	40	70	13	36
Future Volume (vph)	44	525	26	3	844	19	40	70	13	36
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	18.0	68.0	68.0	12.0	62.0	62.0	40.0	40.0	40.0	40.0
Total Split (%)	15.0%	56.7%	56.7%	10.0%	51.7%	51.7%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 94.6
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	525	26	3	844	19	40	70	13	13	36	89
Future Volume (veh/h)	44	525	26	3	844	19	40	70	13	13	36	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1000	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	48	571	20	3	917	21	43	76	5	14	39	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	74	2438	1086	10	2319	1034	117	165	10	60	89	114
Arrive On Green	0.05	0.71	0.71	0.01	0.68	0.68	0.14	0.14	0.13	0.14	0.14	0.13
Sat Flow, veh/h	1619	3420	1523	952	3420	1525	444	1156	67	109	650	831
Grp Volume(v), veh/h	48	571	20	3	917	21	124	0	0	111	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1523	952	1710	1525	1668	0	0	1591	0	0
Q Serve(g_s), s	2.6	5.2	0.3	0.3	10.6	0.4	0.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.6	5.2	0.3	0.3	10.6	0.4	5.8	0.0	0.0	5.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.35		0.04	0.13		0.52
Lane Grp Cap(c), veh/h	74	2438	1086	10	2319	1034	292	0	0	263	0	0
V/C Ratio(X)	0.65	0.23	0.02	0.29	0.40	0.02	0.42	0.00	0.00	0.42	0.00	0.00
Avail Cap(c_a), veh/h	252	2438	1086	85	2319	1034	701	0	0	674	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.1	4.4	3.7	44.1	6.4	4.7	35.5	0.0	0.0	36.0	0.0	0.0
Incr Delay (d2), s/veh	3.6	0.2	0.0	5.8	0.5	0.0	1.0	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.3	0.1	0.1	3.0	0.1	2.5	0.0	0.0	2.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.7	4.7	3.8	49.9	6.9	4.8	36.5	0.0	0.0	37.1	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		639			941			124			111	
Approach Delay, s/veh		7.7			7.0			36.5			37.1	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.8	5.0	68.0		16.8	8.1	64.9				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		34.9	7.4	62.2		* 35	13.4	56.2				
Max Q Clear Time (g_c+I1), s		7.8	2.3	7.2		7.7	4.6	12.6				
Green Ext Time (p_c), s		0.6	0.0	3.9		0.6	0.0	7.1				

Intersection Summary	
HCM 6th Ctrl Delay	11.1
HCM 6th LOS	B

Notes

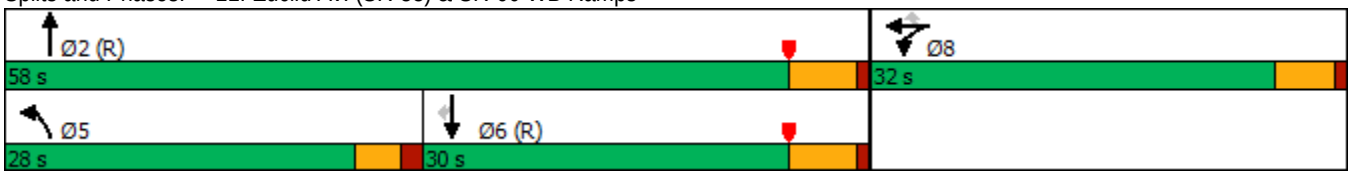
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

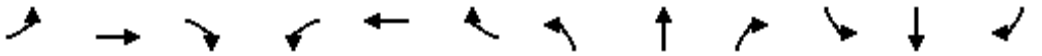
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	591	6	408	333	902	947	470
Future Volume (vph)	591	6	408	333	902	947	470
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	32.0	32.0	32.0	28.0	58.0	30.0	30.0
Total Split (%)	35.6%	35.6%	35.6%	31.1%	64.4%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	591	6	408	333	902	0	0	947	470
Future Volume (veh/h)	0	0	0	591	6	408	333	902	0	0	947	470
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				698	0	145	354	960	0	0	1007	272
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				803	0	357	382	2388	0	0	1446	645
Arrive On Green				0.22	0.00	0.22	0.42	1.00	0.00	0.00	0.40	0.40
Sat Flow, veh/h				3619	0	1610	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				698	0	145	354	960	0	0	1007	272
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1610
Q Serve(g_s), s				16.7	0.0	6.9	16.7	0.0	0.0	0.0	20.9	11.0
Cycle Q Clear(g_c), s				16.7	0.0	6.9	16.7	0.0	0.0	0.0	20.9	11.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				803	0	357	382	2388	0	0	1446	645
V/C Ratio(X)				0.87	0.00	0.41	0.93	0.40	0.00	0.00	0.70	0.42
Avail Cap(c_a), veh/h				1086	0	483	472	2388	0	0	1446	645
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.58	0.58	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.8	0.0	29.9	25.4	0.0	0.0	0.0	22.4	19.5
Incr Delay (d2), s/veh				4.7	0.0	0.3	13.4	0.3	0.0	0.0	2.8	2.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.4	0.0	2.6	6.4	0.1	0.0	0.0	8.7	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				38.5	0.0	30.2	38.7	0.3	0.0	0.0	25.2	21.5
LnGrp LOS				D	A	C	D	A	A	A	C	C
Approach Vol, veh/h					843			1314			1279	
Approach Delay, s/veh					37.1			10.7			24.4	
Approach LOS					D			B			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		65.0			23.5	41.6		25.0				
Change Period (Y+Rc), s		5.5			4.5	5.5		5.0				
Max Green Setting (Gmax), s		52.5			23.5	24.5		27.0				
Max Q Clear Time (g_c+I1), s		2.0			18.7	22.9		18.7				
Green Ext Time (p_c), s		12.0			0.3	1.3		1.2				

Intersection Summary		
HCM 6th Ctrl Delay	22.3	
HCM 6th LOS	C	

Notes

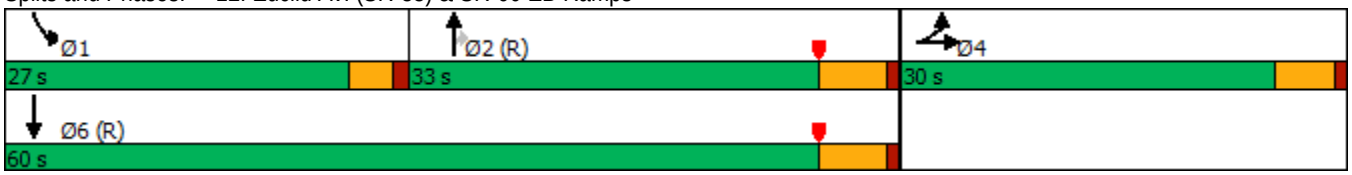
User approved volume balancing among the lanes for turning movement.

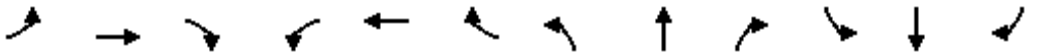
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	404	2	832	656	363	1175
Future Volume (vph)	404	2	832	656	363	1175
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	30.0	30.0	33.0	33.0	27.0	60.0
Total Split (%)	33.3%	33.3%	36.7%	36.7%	30.0%	66.7%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	404	2	288	0	0	0	0	832	656	363	1175	0
Future Volume (veh/h)	404	2	288	0	0	0	0	832	656	363	1175	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	338	124	248				0	876	492	382	1237	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	441	138	276				0	1323	574	414	2308	0
Arrive On Green	0.24	0.24	0.24				0.00	0.37	0.37	0.30	0.85	0.00
Sat Flow, veh/h	1810	565	1131				0	3705	1568	1810	3705	0
Grp Volume(v), veh/h	338	0	372				0	876	492	382	1237	0
Grp Sat Flow(s),veh/h/ln	1810	0	1696				0	1805	1568	1810	1805	0
Q Serve(g_s), s	15.6	0.0	19.1				0.0	18.3	26.1	18.4	8.5	0.0
Cycle Q Clear(g_c), s	15.6	0.0	19.1				0.0	18.3	26.1	18.4	8.5	0.0
Prop In Lane	1.00		0.67				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	441	0	414				0	1323	574	414	2308	0
V/C Ratio(X)	0.77	0.00	0.90				0.00	0.66	0.86	0.92	0.54	0.00
Avail Cap(c_a), veh/h	503	0	471				0	1323	574	462	2308	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.33	1.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.79	0.79	0.72	0.72	0.00
Uniform Delay (d), s/veh	31.6	0.0	32.9				0.0	23.9	26.3	30.6	3.1	0.0
Incr Delay (d2), s/veh	5.1	0.0	17.2				0.0	2.1	12.4	17.2	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.0	9.3				0.0	7.6	11.0	8.9	1.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.7	0.0	50.1				0.0	25.9	38.7	47.7	3.7	0.0
LnGrp LOS	D	A	D				A	C	D	D	A	A
Approach Vol, veh/h		710						1368			1619	
Approach Delay, s/veh		43.7						30.5			14.1	
Approach LOS		D						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	24.6	38.5		27.0		63.0
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	23.0	27.5		25.0		54.5
Max Q Clear Time (g_c+I1), s	20.4	28.1		21.1		10.5
Green Ext Time (p_c), s	0.2	0.0		0.8		16.9

Intersection Summary	
HCM 6th Ctrl Delay	25.9
HCM 6th LOS	C

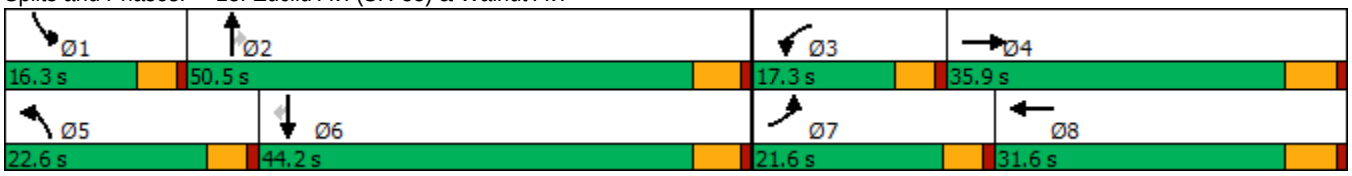
Notes

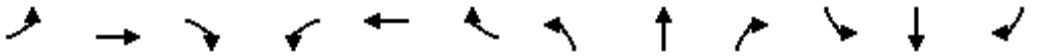
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	113	289	71	307	125	1122	45	150	1128	59
Future Volume (vph)	113	289	71	307	125	1122	45	150	1128	59
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	21.6	35.9	17.3	31.6	22.6	50.5	50.5	16.3	44.2	44.2
Total Split (%)	18.0%	29.9%	14.4%	26.3%	18.8%	42.1%	42.1%	13.6%	36.8%	36.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 107.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	289	109	71	307	204	125	1122	45	150	1128	59
Future Volume (veh/h)	113	289	109	71	307	204	125	1122	45	150	1128	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	119	304	79	75	323	175	132	1181	29	158	1187	41
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	145	589	151	94	403	213	159	2204	684	214	2076	644
Arrive On Green	0.09	0.22	0.22	0.06	0.19	0.19	0.10	0.45	0.45	0.07	0.42	0.42
Sat Flow, veh/h	1619	2696	689	1619	2157	1143	1619	4914	1524	2956	4914	1524
Grp Volume(v), veh/h	119	191	192	75	255	243	132	1181	29	158	1187	41
Grp Sat Flow(s),veh/h/ln	1619	1710	1676	1619	1710	1590	1619	1638	1524	1478	1638	1524
Q Serve(g_s), s	7.3	9.9	10.2	4.6	14.3	14.8	8.0	17.5	1.1	5.3	18.5	1.6
Cycle Q Clear(g_c), s	7.3	9.9	10.2	4.6	14.3	14.8	8.0	17.5	1.1	5.3	18.5	1.6
Prop In Lane	1.00		0.41	1.00		0.72	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	145	373	366	94	319	297	159	2204	684	214	2076	644
V/C Ratio(X)	0.82	0.51	0.52	0.80	0.80	0.82	0.83	0.54	0.04	0.74	0.57	0.06
Avail Cap(c_a), veh/h	274	512	502	204	439	408	290	2204	684	344	2076	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	34.6	34.7	46.8	39.1	39.3	44.5	20.1	15.6	45.7	22.1	17.2
Incr Delay (d2), s/veh	4.3	1.1	1.2	5.8	7.0	9.1	4.2	0.9	0.1	1.9	1.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	4.0	4.1	1.9	6.3	6.3	3.3	6.4	0.4	1.9	6.9	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.3	35.7	35.9	52.6	46.1	48.4	48.7	21.1	15.7	47.6	23.3	17.4
LnGrp LOS	D	D	D	D	D	D	D	C	B	D	C	B
Approach Vol, veh/h		502			573			1342			1386	
Approach Delay, s/veh		39.0			47.9			23.7			25.9	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	50.5	10.4	27.8	14.5	47.9	13.6	24.6
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	11.7	45.1	12.7	30.1	18.0	38.8	17.0	25.8
Max Q Clear Time (g_c+I1), s	7.3	19.5	6.6	12.2	10.0	20.5	9.3	16.8
Green Ext Time (p_c), s	0.1	9.0	0.0	1.8	0.1	7.9	0.1	1.8

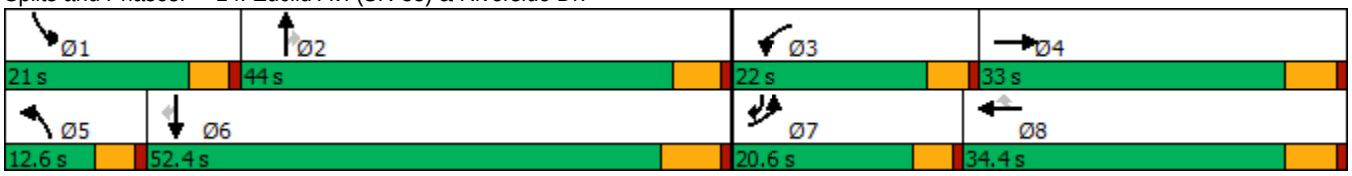
Intersection Summary	
HCM 6th Ctrl Delay	30.1
HCM 6th LOS	C

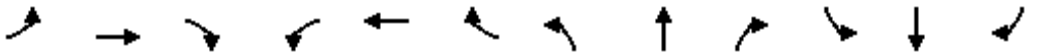
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	153	311	187	488	115	66	909	155	174	940	152
Future Volume (vph)	153	311	187	488	115	66	909	155	174	940	152
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	20.6	33.0	22.0	34.4	34.4	12.6	44.0	44.0	21.0	52.4	20.6
Total Split (%)	17.2%	27.5%	18.3%	28.7%	28.7%	10.5%	36.7%	36.7%	17.5%	43.7%	17.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 117.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	311	49	187	488	115	66	909	155	174	940	152
Future Volume (veh/h)	153	311	49	187	488	115	66	909	155	174	940	152
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	161	327	36	197	514	92	69	957	123	183	989	101
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	186	352	39	221	832	371	86	1129	503	208	1386	793
Arrive On Green	0.11	0.22	0.22	0.14	0.24	0.24	0.05	0.33	0.33	0.13	0.41	0.41
Sat Flow, veh/h	1619	1593	175	1619	3420	1525	1619	3420	1525	1619	3420	1524
Grp Volume(v), veh/h	161	0	363	197	514	92	69	957	123	183	989	101
Grp Sat Flow(s),veh/h/ln	1619	0	1768	1619	1710	1525	1619	1710	1525	1619	1710	1524
Q Serve(g_s), s	11.4	0.0	23.5	14.0	15.7	5.7	4.9	30.4	6.9	13.0	28.3	4.0
Cycle Q Clear(g_c), s	11.4	0.0	23.5	14.0	15.7	5.7	4.9	30.4	6.9	13.0	28.3	4.0
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	186	0	391	221	832	371	86	1129	503	208	1386	793
V/C Ratio(X)	0.87	0.00	0.93	0.89	0.62	0.25	0.80	0.85	0.24	0.88	0.71	0.13
Avail Cap(c_a), veh/h	222	0	411	241	836	373	111	1129	503	227	1386	793
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	0.0	44.6	49.6	39.4	35.6	54.8	36.4	28.5	50.1	29.1	14.4
Incr Delay (d2), s/veh	22.8	0.0	26.6	27.9	1.4	0.3	21.3	8.0	1.2	27.5	3.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	12.8	7.2	6.5	2.1	2.4	13.0	2.6	6.7	11.7	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.7	0.0	71.3	77.5	40.8	36.0	76.0	44.4	29.7	77.6	32.3	14.8
LnGrp LOS	E	A	E	E	D	D	E	D	C	E	C	B
Approach Vol, veh/h		524			803			1149			1273	
Approach Delay, s/veh		72.0			49.2			44.7			37.4	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.6	45.1	20.6	31.7	10.8	53.9	18.0	34.2
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	16.4	* 39	17.4	27.2	8.0	45.9	16.0	28.6
Max Q Clear Time (g_c+I1), s	15.0	32.4	16.0	25.5	6.9	30.3	13.4	17.7
Green Ext Time (p_c), s	0.0	3.1	0.0	0.3	0.0	6.2	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	47.0
HCM 6th LOS	D

Notes

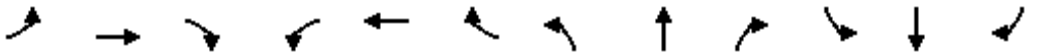
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	104	165	37	71	151	46	971	129	56	1007	92
Future Volume (vph)	104	165	37	71	151	46	971	129	56	1007	92
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	44.0	44.0	44.0	44.0	44.0	15.0	60.0	60.0	16.0	61.0	61.0
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	12.5%	50.0%	50.0%	13.3%	50.8%	50.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 102.3
Natural Cycle: 75
Control Type: Actuated-Uncoordinated

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	165	37	71	151	51	46	971	129	56	1007	92
Future Volume (veh/h)	104	165	37	71	151	51	46	971	129	56	1007	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	111	176	23	76	161	42	49	1033	113	60	1071	67
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	224	438	371	113	205	48	60	1858	829	75	1888	825
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.04	0.54	0.54	0.05	0.55	0.55
Sat Flow, veh/h	1131	1800	1524	279	842	199	1619	3420	1525	1619	3420	1494
Grp Volume(v), veh/h	111	176	23	279	0	0	49	1033	113	60	1071	67
Grp Sat Flow(s),veh/h/ln	1131	1800	1524	1320	0	0	1619	1710	1525	1619	1710	1494
Q Serve(g_s), s	0.0	8.3	1.2	12.9	0.0	0.0	3.0	19.9	3.7	3.7	20.6	2.1
Cycle Q Clear(g_c), s	19.4	8.3	1.2	21.2	0.0	0.0	3.0	19.9	3.7	3.7	20.6	2.1
Prop In Lane	1.00		1.00	0.27		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	224	438	371	366	0	0	60	1858	829	75	1888	825
V/C Ratio(X)	0.50	0.40	0.06	0.76	0.00	0.00	0.81	0.56	0.14	0.80	0.57	0.08
Avail Cap(c_a), veh/h	377	682	577	576	0	0	167	1858	829	183	1888	825
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.2	32.0	29.3	37.7	0.0	0.0	48.2	15.1	11.4	47.7	14.7	10.6
Incr Delay (d2), s/veh	1.7	0.6	0.1	3.3	0.0	0.0	9.2	1.2	0.3	7.3	1.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	3.5	0.4	6.7	0.0	0.0	1.3	6.8	1.2	1.6	7.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.9	32.6	29.4	40.9	0.0	0.0	57.4	16.3	11.7	54.9	16.0	10.8
LnGrp LOS	D	C	C	D	A	A	E	B	B	D	B	B
Approach Vol, veh/h		310			279			1195			1198	
Approach Delay, s/veh		34.3			40.9			17.5			17.6	
Approach LOS		C			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.3	61.3		30.3	8.4	62.2		30.3				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	11.4	* 55		38.2	10.4	54.5		38.2				
Max Q Clear Time (g_c+I1), s	5.7	21.9		21.4	5.0	22.6		23.2				
Green Ext Time (p_c), s	0.0	7.8		1.2	0.0	8.0		1.3				

Intersection Summary			
HCM 6th Ctrl Delay		21.5	
HCM 6th LOS		C	

Notes

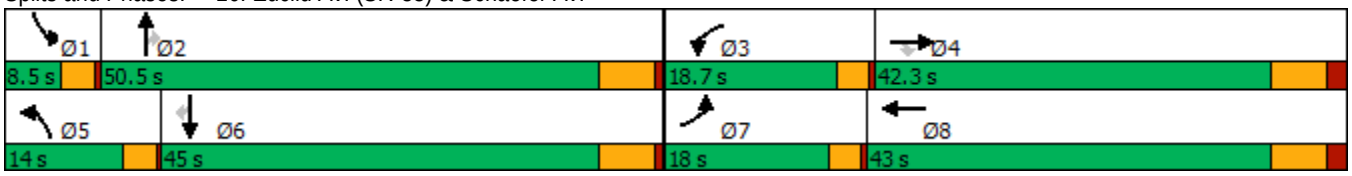
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

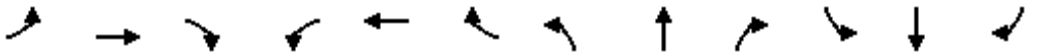
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	153	73	58	140	177	102	934	35	29	914	122
Future Volume (vph)	153	73	58	140	177	102	934	35	29	914	122
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	18.0	42.3	42.3	18.7	43.0	14.0	50.5	50.5	8.5	45.0	45.0
Total Split (%)	15.0%	35.3%	35.3%	15.6%	35.8%	11.7%	42.1%	42.1%	7.1%	37.5%	37.5%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 95.1
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	73	58	140	177	11	102	934	35	29	914	122
Future Volume (veh/h)	153	73	58	140	177	11	102	934	35	29	914	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	165	78	43	151	190	10	110	1004	28	31	983	97
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	200	268	227	210	263	14	137	1430	638	52	1250	556
Arrive On Green	0.12	0.15	0.15	0.13	0.16	0.16	0.08	0.42	0.42	0.03	0.37	0.37
Sat Flow, veh/h	1619	1800	1525	1619	1694	89	1619	3420	1525	1619	3420	1521
Grp Volume(v), veh/h	165	78	43	151	0	200	110	1004	28	31	983	97
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1783	1619	1710	1525	1619	1710	1521
Q Serve(g_s), s	7.3	2.8	1.8	6.6	0.0	7.9	4.9	17.8	0.8	1.4	18.9	3.2
Cycle Q Clear(g_c), s	7.3	2.8	1.8	6.6	0.0	7.9	4.9	17.8	0.8	1.4	18.9	3.2
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	200	268	227	210	0	277	137	1430	638	52	1250	556
V/C Ratio(X)	0.83	0.29	0.19	0.72	0.00	0.72	0.80	0.70	0.04	0.60	0.79	0.17
Avail Cap(c_a), veh/h	319	863	731	334	0	872	231	2066	922	110	1811	805
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.5	27.9	27.4	30.8	0.0	29.6	33.1	17.7	12.7	35.2	20.8	15.8
Incr Delay (d2), s/veh	4.5	0.4	0.3	1.7	0.0	2.7	4.2	0.6	0.0	4.1	1.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	1.2	0.6	2.5	0.0	3.3	1.9	5.7	0.2	0.6	6.4	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.0	28.3	27.7	32.5	0.0	32.3	37.3	18.3	12.7	39.3	22.3	16.0
LnGrp LOS	D	C	C	C	A	C	D	B	B	D	C	B
Approach Vol, veh/h		286			351			1142			1111	
Approach Delay, s/veh		32.7			32.4			20.0			22.2	
Approach LOS		C			C			B			C	

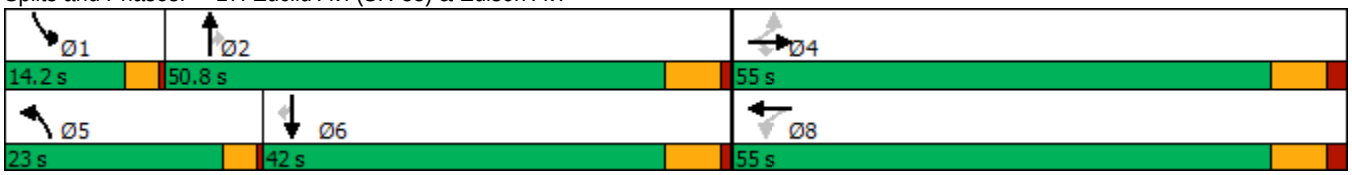
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	36.8	13.0	18.0	9.7	32.9	12.6	18.4
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	44.5	15.2	35.3	10.5	39.0	14.5	36.0
Max Q Clear Time (g_c+I1), s	3.4	19.8	8.6	4.8	6.9	20.9	9.3	9.9
Green Ext Time (p_c), s	0.0	6.7	0.1	0.4	0.0	6.1	0.1	0.8

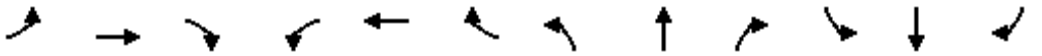
Intersection Summary	
HCM 6th Ctrl Delay	23.6
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	156	237	97	33	416	208	869	37	63	799	167
Future Volume (vph)	156	237	97	33	416	208	869	37	63	799	167
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	55.0	55.0	55.0	55.0	55.0	23.0	50.8	50.8	14.2	42.0	42.0
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	19.2%	42.3%	42.3%	11.8%	35.0%	35.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 107.8
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	237	97	33	416	63	208	869	37	63	799	167
Future Volume (veh/h)	156	237	97	33	416	63	208	869	37	63	799	167
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	162	247	46	34	433	61	217	905	31	66	832	123
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	238	765	648	411	656	92	243	1292	576	82	954	415
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.15	0.38	0.38	0.05	0.28	0.28
Sat Flow, veh/h	866	1800	1524	1042	1543	217	1619	3420	1525	1619	3420	1488
Grp Volume(v), veh/h	162	247	46	34	0	494	217	905	31	66	832	123
Grp Sat Flow(s),veh/h/ln	866	1800	1524	1042	0	1761	1619	1710	1525	1619	1710	1488
Q Serve(g_s), s	20.7	10.3	2.0	2.5	0.0	25.3	14.9	25.3	1.5	4.6	26.2	7.3
Cycle Q Clear(g_c), s	46.1	10.3	2.0	12.9	0.0	25.3	14.9	25.3	1.5	4.6	26.2	7.3
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	238	765	648	411	0	749	243	1292	576	82	954	415
V/C Ratio(X)	0.68	0.32	0.07	0.08	0.00	0.66	0.89	0.70	0.05	0.80	0.87	0.30
Avail Cap(c_a), veh/h	238	765	648	411	0	749	280	1357	605	153	1091	475
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.3	21.6	19.2	25.9	0.0	25.9	47.1	29.7	22.3	53.0	38.8	32.0
Incr Delay (d2), s/veh	7.7	0.2	0.0	0.1	0.0	2.1	24.4	1.5	0.0	6.6	7.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	4.2	0.7	0.6	0.0	10.4	7.3	9.8	0.5	1.9	11.2	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.0	21.9	19.3	26.0	0.0	28.1	71.6	31.3	22.3	59.6	46.0	32.4
LnGrp LOS	D	C	B	C	A	C	E	C	C	E	D	C
Approach Vol, veh/h		455			528			1153			1021	
Approach Delay, s/veh		32.3			27.9			38.6			45.2	
Approach LOS		C			C			D			D	

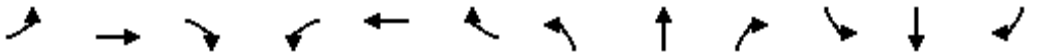
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.2	48.6		55.0	20.4	37.5		55.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	10.7	44.8		48.0	19.5	36.0		48.0				
Max Q Clear Time (g_c+I1), s	6.6	27.3		48.1	16.9	28.2		27.3				
Green Ext Time (p_c), s	0.0	5.2		0.0	0.1	3.3		2.9				

Intersection Summary												
HCM 6th Ctrl Delay			38.1									
HCM 6th LOS			D									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	67	25	150	32	151	169	1060	12	22	954	40
Future Volume (vph)	67	25	150	32	151	169	1060	12	22	954	40
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	46.8	46.8	46.8	46.8	46.8	24.0	63.5	63.5	9.7	49.2	49.2
Total Split (%)	39.0%	39.0%	39.0%	39.0%	39.0%	20.0%	52.9%	52.9%	8.1%	41.0%	41.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 74.4
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	25	150	32	151	37	169	1060	12	22	954	40
Future Volume (veh/h)	67	25	150	32	151	37	169	1060	12	22	954	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	68	26	67	33	154	30	172	1082	11	22	973	30
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	254	353	299	367	287	56	217	1750	780	42	1382	616
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.13	0.51	0.51	0.03	0.40	0.40
Sat Flow, veh/h	1151	1800	1525	1250	1464	285	1619	3420	1525	1619	3420	1524
Grp Volume(v), veh/h	68	26	67	33	0	184	172	1082	11	22	973	30
Grp Sat Flow(s),veh/h/ln	1151	1800	1525	1250	0	1749	1619	1710	1525	1619	1710	1524
Q Serve(g_s), s	3.0	0.6	1.9	1.2	0.0	5.0	5.4	11.9	0.2	0.7	12.5	0.6
Cycle Q Clear(g_c), s	7.9	0.6	1.9	1.8	0.0	5.0	5.4	11.9	0.2	0.7	12.5	0.6
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	254	353	299	367	0	343	217	1750	780	42	1382	616
V/C Ratio(X)	0.27	0.07	0.22	0.09	0.00	0.54	0.79	0.62	0.01	0.52	0.70	0.05
Avail Cap(c_a), veh/h	946	1436	1217	1119	0	1395	630	3755	1675	191	2826	1259
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	17.3	17.8	18.0	0.0	19.0	22.1	9.2	6.3	25.3	13.1	9.5
Incr Delay (d2), s/veh	0.4	0.1	0.3	0.1	0.0	1.0	4.9	0.4	0.0	7.2	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.2	0.6	0.3	0.0	1.8	2.0	2.6	0.0	0.3	3.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	17.3	18.1	18.1	0.0	20.0	27.0	9.5	6.3	32.5	13.7	9.6
LnGrp LOS	C	B	B	B	A	B	C	A	A	C	B	A
Approach Vol, veh/h		161			217			1265			1025	
Approach Delay, s/veh		20.0			19.7			11.9			14.0	
Approach LOS		C			B			B			B	

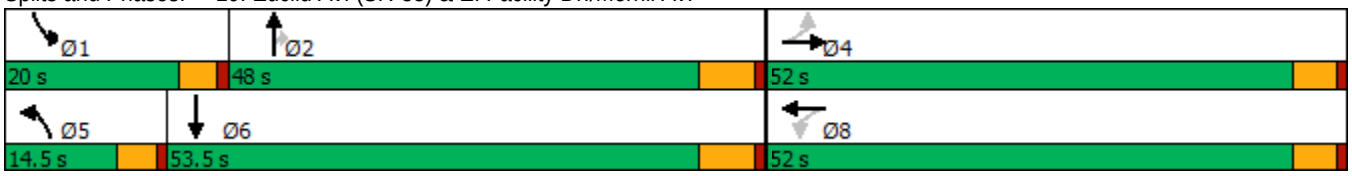
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	32.6		15.1	10.5	27.0		15.1				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	6.2	57.8		42.0	20.5	43.5		42.0				
Max Q Clear Time (g_c+I1), s	2.7	13.9		9.9	7.4	14.5		7.0				
Green Ext Time (p_c), s	0.0	8.2		0.4	0.2	6.7		0.8				

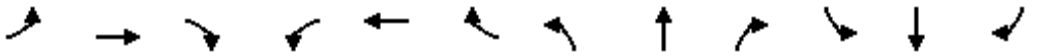
Intersection Summary			
HCM 6th Ctrl Delay		13.8	
HCM 6th LOS		B	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	4	8	225	48	10	1013	140	120	981
Future Volume (vph)	4	8	225	48	10	1013	140	120	981
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	52.0	52.0	52.0	52.0	14.5	48.0	48.0	20.0	53.5
Total Split (%)	43.3%	43.3%	43.3%	43.3%	12.1%	40.0%	40.0%	16.7%	44.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 107.1
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	8	17	225	48	228	10	1013	140	120	981	39
Future Volume (veh/h)	4	8	17	225	48	228	10	1013	140	120	981	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	4	8	17	232	49	208	10	1044	101	124	1011	26
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	95	184	330	307	56	225	40	1255	560	172	1528	39
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.02	0.37	0.37	0.11	0.45	0.45
Sat Flow, veh/h	139	519	933	701	159	637	1619	3420	1525	1619	3404	88
Grp Volume(v), veh/h	29	0	0	489	0	0	10	1044	101	124	508	529
Grp Sat Flow(s),veh/h/ln	1591	0	0	1497	0	0	1619	1710	1525	1619	1710	1782
Q Serve(g_s), s	0.0	0.0	0.0	27.0	0.0	0.0	0.5	24.9	4.0	6.6	20.9	20.9
Cycle Q Clear(g_c), s	1.1	0.0	0.0	28.1	0.0	0.0	0.5	24.9	4.0	6.6	20.9	20.9
Prop In Lane	0.14		0.59	0.47		0.43	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	609	0	0	589	0	0	40	1255	560	172	767	800
V/C Ratio(X)	0.05	0.00	0.00	0.83	0.00	0.00	0.25	0.83	0.18	0.72	0.66	0.66
Avail Cap(c_a), veh/h	867	0	0	843	0	0	181	1602	714	280	906	944
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.1	0.0	0.0	27.7	0.0	0.0	42.9	25.9	19.2	38.8	19.4	19.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	3.3	0.0	0.0	1.2	3.1	0.2	2.1	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	9.5	0.0	0.0	0.2	9.4	1.3	2.6	7.3	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.1	0.0	0.0	31.0	0.0	0.0	44.1	29.0	19.4	40.9	20.8	20.7
LnGrp LOS	B	A	A	C	A	A	D	C	B	D	C	C
Approach Vol, veh/h		29			489			1155			1161	
Approach Delay, s/veh		19.1			31.0			28.3			22.9	
Approach LOS		B			C			C			C	

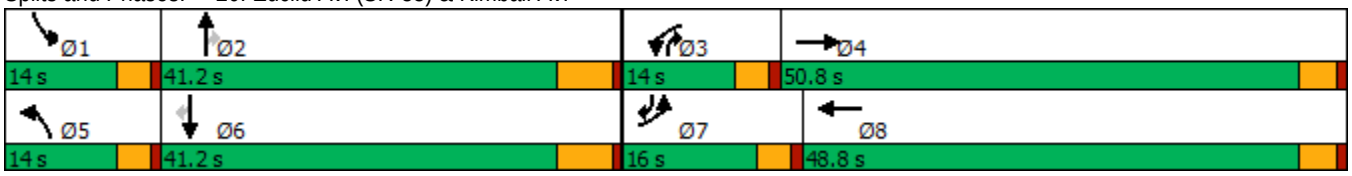
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	38.9		36.7	6.7	46.2		36.7				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	15.5	42.0		47.0	10.0	47.5		47.0				
Max Q Clear Time (g_c+I1), s	8.6	26.9		3.1	2.5	22.9		30.1				
Green Ext Time (p_c), s	0.1	6.0		0.1	0.0	6.1		1.6				

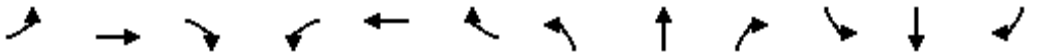
Intersection Summary			
HCM 6th Ctrl Delay		26.4	
HCM 6th LOS		C	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	124	223	44	721	84	704	28	190	586	377
Future Volume (vph)	124	223	44	721	84	704	28	190	586	377
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	16.0	50.8	14.0	48.8	14.0	41.2	14.0	14.0	41.2	16.0
Total Split (%)	13.3%	42.3%	11.7%	40.7%	11.7%	34.3%	11.7%	11.7%	34.3%	13.3%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 102.6
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	223	32	44	721	295	84	704	28	190	586	377
Future Volume (veh/h)	124	223	32	44	721	295	84	704	28	190	586	377
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	127	228	24	45	736	265	86	718	17	194	598	256
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	314	1167	122	121	843	304	158	891	512	255	852	537
Arrive On Green	0.11	0.37	0.37	0.07	0.34	0.34	0.10	0.26	0.26	0.09	0.25	0.25
Sat Flow, veh/h	2956	3126	326	1619	2463	887	1619	3420	1525	2956	3420	1506
Grp Volume(v), veh/h	127	124	128	45	511	490	86	718	17	194	598	256
Grp Sat Flow(s),veh/h/ln	1478	1710	1741	1619	1710	1640	1619	1710	1525	1478	1710	1506
Q Serve(g_s), s	3.6	4.4	4.5	2.4	25.3	25.3	4.6	17.8	0.7	5.8	14.4	11.9
Cycle Q Clear(g_c), s	3.6	4.4	4.5	2.4	25.3	25.3	4.6	17.8	0.7	5.8	14.4	11.9
Prop In Lane	1.00		0.19	1.00		0.54	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	314	639	650	121	585	561	158	891	512	255	852	537
V/C Ratio(X)	0.40	0.19	0.20	0.37	0.87	0.87	0.54	0.81	0.03	0.76	0.70	0.48
Avail Cap(c_a), veh/h	393	876	892	179	838	804	179	1332	709	327	1332	748
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.7	19.1	19.1	39.8	27.9	27.9	38.8	31.3	20.2	40.4	30.9	22.6
Incr Delay (d2), s/veh	0.3	0.1	0.1	0.7	5.4	5.6	1.1	2.3	0.0	5.3	1.1	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.6	1.7	0.9	10.3	9.9	1.7	6.9	0.2	2.2	5.5	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.0	19.3	19.3	40.5	33.3	33.5	39.9	33.5	20.2	45.7	31.9	23.3
LnGrp LOS	D	B	B	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		379			1046			821			1048	
Approach Delay, s/veh		25.6			33.7			33.9			32.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.8	29.5	10.8	38.2	12.8	28.5	13.6	35.4
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	10.0	35.2	10.0	46.3	10.0	35.2	12.0	44.3
Max Q Clear Time (g_c+I1), s	7.8	19.8	4.4	6.5	6.6	16.4	5.6	27.3
Green Ext Time (p_c), s	0.1	3.8	0.0	1.3	0.0	4.1	0.1	3.6

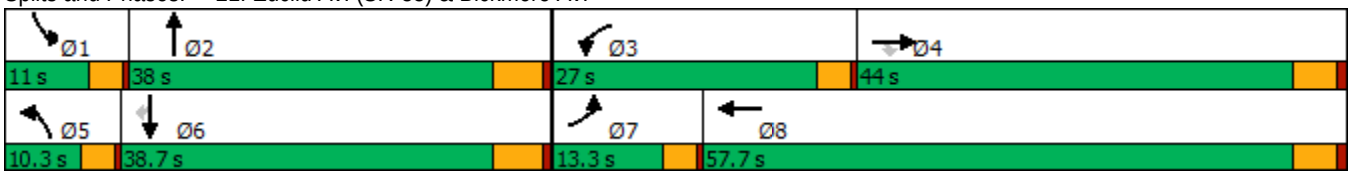
Intersection Summary	
HCM 6th Ctrl Delay	32.4
HCM 6th LOS	C

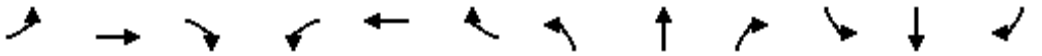
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	47	8	23	166	195	27	546	34	575	142
Future Volume (vph)	47	8	23	166	195	27	546	34	575	142
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	13.3	44.0	44.0	27.0	57.7	10.3	38.0	11.0	38.7	38.7
Total Split (%)	11.1%	36.7%	36.7%	22.5%	48.1%	8.6%	31.7%	9.2%	32.3%	32.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 66
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	8	23	166	195	131	27	546	20	34	575	142
Future Volume (veh/h)	47	8	23	166	195	131	27	546	20	34	575	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	52	9	22	184	217	107	30	607	15	38	639	110
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	86	287	243	232	284	140	56	892	22	68	919	410
Arrive On Green	0.05	0.16	0.16	0.14	0.25	0.25	0.03	0.26	0.26	0.04	0.27	0.27
Sat Flow, veh/h	1619	1800	1525	1619	1138	561	1619	3411	84	1619	3420	1525
Grp Volume(v), veh/h	52	9	22	184	0	324	30	304	318	38	639	110
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1699	1619	1710	1785	1619	1710	1525
Q Serve(g_s), s	1.4	0.2	0.5	4.9	0.0	7.9	0.8	7.1	7.1	1.0	7.5	2.5
Cycle Q Clear(g_c), s	1.4	0.2	0.5	4.9	0.0	7.9	0.8	7.1	7.1	1.0	7.5	2.5
Prop In Lane	1.00		1.00	1.00		0.33	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	86	287	243	232	0	423	56	447	467	68	919	410
V/C Ratio(X)	0.60	0.03	0.09	0.79	0.00	0.77	0.53	0.68	0.68	0.56	0.70	0.27
Avail Cap(c_a), veh/h	357	1580	1339	856	0	2015	248	1251	1306	273	2556	1140
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.6	15.8	15.9	18.4	0.0	15.5	21.1	14.7	14.7	20.9	14.6	12.8
Incr Delay (d2), s/veh	2.5	0.0	0.1	2.3	0.0	1.1	2.9	0.7	0.7	2.6	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.1	0.2	1.6	0.0	2.5	0.3	2.0	2.1	0.4	2.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.1	15.8	16.0	20.8	0.0	16.6	24.0	15.4	15.4	23.5	15.0	12.9
LnGrp LOS	C	B	B	C	A	B	C	B	B	C	B	B
Approach Vol, veh/h		83			508			652			787	
Approach Delay, s/veh		20.4			18.1			15.8			15.1	
Approach LOS		C			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.4	17.1	9.9	12.1	5.0	17.4	5.9	16.1
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	7.5	32.5	23.5	39.0	6.8	33.2	9.8	52.7
Max Q Clear Time (g_c+I1), s	3.0	9.1	6.9	2.5	2.8	9.5	3.4	9.9
Green Ext Time (p_c), s	0.0	1.8	0.2	0.0	0.0	2.5	0.0	1.2

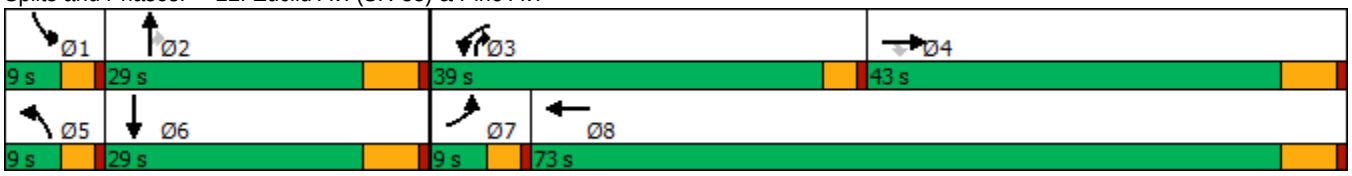
Intersection Summary	
HCM 6th Ctrl Delay	16.3
HCM 6th LOS	B

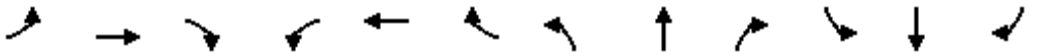
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	8	173	47	981	306	51	612	650	34	617
Future Volume (vph)	8	173	47	981	306	51	612	650	34	617
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	39.0	73.0	9.0	29.0	39.0	9.0	29.0
Total Split (%)	7.5%	35.8%	35.8%	32.5%	60.8%	7.5%	24.2%	32.5%	7.5%	24.2%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 99.9
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	173	47	981	306	25	51	612	650	34	617	16
Future Volume (veh/h)	8	173	47	981	306	25	51	612	650	34	617	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	8	178	0	1011	315	24	53	631	414	35	636	12
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	16	241		1087	812	62	69	771	897	54	743	14
Arrive On Green	0.01	0.13	0.00	0.37	0.49	0.49	0.04	0.23	0.23	0.03	0.22	0.22
Sat Flow, veh/h	1619	1800	1525	2956	1652	126	1619	3420	1492	1619	3434	65
Grp Volume(v), veh/h	8	178	0	1011	0	339	53	631	414	35	317	331
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1777	1619	1710	1492	1619	1710	1788
Q Serve(g_s), s	0.4	7.9	0.0	27.4	0.0	10.0	2.7	14.6	13.0	1.8	14.9	14.9
Cycle Q Clear(g_c), s	0.4	7.9	0.0	27.4	0.0	10.0	2.7	14.6	13.0	1.8	14.9	14.9
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	16	241		1087	0	874	69	771	897	54	370	387
V/C Ratio(X)	0.49	0.74		0.93	0.00	0.39	0.77	0.82	0.46	0.65	0.86	0.86
Avail Cap(c_a), veh/h	97	798		1239	0	1426	97	942	972	97	471	493
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.1	34.7	0.0	25.4	0.0	13.3	39.6	30.7	9.6	39.9	31.5	31.5
Incr Delay (d2), s/veh	8.1	6.1	0.0	10.8	0.0	0.4	13.1	4.0	0.1	4.8	10.0	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.7	0.0	10.0	0.0	3.4	1.2	5.8	3.3	0.7	6.5	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.2	40.9	0.0	36.2	0.0	13.7	52.7	34.7	9.7	44.7	41.5	41.1
LnGrp LOS	D	D		D	A	B	D	C	A	D	D	D
Approach Vol, veh/h		186	A		1350			1098			683	
Approach Delay, s/veh		41.2			30.5			26.1			41.5	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	24.8	34.7	17.2	7.5	24.1	4.8	47.1
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.0	23.0	35.0	37.0	5.0	23.0	5.0	67.0
Max Q Clear Time (g_c+I1), s	3.8	16.6	29.4	9.9	4.7	16.9	2.4	12.0
Green Ext Time (p_c), s	0.0	1.9	1.3	1.3	0.0	1.2	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	31.9
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	22.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	211	14	19	495	16	17	73	13	18	96	44
Future Vol, veh/h	48	211	14	19	495	16	17	73	13	18	96	44
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	53	232	15	21	544	18	19	80	14	20	105	48
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	14.3	32.6	11.6	12.4
HCM LOS	B	D	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	18%	4%	11%
Vol Thru, %	71%	77%	93%	61%
Vol Right, %	13%	5%	3%	28%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	103	273	530	158
LT Vol	17	48	19	18
Through Vol	73	211	495	96
RT Vol	13	14	16	44
Lane Flow Rate	113	300	582	174
Geometry Grp	1	1	1	1
Degree of Util (X)	0.212	0.488	0.861	0.312
Departure Headway (Hd)	6.754	5.854	5.321	6.473
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	533	618	676	557
Service Time	4.779	3.854	3.419	4.493
HCM Lane V/C Ratio	0.212	0.485	0.861	0.312
HCM Control Delay	11.6	14.3	32.6	12.4
HCM Lane LOS	B	B	D	B
HCM 95th-tile Q	0.8	2.7	10	1.3

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	41	3	1	172	19	17	55	3	29	55	47
Future Vol, veh/h	18	41	3	1	172	19	17	55	3	29	55	47
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	19	44	3	1	185	20	18	59	3	31	59	51
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.2	9	8.3	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	29%	1%	22%
Vol Thru, %	73%	66%	90%	42%
Vol Right, %	4%	5%	10%	36%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	75	62	192	131
LT Vol	17	18	1	29
Through Vol	55	41	172	55
RT Vol	3	3	19	47
Lane Flow Rate	81	67	206	141
Geometry Grp	1	1	1	1
Degree of Util (X)	0.106	0.087	0.254	0.174
Departure Headway (Hd)	4.717	4.679	4.435	4.457
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	759	765	809	804
Service Time	2.749	2.712	2.462	2.487
HCM Lane V/C Ratio	0.107	0.088	0.255	0.175
HCM Control Delay	8.3	8.2	9	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.3	1	0.6

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	247	538	46	19	36
Future Vol, veh/h	20	247	538	46	19	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	21	263	572	49	20	38

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	621	0	-	0	902	597
Stage 1	-	-	-	-	597	-
Stage 2	-	-	-	-	305	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	969	-	-	-	399	579
Stage 1	-	-	-	-	554	-
Stage 2	-	-	-	-	752	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	969	-	-	-	389	579
Mov Cap-2 Maneuver	-	-	-	-	389	-
Stage 1	-	-	-	-	540	-
Stage 2	-	-	-	-	752	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	13.2
HCM LOS			B

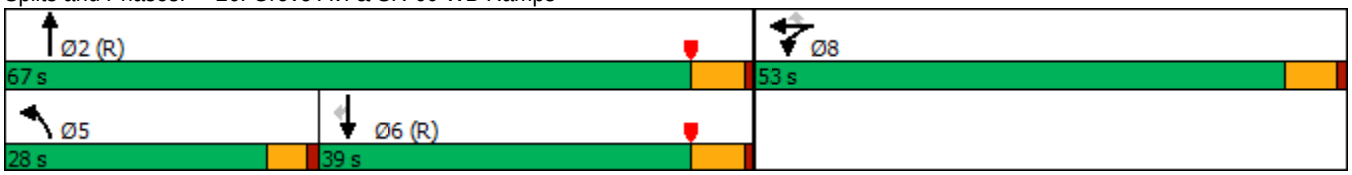
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	969	-	-	-	495
HCM Lane V/C Ratio	0.022	-	-	-	0.118
HCM Control Delay (s)	8.8	0	-	-	13.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

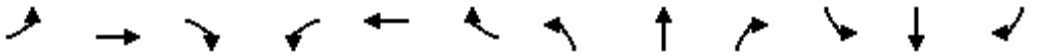
Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	544	254	1036	665	554
Future Volume (vph)	0	544	254	1036	665	554
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	53.0	53.0	28.0	67.0	39.0	39.0
Total Split (%)	44.2%	44.2%	23.3%	55.8%	32.5%	32.5%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	233	0	544	254	1036	0	0	665	554
Future Volume (veh/h)	0	0	0	233	0	544	254	1036	0	0	665	554
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				253	0	462	276	1126	0	0	723	491
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				568	0	505	299	2129	0	0	1395	620
Arrive On Green				0.31	0.00	0.31	0.33	1.00	0.00	0.00	0.39	0.39
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1604
Grp Volume(v), veh/h				253	0	462	276	1126	0	0	723	491
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1604
Q Serve(g_s), s				13.4	0.0	33.1	17.6	0.0	0.0	0.0	18.4	32.5
Cycle Q Clear(g_c), s				13.4	0.0	33.1	17.6	0.0	0.0	0.0	18.4	32.5
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				568	0	505	299	2129	0	0	1395	620
V/C Ratio(X)				0.45	0.00	0.91	0.92	0.53	0.00	0.00	0.52	0.79
Avail Cap(c_a), veh/h				712	0	633	353	2129	0	0	1395	620
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				32.9	0.0	39.6	39.5	0.0	0.0	0.0	28.3	32.6
Incr Delay (d2), s/veh				0.5	0.0	15.6	3.6	0.1	0.0	0.0	1.4	10.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.8	0.0	14.7	6.4	0.0	0.0	0.0	7.9	13.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				33.4	0.0	55.3	43.1	0.1	0.0	0.0	29.6	42.6
LnGrp LOS				C	A	E	D	A	A	A	C	D
Approach Vol, veh/h					715			1402			1214	
Approach Delay, s/veh					47.5			8.6			34.9	
Approach LOS					D			A			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		76.6			24.4	52.2		43.4				
Change Period (Y+Rc), s		5.8			4.6	5.8		5.8				
Max Green Setting (Gmax), s		61.2			23.4	33.2		47.2				
Max Q Clear Time (g_c+I1), s		2.0			19.6	34.5		35.1				
Green Ext Time (p_c), s		9.7			0.2	0.0		2.5				

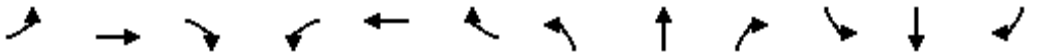
Intersection Summary												
HCM 6th Ctrl Delay			26.5									
HCM 6th LOS			C									

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	1	184	672	346	552
Future Volume (vph)	1	184	672	346	552
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	48.0	48.0	43.0	29.0	72.0
Total Split (%)	40.0%	40.0%	35.8%	24.2%	60.0%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	617	1	184	0	0	0	0	672	346	346	552	0
Future Volume (veh/h)	617	1	184	0	0	0	0	672	346	346	552	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	671	1	125				0	730	267	376	600	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	635	1	565				0	802	293	368	1992	0
Arrive On Green	0.35	0.35	0.35				0.00	0.31	0.31	0.41	1.00	0.00
Sat Flow, veh/h	1807	3	1607				0	2681	946	1810	3705	0
Grp Volume(v), veh/h	672	0	125				0	510	487	376	600	0
Grp Sat Flow(s),veh/h/ln	1810	0	1607				0	1805	1726	1810	1805	0
Q Serve(g_s), s	42.2	0.0	6.6				0.0	32.6	32.6	24.4	0.0	0.0
Cycle Q Clear(g_c), s	42.2	0.0	6.6				0.0	32.6	32.6	24.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.55	1.00		0.00
Lane Grp Cap(c), veh/h	636	0	565				0	560	535	368	1992	0
V/C Ratio(X)	1.06	0.00	0.22				0.00	0.91	0.91	1.02	0.30	0.00
Avail Cap(c_a), veh/h	636	0	565				0	560	535	368	1992	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.75	0.75	0.74	0.74	0.00
Uniform Delay (d), s/veh	38.9	0.0	27.3				0.0	39.8	39.8	35.6	0.0	0.0
Incr Delay (d2), s/veh	51.4	0.0	0.2				0.0	17.2	17.8	46.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.8	0.0	2.5				0.0	16.5	15.8	12.5	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	90.3	0.0	27.5				0.0	57.0	57.6	81.6	0.3	0.0
LnGrp LOS	F	A	C				A	E	E	F	A	A
Approach Vol, veh/h		797						997			976	
Approach Delay, s/veh		80.4						57.3			31.6	
Approach LOS		F						E			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	29.0	43.0		48.0		72.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	24.4	37.2		42.2		66.2
Max Q Clear Time (g_c+I1), s	26.4	34.6		44.2		2.0
Green Ext Time (p_c), s	0.0	1.5		0.0		4.1

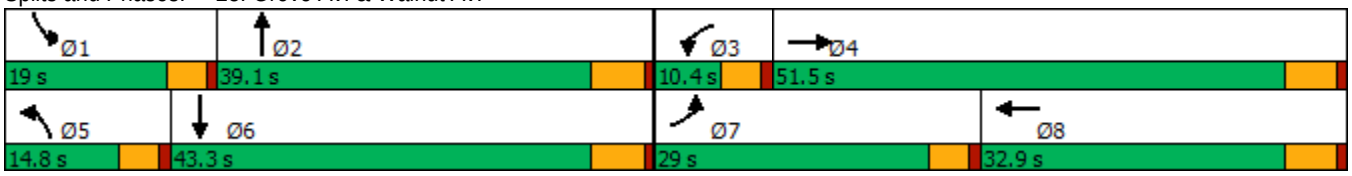
Intersection Summary		
HCM 6th Ctrl Delay		54.9
HCM 6th LOS		D

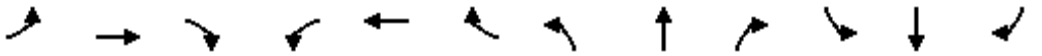
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	177	188	13	187	48	576	89	502
Future Volume (vph)	177	188	13	187	48	576	89	502
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	29.0	51.5	10.4	32.9	14.8	39.1	19.0	43.3
Total Split (%)	24.2%	42.9%	8.7%	27.4%	12.3%	32.6%	15.8%	36.1%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 98
Natural Cycle: 85
Control Type: Actuated-Uncoordinated

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	177	188	54	13	187	179	48	576	12	89	502	103
Future Volume (veh/h)	177	188	54	13	187	179	48	576	12	89	502	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	208	221	49	15	220	140	56	678	13	105	591	85
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	241	818	178	28	330	201	69	1297	25	130	1247	179
Arrive On Green	0.15	0.29	0.29	0.02	0.16	0.16	0.04	0.38	0.38	0.08	0.42	0.42
Sat Flow, veh/h	1619	2785	604	1619	2035	1238	1619	3432	66	1619	3001	431
Grp Volume(v), veh/h	208	134	136	15	183	177	56	338	353	105	336	340
Grp Sat Flow(s),veh/h/ln	1619	1710	1679	1619	1710	1563	1619	1710	1788	1619	1710	1722
Q Serve(g_s), s	11.3	5.4	5.6	0.8	9.1	9.6	3.1	13.8	13.8	5.8	12.9	13.0
Cycle Q Clear(g_c), s	11.3	5.4	5.6	0.8	9.1	9.6	3.1	13.8	13.8	5.8	12.9	13.0
Prop In Lane	1.00		0.36	1.00		0.79	1.00		0.04	1.00		0.25
Lane Grp Cap(c), veh/h	241	502	493	28	277	254	69	646	676	130	711	715
V/C Ratio(X)	0.86	0.27	0.28	0.53	0.66	0.70	0.81	0.52	0.52	0.81	0.47	0.47
Avail Cap(c_a), veh/h	438	866	850	104	514	470	183	646	676	258	711	715
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	24.4	24.5	44.0	35.5	35.7	42.8	21.8	21.8	40.8	19.2	19.2
Incr Delay (d2), s/veh	3.5	0.3	0.3	5.7	2.7	3.4	8.1	3.0	2.9	4.4	2.3	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	2.1	2.1	0.4	3.8	3.7	1.3	5.6	5.8	2.3	5.1	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	24.7	24.8	49.7	38.2	39.1	50.9	24.8	24.6	45.2	21.4	21.5
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		478			375			747			781	
Approach Delay, s/veh		31.8			39.1			26.7			24.6	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.8	39.9	6.2	32.3	8.5	43.3	18.0	20.4
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	33.3	5.8	45.7	10.2	37.5	24.4	27.1
Max Q Clear Time (g_c+I1), s	7.8	15.8	2.8	7.6	5.1	15.0	13.3	11.6
Green Ext Time (p_c), s	0.1	3.5	0.0	1.5	0.0	3.8	0.2	1.7

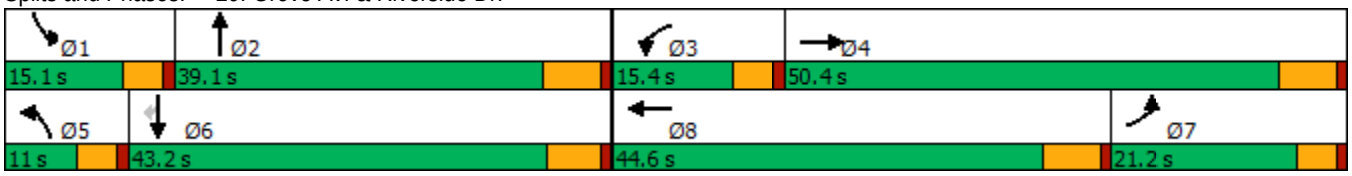
Intersection Summary	
HCM 6th Ctrl Delay	29.0
HCM 6th LOS	C

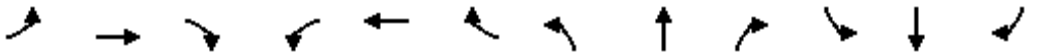
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	144	371	55	737	21	312	82	287	163
Future Volume (vph)	144	371	55	737	21	312	82	287	163
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	21.2	50.4	15.4	44.6	11.0	39.1	15.1	43.2	43.2
Total Split (%)	17.7%	42.0%	12.8%	37.2%	9.2%	32.6%	12.6%	36.0%	36.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 114.1
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	371	28	55	737	115	21	312	47	82	287	163
Future Volume (veh/h)	144	371	28	55	737	115	21	312	47	82	287	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	160	412	24	61	819	102	23	347	30	91	319	95
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	186	651	38	76	928	116	37	489	42	112	624	529
Arrive On Green	0.12	0.39	0.39	0.05	0.30	0.30	0.02	0.30	0.30	0.07	0.35	0.35
Sat Flow, veh/h	1619	1684	98	1619	3054	380	1619	1630	141	1619	1800	1525
Grp Volume(v), veh/h	160	0	436	61	459	462	23	0	377	91	319	95
Grp Sat Flow(s),veh/h/ln	1619	0	1782	1619	1710	1725	1619	0	1771	1619	1800	1525
Q Serve(g_s), s	10.6	0.0	21.8	4.1	28.0	28.0	1.5	0.0	20.7	6.1	15.4	3.1
Cycle Q Clear(g_c), s	10.6	0.0	21.8	4.1	28.0	28.0	1.5	0.0	20.7	6.1	15.4	3.1
Prop In Lane	1.00		0.06	1.00		0.22	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	186	0	689	76	519	524	37	0	532	112	624	529
V/C Ratio(X)	0.86	0.00	0.63	0.80	0.88	0.88	0.62	0.00	0.71	0.81	0.51	0.18
Avail Cap(c_a), veh/h	245	0	719	160	599	604	95	0	532	155	624	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.6	0.0	27.3	51.7	36.3	36.3	53.0	0.0	34.1	50.3	28.4	10.6
Incr Delay (d2), s/veh	16.8	0.0	1.7	7.1	13.2	13.1	6.1	0.0	7.8	14.2	3.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	8.9	1.7	12.8	12.9	0.7	0.0	9.5	2.8	6.8	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.4	0.0	29.0	58.8	49.5	49.4	59.1	0.0	41.9	64.5	31.4	11.3
LnGrp LOS	E	A	C	E	D	D	E	A	D	E	C	B
Approach Vol, veh/h		596			982			400			505	
Approach Delay, s/veh		38.5			50.0			42.9			33.6	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	39.1	9.8	48.5	7.1	44.2	18.8	39.5
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	10.5	32.9	10.8	44.2	6.4	* 37	16.6	* 38
Max Q Clear Time (g_c+I1), s	8.1	22.7	6.1	23.8	3.5	17.4	12.6	30.0
Green Ext Time (p_c), s	0.0	1.4	0.0	2.3	0.0	1.9	0.1	3.3

Intersection Summary	
HCM 6th Ctrl Delay	42.8
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	17.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	61	86	27	10	78	29	35	297	13	45	315	30
Future Vol, veh/h	61	86	27	10	78	29	35	297	13	45	315	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	68	96	30	11	87	32	39	330	14	50	350	33
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13	11.7	17.6	20
HCM LOS	B	B	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	35%	9%	12%
Vol Thru, %	86%	49%	67%	81%
Vol Right, %	4%	16%	25%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	345	174	117	390
LT Vol	35	61	10	45
Through Vol	297	86	78	315
RT Vol	13	27	29	30
Lane Flow Rate	383	193	130	433
Geometry Grp	1	1	1	1
Degree of Util (X)	0.615	0.349	0.238	0.683
Departure Headway (Hd)	5.774	6.506	6.59	5.674
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	629	551	543	641
Service Time	3.789	4.559	4.648	3.688
HCM Lane V/C Ratio	0.609	0.35	0.239	0.676
HCM Control Delay	17.6	13	11.7	20
HCM Lane LOS	C	B	B	C
HCM 95th-tile Q	4.2	1.6	0.9	5.3

Intersection	
Intersection Delay, s/veh	12.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	42	45	22	34	97	38	34	243	10	40	239	41
Future Vol, veh/h	42	45	22	34	97	38	34	243	10	40	239	41
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	47	50	24	38	108	42	38	270	11	44	266	46
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.6	11.4	13.3	14
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	39%	20%	12%
Vol Thru, %	85%	41%	57%	75%
Vol Right, %	3%	20%	22%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	287	109	169	320
LT Vol	34	42	34	40
Through Vol	243	45	97	239
RT Vol	10	22	38	41
Lane Flow Rate	319	121	188	356
Geometry Grp	1	1	1	1
Degree of Util (X)	0.477	0.203	0.304	0.521
Departure Headway (Hd)	5.381	6.026	5.829	5.277
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	666	592	614	679
Service Time	3.434	4.098	3.894	3.329
HCM Lane V/C Ratio	0.479	0.204	0.306	0.524
HCM Control Delay	13.3	10.6	11.4	14
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2.6	0.8	1.3	3

Intersection	
Intersection Delay, s/veh	71.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	201	6	64	495	31	18	189	24	58	184	28
Future Vol, veh/h	33	201	6	64	495	31	18	189	24	58	184	28
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	36	221	7	70	544	34	20	208	26	64	202	31
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	19.9	135.6	20.2	23
HCM LOS	C	F	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	14%	11%	21%
Vol Thru, %	82%	84%	84%	68%
Vol Right, %	10%	3%	5%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	231	240	590	270
LT Vol	18	33	64	58
Through Vol	189	201	495	184
RT Vol	24	6	31	28
Lane Flow Rate	254	264	648	297
Geometry Grp	1	1	1	1
Degree of Util (X)	0.533	0.542	1.214	0.613
Departure Headway (Hd)	8.205	7.931	6.741	8.056
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	442	459	538	451
Service Time	6.205	5.931	4.803	6.056
HCM Lane V/C Ratio	0.575	0.575	1.204	0.659
HCM Control Delay	20.2	19.9	135.6	23
HCM Lane LOS	C	C	F	C
HCM 95th-tile Q	3.1	3.2	24.1	4

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	24	33	13	12	82	12	60	229	11	15	209	47
Future Vol, veh/h	24	33	13	12	82	12	60	229	11	15	209	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	26	36	14	13	90	13	66	252	12	16	230	52

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	730	684	256	703	704	258	282	0	0	264	0	0
Stage 1	288	288	-	390	390	-	-	-	-	-	-	-
Stage 2	442	396	-	313	314	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	340	374	788	355	364	786	1292	-	-	1312	-	-
Stage 1	724	677	-	638	611	-	-	-	-	-	-	-
Stage 2	598	607	-	702	660	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	251	346	788	303	337	786	1292	-	-	1312	-	-
Mov Cap-2 Maneuver	251	346	-	303	337	-	-	-	-	-	-	-
Stage 1	681	667	-	600	574	-	-	-	-	-	-	-
Stage 2	466	571	-	642	650	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.8	20	1.6	0.4
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1292	-	-	337	355	1312	-	-
HCM Lane V/C Ratio	0.051	-	-	0.228	0.328	0.013	-	-
HCM Control Delay (s)	7.9	0	-	18.8	20	7.8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.9	1.4	0	-	-

Intersection	
Intersection Delay, s/veh	34.6
Intersection LOS	D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	83	210	471	217	141	93
Future Vol, veh/h	83	210	471	217	141	93
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	86	216	486	224	145	96
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	14	50.5	13.8
HCM LOS	B	F	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	0%	60%
Vol Thru, %	72%	68%	0%
Vol Right, %	0%	32%	40%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	293	688	234
LT Vol	83	0	141
Through Vol	210	471	0
RT Vol	0	217	93
Lane Flow Rate	302	709	241
Geometry Grp	1	1	1
Degree of Util (X)	0.479	0.979	0.418
Departure Headway (Hd)	5.712	4.971	6.245
Convergence, Y/N	Yes	Yes	Yes
Cap	628	731	574
Service Time	3.772	3.017	4.306
HCM Lane V/C Ratio	0.481	0.97	0.42
HCM Control Delay	14	50.5	13.8
HCM Lane LOS	B	F	B
HCM 95th-tile Q	2.6	15.3	2.1

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	17	230	9	111	392	139	4	18	8	25	17	12
Future Vol, veh/h	17	230	9	111	392	139	4	18	8	25	17	12
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	17	235	9	113	400	142	4	18	8	26	17	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	542	0	0	245	0	0	987	1043	241	984	976	471
Stage 1	-	-	-	-	-	-	275	275	-	697	697	-
Stage 2	-	-	-	-	-	-	712	768	-	287	279	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1037	-	-	1333	-	-	228	231	803	229	253	597
Stage 1	-	-	-	-	-	-	736	686	-	435	446	-
Stage 2	-	-	-	-	-	-	427	414	-	725	683	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1037	-	-	1332	-	-	187	198	802	188	217	597
Mov Cap-2 Maneuver	-	-	-	-	-	-	187	198	-	188	217	-
Stage 1	-	-	-	-	-	-	721	672	-	427	391	-
Stage 2	-	-	-	-	-	-	350	363	-	685	669	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	1.4	21.8	25.2
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	245	1037	-	-	1332	-	-	233
HCM Lane V/C Ratio	0.125	0.017	-	-	0.085	-	-	0.236
HCM Control Delay (s)	21.8	8.5	0	-	8	0	-	25.2
HCM Lane LOS	C	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.3	-	-	0.9

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	46	0	0	77	23	0	0	0	121	0	37
Future Vol, veh/h	10	46	0	0	77	23	0	0	0	121	0	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16965	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	12	56	0	0	94	28	0	0	0	148	0	45

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	122	0	-	-	-	0			188	188	108
Stage 1	-	-	-	-	-	-			108	108	-
Stage 2	-	-	-	-	-	-			80	80	-
Critical Hdwy	4.1	-	-	-	-	-			6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-			5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.4	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-			3.5	4	3.3
Pot Cap-1 Maneuver	1478	-	0	0	-	-			806	710	951
Stage 1	-	-	0	0	-	-			921	810	-
Stage 2	-	-	0	0	-	-			948	832	-
Platoon blocked, %		-			-	-					
Mov Cap-1 Maneuver	1478	-	-	-	-	-			800	0	951
Mov Cap-2 Maneuver	-	-	-	-	-	-			800	0	-
Stage 1	-	-	-	-	-	-			914	0	-
Stage 2	-	-	-	-	-	-			948	0	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1478	-	-	-	831
HCM Lane V/C Ratio	0.008	-	-	-	0.232
HCM Control Delay (s)	7.5	0	-	-	10.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.9

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑			✣				
Traffic Vol, veh/h	0	255	96	112	518	0	170	0	95	0	0	0
Future Vol, veh/h	0	255	96	112	518	0	170	0	95	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	263	99	115	534	0	175	0	98	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	362	0	0	1027	1027	263
Stage 1	-	-	-	-	-	-	263	263	-
Stage 2	-	-	-	-	-	-	764	764	-
Critical Hdwy	-	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	1208	-	0	262	236	781
Stage 1	0	-	-	-	-	0	786	694	-
Stage 2	0	-	-	-	-	0	463	416	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1208	-	-	237	0	781
Mov Cap-2 Maneuver	-	-	-	-	-	-	341	0	-
Stage 1	-	-	-	-	-	-	786	0	-
Stage 2	-	-	-	-	-	-	419	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	27.2
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	427	-	-	1208	-
HCM Lane V/C Ratio	0.64	-	-	0.096	-
HCM Control Delay (s)	27.2	-	-	8.3	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	4.3	-	-	0.3	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	323	27	25	620	0	10	0	31	0	0	0
Future Vol, veh/h	0	323	27	25	620	0	10	0	31	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	355	30	27	681	0	11	0	34	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	385	0	0	1105	1105	193
Stage 1	-	-	-	-	-	-	370	370	-
Stage 2	-	-	-	-	-	-	735	735	-
Critical Hdwy	-	-	-	4.1	-	-	6.6	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	1185	-	0	221	213	822
Stage 1	0	-	-	-	-	0	675	624	-
Stage 2	0	-	-	-	-	0	478	428	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1185	-	-	216	0	822
Mov Cap-2 Maneuver	-	-	-	-	-	-	345	0	-
Stage 1	-	-	-	-	-	-	675	0	-
Stage 2	-	-	-	-	-	-	467	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	615	-	-	1185	-
HCM Lane V/C Ratio	0.073	-	-	0.023	-
HCM Control Delay (s)	11.3	-	-	8.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	354	0	2	645	0	0	0	6	0	0	0
Future Vol, veh/h	0	354	0	2	645	0	0	0	6	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	200	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	381	0	2	694	0	0	0	6	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	381	0	0	1079	-	191
Stage 1	-	-	-	-	-	-	381	-	-
Stage 2	-	-	-	-	-	-	698	-	-
Critical Hdwy	-	-	-	4.1	-	-	6.6	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	-	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	-	3.3
Pot Cap-1 Maneuver	0	-	-	1189	-	0	230	0	825
Stage 1	0	-	-	-	-	0	666	0	-
Stage 2	0	-	-	-	-	0	497	0	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1189	-	-	230	0	825
Mov Cap-2 Maneuver	-	-	-	-	-	-	361	0	-
Stage 1	-	-	-	-	-	-	666	0	-
Stage 2	-	-	-	-	-	-	496	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	825	-	-	1189	-
HCM Lane V/C Ratio	-	0.008	-	-	0.002	-
HCM Control Delay (s)	0	9.4	-	-	8	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	0	-	-	0	-

Intersection	
Intersection Delay, s/veh	213.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	0	288	0	0	0	880	49	0	0	28	13
Future Vol, veh/h	18	0	288	0	0	0	880	49	0	0	28	13
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	19	0	303	0	0	0	926	52	0	0	29	14
Number of Lanes	1	0	1	0	0	0	1	2	0	0	2	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	3
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	3	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	3	0	2
HCM Control Delay	16.5	287.5	10.3
HCM LOS	C	F	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	100%	100%	0%	0%	100%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	880	25	25	18	288	14	14	13
LT Vol	880	0	0	18	0	0	0	0
Through Vol	0	25	25	0	0	14	14	0
RT Vol	0	0	0	0	288	0	0	13
Lane Flow Rate	926	26	26	19	303	15	15	14
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	1.619	0.041	0.028	0.038	0.504	0.029	0.029	0.018
Departure Headway (Hd)	6.291	5.785	3.964	8.298	7.112	8.171	8.171	5.702
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	584	623	886	434	509	441	441	632
Service Time	3.991	3.485	1.763	5.998	4.812	5.871	5.871	3.402
HCM Lane V/C Ratio	1.586	0.042	0.029	0.044	0.595	0.034	0.034	0.022
HCM Control Delay	303.1	8.7	6.9	11.3	16.8	11.1	11.1	8.5
HCM Lane LOS	F	A	A	B	C	B	B	A
HCM 95th-tile Q	51.1	0.1	0.1	0.1	2.8	0.1	0.1	0.1

Intersection	
Intersection Delay, s/veh	86.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	325	26	175	618	40	19	0	106	114	0	10
Future Vol, veh/h	10	325	26	175	618	40	19	0	106	114	0	10
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	11	346	28	186	657	43	20	0	113	121	0	11
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	20.2	136.3	13.3	15
HCM LOS	C	F	B	B

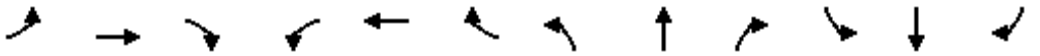
Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	15%	100%	0%	0%	100%	0%	92%
Vol Thru, %	0%	0%	100%	0%	0%	94%	0%
Vol Right, %	85%	0%	0%	100%	0%	6%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	125	10	325	26	175	658	124
LT Vol	19	10	0	0	175	0	114
Through Vol	0	0	325	0	0	618	0
RT Vol	106	0	0	26	0	40	10
Lane Flow Rate	133	11	346	28	186	700	132
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.269	0.021	0.639	0.046	0.374	1.299	0.298
Departure Headway (Hd)	7.79	7.567	7.054	6.337	7.232	6.678	8.682
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	464	476	515	568	497	546	417
Service Time	5.49	5.267	4.754	4.037	4.997	4.444	6.382
HCM Lane V/C Ratio	0.287	0.023	0.672	0.049	0.374	1.282	0.317
HCM Control Delay	13.3	10.4	21.4	9.3	14.3	168.7	15
HCM Lane LOS	B	B	C	A	B	F	B
HCM 95th-tile Q	1.1	0.1	4.5	0.1	1.7	28.9	1.2

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	4	471	630	1004	379
Future Volume (vph)	4	471	630	1004	379
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (%)	32.2%	32.2%	31.1%	67.8%	36.7%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	396	4	471	630	1004	0	0	379	188
Future Volume (veh/h)	0	0	0	396	4	471	630	1004	0	0	379	188
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				440	4	336	700	1116	0	0	421	199
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				458	4	411	676	3181	0	0	858	281
Arrive On Green				0.26	0.26	0.26	0.75	1.00	0.00	0.00	0.18	0.18
Sat Flow, veh/h				1794	16	1610	1810	5358	0	0	5168	1606
Grp Volume(v), veh/h				444	0	336	700	1116	0	0	421	199
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1729	0	0	1634	1606
Q Serve(g_s), s				21.8	0.0	17.7	33.6	0.0	0.0	0.0	7.0	10.5
Cycle Q Clear(g_c), s				21.8	0.0	17.7	33.6	0.0	0.0	0.0	7.0	10.5
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				463	0	411	676	3181	0	0	858	281
V/C Ratio(X)				0.96	0.00	0.82	1.03	0.35	0.00	0.00	0.49	0.71
Avail Cap(c_a), veh/h				463	0	411	676	3181	0	0	1481	485
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.59	0.59	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.0	0.0	31.5	11.4	0.0	0.0	0.0	33.5	35.0
Incr Delay (d2), s/veh				32.0	0.0	13.4	36.0	0.2	0.0	0.0	2.0	14.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				13.0	0.0	16.2	10.6	0.1	0.0	0.0	2.8	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				65.1	0.0	45.0	47.4	0.2	0.0	0.0	35.5	49.0
LnGrp LOS				E	A	D	F	A	A	A	D	D
Approach Vol, veh/h					780			1816			620	
Approach Delay, s/veh					56.4			18.4			39.8	
Approach LOS					E			B			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	61.0	29.0	39.4	21.6
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	55.2	23.0	24.0	* 27
Max Q Clear Time (g_c+I1), s	2.0	23.8	35.6	12.5
Green Ext Time (p_c), s	9.2	0.0	0.0	3.3

Intersection Summary	
HCM 6th Ctrl Delay	31.7
HCM 6th LOS	C

Notes

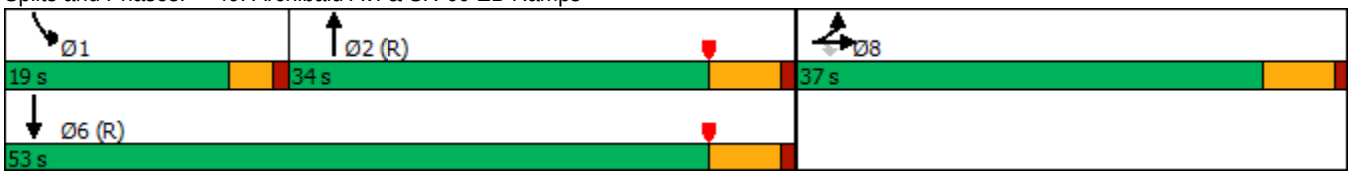
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	2	470	1278	152	622
Future Volume (vph)	2	470	1278	152	622
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (%)	41.1%	41.1%	37.8%	21.1%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	355	2	470	0	0	0	0	1278	576	152	622	0
Future Volume (veh/h)	355	2	470	0	0	0	0	1278	576	152	622	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	378	2	283				0	1360	382	162	662	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	448	2	401				0	2377	667	199	3228	0
Arrive On Green	0.25	0.25	0.25				0.00	0.47	0.47	0.04	0.21	0.00
Sat Flow, veh/h	1800	10	1610				0	5349	1425	1810	5358	0
Grp Volume(v), veh/h	380	0	283				0	1312	430	162	662	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1606	1810	1729	0
Q Serve(g_s), s	18.0	0.0	14.4				0.0	17.5	17.5	8.0	9.5	0.0
Cycle Q Clear(g_c), s	18.0	0.0	14.4				0.0	17.5	17.5	8.0	9.5	0.0
Prop In Lane	0.99		1.00				0.00		0.89	1.00		0.00
Lane Grp Cap(c), veh/h	450	0	401				0	2293	751	199	3228	0
V/C Ratio(X)	0.84	0.00	0.71				0.00	0.57	0.57	0.81	0.21	0.00
Avail Cap(c_a), veh/h	627	0	558				0	2293	751	302	3228	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.54	0.54	0.81	0.81	0.00
Uniform Delay (d), s/veh	32.1	0.0	30.8				0.0	17.4	17.4	42.4	17.3	0.0
Incr Delay (d2), s/veh	7.4	0.0	2.4				0.0	0.6	1.7	4.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	0.0	5.5				0.0	5.8	6.0	3.8	3.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.6	0.0	33.2				0.0	18.0	19.1	46.9	17.4	0.0
LnGrp LOS	D	A	C				A	B	B	D	B	A
Approach Vol, veh/h		663						1742			824	
Approach Delay, s/veh		36.9						18.3			23.2	
Approach LOS		D						B			C	

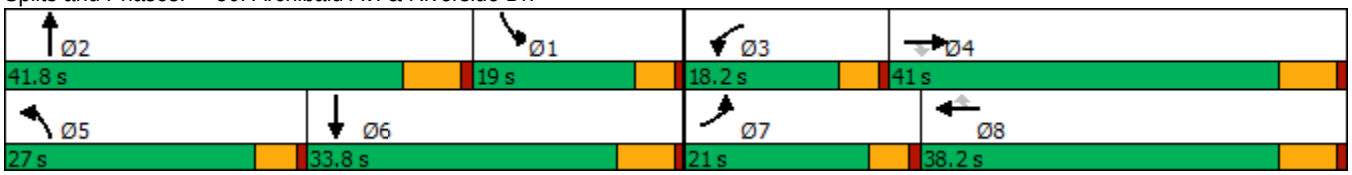
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	13.9	47.9				61.8		28.2				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	15.0	28.2				47.2		31.2				
Max Q Clear Time (g_c+I1), s	10.0	19.5				11.5		20.0				
Green Ext Time (p_c), s	0.1	6.2				4.4		2.4				

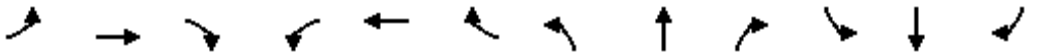
Intersection Summary			
HCM 6th Ctrl Delay			23.3
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	227	293	240	82	452	166	318	1035	128	483
Future Volume (vph)	227	293	240	82	452	166	318	1035	128	483
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.0	41.0	41.0	18.2	38.2	38.2	27.0	41.8	19.0	33.8
Total Split (%)	17.5%	34.2%	34.2%	15.2%	31.8%	31.8%	22.5%	34.8%	15.8%	28.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 104.7
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	293	240	82	452	166	318	1035	44	128	483	233
Future Volume (veh/h)	227	293	240	82	452	166	318	1035	44	128	483	233
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	241	312	121	87	481	95	338	1101	44	136	514	170
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	269	1019	446	108	680	297	364	1385	55	185	705	226
Arrive On Green	0.17	0.30	0.30	0.07	0.20	0.20	0.22	0.29	0.29	0.11	0.19	0.19
Sat Flow, veh/h	1619	3420	1498	1619	3420	1494	1619	4847	194	1619	3680	1181
Grp Volume(v), veh/h	241	312	121	87	481	95	338	744	401	136	456	228
Grp Sat Flow(s),veh/h/ln	1619	1710	1498	1619	1710	1494	1619	1638	1765	1619	1638	1585
Q Serve(g_s), s	14.4	7.0	6.1	5.2	12.9	3.8	20.2	20.7	20.7	8.0	12.9	13.4
Cycle Q Clear(g_c), s	14.4	7.0	6.1	5.2	12.9	3.8	20.2	20.7	20.7	8.0	12.9	13.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.11	1.00		0.74
Lane Grp Cap(c), veh/h	269	1019	446	108	680	297	364	936	504	185	627	304
V/C Ratio(X)	0.90	0.31	0.27	0.80	0.71	0.32	0.93	0.79	0.80	0.73	0.73	0.75
Avail Cap(c_a), veh/h	269	1206	528	223	1109	484	367	1182	636	236	916	443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	26.8	26.5	45.4	36.9	16.6	37.5	32.6	32.6	42.3	37.5	37.7
Incr Delay (d2), s/veh	29.0	0.2	0.3	5.2	1.4	0.6	28.8	3.0	5.5	5.6	1.6	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	2.7	2.1	2.2	5.2	1.9	10.4	8.0	9.0	3.3	5.0	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.4	26.9	26.8	50.6	38.2	17.2	66.3	35.6	38.1	47.9	39.1	41.8
LnGrp LOS	E	C	C	D	D	B	E	D	D	D	D	D
Approach Vol, veh/h		674			663			1483			820	
Approach Delay, s/veh		42.1			36.8			43.3			41.3	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.5	34.4	11.2	35.6	26.8	25.1	21.0	25.8
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	14.4	* 36	13.6	34.8	22.4	27.6	16.4	32.0
Max Q Clear Time (g_c+I1), s	10.0	22.7	7.2	9.0	22.2	15.4	16.4	14.9
Green Ext Time (p_c), s	0.1	5.5	0.0	2.1	0.0	3.1	0.0	2.8

Intersection Summary	
HCM 6th Ctrl Delay	41.4
HCM 6th LOS	D

Notes

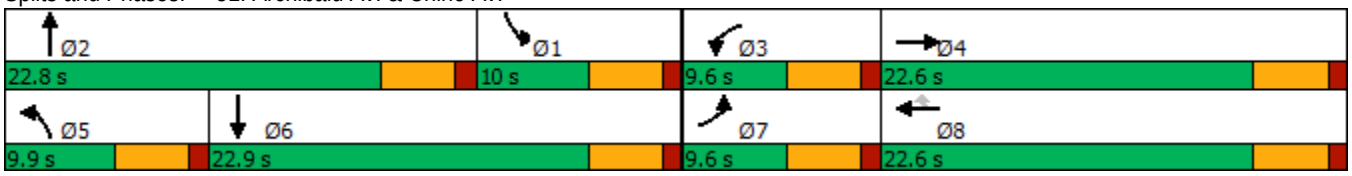
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

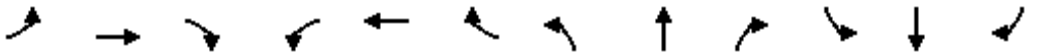
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	91	3	66	4	235	102	1015	111	663
Future Volume (vph)	91	3	66	4	235	102	1015	111	663
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	9.6	22.6	9.6	22.6	22.6	9.9	22.8	10.0	22.9
Total Split (%)	14.8%	34.8%	14.8%	34.8%	34.8%	15.2%	35.1%	15.4%	35.2%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 52.6
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	3	25	66	4	235	102	1015	34	111	663	24
Future Volume (veh/h)	91	3	25	66	4	235	102	1015	34	111	663	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	100	3	9	73	4	121	112	1115	35	122	729	24
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	127	47	140	107	189	161	137	1578	50	150	1116	37
Arrive On Green	0.08	0.12	0.12	0.07	0.11	0.11	0.08	0.32	0.32	0.09	0.33	0.33
Sat Flow, veh/h	1619	395	1185	1619	1800	1525	1619	4895	154	1619	3379	111
Grp Volume(v), veh/h	100	0	12	73	4	121	112	746	404	122	369	384
Grp Sat Flow(s),veh/h/ln	1619	0	1580	1619	1800	1525	1619	1638	1772	1619	1710	1780
Q Serve(g_s), s	2.8	0.0	0.3	2.0	0.1	2.4	3.1	9.2	9.2	3.4	8.4	8.5
Cycle Q Clear(g_c), s	2.8	0.0	0.3	2.0	0.1	2.4	3.1	9.2	9.2	3.4	8.4	8.5
Prop In Lane	1.00		0.75	1.00		1.00	1.00		0.09	1.00		0.06
Lane Grp Cap(c), veh/h	127	0	186	107	189	161	137	1056	571	150	565	588
V/C Ratio(X)	0.79	0.00	0.06	0.68	0.02	0.75	0.81	0.71	0.71	0.81	0.65	0.65
Avail Cap(c_a), veh/h	176	0	620	176	706	598	187	1300	703	191	682	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.8	0.0	18.0	21.0	18.4	9.0	20.6	13.6	13.6	20.4	13.1	13.1
Incr Delay (d2), s/veh	14.5	0.0	0.1	7.5	0.0	7.0	17.7	1.3	2.5	18.6	1.7	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.1	0.9	0.0	1.3	1.6	2.4	2.8	1.8	2.5	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.3	0.0	18.1	28.4	18.5	16.0	38.3	15.0	16.1	39.0	14.8	14.7
LnGrp LOS	D	A	B	C	B	B	D	B	B	D	B	B
Approach Vol, veh/h		112			198			1262			875	
Approach Delay, s/veh		33.5			20.6			17.4			18.1	
Approach LOS		C			C			B			B	

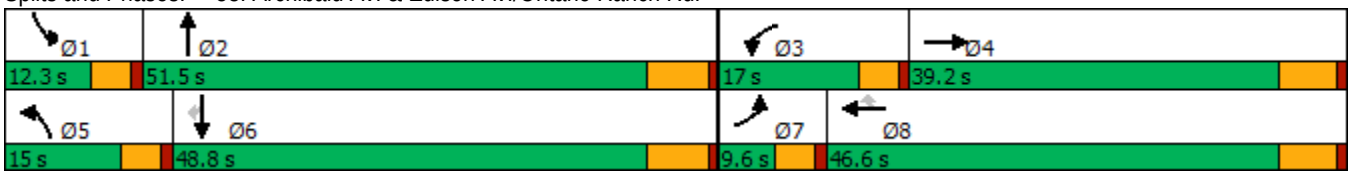
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	19.4	7.6	10.0	8.5	19.8	8.2	9.4
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	5.4	18.2	5.0	18.0	5.3	18.3	5.0	18.0
Max Q Clear Time (g_c+I1), s	5.4	11.2	4.0	2.3	5.1	10.5	4.8	4.4
Green Ext Time (p_c), s	0.0	3.6	0.0	0.0	0.0	2.5	0.0	0.3

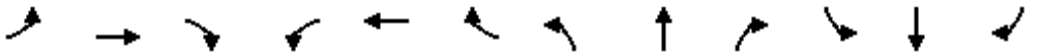
Intersection Summary	
HCM 6th Ctrl Delay	18.7
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	190	40	344	450	133	157	951	366	63	365	88
Future Volume (vph)	22	190	40	344	450	133	157	951	366	63	365	88
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	9.6	39.2		17.0	46.6	46.6	15.0	51.5		12.3	48.8	48.8
Total Split (%)	8.0%	32.7%		14.2%	38.8%	38.8%	12.5%	42.9%		10.3%	40.7%	40.7%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 95.2
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	190	40	344	450	133	157	951	366	63	365	88
Future Volume (veh/h)	22	190	40	344	450	133	157	951	366	63	365	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	23	196	0	355	464	83	162	980	0	65	376	58
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	74	623		421	539	457	193	1225		80	986	440
Arrive On Green	0.02	0.18	0.00	0.14	0.30	0.30	0.12	0.36	0.00	0.05	0.29	0.29
Sat Flow, veh/h	2956	3420	1525	2956	1800	1525	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	23	196	0	355	464	83	162	980	0	65	376	58
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1800	1525	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	0.6	4.1	0.0	9.6	19.9	3.3	8.0	21.1	0.0	3.3	7.2	2.3
Cycle Q Clear(g_c), s	0.6	4.1	0.0	9.6	19.9	3.3	8.0	21.1	0.0	3.3	7.2	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	74	623		421	539	457	193	1225		80	986	440
V/C Ratio(X)	0.31	0.31		0.84	0.86	0.18	0.84	0.80		0.81	0.38	0.13
Avail Cap(c_a), veh/h	181	1380		448	889	754	206	1882		152	1769	789
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	29.0	0.0	34.2	27.0	21.2	35.2	23.6	0.0	38.5	23.3	21.5
Incr Delay (d2), s/veh	0.9	0.3	0.0	12.2	4.8	0.2	22.4	1.4	0.0	7.0	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.6	0.0	3.9	8.3	1.1	4.1	7.5	0.0	1.3	2.6	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.1	29.3	0.0	46.3	31.8	21.4	57.7	25.1	0.0	45.5	23.5	21.7
LnGrp LOS	D	C		D	C	C	E	C		D	C	C
Approach Vol, veh/h		219	A		902			1142	A		499	
Approach Delay, s/veh		30.4			36.6			29.7			26.2	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	35.8	16.2	21.1	14.4	30.1	6.6	30.7
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	7.7	45.0	12.4	33.0	10.4	42.3	5.0	40.4
Max Q Clear Time (g_c+I1), s	5.3	23.1	11.6	6.1	10.0	9.2	2.6	21.9
Green Ext Time (p_c), s	0.0	6.2	0.1	1.0	0.0	2.3	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	31.4
HCM 6th LOS	C

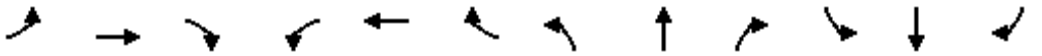
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	15	1459	8	23	726
Future Volume (vph)	11	15	1459	8	23	726
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.5	9.5	32.5	32.5	9.6	16.5
Total Split (s)	9.5	9.5	41.4	41.4	9.6	51.0
Total Split (%)	13.6%	13.6%	59.1%	59.1%	13.7%	72.9%
Yellow Time (s)	3.5	3.5	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	6.5	6.5	4.6	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 61.2
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	11	0	15	0	1459	8	23	726	0
Future Volume (veh/h)	0	0	0	11	0	15	0	1459	8	23	726	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1700	0	1800	0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h				12	0	5	0	1569	6	25	781	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				65	0	56	0	2310	1030	46	2685	0
Arrive On Green				0.02	0.00	0.02	0.00	0.68	0.68	0.03	0.79	0.00
Sat Flow, veh/h				3141	0	2685	0	3510	1525	1619	3510	0
Grp Volume(v), veh/h				12	0	5	0	1569	6	25	781	0
Grp Sat Flow(s),veh/h/ln				1570	0	1342	0	1710	1525	1619	1710	0
Q Serve(g_s), s				0.2	0.0	0.1	0.0	15.6	0.1	0.9	3.6	0.0
Cycle Q Clear(g_c), s				0.2	0.0	0.1	0.0	15.6	0.1	0.9	3.6	0.0
Prop In Lane				1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				65	0	56	0	2310	1030	46	2685	0
V/C Ratio(X)				0.18	0.00	0.09	0.00	0.68	0.01	0.54	0.29	0.00
Avail Cap(c_a), veh/h				277	0	237	0	2310	1030	143	2685	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				27.3	0.0	27.2	0.0	5.5	3.0	27.2	1.7	0.0
Incr Delay (d2), s/veh				1.3	0.0	0.7	0.0	1.6	0.0	3.6	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.1	0.0	0.0	0.0	2.1	0.0	0.3	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.6	0.0	27.9	0.0	7.2	3.0	30.7	2.0	0.0
LnGrp LOS				C	A	C	A	A	A	C	A	A
Approach Vol, veh/h					17			1575			806	
Approach Delay, s/veh					28.4			7.1			2.9	
Approach LOS					C			A			A	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	6.2	44.8				51.0		5.7				
Change Period (Y+Rc), s	4.6	6.5				6.5		4.5				
Max Green Setting (Gmax), s	5.0	34.9				44.5		5.0				
Max Q Clear Time (g_c+I1), s	2.9	17.6				5.6		2.2				
Green Ext Time (p_c), s	0.0	9.7				5.2		0.0				

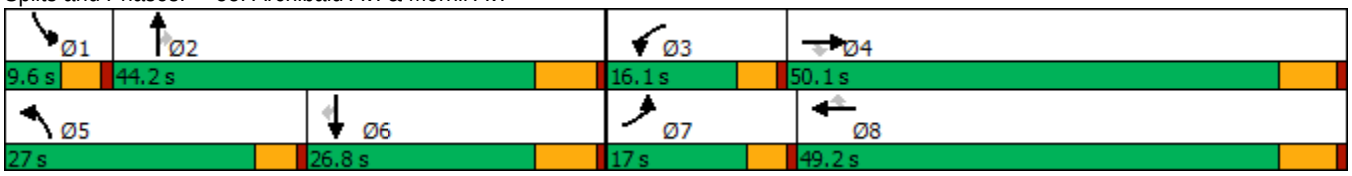
Intersection Summary		
HCM 6th Ctrl Delay		5.8
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	19	89	72	42	125	382	1141	36	38	487	212
Future Volume (vph)	201	19	89	72	42	125	382	1141	36	38	487	212
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	17.0	50.1	50.1	16.1	49.2	49.2	27.0	44.2	44.2	9.6	26.8	26.8
Total Split (%)	14.2%	41.8%	41.8%	13.4%	41.0%	41.0%	22.5%	36.8%	36.8%	8.0%	22.3%	22.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 91.8
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 55: Archibald Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	201	19	89	72	42	125	382	1141	36	38	487	212
Future Volume (veh/h)	201	19	89	72	42	125	382	1141	36	38	487	212
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	207	20	37	74	43	34	394	1176	18	39	502	153
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	241	388	329	92	223	189	426	1424	635	107	647	289
Arrive On Green	0.15	0.22	0.22	0.06	0.12	0.12	0.26	0.42	0.42	0.04	0.19	0.19
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	1619	3420	1525	2956	3420	1525
Grp Volume(v), veh/h	207	20	37	74	43	34	394	1176	18	39	502	153
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1710	1525	1478	1710	1525
Q Serve(g_s), s	10.0	0.7	1.6	3.6	1.7	1.6	18.9	24.4	0.6	1.0	11.1	7.2
Cycle Q Clear(g_c), s	10.0	0.7	1.6	3.6	1.7	1.6	18.9	24.4	0.6	1.0	11.1	7.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	241	388	329	92	223	189	426	1424	635	107	647	289
V/C Ratio(X)	0.86	0.05	0.11	0.80	0.19	0.18	0.92	0.83	0.03	0.36	0.78	0.53
Avail Cap(c_a), veh/h	252	991	840	234	971	823	455	1617	721	185	871	388
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.1	24.8	25.1	37.2	31.3	31.3	28.6	20.7	13.7	37.5	30.7	29.1
Incr Delay (d2), s/veh	22.8	0.1	0.1	6.0	0.4	0.4	23.1	3.3	0.0	0.8	3.1	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.3	0.6	1.5	0.7	0.6	9.1	8.6	0.2	0.4	4.4	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.0	24.8	25.3	43.1	31.7	31.7	51.7	24.0	13.8	38.3	33.8	30.6
LnGrp LOS	E	C	C	D	C	C	D	C	B	D	C	C
Approach Vol, veh/h		264			151			1588			694	
Approach Delay, s/veh		49.3			37.3			30.7			33.4	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	39.7	9.1	23.4	25.6	21.6	16.4	16.1
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	37.7	11.5	43.9	22.4	20.3	12.4	43.0
Max Q Clear Time (g_c+I1), s	3.0	26.4	5.6	3.6	20.9	13.1	12.0	3.7
Green Ext Time (p_c), s	0.0	5.5	0.0	0.2	0.1	2.0	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	33.6
HCM 6th LOS	C

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	268	729	788	279	180	468
Future Volume (vph)	268	729	788	279	180	468
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	27.0	56.7	36.3	27.0	83.7
Total Split (%)	30.3%	22.5%	47.3%	30.3%	22.5%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 110.3
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	268	729	788	279	180	468
Future Volume (veh/h)	268	729	788	279	180	468
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	279	703	821	244	188	488
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	510	651	863	1185	221	1182
Arrive On Green	0.28	0.28	0.45	0.45	0.12	0.62
Sat Flow, veh/h	1810	1610	1900	1610	1810	1900
Grp Volume(v), veh/h	279	703	821	244	188	488
Grp Sat Flow(s),veh/h/ln	1810	1610	1900	1610	1810	1900
Q Serve(g_s), s	14.4	31.0	45.7	5.2	11.2	14.4
Cycle Q Clear(g_c), s	14.4	31.0	45.7	5.2	11.2	14.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	510	651	863	1185	221	1182
V/C Ratio(X)	0.55	1.08	0.95	0.21	0.85	0.41
Avail Cap(c_a), veh/h	510	651	888	1206	362	1359
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	32.8	28.9	4.5	47.3	10.6
Incr Delay (d2), s/veh	0.7	59.1	19.3	0.1	9.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	26.4	23.3	3.7	5.4	5.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.3	91.8	48.1	4.6	57.2	10.7
LnGrp LOS	C	F	D	A	E	B
Approach Vol, veh/h	982		1065			676
Approach Delay, s/veh	75.5		38.2			23.6
Approach LOS	E		D			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	18.4	55.3			73.7	36.3
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	22.0	51.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	13.2	47.7			16.4	33.0
Green Ext Time (p_c), s	0.3	2.3			1.6	0.0

Intersection Summary	
HCM 6th Ctrl Delay	48.0
HCM 6th LOS	D

Notes

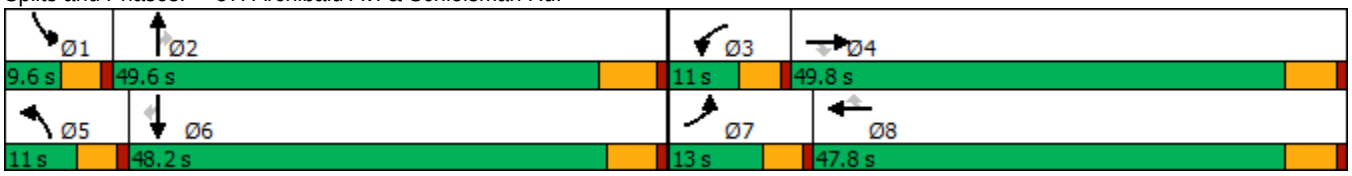
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

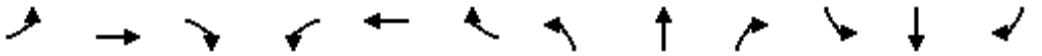
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	383	375	113	248	701	137	241	776	215	103	440	420
Future Volume (vph)	383	375	113	248	701	137	241	776	215	103	440	420
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	49.8	49.8	11.0	47.8	47.8	11.0	49.6	49.6	9.6	48.2	48.2
Total Split (%)	10.8%	41.5%	41.5%	9.2%	39.8%	39.8%	9.2%	41.3%	41.3%	8.0%	40.2%	40.2%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 106.8
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	383	375	113	248	701	137	241	776	215	103	440	420
Future Volume (veh/h)	383	375	113	248	701	137	241	776	215	103	440	420
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	426	417	62	276	779	75	268	862	166	114	489	345
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	279	2156	659	212	2058	631	212	1433	445	166	1364	418
Arrive On Green	0.08	0.42	0.42	0.06	0.40	0.40	0.06	0.28	0.28	0.05	0.26	0.26
Sat Flow, veh/h	3510	5187	1585	3510	5187	1590	3510	5187	1610	3510	5187	1588
Grp Volume(v), veh/h	426	417	62	276	779	75	268	862	166	114	489	345
Grp Sat Flow(s),veh/h/ln	1755	1729	1585	1755	1729	1590	1755	1729	1610	1755	1729	1588
Q Serve(g_s), s	8.4	5.4	2.5	6.4	11.3	3.2	6.4	15.3	8.8	3.4	8.1	21.7
Cycle Q Clear(g_c), s	8.4	5.4	2.5	6.4	11.3	3.2	6.4	15.3	8.8	3.4	8.1	21.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	279	2156	659	212	2058	631	212	1433	445	166	1364	418
V/C Ratio(X)	1.53	0.19	0.09	1.30	0.38	0.12	1.26	0.60	0.37	0.69	0.36	0.83
Avail Cap(c_a), veh/h	279	2156	659	212	2058	631	212	2127	660	166	2098	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	19.6	18.8	49.7	22.7	20.2	49.7	33.2	30.9	49.7	31.7	36.7
Incr Delay (d2), s/veh	255.5	0.2	0.3	165.1	0.5	0.4	150.2	0.4	0.5	9.5	0.2	5.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.4	2.1	0.9	7.6	4.4	1.2	7.1	6.1	3.3	1.6	3.2	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	304.2	19.8	19.1	214.9	23.2	20.6	199.9	33.7	31.4	59.2	31.9	42.0
LnGrp LOS	F	B	B	F	C	C	F	C	C	E	C	D
Approach Vol, veh/h		905			1130			1296			948	
Approach Delay, s/veh		153.6			69.8			67.8			38.8	
Approach LOS		F			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	35.4	11.0	49.8	11.0	34.0	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.0	43.4	6.4	44.0	6.4	* 43	8.4	42.0
Max Q Clear Time (g_c+I1), s	5.4	17.3	8.4	7.4	8.4	23.7	10.4	13.3
Green Ext Time (p_c), s	0.0	6.3	0.0	2.9	0.0	4.0	0.0	5.6

Intersection Summary	
HCM 6th Ctrl Delay	80.1
HCM 6th LOS	F

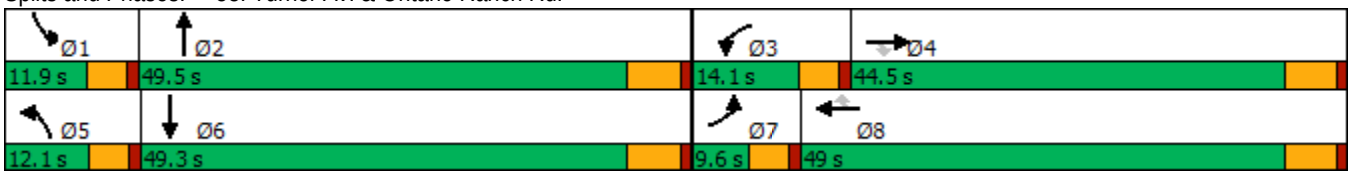
Notes

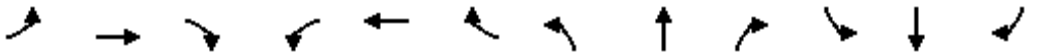
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	26	528	33	42	979	18	56	24	33	15
Future Volume (vph)	26	528	33	42	979	18	56	24	33	15
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	9.6	44.5	44.5	14.1	49.0	49.0	12.1	49.5	11.9	49.3
Total Split (%)	8.0%	37.1%	37.1%	11.8%	40.8%	40.8%	10.1%	41.3%	9.9%	41.1%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 85.8
Natural Cycle: 105
Control Type: Actuated-Uncoordinated

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	528	33	42	979	18	56	24	36	33	15	56
Future Volume (veh/h)	26	528	33	42	979	18	56	24	36	33	15	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	29	587	26	47	1088	11	62	27	27	37	17	39
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	48	1816	810	66	1853	826	76	110	110	57	59	134
Arrive On Green	0.03	0.53	0.53	0.04	0.54	0.54	0.05	0.13	0.13	0.04	0.12	0.12
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	826	826	1619	486	1114
Grp Volume(v), veh/h	29	587	26	47	1088	11	62	0	54	37	0	56
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	0	1651	1619	0	1599
Q Serve(g_s), s	1.4	7.8	0.6	2.3	17.1	0.3	3.0	0.0	2.3	1.8	0.0	2.5
Cycle Q Clear(g_c), s	1.4	7.8	0.6	2.3	17.1	0.3	3.0	0.0	2.3	1.8	0.0	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.50	1.00		0.70
Lane Grp Cap(c), veh/h	48	1816	810	66	1853	826	76	0	219	57	0	193
V/C Ratio(X)	0.60	0.32	0.03	0.72	0.59	0.01	0.81	0.00	0.25	0.65	0.00	0.29
Avail Cap(c_a), veh/h	102	1816	810	193	1853	826	152	0	905	148	0	873
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.2	10.6	8.9	37.8	12.3	8.4	37.6	0.0	31.0	38.0	0.0	32.0
Incr Delay (d2), s/veh	4.4	0.5	0.1	5.3	1.4	0.0	7.5	0.0	0.6	4.6	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.5	0.2	1.0	5.6	0.1	1.3	0.0	0.9	0.7	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.7	11.1	9.0	43.1	13.7	8.5	45.2	0.0	31.6	42.6	0.0	32.8
LnGrp LOS	D	B	A	D	B	A	D	A	C	D	A	C
Approach Vol, veh/h		642			1146			116			93	
Approach Delay, s/veh		12.4			14.8			38.8			36.7	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	16.4	7.8	48.1	8.4	15.4	7.0	49.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	7.3	43.7	9.5	38.7	7.5	43.5	5.0	43.2
Max Q Clear Time (g_c+I1), s	3.8	4.3	4.3	9.8	5.0	4.5	3.4	19.1
Green Ext Time (p_c), s	0.0	0.2	0.0	3.9	0.0	0.3	0.0	7.8

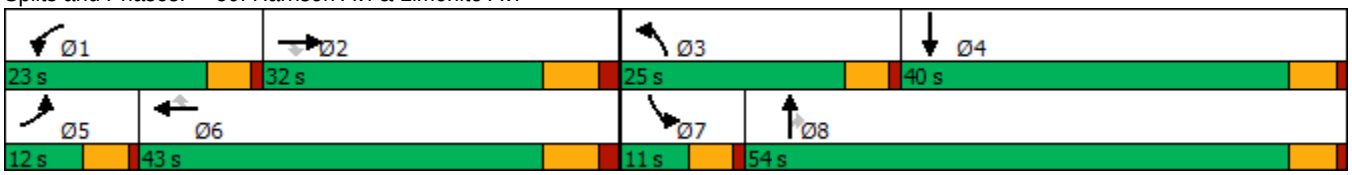
Intersection Summary	
HCM 6th Ctrl Delay	16.5
HCM 6th LOS	B

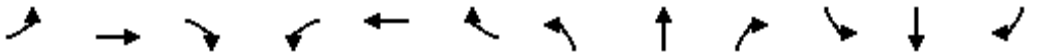
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	41	399	19	137	779	21	144	103	204	26	109
Future Volume (vph)	41	399	19	137	779	21	144	103	204	26	109
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	12.0	32.0	32.0	23.0	43.0	43.0	25.0	54.0	54.0	11.0	40.0
Total Split (%)	10.0%	26.7%	26.7%	19.2%	35.8%	35.8%	20.8%	45.0%	45.0%	9.2%	33.3%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 73.9
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 59: Harrison Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	399	19	137	779	21	144	103	204	26	109	75
Future Volume (veh/h)	41	399	19	137	779	21	144	103	204	26	109	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	43	416	13	143	811	20	150	107	94	27	114	49
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	80	1153	346	185	1452	440	193	421	356	56	184	79
Arrive On Green	0.04	0.22	0.22	0.10	0.28	0.28	0.11	0.22	0.22	0.03	0.15	0.15
Sat Flow, veh/h	1810	5187	1556	1810	5187	1570	1810	1900	1606	1810	1261	542
Grp Volume(v), veh/h	43	416	13	143	811	20	150	107	94	27	0	163
Grp Sat Flow(s),veh/h/ln	1810	1729	1556	1810	1729	1570	1810	1900	1606	1810	0	1802
Q Serve(g_s), s	1.2	3.6	0.3	4.1	7.0	0.5	4.3	2.4	2.6	0.8	0.0	4.5
Cycle Q Clear(g_c), s	1.2	3.6	0.3	4.1	7.0	0.5	4.3	2.4	2.6	0.8	0.0	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	80	1153	346	185	1452	440	193	421	356	56	0	263
V/C Ratio(X)	0.54	0.36	0.04	0.77	0.56	0.05	0.78	0.25	0.26	0.48	0.00	0.62
Avail Cap(c_a), veh/h	240	2459	738	618	3542	1072	686	1755	1483	206	0	1186
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.7	17.3	16.1	23.1	16.2	13.8	22.9	16.9	17.0	25.1	0.0	21.1
Incr Delay (d2), s/veh	2.1	0.2	0.0	2.6	0.3	0.0	2.5	0.3	0.4	2.4	0.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.2	0.1	1.6	2.2	0.1	1.7	0.9	0.8	0.3	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.7	17.5	16.1	25.7	16.5	13.9	25.4	17.2	17.4	27.5	0.0	23.5
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	A	C
Approach Vol, veh/h		472			974			351			190	
Approach Delay, s/veh		18.3			17.8			20.8			24.1	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	18.7	10.6	13.0	7.3	21.8	6.6	17.0
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	18.0	25.0	20.0	34.7	7.0	36.0	6.0	48.7
Max Q Clear Time (g_c+I1), s	6.1	5.6	6.3	6.5	3.2	9.0	2.8	4.6
Green Ext Time (p_c), s	0.1	2.3	0.1	0.8	0.0	5.4	0.0	0.8

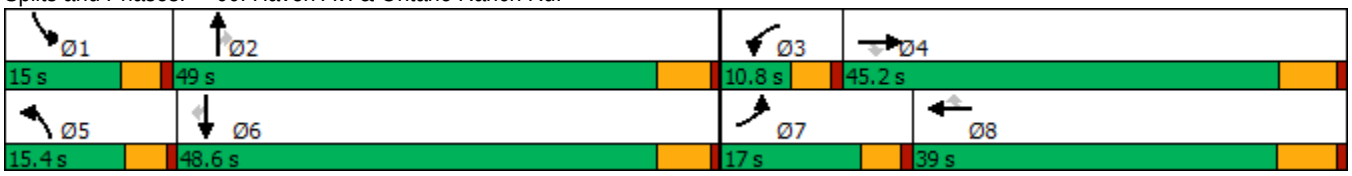
Intersection Summary	
HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

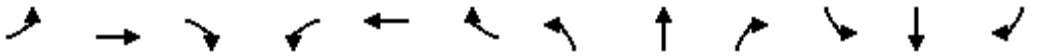
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	560	28	21	812	79	61	184	76	115	56	66
Future Volume (vph)	129	560	28	21	812	79	61	184	76	115	56	66
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	17.0	45.2	45.2	10.8	39.0	39.0	15.4	49.0	49.0	15.0	48.6	48.6
Total Split (%)	14.2%	37.7%	37.7%	9.0%	32.5%	32.5%	12.8%	40.8%	40.8%	12.5%	40.5%	40.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 95
Natural Cycle: 105
Control Type: Actuated-Uncoordinated

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	560	28	21	812	79	61	184	76	115	56	66
Future Volume (veh/h)	129	560	28	21	812	79	61	184	76	115	56	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	137	596	17	22	864	39	65	196	31	122	60	37
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	167	2346	728	39	1362	608	81	257	218	150	334	283
Arrive On Green	0.10	0.48	0.48	0.02	0.40	0.40	0.05	0.14	0.14	0.09	0.19	0.19
Sat Flow, veh/h	1619	4914	1525	1619	3420	1525	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	137	596	17	22	864	39	65	196	31	122	60	37
Grp Sat Flow(s),veh/h/ln	1619	1638	1525	1619	1710	1525	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	6.8	5.9	0.5	1.1	16.6	1.3	3.2	8.6	1.5	6.0	2.3	1.7
Cycle Q Clear(g_c), s	6.8	5.9	0.5	1.1	16.6	1.3	3.2	8.6	1.5	6.0	2.3	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	167	2346	728	39	1362	608	81	257	218	150	334	283
V/C Ratio(X)	0.82	0.25	0.02	0.56	0.63	0.06	0.81	0.76	0.14	0.81	0.18	0.13
Avail Cap(c_a), veh/h	246	2346	728	123	1362	608	214	952	807	206	943	799
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.9	12.7	11.3	39.4	19.8	15.2	38.4	33.7	30.6	36.4	28.0	27.8
Incr Delay (d2), s/veh	8.3	0.3	0.1	4.7	2.3	0.2	6.9	4.7	0.3	11.5	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	1.9	0.1	0.5	6.0	0.4	1.4	3.8	0.5	2.7	1.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.2	13.0	11.3	44.1	22.0	15.4	45.4	38.4	30.9	47.9	28.3	28.0
LnGrp LOS	D	B	B	D	C	B	D	D	C	D	C	C
Approach Vol, veh/h		750			925			292			219	
Approach Delay, s/veh		18.6			22.3			39.1			39.1	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	17.5	6.6	45.5	8.7	21.0	13.0	39.0
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	10.4	43.2	6.2	* 39	10.8	42.8	12.4	32.5
Max Q Clear Time (g_c+I1), s	8.0	10.6	3.1	7.9	5.2	4.3	8.8	18.6
Green Ext Time (p_c), s	0.0	1.1	0.0	3.9	0.0	0.4	0.0	4.5

Intersection Summary	
HCM 6th Ctrl Delay	25.0
HCM 6th LOS	C

Notes

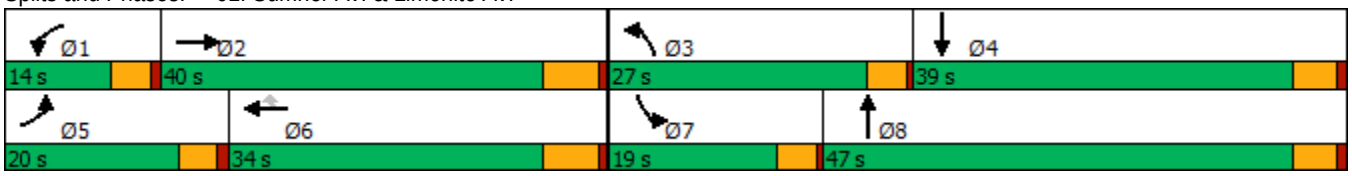
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	232	439	105	604	31	171	367	93	184
Future Volume (vph)	232	439	105	604	31	171	367	93	184
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	20.0	40.0	14.0	34.0	34.0	27.0	47.0	19.0	39.0
Total Split (%)	16.7%	33.3%	11.7%	28.3%	28.3%	22.5%	39.2%	15.8%	32.5%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 71.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 61: Sumner Av. & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	232	439	27	105	604	31	171	367	107	93	184	151
Future Volume (veh/h)	232	439	27	105	604	31	171	367	107	93	184	151
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	239	453	22	108	623	28	176	378	36	96	190	59
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	374	1365	66	224	1175	360	226	635	60	124	366	110
Arrive On Green	0.11	0.27	0.27	0.06	0.23	0.23	0.13	0.19	0.19	0.07	0.13	0.13
Sat Flow, veh/h	3510	5070	244	3510	5187	1589	1810	3332	316	1810	2732	824
Grp Volume(v), veh/h	239	308	167	108	623	28	176	204	210	96	124	125
Grp Sat Flow(s),veh/h/ln	1755	1729	1856	1755	1729	1589	1810	1805	1843	1810	1805	1752
Q Serve(g_s), s	3.1	3.4	3.5	1.4	5.0	0.7	4.5	4.9	5.0	2.5	3.0	3.2
Cycle Q Clear(g_c), s	3.1	3.4	3.5	1.4	5.0	0.7	4.5	4.9	5.0	2.5	3.0	3.2
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.17	1.00		0.47
Lane Grp Cap(c), veh/h	374	931	500	224	1175	360	226	344	351	124	241	234
V/C Ratio(X)	0.64	0.33	0.33	0.48	0.53	0.08	0.78	0.59	0.60	0.78	0.51	0.54
Avail Cap(c_a), veh/h	1139	2461	1321	698	3040	931	871	1587	1620	568	1284	1246
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.5	14.0	14.0	21.6	16.2	14.5	20.3	17.6	17.7	21.9	19.2	19.3
Incr Delay (d2), s/veh	0.7	0.2	0.4	0.6	0.4	0.1	2.2	1.2	1.2	3.9	1.2	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.0	1.1	0.5	1.6	0.2	1.7	1.8	1.8	1.0	1.1	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.1	14.2	14.4	22.2	16.6	14.6	22.4	18.9	18.9	25.8	20.5	20.7
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	C	C
Approach Vol, veh/h		714			759			590			345	
Approach Delay, s/veh		16.6			17.3			19.9			22.0	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	18.9	10.0	11.4	9.6	16.8	7.3	14.1
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	9.5	34.0	23.0	34.0	15.5	28.0	15.0	42.0
Max Q Clear Time (g_c+I1), s	3.4	5.5	6.5	5.2	5.1	7.0	4.5	7.0
Green Ext Time (p_c), s	0.0	2.7	0.1	1.0	0.2	3.8	0.0	1.8

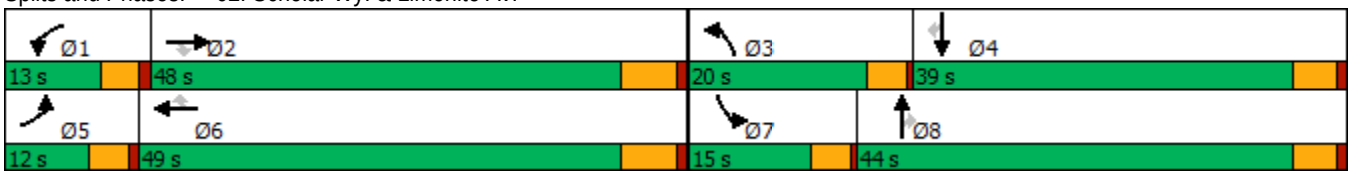
Intersection Summary	
HCM 6th Ctrl Delay	18.4
HCM 6th LOS	B

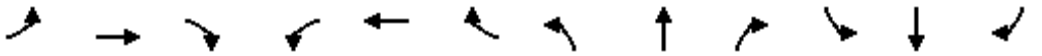
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	654	62	40	559	25	94	169	96	49	185	27
Future Volume (vph)	30	654	62	40	559	25	94	169	96	49	185	27
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	12.0	48.0	48.0	13.0	49.0	49.0	20.0	44.0	44.0	15.0	39.0	39.0
Total Split (%)	10.0%	40.0%	40.0%	10.8%	40.8%	40.8%	16.7%	36.7%	36.7%	12.5%	32.5%	32.5%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 63.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	654	62	40	559	25	94	169	96	49	185	27
Future Volume (veh/h)	30	654	62	40	559	25	94	169	96	49	185	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	33	711	33	43	608	16	102	184	62	53	201	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	54	1128	503	66	1152	514	132	381	322	77	613	261
Arrive On Green	0.03	0.31	0.31	0.04	0.32	0.32	0.07	0.20	0.20	0.04	0.17	0.17
Sat Flow, veh/h	1810	3610	1609	1810	3610	1610	1810	1900	1608	1810	3610	1536
Grp Volume(v), veh/h	33	711	33	43	608	16	102	184	62	53	201	27
Grp Sat Flow(s),veh/h/ln	1810	1805	1609	1810	1805	1610	1810	1900	1608	1810	1805	1536
Q Serve(g_s), s	0.9	8.0	0.7	1.1	6.6	0.3	2.6	4.1	1.5	1.4	2.3	0.7
Cycle Q Clear(g_c), s	0.9	8.0	0.7	1.1	6.6	0.3	2.6	4.1	1.5	1.4	2.3	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	54	1128	503	66	1152	514	132	381	322	77	613	261
V/C Ratio(X)	0.61	0.63	0.07	0.65	0.53	0.03	0.77	0.48	0.19	0.69	0.33	0.10
Avail Cap(c_a), veh/h	284	3177	1416	322	3253	1451	607	1553	1314	417	2572	1094
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.9	14.0	11.5	22.7	13.3	11.2	21.7	16.9	15.9	22.5	17.4	16.7
Incr Delay (d2), s/veh	4.2	0.6	0.1	4.0	0.4	0.0	3.6	0.7	0.2	4.1	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.5	0.2	0.5	2.0	0.1	1.1	1.6	0.5	0.6	0.9	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.0	14.6	11.6	26.7	13.7	11.2	25.3	17.6	16.1	26.7	17.7	16.9
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		777			667			348			281	
Approach Delay, s/veh		15.0			14.5			19.6			19.3	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	20.9	7.5	13.1	5.9	21.2	6.0	14.6
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	8.5	42.0	16.0	34.0	7.5	43.0	11.0	39.0
Max Q Clear Time (g_c+I1), s	3.1	10.0	4.6	4.3	2.9	8.6	3.4	6.1
Green Ext Time (p_c), s	0.0	4.8	0.0	1.1	0.0	4.0	0.0	1.0

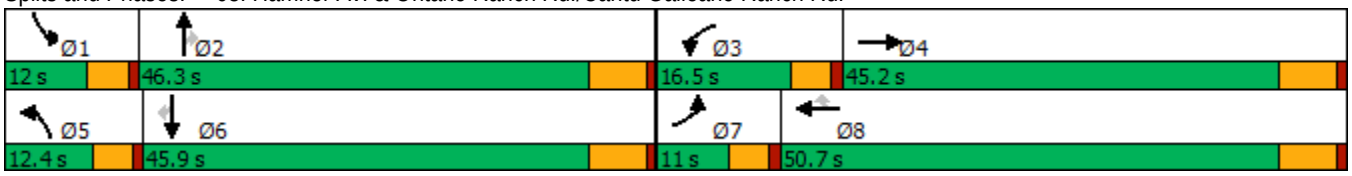
Intersection Summary	
HCM 6th Ctrl Delay	16.2
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	93	521	264	759	195	165	674	484	148	200	79
Future Volume (vph)	93	521	264	759	195	165	674	484	148	200	79
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	11.0	45.2	16.5	50.7	50.7	12.4	46.3	46.3	12.0	45.9	45.9
Total Split (%)	9.2%	37.7%	13.8%	42.3%	42.3%	10.3%	38.6%	38.6%	10.0%	38.3%	38.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 101.8
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	521	79	264	759	195	165	674	484	148	200	79
Future Volume (veh/h)	93	521	79	264	759	195	165	674	484	148	200	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	106	592	90	300	862	222	188	766	543	168	227	90
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	153	1354	200	328	1047	467	215	1826	567	204	1258	561
Arrive On Green	0.05	0.25	0.25	0.11	0.31	0.31	0.07	0.37	0.37	0.07	0.37	0.37
Sat Flow, veh/h	2956	5488	810	2956	3420	1525	2956	4914	1525	2956	3420	1524
Grp Volume(v), veh/h	106	498	184	300	862	222	188	766	543	168	227	90
Grp Sat Flow(s),veh/h/ln	1478	1548	1654	1478	1710	1525	1478	1638	1525	1478	1710	1524
Q Serve(g_s), s	3.8	9.7	10.1	10.8	25.1	12.7	6.7	12.4	37.2	6.0	4.8	4.3
Cycle Q Clear(g_c), s	3.8	9.7	10.1	10.8	25.1	12.7	6.7	12.4	37.2	6.0	4.8	4.3
Prop In Lane	1.00		0.49	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	153	1146	408	328	1047	467	215	1826	567	204	1258	561
V/C Ratio(X)	0.69	0.43	0.45	0.91	0.82	0.48	0.87	0.42	0.96	0.82	0.18	0.16
Avail Cap(c_a), veh/h	177	1690	602	328	1420	634	215	1839	571	204	1267	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.0	34.1	34.2	47.1	34.5	30.2	49.2	25.1	32.8	49.2	22.9	22.8
Incr Delay (d2), s/veh	6.7	0.3	0.8	28.3	3.0	0.8	29.3	0.2	27.3	21.7	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	3.5	3.9	5.1	10.1	4.5	3.3	4.5	16.9	2.7	1.8	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.7	34.3	35.0	75.4	37.5	30.9	78.5	25.2	60.2	70.9	23.0	22.9
LnGrp LOS	E	C	C	E	D	C	E	C	E	E	C	C
Approach Vol, veh/h		788			1384			1497			485	
Approach Delay, s/veh		37.5			44.6			44.6			39.6	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	46.0	16.5	32.6	12.4	45.6	10.1	39.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	7.4	40.1	11.9	39.0	7.8	39.7	6.4	44.5
Max Q Clear Time (g_c+I1), s	8.0	39.2	12.8	12.1	8.7	6.8	5.8	27.1
Green Ext Time (p_c), s	0.0	0.6	0.0	4.0	0.0	1.6	0.0	5.7

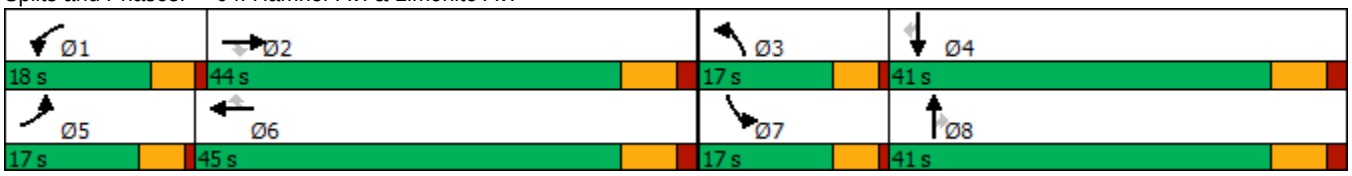
Intersection Summary	
HCM 6th Ctrl Delay	42.7
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	478	40	169	354	82	152	668	244	152	359	109
Future Volume (vph)	164	478	40	169	354	82	152	668	244	152	359	109
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	17.0	44.0	44.0	18.0	45.0	45.0	17.0	41.0	41.0	17.0	41.0	41.0
Total Split (%)	14.2%	36.7%	36.7%	15.0%	37.5%	37.5%	14.2%	34.2%	34.2%	14.2%	34.2%	34.2%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 85.7
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 64: Hamner Av. & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	478	40	169	354	82	152	668	244	152	359	109
Future Volume (veh/h)	164	478	40	169	354	82	152	668	244	152	359	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	174	509	30	180	377	61	162	711	162	162	382	76
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	266	1135	352	273	798	356	252	1476	458	252	1476	458
Arrive On Green	0.08	0.22	0.22	0.08	0.22	0.22	0.07	0.28	0.28	0.07	0.28	0.28
Sat Flow, veh/h	3510	5187	1608	3510	3610	1610	3510	5187	1608	3510	5187	1610
Grp Volume(v), veh/h	174	509	30	180	377	61	162	711	162	162	382	76
Grp Sat Flow(s),veh/h/ln	1755	1729	1608	1755	1805	1610	1755	1729	1608	1755	1729	1610
Q Serve(g_s), s	3.3	5.9	1.0	3.4	6.3	2.1	3.1	7.9	5.5	3.1	3.9	2.5
Cycle Q Clear(g_c), s	3.3	5.9	1.0	3.4	6.3	2.1	3.1	7.9	5.5	3.1	3.9	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	266	1135	352	273	798	356	252	1476	458	252	1476	458
V/C Ratio(X)	0.65	0.45	0.09	0.66	0.47	0.17	0.64	0.48	0.35	0.64	0.26	0.17
Avail Cap(c_a), veh/h	609	2774	860	660	1983	884	609	2549	790	609	2549	791
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.1	23.4	21.5	31.0	23.4	21.8	31.2	20.5	19.7	31.2	19.1	18.6
Incr Delay (d2), s/veh	1.0	0.6	0.2	1.0	0.9	0.5	1.0	0.5	1.0	1.0	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.2	0.4	1.4	2.5	0.8	1.2	2.9	2.0	1.2	1.4	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.1	24.0	21.7	32.0	24.4	22.3	32.3	21.0	20.7	32.3	19.3	18.9
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	B	B
Approach Vol, veh/h		713			618			1035			620	
Approach Delay, s/veh		25.9			26.4			22.7			22.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	22.1	10.0	26.7	10.2	22.3	10.0	26.7
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	13.0	37.0	12.0	34.0	12.0	38.0	12.0	34.0
Max Q Clear Time (g_c+I1), s	5.4	7.9	5.1	5.9	5.3	8.3	5.1	9.9
Green Ext Time (p_c), s	0.1	6.5	0.1	5.1	0.1	5.0	0.1	9.7

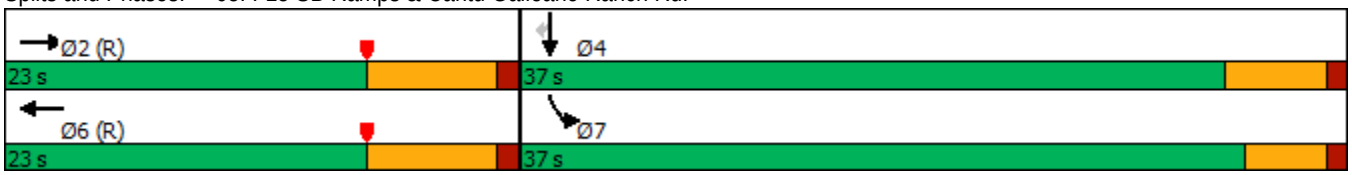
Intersection Summary	
HCM 6th Ctrl Delay	24.2
HCM 6th LOS	C

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	941	318	511	175	310	0	1050
Future Volume (vph)	941	318	511	175	310	0	1050
Turn Type	NA	Free	NA	Free	Prot	NA	Perm
Protected Phases	2		6		7	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		7	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		9.6	10.5	10.5
Total Split (s)	23.0		23.0		37.0	37.0	37.0
Total Split (%)	38.3%		38.3%		61.7%	61.7%	61.7%
Yellow Time (s)	5.8		5.8		3.6	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8		6.8		4.6	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Min		None	Min	Min

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 53 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	✣	↱
Traffic Volume (veh/h)	0	941	318	0	511	175	0	0	0	310	0	1050
Future Volume (veh/h)	0	941	318	0	511	175	0	0	0	310	0	1050
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1046	0	0	568	0				229	0	992
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2219		0	1544					692	0	1231
Arrive On Green	0.00	0.43	0.00	0.00	0.43	0.00				0.38	0.00	0.38
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1046	0	0	568	0				229	0	992
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	8.7	0.0	0.0	6.4	0.0				5.4	0.0	16.5
Cycle Q Clear(g_c), s	0.0	8.7	0.0	0.0	6.4	0.0				5.4	0.0	16.5
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2219		0	1544					692	0	1231
V/C Ratio(X)	0.00	0.47		0.00	0.37					0.33	0.00	0.81
Avail Cap(c_a), veh/h	0	2219		0	1544					977	0	1739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.73	0.00	0.00	0.93	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.3	0.0	0.0	11.7	0.0				13.1	0.0	16.5
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	0.6	0.0				0.3	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.6	0.0	0.0	2.1	0.0				1.8	0.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.8	0.0	0.0	12.3	0.0				13.4	0.0	18.5
LnGrp LOS	A	B		A	B					B	A	B
Approach Vol, veh/h		1046	A		568	A					1221	
Approach Delay, s/veh		12.8			12.3						17.5	
Approach LOS		B			B						B	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	32.5	27.5	32.5
Change Period (Y+Rc), s	6.8	4.6	6.8
Max Green Setting (Gmax), s	16.2	32.4	16.2
Max Q Clear Time (g_c+I1), s	10.7	18.5	8.4
Green Ext Time (p_c), s	2.9	4.4	2.0

Intersection Summary	
HCM 6th Ctrl Delay	14.7
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

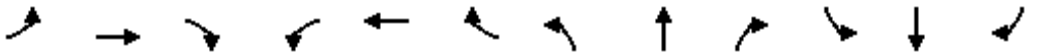
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1032	506	634	592	143	0	392
Future Volume (vph)	1032	506	634	592	143	0	392
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	10.0	36.5	23.5	23.5	23.5
Total Split (s)	55.0	55.0	23.0	78.0	32.0	32.0	32.0
Total Split (%)	50.0%	50.0%	20.9%	70.9%	29.1%	29.1%	29.1%
Yellow Time (s)	4.5	4.5	4.0	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	0.5	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.5	5.5	5.5	5.5	5.5
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	Min	Min	Min

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1032	506	634	592	0	0	0	0	143	0	392
Future Volume (veh/h)	0	1032	506	634	592	0	0	0	0	143	0	392
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1098	416	674	630	0				189	0	79
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2231	994	590	2985	0				264	0	116
Arrive On Green	0.00	0.62	0.62	0.06	0.27	0.00				0.07	0.00	0.07
Sat Flow, veh/h	0	3705	1609	3510	3705	0				3619	0	1586
Grp Volume(v), veh/h	0	1098	416	674	630	0				189	0	79
Grp Sat Flow(s),veh/h/ln	0	1805	1609	1755	1805	0				1810	0	1586
Q Serve(g_s), s	0.0	18.4	14.7	18.5	14.8	0.0				5.6	0.0	5.3
Cycle Q Clear(g_c), s	0.0	18.4	14.7	18.5	14.8	0.0				5.6	0.0	5.3
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2231	994	590	2985	0				264	0	116
V/C Ratio(X)	0.00	0.49	0.42	1.14	0.21	0.00				0.72	0.00	0.68
Avail Cap(c_a), veh/h	0	2231	994	590	2985	0				872	0	382
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.90	0.90	0.66	0.66	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	11.5	10.8	51.9	12.3	0.0				49.9	0.0	49.7
Incr Delay (d2), s/veh	0.0	0.7	1.2	77.1	0.1	0.0				1.4	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.6	4.9	15.0	7.1	0.0				2.5	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.2	12.0	129.1	12.4	0.0				51.2	0.0	52.4
LnGrp LOS	A	B	B	F	B	A				D	A	D
Approach Vol, veh/h		1514			1304						268	
Approach Delay, s/veh		12.2			72.7						51.6	
Approach LOS		B			E						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.0	73.5		13.5		96.5
Change Period (Y+Rc), s	4.5	5.5		5.5		5.5
Max Green Setting (Gmax), s	18.5	49.5		26.5		72.5
Max Q Clear Time (g_c+I1), s	20.5	20.4		7.6		16.8
Green Ext Time (p_c), s	0.0	6.1		0.4		2.6

Intersection Summary		
HCM 6th Ctrl Delay		41.2
HCM 6th LOS		D

Notes

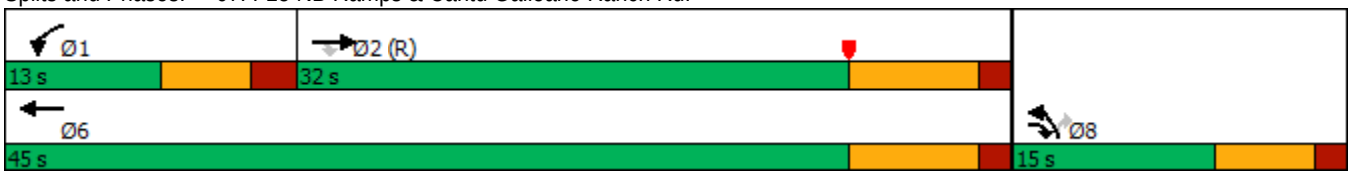
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	479	772	352	443	243	289
Future Volume (vph)	479	772	352	443	243	289
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	32.0	15.0	13.0	45.0	15.0	15.0
Total Split (%)	53.3%	25.0%	21.7%	75.0%	25.0%	25.0%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.0	6.0	7.3	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	479	772	352	443	243	289
Future Volume (veh/h)	479	772	352	443	243	289
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	526	514	387	487	290	146
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2135	904	410	3259	543	242
Arrive On Green	0.69	0.69	0.12	0.63	0.15	0.15
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	526	514	387	487	290	146
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	2.3	9.6	6.6	2.3	4.4	5.1
Cycle Q Clear(g_c), s	2.3	9.6	6.6	2.3	4.4	5.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2135	904	410	3259	543	242
V/C Ratio(X)	0.25	0.57	0.94	0.15	0.53	0.60
Avail Cap(c_a), veh/h	2135	904	410	3259	543	242
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.76	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.9	4.2	26.3	4.6	23.6	23.8
Incr Delay (d2), s/veh	0.2	2.0	32.6	0.0	3.7	10.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.5	4.2	0.4	1.9	2.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.1	6.1	58.9	4.6	27.3	34.6
LnGrp LOS	A	A	E	A	C	C
Approach Vol, veh/h	1040			874	436	
Approach Delay, s/veh	6.1			28.6	29.7	
Approach LOS	A			C	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.0	32.0				45.0	15.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	7.0	24.7				37.7	9.0
Max Q Clear Time (g_c+I1), s	8.6	11.6				4.3	7.1
Green Ext Time (p_c), s	0.0	4.2				3.1	0.3

Intersection Summary	
HCM 6th Ctrl Delay	18.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	687	488	1057	378	169	0	308
Future Volume (vph)	687	488	1057	378	169	0	308
Turn Type	Prot	NA	NA	Perm	Split	NA	Perm
Protected Phases	5	2	6		8	8	
Permitted Phases				6			8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	26.0	72.0	46.0	46.0	38.0	38.0	38.0
Total Split (%)	23.6%	65.5%	41.8%	41.8%	34.5%	34.5%	34.5%
Yellow Time (s)	4.0	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	687	488	0	0	1057	378	169	0	308	0	0	0
Future Volume (veh/h)	687	488	0	0	1057	378	169	0	308	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	716	508	0	0	1101	274	209	0	72			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	686	2951	0	0	2098	936	298	0	130			
Arrive On Green	0.33	1.00	0.00	0.00	0.58	0.58	0.08	0.00	0.08			
Sat Flow, veh/h	3510	3705	0	0	3705	1610	3619	0	1582			
Grp Volume(v), veh/h	716	508	0	0	1101	274	209	0	72			
Grp Sat Flow(s),veh/h/ln	1755	1805	0	0	1805	1610	1810	0	1582			
Q Serve(g_s), s	21.5	0.0	0.0	0.0	20.2	9.4	6.2	0.0	4.8			
Cycle Q Clear(g_c), s	21.5	0.0	0.0	0.0	20.2	9.4	6.2	0.0	4.8			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	686	2951	0	0	2098	936	298	0	130			
V/C Ratio(X)	1.04	0.17	0.00	0.00	0.52	0.29	0.70	0.00	0.55			
Avail Cap(c_a), veh/h	686	2951	0	0	2098	936	1069	0	467			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.71	0.71	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	37.0	0.0	0.0	0.0	13.9	11.6	49.1	0.0	48.5			
Incr Delay (d2), s/veh	40.9	0.1	0.0	0.0	0.9	0.8	3.0	0.0	3.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	11.3	0.0	0.0	0.0	7.6	3.3	2.8	0.0	2.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.0	0.1	0.0	0.0	14.8	12.4	52.1	0.0	52.1			
LnGrp LOS	F	A	A	A	B	B	D	A	D			
Approach Vol, veh/h		1224			1375			281				
Approach Delay, s/veh		45.7			14.3			52.1				
Approach LOS		D			B			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		95.4			26.0	69.4		14.6				
Change Period (Y+Rc), s		5.5			4.5	5.5		5.5				
Max Green Setting (Gmax), s		66.5			21.5	40.5		32.5				
Max Q Clear Time (g_c+I1), s		2.0			23.5	22.2		8.2				
Green Ext Time (p_c), s		2.1			0.0	5.2		0.9				
Intersection Summary												
HCM 6th Ctrl Delay			31.3									
HCM 6th LOS			C									

Notes

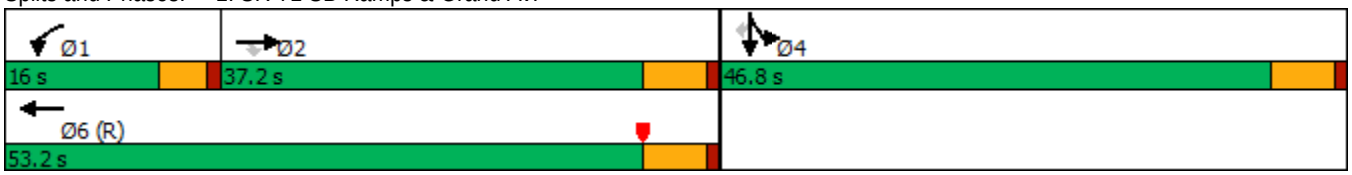
User approved volume balancing among the lanes for turning movement.

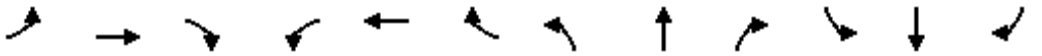
Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1315	523	280	1265	816	1	440
Future Volume (vph)	1315	523	280	1265	816	1	440
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	37.2	37.2	16.0	53.2	46.8	46.8	46.8
Total Split (%)	37.2%	37.2%	16.0%	53.2%	46.8%	46.8%	46.8%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1315	523	280	1265	0	0	0	0	816	1	440
Future Volume (veh/h)	0	1315	523	280	1265	0	0	0	0	816	1	440
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1547	526	329	1488	0				961	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85				0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1735	539	412	2552	0				1150	0	
Arrive On Green	0.00	0.33	0.33	0.12	0.49	0.00				0.32	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	1547	526	329	1488	0				961	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	28.3	32.3	9.1	20.4	0.0				24.7	0.0	0.0
Cycle Q Clear(g_c), s	0.0	28.3	32.3	9.1	20.4	0.0				24.7	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1735	539	412	2552	0				1150	0	
V/C Ratio(X)	0.00	0.89	0.98	0.80	0.58	0.00				0.84	0.00	
Avail Cap(c_a), veh/h	0	1735	539	421	2552	0				1549	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.36	0.36	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	31.6	32.9	43.0	18.1	0.0				31.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	7.4	33.4	3.6	0.4	0.0				3.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.2	16.7	4.0	7.4	0.0				10.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	39.0	66.3	46.5	18.4	0.0				34.8	0.0	0.0
LnGrp LOS	A	D	E	D	B	A				C	A	
Approach Vol, veh/h		2073			1817						961	A
Approach Delay, s/veh		45.9			23.5						34.8	
Approach LOS		D			C						C	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	15.7	37.5		35.8		53.2						
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8						
Max Green Setting (Gmax), s	11.4	31.4		41.0		47.4						
Max Q Clear Time (g_c+I1), s	11.1	34.3		26.7		22.4						
Green Ext Time (p_c), s	0.0	0.0		3.3		11.3						

Intersection Summary												
HCM 6th Ctrl Delay			35.3									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

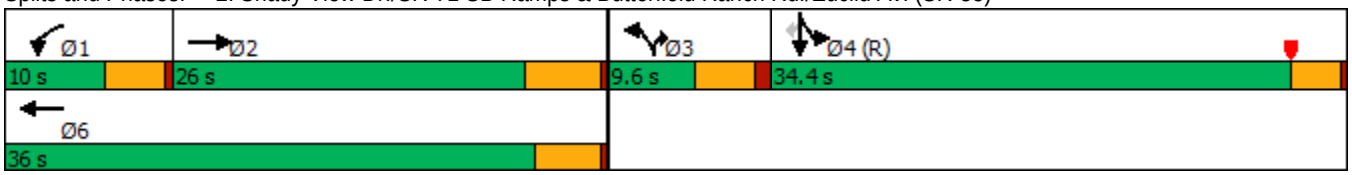
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

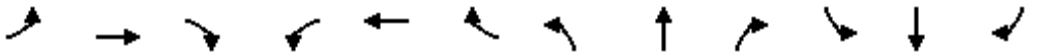
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	841	121	253	17	147	629	66	67
Future Volume (vph)	841	121	253	17	147	629	66	67
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	26.0	10.0	36.0	9.6	9.6	34.4	34.4	34.4
Total Split (%)	32.5%	12.5%	45.0%	12.0%	12.0%	43.0%	43.0%	43.0%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	841	58	121	253	0	17	0	147	629	66	67
Future Volume (veh/h)	0	841	58	121	253	0	17	0	147	629	66	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	876	48	126	264	0	18	0	94	704	0	43
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	913	50	136	1399		0	0	0	1832	0	815
Arrive On Green	0.00	0.26	0.26	0.02	0.13	0.00	0.00	0.00	0.00	0.51	0.00	0.51
Sat Flow, veh/h	0	3575	191	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	454	470	126	264	0		0.0		704	0	43
Grp Sat Flow(s),veh/h/ln	0	1805	1866	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	19.8	19.8	5.6	5.2	0.0				9.5	0.0	1.1
Cycle Q Clear(g_c), s	0.0	19.8	19.8	5.6	5.2	0.0				9.5	0.0	1.1
Prop In Lane	0.00		0.10	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	474	490	136	1399					1832	0	815
V/C Ratio(X)	0.00	0.96	0.96	0.93	0.19					0.38	0.00	0.05
Avail Cap(c_a), veh/h	0	474	490	136	1421					1832	0	815
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.86	0.86	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.1	29.1	38.8	23.6	0.0				12.1	0.0	10.0
Incr Delay (d2), s/veh	0.0	30.8	30.2	50.9	0.0	0.0				0.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.8	12.1	4.4	2.1	0.0				3.4	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	59.8	59.2	89.7	23.7	0.0				12.7	0.0	10.1
LnGrp LOS	A	E	E	F	C					B	A	B
Approach Vol, veh/h		924			390	A					747	
Approach Delay, s/veh		59.5			45.0						12.6	
Approach LOS		E			D						B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	10.0	26.0		44.0		36.0						
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5						
Max Green Setting (Gmax), s	6.0	21.0		30.9		* 32						
Max Q Clear Time (g_c+I1), s	7.6	21.8		11.5		7.2						
Green Ext Time (p_c), s	0.0	0.0		2.6		1.2						

Intersection Summary												
HCM 6th Ctrl Delay			39.8									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

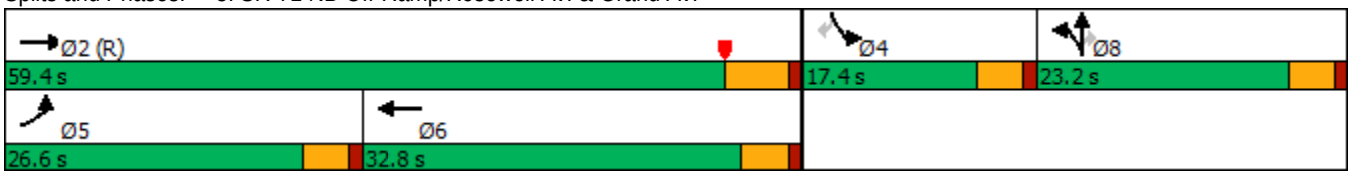
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	346	1487	298	1510	357	130	202	153	753
Future Volume (vph)	346	1487	298	1510	357	130	202	153	753
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	34.8		14.7	21.5	21.5	21.5	9.5	9.5
Total Split (s)	26.6	59.4		32.8	23.2	23.2	23.2	17.4	17.4
Total Split (%)	26.6%	59.4%		32.8%	23.2%	23.2%	23.2%	17.4%	17.4%
Yellow Time (s)	3.5	4.8		3.7	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.8		4.7	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	None	None	None	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	346	1487	298	0	1510	63	357	130	202	153	0	753
Future Volume (veh/h)	346	1487	298	0	1510	63	357	130	202	153	0	753
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	376	1616	0	0	1641	68	264	314	79	166	0	500
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	400	3704		0	2905	120	331	348	295	0	0	0
Arrive On Green	0.22	0.71	0.00	0.00	0.45	0.45	0.18	0.18	0.18	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6751	269	1810	1900	1610		0	
Grp Volume(v), veh/h	376	1616	0	0	1240	469	264	314	79		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1852	1810	1900	1610			
Q Serve(g_s), s	20.4	12.9	0.0	0.0	18.7	18.7	14.0	16.2	4.2			
Cycle Q Clear(g_c), s	20.4	12.9	0.0	0.0	18.7	18.7	14.0	16.2	4.2			
Prop In Lane	1.00		1.00	0.00		0.15	1.00		1.00			
Lane Grp Cap(c), veh/h	400	3704		0	2196	830	331	348	295			
V/C Ratio(X)	0.94	0.44		0.00	0.56	0.56	0.80	0.90	0.27			
Avail Cap(c_a), veh/h	400	3704		0	2196	830	338	355	301			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.53	0.53	0.00	0.00	0.71	0.71	1.00	1.00	1.00			
Uniform Delay (d), s/veh	38.3	5.9	0.0	0.0	20.4	20.4	39.1	40.0	35.1			
Incr Delay (d2), s/veh	19.4	0.2	0.0	0.0	0.2	0.6	11.3	24.4	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	10.7	3.5	0.0	0.0	6.8	7.8	7.0	9.6	1.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.7	6.1	0.0	0.0	20.6	21.0	50.4	64.3	35.3			
LnGrp LOS	E	A		A	C	C	D	E	D			
Approach Vol, veh/h		1992	A		1709			657				
Approach Delay, s/veh		15.9			20.7			55.2				
Approach LOS		B			C			E				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		77.2			26.6	50.6		22.8				
Change Period (Y+Rc), s		5.8			4.5	* 5.8		4.5				
Max Green Setting (Gmax), s		53.6			22.1	* 28		18.7				
Max Q Clear Time (g_c+I1), s		14.9			22.4	20.7		18.2				
Green Ext Time (p_c), s		15.2			0.0	5.5		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	23.7
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

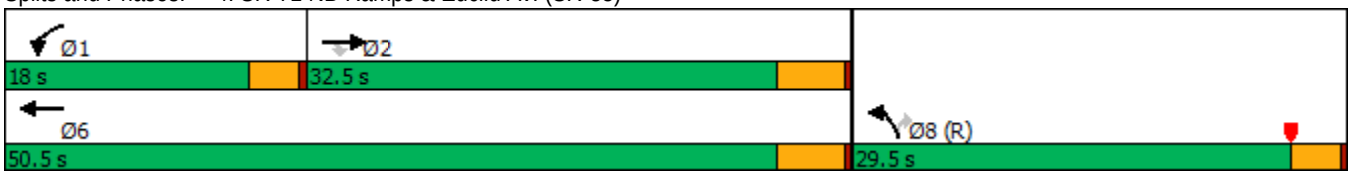
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	806	150	355	938	127	907
Future Volume (vph)	806	150	355	938	127	907
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	32.5	32.5	18.0	50.5	29.5	29.5
Total Split (%)	40.6%	40.6%	22.5%	63.1%	36.9%	36.9%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	806	150	355	938	127	907
Future Volume (veh/h)	806	150	355	938	127	907
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	937	0	413	1091	148	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1080		328	1892	1320	
Arrive On Green	0.40	0.00	0.18	0.52	0.38	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	937	0	413	1091	148	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	19.1	0.0	14.5	16.5	2.2	0.0
Cycle Q Clear(g_c), s	19.1	0.0	14.5	16.5	2.2	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1080		328	1892	1320	
V/C Ratio(X)	0.87		1.26	0.58	0.11	
Avail Cap(c_a), veh/h	1264		328	2076	1320	
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.46	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.6	0.0	32.8	13.0	16.3	0.0
Incr Delay (d2), s/veh	2.7	0.0	139.0	0.3	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	18.4	5.2	0.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.4	0.0	171.8	13.3	16.4	0.0
LnGrp LOS	C		F	B	B	
Approach Vol, veh/h	937	A		1504	148	A
Approach Delay, s/veh	25.4			56.8	16.4	
Approach LOS	C			E	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	18.0	28.4				46.4	33.6
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	14.5	28.0				46.0	26.0
Max Q Clear Time (g_c+I1), s	16.5	21.1				18.5	4.2
Green Ext Time (p_c), s	0.0	2.8				7.6	0.2

Intersection Summary							
HCM 6th Ctrl Delay			43.1				
HCM 6th LOS			D				

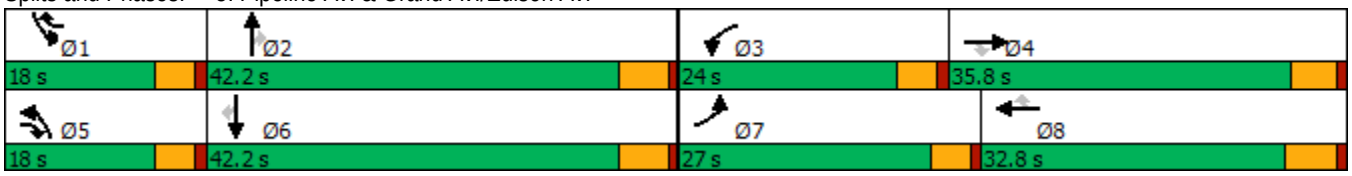
Notes

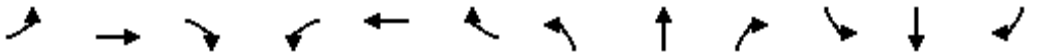
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	249	980	225	220	821	77	268	412	161	123	518	148
Future Volume (vph)	249	980	225	220	821	77	268	412	161	123	518	148
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	27.0	35.8	18.0	24.0	32.8	18.0	18.0	42.2	42.2	18.0	42.2	42.2
Total Split (%)	22.5%	29.8%	15.0%	20.0%	27.3%	15.0%	15.0%	35.2%	35.2%	15.0%	35.2%	35.2%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 99.6
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	249	980	225	220	821	77	268	412	161	123	518	148
Future Volume (veh/h)	249	980	225	220	821	77	268	412	161	123	518	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	274	1077	181	242	902	47	295	453	90	135	569	87
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	367	1687	707	332	1670	661	374	903	403	173	835	363
Arrive On Green	0.12	0.34	0.34	0.11	0.34	0.33	0.13	0.26	0.26	0.11	0.24	0.24
Sat Flow, veh/h	3141	4914	1523	3141	4914	1524	2956	3420	1525	1619	3420	1486
Grp Volume(v), veh/h	274	1077	181	242	902	47	295	453	90	135	569	87
Grp Sat Flow(s),veh/h/ln	1570	1638	1523	1570	1638	1524	1478	1710	1525	1619	1710	1486
Q Serve(g_s), s	7.8	17.1	6.7	6.9	13.7	1.7	9.0	10.4	4.3	7.5	14.0	4.4
Cycle Q Clear(g_c), s	7.8	17.1	6.7	6.9	13.7	1.7	9.0	10.4	4.3	7.5	14.0	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	367	1687	707	332	1670	661	374	903	403	173	835	363
V/C Ratio(X)	0.75	0.64	0.26	0.73	0.54	0.07	0.79	0.50	0.22	0.78	0.68	0.24
Avail Cap(c_a), veh/h	780	1687	707	678	1670	661	447	1410	629	245	1410	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	25.6	15.1	40.1	24.7	15.3	39.3	28.9	26.7	40.3	31.7	28.1
Incr Delay (d2), s/veh	1.2	1.9	0.9	1.2	1.3	0.2	6.3	0.4	0.3	6.1	1.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	6.6	2.3	2.6	5.1	0.6	3.5	4.1	1.5	3.2	5.6	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.7	27.4	16.0	41.3	26.0	15.5	45.6	29.4	26.9	46.5	32.7	28.4
LnGrp LOS	D	C	B	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1532			1191			838			791	
Approach Delay, s/veh		28.5			28.7			34.8			34.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	28.4	13.8	36.5	15.7	26.6	14.8	35.5
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	13.4	36.8	19.4	* 31	13.4	36.8	22.4	27.0
Max Q Clear Time (g_c+I1), s	9.5	12.4	8.9	19.1	11.0	16.0	9.8	15.7
Green Ext Time (p_c), s	0.1	3.1	0.3	6.0	0.1	3.8	0.4	4.4

Intersection Summary	
HCM 6th Ctrl Delay	30.9
HCM 6th LOS	C

Notes

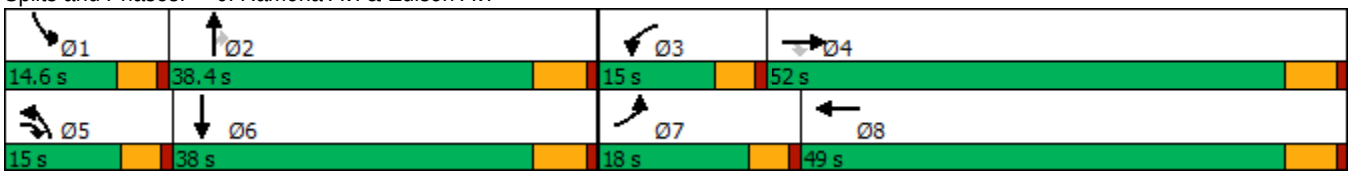
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

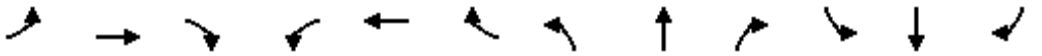
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	107	1056	107	82	840	87	407	69	55	377
Future Volume (vph)	107	1056	107	82	840	87	407	69	55	377
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	18.0	52.0	15.0	15.0	49.0	15.0	38.4	38.4	14.6	38.0
Total Split (%)	15.0%	43.3%	12.5%	12.5%	40.8%	12.5%	32.0%	32.0%	12.2%	31.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 107.9
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	1056	107	82	840	53	87	407	69	55	377	96
Future Volume (veh/h)	107	1056	107	82	840	53	87	407	69	55	377	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1700	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	120	1187	96	92	944	58	98	457	56	62	424	87
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	155	1640	1389	123	1505	92	130	790	353	87	578	118
Arrive On Green	0.10	0.48	0.47	0.08	0.46	0.44	0.08	0.23	0.23	0.05	0.20	0.19
Sat Flow, veh/h	1619	3420	2536	1619	3273	201	1619	3420	1525	1619	2830	576
Grp Volume(v), veh/h	120	1187	96	92	493	509	98	457	56	62	255	256
Grp Sat Flow(s),veh/h/ln	1619	1710	1268	1619	1710	1764	1619	1710	1525	1619	1710	1696
Q Serve(g_s), s	7.2	27.7	1.8	5.6	21.9	22.0	5.9	11.9	2.9	3.8	13.9	14.2
Cycle Q Clear(g_c), s	7.2	27.7	1.8	5.6	21.9	22.0	5.9	11.9	2.9	3.8	13.9	14.2
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	155	1640	1389	123	787	811	130	790	353	87	349	347
V/C Ratio(X)	0.78	0.72	0.07	0.75	0.63	0.63	0.75	0.58	0.16	0.72	0.73	0.74
Avail Cap(c_a), veh/h	226	1640	1389	178	787	811	178	1175	524	171	581	576
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.2	20.8	10.6	45.3	20.5	20.6	45.1	34.2	30.7	46.6	37.2	37.6
Incr Delay (d2), s/veh	5.2	2.8	0.1	4.7	3.8	3.7	7.0	0.7	0.2	4.1	2.9	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	10.5	0.5	2.3	8.8	9.1	2.5	4.8	1.1	1.6	5.8	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.4	23.6	10.7	50.0	24.3	24.3	52.0	34.8	30.9	50.7	40.2	40.7
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		1403			1094			611			573	
Approach Delay, s/veh		24.9			26.4			37.2			41.5	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	27.1	11.6	52.0	12.0	24.5	13.6	50.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.0	32.6	10.4	46.2	10.4	32.2	13.4	43.2
Max Q Clear Time (g_c+I1), s	5.8	13.9	7.6	29.7	7.9	16.2	9.2	24.0
Green Ext Time (p_c), s	0.0	2.7	0.0	7.6	0.0	2.5	0.0	5.8

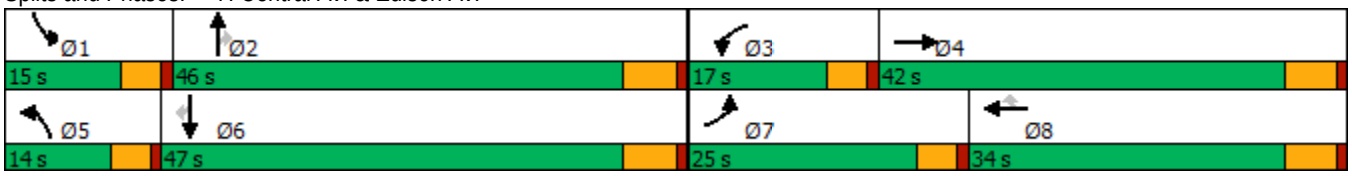
Intersection Summary	
HCM 6th Ctrl Delay	30.0
HCM 6th LOS	C

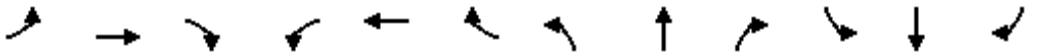
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	207	814	242	562	78	77	934	391	101	746	129
Future Volume (vph)	207	814	242	562	78	77	934	391	101	746	129
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	25.0	42.0	17.0	34.0	34.0	14.0	46.0	46.0	15.0	47.0	47.0
Total Split (%)	20.8%	35.0%	14.2%	28.3%	28.3%	11.7%	38.3%	38.3%	12.5%	39.2%	39.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 116.2
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	814	78	242	562	78	77	934	391	101	746	129
Future Volume (veh/h)	207	814	78	242	562	78	77	934	391	101	746	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	213	839	76	249	579	69	79	963	322	104	769	99
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	247	1069	97	318	980	437	106	1149	503	134	1208	539
Arrive On Green	0.15	0.34	0.32	0.10	0.29	0.29	0.07	0.34	0.34	0.08	0.35	0.35
Sat Flow, veh/h	1619	3167	287	3141	3420	1525	1619	3420	1498	1619	3420	1524
Grp Volume(v), veh/h	213	453	462	249	579	69	79	963	322	104	769	99
Grp Sat Flow(s),veh/h/ln	1619	1710	1744	1570	1710	1525	1619	1710	1498	1619	1710	1524
Q Serve(g_s), s	14.5	26.9	26.9	8.7	16.4	3.8	5.4	29.3	20.5	7.1	21.1	5.1
Cycle Q Clear(g_c), s	14.5	26.9	26.9	8.7	16.4	3.8	5.4	29.3	20.5	7.1	21.1	5.1
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	247	577	589	318	980	437	106	1149	503	134	1208	539
V/C Ratio(X)	0.86	0.78	0.78	0.78	0.59	0.16	0.74	0.84	0.64	0.77	0.64	0.18
Avail Cap(c_a), veh/h	302	577	589	363	980	437	144	1276	559	158	1307	582
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.6	33.6	33.7	49.4	34.5	30.0	51.6	34.5	31.6	50.6	30.4	25.2
Incr Delay (d2), s/veh	16.7	10.3	10.1	8.0	2.6	0.8	7.9	4.7	2.1	14.8	0.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	12.2	12.5	3.7	6.9	1.4	2.4	12.3	7.3	3.3	8.4	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.2	43.8	43.8	57.4	37.1	30.8	59.5	39.2	33.7	65.3	31.3	25.3
LnGrp LOS	E	D	D	E	D	C	E	D	C	E	C	C
Approach Vol, veh/h		1128			897			1364			972	
Approach Delay, s/veh		47.5			42.2			39.1			34.3	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	41.8	15.4	42.0	11.4	43.8	21.1	36.3
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.4	40.2	12.4	36.2	9.4	41.2	20.4	28.2
Max Q Clear Time (g_c+I1), s	9.1	31.3	10.7	28.9	7.4	23.1	16.5	18.4
Green Ext Time (p_c), s	0.0	4.7	0.1	3.1	0.0	4.9	0.1	2.6

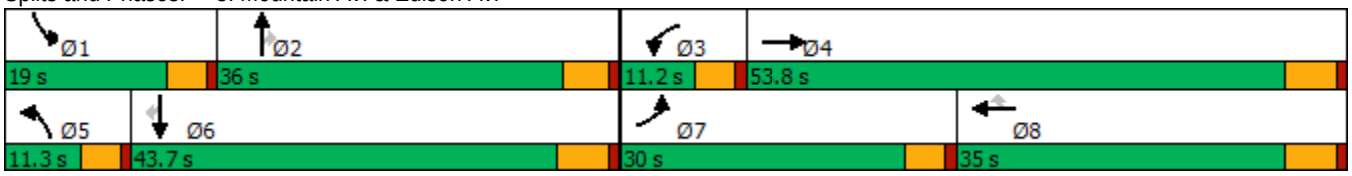
Intersection Summary	
HCM 6th Ctrl Delay	40.8
HCM 6th LOS	D

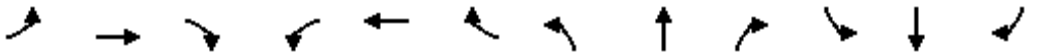
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	196	1054	34	600	77	36	88	27	101	162	204
Future Volume (vph)	196	1054	34	600	77	36	88	27	101	162	204
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	30.0	53.8	11.2	35.0	35.0	11.3	36.0	36.0	19.0	43.7	43.7
Total Split (%)	25.0%	44.8%	9.3%	29.2%	29.2%	9.4%	30.0%	30.0%	15.8%	36.4%	36.4%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 92.8
Natural Cycle: 85
Control Type: Actuated-Uncoordinated

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	1054	77	34	600	77	36	88	27	101	162	204
Future Volume (veh/h)	196	1054	77	34	600	77	36	88	27	101	162	204
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	200	1076	77	35	612	67	37	90	13	103	165	143
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	243	2601	186	63	1525	680	65	238	197	138	333	282
Arrive On Green	0.15	0.56	0.54	0.04	0.45	0.45	0.04	0.13	0.13	0.09	0.18	0.18
Sat Flow, veh/h	1619	4671	334	1619	3420	1525	1619	1800	1492	1619	1800	1525
Grp Volume(v), veh/h	200	754	399	35	612	67	37	90	13	103	165	143
Grp Sat Flow(s),veh/h/ln	1619	1638	1729	1619	1710	1525	1619	1800	1492	1619	1800	1525
Q Serve(g_s), s	10.7	11.9	12.0	1.9	10.8	2.3	2.0	4.1	0.7	5.6	7.4	7.5
Cycle Q Clear(g_c), s	10.7	11.9	12.0	1.9	10.8	2.3	2.0	4.1	0.7	5.6	7.4	7.5
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	243	1824	963	63	1525	680	65	238	197	138	333	282
V/C Ratio(X)	0.82	0.41	0.41	0.55	0.40	0.10	0.57	0.38	0.07	0.75	0.50	0.51
Avail Cap(c_a), veh/h	471	1824	963	130	1525	680	132	644	534	272	799	677
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.9	11.4	11.5	42.2	16.7	14.4	42.1	35.5	34.0	40.0	32.7	32.8
Incr Delay (d2), s/veh	2.7	0.7	1.3	2.8	0.8	0.3	2.9	1.0	0.1	3.0	1.1	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	3.8	4.3	0.8	4.0	0.8	0.8	1.8	0.2	2.2	3.1	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.5	12.1	12.8	45.0	17.5	14.6	45.0	36.5	34.1	43.0	33.9	34.2
LnGrp LOS	D	B	B	D	B	B	D	D	C	D	C	C
Approach Vol, veh/h		1353			714			140			411	
Approach Delay, s/veh		16.4			18.6			38.5			36.3	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	16.5	7.5	53.8	7.6	20.5	17.4	43.9
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	* 31	6.6	48.0	6.7	37.9	25.4	29.2
Max Q Clear Time (g_c+I1), s	7.6	6.1	3.9	14.0	4.0	9.5	12.7	12.8
Green Ext Time (p_c), s	0.1	0.4	0.0	8.4	0.0	1.3	0.2	3.6

Intersection Summary	
HCM 6th Ctrl Delay	21.3
HCM 6th LOS	C

Notes

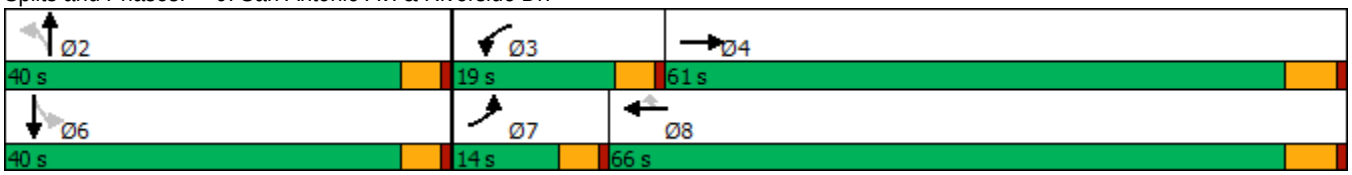
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

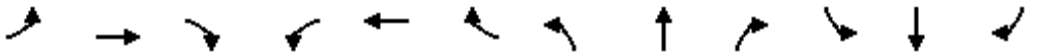
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	29	752	56	691	19	85	14	9	7
Future Volume (vph)	29	752	56	691	19	85	14	9	7
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	14.0	61.0	19.0	66.0	66.0	40.0	40.0	40.0	40.0
Total Split (%)	11.7%	50.8%	15.8%	55.0%	55.0%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 93.9
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	752	109	56	691	19	85	14	39	9	7	29
Future Volume (veh/h)	29	752	109	56	691	19	85	14	39	9	7	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	30	783	108	58	720	20	89	15	17	9	7	7
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	59	2077	286	83	2411	1075	236	94	106	220	101	101
Arrive On Green	0.04	0.69	0.67	0.05	0.70	0.70	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1619	3010	415	1619	3420	1524	1343	768	870	1315	826	826
Grp Volume(v), veh/h	30	445	446	58	720	20	89	0	32	9	0	14
Grp Sat Flow(s),veh/h/ln	1619	1710	1715	1619	1710	1524	1343	0	1638	1315	0	1651
Q Serve(g_s), s	1.6	9.6	9.7	3.1	6.9	0.3	5.5	0.0	1.5	0.5	0.0	0.7
Cycle Q Clear(g_c), s	1.6	9.6	9.7	3.1	6.9	0.3	6.2	0.0	1.5	2.1	0.0	0.7
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.53	1.00		0.50
Lane Grp Cap(c), veh/h	59	1180	1184	83	2411	1075	236	0	200	220	0	202
V/C Ratio(X)	0.51	0.38	0.38	0.70	0.30	0.02	0.38	0.00	0.16	0.04	0.00	0.07
Avail Cap(c_a), veh/h	184	1180	1184	276	2411	1075	621	0	670	597	0	676
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.6	5.7	5.8	41.1	4.8	3.9	36.9	0.0	34.7	35.5	0.0	34.3
Incr Delay (d2), s/veh	2.5	0.9	0.9	4.0	0.3	0.0	1.0	0.0	0.4	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.7	2.8	1.3	1.8	0.1	1.9	0.0	0.6	0.2	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.1	6.6	6.7	45.1	5.2	3.9	37.9	0.0	35.1	35.6	0.0	34.4
LnGrp LOS	D	A	A	D	A	A	D	A	D	D	A	C
Approach Vol, veh/h		921			798			121			23	
Approach Delay, s/veh		7.9			8.0			37.2			34.9	
Approach LOS		A			A			D			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.8	8.5	64.7		14.8	7.2	66.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		35.4	14.4	55.2		35.4	9.4	60.2				
Max Q Clear Time (g_c+I1), s		8.2	5.1	11.7		4.1	3.6	8.9				
Green Ext Time (p_c), s		0.4	0.0	6.0		0.1	0.0	5.2				

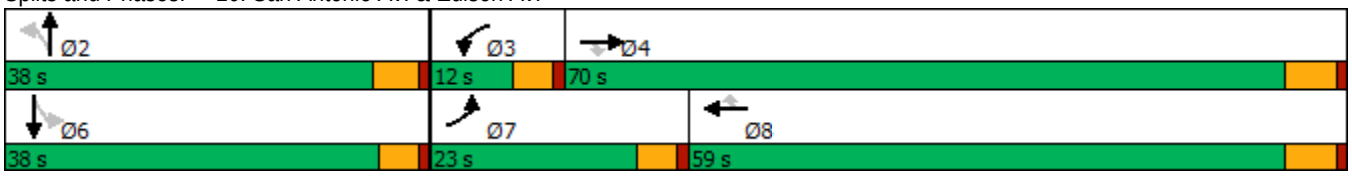
Intersection Summary												
HCM 6th Ctrl Delay			10.2									
HCM 6th LOS			B									

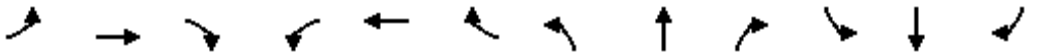
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	80	1006	37	7	640	13	21	29	10	40
Future Volume (vph)	80	1006	37	7	640	13	21	29	10	40
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	23.0	70.0	70.0	12.0	59.0	59.0	38.0	38.0	38.0	38.0
Total Split (%)	19.2%	58.3%	58.3%	10.0%	49.2%	49.2%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 95.7
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	1006	37	7	640	13	21	29	10	10	40	48
Future Volume (veh/h)	80	1006	37	7	640	13	21	29	10	10	40	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1000	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	85	1070	38	7	681	11	22	31	7	11	43	21
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	117	2503	1117	15	2310	1030	104	124	23	61	122	53
Arrive On Green	0.07	0.73	0.73	0.02	0.68	0.68	0.12	0.12	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1619	3420	1525	952	3420	1525	412	1038	192	133	1074	469
Grp Volume(v), veh/h	85	1070	38	7	681	11	60	0	0	75	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	952	1710	1525	1642	0	0	1676	0	0
Q Serve(g_s), s	4.6	11.0	0.6	0.7	7.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.6	11.0	0.6	0.7	7.3	0.2	2.8	0.0	0.0	3.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.37		0.12	0.15		0.28
Lane Grp Cap(c), veh/h	117	2503	1117	15	2310	1030	250	0	0	237	0	0
V/C Ratio(X)	0.73	0.43	0.03	0.47	0.29	0.01	0.24	0.00	0.00	0.32	0.00	0.00
Avail Cap(c_a), veh/h	341	2503	1117	85	2310	1030	657	0	0	670	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	41.0	4.7	3.3	44.0	5.9	4.8	36.3	0.0	0.0	37.1	0.0	0.0
Incr Delay (d2), s/veh	3.2	0.5	0.1	8.4	0.3	0.0	0.5	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	2.6	0.1	0.2	2.0	0.1	1.2	0.0	0.0	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.2	5.2	3.4	52.4	6.3	4.8	36.7	0.0	0.0	37.9	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1193			699			60			75	
Approach Delay, s/veh		8.0			6.7			36.7			37.9	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.8	5.4	70.0		14.8	10.5	64.9				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		32.9	7.4	64.2		* 33	18.4	53.2				
Max Q Clear Time (g_c+I1), s		4.8	2.7	13.0		5.7	6.6	9.3				
Green Ext Time (p_c), s		0.3	0.0	9.1		0.4	0.1	4.8				

Intersection Summary	
HCM 6th Ctrl Delay	9.5
HCM 6th LOS	A

Notes

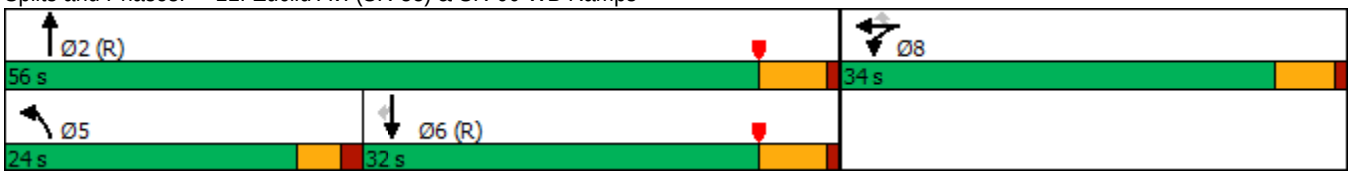
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

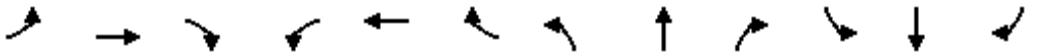
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	580	6	392	233	1034	967	473
Future Volume (vph)	580	6	392	233	1034	967	473
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	34.0	34.0	34.0	24.0	56.0	32.0	32.0
Total Split (%)	37.8%	37.8%	37.8%	26.7%	62.2%	35.6%	35.6%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	580	6	392	233	1034	0	0	967	473
Future Volume (veh/h)	0	0	0	580	6	392	233	1034	0	0	967	473
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				677	0	153	243	1077	0	0	1007	288
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				786	0	349	275	2405	0	0	1677	748
Arrive On Green				0.22	0.00	0.22	0.30	1.00	0.00	0.00	0.46	0.46
Sat Flow, veh/h				3619	0	1608	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				677	0	153	243	1077	0	0	1007	288
Grp Sat Flow(s),veh/h/ln				1810	0	1608	1810	1805	0	0	1805	1610
Q Serve(g_s), s				16.2	0.0	7.4	11.5	0.0	0.0	0.0	18.6	10.5
Cycle Q Clear(g_c), s				16.2	0.0	7.4	11.5	0.0	0.0	0.0	18.6	10.5
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				786	0	349	275	2405	0	0	1677	748
V/C Ratio(X)				0.86	0.00	0.44	0.88	0.45	0.00	0.00	0.60	0.39
Avail Cap(c_a), veh/h				1166	0	518	392	2405	0	0	1677	748
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.60	0.60	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.9	0.0	30.5	30.6	0.0	0.0	0.0	17.9	15.7
Incr Delay (d2), s/veh				3.1	0.0	0.3	7.9	0.4	0.0	0.0	1.6	1.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.0	0.0	2.7	4.6	0.1	0.0	0.0	7.4	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				37.0	0.0	30.8	38.5	0.4	0.0	0.0	19.5	17.2
LnGrp LOS				D	A	C	D	A	A	A	B	B
Approach Vol, veh/h					830			1320			1295	
Approach Delay, s/veh					35.9			7.4			19.0	
Approach LOS					D			A			B	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		65.5			18.2	47.3		24.5				
Change Period (Y+Rc), s		5.5			4.5	5.5		5.0				
Max Green Setting (Gmax), s		50.5			19.5	26.5		29.0				
Max Q Clear Time (g_c+I1), s		2.0			13.5	20.6		18.2				
Green Ext Time (p_c), s		14.1			0.2	4.2		1.3				

Intersection Summary												
HCM 6th Ctrl Delay			18.6									
HCM 6th LOS			B									

Notes

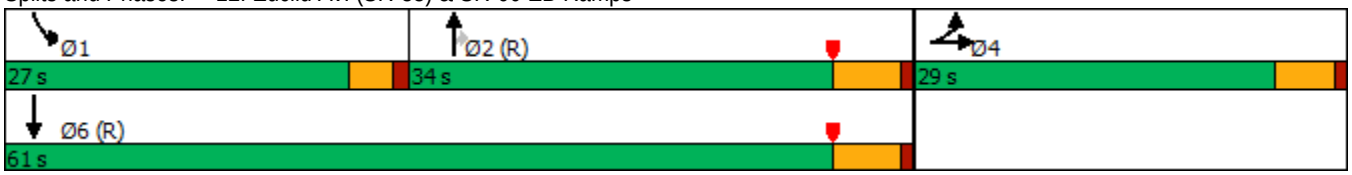
User approved volume balancing among the lanes for turning movement.

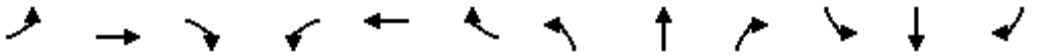
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	400	3	868	551	361	1187
Future Volume (vph)	400	3	868	551	361	1187
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	29.0	29.0	34.0	34.0	27.0	61.0
Total Split (%)	32.2%	32.2%	37.8%	37.8%	30.0%	67.8%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	400	3	306	0	0	0	0	868	551	361	1187	0
Future Volume (veh/h)	400	3	306	0	0	0	0	868	551	361	1187	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	328	115	245				0	886	368	368	1211	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	428	128	273				0	1387	604	395	2334	0
Arrive On Green	0.24	0.24	0.24				0.00	0.38	0.38	0.44	1.00	0.00
Sat Flow, veh/h	1810	541	1152				0	3705	1572	1810	3705	0
Grp Volume(v), veh/h	328	0	360				0	886	368	368	1211	0
Grp Sat Flow(s),veh/h/ln	1810	0	1693				0	1805	1572	1810	1805	0
Q Serve(g_s), s	15.2	0.0	18.6				0.0	18.0	16.9	17.4	0.0	0.0
Cycle Q Clear(g_c), s	15.2	0.0	18.6				0.0	18.0	16.9	17.4	0.0	0.0
Prop In Lane	1.00		0.68				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	428	0	401				0	1387	604	395	2334	0
V/C Ratio(X)	0.77	0.00	0.90				0.00	0.64	0.61	0.93	0.52	0.00
Avail Cap(c_a), veh/h	483	0	451				0	1387	604	462	2334	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.71	0.71	0.80	0.80	0.00
Uniform Delay (d), s/veh	32.0	0.0	33.3				0.0	22.6	22.3	24.8	0.0	0.0
Incr Delay (d2), s/veh	5.4	0.0	17.9				0.0	1.6	3.2	19.3	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	0.0	9.1				0.0	7.4	6.3	7.2	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.4	0.0	51.2				0.0	24.2	25.5	44.1	0.7	0.0
LnGrp LOS	D	A	D				A	C	C	D	A	A
Approach Vol, veh/h		688						1254			1579	
Approach Delay, s/veh		44.6						24.6			10.8	
Approach LOS		D						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.6	40.1		26.3		63.7
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	23.0	28.5		24.0		55.5
Max Q Clear Time (g_c+I1), s	19.4	20.0		20.6		2.0
Green Ext Time (p_c), s	0.2	5.5		0.7		17.4

Intersection Summary	
HCM 6th Ctrl Delay	22.3
HCM 6th LOS	C

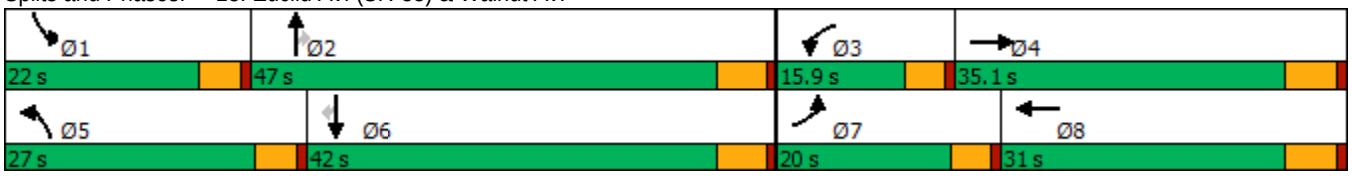
Notes

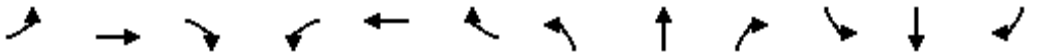
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	103	356	67	356	178	1158	70	253	1061	141
Future Volume (vph)	103	356	67	356	178	1158	70	253	1061	141
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	20.0	35.1	15.9	31.0	27.0	47.0	47.0	22.0	42.0	42.0
Total Split (%)	16.7%	29.3%	13.3%	25.8%	22.5%	39.2%	39.2%	18.3%	35.0%	35.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 108.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	356	133	67	356	135	178	1158	70	253	1061	141
Future Volume (veh/h)	103	356	133	67	356	135	178	1158	70	253	1061	141
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	110	379	118	71	379	118	189	1232	47	269	1129	96
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	135	553	170	89	479	147	219	2038	632	330	1922	596
Arrive On Green	0.08	0.22	0.22	0.05	0.19	0.19	0.14	0.41	0.41	0.11	0.39	0.39
Sat Flow, veh/h	1619	2567	788	1619	2561	786	1619	4914	1523	2956	4914	1524
Grp Volume(v), veh/h	110	251	246	71	251	246	189	1232	47	269	1129	96
Grp Sat Flow(s),veh/h/ln	1619	1710	1645	1619	1710	1637	1619	1638	1523	1478	1638	1524
Q Serve(g_s), s	6.7	13.5	13.9	4.3	14.0	14.4	11.5	19.6	1.9	8.9	18.2	4.1
Cycle Q Clear(g_c), s	6.7	13.5	13.9	4.3	14.0	14.4	11.5	19.6	1.9	8.9	18.2	4.1
Prop In Lane	1.00		0.48	1.00		0.48	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	135	368	354	89	320	306	219	2038	632	330	1922	596
V/C Ratio(X)	0.82	0.68	0.69	0.80	0.79	0.80	0.86	0.60	0.07	0.82	0.59	0.16
Avail Cap(c_a), veh/h	249	500	480	182	430	411	362	2038	632	513	1922	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.2	36.2	36.3	46.9	38.9	39.0	42.5	22.9	17.7	43.5	24.1	19.8
Incr Delay (d2), s/veh	4.5	2.2	2.7	6.1	6.7	8.1	5.8	1.3	0.2	2.9	1.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	5.6	5.6	1.8	6.2	6.2	4.8	7.4	0.7	3.3	6.9	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.7	38.4	39.0	53.0	45.6	47.1	48.3	24.3	17.9	46.5	25.4	20.4
LnGrp LOS	D	D	D	D	D	D	D	C	B	D	C	C
Approach Vol, veh/h		607			568			1468			1494	
Approach Delay, s/veh		40.7			47.2			27.1			28.9	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.8	47.0	10.1	27.4	18.2	44.6	13.0	24.5
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	17.4	41.6	11.3	29.3	22.4	36.6	15.4	25.2
Max Q Clear Time (g_c+I1), s	10.9	21.6	6.3	15.9	13.5	20.2	8.7	16.4
Green Ext Time (p_c), s	0.3	8.6	0.0	2.2	0.2	7.2	0.1	1.8

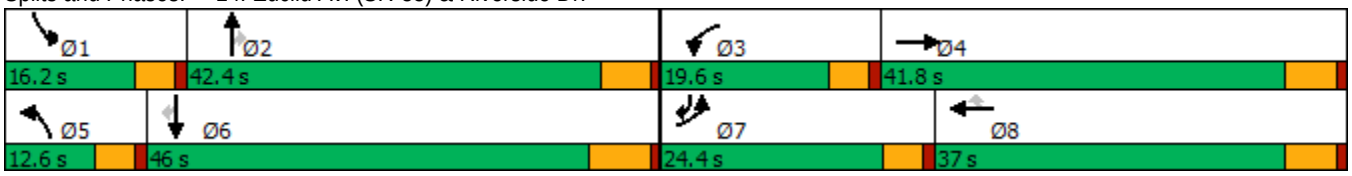
Intersection Summary	
HCM 6th Ctrl Delay	32.5
HCM 6th LOS	C

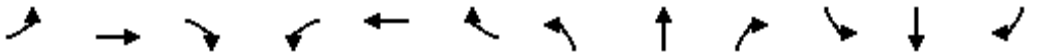
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	145	440	178	393	62	63	975	230	134	880	185
Future Volume (vph)	145	440	178	393	62	63	975	230	134	880	185
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	24.4	41.8	19.6	37.0	37.0	12.6	42.4	42.4	16.2	46.0	24.4
Total Split (%)	20.3%	34.8%	16.3%	30.8%	30.8%	10.5%	35.3%	35.3%	13.5%	38.3%	20.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 119.7
Natural Cycle: 110
Control Type: Actuated-Uncoordinated

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	440	71	178	393	62	63	975	230	134	880	185
Future Volume (veh/h)	145	440	71	178	393	62	63	975	230	134	880	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	151	458	49	185	409	49	66	1016	186	140	917	102
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	175	475	51	201	1070	477	82	1045	466	155	1199	693
Arrive On Green	0.11	0.30	0.30	0.12	0.31	0.31	0.05	0.31	0.31	0.10	0.35	0.35
Sat Flow, veh/h	1619	1598	171	1619	3420	1524	1619	3420	1525	1619	3420	1506
Grp Volume(v), veh/h	151	0	507	185	409	49	66	1016	186	140	917	102
Grp Sat Flow(s),veh/h/ln	1619	0	1769	1619	1710	1524	1619	1710	1525	1619	1710	1506
Q Serve(g_s), s	11.1	0.0	34.2	13.7	11.3	2.8	4.9	35.5	11.7	10.4	28.8	4.8
Cycle Q Clear(g_c), s	11.1	0.0	34.2	13.7	11.3	2.8	4.9	35.5	11.7	10.4	28.8	4.8
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	0	526	201	1070	477	82	1045	466	155	1199	693
V/C Ratio(X)	0.86	0.00	0.96	0.92	0.38	0.10	0.80	0.97	0.40	0.90	0.76	0.15
Avail Cap(c_a), veh/h	265	0	526	201	1070	477	107	1045	466	155	1199	693
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.1	0.0	41.9	52.5	32.5	29.5	56.9	41.5	33.3	54.2	34.9	19.0
Incr Delay (d2), s/veh	11.3	0.0	30.2	41.7	0.2	0.1	21.4	21.9	2.5	44.1	4.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	0.0	18.7	7.7	4.6	1.0	2.4	17.2	4.5	6.1	12.4	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.4	0.0	72.1	94.2	32.7	29.6	78.2	63.5	35.8	98.3	39.6	19.5
LnGrp LOS	E	A	E	F	C	C	E	E	D	F	D	B
Approach Vol, veh/h		658			643			1268			1159	
Approach Delay, s/veh		70.3			50.2			60.2			44.9	
Approach LOS		E			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	43.5	19.6	41.8	10.7	49.0	17.7	43.7
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	11.6	* 37	15.0	36.0	8.0	39.5	19.8	31.2
Max Q Clear Time (g_c+I1), s	12.4	37.5	15.7	36.2	6.9	30.8	13.1	13.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.1	0.1	2.4

Intersection Summary	
HCM 6th Ctrl Delay	55.5
HCM 6th LOS	E

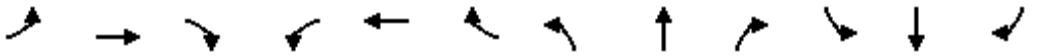
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	93	273	47	75	108	39	1163	219	24	999	69
Future Volume (vph)	93	273	47	75	108	39	1163	219	24	999	69
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	44.0	44.0	44.0	44.0	44.0	12.4	65.0	65.0	11.0	63.6	63.6
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	10.3%	54.2%	54.2%	9.2%	53.0%	53.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 103
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	273	47	75	108	9	39	1163	219	24	999	69
Future Volume (veh/h)	93	273	47	75	108	9	39	1163	219	24	999	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	100	294	28	81	116	6	42	1251	164	26	1074	41
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	268	490	415	119	153	7	53	1875	819	40	1847	807
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.03	0.55	0.55	0.02	0.54	0.54
Sat Flow, veh/h	1218	1800	1525	269	562	25	1619	3420	1494	1619	3420	1494
Grp Volume(v), veh/h	100	294	28	203	0	0	42	1251	164	26	1074	41
Grp Sat Flow(s),veh/h/ln	1218	1800	1525	856	0	0	1619	1710	1494	1619	1710	1494
Q Serve(g_s), s	0.0	15.5	1.5	11.5	0.0	0.0	2.8	28.4	6.1	1.7	23.0	1.4
Cycle Q Clear(g_c), s	13.4	15.5	1.5	27.0	0.0	0.0	2.8	28.4	6.1	1.7	23.0	1.4
Prop In Lane	1.00		1.00	0.40		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	268	490	415	279	0	0	53	1875	819	40	1847	807
V/C Ratio(X)	0.37	0.60	0.07	0.73	0.00	0.00	0.79	0.67	0.20	0.64	0.58	0.05
Avail Cap(c_a), veh/h	363	630	534	389	0	0	116	1875	819	95	1847	807
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	34.6	29.5	41.5	0.0	0.0	52.4	17.6	12.5	52.7	16.8	11.9
Incr Delay (d2), s/veh	0.9	1.2	0.1	4.2	0.0	0.0	9.1	1.9	0.5	6.2	1.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	6.7	0.5	5.5	0.0	0.0	1.2	10.1	1.9	0.7	8.1	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.6	35.7	29.5	45.7	0.0	0.0	61.5	19.5	13.1	58.9	18.2	12.0
LnGrp LOS	C	D	C	D	A	A	E	B	B	E	B	B
Approach Vol, veh/h		422			203			1457			1141	
Approach Delay, s/veh		35.1			45.7			20.0			18.9	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	66.3		35.5	8.2	65.4		35.5				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	6.4	* 60		38.2	7.8	57.1		38.2				
Max Q Clear Time (g_c+I1), s	3.7	30.4		17.5	4.8	25.0		29.0				
Green Ext Time (p_c), s	0.0	10.1		1.9	0.0	7.9		0.7				

Intersection Summary			
HCM 6th Ctrl Delay		23.2	
HCM 6th LOS		C	

Notes

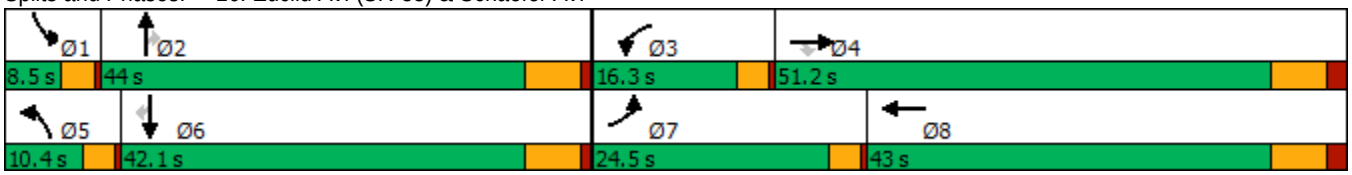
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

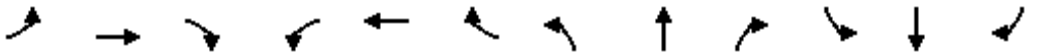
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	280	276	178	76	64	82	1090	80	28	1016	111
Future Volume (vph)	280	276	178	76	64	82	1090	80	28	1016	111
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	24.5	51.2	51.2	16.3	43.0	10.4	44.0	44.0	8.5	42.1	42.1
Total Split (%)	20.4%	42.7%	42.7%	13.6%	35.8%	8.7%	36.7%	36.7%	7.1%	35.1%	35.1%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 94.3
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	276	178	76	64	25	82	1090	80	28	1016	111
Future Volume (veh/h)	280	276	178	76	64	25	82	1090	80	28	1016	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	283	279	139	77	65	20	83	1101	63	28	1026	82
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	322	350	296	172	135	41	103	1382	617	48	1265	564
Arrive On Green	0.20	0.19	0.19	0.11	0.10	0.10	0.06	0.40	0.40	0.03	0.37	0.37
Sat Flow, veh/h	1619	1800	1525	1619	1321	406	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	283	279	139	77	0	85	83	1101	63	28	1026	82
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1727	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	12.8	11.1	6.1	3.4	0.0	3.5	3.8	21.3	1.9	1.3	20.3	2.7
Cycle Q Clear(g_c), s	12.8	11.1	6.1	3.4	0.0	3.5	3.8	21.3	1.9	1.3	20.3	2.7
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	322	350	296	172	0	176	103	1382	617	48	1265	564
V/C Ratio(X)	0.88	0.80	0.47	0.45	0.00	0.48	0.81	0.80	0.10	0.59	0.81	0.15
Avail Cap(c_a), veh/h	452	1057	896	275	0	826	148	1727	770	108	1640	732
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	28.9	26.9	31.6	0.0	31.9	34.8	19.7	13.9	36.1	21.3	15.8
Incr Delay (d2), s/veh	10.7	3.1	0.9	0.7	0.0	1.5	12.0	2.1	0.1	4.2	2.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	4.7	2.1	1.3	0.0	1.4	1.7	7.3	0.6	0.5	7.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.0	32.1	27.7	32.2	0.0	33.4	46.8	21.8	14.0	40.3	23.8	15.9
LnGrp LOS	D	C	C	C	A	C	D	C	B	D	C	B
Approach Vol, veh/h		701			162			1247			1136	
Approach Delay, s/veh		34.4			32.9			23.1			23.6	
Approach LOS		C			C			C			C	

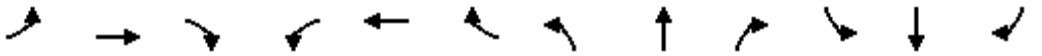
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.7	36.4	11.5	21.6	8.3	33.8	18.5	14.7
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	38.0	12.8	44.2	6.9	36.1	21.0	36.0
Max Q Clear Time (g_c+I1), s	3.3	23.3	5.4	13.1	5.8	22.3	14.8	5.5
Green Ext Time (p_c), s	0.0	6.1	0.0	1.5	0.0	5.5	0.2	0.3

Intersection Summary	
HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	265	463	279	39	252	139	1042	68	82	1092	175
Future Volume (vph)	265	463	279	39	252	139	1042	68	82	1092	175
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	17.0	54.8	54.8	13.2	51.0	51.0
Total Split (%)	43.3%	43.3%	43.3%	43.3%	43.3%	14.2%	45.7%	45.7%	11.0%	42.5%	42.5%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 114.3
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	463	279	39	252	34	139	1042	68	82	1092	175
Future Volume (veh/h)	265	463	279	39	252	34	139	1042	68	82	1092	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	279	487	212	41	265	30	146	1097	64	86	1149	152
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	336	695	589	175	612	69	170	1391	619	106	1255	560
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.11	0.41	0.41	0.07	0.37	0.37
Sat Flow, veh/h	1040	1800	1525	717	1586	179	1619	3420	1522	1619	3420	1525
Grp Volume(v), veh/h	279	487	212	41	0	295	146	1097	64	86	1149	152
Grp Sat Flow(s),veh/h/ln	1040	1800	1525	717	0	1765	1619	1710	1522	1619	1710	1525
Q Serve(g_s), s	30.7	26.5	11.5	5.9	0.0	14.3	10.3	32.6	3.0	6.1	37.3	8.2
Cycle Q Clear(g_c), s	45.0	26.5	11.5	32.5	0.0	14.3	10.3	32.6	3.0	6.1	37.3	8.2
Prop In Lane	1.00		1.00	1.00		0.10	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	336	695	589	175	0	682	170	1391	619	106	1255	560
V/C Ratio(X)	0.83	0.70	0.36	0.23	0.00	0.43	0.86	0.79	0.10	0.81	0.92	0.27
Avail Cap(c_a), veh/h	336	695	589	175	0	682	188	1433	637	135	1321	589
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	30.1	25.5	43.7	0.0	26.3	51.3	30.2	21.4	53.7	35.1	25.9
Incr Delay (d2), s/veh	16.1	3.1	0.4	0.7	0.0	0.4	26.7	3.0	0.1	19.9	9.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.2	11.5	4.1	1.1	0.0	5.9	5.3	12.9	1.0	3.0	16.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.3	33.2	25.8	44.4	0.0	26.8	78.0	33.2	21.5	73.6	45.0	26.2
LnGrp LOS	E	C	C	D	A	C	E	C	C	E	D	C
Approach Vol, veh/h		978			336			1307			1387	
Approach Delay, s/veh		39.1			28.9			37.6			44.7	
Approach LOS		D			C			D			D	

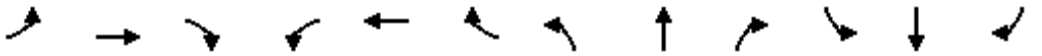
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.1	53.4		52.0	15.7	48.8		52.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	9.7	48.8		45.0	13.5	45.0		45.0				
Max Q Clear Time (g_c+I1), s	8.1	34.6		47.0	12.3	39.3		34.5				
Green Ext Time (p_c), s	0.0	6.0		0.0	0.0	3.4		1.3				

Intersection Summary												
HCM 6th Ctrl Delay			39.7									
HCM 6th LOS			D									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	37	157	202	8	21	102	1076	17	44	1239	62
Future Volume (vph)	37	157	202	8	21	102	1076	17	44	1239	62
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	46.8	46.8	46.8	46.8	46.8	14.0	63.2	63.2	10.0	59.2	59.2
Total Split (%)	39.0%	39.0%	39.0%	39.0%	39.0%	11.7%	52.7%	52.7%	8.3%	49.3%	49.3%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 83.5
Natural Cycle: 105
Control Type: Actuated-Uncoordinated

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	157	202	8	21	9	102	1076	17	44	1239	62
Future Volume (veh/h)	37	157	202	8	21	9	102	1076	17	44	1239	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	42	176	111	9	24	7	115	1209	18	49	1392	58
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	287	258	219	171	192	56	144	1987	886	75	1841	804
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.09	0.58	0.58	0.05	0.54	0.54
Sat Flow, veh/h	1322	1800	1525	1048	1339	391	1619	3420	1525	1619	3420	1494
Grp Volume(v), veh/h	42	176	111	9	0	31	115	1209	18	49	1392	58
Grp Sat Flow(s),veh/h/ln	1322	1800	1525	1048	0	1730	1619	1710	1525	1619	1710	1494
Q Serve(g_s), s	1.7	5.7	4.1	0.5	0.0	1.0	4.2	14.0	0.3	1.8	19.3	1.1
Cycle Q Clear(g_c), s	2.7	5.7	4.1	6.2	0.0	1.0	4.2	14.0	0.3	1.8	19.3	1.1
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	287	258	219	171	0	248	144	1987	886	75	1841	804
V/C Ratio(X)	0.15	0.68	0.51	0.05	0.00	0.13	0.80	0.61	0.02	0.65	0.76	0.07
Avail Cap(c_a), veh/h	1008	1240	1051	742	0	1191	279	3225	1438	173	3000	1311
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	24.8	24.1	27.7	0.0	22.8	27.3	8.3	5.4	28.6	11.0	6.8
Incr Delay (d2), s/veh	0.2	2.4	1.4	0.1	0.0	0.2	7.4	0.3	0.0	7.0	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.3	1.4	0.1	0.0	0.4	1.7	3.0	0.1	0.8	4.6	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.1	27.2	25.5	27.8	0.0	23.0	34.7	8.6	5.4	35.6	11.6	6.8
LnGrp LOS	C	C	C	C	A	C	C	A	A	D	B	A
Approach Vol, veh/h		329			40			1342			1499	
Approach Delay, s/veh		26.2			24.0			10.8			12.2	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	41.1		13.5	8.9	38.5		13.5				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	6.5	57.5		42.0	10.5	53.5		42.0				
Max Q Clear Time (g_c+I1), s	3.8	16.0		7.7	6.2	21.3		8.2				
Green Ext Time (p_c), s	0.0	9.7		1.1	0.1	11.5		0.1				

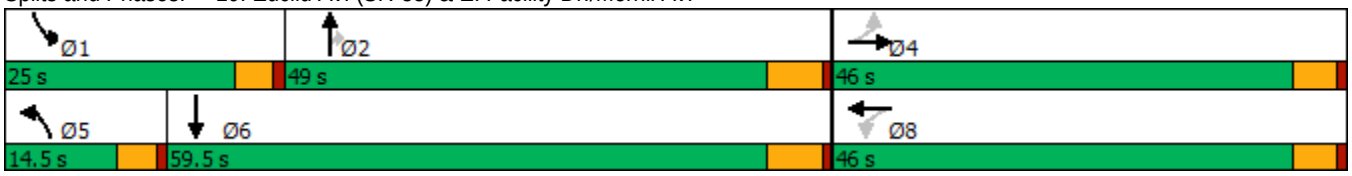
Intersection Summary			
HCM 6th Ctrl Delay		13.2	
HCM 6th LOS		B	

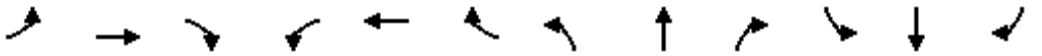
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	11	29	183	2	4	1136	224	251	1155
Future Volume (vph)	11	29	183	2	4	1136	224	251	1155
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	14.5	49.0	49.0	25.0	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	12.1%	40.8%	40.8%	20.8%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 109.2
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	29	12	183	2	136	4	1136	224	251	1155	1
Future Volume (veh/h)	11	29	12	183	2	136	4	1136	224	251	1155	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	12	32	12	201	2	139	4	1248	181	276	1269	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	106	262	89	277	2	153	17	1380	615	304	1985	0
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.01	0.40	0.40	0.19	0.58	0.00
Sat Flow, veh/h	246	1027	347	864	9	598	1619	3420	1525	1619	3510	0
Grp Volume(v), veh/h	56	0	0	342	0	0	4	1248	181	276	1269	0
Grp Sat Flow(s),veh/h/ln	1621	0	0	1470	0	0	1619	1710	1525	1619	1710	0
Q Serve(g_s), s	0.0	0.0	0.0	20.2	0.0	0.0	0.2	34.5	8.1	16.8	24.9	0.0
Cycle Q Clear(g_c), s	2.5	0.0	0.0	22.7	0.0	0.0	0.2	34.5	8.1	16.8	24.9	0.0
Prop In Lane	0.21		0.21	0.59		0.41	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	457	0	0	432	0	0	17	1380	615	304	1985	0
V/C Ratio(X)	0.12	0.00	0.00	0.79	0.00	0.00	0.24	0.90	0.29	0.91	0.64	0.00
Avail Cap(c_a), veh/h	699	0	0	650	0	0	161	1460	651	329	1985	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.9	0.0	0.0	36.2	0.0	0.0	49.4	28.2	20.3	40.1	14.1	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.0	0.0	0.0	2.6	8.1	0.3	25.6	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	7.8	0.0	0.0	0.1	14.0	2.6	8.4	8.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.9	0.0	0.0	38.1	0.0	0.0	52.0	36.3	20.6	65.7	14.8	0.0
LnGrp LOS	C	A	A	D	A	A	D	D	C	E	B	A
Approach Vol, veh/h		56			342			1433			1545	
Approach Delay, s/veh		28.9			38.1			34.3			23.9	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.4	46.6		30.7	5.6	64.5		30.7				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	20.5	43.0		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	18.8	36.5		4.5	2.2	26.9		24.7				
Green Ext Time (p_c), s	0.1	4.1		0.2	0.0	9.2		1.1				

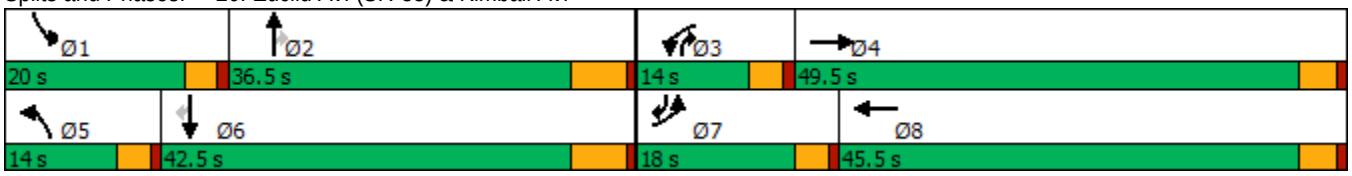
Intersection Summary												
HCM 6th Ctrl Delay			29.9									
HCM 6th LOS			C									

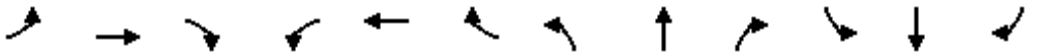
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	344	743	58	305	60	802	36	412	725	228
Future Volume (vph)	344	743	58	305	60	802	36	412	725	228
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	18.0	49.5	14.0	45.5	14.0	36.5	14.0	20.0	42.5	18.0
Total Split (%)	15.0%	41.3%	11.7%	37.9%	11.7%	30.4%	11.7%	16.7%	35.4%	15.0%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 104.5
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	344	743	45	58	305	165	60	802	36	412	725	228
Future Volume (veh/h)	344	743	45	58	305	165	60	802	36	412	725	228
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	355	766	43	60	314	132	62	827	22	425	747	137
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	410	945	53	134	546	225	136	950	550	478	1217	754
Arrive On Green	0.14	0.29	0.29	0.08	0.23	0.23	0.08	0.28	0.28	0.16	0.36	0.36
Sat Flow, veh/h	2956	3292	185	1619	2362	973	1619	3420	1525	2956	3420	1524
Grp Volume(v), veh/h	355	398	411	60	225	221	62	827	22	425	747	137
Grp Sat Flow(s),veh/h/ln	1478	1710	1767	1619	1710	1625	1619	1710	1525	1478	1710	1524
Q Serve(g_s), s	11.4	21.0	21.0	3.4	11.3	11.7	3.5	22.3	0.9	13.6	17.5	4.8
Cycle Q Clear(g_c), s	11.4	21.0	21.0	3.4	11.3	11.7	3.5	22.3	0.9	13.6	17.5	4.8
Prop In Lane	1.00		0.10	1.00		0.60	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	410	491	507	134	395	375	136	950	550	478	1217	754
V/C Ratio(X)	0.87	0.81	0.81	0.45	0.57	0.59	0.46	0.87	0.04	0.89	0.61	0.18
Avail Cap(c_a), veh/h	427	793	820	167	723	687	167	1076	606	488	1287	785
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	32.1	32.1	42.4	33.0	33.2	42.3	33.4	20.1	39.8	25.7	13.6
Incr Delay (d2), s/veh	15.5	3.3	3.2	0.9	0.5	0.5	0.9	7.2	0.0	17.1	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	8.6	8.8	1.4	4.5	4.4	1.4	9.4	0.3	5.7	6.5	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.4	35.4	35.3	43.3	33.5	33.7	43.2	40.6	20.2	56.9	26.5	13.7
LnGrp LOS	E	D	D	D	C	C	D	D	C	E	C	B
Approach Vol, veh/h		1164			506			911			1309	
Approach Delay, s/veh		41.8			34.8			40.3			35.1	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.7	32.9	12.0	32.3	12.1	40.5	17.5	26.9
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	16.0	30.5	10.0	45.0	10.0	36.5	14.0	41.0
Max Q Clear Time (g_c+I1), s	15.6	24.3	5.4	23.0	5.5	19.5	13.4	13.7
Green Ext Time (p_c), s	0.0	2.6	0.0	4.6	0.0	4.5	0.1	1.5

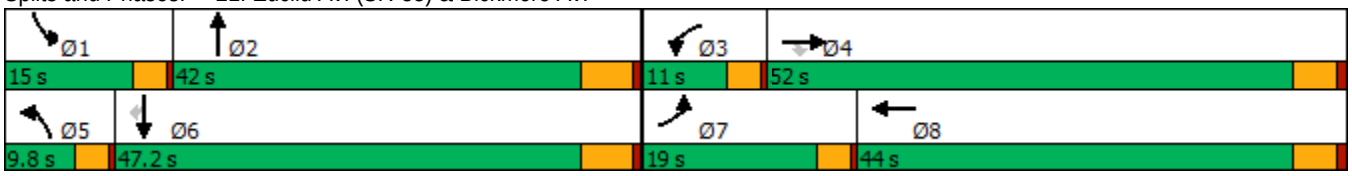
Intersection Summary	
HCM 6th Ctrl Delay	38.3
HCM 6th LOS	D

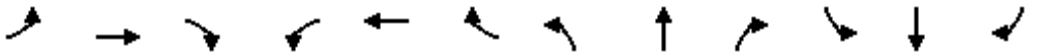
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	115	96	55	35	21	22	617	75	631	134
Future Volume (vph)	115	96	55	35	21	22	617	75	631	134
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	19.0	52.0	52.0	11.0	44.0	9.8	42.0	15.0	47.2	47.2
Total Split (%)	15.8%	43.3%	43.3%	9.2%	36.7%	8.2%	35.0%	12.5%	39.3%	39.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 66
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	96	55	35	21	49	22	617	73	75	631	134
Future Volume (veh/h)	115	96	55	35	21	49	22	617	73	75	631	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	125	104	45	38	23	25	24	671	56	82	686	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	156	300	254	69	89	97	47	933	78	120	1151	514
Arrive On Green	0.10	0.17	0.17	0.04	0.11	0.11	0.03	0.29	0.29	0.07	0.34	0.34
Sat Flow, veh/h	1619	1800	1525	1619	789	857	1619	3196	266	1619	3420	1525
Grp Volume(v), veh/h	125	104	45	38	0	48	24	359	368	82	686	114
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1646	1619	1710	1752	1619	1710	1525
Q Serve(g_s), s	3.1	2.1	1.0	0.9	0.0	1.1	0.6	7.7	7.8	2.0	6.9	2.2
Cycle Q Clear(g_c), s	3.1	2.1	1.0	0.9	0.0	1.1	0.6	7.7	7.8	2.0	6.9	2.2
Prop In Lane	1.00		1.00	1.00		0.52	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	156	300	254	69	0	186	47	499	511	120	1151	514
V/C Ratio(X)	0.80	0.35	0.18	0.55	0.00	0.26	0.51	0.72	0.72	0.69	0.60	0.22
Avail Cap(c_a), veh/h	609	2053	1740	295	0	1558	248	1515	1552	452	3462	1544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.2	15.2	14.7	19.3	0.0	16.7	19.7	13.1	13.1	18.6	11.3	9.8
Incr Delay (d2), s/veh	3.6	0.3	0.1	2.5	0.0	0.3	3.1	0.7	0.7	2.6	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.7	0.3	0.3	0.0	0.4	0.2	2.0	2.0	0.7	1.6	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.8	15.4	14.9	21.8	0.0	17.0	22.8	13.8	13.8	21.2	11.5	9.9
LnGrp LOS	C	B	B	C	A	B	C	B	B	C	B	A
Approach Vol, veh/h		274			86			751			882	
Approach Delay, s/veh		18.3			19.1			14.1			12.2	
Approach LOS		B			B			B			B	

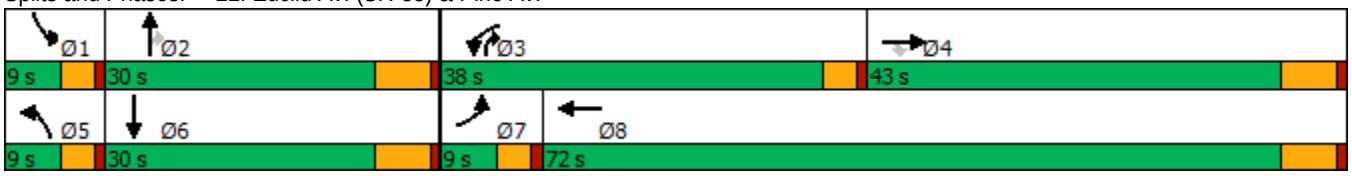
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	17.5	5.3	11.9	4.7	19.4	7.5	9.7
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	11.5	36.5	7.5	47.0	6.3	41.7	15.5	39.0
Max Q Clear Time (g_c+I1), s	4.0	9.8	2.9	4.1	2.6	8.9	5.1	3.1
Green Ext Time (p_c), s	0.0	2.3	0.0	0.4	0.0	2.8	0.1	0.1

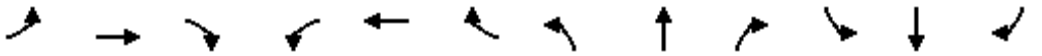
Intersection Summary	
HCM 6th Ctrl Delay	14.0
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	5	424	90	517	64	54	661	1061	50	689
Future Volume (vph)	5	424	90	517	64	54	661	1061	50	689
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	38.0	72.0	9.0	30.0	38.0	9.0	30.0
Total Split (%)	7.5%	35.8%	35.8%	31.7%	60.0%	7.5%	25.0%	31.7%	7.5%	25.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 115.3
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	424	90	517	64	22	54	661	1061	50	689	4
Future Volume (veh/h)	5	424	90	517	64	22	54	661	1061	50	689	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	5	433	0	528	65	20	55	674	666	51	703	4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	11	504		604	631	194	68	888	708	64	897	5
Arrive On Green	0.01	0.28	0.00	0.20	0.48	0.48	0.04	0.26	0.26	0.04	0.26	0.26
Sat Flow, veh/h	1619	1800	1525	2956	1321	406	1619	3420	1525	1619	3487	20
Grp Volume(v), veh/h	5	433	0	528	0	85	55	674	666	51	345	362
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1727	1619	1710	1525	1619	1710	1796
Q Serve(g_s), s	0.3	21.1	0.0	16.0	0.0	2.5	3.1	16.8	24.0	2.9	17.3	17.3
Cycle Q Clear(g_c), s	0.3	21.1	0.0	16.0	0.0	2.5	3.1	16.8	24.0	2.9	17.3	17.3
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	11	504		604	0	825	68	888	708	64	440	462
V/C Ratio(X)	0.47	0.86		0.87	0.00	0.10	0.81	0.76	0.94	0.80	0.78	0.78
Avail Cap(c_a), veh/h	88	721		1088	0	1233	88	888	708	88	444	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.7	31.5	0.0	35.6	0.0	13.3	43.9	31.5	23.6	44.0	31.9	31.9
Incr Delay (d2), s/veh	11.7	8.6	0.0	1.6	0.0	0.1	27.3	3.4	20.5	20.9	8.0	7.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	9.7	0.0	5.5	0.0	0.9	1.7	6.7	15.8	1.5	7.5	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.5	40.1	0.0	37.2	0.0	13.3	71.2	35.0	44.0	64.9	39.9	39.6
LnGrp LOS	E	D		D	A	B	E	C	D	E	D	D
Approach Vol, veh/h		438	A		613			1395			758	
Approach Delay, s/veh		40.3			33.9			40.7			41.5	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	30.0	22.9	31.9	7.9	29.8	4.6	50.1
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.0	24.0	34.0	37.0	5.0	24.0	5.0	66.0
Max Q Clear Time (g_c+I1), s	4.9	26.0	18.0	23.1	5.1	19.3	2.3	4.5
Green Ext Time (p_c), s	0.0	0.0	0.9	2.8	0.0	1.1	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	39.5
HCM 6th LOS	D

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	22.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	470	22	6	281	6	13	86	10	17	78	46
Future Vol, veh/h	68	470	22	6	281	6	13	86	10	17	78	46
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	72	495	23	6	296	6	14	91	11	18	82	48
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	32.1	14	11.5	11.8
HCM LOS	D	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	12%	2%	12%
Vol Thru, %	79%	84%	96%	55%
Vol Right, %	9%	4%	2%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	109	560	293	141
LT Vol	13	68	6	17
Through Vol	86	470	281	78
RT Vol	10	22	6	46
Lane Flow Rate	115	589	308	148
Geometry Grp	1	1	1	1
Degree of Util (X)	0.213	0.86	0.483	0.266
Departure Headway (Hd)	6.69	5.253	5.64	6.457
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	539	684	632	560
Service Time	4.697	3.33	3.734	4.457
HCM Lane V/C Ratio	0.213	0.861	0.487	0.264
HCM Control Delay	11.5	32.1	14	11.8
HCM Lane LOS	B	D	B	B
HCM 95th-tile Q	0.8	10	2.6	1.1

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	206	4	2	54	9	5	79	7	20	62	13
Future Vol, veh/h	15	206	4	2	54	9	5	79	7	20	62	13
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	17	237	5	2	62	10	6	91	8	23	71	15
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.7	8.2	8.6	8.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	7%	3%	21%
Vol Thru, %	87%	92%	83%	65%
Vol Right, %	8%	2%	14%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	91	225	65	95
LT Vol	5	15	2	20
Through Vol	79	206	54	62
RT Vol	7	4	9	13
Lane Flow Rate	105	259	75	109
Geometry Grp	1	1	1	1
Degree of Util (X)	0.139	0.324	0.096	0.145
Departure Headway (Hd)	4.775	4.505	4.638	4.765
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	749	797	770	750
Service Time	2.818	2.539	2.681	2.807
HCM Lane V/C Ratio	0.14	0.325	0.097	0.145
HCM Control Delay	8.6	9.7	8.2	8.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	1.4	0.3	0.5

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	76	589	323	27	35	30
Future Vol, veh/h	76	589	323	27	35	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	81	627	344	29	37	32

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	373	0	-	0	1148	359
Stage 1	-	-	-	-	359	-
Stage 2	-	-	-	-	789	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1197	-	-	-	305	747
Stage 1	-	-	-	-	711	-
Stage 2	-	-	-	-	451	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1197	-	-	-	273	747
Mov Cap-2 Maneuver	-	-	-	-	273	-
Stage 1	-	-	-	-	637	-
Stage 2	-	-	-	-	451	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	16.4
HCM LOS			C

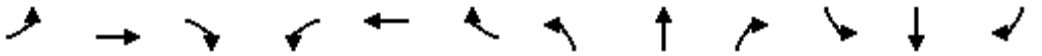
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1197	-	-	-	386
HCM Lane V/C Ratio	0.068	-	-	-	0.179
HCM Control Delay (s)	8.2	0	-	-	16.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.6

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	328	198	831	949	636
Future Volume (vph)	0	328	198	831	949	636
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	38.0	38.0	28.0	82.0	54.0	54.0
Total Split (%)	31.7%	31.7%	23.3%	68.3%	45.0%	45.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	278	0	328	198	831	0	0	949	636
Future Volume (veh/h)	0	0	0	278	0	328	198	831	0	0	949	636
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				290	0	162	206	866	0	0	989	487
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				336	0	299	231	2591	0	0	1991	869
Arrive On Green				0.19	0.00	0.19	0.26	1.00	0.00	0.00	0.55	0.55
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1575
Grp Volume(v), veh/h				290	0	162	206	866	0	0	989	487
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1575
Q Serve(g_s), s				18.6	0.0	10.9	13.2	0.0	0.0	0.0	20.3	24.1
Cycle Q Clear(g_c), s				18.6	0.0	10.9	13.2	0.0	0.0	0.0	20.3	24.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				336	0	299	231	2591	0	0	1991	869
V/C Ratio(X)				0.86	0.00	0.54	0.89	0.33	0.00	0.00	0.50	0.56
Avail Cap(c_a), veh/h				486	0	432	353	2591	0	0	1991	869
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.46	0.46	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				47.4	0.0	44.2	43.9	0.0	0.0	0.0	16.6	17.5
Incr Delay (d2), s/veh				10.6	0.0	1.5	6.1	0.2	0.0	0.0	0.9	2.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				9.1	0.0	4.4	5.4	0.1	0.0	0.0	8.0	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				58.0	0.0	45.8	50.0	0.2	0.0	0.0	17.5	20.1
LnGrp LOS				E	A	D	D	A	A	A	B	C
Approach Vol, veh/h					452			1072			1476	
Approach Delay, s/veh					53.6			9.7			18.3	
Approach LOS					D			A			B	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	91.9		19.9	72.0		28.1						
Change Period (Y+Rc), s	5.8		4.6	5.8		5.8						
Max Green Setting (Gmax), s	76.2		23.4	48.2		32.2						
Max Q Clear Time (g_c+I1), s	2.0		15.2	26.1		20.6						
Green Ext Time (p_c), s	6.6		0.2	8.9		1.6						

Intersection Summary		
HCM 6th Ctrl Delay		20.6
HCM 6th LOS		C

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	321	623	418	809
Future Volume (vph)	0	321	623	418	809
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	38.0	38.0	44.0	38.0	82.0
Total Split (%)	31.7%	31.7%	36.7%	31.7%	68.3%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	406	0	321	0	0	0	0	623	295	418	809	0
Future Volume (veh/h)	406	0	321	0	0	0	0	623	295	418	809	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	437	0	258				0	670	234	449	870	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	468	0	416				0	908	317	466	2328	0
Arrive On Green	0.26	0.00	0.26				0.00	0.35	0.35	0.52	1.00	0.00
Sat Flow, veh/h	1810	0	1610				0	2698	909	1810	3705	0
Grp Volume(v), veh/h	437	0	258				0	465	439	449	870	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1706	1810	1805	0
Q Serve(g_s), s	28.3	0.0	17.0				0.0	27.1	27.1	28.7	0.0	0.0
Cycle Q Clear(g_c), s	28.3	0.0	17.0				0.0	27.1	27.1	28.7	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.53	1.00		0.00
Lane Grp Cap(c), veh/h	468	0	416				0	630	595	466	2328	0
V/C Ratio(X)	0.93	0.00	0.62				0.00	0.74	0.74	0.96	0.37	0.00
Avail Cap(c_a), veh/h	486	0	432				0	630	595	504	2328	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.83	0.83	0.83	0.83	0.00
Uniform Delay (d), s/veh	43.5	0.0	39.3				0.0	34.3	34.3	28.6	0.0	0.0
Incr Delay (d2), s/veh	24.9	0.0	2.6				0.0	6.3	6.7	26.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.4	0.0	6.8				0.0	12.5	11.8	11.4	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.4	0.0	41.8				0.0	40.6	41.0	54.7	0.4	0.0
LnGrp LOS	E	A	D				A	D	D	D	A	A
Approach Vol, veh/h		695						904			1319	
Approach Delay, s/veh		58.6						40.8			18.9	
Approach LOS		E						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	35.5	47.7		36.8		83.2
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	33.4	38.2		32.2		76.2
Max Q Clear Time (g_c+I1), s	30.7	29.1		30.3		2.0
Green Ext Time (p_c), s	0.2	3.6		0.7		6.7

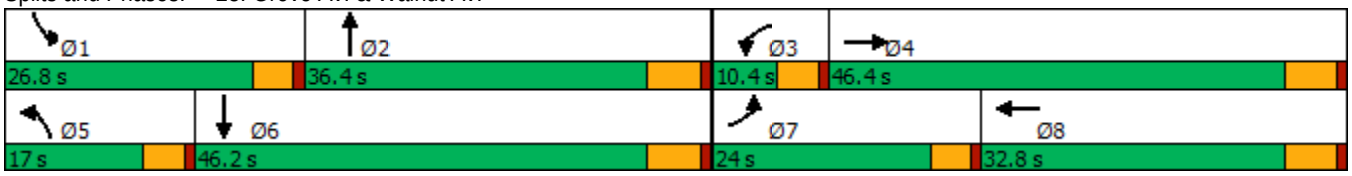
Intersection Summary		
HCM 6th Ctrl Delay		35.1
HCM 6th LOS		D

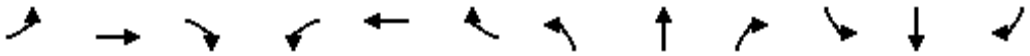
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	146	283	16	153	79	549	168	665
Future Volume (vph)	146	283	16	153	79	549	168	665
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	24.0	46.4	10.4	32.8	17.0	36.4	26.8	46.2
Total Split (%)	20.0%	38.7%	8.7%	27.3%	14.2%	30.3%	22.3%	38.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 96.3
Natural Cycle: 85
Control Type: Actuated-Uncoordinated

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	283	77	16	153	121	79	549	20	168	665	165
Future Volume (veh/h)	146	283	77	16	153	121	79	549	20	168	665	165
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	152	295	65	17	159	91	82	572	11	175	693	104
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	183	591	128	31	251	135	102	1375	26	208	1389	208
Arrive On Green	0.11	0.21	0.21	0.02	0.12	0.12	0.06	0.40	0.40	0.13	0.47	0.47
Sat Flow, veh/h	1619	2794	607	1619	2129	1149	1619	3432	66	1619	2982	447
Grp Volume(v), veh/h	152	179	181	17	126	124	82	285	298	175	397	400
Grp Sat Flow(s),veh/h/ln	1619	1710	1691	1619	1710	1568	1619	1710	1788	1619	1710	1720
Q Serve(g_s), s	8.0	8.0	8.2	0.9	6.1	6.6	4.3	10.4	10.4	9.2	14.0	14.0
Cycle Q Clear(g_c), s	8.0	8.0	8.2	0.9	6.1	6.6	4.3	10.4	10.4	9.2	14.0	14.0
Prop In Lane	1.00		0.36	1.00		0.73	1.00		0.04	1.00		0.26
Lane Grp Cap(c), veh/h	183	362	358	31	201	185	102	685	716	208	797	801
V/C Ratio(X)	0.83	0.49	0.51	0.54	0.63	0.67	0.80	0.42	0.42	0.84	0.50	0.50
Avail Cap(c_a), veh/h	362	801	792	108	532	488	232	685	716	414	797	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	30.1	30.2	42.1	36.4	36.7	40.1	18.7	18.7	36.9	16.1	16.1
Incr Delay (d2), s/veh	3.6	1.0	1.1	5.3	3.2	4.2	5.3	1.9	1.8	3.5	2.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	3.2	3.2	0.4	2.6	2.6	1.8	4.1	4.2	3.6	5.3	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	31.1	31.3	47.5	39.6	40.9	45.4	20.6	20.5	40.4	18.3	18.3
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	B	B
Approach Vol, veh/h		512			267			665			972	
Approach Delay, s/veh		34.2			40.7			23.6			22.3	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	40.5	6.3	24.2	10.1	46.2	14.4	16.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	22.2	30.6	5.8	40.6	12.4	40.4	19.4	27.0
Max Q Clear Time (g_c+I1), s	11.2	12.4	2.9	10.2	6.3	16.0	10.0	8.6
Green Ext Time (p_c), s	0.2	2.9	0.0	1.9	0.0	4.7	0.1	1.2

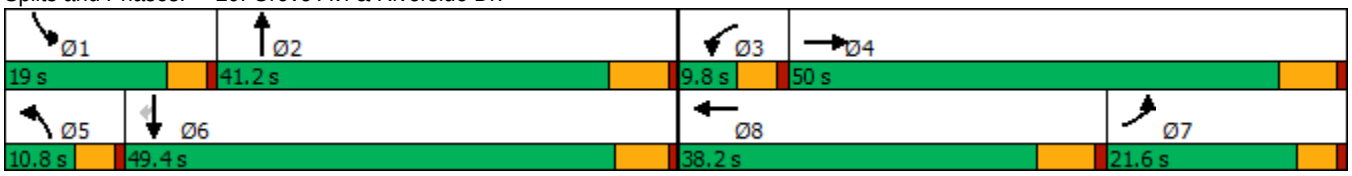
Intersection Summary	
HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

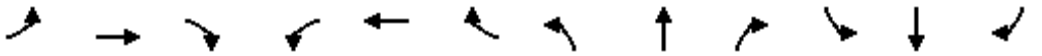
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	160	565	36	531	20	360	150	332	168
Future Volume (vph)	160	565	36	531	20	360	150	332	168
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	21.6	50.0	9.8	38.2	10.8	41.2	19.0	49.4	49.4
Total Split (%)	18.0%	41.7%	8.2%	31.8%	9.0%	34.3%	15.8%	41.2%	41.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 114.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	565	18	36	531	103	20	360	64	150	332	168
Future Volume (veh/h)	160	565	18	36	531	103	20	360	64	150	332	168
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	167	589	18	38	553	61	21	375	50	156	346	118
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	268	624	19	50	654	72	35	479	64	181	717	608
Arrive On Green	0.17	0.36	0.36	0.03	0.21	0.21	0.02	0.31	0.31	0.11	0.40	0.40
Sat Flow, veh/h	1619	1736	53	1619	3106	342	1619	1555	207	1619	1800	1525
Grp Volume(v), veh/h	167	0	607	38	304	310	21	0	425	156	346	118
Grp Sat Flow(s),veh/h/ln	1619	0	1789	1619	1710	1738	1619	0	1763	1619	1800	1525
Q Serve(g_s), s	10.9	0.0	37.4	2.6	19.4	19.5	1.5	0.0	25.0	10.8	16.3	3.1
Cycle Q Clear(g_c), s	10.9	0.0	37.4	2.6	19.4	19.5	1.5	0.0	25.0	10.8	16.3	3.1
Prop In Lane	1.00		0.03	1.00		0.20	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	268	0	643	50	360	366	35	0	543	181	717	608
V/C Ratio(X)	0.62	0.00	0.94	0.76	0.84	0.85	0.61	0.00	0.78	0.86	0.48	0.19
Avail Cap(c_a), veh/h	268	0	690	74	482	490	88	0	543	205	717	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	0.0	35.3	54.6	43.0	43.1	55.1	0.0	35.8	49.6	25.4	6.6
Incr Delay (d2), s/veh	3.4	0.0	21.0	11.0	10.0	10.2	6.3	0.0	10.7	24.8	2.3	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	18.9	1.2	8.8	9.0	0.6	0.0	11.7	5.5	7.1	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.5	0.0	56.3	65.6	53.0	53.2	61.4	0.0	46.6	74.4	27.7	7.3
LnGrp LOS	D	A	E	E	D	D	E	A	D	E	C	A
Approach Vol, veh/h		774			652			446			620	
Approach Delay, s/veh		54.4			53.8			47.3			35.6	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.3	41.2	8.1	47.0	7.0	51.5	25.0	30.1
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	14.4	35.0	5.2	43.8	6.2	* 44	17.0	* 32
Max Q Clear Time (g_c+I1), s	12.8	27.0	4.6	39.4	3.5	18.3	12.9	21.5
Green Ext Time (p_c), s	0.0	1.4	0.0	1.4	0.0	2.2	0.1	2.4

Intersection Summary	
HCM 6th Ctrl Delay	48.3
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	19.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	74	176	25	9	38	38	35	363	19	35	326	21
Future Vol, veh/h	74	176	25	9	38	38	35	363	19	35	326	21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	77	183	26	9	40	40	36	378	20	36	340	22
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	16.6	11.4	22.7	20.2
HCM LOS	C	B	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	27%	11%	9%
Vol Thru, %	87%	64%	45%	85%
Vol Right, %	5%	9%	45%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	417	275	85	382
LT Vol	35	74	9	35
Through Vol	363	176	38	326
RT Vol	19	25	38	21
Lane Flow Rate	434	286	89	398
Geometry Grp	1	1	1	1
Degree of Util (X)	0.717	0.521	0.171	0.664
Departure Headway (Hd)	5.944	6.545	6.933	6.004
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	608	550	515	601
Service Time	3.994	4.601	5.009	4.055
HCM Lane V/C Ratio	0.714	0.52	0.173	0.662
HCM Control Delay	22.7	16.6	11.4	20.2
HCM Lane LOS	C	C	B	C
HCM 95th-tile Q	5.9	3	0.6	4.9

Intersection	
Intersection Delay, s/veh	17.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	96	138	85	2	45	36	19	302	30	52	239	53
Future Vol, veh/h	96	138	85	2	45	36	19	302	30	52	239	53
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	103	148	91	2	48	39	20	325	32	56	257	57
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	18	11.2	18.8	18.3
HCM LOS	C	B	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	30%	2%	15%
Vol Thru, %	86%	43%	54%	69%
Vol Right, %	9%	27%	43%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	351	319	83	344
LT Vol	19	96	2	52
Through Vol	302	138	45	239
RT Vol	30	85	36	53
Lane Flow Rate	377	343	89	370
Geometry Grp	1	1	1	1
Degree of Util (X)	0.63	0.593	0.168	0.617
Departure Headway (Hd)	6.011	6.22	6.78	6.005
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	600	580	527	599
Service Time	4.059	4.268	4.85	4.053
HCM Lane V/C Ratio	0.628	0.591	0.169	0.618
HCM Control Delay	18.8	18	11.2	18.3
HCM Lane LOS	C	C	B	C
HCM 95th-tile Q	4.4	3.9	0.6	4.2

Intersection	
Intersection Delay, s/veh	133.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	430	7	61	266	50	13	259	131	128	187	22
Future Vol, veh/h	43	430	7	61	266	50	13	259	131	128	187	22
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	46	462	8	66	286	54	14	278	141	138	201	24
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	209	102.6	119.3	77.2
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	9%	16%	38%
Vol Thru, %	64%	90%	71%	55%
Vol Right, %	33%	1%	13%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	403	480	377	337
LT Vol	13	43	61	128
Through Vol	259	430	266	187
RT Vol	131	7	50	22
Lane Flow Rate	433	516	405	362
Geometry Grp	1	1	1	1
Degree of Util (X)	1.122	1.364	1.065	0.965
Departure Headway (Hd)	10.626	10.212	10.983	11.378
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	347	361	332	323
Service Time	8.626	8.212	8.983	9.378
HCM Lane V/C Ratio	1.248	1.429	1.22	1.121
HCM Control Delay	119.3	209	102.6	77.2
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	14.8	23.7	12.9	10

Intersection	
Int Delay, s/veh	122.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	89	83	68	5	17	13	14	325	4	12	212	29
Future Vol, veh/h	89	83	68	5	17	13	14	325	4	12	212	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	25	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	99	92	76	6	19	14	16	1300	4	13	236	32

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1629	1614	252	1696	1628	1302	268	0	0	1304	0	0
Stage 1	278	278	-	1334	1334	-	-	-	-	-	-	-
Stage 2	1351	1336	-	362	294	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 82	105	792	74	103	198	1307	-	-	538	-	-
Stage 1	733	684	-	191	225	-	-	-	-	-	-	-
Stage 2	187	224	-	661	673	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 61	97	792	10	95	198	1307	-	-	538	-	-
Mov Cap-2 Maneuver	~ 61	97	-	10	95	-	-	-	-	-	-	-
Stage 1	700	664	-	182	215	-	-	-	-	-	-	-
Stage 2	151	214	-	500	653	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 844.7	216.1	0.1	0.6
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1307	-	-	100	47	538	-	-
HCM Lane V/C Ratio	0.012	-	-	2.667	0.827	0.025	-	-
HCM Control Delay (s)	7.8	0	-	$ 844.7	216.1	11.9	0	-
HCM Lane LOS	A	A	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0	-	-	24.9	3.3	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	43.7
Intersection LOS	E

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	177	455	253	166	191	93
Future Vol, veh/h	177	455	253	166	191	93
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	184	474	264	173	199	97
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	70.5	21.1	17.5
HCM LOS	F	C	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	0%	67%
Vol Thru, %	72%	60%	0%
Vol Right, %	0%	40%	33%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	632	419	284
LT Vol	177	0	191
Through Vol	455	253	0
RT Vol	0	166	93
Lane Flow Rate	658	436	296
Geometry Grp	1	1	1
Degree of Util (X)	1.04	0.695	0.545
Departure Headway (Hd)	5.685	5.84	6.731
Convergence, Y/N	Yes	Yes	Yes
Cap	632	624	538
Service Time	3.772	3.84	4.731
HCM Lane V/C Ratio	1.041	0.699	0.55
HCM Control Delay	70.5	21.1	17.5
HCM Lane LOS	F	C	C
HCM 95th-tile Q	17.2	5.5	3.2

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	20	654	1	15	352	30	3	20	49	64	13	10
Future Vol, veh/h	20	654	1	15	352	30	3	20	49	64	13	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	21	688	1	16	371	32	3	21	52	67	14	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	403	0	0	689	0	0	1163	1166	689	1186	1150	387
Stage 1	-	-	-	-	-	-	731	731	-	419	419	-
Stage 2	-	-	-	-	-	-	432	435	-	767	731	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1167	-	-	915	-	-	173	196	449	167	200	665
Stage 1	-	-	-	-	-	-	416	430	-	616	593	-
Stage 2	-	-	-	-	-	-	606	584	-	398	430	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1167	-	-	915	-	-	155	186	449	130	190	665
Mov Cap-2 Maneuver	-	-	-	-	-	-	155	186	-	130	190	-
Stage 1	-	-	-	-	-	-	404	418	-	598	579	-
Stage 2	-	-	-	-	-	-	569	571	-	325	418	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	20.7	60.1
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	305	1167	-	-	915	-	-	151
HCM Lane V/C Ratio	0.248	0.018	-	-	0.017	-	-	0.606
HCM Control Delay (s)	20.7	8.1	0	-	9	0	-	60.1
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	1	0.1	-	-	0.1	-	-	3.2

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	62	0	0	32	31	0	0	0	21	0	3
Future Vol, veh/h	40	62	0	0	32	31	0	0	0	21	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16965	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	43	67	0	0	35	34	0	0	0	23	0	3

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	69	0	-	-	-	0			205	205	52
Stage 1	-	-	-	-	-	-			52	52	-
Stage 2	-	-	-	-	-	-			153	153	-
Critical Hdwy	4.1	-	-	-	-	-			6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-			5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.4	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-			3.5	4	3.3
Pot Cap-1 Maneuver	1545	-	0	0	-	-			788	695	1021
Stage 1	-	-	0	0	-	-			976	856	-
Stage 2	-	-	0	0	-	-			880	775	-
Platoon blocked, %		-			-	-					
Mov Cap-1 Maneuver	1545	-	-	-	-	-			765	0	1021
Mov Cap-2 Maneuver	-	-	-	-	-	-			765	0	-
Stage 1	-	-	-	-	-	-			948	0	-
Stage 2	-	-	-	-	-	-			880	0	-

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1545	-	-	-	790
HCM Lane V/C Ratio	0.028	-	-	-	0.033
HCM Control Delay (s)	7.4	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑			✣				
Traffic Vol, veh/h	0	537	110	83	317	0	102	0	119	0	0	0
Future Vol, veh/h	0	537	110	83	317	0	102	0	119	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	25	91	91	91	91	91	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	590	121	91	348	0	112	0	131	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	711	0	0	1120	1120	590
Stage 1	-	-	-	-	-	-	590	590	-
Stage 2	-	-	-	-	-	-	530	530	-
Critical Hdwy	-	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	898	-	0	231	208	511
Stage 1	0	-	-	-	-	0	558	498	-
Stage 2	0	-	-	-	-	0	594	530	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	898	-	-	208	0	511
Mov Cap-2 Maneuver	-	-	-	-	-	-	344	0	-
Stage 1	-	-	-	-	-	-	558	0	-
Stage 2	-	-	-	-	-	-	534	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2	25
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	417	-	-	898	-
HCM Lane V/C Ratio	0.582	-	-	0.102	-
HCM Control Delay (s)	25	-	-	9.5	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	3.6	-	-	0.3	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	651	5	10	387	0	12	0	18	0	0	0
Future Vol, veh/h	0	651	5	10	387	0	12	0	18	0	0	0
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	740	6	11	440	0	14	0	20	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	747	0	0	1206	1206	374
Stage 1	-	-	-	-	-	-	744	744	-
Stage 2	-	-	-	-	-	-	462	462	-
Critical Hdwy	-	-	-	4.1	-	-	6.6	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	870	-	0	191	185	629
Stage 1	0	-	-	-	-	0	436	424	-
Stage 2	0	-	-	-	-	0	638	568	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	869	-	-	188	0	628
Mov Cap-2 Maneuver	-	-	-	-	-	-	317	0	-
Stage 1	-	-	-	-	-	-	436	0	-
Stage 2	-	-	-	-	-	-	630	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	13.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	451	-	-	869	-
HCM Lane V/C Ratio	0.076	-	-	0.013	-
HCM Control Delay (s)	13.6	-	-	9.2	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	669	0	20	397	0	0	0	20	0	0	0
Future Vol, veh/h	0	669	0	20	397	0	0	0	20	0	0	0
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	200	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	743	0	22	441	0	0	0	22	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	744	0	0	1229	-	373
Stage 1	-	-	-	-	-	-	744	-	-
Stage 2	-	-	-	-	-	-	485	-	-
Critical Hdwy	-	-	-	4.1	-	-	6.6	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	-	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	-	3.3
Pot Cap-1 Maneuver	0	-	-	873	-	0	185	0	630
Stage 1	0	-	-	-	-	0	436	0	-
Stage 2	0	-	-	-	-	0	623	0	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	872	-	-	180	0	629
Mov Cap-2 Maneuver	-	-	-	-	-	-	310	0	-
Stage 1	-	-	-	-	-	-	436	0	-
Stage 2	-	-	-	-	-	-	607	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	629	-	-	872	-
HCM Lane V/C Ratio	-	0.035	-	-	0.025	-
HCM Control Delay (s)	0	10.9	-	-	9.2	-
HCM Lane LOS	A	B	-	-	A	-
HCM 95th %tile Q(veh)	-	0.1	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	77.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	0	733	0	0	0	288	19	0	0	45	91
Future Vol, veh/h	14	0	733	0	0	0	288	19	0	0	45	91
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	15	0	772	0	0	0	303	20	0	0	47	96
Number of Lanes	1	0	1	0	0	0	1	2	0	0	2	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	3
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	3	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	3	0	2
HCM Control Delay	113.1	22.5	10
HCM LOS	F	C	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	100%	100%	0%	0%	100%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	288	10	10	14	733	23	23	91
LT Vol	288	0	0	14	0	0	0	0
Through Vol	0	10	10	0	0	23	23	0
RT Vol	0	0	0	0	733	0	0	91
Lane Flow Rate	303	10	10	15	772	24	24	96
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.632	0.019	0.015	0.027	1.177	0.05	0.05	0.137
Departure Headway (Hd)	7.996	7.48	5.724	6.687	5.491	8.164	8.164	5.661
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	455	481	629	539	664	441	441	637
Service Time	5.696	5.18	3.424	4.387	3.191	5.864	5.864	3.361
HCM Lane V/C Ratio	0.666	0.021	0.016	0.028	1.163	0.054	0.054	0.151
HCM Control Delay	23.4	10.3	8.5	9.6	115.1	11.3	11.3	9.3
HCM Lane LOS	C	B	A	A	F	B	B	A
HCM 95th-tile Q	4.3	0.1	0	0.1	25.7	0.2	0.2	0.5

Intersection	
Intersection Delay, s/veh	89.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	664	21	25	379	7	36	4	99	52	5	2
Future Vol, veh/h	4	664	21	25	379	7	36	4	99	52	5	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	4	738	23	28	421	8	40	4	110	58	6	2
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	143.5	35.4	14	13.3
HCM LOS	F	E	B	B

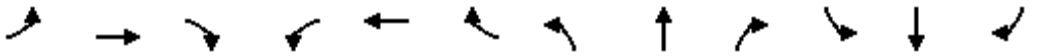
Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	26%	100%	0%	0%	100%	0%	88%
Vol Thru, %	3%	0%	100%	0%	0%	98%	8%
Vol Right, %	71%	0%	0%	100%	0%	2%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	139	4	664	21	25	386	59
LT Vol	36	4	0	0	25	0	52
Through Vol	4	0	664	0	0	379	5
RT Vol	99	0	0	21	0	7	2
Lane Flow Rate	154	4	738	23	28	429	66
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.313	0.008	1.255	0.035	0.058	0.829	0.153
Departure Headway (Hd)	7.822	6.631	6.123	5.41	7.987	7.463	9.005
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	462	539	598	660	451	489	401
Service Time	5.522	4.379	3.87	3.158	5.687	5.163	6.705
HCM Lane V/C Ratio	0.333	0.007	1.234	0.035	0.062	0.877	0.165
HCM Control Delay	14	9.4	148.6	8.4	11.2	37	13.3
HCM Lane LOS	B	A	F	A	B	E	B
HCM 95th-tile Q	1.3	0	28.3	0.1	0.2	8.1	0.5

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	5	253	379	471	1044
Future Volume (vph)	5	253	379	471	1044
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (%)	32.2%	32.2%	31.1%	67.8%	36.7%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	376	5	253	379	471	0	0	1044	435
Future Volume (veh/h)	0	0	0	376	5	253	379	471	0	0	1044	435
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				392	5	119	395	491	0	0	1088	318
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				436	6	393	517	3242	0	0	1386	400
Arrive On Green				0.24	0.24	0.24	0.57	1.00	0.00	0.00	0.27	0.27
Sat Flow, veh/h				1788	23	1610	1810	5358	0	0	5311	1457
Grp Volume(v), veh/h				397	0	119	395	491	0	0	1057	349
Grp Sat Flow(s),veh/h/ln				1811	0	1610	1810	1729	0	0	1634	1600
Q Serve(g_s), s				19.1	0.0	5.4	14.9	0.0	0.0	0.0	17.9	18.2
Cycle Q Clear(g_c), s				19.1	0.0	5.4	14.9	0.0	0.0	0.0	17.9	18.2
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.91
Lane Grp Cap(c), veh/h				441	0	393	517	3242	0	0	1347	440
V/C Ratio(X)				0.90	0.00	0.30	0.76	0.15	0.00	0.00	0.78	0.79
Avail Cap(c_a), veh/h				463	0	411	517	3242	0	0	1481	484
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.72	0.72	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.0	0.0	27.8	17.0	0.0	0.0	0.0	30.2	30.3
Incr Delay (d2), s/veh				21.1	0.0	0.9	4.4	0.1	0.0	0.0	4.6	13.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				10.4	0.0	5.3	4.5	0.0	0.0	0.0	7.1	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				54.0	0.0	28.7	21.3	0.1	0.0	0.0	34.8	44.0
LnGrp LOS				D	A	C	C	A	A	A	C	D
Approach Vol, veh/h					516			886			1406	
Approach Delay, s/veh					48.2			9.6			37.1	
Approach LOS					D			A			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	62.1	27.9	31.5	30.5
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	55.2	23.0	24.0	* 27
Max Q Clear Time (g_c+I1), s	2.0	21.1	16.9	20.2
Green Ext Time (p_c), s	3.3	0.8	0.4	4.5

Intersection Summary	
HCM 6th Ctrl Delay	30.5
HCM 6th LOS	C

Notes

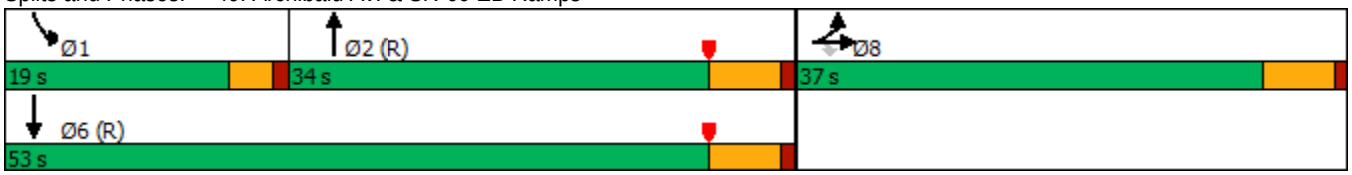
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

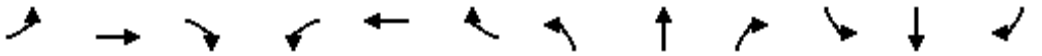
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	534	749	369	1051
Future Volume (vph)	0	534	749	369	1051
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (%)	41.1%	41.1%	37.8%	21.1%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	0	534	0	0	0	0	749	511	369	1051	0
Future Volume (veh/h)	101	0	534	0	0	0	0	749	511	369	1051	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	105	0	306				0	780	357	384	1095	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	397	0	353				0	2159	708	302	3380	0
Arrive On Green	0.22	0.00	0.22				0.00	0.44	0.44	0.06	0.22	0.00
Sat Flow, veh/h	1810	0	1610				0	5168	1607	1810	5358	0
Grp Volume(v), veh/h	105	0	306				0	780	357	384	1095	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1607	1810	1729	0
Q Serve(g_s), s	4.3	0.0	16.5				0.0	9.5	14.4	15.0	16.0	0.0
Cycle Q Clear(g_c), s	4.3	0.0	16.5				0.0	9.5	14.4	15.0	16.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	397	0	353				0	2159	708	302	3380	0
V/C Ratio(X)	0.26	0.00	0.87				0.00	0.36	0.50	1.27	0.32	0.00
Avail Cap(c_a), veh/h	627	0	558				0	2159	708	302	3380	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.63	0.63	0.60	0.60	0.00
Uniform Delay (d), s/veh	29.1	0.0	33.8				0.0	16.8	18.1	42.5	18.6	0.0
Incr Delay (d2), s/veh	0.4	0.0	8.4				0.0	0.3	1.6	137.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	6.8				0.0	3.2	5.0	18.7	7.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.5	0.0	42.3				0.0	17.0	19.7	180.4	18.7	0.0
LnGrp LOS	C	A	D				A	B	B	F	B	A
Approach Vol, veh/h		411						1137			1479	
Approach Delay, s/veh		39.0						17.9			60.7	
Approach LOS		D						B			E	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	19.0	45.4				64.4		25.6				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	15.0	28.2				47.2		31.2				
Max Q Clear Time (g_c+I1), s	17.0	16.4				18.0		18.5				
Green Ext Time (p_c), s	0.0	5.3				7.8		1.3				

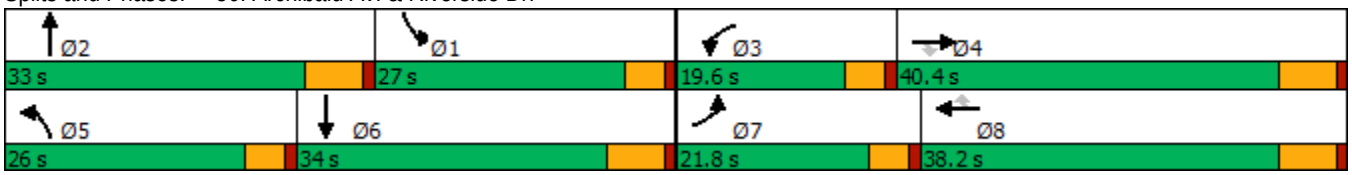
Intersection Summary			
HCM 6th Ctrl Delay			41.7
HCM 6th LOS			D

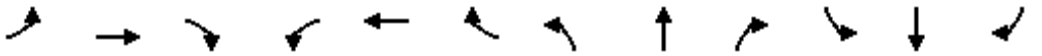
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	214	598	331	139	426	111	271	575	273	840
Future Volume (vph)	214	598	331	139	426	111	271	575	273	840
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.8	40.4	40.4	19.6	38.2	38.2	26.0	33.0	27.0	34.0
Total Split (%)	18.2%	33.7%	33.7%	16.3%	31.8%	31.8%	21.7%	27.5%	22.5%	28.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 112.6
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	598	331	139	426	111	271	575	47	273	840	235
Future Volume (veh/h)	214	598	331	139	426	111	271	575	47	273	840	235
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	228	636	195	148	453	59	288	612	41	290	894	186
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	255	820	357	175	651	289	314	855	57	403	1025	212
Arrive On Green	0.16	0.24	0.24	0.11	0.19	0.19	0.19	0.18	0.18	0.25	0.25	0.25
Sat Flow, veh/h	1619	3420	1490	1619	3420	1518	1619	4700	313	1619	4072	843
Grp Volume(v), veh/h	228	636	195	148	453	59	288	425	228	290	718	362
Grp Sat Flow(s),veh/h/ln	1619	1710	1490	1619	1710	1518	1619	1638	1737	1619	1638	1639
Q Serve(g_s), s	14.5	18.2	12.0	9.4	12.9	1.9	18.2	12.8	12.9	17.2	22.0	22.2
Cycle Q Clear(g_c), s	14.5	18.2	12.0	9.4	12.9	1.9	18.2	12.8	12.9	17.2	22.0	22.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.51
Lane Grp Cap(c), veh/h	255	820	357	175	651	289	314	596	316	403	825	413
V/C Ratio(X)	0.90	0.78	0.55	0.85	0.70	0.20	0.92	0.71	0.72	0.72	0.87	0.88
Avail Cap(c_a), veh/h	266	1118	487	232	1046	464	331	839	445	403	870	435
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	37.1	34.8	45.8	39.5	10.7	41.3	40.2	40.3	36.0	37.5	37.6
Incr Delay (d2), s/veh	27.9	2.4	1.3	15.5	1.4	0.3	27.6	1.7	3.4	5.4	9.2	17.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	7.4	4.2	4.4	5.3	1.2	9.3	5.0	5.5	7.0	9.3	10.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.2	39.5	36.1	61.3	40.9	11.0	69.0	41.9	43.7	41.3	46.7	54.9
LnGrp LOS	E	D	D	E	D	B	E	D	D	D	D	D
Approach Vol, veh/h		1059			660			941			1370	
Approach Delay, s/veh		45.7			42.8			50.6			47.7	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.2	25.2	15.9	31.3	24.9	32.6	21.1	26.1
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	22.4	* 27	15.0	34.2	21.4	27.8	17.2	32.0
Max Q Clear Time (g_c+I1), s	19.2	14.9	11.4	20.2	20.2	24.2	16.5	14.9
Green Ext Time (p_c), s	0.1	2.9	0.1	3.8	0.1	2.1	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	47.1
HCM 6th LOS	D

Notes

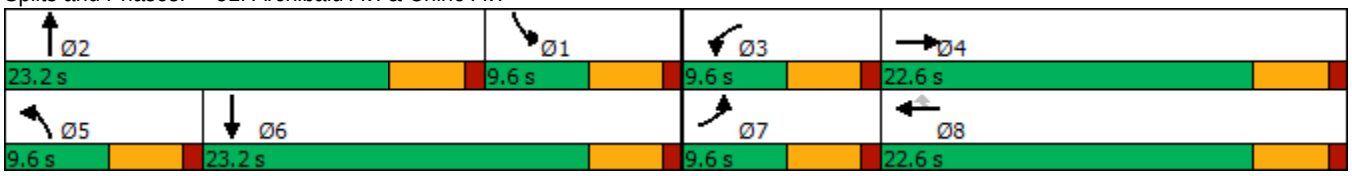
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

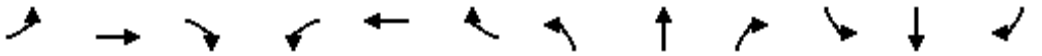
Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	20	1	19	107	19	717	137	1034
Future Volume (vph)	20	1	19	107	19	717	137	1034
Turn Type	Prot	NA	Prot	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3		5	2	1	6
Permitted Phases				8				
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	9.6	22.6	9.6	22.6	9.6	23.2	9.6	23.2
Total Split (%)	14.8%	34.8%	14.8%	34.8%	14.8%	35.7%	14.8%	35.7%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 39.8
Natural Cycle: 75
Control Type: Actuated-Uncoordinated

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	1	6	19	0	107	19	717	35	137	1034	12
Future Volume (veh/h)	20	1	6	19	0	107	19	717	35	137	1034	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	22	1	5	21	0	35	21	797	30	152	1149	12
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	44	17	83	42	113	95	42	1372	52	258	1441	15
Arrive On Green	0.03	0.06	0.06	0.03	0.00	0.06	0.03	0.28	0.28	0.16	0.42	0.42
Sat Flow, veh/h	1619	261	1304	1619	1800	1525	1619	4860	182	1619	3467	36
Grp Volume(v), veh/h	22	0	6	21	0	35	21	537	290	152	567	594
Grp Sat Flow(s),veh/h/ln	1619	0	1565	1619	1800	1525	1619	1638	1766	1619	1710	1793
Q Serve(g_s), s	0.5	0.0	0.1	0.5	0.0	0.5	0.5	5.5	5.5	3.4	11.4	11.4
Cycle Q Clear(g_c), s	0.5	0.0	0.1	0.5	0.0	0.5	0.5	5.5	5.5	3.4	11.4	11.4
Prop In Lane	1.00		0.83	1.00		1.00	1.00		0.10	1.00		0.02
Lane Grp Cap(c), veh/h	44	0	100	42	113	95	42	925	499	258	711	745
V/C Ratio(X)	0.50	0.00	0.06	0.50	0.00	0.37	0.50	0.58	0.58	0.59	0.80	0.80
Avail Cap(c_a), veh/h	206	0	718	206	825	699	206	1552	837	258	810	850
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.8	0.0	17.3	18.9	0.0	5.9	18.9	12.1	12.1	15.3	10.0	10.0
Incr Delay (d2), s/veh	8.5	0.0	0.2	8.8	0.0	2.3	8.8	0.6	1.1	3.5	5.0	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.3	0.0	0.3	0.2	1.3	1.5	1.2	3.2	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.4	0.0	17.5	27.7	0.0	8.3	27.7	12.7	13.2	18.8	15.0	14.8
LnGrp LOS	C	A	B	C	A	A	C	B	B	B	B	B
Approach Vol, veh/h		28			56			848			1313	
Approach Delay, s/veh		25.3			15.5			13.2			15.4	
Approach LOS		C			B			B			B	

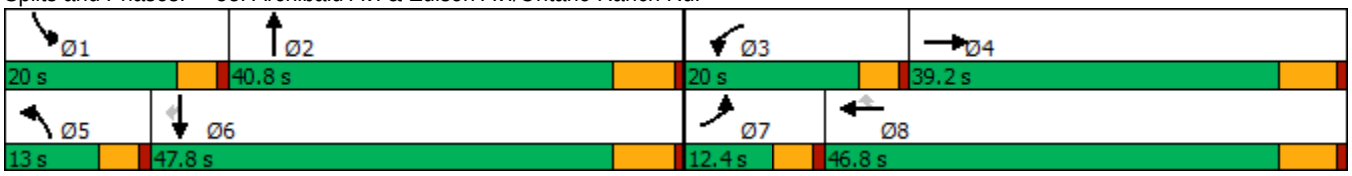
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	15.7	5.6	7.1	5.6	20.9	5.7	7.1
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	5.0	18.6	5.0	18.0	5.0	18.6	5.0	18.0
Max Q Clear Time (g_c+I1), s	5.4	7.5	2.5	2.1	2.5	13.4	2.5	2.5
Green Ext Time (p_c), s	0.0	3.5	0.0	0.0	0.0	2.9	0.0	0.0

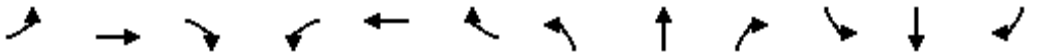
Intersection Summary	
HCM 6th Ctrl Delay	14.7
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	533	120	275	200	71	68	531	281	131	765	69
Future Volume (vph)	83	533	120	275	200	71	68	531	281	131	765	69
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	12.4	39.2		20.0	46.8	46.8	13.0	40.8		20.0	47.8	47.8
Total Split (%)	10.3%	32.7%		16.7%	39.0%	39.0%	10.8%	34.0%		16.7%	39.8%	39.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 92.6
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	533	120	275	200	71	68	531	281	131	765	69
Future Volume (veh/h)	83	533	120	275	200	71	68	531	281	131	765	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	86	549	0	284	206	39	70	547	0	135	789	49
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	166	747		365	515	436	86	888		167	1057	461
Arrive On Green	0.06	0.22	0.00	0.12	0.29	0.29	0.05	0.26	0.00	0.10	0.31	0.31
Sat Flow, veh/h	2956	3420	1525	2956	1800	1525	1619	3420	1525	1619	3420	1491
Grp Volume(v), veh/h	86	549	0	284	206	39	70	547	0	135	789	49
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1800	1525	1619	1710	1525	1619	1710	1491
Q Serve(g_s), s	2.1	11.1	0.0	6.9	6.8	1.4	3.2	10.4	0.0	6.0	15.4	1.7
Cycle Q Clear(g_c), s	2.1	11.1	0.0	6.9	6.8	1.4	3.2	10.4	0.0	6.0	15.4	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	166	747		365	515	436	86	888		167	1057	461
V/C Ratio(X)	0.52	0.74		0.78	0.40	0.09	0.81	0.62		0.81	0.75	0.11
Avail Cap(c_a), veh/h	311	1523		614	986	836	184	1583		336	1906	831
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	27.0	0.0	31.5	21.3	19.4	34.7	24.2	0.0	32.5	23.0	18.3
Incr Delay (d2), s/veh	0.9	1.4	0.0	1.4	0.5	0.1	6.6	0.7	0.0	3.6	1.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	4.2	0.0	2.3	2.6	0.4	1.3	3.7	0.0	2.3	5.4	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.9	28.4	0.0	32.8	21.8	19.5	41.3	24.9	0.0	36.1	24.1	18.4
LnGrp LOS	C	C		C	C	B	D	C		D	C	B
Approach Vol, veh/h		635	A		529			617	A		973	
Approach Delay, s/veh		29.3			27.6			26.7			25.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	25.7	13.8	22.4	8.6	29.4	8.7	27.4
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	15.4	34.3	15.4	33.0	8.4	41.3	7.8	40.6
Max Q Clear Time (g_c+I1), s	8.0	12.4	8.9	13.1	5.2	17.4	4.1	8.8
Green Ext Time (p_c), s	0.1	3.1	0.3	3.1	0.0	5.0	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	27.0
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	10	870	1	9	1151
Future Volume (vph)	2	10	870	1	9	1151
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.5	9.5	32.5	32.5	9.6	16.5
Total Split (s)	10.0	10.0	40.0	40.0	10.0	50.0
Total Split (%)	14.3%	14.3%	57.1%	57.1%	14.3%	71.4%
Yellow Time (s)	3.5	3.5	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	6.5	6.5	4.6	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 63.8
Natural Cycle: 65
Control Type: Actuated-Uncoordinated

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	2	0	10	0	870	1	9	1151	0
Future Volume (veh/h)	0	0	0	2	0	10	0	870	1	9	1151	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1700	0	1800	0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h				2	0	2	0	926	1	10	1224	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				17	0	14	0	2384	1063	21	2715	0
Arrive On Green				0.01	0.00	0.01	0.00	0.70	0.70	0.01	0.79	0.00
Sat Flow, veh/h				3141	0	2685	0	3510	1524	1619	3510	0
Grp Volume(v), veh/h				2	0	2	0	926	1	10	1224	0
Grp Sat Flow(s),veh/h/ln				1570	0	1342	0	1710	1524	1619	1710	0
Q Serve(g_s), s				0.0	0.0	0.0	0.0	6.2	0.0	0.3	6.3	0.0
Cycle Q Clear(g_c), s				0.0	0.0	0.0	0.0	6.2	0.0	0.3	6.3	0.0
Prop In Lane				1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				17	0	14	0	2384	1063	21	2715	0
V/C Ratio(X)				0.12	0.00	0.14	0.00	0.39	0.00	0.48	0.45	0.00
Avail Cap(c_a), veh/h				315	0	269	0	2384	1063	160	2715	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				27.1	0.0	27.1	0.0	3.4	2.5	26.9	1.8	0.0
Incr Delay (d2), s/veh				3.1	0.0	4.3	0.0	0.5	0.0	6.2	0.5	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.0	0.0	0.0	0.0	0.6	0.0	0.1	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				30.2	0.0	31.4	0.0	3.9	2.5	33.1	2.4	0.0
LnGrp LOS				C	A	C	A	A	A	C	A	A
Approach Vol, veh/h					4			927			1234	
Approach Delay, s/veh					30.8			3.9			2.6	
Approach LOS					C			A			A	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	5.3	44.7				50.0		4.8				
Change Period (Y+Rc), s	4.6	6.5				6.5		4.5				
Max Green Setting (Gmax), s	5.4	33.5				43.5		5.5				
Max Q Clear Time (g_c+I1), s	2.3	8.2				8.3		2.0				
Green Ext Time (p_c), s	0.0	6.0				9.5		0.0				

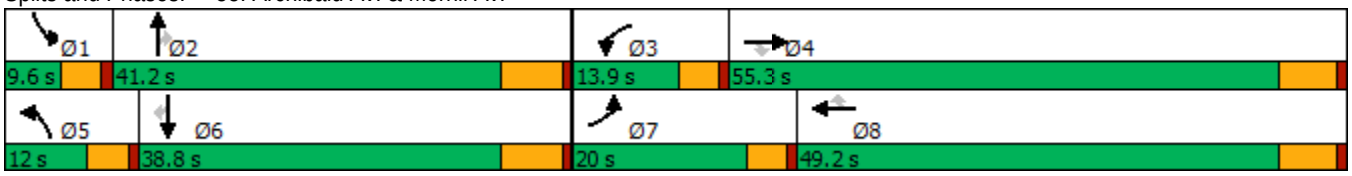
Intersection Summary		
HCM 6th Ctrl Delay		3.2
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	67	395	44	22	53	109	577	38	70	920	164
Future Volume (vph)	241	67	395	44	22	53	109	577	38	70	920	164
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	20.0	55.3	55.3	13.9	49.2	49.2	12.0	41.2	41.2	9.6	38.8	38.8
Total Split (%)	16.7%	46.1%	46.1%	11.6%	41.0%	41.0%	10.0%	34.3%	34.3%	8.0%	32.3%	32.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 91.3
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 55: Archibald Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	241	67	395	44	22	53	109	577	38	70	920	164
Future Volume (veh/h)	241	67	395	44	22	53	109	577	38	70	920	164
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	248	69	222	45	23	16	112	595	25	72	948	111
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	283	471	399	64	228	193	138	1267	558	149	1147	512
Arrive On Green	0.17	0.26	0.26	0.04	0.13	0.13	0.09	0.37	0.37	0.05	0.34	0.34
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	1619	3420	1506	2956	3420	1525
Grp Volume(v), veh/h	248	69	222	45	23	16	112	595	25	72	948	111
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1710	1506	1478	1710	1525
Q Serve(g_s), s	11.8	2.3	9.9	2.2	0.9	0.7	5.4	10.5	0.8	1.9	20.1	4.1
Cycle Q Clear(g_c), s	11.8	2.3	9.9	2.2	0.9	0.7	5.4	10.5	0.8	1.9	20.1	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	283	471	399	64	228	193	138	1267	558	149	1147	512
V/C Ratio(X)	0.88	0.15	0.56	0.70	0.10	0.08	0.81	0.47	0.04	0.48	0.83	0.22
Avail Cap(c_a), veh/h	316	1121	950	191	982	832	152	1505	663	187	1401	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.7	22.3	25.1	37.4	30.4	30.4	35.4	18.9	15.9	36.4	24.1	18.8
Incr Delay (d2), s/veh	20.1	0.1	1.2	5.0	0.2	0.2	22.7	0.3	0.0	0.9	3.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	0.9	3.5	0.9	0.4	0.3	2.8	3.6	0.3	0.6	7.5	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.8	22.5	26.4	42.4	30.6	30.6	58.2	19.2	15.9	37.3	27.6	19.0
LnGrp LOS	D	C	C	D	C	C	E	B	B	D	C	B
Approach Vol, veh/h		539			84			732			1131	
Approach Delay, s/veh		37.6			36.9			25.0			27.4	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	35.7	7.7	26.8	11.3	32.9	18.4	16.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	34.7	9.3	49.1	7.4	32.3	15.4	43.0
Max Q Clear Time (g_c+I1), s	3.9	12.5	4.2	11.9	7.4	22.1	13.8	2.9
Green Ext Time (p_c), s	0.0	3.5	0.0	1.0	0.0	4.3	0.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	29.2
HCM 6th LOS	C

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	333	227	516	328	519	840
Future Volume (vph)	333	227	516	328	519	840
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	37.0	46.7	36.3	37.0	83.7
Total Split (%)	30.3%	30.8%	38.9%	30.3%	30.8%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 105.6
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	333	227	516	328	519	840
Future Volume (veh/h)	333	227	516	328	519	840
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	340	182	527	314	530	857
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	376	834	614	844	561	1300
Arrive On Green	0.21	0.21	0.32	0.32	0.31	0.68
Sat Flow, veh/h	1810	1610	1900	1576	1810	1900
Grp Volume(v), veh/h	340	182	527	314	530	857
Grp Sat Flow(s),veh/h/ln	1810	1610	1900	1576	1810	1900
Q Serve(g_s), s	18.0	6.0	25.5	11.5	28.1	25.5
Cycle Q Clear(g_c), s	18.0	6.0	25.5	11.5	28.1	25.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	376	834	614	844	561	1300
V/C Ratio(X)	0.91	0.22	0.86	0.37	0.94	0.66
Avail Cap(c_a), veh/h	571	1008	801	999	590	1523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	12.9	31.1	13.5	33.0	8.9
Incr Delay (d2), s/veh	9.5	0.0	7.8	0.3	23.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	1.9	12.0	5.8	14.8	7.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	47.5	12.9	38.9	13.8	56.6	9.4
LnGrp LOS	D	B	D	B	E	A
Approach Vol, veh/h	522		841			1387
Approach Delay, s/veh	35.4		29.5			27.5
Approach LOS	D		C			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	35.4	37.0			72.5	25.7
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	32.0	41.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	30.1	27.5			27.5	20.0
Green Ext Time (p_c), s	0.4	4.2			3.5	0.4

Intersection Summary	
HCM 6th Ctrl Delay	29.6
HCM 6th LOS	C

Notes

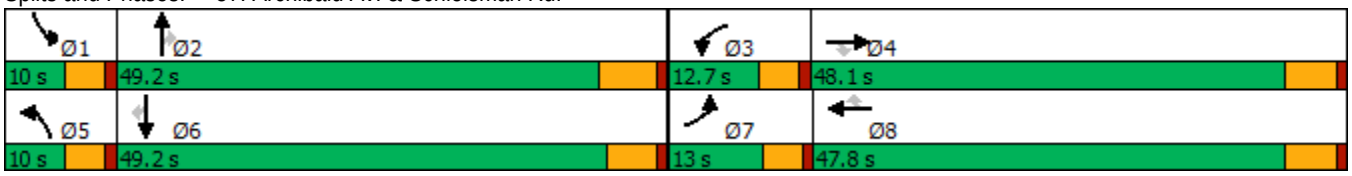
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

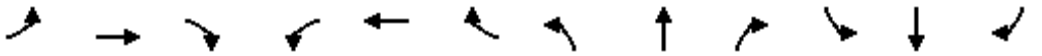
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	993	172	108	308	55	178	593	109	160	641	300
Future Volume (vph)	372	993	172	108	308	55	178	593	109	160	641	300
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	48.1	48.1	12.7	47.8	47.8	10.0	49.2	49.2	10.0	49.2	49.2
Total Split (%)	10.8%	40.1%	40.1%	10.6%	39.8%	39.8%	8.3%	41.0%	41.0%	8.3%	41.0%	41.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 99.3
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	372	993	172	108	308	55	178	593	109	160	641	300
Future Volume (veh/h)	372	993	172	108	308	55	178	593	109	160	641	300
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	380	1013	94	110	314	30	182	605	74	163	654	192
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	307	2467	766	173	2269	703	197	1027	319	197	1027	317
Arrive On Green	0.09	0.48	0.48	0.05	0.44	0.44	0.06	0.20	0.20	0.06	0.20	0.20
Sat Flow, veh/h	3510	5187	1610	3510	5187	1608	3510	5187	1610	3510	5187	1603
Grp Volume(v), veh/h	380	1013	94	110	314	30	182	605	74	163	654	192
Grp Sat Flow(s),veh/h/ln	1755	1729	1610	1755	1729	1608	1755	1729	1610	1755	1729	1603
Q Serve(g_s), s	8.4	12.2	3.1	3.0	3.5	1.0	5.0	10.2	3.7	4.4	11.1	10.5
Cycle Q Clear(g_c), s	8.4	12.2	3.1	3.0	3.5	1.0	5.0	10.2	3.7	4.4	11.1	10.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	2467	766	173	2269	703	197	1027	319	197	1027	317
V/C Ratio(X)	1.24	0.41	0.12	0.64	0.14	0.04	0.92	0.59	0.23	0.83	0.64	0.60
Avail Cap(c_a), veh/h	307	2467	766	296	2269	703	197	2323	721	197	2366	731
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.8	16.4	14.0	44.8	16.2	15.5	45.1	35.0	32.4	44.8	35.3	35.1
Incr Delay (d2), s/veh	131.6	0.5	0.3	1.4	0.1	0.1	42.0	0.5	0.4	22.7	0.7	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	4.5	1.1	1.3	1.3	0.4	3.2	4.1	1.4	2.5	4.4	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	175.4	16.9	14.3	46.2	16.3	15.6	87.1	35.5	32.7	67.6	36.0	36.9
LnGrp LOS	F	B	B	D	B	B	F	D	C	E	D	D
Approach Vol, veh/h		1487			454			861			1009	
Approach Delay, s/veh		57.3			23.5			46.2			41.3	
Approach LOS		E			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	25.2	9.3	51.5	10.0	25.2	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.4	43.0	8.1	42.3	5.4	* 44	8.4	42.0
Max Q Clear Time (g_c+I1), s	6.4	12.2	5.0	14.2	7.0	13.1	10.4	5.5
Green Ext Time (p_c), s	0.0	4.1	0.0	7.7	0.0	5.0	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	46.5
HCM 6th LOS	D

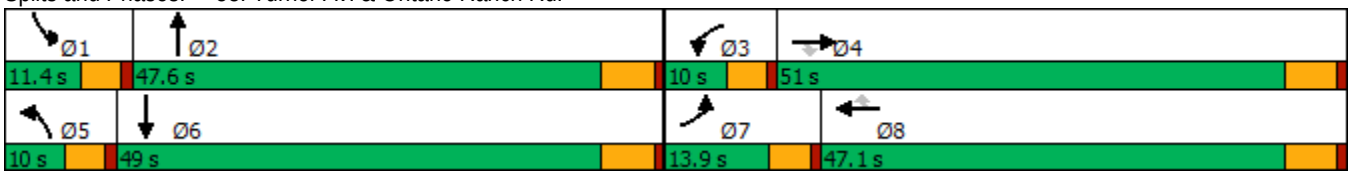
Notes

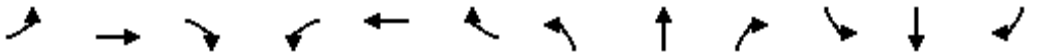
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	41	1010	38	31	567	13	25	7	27	7
Future Volume (vph)	41	1010	38	31	567	13	25	7	27	7
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	13.9	51.0	51.0	10.0	47.1	47.1	10.0	47.6	11.4	49.0
Total Split (%)	11.6%	42.5%	42.5%	8.3%	39.3%	39.3%	8.3%	39.7%	9.5%	40.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	6.9	57.8	57.8	5.5	56.5	56.5	5.5	14.8	6.1	15.2
Actuated g/C Ratio	0.08	0.70	0.70	0.07	0.68	0.68	0.07	0.18	0.07	0.18
v/c Ratio	0.34	0.47	0.04	0.32	0.27	0.01	0.25	0.16	0.25	0.10
Control Delay	49.3	15.5	0.1	53.1	14.1	0.0	51.2	13.0	49.4	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	15.5	0.1	53.1	14.1	0.0	51.2	13.0	49.4	15.4
LOS	D	B	A	D	B	A	D	B	D	B
Approach Delay		16.3			15.8			26.4		32.1
Approach LOS		B			B			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 83	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay: 17.0	Intersection LOS: B
Intersection Capacity Utilization 58.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	1010	38	31	567	13	25	7	38	27	7	21
Future Volume (veh/h)	41	1010	38	31	567	13	25	7	38	27	7	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	45	1110	30	34	623	11	27	8	23	30	8	9
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	64	1915	854	54	1894	845	46	48	139	49	94	105
Arrive On Green	0.04	0.56	0.56	0.03	0.55	0.55	0.03	0.12	0.12	0.03	0.12	0.12
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	407	1169	1619	773	870
Grp Volume(v), veh/h	45	1110	30	34	623	11	27	0	31	30	0	17
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	0	1576	1619	0	1643
Q Serve(g_s), s	2.2	17.1	0.7	1.7	8.0	0.3	1.3	0.0	1.4	1.5	0.0	0.7
Cycle Q Clear(g_c), s	2.2	17.1	0.7	1.7	8.0	0.3	1.3	0.0	1.4	1.5	0.0	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.74	1.00		0.53
Lane Grp Cap(c), veh/h	64	1915	854	54	1894	845	46	0	187	49	0	199
V/C Ratio(X)	0.71	0.58	0.04	0.64	0.33	0.01	0.59	0.00	0.17	0.61	0.00	0.09
Avail Cap(c_a), veh/h	187	1915	854	108	1894	845	108	0	816	136	0	880
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.3	11.6	8.0	38.5	9.8	8.1	38.8	0.0	32.0	38.7	0.0	31.5
Incr Delay (d2), s/veh	5.2	1.3	0.1	4.6	0.5	0.0	4.5	0.0	0.4	4.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.5	0.2	0.7	2.6	0.1	0.6	0.0	0.5	0.6	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.5	12.8	8.0	43.1	10.3	8.1	43.3	0.0	32.4	43.2	0.0	31.7
LnGrp LOS	D	B	A	D	B	A	D	A	C	D	A	C
Approach Vol, veh/h		1185			668			58			47	
Approach Delay, s/veh		13.9			11.9			37.4			39.0	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	15.4	7.3	51.0	6.9	15.6	7.8	50.5
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	6.8	41.8	5.4	45.2	5.4	43.2	9.3	41.3
Max Q Clear Time (g_c+I1), s	3.5	3.4	3.7	19.1	3.3	2.7	4.2	10.0
Green Ext Time (p_c), s	0.0	0.1	0.0	8.3	0.0	0.0	0.0	4.2

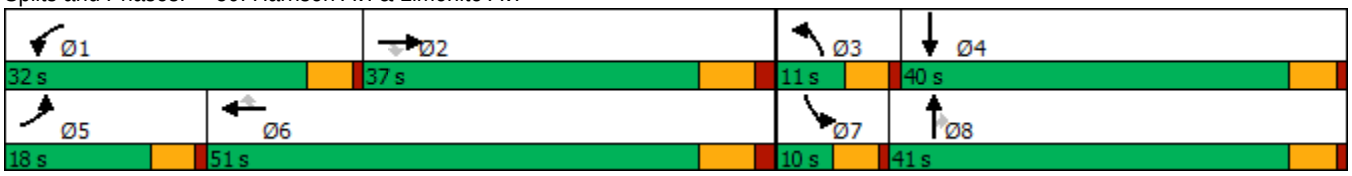
Intersection Summary	
HCM 6th Ctrl Delay	14.5
HCM 6th LOS	B

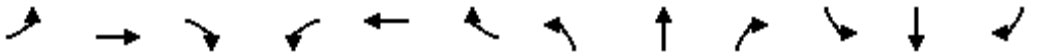
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	76	719	52	202	496	5	33	43	151	16	45
Future Volume (vph)	76	719	52	202	496	5	33	43	151	16	45
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	18.0	37.0	37.0	32.0	51.0	51.0	11.0	41.0	41.0	10.0	40.0
Total Split (%)	15.0%	30.8%	30.8%	26.7%	42.5%	42.5%	9.2%	34.2%	34.2%	8.3%	33.3%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 63.9
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 59: Harrison Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	719	52	202	496	5	33	43	151	16	45	31
Future Volume (veh/h)	76	719	52	202	496	5	33	43	151	16	45	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	78	734	48	206	506	3	34	44	69	16	46	23
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	119	1323	411	260	1727	536	68	261	218	36	143	71
Arrive On Green	0.07	0.26	0.26	0.14	0.33	0.33	0.04	0.14	0.14	0.02	0.12	0.12
Sat Flow, veh/h	1810	5187	1610	1810	5187	1610	1810	1900	1588	1810	1195	597
Grp Volume(v), veh/h	78	734	48	206	506	3	34	44	69	16	0	69
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1610	1810	1900	1588	1810	0	1792
Q Serve(g_s), s	2.1	6.2	1.1	5.5	3.6	0.1	0.9	1.0	2.0	0.4	0.0	1.8
Cycle Q Clear(g_c), s	2.1	6.2	1.1	5.5	3.6	0.1	0.9	1.0	2.0	0.4	0.0	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	119	1323	411	260	1727	536	68	261	218	36	0	214
V/C Ratio(X)	0.65	0.55	0.12	0.79	0.29	0.01	0.50	0.17	0.32	0.44	0.00	0.32
Avail Cap(c_a), veh/h	468	3098	962	973	4543	1410	216	1350	1129	180	0	1238
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.9	16.2	14.4	20.8	12.4	11.2	23.7	19.1	19.5	24.3	0.0	20.3
Incr Delay (d2), s/veh	2.2	0.4	0.1	2.1	0.1	0.0	2.1	0.3	0.8	3.2	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.9	0.4	2.0	1.0	0.0	0.4	0.4	0.7	0.2	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.1	16.6	14.5	22.8	12.5	11.2	25.8	19.4	20.4	27.5	0.0	21.1
LnGrp LOS	C	B	B	C	B	B	C	B	C	C	A	C
Approach Vol, veh/h		860			715			147			85	
Approach Delay, s/veh		17.3			15.5			21.4			22.3	
Approach LOS		B			B			C			C	

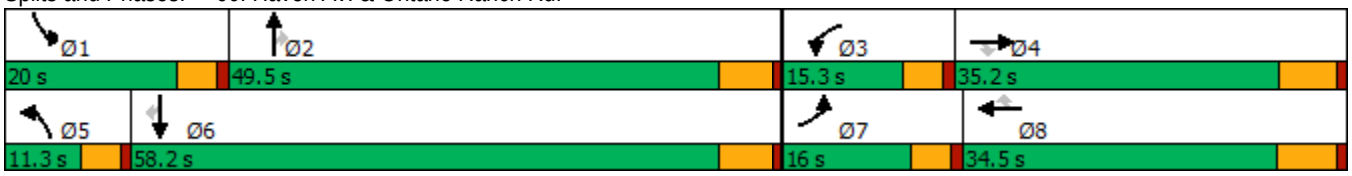
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	19.8	6.9	11.3	8.3	23.7	6.0	12.2
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	27.0	30.0	6.0	34.7	13.0	44.0	5.0	35.7
Max Q Clear Time (g_c+I1), s	7.5	8.2	2.9	3.8	4.1	5.6	2.4	4.0
Green Ext Time (p_c), s	0.1	4.6	0.0	0.3	0.0	3.3	0.0	0.4

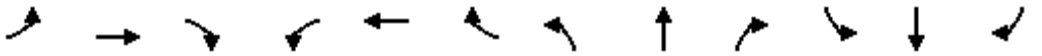
Intersection Summary	
HCM 6th Ctrl Delay	17.1
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	817	65	60	493	126	28	86	23	162	253	106
Future Volume (vph)	114	817	65	60	493	126	28	86	23	162	253	106
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	16.0	35.2	35.2	15.3	34.5	34.5	11.3	49.5	49.5	20.0	58.2	58.2
Total Split (%)	13.3%	29.3%	29.3%	12.8%	28.8%	28.8%	9.4%	41.3%	41.3%	16.7%	48.5%	48.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	10.3	34.8	34.8	7.7	29.2	29.2	6.0	15.4	15.4	14.2	26.1	26.1
Actuated g/C Ratio	0.12	0.40	0.40	0.09	0.34	0.34	0.07	0.18	0.18	0.16	0.30	0.30
v/c Ratio	0.62	0.43	0.10	0.44	0.45	0.21	0.26	0.28	0.06	0.64	0.49	0.20
Control Delay	56.0	24.7	0.3	52.7	28.0	4.9	50.9	34.1	0.3	50.5	28.1	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.0	24.7	0.3	52.7	28.0	4.9	50.9	34.1	0.3	50.5	28.1	5.1
LOS	E	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		26.7			25.9			31.8			30.4	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 87.1	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 27.6	Intersection LOS: C
Intersection Capacity Utilization 57.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	817	65	60	493	126	28	86	23	162	253	106
Future Volume (veh/h)	114	817	65	60	493	126	28	86	23	162	253	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	119	851	37	62	514	57	29	90	10	169	264	37
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	147	2022	628	78	1260	562	49	237	201	204	409	347
Arrive On Green	0.09	0.41	0.41	0.05	0.37	0.37	0.03	0.13	0.13	0.13	0.23	0.23
Sat Flow, veh/h	1619	4914	1525	1619	3420	1525	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	119	851	37	62	514	57	29	90	10	169	264	37
Grp Sat Flow(s),veh/h/ln	1619	1638	1525	1619	1710	1525	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	5.5	9.4	1.1	2.9	8.5	1.9	1.3	3.5	0.4	7.7	10.1	1.5
Cycle Q Clear(g_c), s	5.5	9.4	1.1	2.9	8.5	1.9	1.3	3.5	0.4	7.7	10.1	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	147	2022	628	78	1260	562	49	237	201	204	409	347
V/C Ratio(X)	0.81	0.42	0.06	0.80	0.41	0.10	0.59	0.38	0.05	0.83	0.65	0.11
Avail Cap(c_a), veh/h	243	2022	628	228	1260	562	143	1035	877	328	1242	1052
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	15.9	13.5	35.8	17.8	15.7	36.4	30.2	28.8	32.4	26.6	23.2
Incr Delay (d2), s/veh	3.9	0.6	0.2	6.8	1.0	0.4	4.2	1.0	0.1	4.4	1.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	3.1	0.3	1.2	3.0	0.6	0.6	1.5	0.1	3.1	4.1	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.8	16.6	13.7	42.6	18.8	16.1	40.6	31.2	28.9	36.8	28.3	23.4
LnGrp LOS	D	B	B	D	B	B	D	C	C	D	C	C
Approach Vol, veh/h		1007			633			129			470	
Approach Delay, s/veh		19.0			20.9			33.1			31.0	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	15.8	8.2	37.8	6.9	23.1	11.5	34.5
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	15.4	43.7	10.7	* 29	6.7	52.4	11.4	28.0
Max Q Clear Time (g_c+I1), s	9.7	5.5	4.9	11.4	3.3	12.1	7.5	10.5
Green Ext Time (p_c), s	0.1	0.5	0.0	5.0	0.0	1.6	0.0	2.8

Intersection Summary	
HCM 6th Ctrl Delay	22.8
HCM 6th LOS	C

Notes

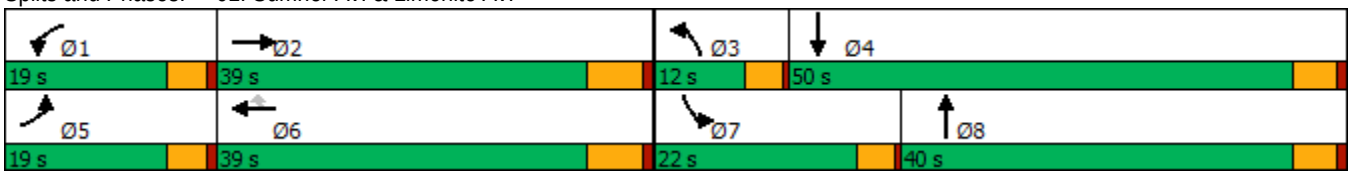
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

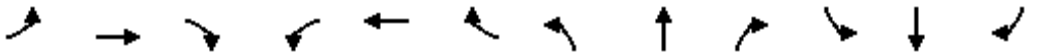
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	208	559	207	486	44	41	208	113	428
Future Volume (vph)	208	559	207	486	44	41	208	113	428
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	19.0	39.0	19.0	39.0	39.0	12.0	40.0	22.0	50.0
Total Split (%)	15.8%	32.5%	15.8%	32.5%	32.5%	10.0%	33.3%	18.3%	41.7%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 68.9
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 61: Sumner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	208	559	77	207	486	44	41	208	135	113	428	189
Future Volume (veh/h)	208	559	77	207	486	44	41	208	135	113	428	189
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	214	576	67	213	501	37	42	214	68	116	441	97
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	342	1080	124	341	1186	368	64	511	157	151	697	152
Arrive On Green	0.10	0.23	0.23	0.10	0.23	0.23	0.04	0.19	0.19	0.08	0.24	0.24
Sat Flow, veh/h	3510	4717	542	3510	5187	1610	1810	2703	833	1810	2946	643
Grp Volume(v), veh/h	214	420	223	213	501	37	42	141	141	116	269	269
Grp Sat Flow(s),veh/h/ln	1755	1729	1802	1755	1729	1610	1810	1805	1731	1810	1805	1784
Q Serve(g_s), s	2.8	5.2	5.3	2.8	4.0	0.9	1.1	3.3	3.5	3.0	6.5	6.6
Cycle Q Clear(g_c), s	2.8	5.2	5.3	2.8	4.0	0.9	1.1	3.3	3.5	3.0	6.5	6.6
Prop In Lane	1.00		0.30	1.00		1.00	1.00		0.48	1.00		0.36
Lane Grp Cap(c), veh/h	342	792	412	341	1186	368	64	341	327	151	427	422
V/C Ratio(X)	0.63	0.53	0.54	0.63	0.42	0.10	0.65	0.41	0.43	0.77	0.63	0.64
Avail Cap(c_a), veh/h	1049	2352	1225	1049	3528	1095	298	1302	1249	671	1674	1655
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.0	16.4	16.5	21.1	16.0	14.8	23.1	17.3	17.4	21.8	16.6	16.7
Incr Delay (d2), s/veh	0.7	0.6	1.1	0.7	0.2	0.1	4.1	0.6	0.7	3.1	1.1	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.6	1.8	1.0	1.2	0.3	0.5	1.2	1.2	1.2	2.3	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.8	17.0	17.6	21.8	16.2	14.9	27.2	17.9	18.0	24.9	17.8	17.8
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		857			751			324			654	
Approach Delay, s/veh		18.3			17.7			19.2			19.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	17.1	5.7	16.5	9.2	17.1	8.0	14.2
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	14.5	33.0	8.0	45.0	14.5	33.0	18.0	35.0
Max Q Clear Time (g_c+I1), s	4.8	7.3	3.1	8.6	4.8	6.0	5.0	5.5
Green Ext Time (p_c), s	0.2	3.7	0.0	2.4	0.2	3.2	0.1	1.2

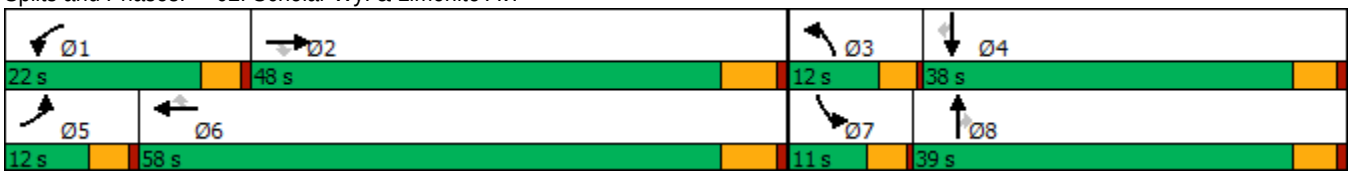
Intersection Summary	
HCM 6th Ctrl Delay	18.4
HCM 6th LOS	B

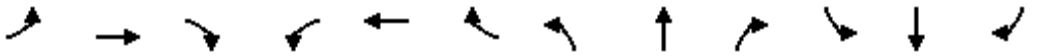
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	735	41	119	673	54	41	91	122	28	128	29
Future Volume (vph)	38	735	41	119	673	54	41	91	122	28	128	29
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	12.0	48.0	48.0	22.0	58.0	58.0	12.0	39.0	39.0	11.0	38.0	38.0
Total Split (%)	10.0%	40.0%	40.0%	18.3%	48.3%	48.3%	10.0%	32.5%	32.5%	9.2%	31.7%	31.7%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 65.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	735	41	119	673	54	41	91	122	28	128	29
Future Volume (veh/h)	38	735	41	119	673	54	41	91	122	28	128	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	40	782	30	127	716	33	44	97	50	30	136	24
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	63	1221	545	165	1425	636	67	249	211	50	438	191
Arrive On Green	0.03	0.34	0.34	0.09	0.39	0.39	0.04	0.13	0.13	0.03	0.12	0.12
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	1900	1610	1810	3610	1572
Grp Volume(v), veh/h	40	782	30	127	716	33	44	97	50	30	136	24
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1900	1610	1810	1805	1572
Q Serve(g_s), s	1.0	8.7	0.6	3.2	7.1	0.6	1.1	2.2	1.3	0.8	1.6	0.6
Cycle Q Clear(g_c), s	1.0	8.7	0.6	3.2	7.1	0.6	1.1	2.2	1.3	0.8	1.6	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	63	1221	545	165	1425	636	67	249	211	50	438	191
V/C Ratio(X)	0.64	0.64	0.06	0.77	0.50	0.05	0.65	0.39	0.24	0.60	0.31	0.13
Avail Cap(c_a), veh/h	287	3205	1429	669	3968	1770	306	1365	1157	268	2518	1097
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.5	13.2	10.6	21.0	10.8	8.8	22.5	18.8	18.4	22.7	19.0	18.5
Incr Delay (d2), s/veh	4.0	0.6	0.0	2.9	0.3	0.0	4.0	0.7	0.4	4.3	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.6	0.2	1.2	1.9	0.2	0.5	0.9	0.5	0.4	0.6	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.5	13.8	10.6	23.9	11.1	8.9	26.4	19.6	18.9	27.0	19.3	18.8
LnGrp LOS	C	B	B	C	B	A	C	B	B	C	B	B
Approach Vol, veh/h		852			876			191			190	
Approach Delay, s/veh		14.3			12.9			21.0			20.4	
Approach LOS		B			B			C			C	

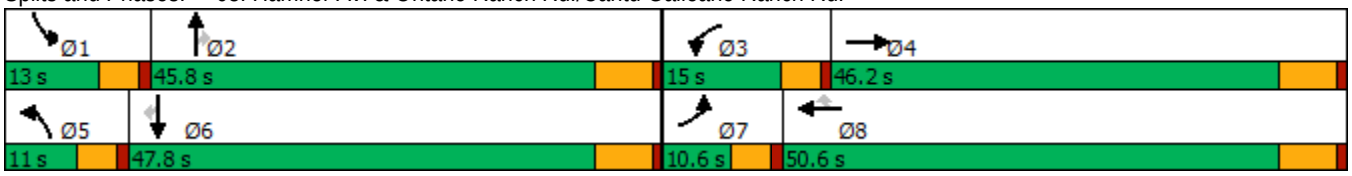
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	22.0	5.8	10.7	6.1	24.7	5.3	11.2
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	17.5	42.0	8.0	33.0	7.5	52.0	7.0	34.0
Max Q Clear Time (g_c+I1), s	5.2	10.7	3.1	3.6	3.0	9.1	2.8	4.2
Green Ext Time (p_c), s	0.1	5.3	0.0	0.7	0.0	5.0	0.0	0.5

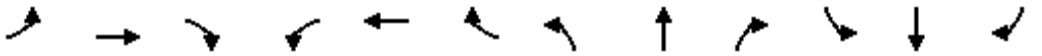
Intersection Summary	
HCM 6th Ctrl Delay	14.8
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	87	736	580	422	107	195	372	233	451	790	107
Future Volume (vph)	87	736	580	422	107	195	372	233	451	790	107
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	10.6	46.2	15.0	50.6	50.6	11.0	45.8	45.8	13.0	47.8	47.8
Total Split (%)	8.8%	38.5%	12.5%	42.2%	42.2%	9.2%	38.2%	38.2%	10.8%	39.8%	39.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	5.9	24.3	10.7	31.4	31.4	6.6	27.0	27.0	8.6	29.0	29.0
Actuated g/C Ratio	0.06	0.26	0.12	0.34	0.34	0.07	0.29	0.29	0.09	0.31	0.31
v/c Ratio	0.48	0.64	1.78	0.38	0.19	0.98	0.27	0.44	1.72	0.77	0.20
Control Delay	55.3	29.9	391.8	25.8	5.5	103.1	26.0	12.3	366.7	34.5	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.3	29.9	391.8	25.8	5.5	103.1	26.0	12.3	366.7	34.5	5.7
LOS	E	C	F	C	A	F	C	B	F	C	A
Approach Delay		31.9		215.2			40.8			143.5	
Approach LOS		C		F			D			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 92.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.78	
Intersection Signal Delay: 115.0	Intersection LOS: F
Intersection Capacity Utilization 83.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	736	263	580	422	107	195	372	233	451	790	107
Future Volume (veh/h)	87	736	263	580	422	107	195	372	233	451	790	107
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	91	767	217	604	440	77	203	388	164	470	823	56
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	153	1182	324	360	1069	477	221	1397	433	291	1053	469
Arrive On Green	0.05	0.24	0.24	0.12	0.31	0.31	0.07	0.28	0.28	0.10	0.31	0.31
Sat Flow, veh/h	2956	4869	1335	2956	3420	1525	2956	4914	1524	2956	3420	1524
Grp Volume(v), veh/h	91	730	254	604	440	77	203	388	164	470	823	56
Grp Sat Flow(s),veh/h/ln	1478	1548	1560	1478	1710	1525	1478	1638	1524	1478	1710	1524
Q Serve(g_s), s	2.6	12.1	12.6	10.4	8.7	3.1	5.8	5.2	7.4	8.4	18.7	2.3
Cycle Q Clear(g_c), s	2.6	12.1	12.6	10.4	8.7	3.1	5.8	5.2	7.4	8.4	18.7	2.3
Prop In Lane	1.00		0.86	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	153	1127	379	360	1069	477	221	1397	433	291	1053	469
V/C Ratio(X)	0.59	0.65	0.67	1.68	0.41	0.16	0.92	0.28	0.38	1.62	0.78	0.12
Avail Cap(c_a), veh/h	208	2174	730	360	1777	793	221	2278	706	291	1665	742
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	29.1	29.2	37.5	23.2	21.2	39.3	23.8	24.5	38.5	27.0	21.2
Incr Delay (d2), s/veh	1.4	0.6	2.1	317.2	0.3	0.2	37.7	0.1	0.5	293.0	1.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.1	4.4	19.3	3.2	1.0	3.1	1.9	2.5	14.7	7.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	29.7	31.3	354.7	23.4	21.4	77.0	23.9	25.1	331.5	28.3	21.4
LnGrp LOS	D	C	C	F	C	C	E	C	C	F	C	C
Approach Vol, veh/h		1075			1121			755			1349	
Approach Delay, s/veh		31.0			201.8			38.4			133.6	
Approach LOS		C			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	30.5	15.0	26.9	11.0	32.5	9.0	32.9
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	8.4	39.6	10.4	40.0	6.4	41.6	6.0	44.4
Max Q Clear Time (g_c+I1), s	10.4	9.4	12.4	14.6	7.8	20.7	4.6	10.7
Green Ext Time (p_c), s	0.0	2.9	0.0	6.2	0.0	5.2	0.0	2.9

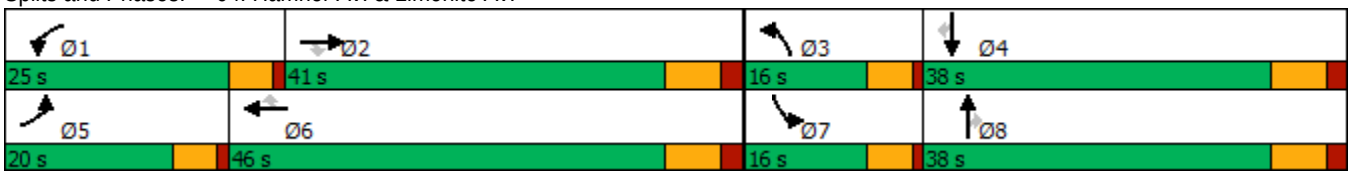
Intersection Summary	
HCM 6th Ctrl Delay	109.0
HCM 6th LOS	F

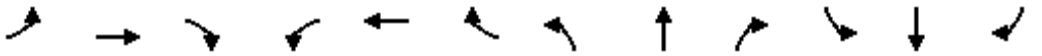
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	275	480	66	356	388	144	186	560	173	182	605	209
Future Volume (vph)	275	480	66	356	388	144	186	560	173	182	605	209
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	20.0	41.0	41.0	25.0	46.0	46.0	16.0	38.0	38.0	16.0	38.0	38.0
Total Split (%)	16.7%	34.2%	34.2%	20.8%	38.3%	38.3%	13.3%	31.7%	31.7%	13.3%	31.7%	31.7%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 89.1
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 64: Hamner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	275	480	66	356	388	144	186	560	173	182	605	209
Future Volume (veh/h)	275	480	66	356	388	144	186	560	173	182	605	209
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	284	495	47	367	400	103	192	577	94	188	624	152
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	379	1090	337	466	848	372	280	1325	403	276	1319	402
Arrive On Green	0.11	0.21	0.21	0.13	0.23	0.23	0.08	0.26	0.26	0.08	0.25	0.25
Sat Flow, veh/h	3510	5187	1606	3510	3610	1585	3510	5187	1577	3510	5187	1581
Grp Volume(v), veh/h	284	495	47	367	400	103	192	577	94	188	624	152
Grp Sat Flow(s),veh/h/ln	1755	1729	1606	1755	1805	1585	1755	1729	1577	1755	1729	1581
Q Serve(g_s), s	5.8	6.2	1.8	7.5	7.1	4.0	4.0	6.9	3.5	3.9	7.6	5.9
Cycle Q Clear(g_c), s	5.8	6.2	1.8	7.5	7.1	4.0	4.0	6.9	3.5	3.9	7.6	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	379	1090	337	466	848	372	280	1325	403	276	1319	402
V/C Ratio(X)	0.75	0.45	0.14	0.79	0.47	0.28	0.68	0.44	0.23	0.68	0.47	0.38
Avail Cap(c_a), veh/h	709	2373	735	945	1895	832	520	2164	658	520	2164	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	25.6	23.9	31.2	24.5	23.3	33.3	23.2	21.9	33.3	23.5	22.9
Incr Delay (d2), s/veh	1.1	0.6	0.4	1.1	0.9	0.9	1.1	0.5	0.6	1.1	0.6	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	2.4	0.7	3.0	2.8	1.4	1.6	2.6	1.2	1.6	2.9	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.3	26.3	24.3	32.3	25.3	24.1	34.4	23.7	22.5	34.4	24.1	24.1
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		826			870			863			964	
Approach Delay, s/veh		28.6			28.1			25.9			26.1	
Approach LOS		C			C			C			C	

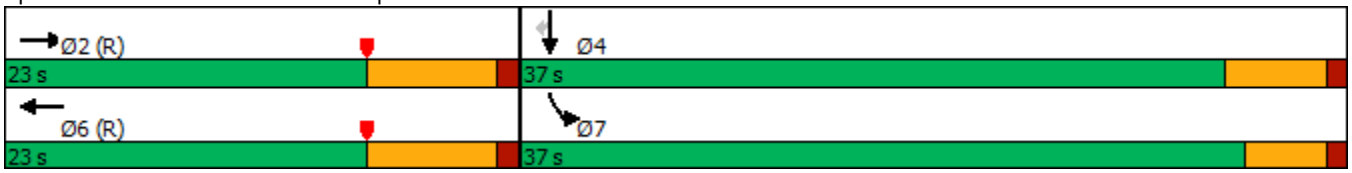
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	22.6	10.9	25.9	13.0	24.5	10.8	26.0
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	20.0	34.0	11.0	31.0	15.0	39.0	11.0	31.0
Max Q Clear Time (g_c+I1), s	9.5	8.2	6.0	9.6	7.8	9.1	5.9	8.9
Green Ext Time (p_c), s	0.3	6.2	0.1	8.1	0.2	5.7	0.1	7.2

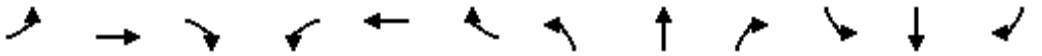
Intersection Summary	
HCM 6th Ctrl Delay	27.1
HCM 6th LOS	C

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1021	491	443	418	290	0	940
Future Volume (vph)	1021	491	443	418	290	0	940
Turn Type	NA	Free	NA	Free	Prot	NA	Perm
Protected Phases	2		6		7	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		7	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		9.6	10.5	10.5
Total Split (s)	23.0		23.0		37.0	37.0	37.0
Total Split (%)	38.3%		38.3%		61.7%	61.7%	61.7%
Yellow Time (s)	5.8		5.8		3.6	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8		6.8		4.6	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Min		None	Min	Min
Act Effct Green (s)	16.2	60.0	16.2	60.0	32.4	31.5	31.5
Actuated g/C Ratio	0.27	1.00	0.27	1.00	0.54	0.52	0.52
v/c Ratio	0.75	0.31	0.47	0.27	0.29	0.61	0.57
Control Delay	24.1	0.5	16.2	0.9	8.6	11.2	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	0.5	16.2	0.9	8.6	11.2	10.4
LOS	C	A	B	A	A	B	B
Approach Delay	16.4		8.8			10.3	
Approach LOS	B		A			B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 53 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 12.5	Intersection LOS: B
Intersection Capacity Utilization 61.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	✣	↱
Traffic Volume (veh/h)	0	1021	491	0	443	418	0	0	0	290	0	940
Future Volume (veh/h)	0	1021	491	0	443	418	0	0	0	290	0	940
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1053	0	0	457	0				199	0	744
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2635		0	1834					546	0	972
Arrive On Green	0.00	0.51	0.00	0.00	0.51	0.00				0.30	0.00	0.30
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1053	0	0	457	0				199	0	744
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	7.5	0.0	0.0	4.3	0.0				5.2	0.0	12.6
Cycle Q Clear(g_c), s	0.0	7.5	0.0	0.0	4.3	0.0				5.2	0.0	12.6
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2635		0	1834					546	0	972
V/C Ratio(X)	0.00	0.40		0.00	0.25					0.36	0.00	0.77
Avail Cap(c_a), veh/h	0	2635		0	1834					977	0	1739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.31	0.00	0.00	0.97	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.1	0.0	0.0	8.3	0.0				16.4	0.0	19.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.3	0.0				0.4	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.0	0.0	0.0	1.2	0.0				1.9	0.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	9.2	0.0	0.0	8.6	0.0				16.8	0.0	20.3
LnGrp LOS	A	A		A	A					B	A	C
Approach Vol, veh/h		1053	A		457	A					943	
Approach Delay, s/veh		9.2			8.6						19.6	
Approach LOS		A			A						B	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		37.3		22.7		37.3						
Change Period (Y+Rc), s		6.8		4.6		6.8						
Max Green Setting (Gmax), s		16.2		32.4		16.2						
Max Q Clear Time (g_c+I1), s		9.5		14.6		6.3						
Green Ext Time (p_c), s		3.4		3.5		1.8						

Intersection Summary	
HCM 6th Ctrl Delay	13.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

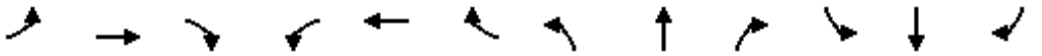
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1096	499	513	929	129	1	400
Future Volume (vph)	1096	499	513	929	129	1	400
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	10.0	36.5	23.5	23.5	23.5
Total Split (s)	55.0	55.0	23.0	78.0	32.0	32.0	32.0
Total Split (%)	50.0%	50.0%	20.9%	70.9%	29.1%	29.1%	29.1%
Yellow Time (s)	4.5	4.5	4.0	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	0.5	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.5	5.5	5.5	5.5	5.5
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	Min	Min	Min

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1096	499	513	929	0	0	0	0	129	1	400
Future Volume (veh/h)	0	1096	499	513	929	0	0	0	0	129	1	400
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1118	363	523	948	0				193	0	109
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2183	974	582	2929	0				320	0	143
Arrive On Green	0.00	0.60	0.60	0.11	0.54	0.00				0.09	0.00	0.09
Sat Flow, veh/h	0	3705	1610	3510	3705	0				3619	0	1610
Grp Volume(v), veh/h	0	1118	363	523	948	0				193	0	109
Grp Sat Flow(s),veh/h/ln	0	1805	1610	1755	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	19.5	12.7	16.2	16.0	0.0				5.6	0.0	7.3
Cycle Q Clear(g_c), s	0.0	19.5	12.7	16.2	16.0	0.0				5.6	0.0	7.3
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2183	974	582	2929	0				320	0	143
V/C Ratio(X)	0.00	0.51	0.37	0.90	0.32	0.00				0.60	0.00	0.76
Avail Cap(c_a), veh/h	0	2183	974	590	2929	0				872	0	388
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.90	0.90	0.64	0.64	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.4	11.1	48.0	8.4	0.0				48.3	0.0	49.0
Incr Delay (d2), s/veh	0.0	0.8	1.0	11.2	0.2	0.0				0.7	0.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.1	4.2	8.1	6.7	0.0				2.5	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.2	12.1	59.1	8.6	0.0				48.9	0.0	52.2
LnGrp LOS	A	B	B	E	A	A				D	A	D
Approach Vol, veh/h		1481			1471						302	
Approach Delay, s/veh		12.9			26.5						50.1	
Approach LOS		B			C						D	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	22.7	72.0		15.2		94.8						
Change Period (Y+Rc), s	4.5	5.5		5.5		5.5						
Max Green Setting (Gmax), s	18.5	49.5		26.5		72.5						
Max Q Clear Time (g_c+I1), s	18.2	21.5		9.3		18.0						
Green Ext Time (p_c), s	0.0	6.0		0.5		4.4						

Intersection Summary												
HCM 6th Ctrl Delay			22.5									
HCM 6th LOS			C									

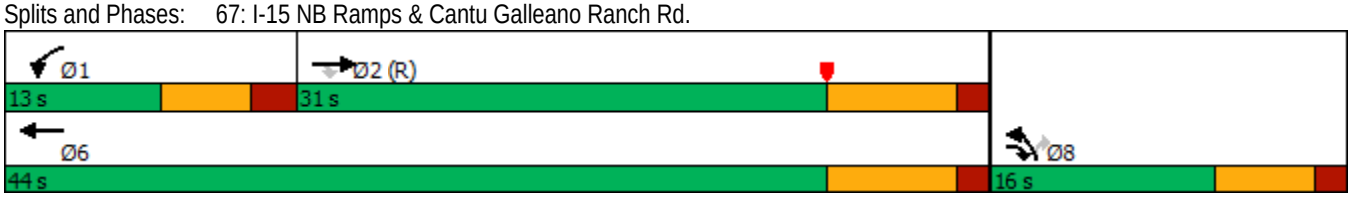
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	635	707	292	673	192	229
Future Volume (vph)	635	707	292	673	192	229
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	31.0	16.0	13.0	44.0	16.0	16.0
Total Split (%)	51.7%	26.7%	21.7%	73.3%	26.7%	26.7%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.0	6.0	7.3	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max
Act Effct Green (s)	23.7	41.0	7.0	36.7	10.0	10.0
Actuated g/C Ratio	0.40	0.68	0.12	0.61	0.17	0.17
v/c Ratio	0.33	0.67	0.75	0.22	0.47	0.39
Control Delay	11.4	8.4	39.5	5.5	17.5	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	8.4	39.5	5.5	17.5	8.4
LOS	B	A	D	A	B	A
Approach Delay	9.8			15.8	14.7	
Approach LOS	A			B	B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 12.7	Intersection LOS: B
Intersection Capacity Utilization 62.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	635	707	292	673	192	229
Future Volume (veh/h)	635	707	292	673	192	229
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	668	528	307	708	225	113
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2049	904	410	3173	603	268
Arrive On Green	0.66	0.66	0.12	0.61	0.17	0.17
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	668	528	307	708	225	113
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	3.4	10.7	5.1	3.7	3.3	3.8
Cycle Q Clear(g_c), s	3.4	10.7	5.1	3.7	3.3	3.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2049	904	410	3173	603	268
V/C Ratio(X)	0.33	0.58	0.75	0.22	0.37	0.42
Avail Cap(c_a), veh/h	2049	904	410	3173	603	268
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.64	0.64	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.7	4.6	25.7	5.2	22.2	22.4
Incr Delay (d2), s/veh	0.3	1.8	11.9	0.0	1.8	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.7	2.5	0.7	1.4	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.0	6.3	37.6	5.3	24.0	27.2
LnGrp LOS	A	A	D	A	C	C
Approach Vol, veh/h	1196			1015	338	
Approach Delay, s/veh	6.7			15.0	25.1	
Approach LOS	A			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.0	31.0				44.0	16.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	7.0	23.7				36.7	10.0
Max Q Clear Time (g_c+I1), s	7.1	12.7				5.7	5.8
Green Ext Time (p_c), s	0.0	4.6				4.7	0.5

Intersection Summary	
HCM 6th Ctrl Delay	12.5
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	450	775	1089	186	352	2	757
Future Volume (vph)	450	775	1089	186	352	2	757
Turn Type	Prot	NA	NA	Perm	Split	NA	Perm
Protected Phases	5	2	6		8	8	
Permitted Phases				6			8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	26.0	72.0	46.0	46.0	38.0	38.0	38.0
Total Split (%)	23.6%	65.5%	41.8%	41.8%	34.5%	34.5%	34.5%
Yellow Time (s)	4.0	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	450	775	0	0	1089	186	352	2	757	0	0	0
Future Volume (veh/h)	450	775	0	0	1089	186	352	2	757	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	455	783	0	0	1100	97	522	0	296			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	523	2461	0	0	1775	791	790	0	347			
Arrive On Green	0.30	1.00	0.00	0.00	0.49	0.49	0.22	0.00	0.22			
Sat Flow, veh/h	3510	3705	0	0	3705	1608	3619	0	1588			
Grp Volume(v), veh/h	455	783	0	0	1100	97	522	0	296			
Grp Sat Flow(s),veh/h/ln	1755	1805	0	0	1805	1608	1810	0	1588			
Q Serve(g_s), s	13.5	0.0	0.0	0.0	24.5	3.6	14.5	0.0	19.7			
Cycle Q Clear(g_c), s	13.5	0.0	0.0	0.0	24.5	3.6	14.5	0.0	19.7			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	523	2461	0	0	1775	791	790	0	347			
V/C Ratio(X)	0.87	0.32	0.00	0.00	0.62	0.12	0.66	0.00	0.85			
Avail Cap(c_a), veh/h	686	2461	0	0	1775	791	1069	0	469			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.80	0.80	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	37.6	0.0	0.0	0.0	20.4	15.1	39.3	0.0	41.3			
Incr Delay (d2), s/veh	7.7	0.3	0.0	0.0	1.6	0.3	1.0	0.0	11.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.3	0.1	0.0	0.0	9.9	1.3	6.3	0.0	8.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	0.3	0.0	0.0	22.1	15.4	40.2	0.0	52.3			
LnGrp LOS	D	A	A	A	C	B	D	A	D			
Approach Vol, veh/h		1238			1197			818				
Approach Delay, s/veh		16.8			21.5			44.6				
Approach LOS		B			C			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		80.5			20.9	59.6		29.5				
Change Period (Y+Rc), s		5.5			4.5	5.5		5.5				
Max Green Setting (Gmax), s		66.5			21.5	40.5		32.5				
Max Q Clear Time (g_c+I1), s		2.0			15.5	26.5		21.7				
Green Ext Time (p_c), s		3.4			0.9	4.4		2.3				
Intersection Summary												
HCM 6th Ctrl Delay			25.5									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

APPENDIX 3.3:

EXISTING (2019) CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

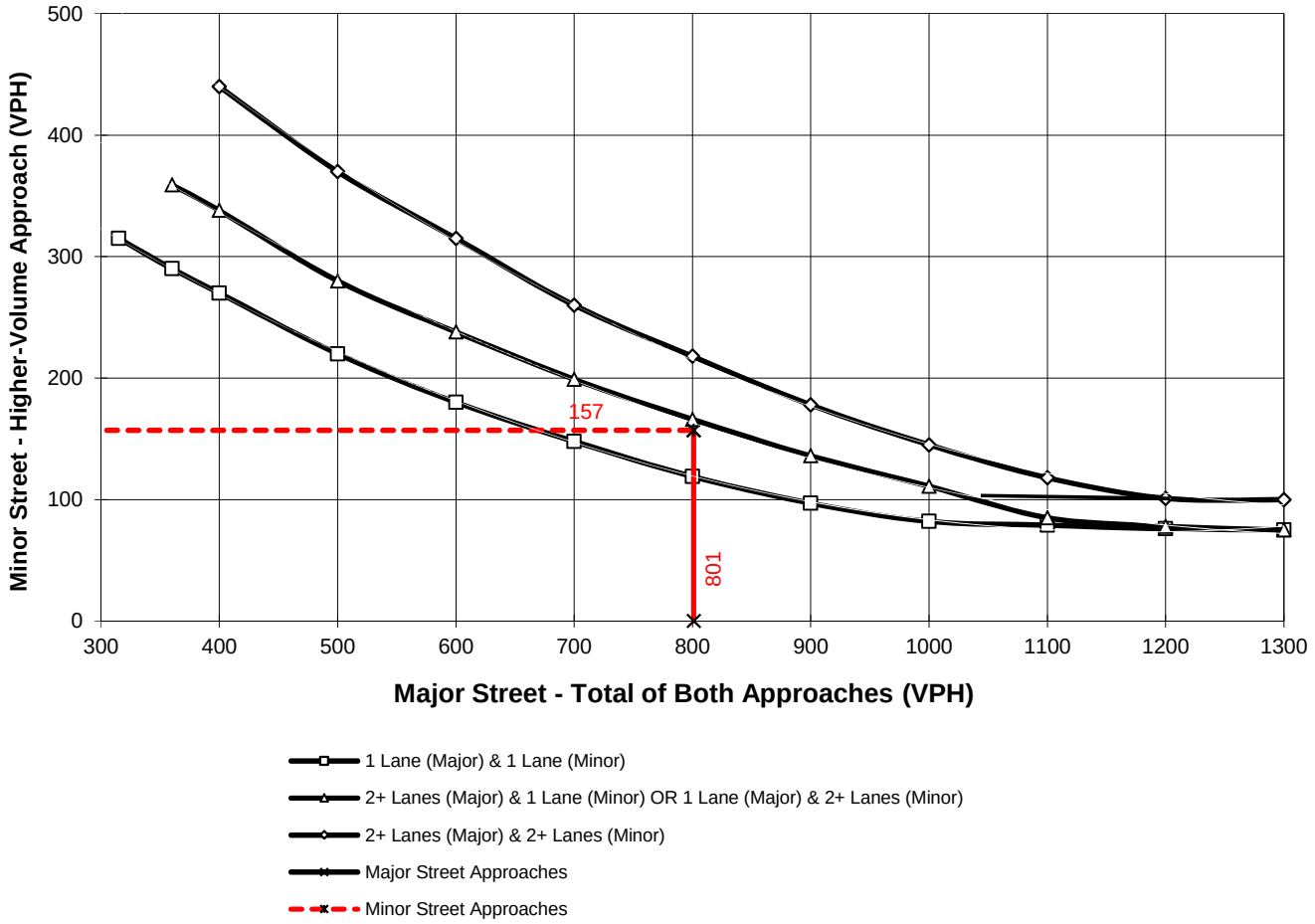
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2019) Conditions - Weekday AM Peak Hour**

Major Street Name = **Edison Av.**
Total of Both Approaches (VPH) = **801**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Bon View Av.**
High Volume Approach (VPH) = **157**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

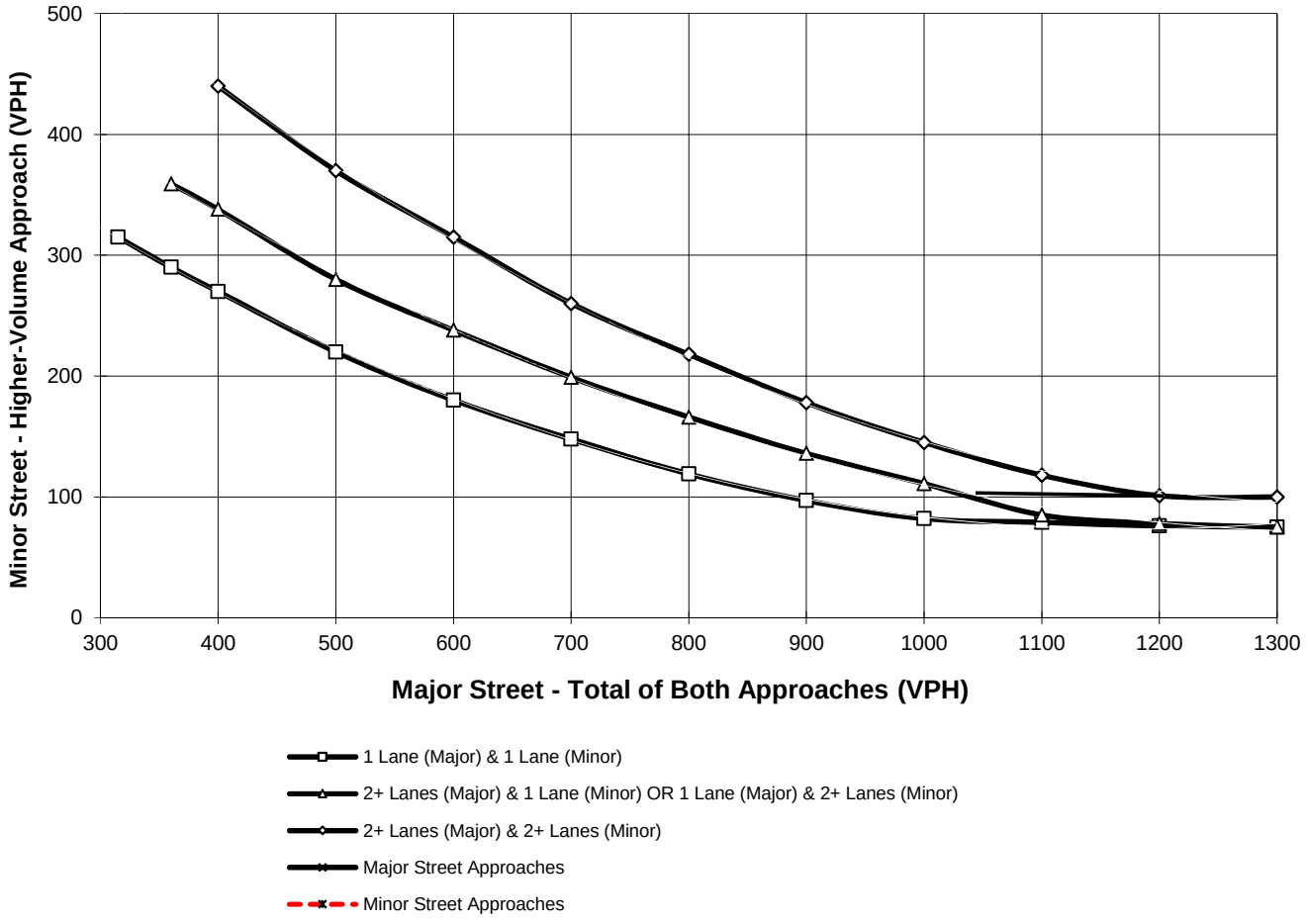
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2019) Conditions - Weekday AM Peak Hour**

Major Street Name = **Eucalyptus Av.** Total of Both Approaches (VPH) = **253**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Bon View Av.** High Volume Approach (VPH) = **130**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

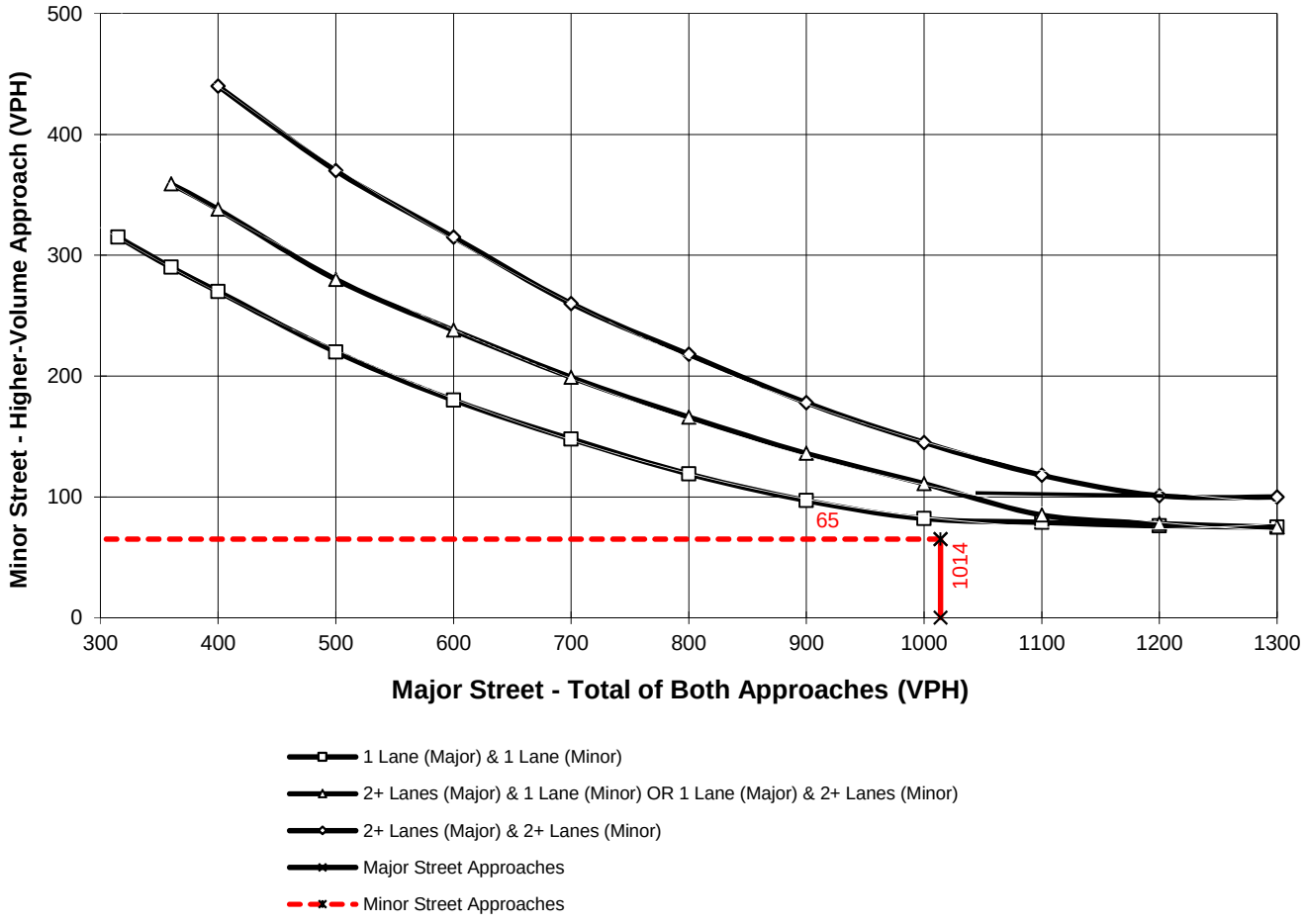
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2019) Conditions - Weekday PM Peak Hour**

Major Street Name = **Merrill Av.**
Total of Both Approaches (VPH) = **1014**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Bon View Av.**
High Volume Approach (VPH) = **65**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

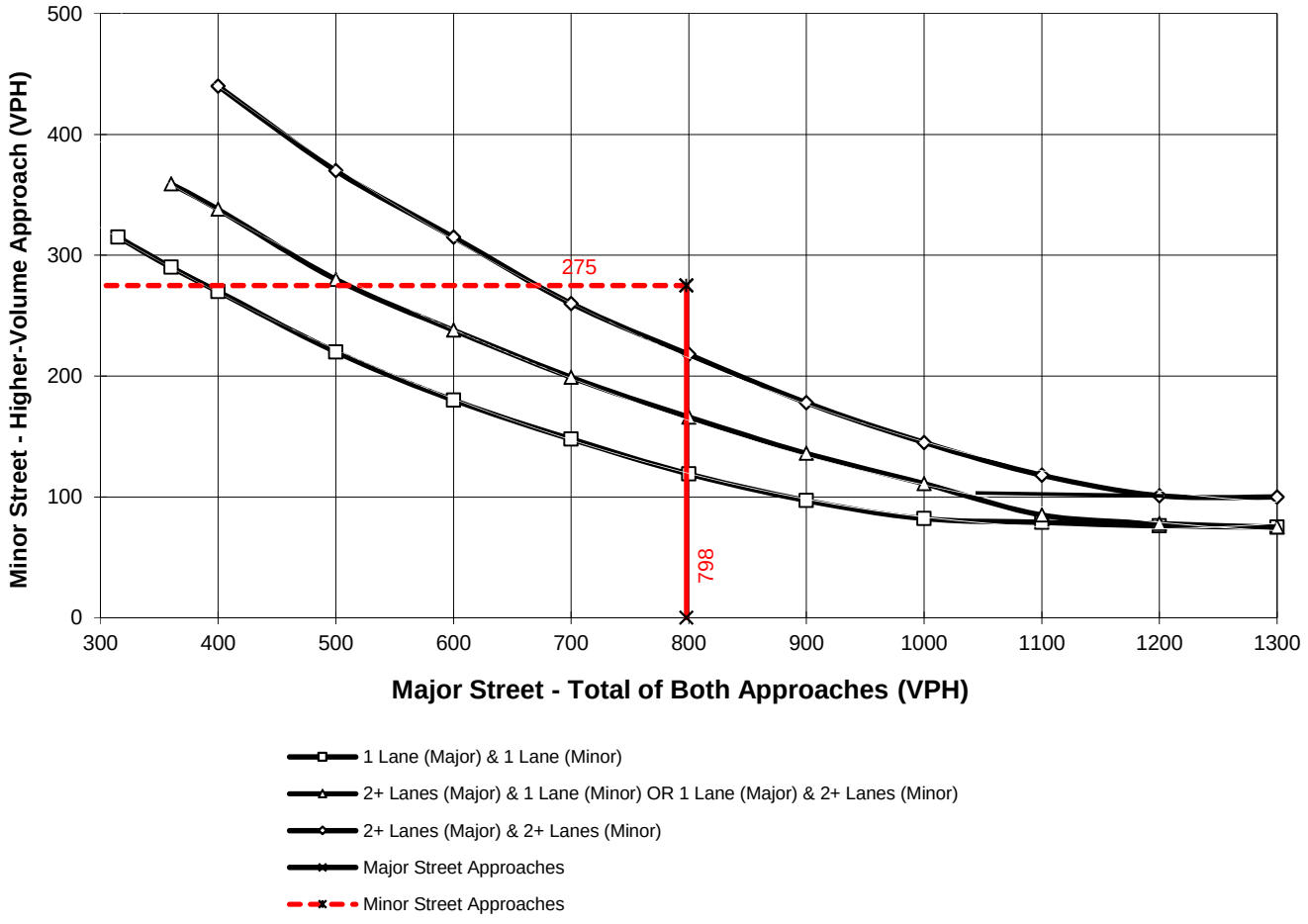
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2019) Conditions - Weekday PM Peak Hour**

Major Street Name = **Grove Av.**
Total of Both Approaches (VPH) = **798**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Chino Av.**
High Volume Approach (VPH) = **275**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

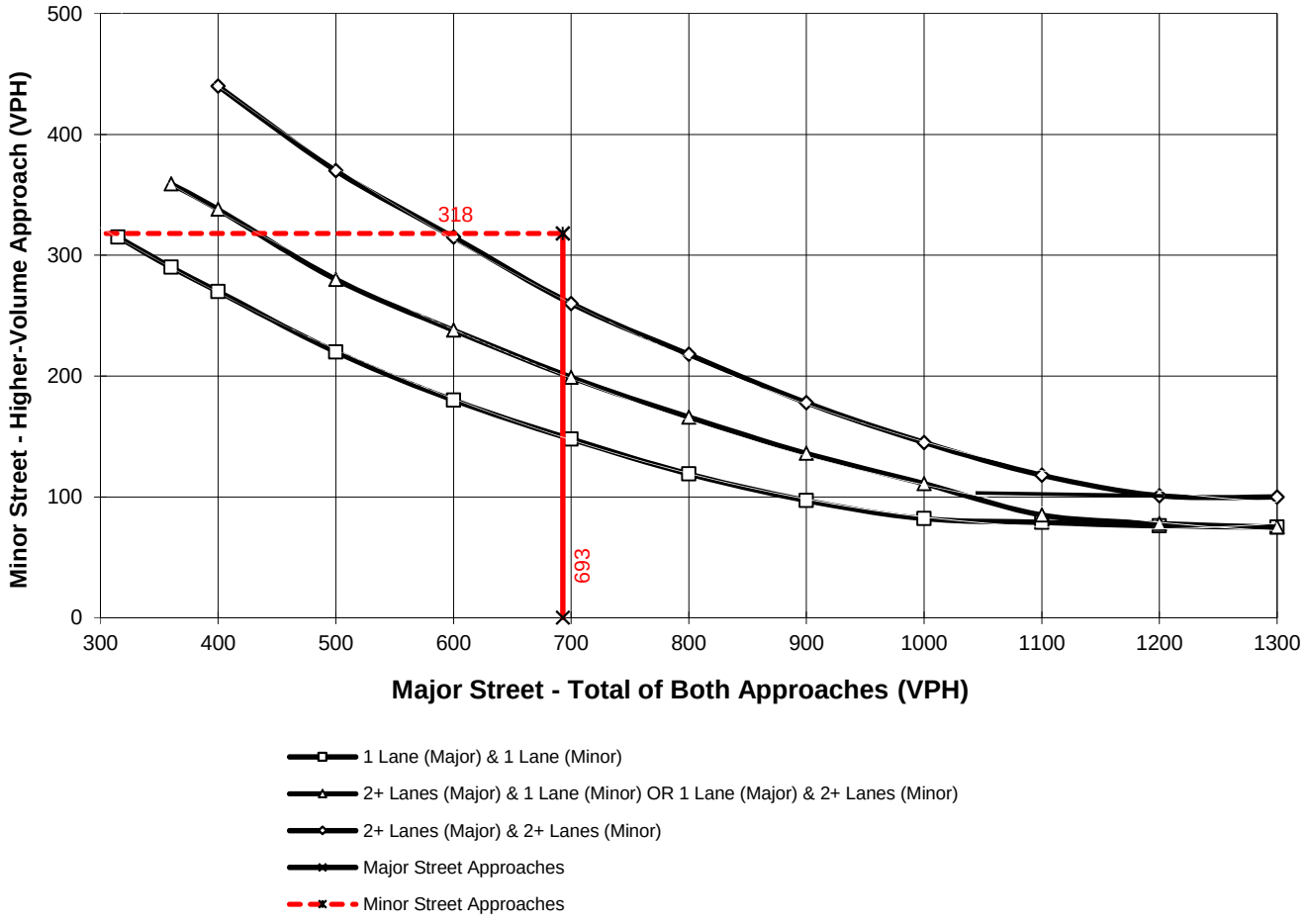
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2019) Conditions - Weekday PM Peak Hour**

Major Street Name = **Grove Av.**
Total of Both Approaches (VPH) = **693**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Schaefer Av.**
High Volume Approach (VPH) = **318**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

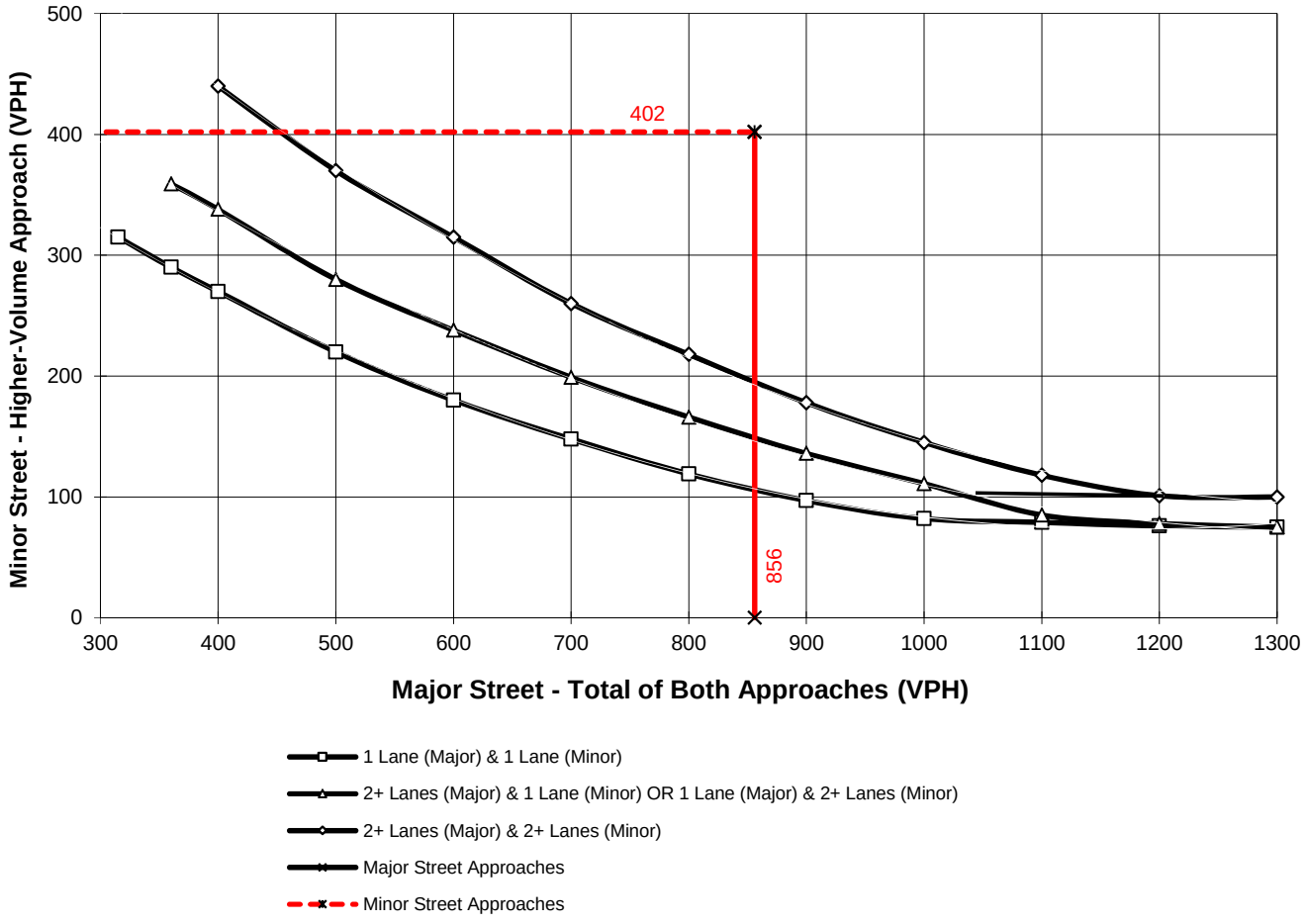
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2019) Conditions - Weekday PM Peak Hour**

Major Street Name = **Edison Av.**
Total of Both Approaches (VPH) = **856**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Grove Av.**
High Volume Approach (VPH) = **402**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

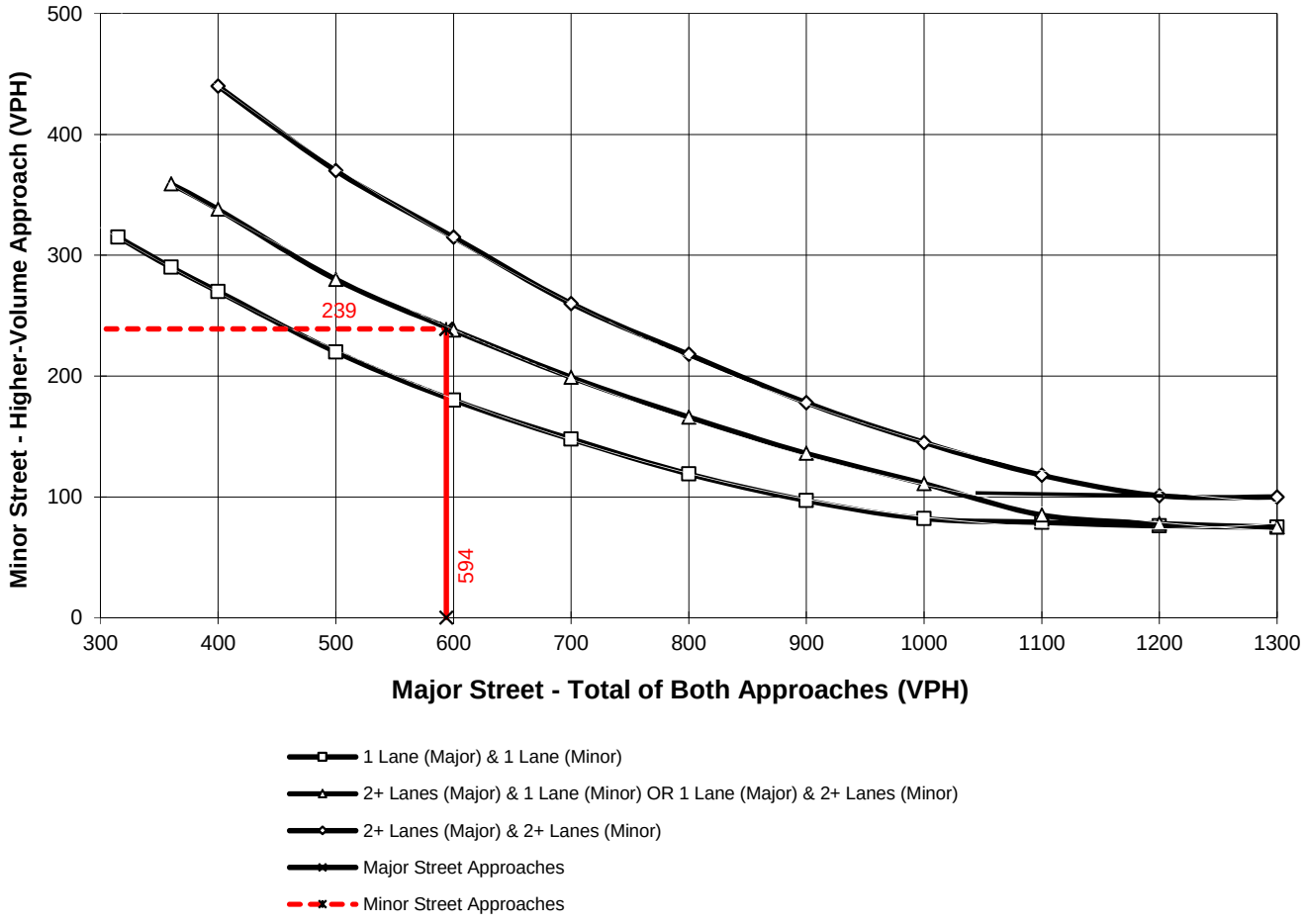
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2019) Conditions - Weekday PM Peak Hour**

Major Street Name = **Grove Av.** Total of Both Approaches (VPH) = **594**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Eucalyptus Av.** High Volume Approach (VPH) = **239**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

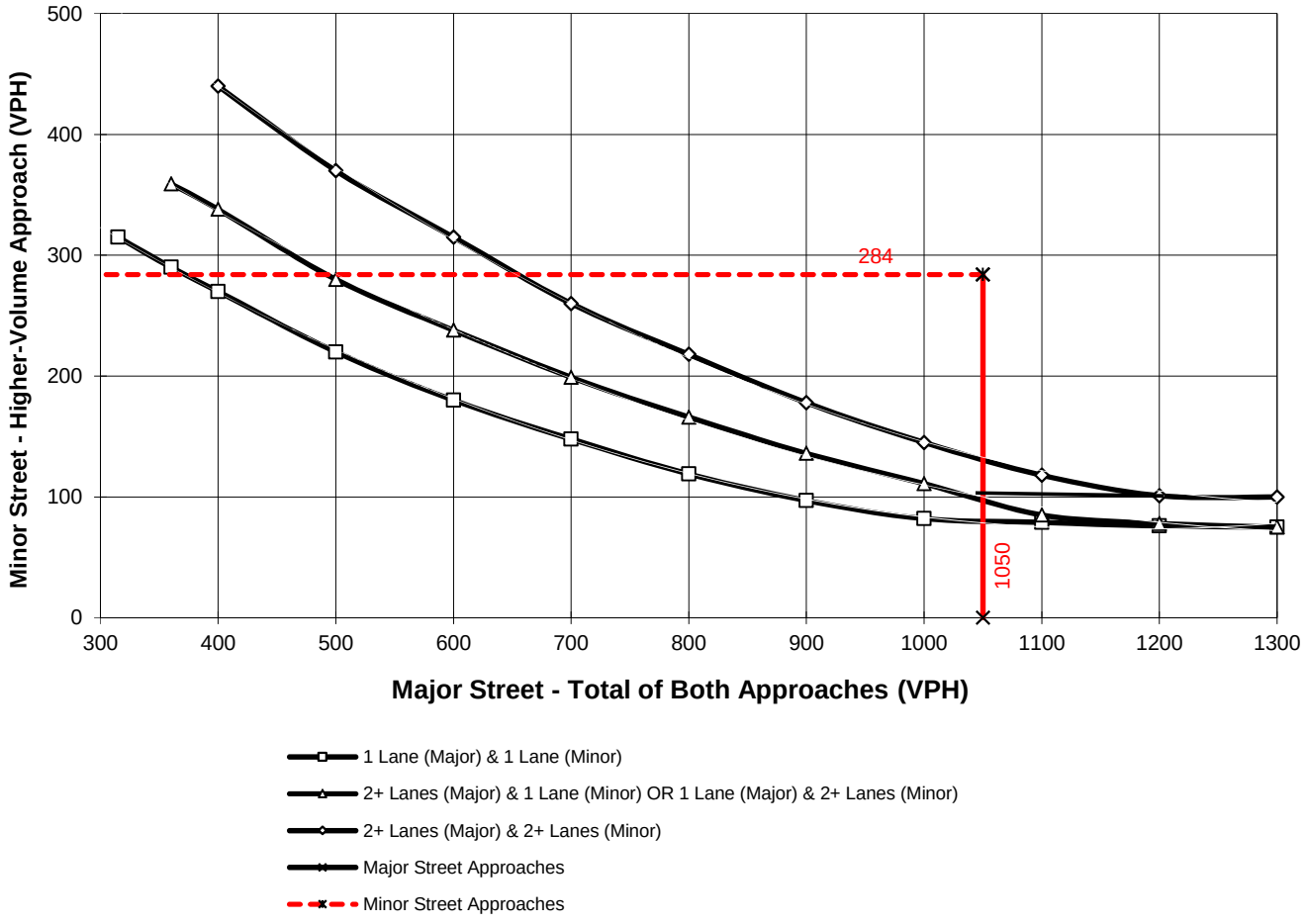
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2019) Conditions - Weekday PM Peak Hour**

Major Street Name = **Merrill Av.**
Total of Both Approaches (VPH) = **1050**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Grove Av.**
High Volume Approach (VPH) = **284**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

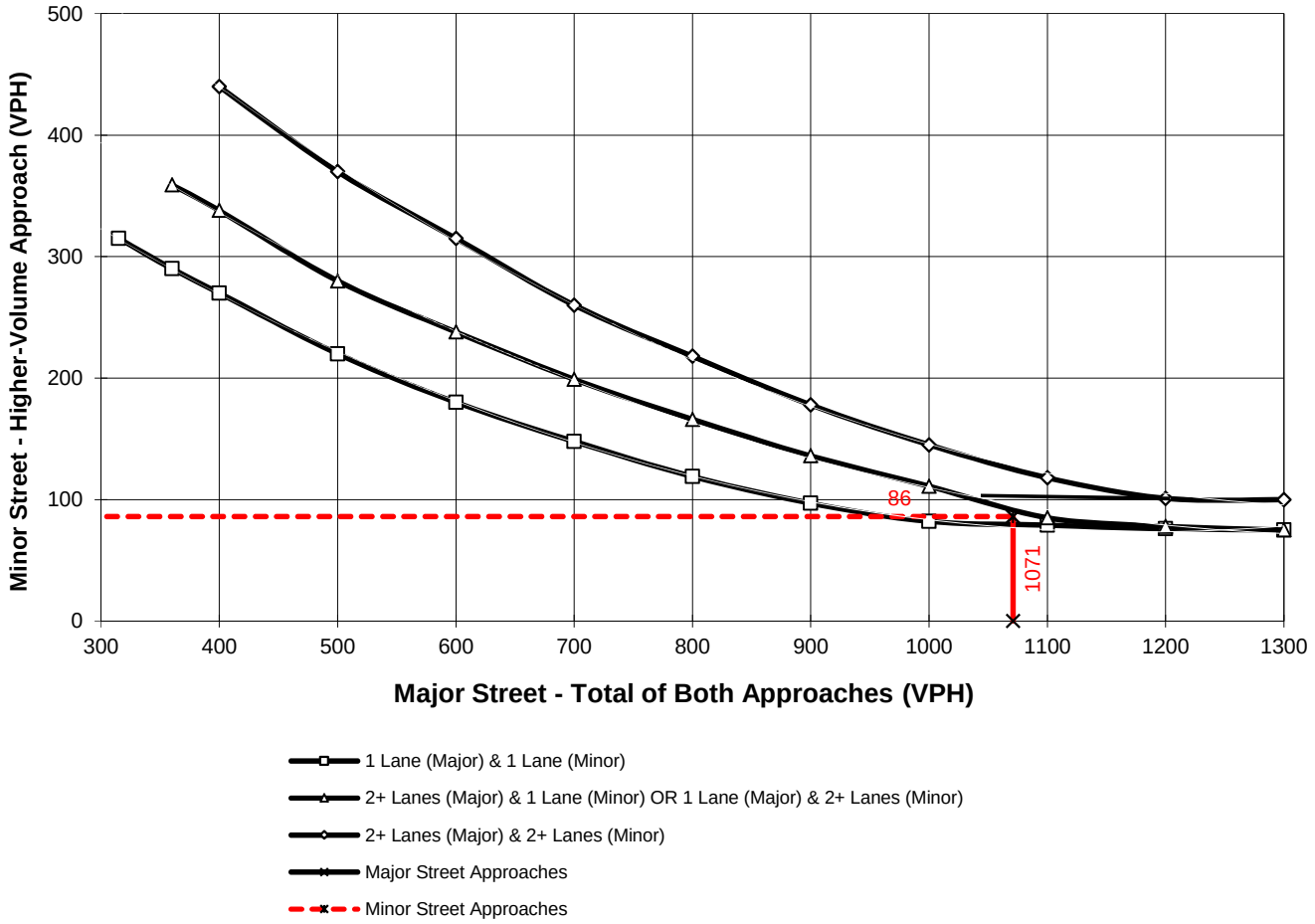
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2019) Conditions - Weekday PM Peak Hour**

Major Street Name = **Edison Av.**
Total of Both Approaches (VPH) = **1071**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Walker Av.**
High Volume Approach (VPH) = **86**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

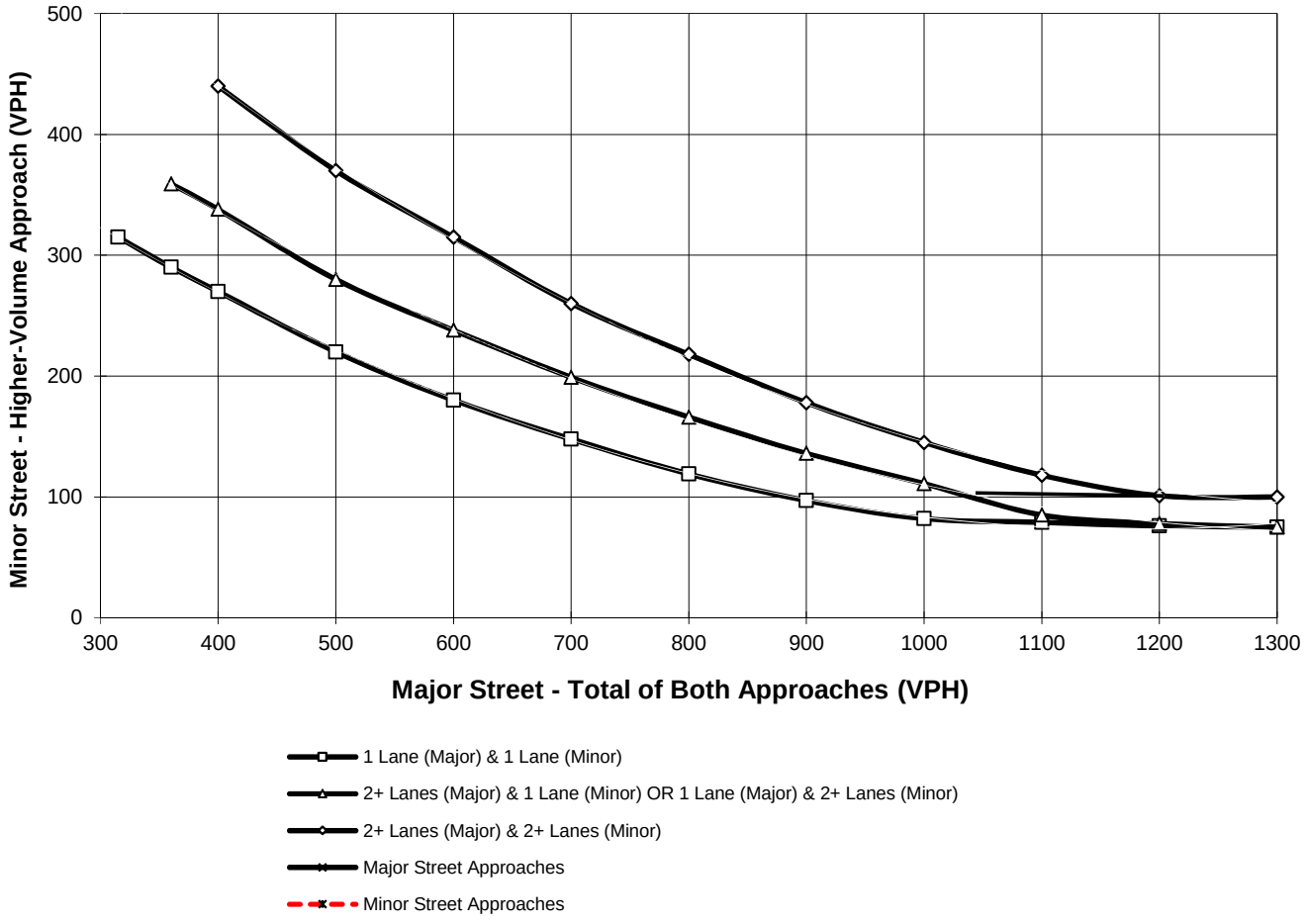
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2019) Conditions - Weekday PM Peak Hour**

Major Street Name = **Walker Av.** Total of Both Approaches (VPH) = **158**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Eucalyptus Av.** High Volume Approach (VPH) = **100**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

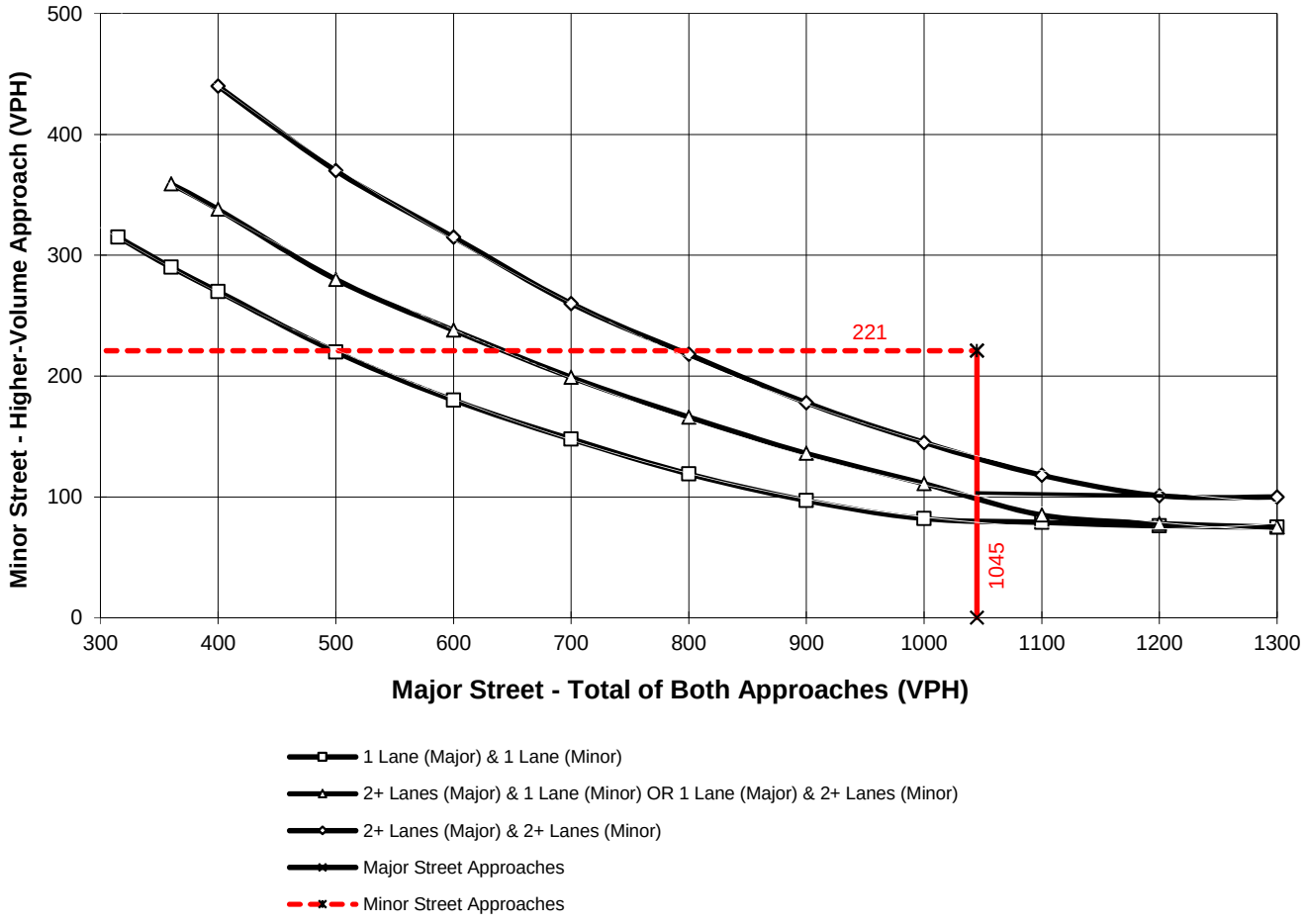
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2019) Conditions - Weekday PM Peak Hour**

Major Street Name = **Merrill Av.**
Total of Both Approaches (VPH) = **1045**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Walker Av.**
High Volume Approach (VPH) = **221**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

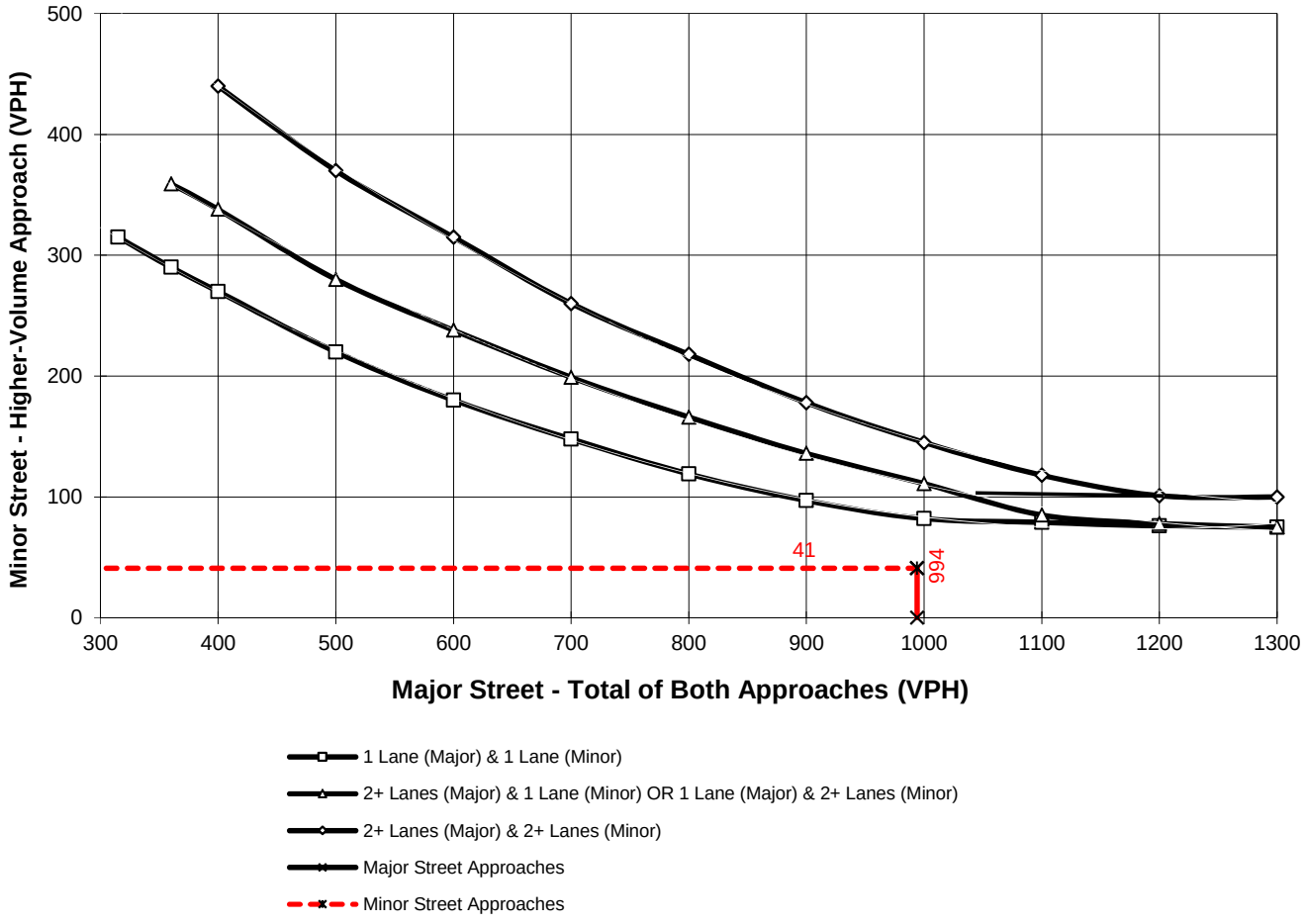
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2019) Conditions - Weekday PM Peak Hour**

Major Street Name = **Merrill Av.**
Total of Both Approaches (VPH) = **994**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Baker Av.**
High Volume Approach (VPH) = **41**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

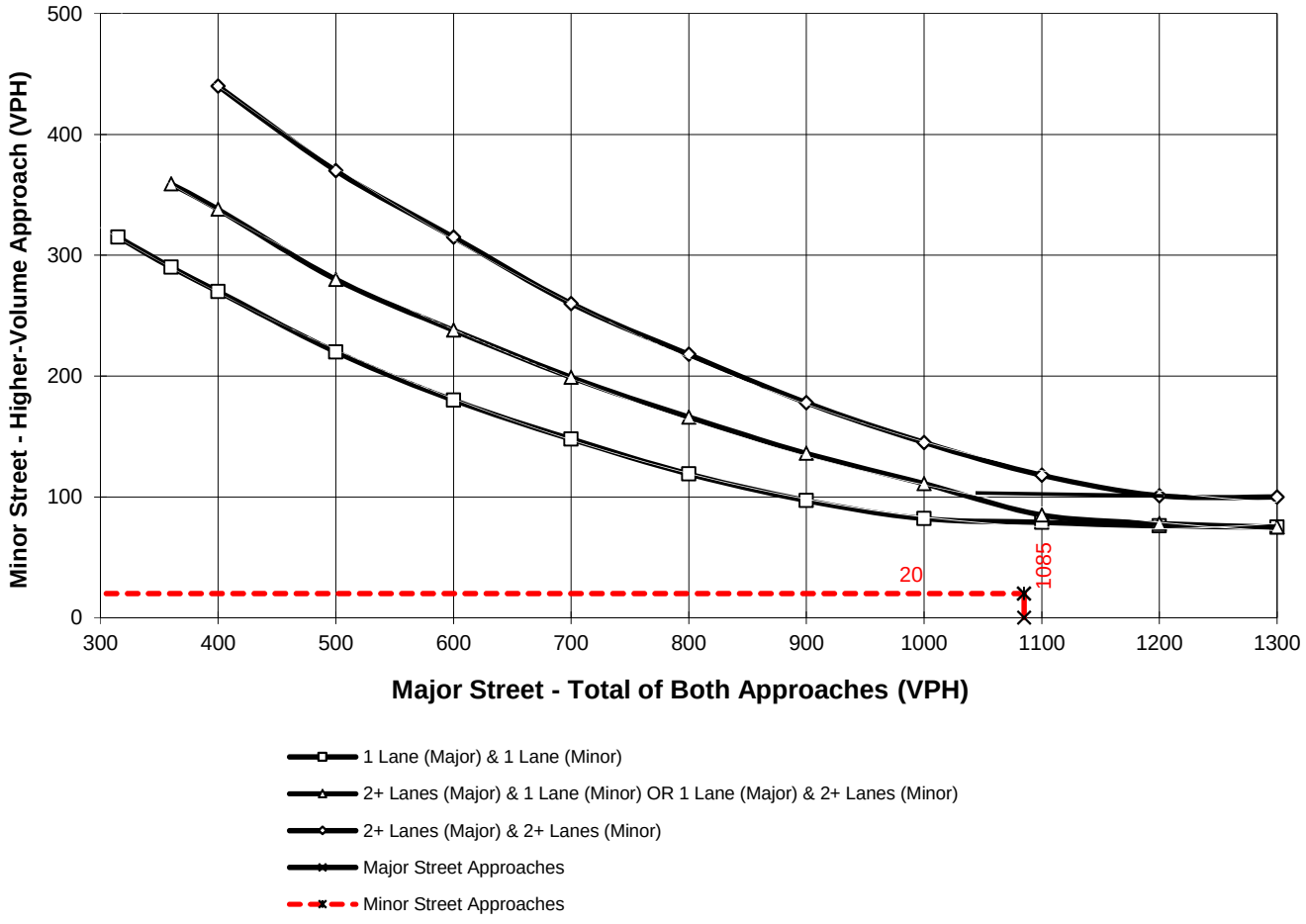
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2019) Conditions - Weekday PM Peak Hour**

Major Street Name = **Merrill Av.**
Total of Both Approaches (VPH) = **1085**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Hellman Av.**
High Volume Approach (VPH) = **20**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

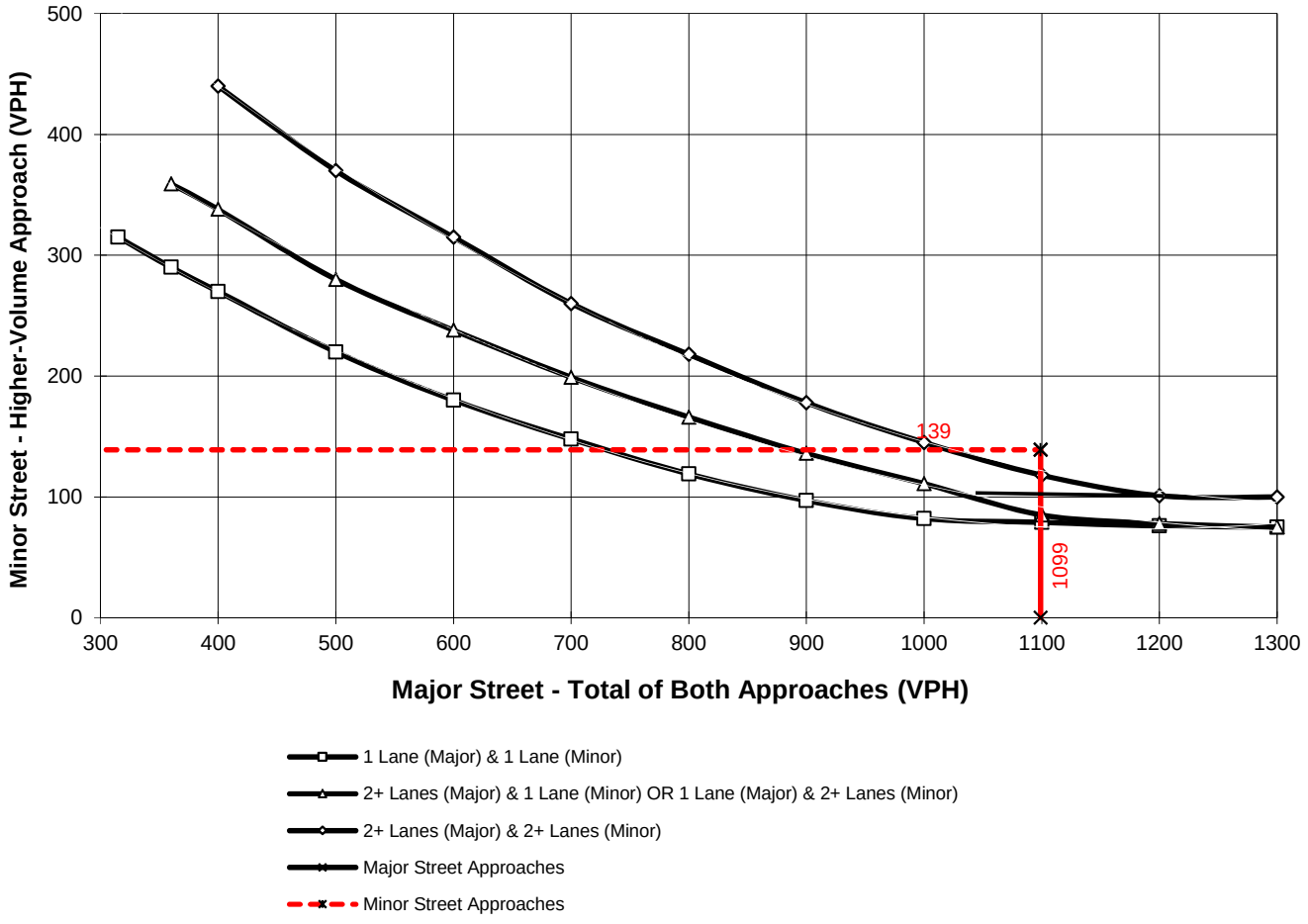
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2019) Conditions - Weekday PM Peak Hour**

Major Street Name = **Carpenter Av.**
Total of Both Approaches (VPH) = **1099**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Merrill Av.**
High Volume Approach (VPH) = **139**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

APPENDIX 3.4:

EXISTING (2019) CONDITIONS OFF-RAMP QUEUING ANALYSIS WORKSHEETS

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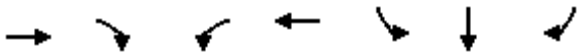
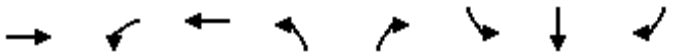


Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	864	235	74	1558	467	471	361
v/c Ratio	0.37	0.27	0.32	0.56	0.71	0.72	0.54
Control Delay	20.7	4.0	42.8	24.8	31.8	32.0	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.7	4.0	42.8	24.8	31.8	32.0	20.3
Queue Length 50th (ft)	136	0	24	274	258	262	134
Queue Length 95th (ft)	181	40	m32	326	300	302	173
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	2338	857	234	2788	806	808	801
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.27	0.32	0.56	0.58	0.58	0.45

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	731	199	281	19	294	333	335	41
v/c Ratio	0.89	0.62	0.17	0.12	0.87	0.66	0.66	0.07
Control Delay	43.8	42.2	18.2	36.4	38.0	31.1	31.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.8	42.2	18.2	36.4	38.0	31.1	31.1	0.2
Queue Length 50th (ft)	183	91	46	9	37	157	158	0
Queue Length 95th (ft)	#276	#247	80	29	#178	215	215	0
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	855	320	1672	155	339	640	645	693
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.62	0.17	0.12	0.87	0.52	0.52	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	347	1126	188	1168	290	295	71	45	729
v/c Ratio	0.93	0.47	0.12	0.84	0.51	0.51	0.11	0.29	0.86
Control Delay	74.6	19.1	0.1	44.0	31.1	31.1	0.8	46.8	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.6	19.1	0.1	44.0	31.1	31.1	0.8	46.8	17.1
Queue Length 50th (ft)	218	168	0	209	153	156	0	27	22
Queue Length 95th (ft)	#401	191	0	251	250	254	4	61	88
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	379	2386	1615	1396	574	582	627	202	907
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.47	0.12	0.84	0.51	0.51	0.11	0.22	0.80

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	699	307	787	976	46	667
v/c Ratio	0.70	0.50	0.98	0.35	0.10	0.86
Control Delay	26.4	8.8	52.3	3.3	33.6	17.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.4	8.8	52.3	3.3	33.6	17.5
Queue Length 50th (ft)	162	43	374	63	10	11
Queue Length 95th (ft)	m180	m69	#620	45	27	#203
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1263	712	800	3023	481	776
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.43	0.98	0.32	0.10	0.86

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	371	364	334	354	960	1007	500
v/c Ratio	0.83	0.84	0.68	0.84	0.43	0.57	0.57
Control Delay	47.9	47.3	25.4	37.3	18.1	27.5	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.9	0.0	0.0
Total Delay	47.9	47.3	25.4	37.3	19.0	27.5	5.6
Queue Length 50th (ft)	203	196	107	170	259	179	0
Queue Length 95th (ft)	306	#316	202	m263	335	241	79
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)	400		400	285			
Base Capacity (vph)	514	496	547	491	2251	1767	880
Starvation Cap Reductn	0	0	0	0	942	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.73	0.61	0.72	0.73	0.57	0.57

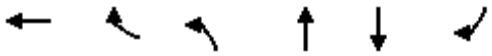
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	382	348	876	691	382	1237
v/c Ratio	0.88	0.78	0.70	0.72	0.89	0.54
Control Delay	54.9	37.2	29.9	8.4	51.6	5.0
Queue Delay	0.2	0.1	0.0	0.0	0.0	0.3
Total Delay	55.0	37.3	29.9	8.4	51.6	5.4
Queue Length 50th (ft)	211	149	238	22	114	48
Queue Length 95th (ft)	#363	#260	312	146	m#333	91
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	476	485	1260	960	461	2276
Starvation Cap Reductn	0	0	0	0	0	450
Spillback Cap Reductn	3	3	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.72	0.70	0.72	0.83	0.68

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	253	591	276	1126	723	602
v/c Ratio	0.38	0.93	0.87	0.58	0.62	0.66
Control Delay	29.1	54.3	58.6	22.4	38.9	6.7
Queue Delay	0.0	0.0	0.0	0.7	0.0	0.0
Total Delay	29.1	54.3	58.6	23.1	38.9	6.7
Queue Length 50th (ft)	136	379	229	296	266	0
Queue Length 95th (ft)	206	#598	m223	m289	337	101
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	709	675	351	1933	1158	911
Starvation Cap Reductn	0	0	0	442	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.88	0.79	0.76	0.62	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	672	200	1106	376	600
v/c Ratio	1.06	0.29	1.00	1.02	0.30
Control Delay	89.7	5.9	65.5	115.3	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	89.7	5.9	65.5	115.3	11.9
Queue Length 50th (ft)	~570	7	425	~322	76
Queue Length 95th (ft)	#801	57	#582	#521	118
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	636	680	1107	367	1991
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.06	0.29	1.00	1.02	0.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	444	523	700	1116	630
v/c Ratio	0.96	1.07	0.96	0.35	0.55
Control Delay	68.2	87.9	52.6	15.1	28.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	68.2	87.9	52.6	15.1	28.2
Queue Length 50th (ft)	249	~285	283	139	74
Queue Length 95th (ft)	#437	#483	#620	240	100
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	462	490	727	3181	1962
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.96	1.07	0.96	0.35	0.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	380	500	1973	162	662
v/c Ratio	0.75	0.83	0.75	0.68	0.22
Control Delay	38.8	29.5	24.8	41.6	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	38.8	29.5	24.8	41.6	20.0
Queue Length 50th (ft)	195	158	258	100	121
Queue Length 95th (ft)	271	265	#394	m134	m145
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	627	696	2647	300	3072
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.61	0.72	0.75	0.54	0.22

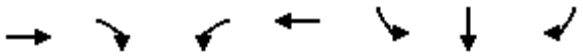
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1046	353	568	194	310	606	595
v/c Ratio	0.75	0.22	0.58	0.12	0.33	0.75	0.71
Control Delay	24.0	0.3	18.9	0.1	9.0	17.3	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	0.3	18.9	0.1	9.0	17.3	15.2
Queue Length 50th (ft)	126	0	101	0	60	151	136
Queue Length 95th (ft)	168	0	149	m0	105	#308	255
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1400	1615	974	1615	926	809	838
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.22	0.58	0.12	0.33	0.75	0.71

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1098	538	674	630	137	215	217
v/c Ratio	0.66	0.52	0.70	0.22	0.66	0.61	0.58
Control Delay	25.2	3.6	29.3	0.2	60.5	15.3	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.2	3.6	29.3	0.2	60.5	15.3	12.2
Queue Length 50th (ft)	299	0	90	1	98	10	0
Queue Length 95th (ft)	390	59	#253	2	157	85	68
Internal Link Dist (ft)	2412			735		968	
Turn Bay Length (ft)			200		400		
Base Capacity (vph)	1674	1028	959	2811	413	504	529
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.52	0.70	0.22	0.33	0.43	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

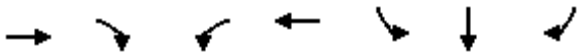
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	526	848	387	487	401	184
v/c Ratio	0.25	0.77	0.95	0.15	0.65	0.49
Control Delay	8.4	12.2	63.5	4.7	21.5	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.4	12.2	63.5	4.7	21.5	9.4
Queue Length 50th (ft)	20	143	73	22	47	0
Queue Length 95th (ft)	m45	236	#148	32	86	51
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2135	1107	408	3259	619	376
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.77	0.95	0.15	0.65	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	716	508	1101	394	158	169	170
v/c Ratio	0.73	0.19	0.70	0.43	0.63	0.49	0.47
Control Delay	24.7	6.2	29.4	4.1	55.0	13.6	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.7	6.2	29.4	4.1	55.0	13.6	10.2
Queue Length 50th (ft)	243	94	320	2	112	12	0
Queue Length 95th (ft)	318	149	456	65	171	74	58
Internal Link Dist (ft)		735	1069			1143	
Turn Bay Length (ft)	235				450		400
Base Capacity (vph)	981	2724	1564	919	506	541	567
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.19	0.70	0.43	0.31	0.31	0.30

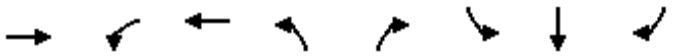
Intersection Summary



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1547	615	329	1488	480	481	518
v/c Ratio	0.79	0.62	0.76	0.53	0.74	0.74	0.78
Control Delay	32.6	5.2	50.7	18.8	33.8	33.8	31.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	5.2	50.7	18.8	33.8	33.8	31.5
Queue Length 50th (ft)	341	0	113	216	261	262	235
Queue Length 95th (ft)	372	53	m132	249	338	337	317
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	1956	992	444	2808	734	735	737
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.62	0.74	0.53	0.65	0.65	0.70

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	936	126	264	18	153	360	364	70
v/c Ratio	0.91	0.57	0.16	0.16	0.62	0.66	0.66	0.12
Control Delay	43.1	44.4	24.1	38.8	19.1	29.9	29.8	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.1	44.4	24.1	38.8	19.1	29.9	29.8	0.4
Queue Length 50th (ft)	240	62	56	9	0	167	169	0
Queue Length 95th (ft)	#376	#173	98	29	#65	230	232	1
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	1026	221	1675	115	246	662	670	711
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.57	0.16	0.16	0.62	0.54	0.54	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	376	1616	324	1709	221	308	220	166	818
v/c Ratio	0.96	0.57	0.20	0.89	0.69	0.94	0.54	0.78	0.89
Control Delay	74.1	18.8	0.2	41.2	50.2	77.3	21.0	67.7	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.1	18.8	0.2	41.2	50.2	77.3	21.0	67.7	22.2
Queue Length 50th (ft)	261	260	0	306	140	205	51	103	53
Queue Length 95th (ft)	m#404	309	m0	#383	#240	#376	125	#197	#168
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	398	2834	1615	1915	324	332	410	232	940
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.57	0.20	0.89	0.68	0.93	0.54	0.72	0.87

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	937	174	413	1091	148	1055
v/c Ratio	0.81	0.29	1.26	0.55	0.12	1.28
Control Delay	26.3	7.4	171.8	12.8	18.7	155.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.3	7.4	171.8	12.8	18.7	155.1
Queue Length 50th (ft)	172	16	~263	163	26	~555
Queue Length 95th (ft)	m214	m23	#406	195	44	#732
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1263	644	327	2075	1238	823
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.27	1.26	0.53	0.12	1.28

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	350	350	318	243	1077	1007	493
v/c Ratio	0.78	0.81	0.70	0.77	0.48	0.49	0.53
Control Delay	43.2	44.0	29.4	39.3	20.6	23.1	4.7
Queue Delay	0.0	0.0	0.0	0.0	1.6	0.0	0.0
Total Delay	43.2	44.0	29.4	39.3	22.2	23.1	4.7
Queue Length 50th (ft)	190	190	123	125	315	159	0
Queue Length 95th (ft)	276	284	207	m184	417	228	72
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)				285			400
Base Capacity (vph)	552	528	545	391	2247	2062	939
Starvation Cap Reductn	0	0	0	0	931	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.66	0.58	0.62	0.82	0.49	0.53

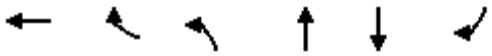
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	367	356	886	562	368	1211
v/c Ratio	0.88	0.81	0.68	0.61	0.88	0.52
Control Delay	56.0	40.0	28.6	5.3	48.6	5.0
Queue Delay	5.2	2.5	0.0	0.0	0.0	0.3
Total Delay	61.1	42.5	28.6	5.3	48.6	5.3
Queue Length 50th (ft)	205	152	238	0	108	41
Queue Length 95th (ft)	#352	#288	311	76	#315	86
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	457	474	1310	928	461	2312
Starvation Cap Reductn	0	0	0	0	0	450
Spillback Cap Reductn	49	46	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.83	0.68	0.61	0.80	0.65

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	290	342	206	866	989	663
v/c Ratio	0.78	0.72	0.77	0.34	0.54	0.59
Control Delay	59.0	28.3	53.5	10.1	23.1	4.1
Queue Delay	1.3	0.0	0.0	0.4	0.0	0.0
Total Delay	60.3	28.3	53.5	10.5	23.1	4.1
Queue Length 50th (ft)	213	115	171	169	266	0
Queue Length 95th (ft)	291	209	m201	m228	403	78
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	484	566	351	2514	1842	1128
Starvation Cap Reductn	0	0	0	1001	0	0
Spillback Cap Reductn	68	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.60	0.59	0.57	0.54	0.59

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	437	345	987	449	870
v/c Ratio	0.93	0.62	0.82	0.94	0.37
Control Delay	71.5	23.3	41.0	78.7	7.9
Queue Delay	0.0	0.0	0.0	1.8	0.1
Total Delay	71.5	23.3	41.0	80.5	8.0
Queue Length 50th (ft)	328	109	356	288	106
Queue Length 95th (ft)	#517	212	#454	#541	125
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	484	565	1203	502	2323
Starvation Cap Reductn	0	0	0	12	464
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.90	0.61	0.82	0.92	0.47

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	397	264	395	491	1541
v/c Ratio	0.86	0.43	0.89	0.15	0.74
Control Delay	52.1	6.1	68.0	20.3	27.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	52.1	6.1	68.0	20.3	27.8
Queue Length 50th (ft)	216	0	188	83	214
Queue Length 95th (ft)	#374	58	#328	117	259
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	472	616	481	3213	2093
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.84	0.43	0.82	0.15	0.74

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	105	556	1312	384	1095
v/c Ratio	0.18	0.94	0.64	1.18	0.39
Control Delay	21.6	50.9	24.0	127.7	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.6	50.9	24.0	127.7	20.2
Queue Length 50th (ft)	41	260	156	~292	225
Queue Length 95th (ft)	78	#465	195	m#442	271
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	625	613	2040	326	2795
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.17	0.91	0.64	1.18	0.39

Intersection Summary

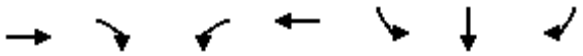
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1053	506	457	431	269	505	494
v/c Ratio	0.75	0.31	0.47	0.27	0.29	0.61	0.57
Control Delay	24.1	0.5	16.2	0.9	8.6	11.2	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	0.5	16.2	0.9	8.6	11.2	10.4
Queue Length 50th (ft)	127	0	44	0	50	93	84
Queue Length 95th (ft)	170	0	88	0	90	186	167
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1400	1615	974	1615	926	832	860
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.31	0.47	0.27	0.29	0.61	0.57

Intersection Summary



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1118	509	523	948	119	210	212
v/c Ratio	0.56	0.45	0.77	0.33	0.63	0.68	0.67
Control Delay	18.4	2.9	46.5	0.6	60.6	23.3	23.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.4	2.9	46.5	0.6	60.6	23.3	23.1
Queue Length 50th (ft)	255	0	123	1	86	32	32
Queue Length 95th (ft)	387	56	178	2	142	112	108
Internal Link Dist (ft)	2412			735		968	
Turn Bay Length (ft)			200		400		
Base Capacity (vph)	2003	1122	689	2849	413	482	494
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.45	0.76	0.33	0.29	0.44	0.43

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	668	744	307	708	303	140
v/c Ratio	0.33	0.67	0.75	0.22	0.47	0.39
Control Delay	11.4	8.4	39.5	5.5	17.5	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	8.4	39.5	5.5	17.5	8.4
Queue Length 50th (ft)	38	103	56	36	34	0
Queue Length 95th (ft)	m56	m125	#109	50	65	45
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2048	1113	408	3172	649	361
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.67	0.75	0.22	0.47	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	455	783	1100	188	320	405	398
v/c Ratio	0.76	0.33	0.70	0.23	0.75	0.78	0.76
Control Delay	40.2	21.0	29.6	4.4	48.9	29.8	27.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.2	21.0	29.6	4.4	48.9	29.8	27.5
Queue Length 50th (ft)	160	261	334	1	215	149	135
Queue Length 95th (ft)	218	340	455	47	308	272	248
Internal Link Dist (ft)		735	1069			1143	
Turn Bay Length (ft)	235				450		400
Base Capacity (vph)	684	2348	1581	801	506	575	588
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.33	0.70	0.23	0.63	0.70	0.68

Intersection Summary

APPENDIX 3.5:

EXISTING (2019) CONDITIONS FREEWAY FACILITY ANALYSIS WORKSHEETS

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2501	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	734
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.31
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	10.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2501	950
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	8.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.926	0.893
Flow Rate (vi),pc/h	2936	1156
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.31	0.28

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	4.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.402
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	659
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	58.7
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	1619	Ramp Junction Speed (S), mi/h	65.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	11.2
Level of Service (LOS)	A		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	389	428
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	13.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.885
Flow Rate (vi),pc/h	448	526
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.20	0.28

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	9.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.306
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	448	Ramp Junction Speed (S), mi/h	61.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	974	Average Density (D), pc/mi/ln	7.9
Level of Service (LOS)	A		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1440	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	854
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.36
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	12.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4092	Heavy Vehicle Adjustment Factor (f_{HV})	0.787
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1413
Total Trucks, %	27.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.59
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3452	640
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	29.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.775	0.855
Flow Rate (vi),pc/h	4842	814
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.79	0.39

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	25.5
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.363
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1840
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	59.8
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	65.2
Flow in Lanes 1 and 2 (v12), pc/h	3002	Ramp Junction Speed (S), mi/h	61.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	3816	Average Density (D), pc/mi/ln	30.7
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1319	596
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	31.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.763	0.909
Flow Rate (vi),pc/h	1879	713
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.26	0.17

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	13.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.362
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	641
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.9
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	1238	Ramp Junction Speed (S), mi/h	64.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	9.7
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1319	Heavy Vehicle Adjustment Factor (f_{HV})	0.763
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	626
Total Trucks, %	31.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.26
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	8.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7219	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2060
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.86
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.6
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6531	688
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.855
Flow Rate (vi),pc/h	7311	875
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.85	0.42

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	28.1
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.400
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2194
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	58.8
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.108	Outer Lanes Freeway Speed (SO), mi/h	63.9
Flow in Lanes 1 and 2 (v12), pc/h	2924	Ramp Junction Speed (S), mi/h	61.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	3799	Average Density (D), pc/mi/ln	33.3
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.952	8326	9548	0.87	60.3	34.5	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.952	0.833	8326	838	9600	2100	0.87	0.40	65.5	59.6	31.8	35.2	E

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	7514	9548	0.79	63.9	29.4	D

Segment 4: Merge

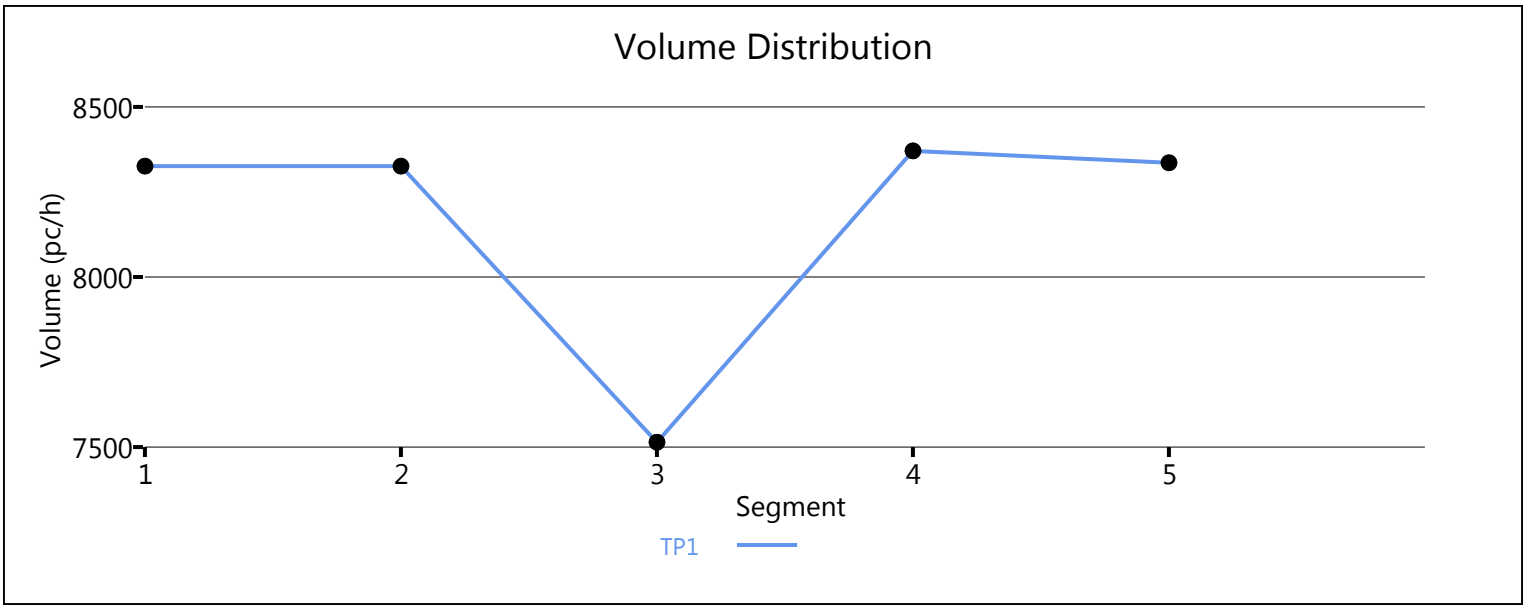
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.826	8371	857	9600	2100	0.87	0.41	61.2	58.5	34.2	28.5	D

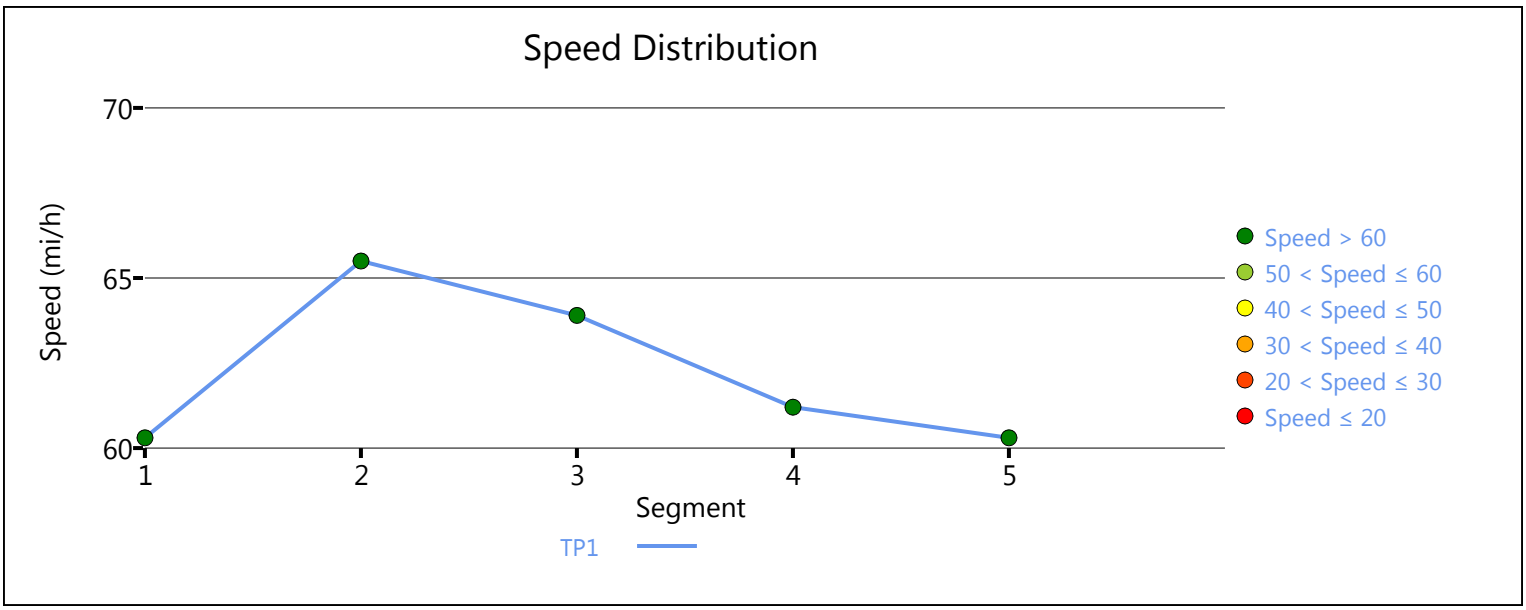
Segment 5: Basic

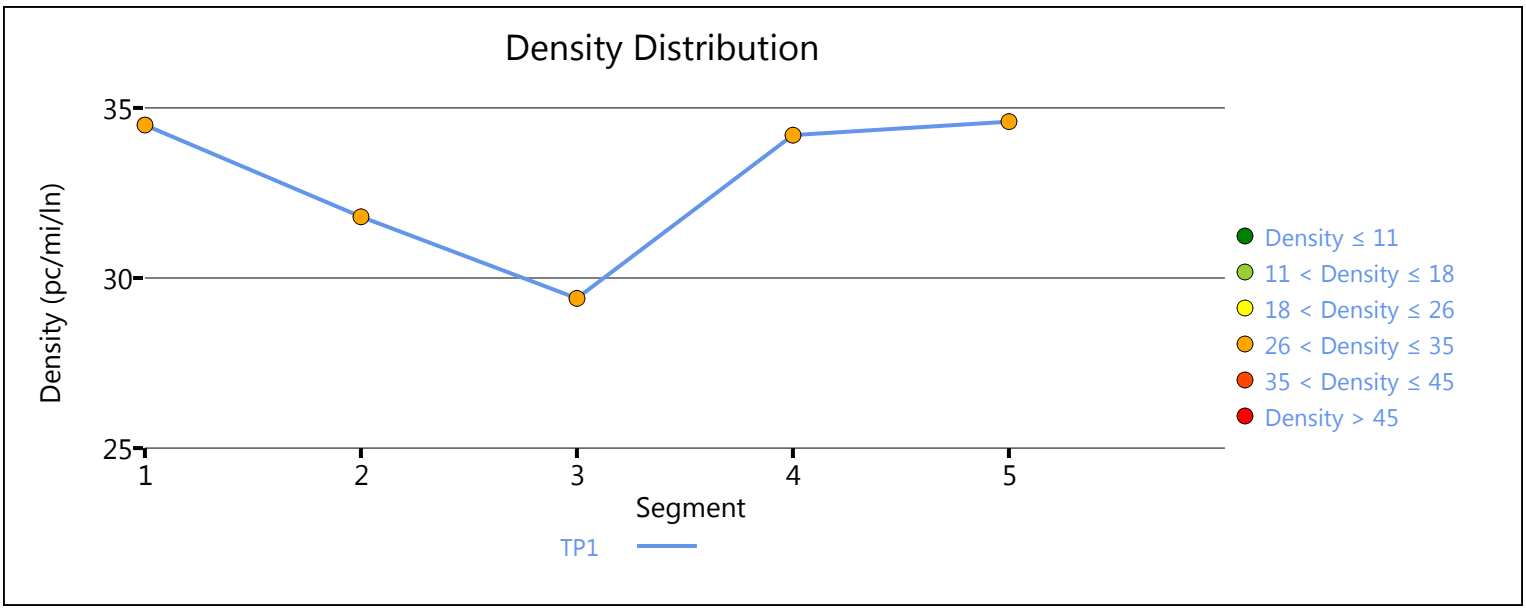
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.952	8336	9548	0.87	60.3	34.6	D

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	61.9	33.0	31.6	1.8	D

Facility Overall Results			
Space Mean Speed, mi/h	61.9	Density, veh/mi/ln	31.6
Average Travel Time, min	1.8	Density, pc/mi/ln	33.0







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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	5251	727
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	15.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.870
Flow Rate (vi),pc/h	6053	908
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.50	0.43

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	27.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.380
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1195
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.4
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.0
Flow in Lanes 1 and 2 (v12), pc/h	2755	Ramp Junction Speed (S), mi/h	66.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	18.3
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5251	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1211
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.50
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7048	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1954
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.81
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7048	584
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.855
Flow Rate (vi),pc/h	7817	742
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.65	0.35

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	26.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.365
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1554
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.8
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	74.6
Flow in Lanes 1 and 2 (v12), pc/h	3145	Ramp Junction Speed (S), mi/h	66.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	23.6
Level of Service (LOS)	C		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.980	8096	9548	0.85	61.5	32.9	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.980	0.885	8096	850	9600	2100	0.84	0.40	65.5	59.5	30.9	34.0	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.990	7254	9548	0.76	64.9	28.0	D

Segment 4: Merge

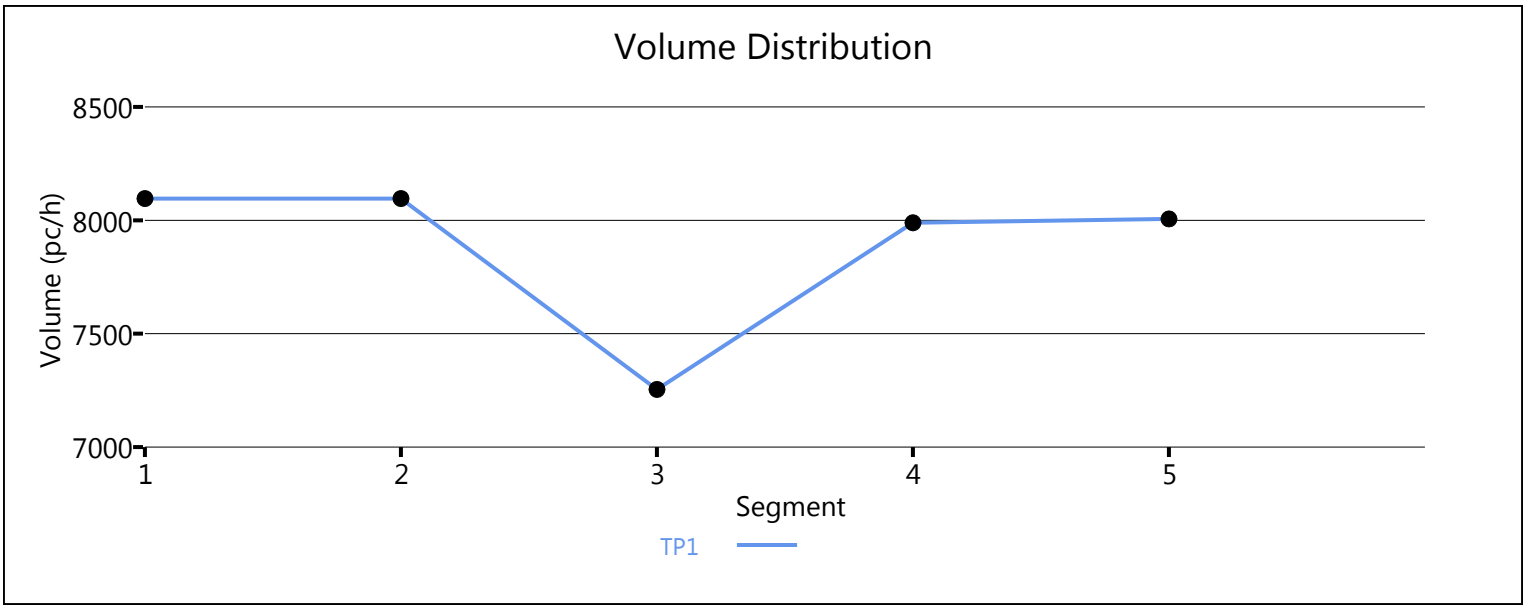
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.990	0.806	7989	735	9600	2100	0.83	0.35	62.0	59.8	32.2	26.4	C

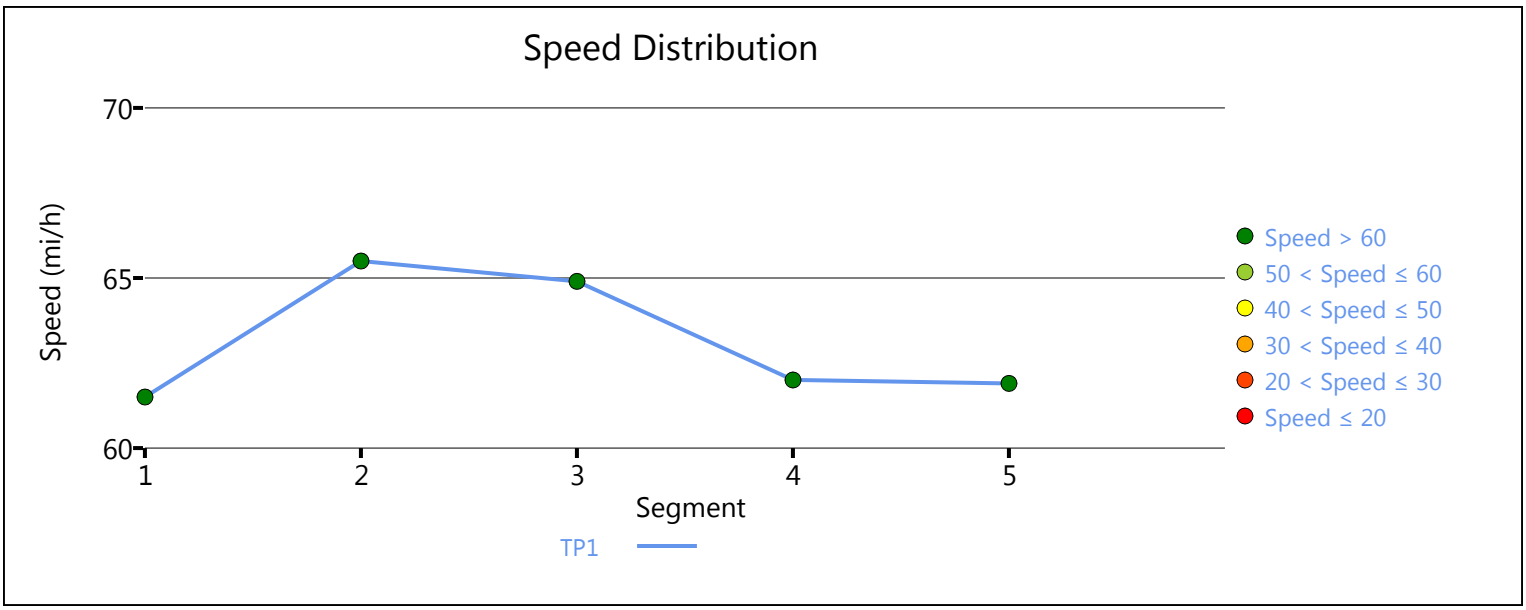
Segment 5: Basic

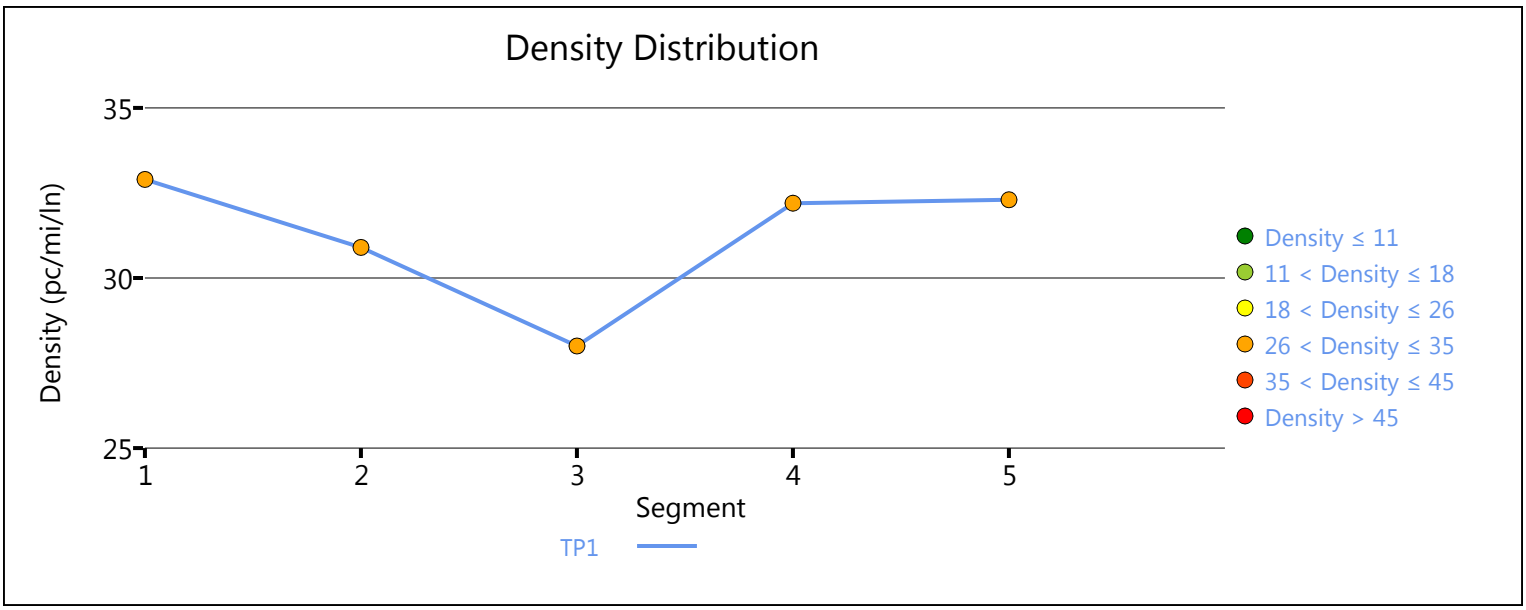
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	8006	9548	0.84	61.9	32.3	D

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	63.0	31.2	30.6	1.7	D

Facility Overall Results			
Space Mean Speed, mi/h	63.0	Density, veh/mi/ln	30.6
Average Travel Time, min	1.7	Density, pc/mi/ln	31.2







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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4343	607
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.855
Flow Rate (vi),pc/h	4768	772
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.58	0.37

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	19.4
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.282
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1431
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	62.1
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.121	Outer Lanes Freeway Speed (SO), mi/h	66.7
Flow in Lanes 1 and 2 (v12), pc/h	1907	Ramp Junction Speed (S), mi/h	64.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	2679	Average Density (D), pc/mi/ln	21.5
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4950	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1385
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4534	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1294
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.54
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4534	1131
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.862
Flow Rate (vi),pc/h	5177	1426
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.54	0.68

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	27.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.426
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1058
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.6
Flow in Lanes 1 and 2 (v12), pc/h	3061	Ramp Junction Speed (S), mi/h	64.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	20.1
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3272	1092
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	4.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.962
Flow Rate (vi),pc/h	3663	1234
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.68	0.59

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	1470.0	Density in Ramp Influence Area (DR), pc/mi/ln	25.3
Distance to Upstream Ramp (LUP), ft	1930	Speed Index (M)	0.349
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1440
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	60.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	66.6
Flow in Lanes 1 and 2 (v12), pc/h	2223	Ramp Junction Speed (S), mi/h	62.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	3457	Average Density (D), pc/mi/ln	26.3
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4364	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1628
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.68
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5107	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1133
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.47
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4105	1002
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	0.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	1.000	0.909
Flow Rate (vi),pc/h	4462	1198
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.79	0.63

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	116.2	Density in Ramp Influence Area (DR), pc/mi/ln	34.5
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.491
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1883
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	56.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	65.0
Flow in Lanes 1 and 2 (v12), pc/h	2579	Ramp Junction Speed (S), mi/h	58.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	3777	Average Density (D), pc/mi/ln	32.0
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3989	464
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.971
Flow Rate (vi),pc/h	4380	519
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.61	0.25

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	25.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.345
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1440
Distance to Downstream Ramp (LDOWN), ft	2000	Off-Ramp Influenece Area Speed (SR), mi/h	60.3
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.627	Outer Lanes Freeway Speed (SO), mi/h	75.1
Flow in Lanes 1 and 2 (v12), pc/h	2940	Ramp Junction Speed (S), mi/h	64.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	22.6
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3989	Heavy Vehicle Adjustment Factor (f_{HV})	0.990
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1460
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.61
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4085	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1166
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.49
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4085	1132
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.926
Flow Rate (vi),pc/h	4664	1329
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.49	0.32

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	9.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.418
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1234
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	58.3
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	75.9
Flow in Lanes 1 and 2 (v12), pc/h	2196	Ramp Junction Speed (S), mi/h	66.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	17.5
Level of Service (LOS)	A		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	277	643
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	11.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.901	0.943
Flow Rate (vi),pc/h	334	741
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.22	0.39

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	10.4
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.307
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	334	Ramp Junction Speed (S), mi/h	61.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	1075	Average Density (D), pc/mi/ln	8.8
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1570	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	905
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.38
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	12.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3580	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1032
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.43
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2591	989
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	2987	1140
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.57	0.54

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	19.0
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.264
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1135
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	62.6
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	67.7
Flow in Lanes 1 and 2 (v12), pc/h	1852	Ramp Junction Speed (S), mi/h	63.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	2992	Average Density (D), pc/mi/ln	21.5
Level of Service (LOS)	B		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2648	971
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	14.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.877	0.943
Flow Rate (vi),pc/h	3282	1119
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.46	0.27

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	21.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.399
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1190
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.8
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	76.0
Flow in Lanes 1 and 2 (v12), pc/h	2092	Ramp Junction Speed (S), mi/h	64.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	17.1
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2648	Heavy Vehicle Adjustment Factor (f_{HV})	0.877
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1094
Total Trucks, %	14.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.46
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.6
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7029	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1967
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6394	635
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.901
Flow Rate (vi),pc/h	7158	766
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.83	0.36

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	26.9
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.373
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2148
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	59.6
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.122	Outer Lanes Freeway Speed (SO), mi/h	64.1
Flow in Lanes 1 and 2 (v12), pc/h	2863	Ramp Junction Speed (S), mi/h	62.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	3629	Average Density (D), pc/mi/ln	32.0
Level of Service (LOS)	C		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	7881	9548	0.83	62.4	31.6	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.855	7881	639	9600	2100	0.82	0.30	66.0	60.0	29.9	32.6	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	7245	9548	0.76	64.9	27.9	D

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.971	0.917	8133	888	9600	2100	0.85	0.42	61.5	58.9	33.1	27.8	C

Segment 5: Basic

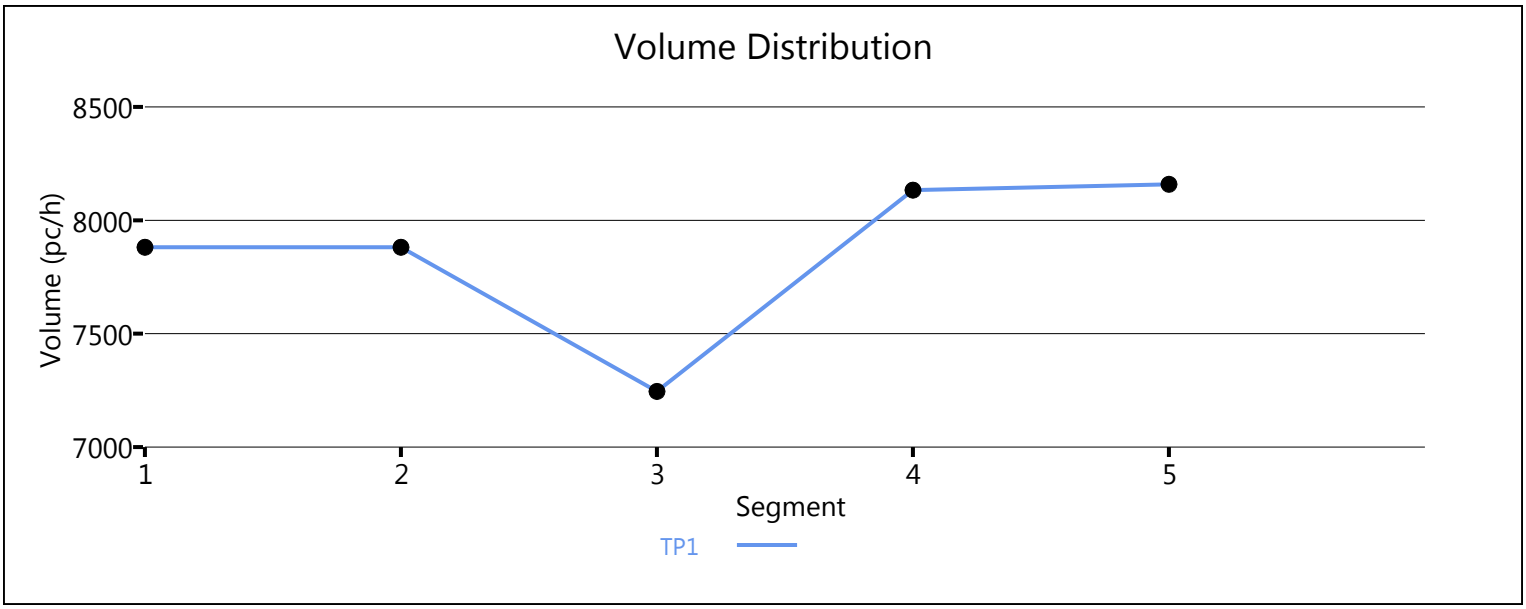
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	8159	9548	0.85	61.2	33.3	D

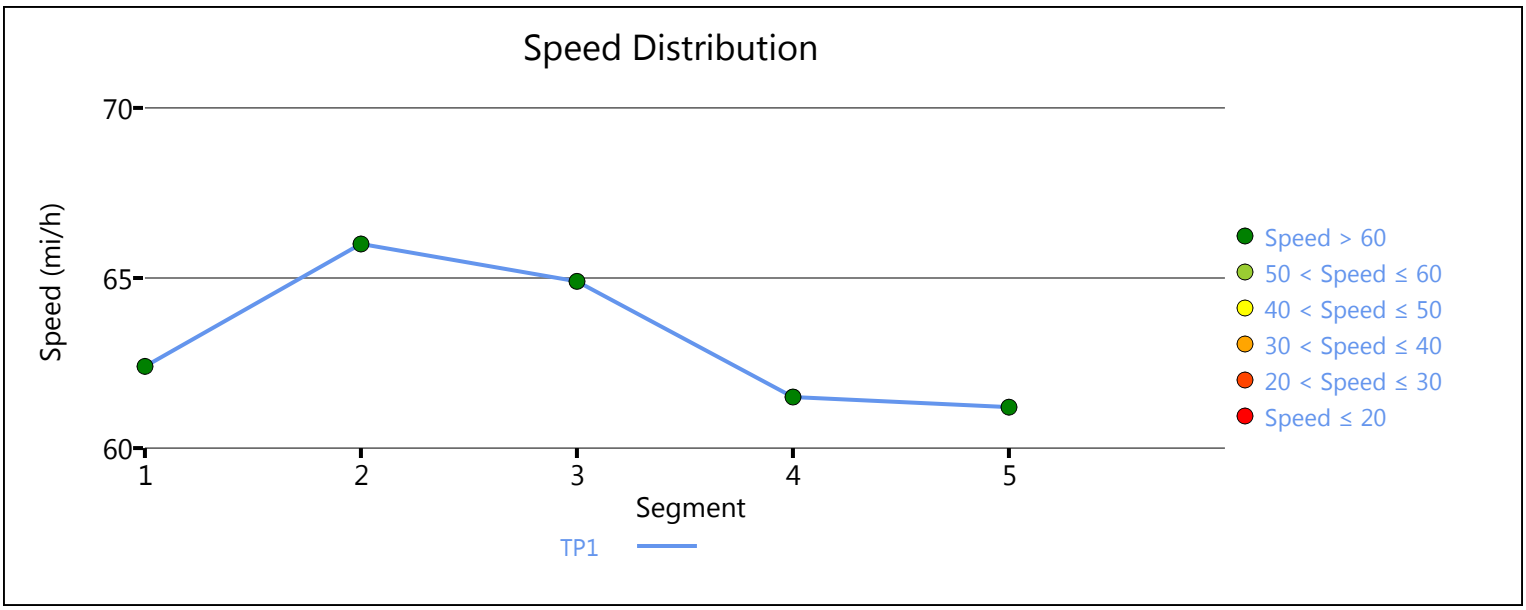
Facility Time Period Results

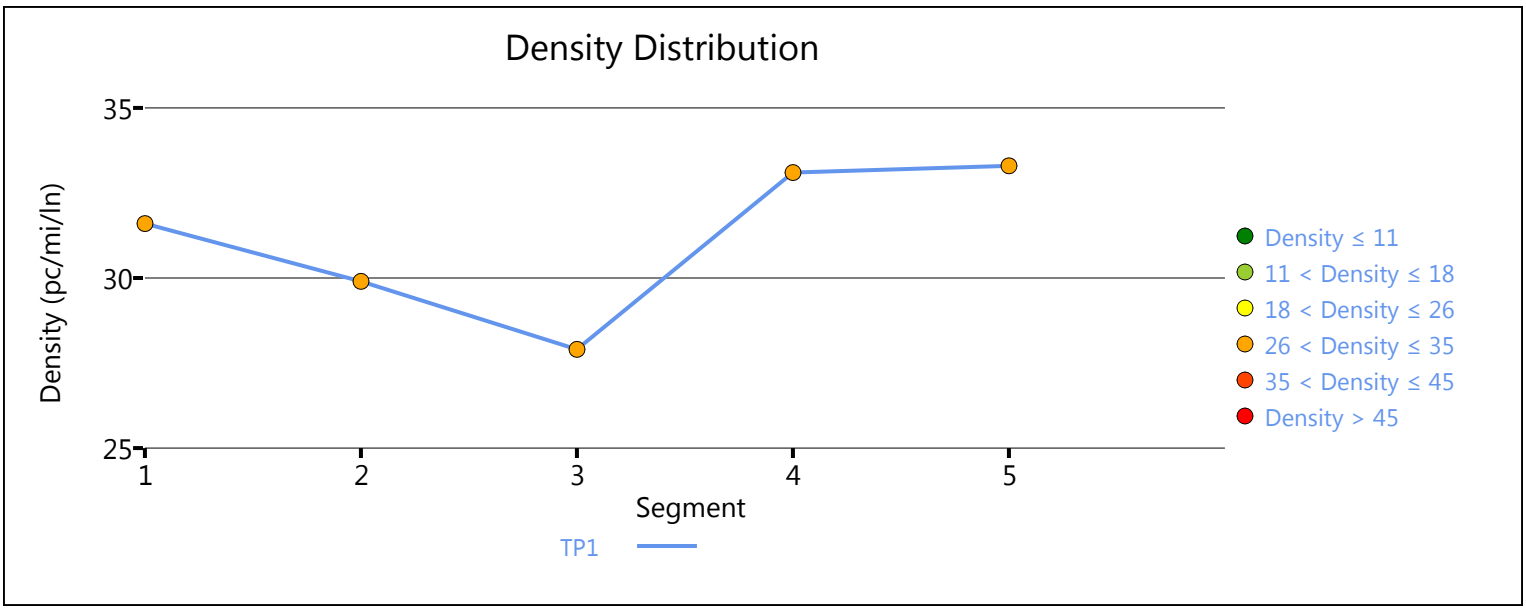
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	62.8	31.3	30.2	1.8	D

Facility Overall Results

Space Mean Speed, mi/h	62.8	Density, veh/mi/ln	30.2
Average Travel Time, min	1.8	Density, pc/mi/ln	31.3







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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4381	556
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	7.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.893
Flow Rate (vi),pc/h	5093	677
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.42	0.32

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	24.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.359
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1102
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.9
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.4
Flow in Lanes 1 and 2 (v12), pc/h	2380	Ramp Junction Speed (S), mi/h	66.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	15.2
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4937	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1159
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.48
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.6
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6141	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1703
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.71
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6141	606
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.862
Flow Rate (vi),pc/h	6811	764
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.57	0.36

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	25.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.367
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1417
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.7
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	75.2
Flow in Lanes 1 and 2 (v12), pc/h	2955	Ramp Junction Speed (S), mi/h	66.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	20.5
Level of Service (LOS)	C		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.980	6961	9548	0.73	65.8	26.4	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.980	0.840	6961	763	9600	2100	0.73	0.36	66.1	59.7	26.3	29.3	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	1.000	6180	9548	0.65	67.7	22.8	C

Segment 4: Merge

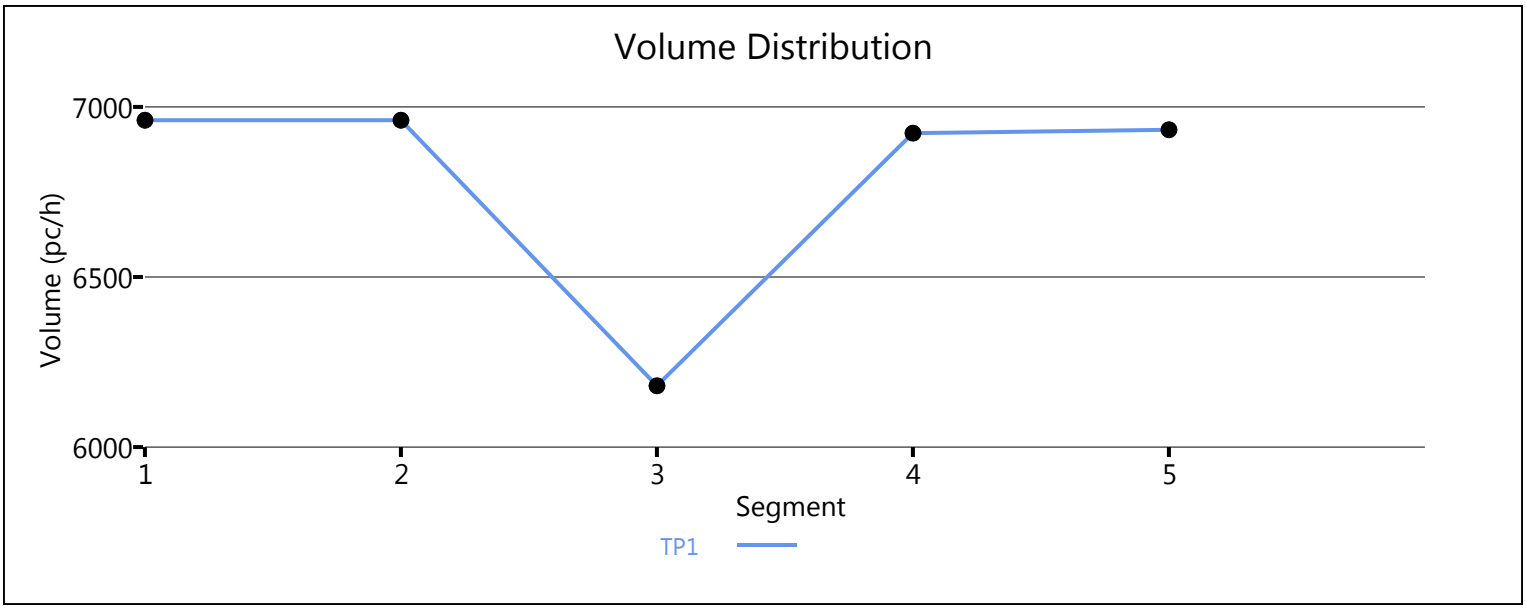
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.94	1.000	0.901	6923	743	9600	2100	0.72	0.35	63.2	61.2	27.4	23.1	C

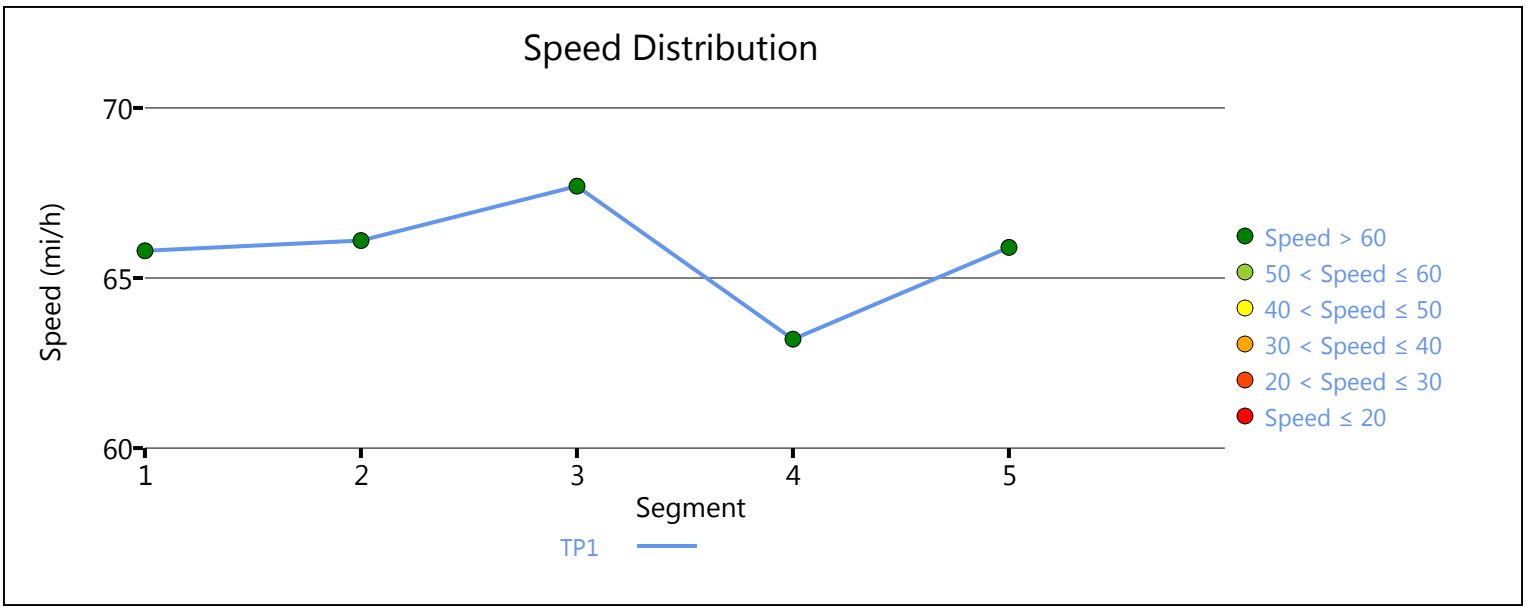
Segment 5: Basic

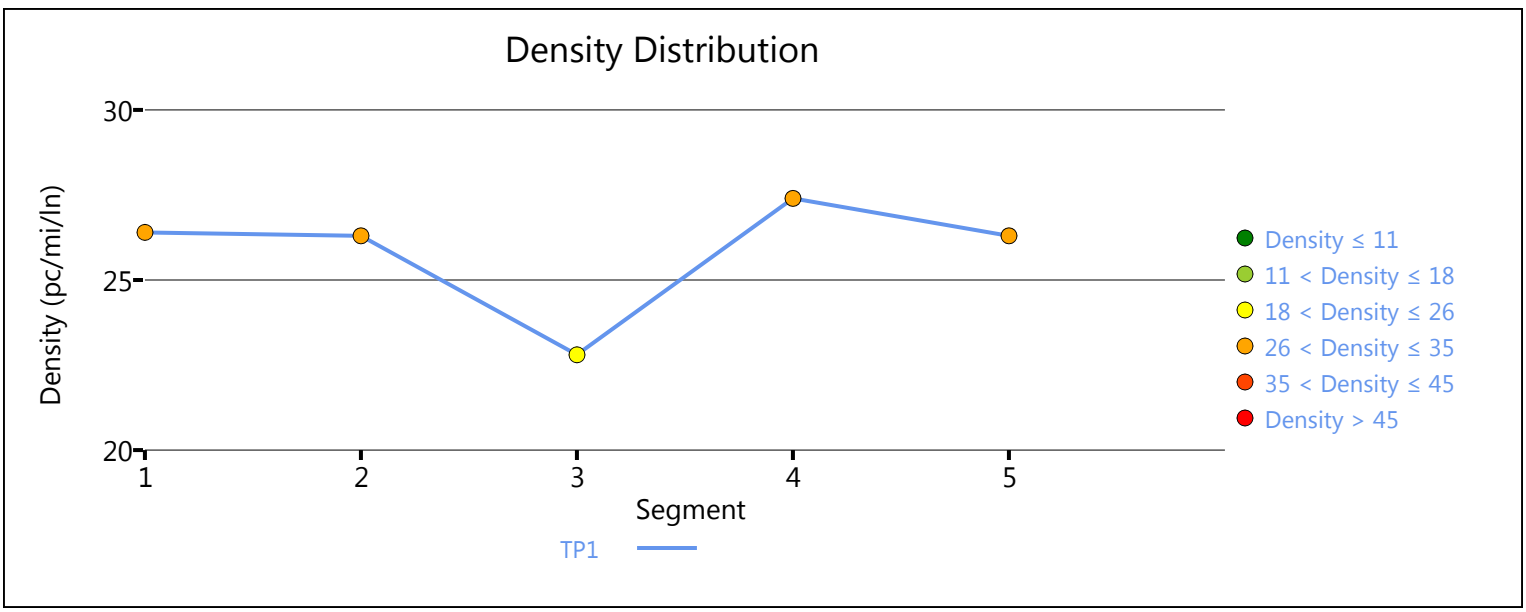
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.990	6933	9548	0.73	65.9	26.3	D

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	65.8	25.7	25.5	1.6	C

Facility Overall Results			
Space Mean Speed, mi/h	65.8	Density, veh/mi/ln	25.5
Average Travel Time, min	1.6	Density, pc/mi/ln	25.7







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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4122	805
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.926
Flow Rate (vi),pc/h	4572	945
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.57	0.45

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	20.1
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.288
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1372
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.9
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.100	Outer Lanes Freeway Speed (SO), mi/h	66.9
Flow in Lanes 1 and 2 (v12), pc/h	1829	Ramp Junction Speed (S), mi/h	64.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	2774	Average Density (D), pc/mi/ln	21.5
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4927	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1379
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.57
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3586	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1033
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.43
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3586	1103
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.909
Flow Rate (vi),pc/h	4133	1319
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.43	0.63

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	22.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.417
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	794
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.3
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	2546	Ramp Junction Speed (S), mi/h	64.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	16.1
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2814	1006
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.990
Flow Rate (vi),pc/h	3213	1105
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.60	0.53

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	1346.1	Density in Ramp Influence Area (DR), pc/mi/ln	22.2
Distance to Upstream Ramp (LUP), ft	1930	Speed Index (M)	0.308
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1263
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	67.3
Flow in Lanes 1 and 2 (v12), pc/h	1950	Ramp Junction Speed (S), mi/h	63.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	3055	Average Density (D), pc/mi/ln	22.8
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3820	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1439
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.60
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4405	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	986
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.41
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3512	893
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.909
Flow Rate (vi),pc/h	3856	1068
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.68	0.56

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	0.0	Density in Ramp Influence Area (DR), pc/mi/ln	30.8
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.426
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1627
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	58.1
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	65.9
Flow in Lanes 1 and 2 (v12), pc/h	2229	Ramp Junction Speed (S), mi/h	60.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	3297	Average Density (D), pc/mi/ln	27.1
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4338	1081
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.971
Flow Rate (vi),pc/h	4856	1210
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.67	0.58

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	29.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.407
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1520
Distance to Downstream Ramp (LDOWN), ft	2000	Off-Ramp Influenece Area Speed (SR), mi/h	58.6
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.583	Outer Lanes Freeway Speed (SO), mi/h	74.8
Flow in Lanes 1 and 2 (v12), pc/h	3336	Ramp Junction Speed (S), mi/h	62.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	25.7
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4338	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1619
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.67
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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APPENDIX 3.6:

EXISTING (2019) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

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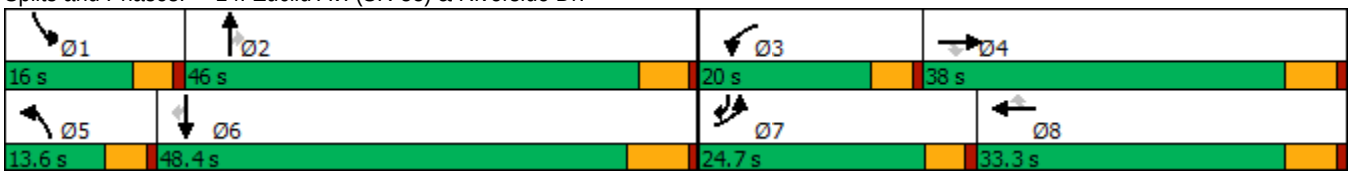
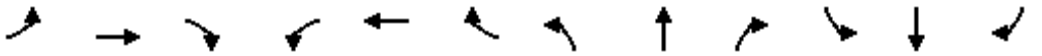
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	311	49	187	488	115	66	909	155	174	940	152
Future Volume (vph)	153	311	49	187	488	115	66	909	155	174	940	152
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	24.7	38.0	38.0	20.0	33.3	33.3	13.6	46.0	46.0	16.0	48.4	24.7
Total Split (%)	20.6%	31.7%	31.7%	16.7%	27.8%	27.8%	11.3%	38.3%	38.3%	13.3%	40.3%	20.6%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	None
Act Effct Green (s)	15.0	24.9	24.9	15.3	25.2	25.2	7.9	40.7	40.7	11.4	45.2	62.1
Actuated g/C Ratio	0.13	0.22	0.22	0.14	0.22	0.22	0.07	0.36	0.36	0.10	0.40	0.55
v/c Ratio	0.75	0.82	0.12	0.90	0.67	0.26	0.61	0.78	0.25	1.12	0.72	0.18
Control Delay	68.8	59.3	0.6	88.8	45.4	3.9	74.8	38.1	5.4	154.3	34.2	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.8	59.3	0.6	88.8	45.4	3.9	74.8	38.1	5.4	154.3	34.2	4.0
LOS	E	E	A	F	D	A	E	D	A	F	C	A
Approach Delay		56.5			49.7			35.7			47.1	
Approach LOS		E			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 45.5	Intersection LOS: D
Intersection Capacity Utilization 83.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	311	49	187	488	115	66	909	155	174	940	152
Future Volume (veh/h)	153	311	49	187	488	115	66	909	155	174	940	152
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	161	327	36	197	514	92	69	957	123	183	989	101
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	187	371	314	222	777	347	86	1241	554	165	1408	804
Arrive On Green	0.12	0.21	0.21	0.14	0.23	0.23	0.05	0.36	0.36	0.10	0.41	0.41
Sat Flow, veh/h	1619	1800	1525	1619	3420	1525	1619	3420	1525	1619	3420	1524
Grp Volume(v), veh/h	161	327	36	197	514	92	69	957	123	183	989	101
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	1525	1619	1710	1525	1619	1710	1524
Q Serve(g_s), s	10.9	19.7	2.1	13.4	15.3	5.5	4.7	27.7	6.3	11.4	26.8	3.8
Cycle Q Clear(g_c), s	10.9	19.7	2.1	13.4	15.3	5.5	4.7	27.7	6.3	11.4	26.8	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	187	371	314	222	777	347	86	1241	554	165	1408	804
V/C Ratio(X)	0.86	0.88	0.11	0.89	0.66	0.27	0.80	0.77	0.22	1.11	0.70	0.13
Avail Cap(c_a), veh/h	291	518	439	223	841	375	130	1241	554	165	1408	804
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.6	43.1	36.1	47.4	39.3	35.5	52.4	31.5	24.7	50.2	27.2	13.4
Incr Delay (d2), s/veh	9.2	12.4	0.2	31.1	1.7	0.4	10.3	4.7	0.9	102.4	3.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	9.7	0.8	7.1	6.4	2.0	2.1	11.3	2.3	9.2	11.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.7	55.5	36.3	78.6	41.0	35.9	62.7	36.2	25.6	152.6	30.2	13.7
LnGrp LOS	E	E	D	E	D	D	E	D	C	F	C	B
Approach Vol, veh/h		524			803			1149			1273	
Approach Delay, s/veh		54.9			49.7			36.7			46.5	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	47.1	19.9	28.8	10.5	52.6	17.5	31.2
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	11.4	* 41	15.4	32.2	9.0	41.9	20.1	27.5
Max Q Clear Time (g_c+I1), s	13.4	29.7	15.4	21.7	6.7	28.8	12.9	17.3
Green Ext Time (p_c), s	0.0	4.6	0.0	1.3	0.0	5.7	0.1	2.5

Intersection Summary	
HCM 6th Ctrl Delay	45.3
HCM 6th LOS	D

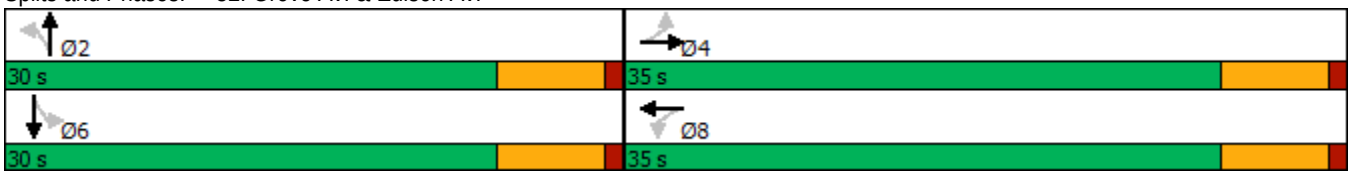
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	33	201	64	495	18	189	58	184
Future Volume (vph)	33	201	64	495	18	189	58	184
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Total Split (s)	35.0	35.0	35.0	35.0	30.0	30.0	30.0	30.0
Total Split (%)	53.8%	53.8%	53.8%	53.8%	46.2%	46.2%	46.2%	46.2%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		29.0		29.0		15.7		15.7
Actuated g/C Ratio		0.51		0.51		0.27		0.27
v/c Ratio		0.33		0.76		0.54		0.70
Control Delay		10.9		21.0		21.0		27.0
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		10.9		21.0		21.0		27.0
LOS		B		C		C		C
Approach Delay		10.9		21.0		21.0		27.0
Approach LOS		B		C		C		C

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 57.2	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 20.4	Intersection LOS: C
Intersection Capacity Utilization 82.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	201	6	64	495	31	18	189	24	58	184	28
Future Volume (veh/h)	33	201	6	64	495	31	18	189	24	58	184	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	36	221	7	70	544	34	20	208	26	64	202	31
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	150	812	24	140	822	49	89	334	40	141	278	39
Arrive On Green	0.54	0.54	0.54	0.54	0.54	0.54	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	133	1493	44	119	1511	90	68	1506	179	264	1255	177
Grp Volume(v), veh/h	264	0	0	648	0	0	254	0	0	297	0	0
Grp Sat Flow(s),veh/h/ln	1671	0	0	1720	0	0	1753	0	0	1696	0	0
Q Serve(g_s), s	0.0	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0
Cycle Q Clear(g_c), s	4.2	0.0	0.0	14.1	0.0	0.0	6.9	0.0	0.0	8.5	0.0	0.0
Prop In Lane	0.14		0.03	0.11		0.05	0.08		0.10	0.22		0.10
Lane Grp Cap(c), veh/h	986	0	0	1011	0	0	462	0	0	459	0	0
V/C Ratio(X)	0.27	0.00	0.00	0.64	0.00	0.00	0.55	0.00	0.00	0.65	0.00	0.00
Avail Cap(c_a), veh/h	986	0	0	1011	0	0	849	0	0	820	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.5	0.0	0.0	8.7	0.0	0.0	18.7	0.0	0.0	19.3	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	3.1	0.0	0.0	1.0	0.0	0.0	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	3.8	0.0	0.0	2.4	0.0	0.0	2.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.1	0.0	0.0	11.8	0.0	0.0	19.7	0.0	0.0	20.8	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	B	A	A	C	A	A
Approach Vol, veh/h		264			648			254			297	
Approach Delay, s/veh		7.1			11.8			19.7			20.8	
Approach LOS		A			B			B			C	

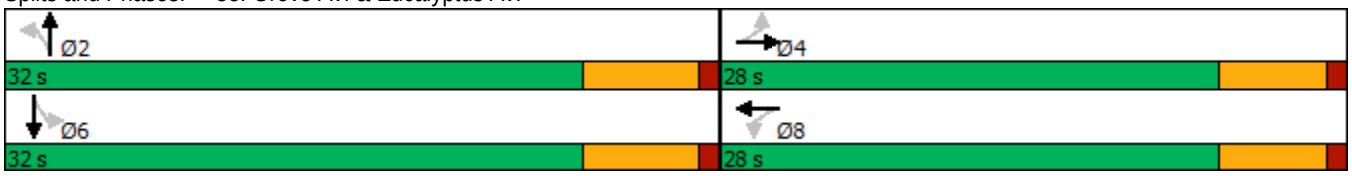
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		17.9		35.0		17.9		35.0				
Change Period (Y+Rc), s		6.2		6.2		6.2		6.2				
Max Green Setting (Gmax), s		23.8		28.8		23.8		28.8				
Max Q Clear Time (g_c+I1), s		8.9		6.2		10.5		16.1				
Green Ext Time (p_c), s		1.1		1.4		1.3		3.2				

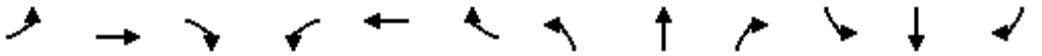
Intersection Summary												
HCM 6th Ctrl Delay			14.2									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	24	33	12	82	60	229	15	209
Future Volume (vph)	24	33	12	82	60	229	15	209
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	28.0	28.0	28.0	28.0	32.0	32.0	32.0	32.0
Total Split (%)	46.7%	46.7%	46.7%	46.7%	53.3%	53.3%	53.3%	53.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.8		5.8		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		12.2		12.2		32.1		32.1
Actuated g/C Ratio		0.24		0.24		0.62		0.62
v/c Ratio		0.21		0.28		0.33		0.28
Control Delay		14.1		16.0		9.1		8.0
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		14.1		16.0		9.1		8.0
LOS		B		B		A		A
Approach Delay		14.1		16.0		9.1		8.0
Approach LOS		B		B		A		A

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 51.6	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.33	
Intersection Signal Delay: 10.1	Intersection LOS: B
Intersection Capacity Utilization 55.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	33	13	12	82	12	60	229	11	15	209	47
Future Volume (veh/h)	24	33	13	12	82	12	60	229	11	15	209	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	26	36	14	13	90	13	66	252	12	16	230	52
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	169	192	58	103	284	38	216	750	33	98	765	165
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.55	0.55	0.55	0.55	0.55	0.55
Sat Flow, veh/h	341	980	298	89	1454	195	225	1365	60	32	1394	301
Grp Volume(v), veh/h	76	0	0	116	0	0	330	0	0	298	0	0
Grp Sat Flow(s),veh/h/ln	1619	0	0	1738	0	0	1651	0	0	1727	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.7	0.0	0.0	2.7	0.0	0.0	4.8	0.0	0.0	4.4	0.0	0.0
Prop In Lane	0.34		0.18	0.11		0.11	0.20		0.04	0.05		0.17
Lane Grp Cap(c), veh/h	419	0	0	425	0	0	998	0	0	1029	0	0
V/C Ratio(X)	0.18	0.00	0.00	0.27	0.00	0.00	0.33	0.00	0.00	0.29	0.00	0.00
Avail Cap(c_a), veh/h	849	0	0	898	0	0	998	0	0	1029	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.9	0.0	0.0	16.3	0.0	0.0	5.9	0.0	0.0	5.8	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.3	0.0	0.0	0.9	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	0.9	0.0	0.0	1.1	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	0.0	0.0	16.6	0.0	0.0	6.7	0.0	0.0	6.5	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		76			116			330			298	
Approach Delay, s/veh		16.1			16.6			6.7			6.5	
Approach LOS		B			B			A			A	

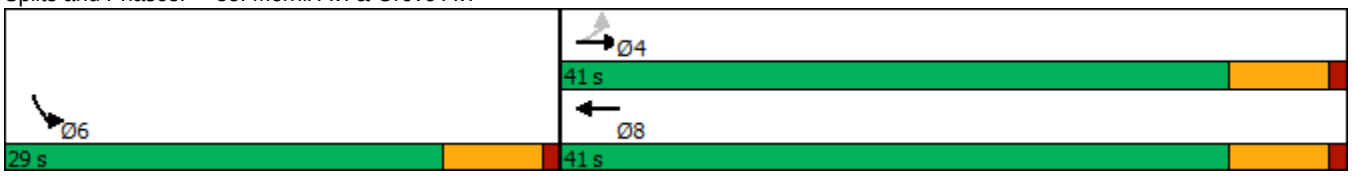
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.0		15.0		32.0		15.0				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		25.8		22.2		25.8		22.2				
Max Q Clear Time (g_c+I1), s		6.8		3.7		6.4		4.7				
Green Ext Time (p_c), s		1.7		0.3		1.4		0.4				

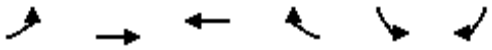
Intersection Summary												
HCM 6th Ctrl Delay			8.9									
HCM 6th LOS			A									

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	83	210	471	141
Future Volume (vph)	83	210	471	141
Turn Type	Perm	NA	NA	Prot
Protected Phases		4	8	6
Permitted Phases	4			
Detector Phase	4	4	8	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2
Total Split (s)	41.0	41.0	41.0	29.0
Total Split (%)	58.6%	58.6%	58.6%	41.4%
Yellow Time (s)	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0
Total Lost Time (s)		6.2	6.2	6.2
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	Max	Max	Max	None
Act Effct Green (s)		37.2	37.2	13.9
Actuated g/C Ratio		0.58	0.58	0.22
v/c Ratio		0.46	0.69	0.63
Control Delay		11.7	14.7	24.7
Queue Delay		0.0	0.0	0.0
Total Delay		11.7	14.7	24.7
LOS		B	B	C
Approach Delay		11.7	14.7	24.7
Approach LOS		B	B	C

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 63.6	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 15.9	Intersection LOS: B
Intersection Capacity Utilization 87.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	83	210	471	217	141	93
Future Volume (veh/h)	83	210	471	217	141	93
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	86	216	486	224	145	96
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	193	439	696	321	176	116
Arrive On Green	0.60	0.60	0.60	0.60	0.19	0.19
Sat Flow, veh/h	190	736	1166	537	925	612
Grp Volume(v), veh/h	302	0	0	710	242	0
Grp Sat Flow(s),veh/h/ln	926	0	0	1703	1544	0
Q Serve(g_s), s	3.6	0.0	0.0	16.8	8.8	0.0
Cycle Q Clear(g_c), s	20.4	0.0	0.0	16.8	8.8	0.0
Prop In Lane	0.28			0.32	0.60	0.40
Lane Grp Cap(c), veh/h	632	0	0	1017	293	0
V/C Ratio(X)	0.48	0.00	0.00	0.70	0.82	0.00
Avail Cap(c_a), veh/h	632	0	0	1017	604	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.2	0.0	0.0	8.1	22.7	0.0
Incr Delay (d2), s/veh	2.6	0.0	0.0	4.0	5.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.0	4.5	3.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.8	0.0	0.0	12.1	28.5	0.0
LnGrp LOS	A	A	A	B	C	A
Approach Vol, veh/h		302	710		242	
Approach Delay, s/veh		9.8	12.1		28.5	
Approach LOS		A	B		C	

Timer - Assigned Phs			4		6	8
Phs Duration (G+Y+Rc), s			41.0		17.3	41.0
Change Period (Y+Rc), s			6.2		6.2	6.2
Max Green Setting (Gmax), s			34.8		22.8	34.8
Max Q Clear Time (g_c+I1), s			22.4		10.8	18.8
Green Ext Time (p_c), s			1.5		0.5	4.1

Intersection Summary		
HCM 6th Ctrl Delay	14.7	
HCM 6th LOS	B	

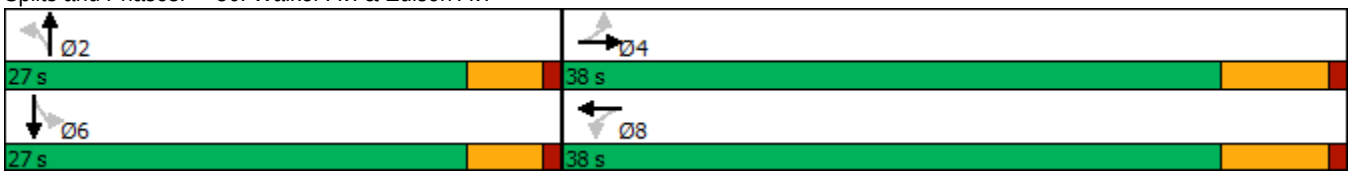
Notes

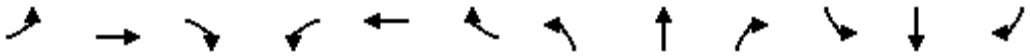
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	17	230	111	392	4	18	25	17
Future Volume (vph)	17	230	111	392	4	18	25	17
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	26.7	26.7	26.7	26.7
Total Split (s)	38.0	38.0	38.0	38.0	27.0	27.0	27.0	27.0
Total Split (%)	58.5%	58.5%	58.5%	58.5%	41.5%	41.5%	41.5%	41.5%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		4.7		4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		45.1		45.1		12.3		12.3
Actuated g/C Ratio		0.76		0.76		0.21		0.21
v/c Ratio		0.20		0.55		0.09		0.18
Control Delay		5.8		10.5		15.3		16.9
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		5.8		10.5		15.3		16.9
LOS		A		B		B		B
Approach Delay		5.8		10.5		15.3		16.9
Approach LOS		A		B		B		B

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 59.1	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 9.8	Intersection LOS: A
Intersection Capacity Utilization 78.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	17	230	9	111	392	139	4	18	8	25	17	12
Future Volume (veh/h)	17	230	9	111	392	139	4	18	8	25	17	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	17	235	9	113	400	142	4	18	8	26	17	12
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	106	1050	39	215	685	226	95	160	63	179	101	48
Arrive On Green	0.64	0.64	0.64	0.64	0.64	0.64	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	44	1638	60	203	1068	352	93	1148	451	517	728	348
Grp Volume(v), veh/h	261	0	0	655	0	0	30	0	0	55	0	0
Grp Sat Flow(s),veh/h/ln	1743	0	0	1623	0	0	1692	0	0	1593	0	0
Q Serve(g_s), s	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.0	0.0	0.0	11.2	0.0	0.0	0.8	0.0	0.0	1.4	0.0	0.0
Prop In Lane	0.07		0.03	0.17		0.22	0.13		0.27	0.47		0.22
Lane Grp Cap(c), veh/h	1194	0	0	1126	0	0	318	0	0	328	0	0
V/C Ratio(X)	0.22	0.00	0.00	0.58	0.00	0.00	0.09	0.00	0.00	0.17	0.00	0.00
Avail Cap(c_a), veh/h	1194	0	0	1126	0	0	832	0	0	806	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.7	0.0	0.0	5.2	0.0	0.0	18.7	0.0	0.0	19.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	2.2	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	1.9	0.0	0.0	0.3	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.2	0.0	0.0	7.4	0.0	0.0	18.8	0.0	0.0	19.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		261			655			30			55	
Approach Delay, s/veh		4.2			7.4			18.8			19.2	
Approach LOS		A			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		11.6		38.0		11.6		38.0				
Change Period (Y+Rc), s		* 4.7		6.2		* 4.7		6.2				
Max Green Setting (Gmax), s		* 22		31.8		* 22		31.8				
Max Q Clear Time (g_c+I1), s		2.8		5.0		3.4		13.2				
Green Ext Time (p_c), s		0.1		1.4		0.2		4.0				

Intersection Summary		
HCM 6th Ctrl Delay		7.5
HCM 6th LOS		A

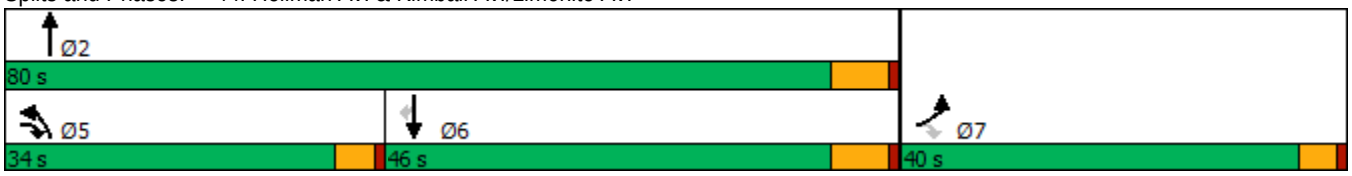
Notes

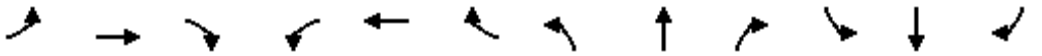
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	18	288	880	49	28	13
Future Volume (vph)	18	288	880	49	28	13
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	7	5	5	2	6	
Permitted Phases		7				6
Detector Phase	7	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	26.5	9.6	9.6	16.2	28.2	28.2
Total Split (s)	40.0	34.0	34.0	80.0	46.0	46.0
Total Split (%)	33.3%	28.3%	28.3%	66.7%	38.3%	38.3%
Yellow Time (s)	3.5	3.6	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.6	4.6	6.2	6.2	6.2
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	Max	Max	Max	None	None
Act Effct Green (s)	9.1	66.5	59.2	86.9	27.8	27.8
Actuated g/C Ratio	0.09	0.69	0.61	0.90	0.29	0.29
v/c Ratio	0.12	0.26	0.48	0.02	0.03	0.03
Control Delay	39.4	2.3	22.7	2.6	19.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.4	2.3	22.7	2.6	19.8	0.1
LOS	D	A	C	A	B	A
Approach Delay				21.6	13.3	
Approach LOS				C	B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.48	
Intersection Signal Delay: 17.3	Intersection LOS: B
Intersection Capacity Utilization 46.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	0	288	0	0	0	880	49	0	0	28	13
Future Volume (veh/h)	18	0	288	0	0	0	880	49	0	0	28	13
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1700	0	1800				1700	1800	0	0	1800	1800
Adj Flow Rate, veh/h	19	0	303				926	52	0	0	29	14
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	266	0	694				913	2495	0	0	1346	600
Arrive On Green	0.16	0.00	0.16				0.29	0.73	0.00	0.00	0.39	0.39
Sat Flow, veh/h	1619	0	1525				3141	3510	0	0	3510	1525
Grp Volume(v), veh/h	19	0	303				926	52	0	0	29	14
Grp Sat Flow(s),veh/h/ln	1619	0	1525				1570	1710	0	0	1710	1525
Q Serve(g_s), s	1.0	0.0	13.7				29.4	0.4	0.0	0.0	0.5	0.6
Cycle Q Clear(g_c), s	1.0	0.0	13.7				29.4	0.4	0.0	0.0	0.5	0.6
Prop In Lane	1.00		1.00				1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	266	0	694				913	2495	0	0	1346	600
V/C Ratio(X)	0.07	0.00	0.44				1.01	0.02	0.00	0.00	0.02	0.02
Avail Cap(c_a), veh/h	568	0	979				913	2495	0	0	1346	600
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	0.0	18.7				35.9	3.8	0.0	0.0	18.8	18.8
Incr Delay (d2), s/veh	0.1	0.0	0.4				33.4	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.1				14.6	0.1	0.0	0.0	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.8	0.0	19.2				69.2	3.8	0.0	0.0	18.8	18.8
LnGrp LOS	D	A	B				F	A	A	A	B	B
Approach Vol, veh/h		322						978			43	
Approach Delay, s/veh		20.1						65.8			18.8	
Approach LOS		C						E			B	

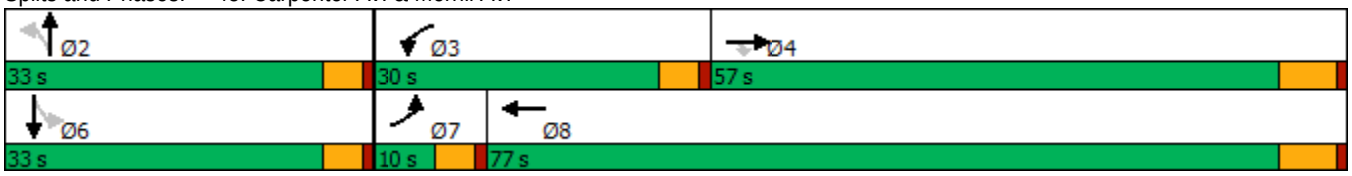
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		80.0		21.1	34.0	46.0						
Change Period (Y+Rc), s		6.2		4.5	4.6	6.2						
Max Green Setting (Gmax), s		73.8		35.5	29.4	39.8						
Max Q Clear Time (g_c+I1), s		2.4		15.7	31.4	2.6						
Green Ext Time (p_c), s		0.3		1.0	0.0	0.2						

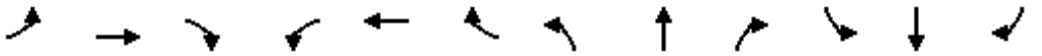
Intersection Summary												
HCM 6th Ctrl Delay			53.3									
HCM 6th LOS			D									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	10	325	26	175	618	19	0	114	0
Future Volume (vph)	10	325	26	175	618	19	0	114	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	26.6	26.6
Total Split (s)	10.0	57.0	57.0	30.0	77.0	33.0	33.0	33.0	33.0
Total Split (%)	8.3%	47.5%	47.5%	25.0%	64.2%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2		4.6		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.2	54.0	54.0	14.7	71.6		12.3		12.3
Actuated g/C Ratio	0.05	0.56	0.56	0.15	0.74		0.13		0.13
v/c Ratio	0.12	0.34	0.03	0.72	0.53		0.45		0.63
Control Delay	50.0	14.4	0.1	54.7	8.4		15.8		24.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	50.0	14.4	0.1	54.7	8.4		15.8		24.9
LOS	D	B	A	D	A		B		C
Approach Delay		14.4			18.2		15.8		24.9
Approach LOS		B			B		B		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.4	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 17.6	Intersection LOS: B
Intersection Capacity Utilization 67.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 45: Carpenter Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	325	26	175	618	40	19	0	106	114	0	10
Future Volume (veh/h)	10	325	26	175	618	40	19	0	106	114	0	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	11	346	28	186	657	43	20	0	113	121	0	11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	22	1043	884	218	1159	76	62	14	199	213	3	13
Arrive On Green	0.01	0.58	0.58	0.13	0.69	0.69	0.14	0.00	0.14	0.14	0.00	0.14
Sat Flow, veh/h	1714	1800	1525	1714	1671	109	151	96	1395	1020	20	95
Grp Volume(v), veh/h	11	346	28	186	0	700	133	0	0	132	0	0
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	0	1780	1642	0	0	1135	0	0
Q Serve(g_s), s	0.7	10.2	0.8	10.9	0.0	20.3	0.0	0.0	0.0	4.1	0.0	0.0
Cycle Q Clear(g_c), s	0.7	10.2	0.8	10.9	0.0	20.3	7.9	0.0	0.0	12.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.06	0.15		0.85	0.92		0.08
Lane Grp Cap(c), veh/h	22	1043	884	218	0	1234	275	0	0	230	0	0
V/C Ratio(X)	0.49	0.33	0.03	0.85	0.00	0.57	0.48	0.00	0.00	0.58	0.00	0.00
Avail Cap(c_a), veh/h	91	1043	884	426	0	1234	479	0	0	408	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	50.0	11.2	9.2	43.7	0.0	7.9	41.0	0.0	0.0	43.0	0.0	0.0
Incr Delay (d2), s/veh	6.0	0.9	0.1	3.7	0.0	1.9	1.3	0.0	0.0	2.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.7	0.2	4.6	0.0	6.3	3.2	0.0	0.0	3.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.0	12.0	9.3	47.4	0.0	9.8	42.3	0.0	0.0	45.3	0.0	0.0
LnGrp LOS	E	B	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		385			886			133			132	
Approach Delay, s/veh		13.1			17.7			42.3			45.3	
Approach LOS		B			B			D			D	

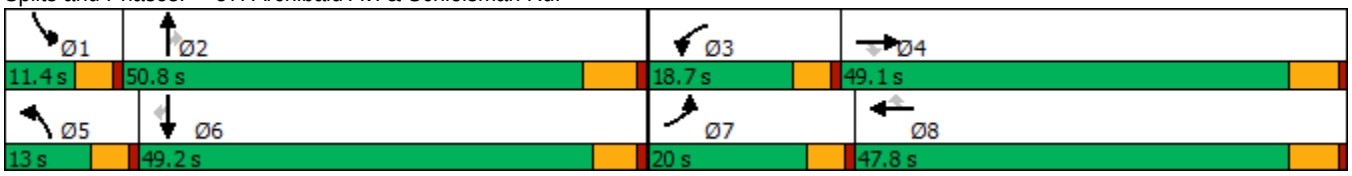
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		19.2	17.6	65.4		19.2	5.9	77.0				
Change Period (Y+Rc), s		4.6	4.6	6.2		4.6	4.6	6.2				
Max Green Setting (Gmax), s		28.4	25.4	50.8		28.4	5.4	70.8				
Max Q Clear Time (g_c+I1), s		9.9	12.9	12.2		14.0	2.7	22.3				
Green Ext Time (p_c), s		0.7	0.2	2.0		0.6	0.0	4.9				

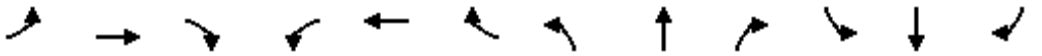
Intersection Summary												
HCM 6th Ctrl Delay			21.0									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	383	375	113	248	701	137	241	776	215	103	440	420
Future Volume (vph)	383	375	113	248	701	137	241	776	215	103	440	420
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	20.0	49.1	49.1	18.7	47.8	47.8	13.0	50.8	50.8	11.4	49.2	49.2
Total Split (%)	15.4%	37.8%	37.8%	14.4%	36.8%	36.8%	10.0%	39.1%	39.1%	8.8%	37.8%	37.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	None	None	Max	None	None	None	None	None	None	None	None
Act Effct Green (s)	15.9	24.6	24.6	14.6	23.2	23.2	8.7	25.3	25.3	6.6	24.1	24.1
Actuated g/C Ratio	0.17	0.26	0.26	0.16	0.25	0.25	0.09	0.27	0.27	0.07	0.26	0.26
v/c Ratio	0.71	0.30	0.25	0.50	0.60	0.30	0.82	0.61	0.39	0.46	0.36	0.76
Control Delay	46.6	28.2	6.5	43.2	33.0	7.6	64.8	31.7	5.7	52.4	29.1	21.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	28.2	6.5	43.2	33.0	7.6	64.8	31.7	5.7	52.4	29.1	21.8
LOS	D	C	A	D	C	A	E	C	A	D	C	C
Approach Delay		33.4			32.1			33.6			28.4	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 93.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 32.0	Intersection LOS: C
Intersection Capacity Utilization 78.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	383	375	113	248	701	137	241	776	215	103	440	420
Future Volume (veh/h)	383	375	113	248	701	137	241	776	215	103	440	420
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	426	417	62	276	779	75	268	862	166	114	489	345
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	596	1275	388	546	1201	368	325	1624	504	183	1414	433
Arrive On Green	0.17	0.25	0.25	0.16	0.23	0.23	0.09	0.31	0.31	0.05	0.27	0.27
Sat Flow, veh/h	3510	5187	1580	3510	5187	1589	3510	5187	1610	3510	5187	1588
Grp Volume(v), veh/h	426	417	62	276	779	75	268	862	166	114	489	345
Grp Sat Flow(s),veh/h/ln	1755	1729	1580	1755	1729	1589	1755	1729	1610	1755	1729	1588
Q Serve(g_s), s	10.4	6.0	2.8	6.5	12.3	3.5	6.8	12.4	7.2	2.9	6.9	18.3
Cycle Q Clear(g_c), s	10.4	6.0	2.8	6.5	12.3	3.5	6.8	12.4	7.2	2.9	6.9	18.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	596	1275	388	546	1201	368	325	1624	504	183	1414	433
V/C Ratio(X)	0.71	0.33	0.16	0.51	0.65	0.20	0.82	0.53	0.33	0.62	0.35	0.80
Avail Cap(c_a), veh/h	596	2475	754	546	2401	736	325	2550	791	263	2504	766
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	28.1	26.9	35.1	31.5	28.1	40.4	25.7	23.9	42.1	26.5	30.7
Incr Delay (d2), s/veh	7.2	0.1	0.2	3.3	0.6	0.3	14.8	0.3	0.4	1.3	0.1	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	2.3	1.0	2.9	4.9	1.3	3.4	4.7	2.6	1.2	2.6	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.8	28.2	27.0	38.5	32.1	28.4	55.3	25.9	24.2	43.4	26.7	34.1
LnGrp LOS	D	C	C	D	C	C	E	C	C	D	C	C
Approach Vol, veh/h		905			1130			1296			948	
Approach Delay, s/veh		35.0			33.4			31.8			31.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	34.6	18.7	28.1	13.0	30.9	20.0	26.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	6.8	44.6	14.1	43.3	8.4	* 44	15.4	42.0
Max Q Clear Time (g_c+I1), s	4.9	14.4	8.5	8.0	8.8	20.3	12.4	14.3
Green Ext Time (p_c), s	0.0	6.5	0.3	2.9	0.0	4.2	0.3	5.6

Intersection Summary	
HCM 6th Ctrl Delay	32.8
HCM 6th LOS	C

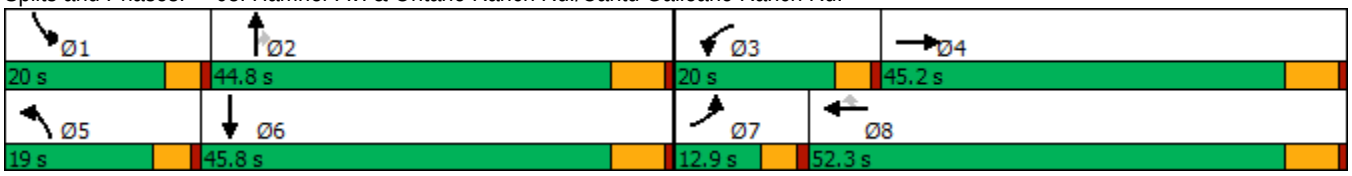
Notes

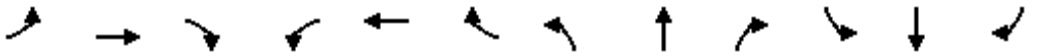
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	93	521	264	759	195	165	674	484	148	200
Future Volume (vph)	93	521	264	759	195	165	674	484	148	200
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2
Total Split (s)	12.9	45.2	20.0	52.3	52.3	19.0	44.8	44.8	20.0	45.8
Total Split (%)	9.9%	34.8%	15.4%	40.2%	40.2%	14.6%	34.5%	34.5%	15.4%	35.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	7.6	28.0	14.3	34.8	34.8	11.2	31.1	31.1	10.8	30.7
Actuated g/C Ratio	0.07	0.26	0.13	0.33	0.33	0.10	0.29	0.29	0.10	0.29
v/c Ratio	0.51	0.42	0.76	0.78	0.34	0.61	0.54	0.86	0.56	0.23
Control Delay	62.2	32.6	60.9	38.8	5.3	58.1	34.0	34.0	57.0	22.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.2	32.6	60.9	38.8	5.3	58.1	34.0	34.0	57.0	22.6
LOS	E	C	E	D	A	E	C	C	E	C
Approach Delay		36.6		38.3			37.0			34.5
Approach LOS		D		D			D			C

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 106.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 37.1	Intersection LOS: D
Intersection Capacity Utilization 63.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	521	79	264	759	195	165	674	484	148	200	79
Future Volume (veh/h)	93	521	79	264	759	195	165	674	484	148	200	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	106	592	90	300	862	222	188	766	543	168	227	90
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	154	1318	195	354	1053	470	243	1779	552	223	1258	462
Arrive On Green	0.05	0.24	0.24	0.12	0.31	0.31	0.08	0.36	0.36	0.08	0.36	0.36
Sat Flow, veh/h	2956	5488	810	2956	3420	1525	2956	4914	1525	2956	3541	1300
Grp Volume(v), veh/h	106	498	184	300	862	222	188	766	543	168	209	108
Grp Sat Flow(s),veh/h/ln	1478	1548	1654	1478	1710	1525	1478	1638	1525	1478	1638	1565
Q Serve(g_s), s	3.8	9.7	10.1	10.6	24.9	12.6	6.6	12.6	37.6	5.9	4.7	5.1
Cycle Q Clear(g_c), s	3.8	9.7	10.1	10.6	24.9	12.6	6.6	12.6	37.6	5.9	4.7	5.1
Prop In Lane	1.00		0.49	1.00		1.00	1.00		1.00	1.00		0.83
Lane Grp Cap(c), veh/h	154	1115	397	354	1053	470	243	1779	552	223	1164	556
V/C Ratio(X)	0.69	0.45	0.46	0.85	0.82	0.47	0.77	0.43	0.98	0.75	0.18	0.19
Avail Cap(c_a), veh/h	230	1699	605	427	1479	660	399	1779	552	427	1217	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.7	34.5	34.6	46.0	34.1	29.9	47.9	25.7	33.7	48.3	23.7	23.8
Incr Delay (d2), s/veh	2.1	0.3	0.8	11.0	2.6	0.7	2.0	0.2	33.8	2.0	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.5	3.9	4.3	10.0	4.4	2.4	4.6	17.9	2.2	1.7	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.7	34.7	35.5	57.0	36.7	30.6	49.9	25.9	67.5	50.3	23.7	24.0
LnGrp LOS	D	C	D	E	D	C	D	C	E	D	C	C
Approach Vol, veh/h		788			1384			1497			485	
Approach Delay, s/veh		37.2			40.1			44.0			33.0	
Approach LOS		D			D			D			C	

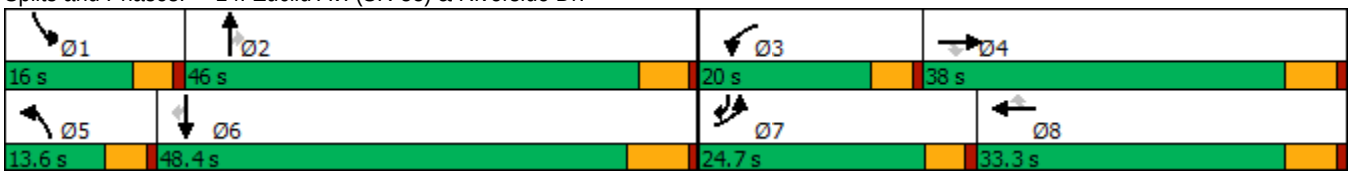
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	44.8	17.4	31.8	13.4	44.1	10.1	39.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	15.4	38.6	15.4	39.0	14.4	39.6	8.3	46.1
Max Q Clear Time (g_c+I1), s	7.9	39.6	12.6	12.1	8.6	7.1	5.8	26.9
Green Ext Time (p_c), s	0.2	0.0	0.2	4.0	0.1	1.8	0.0	6.0

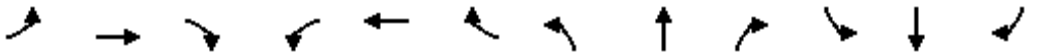
Intersection Summary	
HCM 6th Ctrl Delay	40.1
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	440	71	178	393	62	63	975	230	134	880	185
Future Volume (vph)	145	440	71	178	393	62	63	975	230	134	880	185
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	24.7	38.0	38.0	20.0	33.3	33.3	13.6	46.0	46.0	16.0	48.4	24.7
Total Split (%)	20.6%	31.7%	31.7%	16.7%	27.8%	27.8%	11.3%	38.3%	38.3%	13.3%	40.3%	20.6%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	None
Act Effct Green (s)	15.1	31.6	31.6	15.0	31.5	31.5	7.9	40.6	40.6	11.4	45.0	62.0
Actuated g/C Ratio	0.13	0.27	0.27	0.13	0.26	0.26	0.07	0.34	0.34	0.10	0.38	0.52
v/c Ratio	0.74	0.96	0.15	0.91	0.45	0.13	0.62	0.87	0.36	0.91	0.71	0.22
Control Delay	70.8	75.7	2.3	95.8	39.3	0.5	78.2	46.3	6.3	105.3	36.3	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.8	75.7	2.3	95.8	39.3	0.5	78.2	46.3	6.3	105.3	36.3	3.6
LOS	E	E	A	F	D	A	E	D	A	F	D	A
Approach Delay		66.7			51.3			40.7			39.0	
Approach LOS		E			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 46.5	Intersection LOS: D
Intersection Capacity Utilization 89.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	440	71	178	393	62	63	975	230	134	880	185
Future Volume (veh/h)	145	440	71	178	393	62	63	975	230	134	880	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	151	458	49	185	409	49	66	1016	186	140	917	102
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	175	479	406	206	974	434	82	1147	511	152	1295	736
Arrive On Green	0.11	0.27	0.27	0.13	0.28	0.28	0.05	0.34	0.34	0.09	0.38	0.38
Sat Flow, veh/h	1619	1800	1525	1619	3420	1524	1619	3420	1525	1619	3420	1506
Grp Volume(v), veh/h	151	458	49	185	409	49	66	1016	186	140	917	102
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	1524	1619	1710	1525	1619	1710	1506
Q Serve(g_s), s	11.1	30.3	3.0	13.6	11.8	2.9	4.9	34.0	11.2	10.4	27.6	4.5
Cycle Q Clear(g_c), s	11.1	30.3	3.0	13.6	11.8	2.9	4.9	34.0	11.2	10.4	27.6	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	479	406	206	974	434	82	1147	511	152	1295	736
V/C Ratio(X)	0.86	0.96	0.12	0.90	0.42	0.11	0.80	0.89	0.36	0.92	0.71	0.14
Avail Cap(c_a), veh/h	269	479	406	206	974	434	120	1147	511	152	1295	736
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.1	43.8	33.7	52.1	35.2	32.0	56.9	38.1	30.5	54.4	31.9	17.1
Incr Delay (d2), s/veh	10.5	30.4	0.1	35.4	0.3	0.1	13.2	10.2	2.0	48.7	3.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	17.0	1.1	7.4	4.8	1.1	2.2	14.9	4.3	6.2	11.6	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.6	74.1	33.8	87.5	35.5	32.1	70.1	48.3	32.5	103.0	35.2	17.5
LnGrp LOS	E	E	C	F	D	C	E	D	C	F	D	B
Approach Vol, veh/h		658			643			1268			1159	
Approach Delay, s/veh		68.7			50.2			47.1			41.9	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	47.1	20.0	38.0	10.7	52.4	17.7	40.3
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	11.4	* 41	15.4	32.2	9.0	41.9	20.1	27.5
Max Q Clear Time (g_c+I1), s	12.4	36.0	15.6	32.3	6.9	29.6	13.1	13.8
Green Ext Time (p_c), s	0.0	2.7	0.0	0.0	0.0	5.1	0.1	2.1

Intersection Summary	
HCM 6th Ctrl Delay	49.8
HCM 6th LOS	D

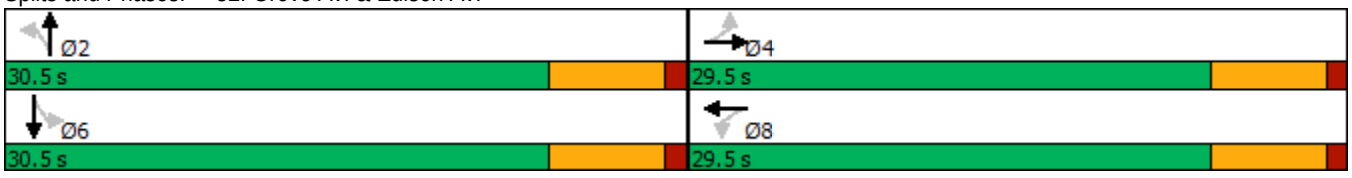
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	43	430	61	266	13	259	128	187
Future Volume (vph)	43	430	61	266	13	259	128	187
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Total Split (s)	29.5	29.5	29.5	29.5	30.5	30.5	30.5	30.5
Total Split (%)	49.2%	49.2%	49.2%	49.2%	50.8%	50.8%	50.8%	50.8%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		23.4		23.4		20.6		20.6
Actuated g/C Ratio		0.41		0.41		0.36		0.36
v/c Ratio		0.74		0.64		0.67		0.87
Control Delay		24.0		19.5		18.8		39.0
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		24.0		19.5		18.8		39.0
LOS		C		B		B		D
Approach Delay		24.0		19.5		18.8		39.0
Approach LOS		C		B		B		D

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 56.5	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 24.8	Intersection LOS: C
Intersection Capacity Utilization 93.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	430	7	61	266	50	13	259	131	128	187	22
Future Volume (veh/h)	43	430	7	61	266	50	13	259	131	128	187	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	46	462	8	66	286	54	14	278	141	138	201	24
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	112	709	12	153	552	96	77	374	184	223	268	28
Arrive On Green	0.44	0.44	0.44	0.44	0.44	0.44	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	87	1620	27	170	1261	220	22	1134	558	392	814	85
Grp Volume(v), veh/h	516	0	0	406	0	0	433	0	0	363	0	0
Grp Sat Flow(s),veh/h/ln	1734	0	0	1650	0	0	1714	0	0	1292	0	0
Q Serve(g_s), s	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0
Cycle Q Clear(g_c), s	12.3	0.0	0.0	9.0	0.0	0.0	12.1	0.0	0.0	14.2	0.0	0.0
Prop In Lane	0.09		0.02	0.16		0.13	0.03		0.33	0.38		0.07
Lane Grp Cap(c), veh/h	833	0	0	801	0	0	634	0	0	519	0	0
V/C Ratio(X)	0.62	0.00	0.00	0.51	0.00	0.00	0.68	0.00	0.00	0.70	0.00	0.00
Avail Cap(c_a), veh/h	833	0	0	801	0	0	847	0	0	691	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.8	0.0	0.0	10.9	0.0	0.0	16.1	0.0	0.0	16.4	0.0	0.0
Incr Delay (d2), s/veh	3.5	0.0	0.0	2.3	0.0	0.0	1.4	0.0	0.0	2.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.0	0.0	2.9	0.0	0.0	3.8	0.0	0.0	3.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.3	0.0	0.0	13.2	0.0	0.0	17.5	0.0	0.0	18.4	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h		516			406			433			363	
Approach Delay, s/veh		15.3			13.2			17.5			18.4	
Approach LOS		B			B			B			B	

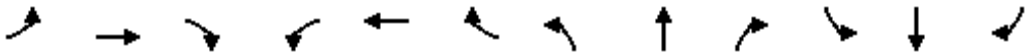
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		23.7		29.5		23.7		29.5				
Change Period (Y+Rc), s		6.2		6.2		6.2		6.2				
Max Green Setting (Gmax), s		24.3		23.3		24.3		23.3				
Max Q Clear Time (g_c+I1), s		14.1		14.3		16.2		11.0				
Green Ext Time (p_c), s		1.7		2.0		1.4		1.9				

Intersection Summary												
HCM 6th Ctrl Delay			16.0									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	89	83	5	17	14	325	12	212
Future Volume (vph)	89	83	5	17	14	325	12	212
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	27.8	27.8	27.8	27.8	92.2	92.2	92.2	92.2
Total Split (%)	23.2%	23.2%	23.2%	23.2%	76.8%	76.8%	76.8%	76.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.8		5.8		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		21.7		21.7		86.3		86.3
Actuated g/C Ratio		0.18		0.18		0.72		0.72
v/c Ratio		0.95		0.13		1.03		0.24
Control Delay		88.0		30.6		50.1		6.0
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		88.0		30.6		50.1		6.0
LOS		F		C		D		A
Approach Delay		88.0		30.6		50.1		6.0
Approach LOS		F		C		D		A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 48.5	Intersection LOS: D
Intersection Capacity Utilization 54.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	83	68	5	17	13	14	325	4	12	212	29
Future Volume (veh/h)	89	83	68	5	17	13	14	325	4	12	212	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	99	92	76	6	19	14	16	1300	4	13	236	32
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.25	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	140	108	82	60	164	106	38	1274	4	54	875	115
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	538	587	448	139	896	580	10	1778	5	31	1220	161
Grp Volume(v), veh/h	267	0	0	39	0	0	1320	0	0	281	0	0
Grp Sat Flow(s),veh/h/ln	1573	0	0	1615	0	0	1793	0	0	1412	0	0
Q Serve(g_s), s	17.7	0.0	0.0	0.0	0.0	0.0	39.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	20.0	0.0	0.0	2.3	0.0	0.0	86.0	0.0	0.0	6.4	0.0	0.0
Prop In Lane	0.37		0.28	0.15		0.36	0.01		0.00	0.05		0.11
Lane Grp Cap(c), veh/h	329	0	0	331	0	0	1315	0	0	1044	0	0
V/C Ratio(X)	0.81	0.00	0.00	0.12	0.00	0.00	1.00	0.00	0.00	0.27	0.00	0.00
Avail Cap(c_a), veh/h	329	0	0	331	0	0	1315	0	0	1044	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	48.1	0.0	0.0	41.0	0.0	0.0	17.9	0.0	0.0	5.7	0.0	0.0
Incr Delay (d2), s/veh	14.1	0.0	0.0	0.2	0.0	0.0	25.7	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	0.0	0.0	1.0	0.0	0.0	37.3	0.0	0.0	2.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.2	0.0	0.0	41.1	0.0	0.0	43.6	0.0	0.0	6.4	0.0	0.0
LnGrp LOS	E	A	A	D	A	A	F	A	A	A	A	A
Approach Vol, veh/h		267			39			1320			281	
Approach Delay, s/veh		62.2			41.1			43.6			6.4	
Approach LOS		E			D			D			A	

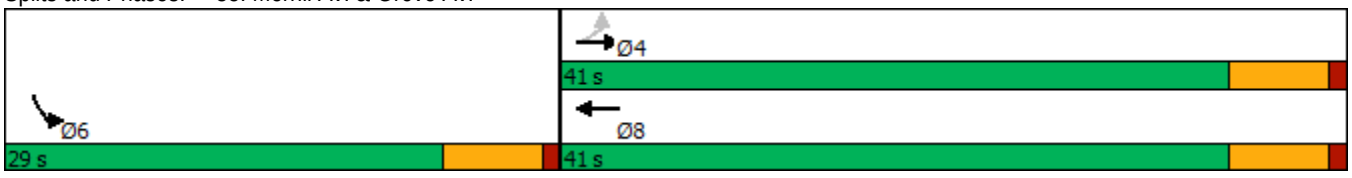
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		92.2		27.8		92.2		27.8				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		86.0		22.0		86.0		22.0				
Max Q Clear Time (g_c+I1), s		88.0		22.0		8.4		4.3				
Green Ext Time (p_c), s		0.0		0.0		1.8		0.1				

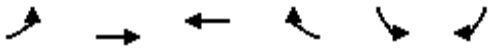
Intersection Summary												
HCM 6th Ctrl Delay			40.6									
HCM 6th LOS			D									

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	177	455	253	191
Future Volume (vph)	177	455	253	191
Turn Type	Perm	NA	NA	Prot
Protected Phases		4	8	6
Permitted Phases	4			
Detector Phase	4	4	8	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2
Total Split (s)	41.0	41.0	41.0	29.0
Total Split (%)	58.6%	58.6%	58.6%	41.4%
Yellow Time (s)	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0
Total Lost Time (s)		6.2	6.2	6.2
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	Max	Max	Max	None
Act Effct Green (s)		35.8	35.8	15.7
Actuated g/C Ratio		0.56	0.56	0.25
v/c Ratio		0.94	0.44	0.71
Control Delay		40.1	9.6	29.0
Queue Delay		0.0	0.0	0.0
Total Delay		40.1	9.6	29.0
LOS		D	A	C
Approach Delay		40.1	9.6	29.0
Approach LOS		D	A	C

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 64	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 28.2	Intersection LOS: C
Intersection Capacity Utilization 94.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	177	455	253	166	191	93
Future Volume (veh/h)	177	455	253	166	191	93
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	184	474	264	173	199	97
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	247	559	580	380	234	114
Arrive On Green	0.57	0.57	0.57	0.57	0.22	0.22
Sat Flow, veh/h	299	977	1015	665	1043	508
Grp Volume(v), veh/h	658	0	0	437	297	0
Grp Sat Flow(s),veh/h/ln	1276	0	0	1680	1556	0
Q Serve(g_s), s	20.1	0.0	0.0	9.2	11.1	0.0
Cycle Q Clear(g_c), s	29.3	0.0	0.0	9.2	11.1	0.0
Prop In Lane	0.28			0.40	0.67	0.33
Lane Grp Cap(c), veh/h	806	0	0	961	349	0
V/C Ratio(X)	0.82	0.00	0.00	0.45	0.85	0.00
Avail Cap(c_a), veh/h	806	0	0	961	583	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.9	0.0	0.0	7.5	22.6	0.0
Incr Delay (d2), s/veh	9.0	0.0	0.0	1.6	6.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	0.0	0.0	2.4	4.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.9	0.0	0.0	9.1	28.8	0.0
LnGrp LOS	C	A	A	A	C	A
Approach Vol, veh/h		658	437		297	
Approach Delay, s/veh		21.9	9.1		28.8	
Approach LOS		C	A		C	

Timer - Assigned Phs			4		6	8
Phs Duration (G+Y+Rc), s			41.0		19.9	41.0
Change Period (Y+Rc), s			6.2		6.2	6.2
Max Green Setting (Gmax), s			34.8		22.8	34.8
Max Q Clear Time (g_c+I1), s			31.3		13.1	11.2
Green Ext Time (p_c), s			1.4		0.6	2.5

Intersection Summary		
HCM 6th Ctrl Delay	19.3	
HCM 6th LOS	B	

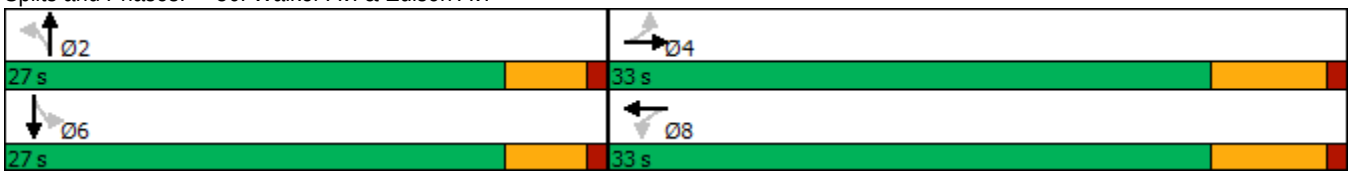
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	20	654	15	352	3	20	64	13
Future Volume (vph)	20	654	15	352	3	20	64	13
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	26.7	26.7	26.7	26.7
Total Split (s)	33.0	33.0	33.0	33.0	27.0	27.0	27.0	27.0
Total Split (%)	55.0%	55.0%	55.0%	55.0%	45.0%	45.0%	45.0%	45.0%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		4.7		4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		36.1		36.1		12.1		12.1
Actuated g/C Ratio		0.72		0.72		0.24		0.24
v/c Ratio		0.56		0.34		0.18		0.29
Control Delay		12.1		7.7		8.0		16.0
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		12.1		7.7		8.0		16.0
LOS		B		A		A		B
Approach Delay		12.1		7.7		8.0		16.0
Approach LOS		B		A		A		B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 50.4	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 10.7	Intersection LOS: B
Intersection Capacity Utilization 65.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	654	1	15	352	30	3	20	49	64	13	10
Future Volume (veh/h)	20	654	1	15	352	30	3	20	49	64	13	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	21	688	1	16	371	32	3	21	52	67	14	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	91	1013	1	93	915	77	84	92	208	320	64	34
Arrive On Green	0.58	0.58	0.58	0.58	0.58	0.58	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	20	1760	3	22	1590	133	21	484	1093	978	335	178
Grp Volume(v), veh/h	710	0	0	419	0	0	76	0	0	92	0	0
Grp Sat Flow(s),veh/h/ln	1783	0	0	1746	0	0	1597	0	0	1491	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Cycle Q Clear(g_c), s	12.9	0.0	0.0	6.1	0.0	0.0	1.9	0.0	0.0	2.1	0.0	0.0
Prop In Lane	0.03		0.00	0.04		0.08	0.04		0.68	0.73		0.12
Lane Grp Cap(c), veh/h	1106	0	0	1085	0	0	384	0	0	417	0	0
V/C Ratio(X)	0.64	0.00	0.00	0.39	0.00	0.00	0.20	0.00	0.00	0.22	0.00	0.00
Avail Cap(c_a), veh/h	1106	0	0	1085	0	0	842	0	0	828	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.9	0.0	0.0	5.5	0.0	0.0	16.0	0.0	0.0	16.1	0.0	0.0
Incr Delay (d2), s/veh	2.9	0.0	0.0	1.0	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	0.0	1.2	0.0	0.0	0.6	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.8	0.0	0.0	6.5	0.0	0.0	16.3	0.0	0.0	16.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		710			419			76			92	
Approach Delay, s/veh		9.8			6.5			16.3			16.4	
Approach LOS		A			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.6		33.0		13.6		33.0				
Change Period (Y+Rc), s		* 4.7		6.2		* 4.7		6.2				
Max Green Setting (Gmax), s		* 22		26.8		* 22		26.8				
Max Q Clear Time (g_c+I1), s		3.9		14.9		4.1		8.1				
Green Ext Time (p_c), s		0.3		3.4		0.4		2.2				

Intersection Summary												
HCM 6th Ctrl Delay			9.6									
HCM 6th LOS			A									

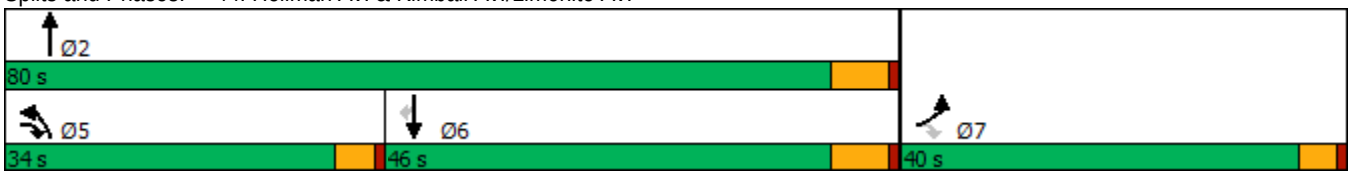
Notes

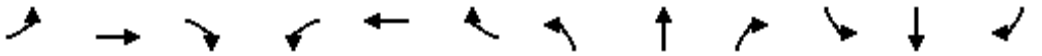
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	733	288	19	45	91
Future Volume (vph)	14	733	288	19	45	91
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	7	5	5	2	6	
Permitted Phases		7				6
Detector Phase	7	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	26.5	9.5	9.5	16.2	28.2	28.2
Total Split (s)	40.0	34.0	34.0	80.0	46.0	46.0
Total Split (%)	33.3%	28.3%	28.3%	66.7%	38.3%	38.3%
Yellow Time (s)	3.5	3.5	3.5	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	6.2	6.2	6.2
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	Max	Max	Max	None	None
Act Effct Green (s)	9.0	54.9	47.8	86.0	34.0	34.0
Actuated g/C Ratio	0.09	0.57	0.50	0.90	0.36	0.36
v/c Ratio	0.10	0.64	0.19	0.01	0.04	0.16
Control Delay	38.5	3.9	20.7	2.9	17.6	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.5	3.9	20.7	2.9	17.6	5.0
LOS	D	A	C	A	B	A
Approach Delay				19.6	9.1	
Approach LOS				B	A	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 95.5			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 8.9		Intersection LOS: A	
Intersection Capacity Utilization 65.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	0	733	0	0	0	288	19	0	0	45	91
Future Volume (veh/h)	14	0	733	0	0	0	288	19	0	0	45	91
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1700	0	1800				1700	1800	0	0	1800	1800
Adj Flow Rate, veh/h	15	0	772				303	20	0	0	47	96
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	479	0	826				772	2103	0	0	1134	506
Arrive On Green	0.30	0.00	0.30				0.25	0.62	0.00	0.00	0.33	0.33
Sat Flow, veh/h	1619	0	1525				3141	3510	0	0	3510	1525
Grp Volume(v), veh/h	15	0	772				303	20	0	0	47	96
Grp Sat Flow(s),veh/h/ln	1619	0	1525				1570	1710	0	0	1710	1525
Q Serve(g_s), s	0.8	0.0	35.5				9.7	0.3	0.0	0.0	1.1	5.4
Cycle Q Clear(g_c), s	0.8	0.0	35.5				9.7	0.3	0.0	0.0	1.1	5.4
Prop In Lane	1.00		1.00				1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	479	0	826				772	2103	0	0	1134	506
V/C Ratio(X)	0.03	0.00	0.93				0.39	0.01	0.00	0.00	0.04	0.19
Avail Cap(c_a), veh/h	479	0	826				772	2103	0	0	1134	506
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	30.0	0.0	25.5				37.8	8.9	0.0	0.0	27.2	28.6
Incr Delay (d2), s/veh	0.0	0.0	17.5				1.5	0.0	0.0	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	41.5				3.7	0.1	0.0	0.0	0.4	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	0.0	43.0				39.3	9.0	0.0	0.0	27.2	28.8
LnGrp LOS	C	A	D				D	A	A	A	C	C
Approach Vol, veh/h		787						323			143	
Approach Delay, s/veh		42.7						37.4			28.3	
Approach LOS		D						D			C	

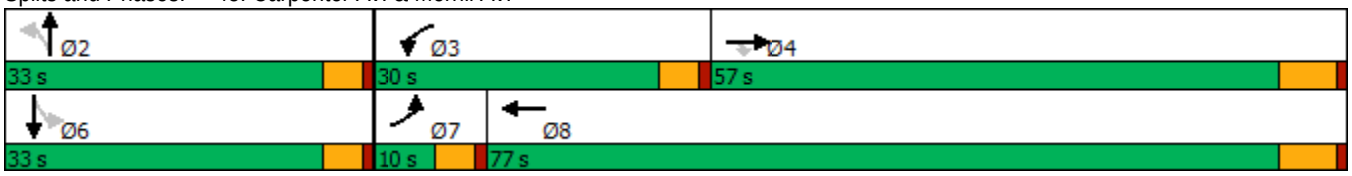
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		80.0		40.0	34.0	46.0						
Change Period (Y+Rc), s		6.2		4.5	4.5	6.2						
Max Green Setting (Gmax), s		73.8		35.5	29.5	39.8						
Max Q Clear Time (g_c+I1), s		2.3		37.5	11.7	7.4						
Green Ext Time (p_c), s		0.1		0.0	0.5	0.5						

Intersection Summary												
HCM 6th Ctrl Delay			39.7									
HCM 6th LOS			D									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	4	664	21	25	379	36	4	52	5
Future Volume (vph)	4	664	21	25	379	36	4	52	5
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	26.6	26.6
Total Split (s)	10.0	57.0	57.0	30.0	77.0	33.0	33.0	33.0	33.0
Total Split (%)	8.3%	47.5%	47.5%	25.0%	64.2%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2		4.6		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.1	71.2	71.2	6.3	74.2		12.7		12.7
Actuated g/C Ratio	0.05	0.71	0.71	0.06	0.74		0.13		0.13
v/c Ratio	0.05	0.57	0.02	0.26	0.32		0.56		0.62
Control Delay	48.5	11.3	0.0	51.1	6.2		24.2		64.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	48.5	11.3	0.0	51.1	6.2		24.2		64.1
LOS	D	B	A	D	A		C		E
Approach Delay		11.1			8.9		24.2		64.1
Approach LOS		B			A		C		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99.6	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 14.3	Intersection LOS: B
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 45: Carpenter Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	664	21	25	379	7	36	4	99	52	5	2
Future Volume (veh/h)	4	664	21	25	379	7	36	4	99	52	5	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	4	738	23	28	421	8	40	4	110	58	6	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	9	1254	1063	47	1265	24	84	17	137	177	16	4
Arrive On Green	0.01	0.70	0.70	0.03	0.72	0.72	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1714	1800	1525	1714	1760	33	320	138	1146	902	134	32
Grp Volume(v), veh/h	4	738	23	28	0	429	154	0	0	66	0	0
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	0	1794	1604	0	0	1069	0	0
Q Serve(g_s), s	0.2	20.8	0.5	1.6	0.0	8.7	2.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	20.8	0.5	1.6	0.0	8.7	9.0	0.0	0.0	6.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.26		0.71	0.88		0.03
Lane Grp Cap(c), veh/h	9	1254	1063	47	0	1289	238	0	0	197	0	0
V/C Ratio(X)	0.44	0.59	0.02	0.60	0.00	0.33	0.65	0.00	0.00	0.34	0.00	0.00
Avail Cap(c_a), veh/h	94	1254	1063	442	0	1289	492	0	0	422	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	48.8	7.7	4.6	47.4	0.0	5.1	42.1	0.0	0.0	40.8	0.0	0.0
Incr Delay (d2), s/veh	12.2	2.0	0.0	4.6	0.0	0.7	2.9	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	6.3	0.1	0.7	0.0	2.5	3.8	0.0	0.0	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.0	9.7	4.6	51.9	0.0	5.8	45.0	0.0	0.0	41.8	0.0	0.0
LnGrp LOS	E	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		765			457			154			66	
Approach Delay, s/veh		9.8			8.6			45.0			41.8	
Approach LOS		A			A			D			D	

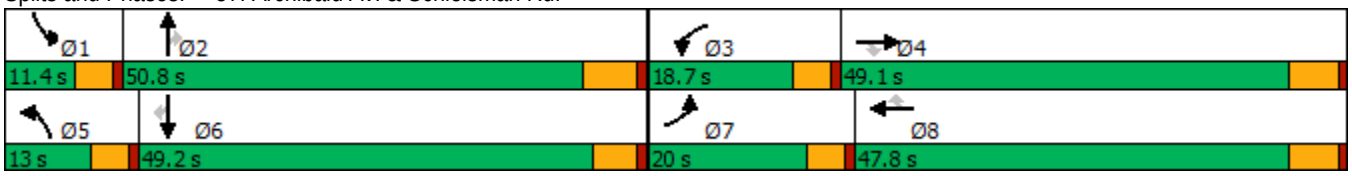
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.4	7.3	74.8		16.4	5.1	77.0				
Change Period (Y+Rc), s		4.6	4.6	6.2		4.6	4.6	6.2				
Max Green Setting (Gmax), s		28.4	25.4	50.8		28.4	5.4	70.8				
Max Q Clear Time (g_c+I1), s		11.0	3.6	22.8		8.1	2.2	10.7				
Green Ext Time (p_c), s		0.8	0.0	5.0		0.3	0.0	2.5				

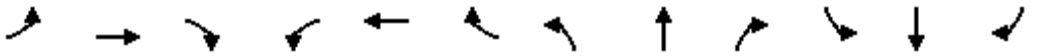
Intersection Summary												
HCM 6th Ctrl Delay			14.7									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	993	172	108	308	55	178	593	109	160	641	300
Future Volume (vph)	372	993	172	108	308	55	178	593	109	160	641	300
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	20.0	49.1	49.1	18.7	47.8	47.8	13.0	50.8	50.8	11.4	49.2	49.2
Total Split (%)	15.4%	37.8%	37.8%	14.4%	36.8%	36.8%	10.0%	39.1%	39.1%	8.8%	37.8%	37.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	None	None	Max	None	None	None	None	None	None	None	None
Act Effct Green (s)	15.9	27.4	27.4	14.6	26.1	26.1	8.3	22.2	22.2	7.0	21.7	21.7
Actuated g/C Ratio	0.17	0.29	0.29	0.16	0.28	0.28	0.09	0.24	0.24	0.08	0.23	0.23
v/c Ratio	0.63	0.66	0.29	0.20	0.22	0.11	0.58	0.49	0.24	0.62	0.54	0.51
Control Delay	44.5	31.5	5.6	40.5	26.6	0.7	52.4	31.8	7.1	56.4	33.0	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.5	31.5	5.6	40.5	26.6	0.7	52.4	31.8	7.1	56.4	33.0	6.7
LOS	D	C	A	D	C	A	D	C	A	E	C	A
Approach Delay		31.7			26.7			32.9			29.2	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 93.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 30.7	Intersection LOS: C
Intersection Capacity Utilization 82.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	372	993	172	108	308	55	178	593	109	160	641	300
Future Volume (veh/h)	372	993	172	108	308	55	178	593	109	160	641	300
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	380	1013	94	110	314	30	182	605	74	163	654	192
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	650	1516	471	595	1435	444	261	1115	346	239	1083	335
Arrive On Green	0.19	0.29	0.29	0.17	0.28	0.28	0.07	0.22	0.22	0.07	0.21	0.21
Sat Flow, veh/h	3510	5187	1610	3510	5187	1607	3510	5187	1610	3510	5187	1603
Grp Volume(v), veh/h	380	1013	94	110	314	30	182	605	74	163	654	192
Grp Sat Flow(s),veh/h/ln	1755	1729	1610	1755	1729	1607	1755	1729	1610	1755	1729	1603
Q Serve(g_s), s	8.2	14.3	3.6	2.2	3.9	1.1	4.2	8.6	3.1	3.8	9.5	8.9
Cycle Q Clear(g_c), s	8.2	14.3	3.6	2.2	3.9	1.1	4.2	8.6	3.1	3.8	9.5	8.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	650	1516	471	595	1435	444	261	1115	346	239	1083	335
V/C Ratio(X)	0.58	0.67	0.20	0.18	0.22	0.07	0.70	0.54	0.21	0.68	0.60	0.57
Avail Cap(c_a), veh/h	650	2702	839	595	2620	812	355	2783	864	287	2733	845
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.9	25.9	22.1	29.6	23.2	22.2	37.6	29.0	26.8	37.9	29.8	29.6
Incr Delay (d2), s/veh	3.8	0.5	0.2	0.7	0.1	0.1	1.6	0.4	0.3	3.2	0.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	5.4	1.3	0.9	1.5	0.4	1.7	3.3	1.2	1.6	3.7	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.8	26.4	22.3	30.3	23.2	22.2	39.2	29.4	27.2	41.1	30.3	31.1
LnGrp LOS	C	C	C	C	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1487			454			861			1009	
Approach Delay, s/veh		28.3			24.9			31.3			32.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	24.1	18.7	30.1	10.8	23.6	20.0	28.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	6.8	44.6	14.1	43.3	8.4	* 44	15.4	42.0
Max Q Clear Time (g_c+I1), s	5.8	10.6	4.2	16.3	6.2	11.5	10.2	5.9
Green Ext Time (p_c), s	0.0	4.2	0.1	7.6	0.1	5.0	0.4	2.1

Intersection Summary	
HCM 6th Ctrl Delay	29.6
HCM 6th LOS	C

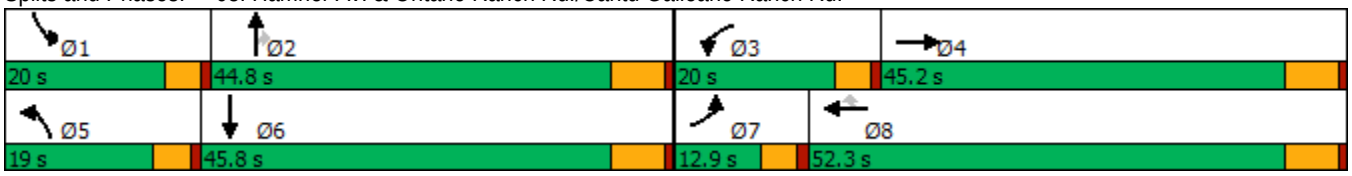
Notes

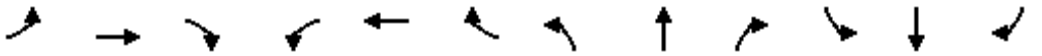
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	87	736	580	422	107	195	372	233	451	790
Future Volume (vph)	87	736	580	422	107	195	372	233	451	790
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2
Total Split (s)	12.9	45.2	20.0	52.3	52.3	19.0	44.8	44.8	20.0	45.8
Total Split (%)	9.9%	34.8%	15.4%	40.2%	40.2%	14.6%	34.5%	34.5%	15.4%	35.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	7.3	25.6	15.8	36.6	36.6	11.3	22.5	22.5	15.8	27.0
Actuated g/C Ratio	0.07	0.25	0.16	0.36	0.36	0.11	0.22	0.22	0.16	0.27
v/c Ratio	0.43	0.67	1.32	0.36	0.18	0.62	0.36	0.49	1.03	0.72
Control Delay	56.4	34.5	195.5	27.1	5.9	54.7	34.2	11.0	94.0	37.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.4	34.5	195.5	27.1	5.9	54.7	34.2	11.0	94.0	37.3
LOS	E	C	F	C	A	D	C	B	F	D
Approach Delay		36.3		113.1			32.4			56.3
Approach LOS		D		F			C			E

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 101.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.32	
Intersection Signal Delay: 61.4	Intersection LOS: E
Intersection Capacity Utilization 79.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	736	263	580	422	107	195	372	233	451	790	107
Future Volume (veh/h)	87	736	263	580	422	107	195	372	233	451	790	107
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	91	767	217	604	440	77	203	388	164	470	823	56
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	150	1167	320	518	1246	556	270	804	249	518	1164	79
Arrive On Green	0.05	0.24	0.24	0.18	0.36	0.36	0.09	0.16	0.16	0.18	0.25	0.25
Sat Flow, veh/h	2956	4869	1335	2956	3420	1525	2956	4914	1523	2956	4700	319
Grp Volume(v), veh/h	91	730	254	604	440	77	203	388	164	470	573	306
Grp Sat Flow(s),veh/h/ln	1478	1548	1560	1478	1710	1525	1478	1638	1523	1478	1638	1742
Q Serve(g_s), s	2.6	12.5	13.0	15.4	8.2	3.0	5.9	6.3	8.9	13.7	14.0	14.1
Cycle Q Clear(g_c), s	2.6	12.5	13.0	15.4	8.2	3.0	5.9	6.3	8.9	13.7	14.0	14.1
Prop In Lane	1.00		0.86	1.00		1.00	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	150	1113	374	518	1246	556	270	804	249	518	812	432
V/C Ratio(X)	0.61	0.66	0.68	1.16	0.35	0.14	0.75	0.48	0.66	0.91	0.71	0.71
Avail Cap(c_a), veh/h	279	2063	693	518	1796	801	485	2160	669	518	1477	786
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	30.1	30.3	36.2	20.4	18.7	38.9	33.3	34.4	35.5	30.1	30.1
Incr Delay (d2), s/veh	1.5	0.7	2.2	93.7	0.2	0.1	1.6	0.5	3.0	19.2	1.1	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.3	4.6	11.9	3.0	1.0	2.1	2.4	3.3	5.9	5.2	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.3	30.8	32.5	129.9	20.5	18.8	40.5	33.8	37.4	54.7	31.2	32.3
LnGrp LOS	D	C	C	F	C	B	D	C	D	D	C	C
Approach Vol, veh/h		1075			1121			755			1349	
Approach Delay, s/veh		32.2			79.3			36.4			39.6	
Approach LOS		C			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	20.6	20.0	27.2	12.6	28.0	9.1	38.2
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	15.4	38.6	15.4	39.0	14.4	39.6	8.3	46.1
Max Q Clear Time (g_c+I1), s	15.7	10.9	17.4	15.0	7.9	16.1	4.6	10.2
Green Ext Time (p_c), s	0.0	2.9	0.0	6.1	0.2	5.2	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	47.5
HCM 6th LOS	D

APPENDIX 4.1:

POST PROCESSING WORKSHEETS

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Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: SR-71 Southbound Ramps & Grand Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	NB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
SOUTH BOUND	Left	1	874	873	87300%	1	998	997	99700%
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	1	278	277	27700%	1	253	252	25200%
	SB Total	2	1,152	1,150	57500%	2	1,251	1,249	62450%
EAST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	2	1,086	1,084	54200%	2	1,782	1,780	89000%
	Right	1	54	53	5300%	1	99	98	9800%
	EB Total	3	1,140	1,137	37900%	3	1,881	1,878	62600%
WEST BOUND	Left	1	206	205	20500%	1	261	260	26000%
	Through	2	1,312	1,310	65500%	2	1,197	1,195	59750%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	WB Total	3	1,518	1,515	50500%	3	1,458	1,455	48500%
TOTAL ENTERING VOLUME		8	3,810	3802	47525%	8	4,590	4582	57275%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,152	1,251			
North Leg	Outbound	0	0			
North Leg	**TOTAL**	**1,152**	**1,251**	**7%**	**8%**	**15,974**
South Leg	Inbound	0	0			
South Leg	Outbound	260	360			
South Leg	**TOTAL**	**260**	**360**	**5%**	**7%**	**4,890**
East Leg	Inbound	1,518	1,458			
East Leg	Outbound	1,960	2,780			
East Leg	**TOTAL**	**3,478**	**4,238**	**8%**	**10%**	**44,428**
West Leg	Inbound	1,140	1,881			
West Leg	Outbound	1,590	1,450			
West Leg	**TOTAL**	**2,730**	**3,331**	**8%**	**9%**	**35,386**
OVERALL TOTAL		***7,620***	***9,180***	**8%**	***9%***	***100,678***

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Project: Merill Commerce Center
Scenario: Horizon Year (2040)

Job #: 12003
Analyst: CP
Date: 4/9/19

LOCATION: SR-71 Southbound Ramps / Euclid Avenue (SR-83)
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	19	7	-12	-62%	17	6	-11	-65%
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	288	313	26	9%	147	157	10	7%
	NB Total	306	320	14	5%	164	163	-1	-1%
SOUTH BOUND	Left	628	669	42	7%	629	1,040	411	65%
	Through	26	8	-18	-69%	66	43	-23	-34%
	Right	40	14	-26	-65%	67	37	-30	-45%
	SB Total	693	691	-2	0%	762	1,120	359	47%
EAST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	685	775	91	13%	841	983	142	17%
	Right	31	10	-21	-68%	58	27	-31	-53%
	EB Total	716	785	70	10%	899	1,010	111	12%
WEST BOUND	Left	195	234	40	20%	121	170	50	41%
	Through	275	401	126	46%	253	297	45	18%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	WB Total	470	635	166	35%	373	467	94	25%
TOTAL ENTERING VOLUME		2,184	2,431	247	11%	2,198	2,760	563	26%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	691	1,120			
North Leg	Outbound	0	0			
North Leg	**TOTAL**	**691**	**1,120**	**27%**	**44%**	**2,538**
South Leg	Inbound	320	163			
South Leg	Outbound	252	240			
South Leg	**TOTAL**	**572**	**403**	**#DIV/0!**	**#DIV/0!**	**-**
East Leg	Inbound	635	467			
East Leg	Outbound	1,757	2,180			
East Leg	**TOTAL**	**2,392**	**2,647**	**14%**	**16%**	**16,686**
West Leg	Inbound	785	1,010			
West Leg	Outbound	422	340			
West Leg	**TOTAL**	**1,207**	**1,350**	**7%**	**8%**	**17,307**
OVERALL TOTAL		***4,862***	***5,520***	**13%**	***15%***	***36,531***

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Project: Merrill Commerce Center
Scenario: Horizon Year (Post-2040)

Job #: 12003
Analyst: CP
Date: 4/9/19

LOCATION: SR-71 Northbound Ramps & Edison Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	363	362	36200%	1	301	300	30000%
	Through	1	72	71	7100%	1	67	66	6600%
	Right	1	71	70	7000%	1	70	69	6900%
	NB Total	3	506	503	16767%	3	438	435	14500%
SOUTH BOUND	Left	1	117	116	11600%	1	128	127	12700%
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	1	595	594	59400%	1	548	547	54700%
	SB Total	2	712	710	35500%	2	676	674	33700%
EAST BOUND	Left	1	632	631	63100%	1	887	886	88600%
	Through	2	1,255	1,253	62650%	2	1,872	1,870	93500%
	Right	1	0	-1	-100%	1	0	-1	-100%
	EB Total	4	1,887	1,883	47075%	4	2,759	2,755	68875%
WEST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	2	1,498	1,496	74800%	2	1,961	1,959	97950%
	Right	1	148	147	14700%	1	217	216	21600%
	WB Total	3	1,646	1,643	54767%	3	2,178	2,175	72500%
TOTAL ENTERING VOLUME		12	4,751	4739	39492%	12	6,051	6039	50325%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	712	676			
North Leg	Outbound	852	1,171			
North Leg	**TOTAL**	**1,564**	**1,847**	**7%**	**9%**	**21,473**
South Leg	Inbound	506	438			
South Leg	Outbound	0	0			
South Leg	**TOTAL**	**506**	**438**	**8%**	**7%**	**6,674**
East Leg	Inbound	1,646	2,178			
East Leg	Outbound	1,443	2,070			
East Leg	**TOTAL**	**3,089**	**4,248**	**7%**	**9%**	**45,792**
West Leg	Inbound	1,887	2,759			
West Leg	Outbound	2,456	2,810			
West Leg	**TOTAL**	**4,343**	**5,569**	**7%**	**9%**	**60,928**
OVERALL TOTAL		***9,502***	***12,102***	***7%***	***9%***	***134,867***

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Project: Merill Commerce Center
Scenario: Horizon Year (2040)

Job #: 12003
Analyst: CP
Date: 4/9/19

LOCATION: SR-71 Northbound Ramps / Euclid Avenue (SR-83)
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	156	155	15500%	1	181	180	18000%
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	1	404	403	40300%	1	1,214	1,213	121300%
	NB Total	2	560	558	27900%	2	1,395	1,393	69650%
SOUTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	SB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
EAST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	2	516	514	25700%	2	1,021	1,019	50950%
	Right	1	49	48	4800%	1	6	5	500%
	EB Total	3	565	562	18733%	3	1,027	1,024	34133%
WEST BOUND	Left	1	401	400	40000%	1	54	53	5300%
	Through	2	1,614	1,612	80600%	2	1,453	1,451	72550%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	WB Total	3	2,015	2,012	67067%	3	1,507	1,504	50133%
TOTAL ENTERING VOLUME		8	3,140	3132	39150%	8	3,929	3921	49013%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	0	0			
North Leg	Outbound	0	0			
North Leg	**TOTAL**	**0**	**0**	**#DIV/0!**	**#DIV/0!**	**-**
South Leg	Inbound	560	1,395			
South Leg	Outbound	450	60			
South Leg	**TOTAL**	**1,010**	**1,455**	**6%**	**9%**	**16,479**
East Leg	Inbound	2,015	1,507			
East Leg	Outbound	920	2,235			
East Leg	**TOTAL**	**2,935**	**3,742**	**8%**	**10%**	**37,837**
West Leg	Inbound	565	1,027			
West Leg	Outbound	1,770	1,634			
West Leg	**TOTAL**	**2,335**	**2,661**	**8%**	**9%**	**28,348**
OVERALL TOTAL		***6,280***	***7,858***	**8%**	***10%***	***82,664***

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Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Pipeline Av. & Edison Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	142	157	15	11%	268	353	85	32%
	Through	195	264	69	35%	412	538	127	31%
	Right	98	89	-9	-9%	161	161	1	0%
	NB Total	435	510	75	17%	840	1,052	212	25%
SOUTH BOUND	Left	57	107	51	89%	123	178	55	45%
	Through	317	470	154	48%	518	693	176	34%
	Right	67	153	86	128%	148	282	134	91%
	SB Total	440	730	290	66%	789	1,153	365	46%
EAST BOUND	Left	106	200	95	90%	249	389	141	57%
	Through	781	997	217	28%	980	1,172	192	20%
	Right	142	142	1	0%	225	249	25	11%
	EB Total	1,028	1,339	312	30%	1,453	1,810	357	25%
WEST BOUND	Left	150	116	-34	-22%	220	208	-12	-5%
	Through	793	953	160	20%	821	1,105	284	35%
	Right	42	62	20	48%	77	103	26	34%
	WB Total	985	1,131	147	15%	1,118	1,416	298	27%
TOTAL ENTERING VOLUME		2,887	3,710	823	29%	4,200	5,431	1232	29%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	730	1,153			
North Leg	Outbound	526	1,030			
North Leg	**TOTAL**	**1,256**	**2,183**	**11%**	**20%**	**11,072**
South Leg	Inbound	510	1,052			
South Leg	Outbound	728	1,150			
South Leg	**TOTAL**	**1,238**	**2,202**	**7%**	**12%**	**18,595**
East Leg	Inbound	1,131	1,416			
East Leg	Outbound	1,193	1,511			
East Leg	**TOTAL**	**2,324**	**2,927**	**6%**	**7%**	**39,199**
West Leg	Inbound	1,339	1,810			
West Leg	Outbound	1,263	1,740			
West Leg	**TOTAL**	**2,602**	**3,550**	**5%**	**7%**	**47,508**
OVERALL TOTAL		***7,420***	***10,862***	**6%**	***9%***	***116,374***

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Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Ramona Av. & Edison Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	41	45	5	11%	87	104	18	20%
	Through	285	234	-51	-18%	407	347	-60	-15%
	Right	54	144	90	167%	69	162	94	136%
	NB Total	379	423	44	12%	562	613	51	9%
SOUTH BOUND	Left	40	33	-7	-16%	55	51	-4	-6%
	Through	419	337	-82	-20%	377	294	-83	-22%
	Right	86	30	-56	-65%	96	45	-51	-53%
	SB Total	544	400	-144	-26%	527	390	-137	-26%
EAST BOUND	Left	91	39	-52	-57%	107	51	-56	-52%
	Through	735	1,023	289	39%	1,056	1,388	332	31%
	Right	55	74	19	35%	107	118	12	11%
	EB Total	881	1,136	256	29%	1,269	1,557	288	23%
WEST BOUND	Left	48	139	91	190%	82	188	106	129%
	Through	916	1,145	230	25%	840	1,161	321	38%
	Right	61	56	-5	-8%	53	52	-1	-2%
	WB Total	1,025	1,340	316	31%	975	1,401	426	44%
TOTAL ENTERING VOLUME		2,828	3,299	471	17%	3,333	3,961	629	19%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	400	390			
North Leg	Outbound	329	450			
North Leg	**TOTAL**	**729**	**840**	**10%**	**12%**	**7,237**
South Leg	Inbound	423	613			
South Leg	Outbound	550	600			
South Leg	**TOTAL**	**973**	**1,213**	**12%**	**15%**	**7,858**
East Leg	Inbound	1,340	1,401			
East Leg	Outbound	1,200	1,601			
East Leg	**TOTAL**	**2,540**	**3,002**	**7%**	**8%**	**35,543**
West Leg	Inbound	1,136	1,557			
West Leg	Outbound	1,220	1,310			
West Leg	**TOTAL**	**2,356**	**2,867**	**6%**	**8%**	**36,269**
OVERALL TOTAL		***6,598***	***7,922***	***8%***	***9%***	***86,907***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[06 Ramona_Edison.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Central Av. & Edison Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	69	73	5	7%	77	128	51	66%
	Through	732	750	19	3%	934	1,072	138	15%
	Right	292	465	174	60%	391	598	208	53%
	NB Total	1,092	1,288	197	18%	1,402	1,798	397	28%
SOUTH BOUND	Left	68	107	40	59%	101	111	11	10%
	Through	866	961	95	11%	746	845	99	13%
	Right	237	251	14	6%	129	155	26	20%
	SB Total	1,171	1,319	149	13%	976	1,111	136	14%
EAST BOUND	Left	141	164	24	17%	207	229	22	11%
	Through	424	769	346	82%	814	1,201	387	48%
	Right	50	64	14	28%	78	117	40	51%
	EB Total	614	997	383	62%	1,099	1,547	449	41%
WEST BOUND	Left	300	425	126	42%	242	378	136	56%
	Through	937	1,267	331	35%	562	928	367	65%
	Right	104	135	31	30%	78	89	11	14%
	WB Total	1,340	1,827	487	36%	882	1,395	514	58%
TOTAL ENTERING VOLUME		4,216	5,431	1215	29%	4,357	5,851	1494	34%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,319	1,111			
North Leg	Outbound	1,049	1,390			
North Leg	**TOTAL**	**2,368**	**2,501**	**14%**	**15%**	**17,183**
South Leg	Inbound	1,288	1,798			
South Leg	Outbound	1,450	1,340			
South Leg	**TOTAL**	**2,738**	**3,138**	**9%**	**11%**	**29,528**
East Leg	Inbound	1,827	1,395			
East Leg	Outbound	1,341	1,910			
East Leg	**TOTAL**	**3,168**	**3,305**	**7%**	**7%**	**46,084**
West Leg	Inbound	997	1,547			
West Leg	Outbound	1,591	1,211			
West Leg	**TOTAL**	**2,588**	**2,758**	**8%**	**9%**	**30,599**
OVERALL TOTAL		***10,862***	***11,702***	**9%**	***9%***	***123,394***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[07 Central_Edison.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Mountain Av. & Edison Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	80	85	5	6%	36	43	7	19%
	Through	146	137	-9	-6%	88	72	-16	-18%
	Right	39	49	10	26%	27	36	9	33%
	NB Total	265	271	6	2%	151	151	0	0%
SOUTH BOUND	Left	90	128	38	42%	101	127	27	26%
	Through	75	63	-12	-15%	162	139	-23	-14%
	Right	250	302	53	21%	204	228	24	12%
	SB Total	414	493	79	19%	466	494	28	6%
EAST BOUND	Left	134	209	76	57%	196	186	-10	-5%
	Through	464	964	500	108%	1,054	1,646	592	56%
	Right	38	47	9	24%	77	82	5	6%
	EB Total	636	1,220	585	92%	1,327	1,914	587	44%
WEST BOUND	Left	10	9	-1	-5%	34	49	16	46%
	Through	951	1,353	403	42%	600	1,149	550	92%
	Right	99	124	26	26%	77	102	25	32%
	WB Total	1,059	1,486	428	40%	710	1,300	590	83%
TOTAL ENTERING VOLUME		2,373	3,470	1097	46%	2,654	3,859	1205	45%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	493	494			
North Leg	Outbound	470	360			
North Leg	**TOTAL**	**963**	**854**	**11%**	**9%**	**9,013**
South Leg	Inbound	271	151			
South Leg	Outbound	119	270			
South Leg	**TOTAL**	**390**	**421**	**#DIV/0!**	**#DIV/0!**	**-**
East Leg	Inbound	1,486	1,300			
East Leg	Outbound	1,141	1,809			
East Leg	**TOTAL**	**2,627**	**3,109**	**6%**	**8%**	**40,912**
West Leg	Inbound	1,220	1,914			
West Leg	Outbound	1,740	1,420			
West Leg	**TOTAL**	**2,960**	**3,334**	**7%**	**7%**	**44,784**
OVERALL TOTAL		***6,940***	***7,718***	***7%***	***8%***	***94,709***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[08 Mountain_Edison.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: San Antonio Av. & Riverside Dr.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	110	120	10	9%	85	98	13	15%
	Through	2	2	0	0%	14	11	-3	-21%
	Right	42	49	7	17%	39	41	2	5%
	NB Total	154	171	17	11%	138	150	12	9%
SOUTH BOUND	Left	15	17	2	13%	9	10	1	11%
	Through	5	4	-1	-20%	7	6	-1	-14%
	Right	48	50	3	5%	29	34	5	17%
	SB Total	68	71	4	5%	45	50	5	11%
EAST BOUND	Left	16	15	-1	-6%	29	31	2	7%
	Through	451	674	224	50%	752	1,119	368	49%
	Right	55	57	2	4%	109	125	16	15%
	EB Total	522	746	225	43%	890	1,275	386	43%
WEST BOUND	Left	34	30	-4	-10%	56	64	8	14%
	Through	793	941	149	19%	691	1,120	429	62%
	Right	4	3	-1	-25%	19	20	2	8%
	WB Total	830	974	144	17%	766	1,204	439	57%
TOTAL ENTERING VOLUME		1,573	1,962	389	25%	1,838	2,679	841	46%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	71	50			
North Leg	Outbound	20	62			
North Leg	**TOTAL**	**91**	**112**	**#DIV/0!**	**#DIV/0!**	**-**
South Leg	Inbound	171	150			
South Leg	Outbound	91	195			
South Leg	**TOTAL**	**262**	**345**	**10%**	**14%**	**2,518**
East Leg	Inbound	974	1,204			
East Leg	Outbound	740	1,170			
East Leg	**TOTAL**	**1,714**	**2,374**	**10%**	**14%**	**17,363**
West Leg	Inbound	746	1,275			
West Leg	Outbound	1,111	1,252			
West Leg	**TOTAL**	**1,857**	**2,527**	**13%**	**17%**	**14,846**
OVERALL TOTAL		***3,924***	***5,358***	**11%**	***15%***	***34,727***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[09 San Antonio_Riverside.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: San Antonio Av. & Edison Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	40	87	47	118%	21	31	11	51%
	Through	70	97	27	39%	29	35	6	21%
	Right	13	69	56	431%	10	15	6	58%
	NB Total	123	253	130	106%	59	81	22	37%
SOUTH BOUND	Left	13	33	21	164%	10	12	2	20%
	Through	36	53	17	47%	40	52	13	32%
	Right	89	95	7	7%	48	55	8	16%
	SB Total	137	181	44	32%	97	119	22	23%
EAST BOUND	Left	44	25	-19	-43%	80	97	18	22%
	Through	525	1,148	624	119%	1,006	1,613	608	60%
	Right	26	32	6	23%	37	64	28	75%
	EB Total	595	1,205	611	103%	1,122	1,774	653	58%
WEST BOUND	Left	3	6	3	100%	7	15	9	131%
	Through	844	1,198	355	42%	640	1,263	623	97%
	Right	19	17	-2	-11%	13	20	8	60%
	WB Total	866	1,221	356	41%	659	1,298	639	97%
TOTAL ENTERING VOLUME		1,720	2,860	1140	66%	1,937	3,272	1336	69%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	181	119			
North Leg	Outbound	139	152			
North Leg	**TOTAL**	**320**	**271**	**19%**	**16%**	**1,723**
South Leg	Inbound	253	81			
South Leg	Outbound	91	131			
South Leg	**TOTAL**	**344**	**212**	**13%**	**8%**	**2,644**
East Leg	Inbound	1,221	1,298			
East Leg	Outbound	1,250	1,640			
East Leg	**TOTAL**	**2,471**	**2,938**	**8%**	**10%**	**29,242**
West Leg	Inbound	1,205	1,774			
West Leg	Outbound	1,380	1,349			
West Leg	**TOTAL**	**2,585**	**3,123**	**7%**	**8%**	**39,245**
OVERALL TOTAL		***5,720***	***6,544***	***8%***	***9%***	***72,854***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[10 San Antonio_Edison.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Euclid Av. & SR-60 Westbound Ramps
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	333	324	-9	-3%	233	208	-25	-11%
	Through	902	1,181	279	31%	1,034	1,113	79	8%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	NB Total	1,235	1,505	270	22%	1,267	1,321	54	4%
SOUTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	947	1,201	254	27%	967	1,242	275	28%
	Right	470	541	72	15%	473	517	44	9%
	SB Total	1,417	1,742	326	23%	1,440	1,759	319	22%
EAST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	EB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
WEST BOUND	Left	591	509	-82	-14%	580	558	-22	-4%
	Through	6	4	-2	-27%	6	5	-1	-17%
	Right	408	429	21	5%	392	387	-5	-1%
	WB Total	1,004	942	-62	-6%	978	950	-28	-3%
TOTAL ENTERING VOLUME		3,656	4,189	533.5	15%	3,685	4,030	346	9%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,742	1,759			
North Leg	Outbound	1,610	1,500			
North Leg	**TOTAL**	**3,352**	**3,259**	**9%**	**9%**	**36,643**
South Leg	Inbound	1,505	1,321			
South Leg	Outbound	1,710	1,800			
South Leg	**TOTAL**	**3,215**	**3,121**	**9%**	**9%**	**35,842**
East Leg	Inbound	942	950			
East Leg	Outbound	0	0			
East Leg	**TOTAL**	**942**	**950**	**14%**	**14%**	**6,974**
West Leg	Inbound	0	0			
West Leg	Outbound	869	730			
West Leg	**TOTAL**	**869**	**730**	**10%**	**9%**	**8,386**
OVERALL TOTAL		***8,378***	***8,060***	**10%**	***9%***	***87,845***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[11 Euclid_SR-60 WB.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Euclid Av. & SR-60 Eastbound Ramps
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	832	1,038	207	25%	868	889	22	2%
	Right	656	623	-33	-5%	551	531	-20	-4%
	NB Total	1,487	1,661	174	12%	1,419	1,420	2	0%
SOUTH BOUND	Left	363	385	22	6%	361	378	18	5%
	Through	1,175	1,323	149	13%	1,187	1,422	236	20%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	SB Total	1,538	1,708	171	11%	1,547	1,800	253	16%
EAST BOUND	Left	404	462	59	14%	400	465	66	16%
	Through	2	2	0	0%	3	3	0	0%
	Right	288	267	-21	-7%	306	382	77	25%
	EB Total	694	731	38	5%	708	850	142	20%
WEST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	WB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
TOTAL ENTERING VOLUME		3,718	4,100	382	10%	3,674	4,070	397	11%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,708	1,800			
North Leg	Outbound	1,500	1,354			
North Leg	**TOTAL**	**3,208**	**3,154**	**9%**	**9%**	**35,842**
South Leg	Inbound	1,661	1,420			
South Leg	Outbound	1,590	1,804			
South Leg	**TOTAL**	**3,251**	**3,224**	**9%**	**8%**	**38,142**
East Leg	Inbound	0	0			
East Leg	Outbound	1,010	912			
East Leg	**TOTAL**	**1,010**	**912**	**15%**	**14%**	**6,678**
West Leg	Inbound	731	850			
West Leg	Outbound	0	0			
West Leg	**TOTAL**	**731**	**850**	**9%**	**10%**	**8,223**
OVERALL TOTAL		***8,200***	***8,140***	***9%***	***9%***	***88,885***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[12 Euclid_SR-60 EB.xls]Output (3)

Project: Merrill Commerce Center
Scenario: Horizon Year (2040)

Job #: 12003
Analyst: CP
Date: 4/9/19

LOCATION: Euclid Av. & Walnut Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	125	119	-6	-5%	178	216	38	21%
	Through	1,122	1,194	72	6%	1,158	1,142	-16	-1%
	Right	45	20	-25	-56%	70	40	-30	-43%
	NB Total	1,292	1,333	41	3%	1,406	1,398	-8	-1%
SOUTH BOUND	Left	150	147	-3	-2%	253	223	-30	-12%
	Through	1,128	1,173	46	4%	1,061	1,224	164	15%
	Right	59	123	64	108%	141	265	125	89%
	SB Total	1,336	1,443	107	8%	1,454	1,712	258	18%
EAST BOUND	Left	113	252	139	123%	103	179	76	74%
	Through	289	270	-19	-6%	356	356	1	0%
	Right	109	108	-1	-1%	133	174	41	31%
	EB Total	511	630	120	23%	592	709	118	20%
WEST BOUND	Left	71	29	-42	-59%	67	45	-22	-32%
	Through	307	255	-52	-17%	356	395	40	11%
	Right	204	190	-14	-7%	135	121	-14	-10%
	WB Total	582	474	-108	-18%	557	561	5	1%
TOTAL ENTERING VOLUME		3,720	3,880	160	4%	4,008	4,380	373	9%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,443	1,712			
North Leg	Outbound	1,636	1,442			
North Leg	**TOTAL**	**3,079**	**3,154**	**8%**	**8%**	**38,142**
South Leg	Inbound	1,333	1,398			
South Leg	Outbound	1,310	1,443			
South Leg	**TOTAL**	**2,643**	**2,841**	**8%**	**9%**	**32,886**
East Leg	Inbound	474	561			
East Leg	Outbound	437	619			
East Leg	**TOTAL**	**911**	**1,180**	**8%**	**10%**	**11,850**
West Leg	Inbound	630	709			
West Leg	Outbound	497	876			
West Leg	**TOTAL**	**1,127**	**1,585**	**11%**	**16%**	**10,155**
OVERALL TOTAL		***7,760***	***8,760***	**8%**	***9%***	***93,033***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[13 Euclid_Walnut.xls]Output (3)

Project: Merrill Commerce Center
Scenario: Horizon Year (2040)

Job #: 12003
Analyst: CP
Date: 4/9/19

LOCATION: Euclid Avenue (SR-83) & Riverside Drive
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	66	148	82	124%	63	166	104	166%
	Through	909	982	74	8%	975	918	-57	-6%
	Right	155	201	47	30%	230	219	-11	-5%
	NB Total	1,129	1,331	202	18%	1,267	1,303	37	3%
SOUTH BOUND	Left	174	127	-47	-27%	134	90	-44	-33%
	Through	940	959	19	2%	880	953	73	8%
	Right	152	192	40	26%	185	345	161	87%
	SB Total	1,266	1,278	13	1%	1,198	1,388	190	16%
EAST BOUND	Left	153	185	32	21%	145	234	89	61%
	Through	311	453	143	46%	440	721	281	64%
	Right	49	99	51	104%	71	187	116	163%
	EB Total	512	737	225	44%	656	1,142	486	74%
WEST BOUND	Left	187	173	-14	-7%	178	130	-48	-27%
	Through	488	557	70	14%	393	499	106	27%
	Right	115	63	-52	-45%	62	28	-34	-54%
	WB Total	790	793	4	0%	632	657	25	4%
TOTAL ENTERING VOLUME		3,696	4,139	443	12%	3,753	4,490	738	20%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,278	1,388			
North Leg	Outbound	1,230	1,180			
North Leg	**TOTAL**	**2,508**	**2,568**	**8%**	**8%**	**31,838**
South Leg	Inbound	1,331	1,303			
South Leg	Outbound	1,231	1,270			
South Leg	**TOTAL**	**2,562**	**2,573**	**5%**	**6%**	**46,642**
East Leg	Inbound	793	657			
East Leg	Outbound	781	1,030			
East Leg	**TOTAL**	**1,574**	**1,687**	**9%**	**10%**	**17,656**
West Leg	Inbound	737	1,142			
West Leg	Outbound	897	1,010			
West Leg	**TOTAL**	**1,634**	**2,152**	**10%**	**13%**	**16,597**
OVERALL TOTAL		***8,278***	***8,980***	***7%***	***8%***	***112,733***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[14 Euclid_Riverside.xls]Output (3)

Project: Merrill Commerce Center
Scenario: Horizon Year (2040)

Job #: 12003
Analyst: CP
Date: 4/9/19

LOCATION: Euclid Avenue (SR-83) & Chino Avenue
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	46	64	18	39%	39	38	-1	-1%
	Through	971	1,128	158	16%	1,163	1,128	-35	-3%
	Right	129	180	52	40%	219	261	42	19%
	NB Total	1,145	1,372	227	20%	1,421	1,427	7	0%
SOUTH BOUND	Left	56	69	14	24%	24	35	11	46%
	Through	1,007	967	-40	-4%	999	1,092	94	9%
	Right	92	113	21	23%	69	85	16	23%
	SB Total	1,154	1,149	-5	0%	1,092	1,212	121	11%
EAST BOUND	Left	104	126	23	22%	93	134	42	45%
	Through	165	243	78	47%	273	487	214	78%
	Right	37	42	6	15%	47	61	15	31%
	EB Total	305	411	106	35%	412	682	270	66%
WEST BOUND	Left	71	105	34	48%	75	137	62	83%
	Through	151	285	134	89%	108	223	115	106%
	Right	51	80	30	58%	9	18	9	100%
	WB Total	273	470	198	72%	192	378	186	97%
TOTAL ENTERING VOLUME		2,877	3,402	525.5	18%	3,116	3,699	583	19%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,149	1,212			
North Leg	Outbound	1,334	1,280			
North Leg	**TOTAL**	**2,483**	**2,492**	**5%**	**5%**	**46,149**
South Leg	Inbound	1,372	1,427			
South Leg	Outbound	1,114	1,290			
South Leg	**TOTAL**	**2,486**	**2,717**	**6%**	**6%**	**44,774**
East Leg	Inbound	470	378			
East Leg	Outbound	492	783			
East Leg	**TOTAL**	**962**	**1,161**	**11%**	**13%**	**8,948**
West Leg	Inbound	411	682			
West Leg	Outbound	462	346			
West Leg	**TOTAL**	**873**	**1,028**	**9%**	**11%**	**9,480**
OVERALL TOTAL		***6,804***	***7,398***	**6%**	***7%***	***109,351***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[15 Euclid_Chino.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Euclid Avenue (SR-83) / Schaefer Avenue
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	226	225	22500%	1	228	227	22700%
	Through	4	1,002	998	24950%	4	943	939	23475%
	Right	1	19	18	1800%	1	100	99	9900%
	NB Total	6	1,247	1,241	20683%	6	1,271	1,265	21083%
SOUTH BOUND	Left	1	39	38	3800%	1	199	198	19800%
	Through	4	973	969	24225%	4	1,004	1,000	25000%
	Right	1	457	456	45600%	1	455	454	45400%
	SB Total	6	1,469	1,463	24383%	6	1,658	1,652	27533%
EAST BOUND	Left	1	182	181	18100%	1	487	486	48600%
	Through	2	32	30	1500%	2	463	461	23050%
	Right	1	88	87	8700%	1	260	259	25900%
	EB Total	4	302	298	7450%	4	1,210	1,206	30150%
WEST BOUND	Left	1	89	88	8800%	1	39	38	3800%
	Through	2	377	375	18750%	2	158	156	7800%
	Right	1	186	185	18500%	1	73	72	7200%
	WB Total	4	652	648	16200%	4	270	266	6650%
TOTAL ENTERING VOLUME		20	3,670	3650	18250%	20	4,409	4389	21945%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,469	1,658			
North Leg	Outbound	1,370	1,503			
North Leg	**TOTAL**	**2,839**	**3,161**	**6%**	**7%**	**44,269**
South Leg	Inbound	1,247	1,271			
South Leg	Outbound	1,150	1,303			
South Leg	**TOTAL**	**2,397**	**2,574**	**6%**	**7%**	**38,681**
East Leg	Inbound	652	270			
East Leg	Outbound	90	762			
East Leg	**TOTAL**	**742**	**1,032**	**27%**	**37%**	**2,775**
West Leg	Inbound	302	1,210			
West Leg	Outbound	1,060	841			
West Leg	**TOTAL**	**1,362**	**2,051**	**10%**	**15%**	**13,750**
OVERALL TOTAL		***7,340***	***8,818***	***7%***	***9%***	***99,475***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[16 Euclid_Schaefer-SEMI.xls]Output (3)

Project: Merrill Commerce Center
Scenario: Horizon Year (2040)

Job #: 12003
Analyst: CP
Date: 4/9/19

LOCATION: Euclid Avenue (SR-83) / Edison Avenue
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	208	107	-101	-49%	82	69	-13	-15%
	Through	869	856	-13	-1%	1,090	980	-110	-10%
	Right	37	152	115	311%	80	281	202	253%
	NB Total	1,114	1,115	2	0%	1,251	1,330	80	6%
SOUTH BOUND	Left	63	197	134	213%	28	165	137	489%
	Through	799	775	-24	-3%	1,016	895	-121	-12%
	Right	167	66	-101	-60%	111	158	47	42%
	SB Total	1,029	1,038	9	1%	1,155	1,218	63	5%
EAST BOUND	Left	156	134	-22	-14%	280	296	17	6%
	Through	237	853	616	260%	276	1,147	872	316%
	Right	97	108	11	11%	178	110	-68	-38%
	EB Total	490	1,095	606	124%	733	1,553	821	112%
WEST BOUND	Left	33	210	178	546%	76	428	353	467%
	Through	416	1,089	673	162%	64	585	521	814%
	Right	63	312	250	399%	25	237	213	867%
	WB Total	511	1,611	1,100	215%	164	1,250	1,086	662%
TOTAL ENTERING VOLUME		3,143	4,859	1716	55%	3,302	5,351	2049	62%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,038	1,218			
North Leg	Outbound	1,302	1,513			
North Leg	**TOTAL**	**2,340**	**2,731**	**6%**	**7%**	**38,168**
South Leg	Inbound	1,115	1,330			
South Leg	Outbound	1,093	1,433			
South Leg	**TOTAL**	**2,208**	**2,763**	**6%**	**7%**	**38,478**
East Leg	Inbound	1,611	1,250			
East Leg	Outbound	1,202	1,593			
East Leg	**TOTAL**	**2,813**	**2,843**	**6%**	**6%**	**49,894**
West Leg	Inbound	1,095	1,553			
West Leg	Outbound	1,262	812			
West Leg	**TOTAL**	**2,357**	**2,365**	**6%**	**6%**	**39,712**
OVERALL TOTAL		***9,718***	***10,702***	**6%**	***6%***	***166,252***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[17 Euclid_Edison.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Euclid Avenue (SR-83) & Eucalyptus Avenue
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	70	69	6900%	1	69	68	6800%
	Through	4	1,006	1,002	25050%	4	910	906	22650%
	Right	1	133	132	13200%	1	383	382	38200%
	NB Total	6	1,209	1,203	20050%	6	1,362	1,356	22600%
SOUTH BOUND	Left	1	67	66	6600%	1	252	251	25100%
	Through	4	1,076	1,072	26800%	4	1,158	1,154	28850%
	Right	1	36	35	3500%	1	45	44	4400%
	SB Total	6	1,179	1,173	19550%	6	1,455	1,449	24150%
EAST BOUND	Left	1	26	25	2500%	1	46	45	4500%
	Through	1	30	29	2900%	1	175	174	17400%
	Right	1	54	53	5300%	1	89	88	8800%
	EB Total	3	110	107	3567%	3	310	307	10233%
WEST BOUND	Left	1	385	384	38400%	1	413	412	41200%
	Through	1	115	114	11400%	1	146	145	14500%
	Right	1	182	181	18100%	1	214	213	21300%
	WB Total	3	682	679	22633%	3	773	770	25667%
TOTAL ENTERING VOLUME		18	3,180	3162	17567%	18	3,900	3882	21567%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,179	1,455			
North Leg	Outbound	1,214	1,170			
North Leg	**TOTAL**	**2,393**	**2,625**	**6%**	**7%**	**38,478**
South Leg	Inbound	1,209	1,362			
South Leg	Outbound	1,515	1,660			
South Leg	**TOTAL**	**2,724**	**3,022**	**7%**	**7%**	**40,597**
East Leg	Inbound	682	773			
East Leg	Outbound	230	810			
East Leg	**TOTAL**	**912**	**1,583**	**11%**	**20%**	**7,941**
West Leg	Inbound	110	310			
West Leg	Outbound	221	260			
West Leg	**TOTAL**	**331**	**570**	**6%**	**10%**	**5,795**
OVERALL TOTAL		***6,360***	***7,800***	***7%***	***8%***	***92,811***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[18 Euclid_Eucalyptus-SEMI.xls]Output (3)

Project: Merrill Commerce Center
Scenario: Horizon Year (2040)

Job #: 12003
Analyst: CP
Date: 4/9/19

LOCATION: Euclid Avenue (SR-83) & Merrill Avenue
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	0	-1	-100%	1	0	-1	-100%
	Through	5	1,158	1,153	23060%	5	1,310	1,305	26100%
	Right	2	267	265	13250%	2	735	733	36650%
	NB Total	8	1,425	1,417	17713%	8	2,045	2,037	25463%
SOUTH BOUND	Left	2	63	61	3050%	2	105	103	5150%
	Through	5	1,510	1,505	30100%	5	1,647	1,642	32840%
	Right	1	0	-1	-100%	1	0	-1	-100%
	SB Total	8	1,573	1,565	19563%	8	1,752	1,744	21800%
EAST BOUND	Left	1	0	-1	-100%	1	0	-1	-100%
	Through	1	0	-1	-100%	1	0	-1	-100%
	Right	1	0	-1	-100%	1	0	-1	-100%
	EB Total	3	0	-3	-100%	3	0	-3	-100%
WEST BOUND	Left	2	340	338	16900%	2	443	441	22050%
	Through	1	0	-1	-100%	1	0	-1	-100%
	Right	2	62	60	3000%	2	50	48	2400%
	WB Total	5	402	397	7940%	5	493	488	9760%
TOTAL ENTERING VOLUME		24	3,400	3376	14067%	24	4,290	4266	17775%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,573	1,752			
North Leg	Outbound	1,220	1,360			
North Leg	**TOTAL**	**2,793**	**3,112**	**7%**	**8%**	**40,597**
South Leg	Inbound	1,425	2,045			
South Leg	Outbound	1,850	2,090			
South Leg	**TOTAL**	**3,275**	**4,135**	**7%**	**9%**	**46,812**
East Leg	Inbound	402	493			
East Leg	Outbound	330	840			
East Leg	**TOTAL**	**732**	**1,333**	**6%**	**12%**	**11,557**
West Leg	Inbound	0	0			
West Leg	Outbound	0	0			
West Leg	**TOTAL**	**0**	**0**	**#DIV/0!**	**#DIV/0!**	**-**
OVERALL TOTAL		***6,800***	***8,580***	***7%***	***9%***	***98,966***

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Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Euclid Avenue (SR-83) & Kimball Avenue
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	178	177	17700%	1	147	146	14600%
	Through	5	883	878	17560%	5	1,270	1,265	25300%
	Right	1	62	61	6100%	1	159	158	15800%
	NB Total	7	1,123	1,116	15943%	7	1,576	1,569	22414%
SOUTH BOUND	Left	1	160	159	15900%	1	441	440	44000%
	Through	5	1,228	1,223	24460%	5	1,240	1,235	24700%
	Right	1	458	457	45700%	1	408	407	40700%
	SB Total	7	1,846	1,839	26271%	7	2,089	2,082	29743%
EAST BOUND	Left	1	203	202	20200%	1	587	586	58600%
	Through	2	128	126	6300%	2	660	658	32900%
	Right	1	109	108	10800%	1	206	205	20500%
	EB Total	4	440	436	10900%	4	1,453	1,449	36225%
WEST BOUND	Left	1	226	225	22500%	1	103	102	10200%
	Through	2	757	755	37750%	2	305	303	15150%
	Right	1	418	417	41700%	1	293	292	29200%
	WB Total	4	1,401	1,397	34925%	4	701	697	17425%
TOTAL ENTERING VOLUME		22	4,810	4788	21764%	22	5,819	5797	26350%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,846	2,089			
North Leg	Outbound	1,504	2,150			
North Leg	**TOTAL**	**3,350**	**4,239**	**7%**	**9%**	**46,812**
South Leg	Inbound	1,123	1,576			
South Leg	Outbound	1,563	1,549			
South Leg	**TOTAL**	**2,686**	**3,125**	**7%**	**9%**	**36,201**
East Leg	Inbound	1,401	701			
East Leg	Outbound	350	1,260			
East Leg	**TOTAL**	**1,751**	**1,961**	**9%**	**10%**	**20,541**
West Leg	Inbound	440	1,453			
West Leg	Outbound	1,393	860			
West Leg	**TOTAL**	**1,833**	**2,313**	**8%**	**11%**	**21,734**
OVERALL TOTAL		***9,620***	***11,638***	**8%**	***9%***	***125,288***

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Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Euclid Avenue (SR-83) & Bickmore Avenue
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	45	44	4400%	1	13	12	1200%
	Through	5	932	927	18540%	5	1,323	1,318	26360%
	Right	1	26	25	2500%	1	72	71	7100%
	NB Total	7	1,003	996	14229%	7	1,408	1,401	20014%
SOUTH BOUND	Left	1	107	106	10600%	1	187	186	18600%
	Through	5	1,220	1,215	24300%	5	1,289	1,284	25680%
	Right	1	184	183	18300%	1	33	32	3200%
	SB Total	7	1,511	1,504	21486%	7	1,509	1,502	21457%
EAST BOUND	Left	1	26	25	2500%	1	86	85	8500%
	Through	1	7	6	600%	1	42	41	4100%
	Right	1	8	7	700%	1	32	31	3100%
	EB Total	3	41	38	1267%	3	160	157	5233%
WEST BOUND	Left	1	52	51	5100%	1	62	61	6100%
	Through	1	71	70	7000%	1	14	13	1300%
	Right	1	162	161	16100%	1	166	165	16500%
	WB Total	3	285	282	9400%	3	242	239	7967%
TOTAL ENTERING VOLUME		20	2,840	2820	14100%	20	3,319	3299	16495%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,511	1,509			
North Leg	Outbound	1,120	1,575			
North Leg	**TOTAL**	**2,631**	**3,084**	**7%**	**9%**	**36,201**
South Leg	Inbound	1,003	1,408			
South Leg	Outbound	1,280	1,383			
South Leg	**TOTAL**	**2,283**	**2,791**	**7%**	**8%**	**32,928**
East Leg	Inbound	285	242			
East Leg	Outbound	140	301			
East Leg	**TOTAL**	**425**	**543**	**7%**	**9%**	**6,166**
West Leg	Inbound	41	160			
West Leg	Outbound	300	60			
West Leg	**TOTAL**	**341**	**220**	**12%**	**8%**	**2,893**
OVERALL TOTAL		***5,680***	***6,638***	***7%***	***8%***	***78,188***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[21 Euclid_Bickmore-SEMI.xls]Output (3)

Project: Merrill Commerce Center
Scenario: Horizon Year (2040)

Job #: 12003
Analyst: CP
Date: 4/9/19

LOCATION: Euclid Avenue (SR-83) & Pine Avenue
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	171	170	17000%	1	278	277	27700%
	Through	5	535	530	10600%	5	1,011	1,006	20120%
	Right	1	214	213	21300%	1	891	890	89000%
	NB Total	7	920	913	13043%	7	2,180	2,173	31043%
SOUTH BOUND	Left	1	163	162	16200%	1	391	390	39000%
	Through	5	987	982	19640%	5	867	862	17240%
	Right	1	130	129	12900%	1	122	121	12100%
	SB Total	7	1,280	1,273	18186%	7	1,380	1,373	19614%
EAST BOUND	Left	1	84	83	8300%	1	115	114	11400%
	Through	2	303	301	15050%	2	911	909	45450%
	Right	1	204	203	20300%	1	224	223	22300%
	EB Total	4	591	587	14675%	4	1,250	1,246	31150%
WEST BOUND	Left	1	829	828	82800%	1	482	481	48100%
	Through	2	980	978	48900%	2	611	609	30450%
	Right	1	341	340	34000%	1	247	246	24600%
	WB Total	4	2,150	2,146	53650%	4	1,340	1,336	33400%
TOTAL ENTERING VOLUME		22	4,941	4919	22359%	22	6,150	6128	27855%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,280	1,380			
North Leg	Outbound	960	1,373			
North Leg	**TOTAL**	**2,240**	**2,753**	**7%**	**8%**	**32,928**
South Leg	Inbound	920	2,180			
South Leg	Outbound	2,020	1,573			
South Leg	**TOTAL**	**2,940**	**3,753**	**8%**	**10%**	**37,354**
East Leg	Inbound	2,150	1,340			
East Leg	Outbound	680	2,193			
East Leg	**TOTAL**	**2,830**	**3,533**	**8%**	**10%**	**34,812**
West Leg	Inbound	591	1,250			
West Leg	Outbound	1,281	1,011			
West Leg	**TOTAL**	**1,872**	**2,261**	**7%**	**9%**	**25,646**
OVERALL TOTAL		***9,882***	***12,300***	**8%**	***9%***	***130,740***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[22 Euclid_Pine-SEMI.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Bon View Av. & Edison Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	297	296	29600%	1	164	163	16300%
	Through	1	24	23	2300%	1	6	5	500%
	Right	1	93	92	9200%	1	65	64	6400%
	NB Total	3	414	411	13700%	3	235	232	7733%
SOUTH BOUND	Left	1	8	7	700%	1	15	14	1400%
	Through	1	5	4	400%	1	17	16	1600%
	Right	1	27	26	2600%	1	39	38	3800%
	SB Total	3	40	37	1233%	3	71	68	2267%
EAST BOUND	Left	1	45	44	4400%	1	25	24	2400%
	Through	2	1,559	1,557	77850%	2	2,304	2,302	115100%
	Right	1	114	113	11300%	1	279	278	27800%
	EB Total	4	1,718	1,714	42850%	4	2,608	2,604	65100%
WEST BOUND	Left	1	51	50	5000%	1	95	94	9400%
	Through	2	2,227	2,225	111250%	2	1,982	1,980	99000%
	Right	1	20	19	1900%	1	9	8	800%
	WB Total	4	2,298	2,294	57350%	4	2,086	2,082	52050%
TOTAL ENTERING VOLUME		14	4,470	4456	31829%	14	5,000	4986	35614%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	40	71			
North Leg	Outbound	89	40			
North Leg	**TOTAL**	**129**	**111**	**10%**	**8%**	**1,329**
South Leg	Inbound	414	235			
South Leg	Outbound	170	391			
South Leg	**TOTAL**	**584**	**626**	**8%**	**9%**	**7,040**
East Leg	Inbound	2,298	2,086			
East Leg	Outbound	1,660	2,384			
East Leg	**TOTAL**	**3,958**	**4,470**	**9%**	**10%**	**45,899**
West Leg	Inbound	1,718	2,608			
West Leg	Outbound	2,551	2,185			
West Leg	**TOTAL**	**4,269**	**4,793**	**8%**	**9%**	**52,006**
OVERALL TOTAL		***8,940***	***10,000***	**8%**	***9%***	***106,274***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[23 Bon View_Edison-SEMI.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Bon View Av. & Eucalyptus Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	0	-1	-100%	1	2	1	100%
	Through	1	0	-1	-100%	1	5	4	400%
	Right	1	0	-1	-100%	1	3	2	200%
	NB Total	3	0	-3	-100%	3	10	7	233%
SOUTH BOUND	Left	1	46	45	4500%	1	110	109	10900%
	Through	1	61	60	6000%	1	4	3	300%
	Right	1	166	165	16500%	1	65	64	6400%
	SB Total	3	273	270	9000%	3	179	176	5867%
EAST BOUND	Left	1	38	37	3700%	1	110	109	10900%
	Through	2	64	62	3100%	2	607	605	30250%
	Right	1	9	8	800%	1	3	2	200%
	EB Total	4	111	107	2675%	4	720	716	17900%
WEST BOUND	Left	1	20	19	1900%	1	3	2	200%
	Through	2	484	482	24100%	2	373	371	18550%
	Right	1	82	81	8100%	1	114	113	11300%
	WB Total	4	586	582	14550%	4	490	486	12150%
TOTAL ENTERING VOLUME		14	970	956	6829%	14	1,399	1385	9893%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	273	179			
North Leg	Outbound	120	229			
North Leg	**TOTAL**	**393**	**408**	**9%**	**9%**	**4,540**
South Leg	Inbound	0	10			
South Leg	Outbound	90	10			
South Leg	**TOTAL**	**90**	**20**	**11%**	**2%**	**852**
East Leg	Inbound	586	490			
East Leg	Outbound	110	720			
East Leg	**TOTAL**	**696**	**1,210**	**15%**	**25%**	**4,768**
West Leg	Inbound	111	720			
West Leg	Outbound	650	440			
West Leg	**TOTAL**	**761**	**1,160**	**15%**	**22%**	**5,218**
OVERALL TOTAL		***1,940***	***2,798***	**13%**	***18%***	***15,378***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[24 Bon View_Euclayptus-SEMI.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Bon View Av. & Merrill Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	NB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
SOUTH BOUND	Left	1	54	53	5300%	1	6	5	500%
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	1	37	36	3600%	1	4	3	300%
	SB Total	2	91	89	4450%	2	10	8	400%
EAST BOUND	Left	1	0	-1	-100%	1	6	5	500%
	Through	2	351	349	17450%	2	924	922	46100%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	EB Total	3	351	348	11600%	3	930	927	30900%
WEST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	2	449	447	22350%	2	476	474	23700%
	Right	1	0	-1	-100%	1	4	3	300%
	WB Total	3	449	446	14867%	3	480	477	15900%
TOTAL ENTERING VOLUME		8	891	883	11038%	8	1,420	1412	17650%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	91	10			
North Leg	Outbound	0	10			
North Leg	**TOTAL**	**91**	**20**	**11%**	**2%**	**852**
South Leg	Inbound	0	0			
South Leg	Outbound	0	0			
South Leg	**TOTAL**	**0**	**0**	**#DIV/0!**	**#DIV/0!**	**-**
East Leg	Inbound	449	480			
East Leg	Outbound	405	930			
East Leg	**TOTAL**	**854**	**1,410**	**6%**	**11%**	**13,289**
West Leg	Inbound	351	930			
West Leg	Outbound	486	480			
West Leg	**TOTAL**	**837**	**1,410**	**6%**	**11%**	**13,040**
OVERALL TOTAL		***1,782***	***2,840***	***7%***	***10%***	***27,181***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[25 Bon View_Merrill-SEMI.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Grove Av. & SR-60 Westbound Ramps
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	254	250	-4	-1%	198	155	-43	-22%
	Through	1,036	1,402	367	35%	831	957	126	15%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	NB Total	1,289	1,652	363	28%	1,029	1,112	84	8%
SOUTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	665	783	118	18%	949	1,451	503	53%
	Right	554	545	-9	-2%	636	667	32	5%
	SB Total	1,219	1,328	109	9%	1,584	2,118	534	34%
EAST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	EB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
WEST BOUND	Left	233	252	20	8%	278	284	6	2%
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	544	678	134	25%	328	337	9	3%
	WB Total	777	930	154	20%	606	621	15	2%
TOTAL ENTERING VOLUME		3,285	3,910	625.5	19%	3,219	3,851	633	20%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,328	2,118			
North Leg	Outbound	2,080	1,294			
North Leg	**TOTAL**	**3,408**	**3,412**	**6%**	**6%**	**52,674**
South Leg	Inbound	1,652	1,112			
South Leg	Outbound	1,035	1,735			
South Leg	**TOTAL**	**2,687**	**2,847**	**6%**	**6%**	**43,993**
East Leg	Inbound	930	621			
East Leg	Outbound	0	0			
East Leg	**TOTAL**	**930**	**621**	**16%**	**11%**	**5,745**
West Leg	Inbound	0	0			
West Leg	Outbound	795	822			
West Leg	**TOTAL**	**795**	**822**	**8%**	**8%**	**10,120**
OVERALL TOTAL		***7,820***	***7,702***	***7%***	***7%***	***112,532***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[26 Grove_SR-60 WB.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Grove Av. & SR-60 Eastbound Ramps
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	672	972	300	45%	623	682	60	10%
	Right	346	369	23	7%	295	259	-36	-12%
	NB Total	1,018	1,341	323	32%	917	941	24	3%
SOUTH BOUND	Left	346	372	26	8%	418	569	152	36%
	Through	552	656	105	19%	809	1,160	351	43%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	SB Total	898	1,028	131	15%	1,227	1,729	503	41%
EAST BOUND	Left	617	683	66	11%	406	438	32	8%
	Through	1	1	0	0%	0	0	0	#DIV/0!
	Right	184	166	-18	-10%	321	292	-29	-9%
	EB Total	802	850	48	6%	727	730	3	0%
WEST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	WB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
TOTAL ENTERING VOLUME		2,718	3,219	501.5	18%	2,871	3,400	530	18%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,028	1,729			
North Leg	Outbound	1,655	1,120			
North Leg	**TOTAL**	**2,683**	**2,849**	**6%**	**6%**	**43,993**
South Leg	Inbound	1,341	941			
South Leg	Outbound	822	1,452			
South Leg	**TOTAL**	**2,163**	**2,393**	**6%**	**7%**	**35,894**
East Leg	Inbound	0	0			
East Leg	Outbound	742	828			
East Leg	**TOTAL**	**742**	**828**	**13%**	**14%**	**5,733**
West Leg	Inbound	850	730			
West Leg	Outbound	0	0			
West Leg	**TOTAL**	**850**	**730**	**9%**	**7%**	**9,841**
OVERALL TOTAL		***6,438***	***6,800***	***7%***	***7%***	***95,461***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[27 Grove_SR-60 EB.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Grove Av. & Walnut Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	48	78	30	63%	79	93	14	18%
	Through	576	940	364	63%	549	627	79	14%
	Right	12	21	10	83%	20	19	-1	-5%
	NB Total	636	1,039	404	63%	648	739	92	14%
SOUTH BOUND	Left	89	101	12	13%	168	164	-4	-2%
	Through	502	607	106	21%	665	957	292	44%
	Right	103	105	2	2%	165	201	36	22%
	SB Total	694	813	120	17%	998	1,322	325	33%
EAST BOUND	Left	177	168	-9	-5%	146	151	6	4%
	Through	188	198	11	6%	283	241	-42	-15%
	Right	54	61	7	13%	77	97	20	26%
	EB Total	418	427	9	2%	505	489	-16	-3%
WEST BOUND	Left	13	12	-1	-8%	16	22	6	38%
	Through	187	147	-40	-21%	153	174	22	14%
	Right	179	142	-37	-21%	121	134	14	11%
	WB Total	379	301	-78	-21%	289	330	41	14%
TOTAL ENTERING VOLUME		2,126	2,580	454	21%	2,439	2,880	441	18%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	813	1,322			
North Leg	Outbound	1,250	912			
North Leg	**TOTAL**	**2,063**	**2,234**	**6%**	**7%**	**32,876**
South Leg	Inbound	1,039	739			
South Leg	Outbound	680	1,076			
South Leg	**TOTAL**	**1,719**	**1,815**	**7%**	**8%**	**23,267**
East Leg	Inbound	301	330			
East Leg	Outbound	320	424			
East Leg	**TOTAL**	**621**	**754**	**10%**	**12%**	**6,056**
West Leg	Inbound	427	489			
West Leg	Outbound	330	468			
West Leg	**TOTAL**	**757**	**957**	**7%**	**9%**	**11,001**
OVERALL TOTAL		***5,160***	***5,760***	***7%***	***8%***	***73,200***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[28 Grove_Walnut.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Grove Av. & Riverside Dr.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	21	32	11	52%	20	18	-2	-10%
	Through	312	693	382	122%	360	470	111	31%
	Right	47	84	38	81%	64	112	49	76%
	NB Total	379	809	430	113%	443	600	157	35%
SOUTH BOUND	Left	82	119	37	45%	150	186	36	24%
	Through	287	404	117	41%	332	671	340	102%
	Right	163	200	37	23%	168	104	-64	-38%
	SB Total	532	723	191	36%	649	961	312	48%
EAST BOUND	Left	144	179	35	24%	160	165	6	3%
	Through	371	377	6	2%	565	786	222	39%
	Right	28	28	0	0%	18	41	23	128%
	EB Total	543	584	41	8%	742	992	250	34%
WEST BOUND	Left	55	48	-7	-12%	36	120	85	238%
	Through	737	568	-169	-23%	531	550	20	4%
	Right	115	128	14	12%	103	158	56	54%
	WB Total	906	744	-162	-18%	669	828	160	24%
TOTAL ENTERING VOLUME		2,360	2,860	500.5	21%	2,503	3,381	879	35%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	723	961			
North Leg	Outbound	1,000	793			
North Leg	**TOTAL**	**1,723**	**1,754**	**8%**	**8%**	**22,971**
South Leg	Inbound	809	600			
South Leg	Outbound	480	832			
South Leg	**TOTAL**	**1,289**	**1,432**	**11%**	**12%**	**11,860**
East Leg	Inbound	744	828			
East Leg	Outbound	580	1,084			
East Leg	**TOTAL**	**1,324**	**1,912**	**13%**	**19%**	**9,813**
West Leg	Inbound	584	992			
West Leg	Outbound	800	672			
West Leg	**TOTAL**	**1,384**	**1,664**	**9%**	**11%**	**15,229**
OVERALL TOTAL		***5,720***	***6,762***	**10%**	***11%***	***59,873***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[29 Grove_Riverside.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Grove Av. & Chino Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	35	67	33	94%	35	71	36	103%
	Through	297	661	364	123%	363	517	155	43%
	Right	13	39	26	200%	19	42	24	127%
	NB Total	345	767	423	123%	416	630	214	51%
SOUTH BOUND	Left	45	58	14	30%	35	63	28	80%
	Through	315	437	123	39%	326	735	410	126%
	Right	30	25	-5	-17%	21	34	13	62%
	SB Total	389	520	131	34%	382	832	451	118%
EAST BOUND	Left	61	89	29	47%	74	75	2	2%
	Through	86	173	87	101%	176	284	108	61%
	Right	27	57	31	115%	25	50	25	100%
	EB Total	173	319	146	84%	275	409	135	49%
WEST BOUND	Left	10	26	16	160%	9	25	17	194%
	Through	78	119	42	54%	38	79	41	108%
	Right	29	50	22	75%	38	55	18	47%
	WB Total	116	195	79	68%	84	159	75	89%
TOTAL ENTERING VOLUME		1,023	1,801	778.5	76%	1,156	2,030	874	76%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	520	832			
North Leg	Outbound	800	647			
North Leg	**TOTAL**	**1,320**	**1,479**	**11%**	**12%**	**11,859**
South Leg	Inbound	767	630			
South Leg	Outbound	520	810			
South Leg	**TOTAL**	**1,287**	**1,440**	**11%**	**12%**	**11,616**
East Leg	Inbound	195	159			
East Leg	Outbound	270	389			
East Leg	**TOTAL**	**465**	**548**	**6%**	**7%**	**7,830**
West Leg	Inbound	319	409			
West Leg	Outbound	211	184			
West Leg	**TOTAL**	**530**	**593**	**6%**	**7%**	**8,578**
OVERALL TOTAL		***3,602***	***4,060***	**9%**	***10%***	***39,883***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[30 Grove_Chino.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Grove Av. & Schaefer Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	34	126	93	276%	19	28	10	51%
	Through	243	407	165	68%	302	514	212	70%
	Right	10	66	56	560%	30	63	33	110%
	NB Total	286	599	313	109%	351	605	255	73%
SOUTH BOUND	Left	40	78	38	95%	52	90	39	75%
	Through	239	287	48	20%	239	619	381	160%
	Right	41	45	5	11%	53	66	14	26%
	SB Total	320	410	91	28%	343	775	433	126%
EAST BOUND	Left	42	262	220	524%	96	91	-5	-5%
	Through	45	1,096	1,052	2363%	138	162	24	17%
	Right	22	324	303	1407%	85	147	63	74%
	EB Total	108	1,682	1,574	1457%	318	400	82	26%
WEST BOUND	Left	34	203	169	497%	2	6	4	200%
	Through	97	532	436	451%	45	59	15	33%
	Right	38	94	56	147%	36	55	19	53%
	WB Total	169	829	661	392%	83	120	38	45%
TOTAL ENTERING VOLUME		882	3,520	2638	299%	1,094	1,900	807	74%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	410	775			
North Leg	Outbound	763	660			
North Leg	**TOTAL**	**1,173**	**1,435**	**10%**	**12%**	**11,616**
South Leg	Inbound	599	605			
South Leg	Outbound	814	772			
South Leg	**TOTAL**	**1,413**	**1,377**	**12%**	**12%**	**11,415**
East Leg	Inbound	829	120			
East Leg	Outbound	1,240	315			
East Leg	**TOTAL**	**2,069**	**435**	**100%**	**21%**	**2,065**
West Leg	Inbound	1,682	400			
West Leg	Outbound	703	153			
West Leg	**TOTAL**	**2,385**	**553**	**168%**	**39%**	**1,419**
OVERALL TOTAL		***7,040***	***3,800***	***27%***	***14%***	***26,515***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[31 Grove_Schaefer.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Grove Av. & Edison Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	18	63	45	250%	13	47	35	276%
	Through	189	404	215	114%	259	432	173	67%
	Right	24	39	15	63%	131	383	253	193%
	NB Total	231	506	275	119%	402	862	460	114%
SOUTH BOUND	Left	58	36	-22	-37%	128	322	195	153%
	Through	184	365	181	98%	187	401	215	115%
	Right	28	37	10	35%	22	69	48	221%
	SB Total	269	438	169	63%	336	792	457	136%
EAST BOUND	Left	33	207	175	537%	43	82	40	93%
	Through	201	966	766	382%	430	1,465	1,035	241%
	Right	6	93	87	1450%	7	20	13	186%
	EB Total	239	1,266	1,027	430%	480	1,567	1,088	227%
WEST BOUND	Left	64	302	238	372%	61	179	118	193%
	Through	495	1,570	1,076	217%	266	1,164	898	338%
	Right	31	59	29	93%	50	96	47	94%
	WB Total	589	1,931	1,342	228%	377	1,439	1,063	282%
TOTAL ENTERING VOLUME		1,328	4,141	2813	212%	1,594	4,660	3067	192%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	438	792			
North Leg	Outbound	670	610			
North Leg	**TOTAL**	**1,108**	**1,402**	**10%**	**12%**	**11,415**
South Leg	Inbound	506	862			
South Leg	Outbound	760	600			
South Leg	**TOTAL**	**1,266**	**1,462**	**9%**	**10%**	**14,894**
East Leg	Inbound	1,931	1,439			
East Leg	Outbound	1,041	2,170			
East Leg	**TOTAL**	**2,972**	**3,609**	**7%**	**8%**	**45,461**
West Leg	Inbound	1,266	1,567			
West Leg	Outbound	1,670	1,280			
West Leg	**TOTAL**	**2,936**	**2,847**	**5%**	**5%**	**54,534**
OVERALL TOTAL		***8,282***	***9,320***	***7%***	***7%***	***126,304***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[32 Grove_Edison.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Grove Av. & Eucalyptus Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	60	15	-45	-75%	14	40	27	196%
	Through	229	379	151	66%	325	704	380	117%
	Right	11	23	12	109%	4	12	8	200%
	NB Total	300	417	118	39%	342	756	414	121%
SOUTH BOUND	Left	15	213	199	1369%	12	66	55	474%
	Through	209	522	313	150%	212	360	149	70%
	Right	47	82	36	76%	29	169	140	483%
	SB Total	270	817	547	203%	252	595	343	136%
EAST BOUND	Left	24	49	26	109%	89	121	33	37%
	Through	33	84	52	158%	83	153	70	84%
	Right	13	6	-7	-54%	68	37	-31	-45%
	EB Total	69	139	70	101%	239	311	72	30%
WEST BOUND	Left	12	23	12	100%	5	20	15	300%
	Through	82	113	32	39%	17	230	213	1253%
	Right	12	112	100	833%	13	130	117	900%
	WB Total	105	248	143	136%	35	380	345	986%
TOTAL ENTERING VOLUME		744	1,621	877.5	118%	868	2,042	1174	135%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	817	595			
North Leg	Outbound	540	955			
North Leg	**TOTAL**	**1,357**	**1,550**	**9%**	**10%**	**14,894**
South Leg	Inbound	417	756			
South Leg	Outbound	551	417			
South Leg	**TOTAL**	**968**	**1,173**	**8%**	**10%**	**11,780**
East Leg	Inbound	248	380			
East Leg	Outbound	320	231			
East Leg	**TOTAL**	**568**	**611**	**6%**	**7%**	**9,246**
West Leg	Inbound	139	311			
West Leg	Outbound	210	439			
West Leg	**TOTAL**	**349**	**750**	**8%**	**16%**	**4,639**
OVERALL TOTAL		***3,242***	***4,084***	***8%***	***10%***	***40,559***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[33 Grove_Eucalyptus.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Grove Av. & Merrill Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	NB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
SOUTH BOUND	Left	141	406	265	188%	191	264	73	38%
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	93	144	52	56%	93	131	38	41%
	SB Total	234	550	317	136%	284	395	111	39%
EAST BOUND	Left	83	123	40	48%	177	349	173	98%
	Through	210	428	219	104%	455	566	111	24%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	EB Total	293	551	259	88%	632	915	284	45%
WEST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	471	425	-46	-10%	253	389	137	54%
	Right	217	263	47	21%	166	401	236	142%
	WB Total	687	688	1	0%	418	790	372	89%
TOTAL ENTERING VOLUME		1,213	1,789	576	47%	1,334	2,100	767	57%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	550	395			
North Leg	Outbound	386	750			
North Leg	**TOTAL**	**936**	**1,145**	**8%**	**10%**	**11,780**
South Leg	Inbound	0	0			
South Leg	Outbound	0	0			
South Leg	**TOTAL**	**0**	**0**	**#DIV/0!**	**#DIV/0!**	**-**
East Leg	Inbound	688	790			
East Leg	Outbound	834	830			
East Leg	**TOTAL**	**1,522**	**1,620**	**10%**	**10%**	**15,732**
West Leg	Inbound	551	915			
West Leg	Outbound	569	520			
West Leg	**TOTAL**	**1,120**	**1,435**	**8%**	**11%**	**13,387**
OVERALL TOTAL		***3,578***	***4,200***	**9%**	***10%***	***40,899***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[35 Grove_Merrill.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Walker Av. & Edison Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	4	87	83	2075%	3	14	11	367%
	Through	18	245	227	1261%	20	56	37	187%
	Right	8	98	91	1207%	49	87	39	79%
	NB Total	30	430	401	1358%	71	157	86	121%
SOUTH BOUND	Left	25	59	34	136%	64	173	110	172%
	Through	17	36	19	112%	13	292	279	2146%
	Right	12	45	34	291%	10	69	60	626%
	SB Total	54	140	87	162%	86	534	448	521%
EAST BOUND	Left	17	63	47	282%	20	95	75	375%
	Through	230	846	617	269%	654	1,972	1,318	202%
	Right	9	29	20	222%	1	25	24	2400%
	EB Total	255	938	683	268%	675	2,092	1,417	210%
WEST BOUND	Left	111	194	84	76%	15	167	153	1052%
	Through	392	1,282	890	227%	352	1,305	954	271%
	Right	139	285	147	106%	30	65	36	120%
	WB Total	641	1,761	1,120	175%	396	1,537	1,142	289%
TOTAL ENTERING VOLUME		979	3,269	2290	234%	1,228	4,320	3093	252%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	140	534			
North Leg	Outbound	593	216			
North Leg	**TOTAL**	**733**	**750**	**7%**	**7%**	**10,506**
South Leg	Inbound	430	157			
South Leg	Outbound	259	484			
South Leg	**TOTAL**	**689**	**641**	**6%**	**5%**	**12,354**
East Leg	Inbound	1,761	1,537			
East Leg	Outbound	1,003	2,232			
East Leg	**TOTAL**	**2,764**	**3,769**	**6%**	**8%**	**44,576**
West Leg	Inbound	938	2,092			
West Leg	Outbound	1,414	1,388			
West Leg	**TOTAL**	**2,352**	**3,480**	**5%**	**8%**	**45,164**
OVERALL TOTAL		***6,538***	***8,640***	**6%**	***8%***	***112,600***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[36 Walker_Edison.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Walker Av. & Eucalyptus Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	0	-1	-100%	1	0	-1	-100%
	Through	1	0	-1	-100%	1	0	-1	-100%
	Right	1	0	-1	-100%	1	0	-1	-100%
	NB Total	3	0	-3	-100%	3	0	-3	-100%
SOUTH BOUND	Left	1	102	101	10100%	1	140	139	13900%
	Through	1	0	-1	-100%	1	0	-1	-100%
	Right	1	308	307	30700%	1	110	109	10900%
	SB Total	3	410	407	13567%	3	250	247	8233%
EAST BOUND	Left	1	41	40	4000%	1	410	409	40900%
	Through	1	39	38	3800%	1	300	299	29900%
	Right	1	0	-1	-100%	1	0	-1	-100%
	EB Total	3	80	77	2567%	3	710	707	23567%
WEST BOUND	Left	1	0	-1	-100%	1	0	-1	-100%
	Through	1	319	318	31800%	1	120	119	11900%
	Right	1	111	110	11000%	1	210	209	20900%
	WB Total	3	430	427	14233%	3	330	327	10900%
TOTAL ENTERING VOLUME		12	920	908	7567%	12	1,290	1278	10650%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	410	250			
North Leg	Outbound	152	620			
North Leg	**TOTAL**	**562**	**870**	**8%**	**12%**	**7,026**
South Leg	Inbound	0	0			
South Leg	Outbound	0	0			
South Leg	**TOTAL**	**0**	**0**	**#DIV/0!**	**#DIV/0!**	**-**
East Leg	Inbound	430	330			
East Leg	Outbound	141	440			
East Leg	**TOTAL**	**571**	**770**	**12%**	**16%**	**4,855**
West Leg	Inbound	80	710			
West Leg	Outbound	627	230			
West Leg	**TOTAL**	**707**	**940**	**12%**	**15%**	**6,089**
OVERALL TOTAL		***1,840***	***2,580***	**10%**	***14%***	***17,970***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[37 Walker_Eucalyptus-SEMI.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Walker Av. & Merrill Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	0	-1	-100%	1	0	-1	-100%
	Through	1	0	-1	-100%	1	0	-1	-100%
	Right	1	0	-1	-100%	1	0	-1	-100%
	NB Total	3	0	-3	-100%	3	0	-3	-100%
SOUTH BOUND	Left	1	0	-1	-100%	1	0	-1	-100%
	Through	1	0	-1	-100%	1	0	-1	-100%
	Right	1	0	-1	-100%	1	0	-1	-100%
	SB Total	3	0	-3	-100%	3	0	-3	-100%
EAST BOUND	Left	1	0	-1	-100%	1	0	-1	-100%
	Through	2	590	588	29400%	2	930	928	46400%
	Right	1	0	-1	-100%	1	0	-1	-100%
	EB Total	4	590	586	14650%	4	930	926	23150%
WEST BOUND	Left	1	0	-1	-100%	1	0	-1	-100%
	Through	2	500	498	24900%	2	550	548	27400%
	Right	1	0	-1	-100%	1	0	-1	-100%
	WB Total	4	500	496	12400%	4	550	546	13650%
TOTAL ENTERING VOLUME		14	1,090	1076	7686%	14	1,480	1466	10471%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	0	0			
North Leg	Outbound	0	0			
North Leg	**TOTAL**	**0**	**0**	**#DIV/0!**	**#DIV/0!**	**-**
South Leg	Inbound	0	0			
South Leg	Outbound	0	0			
South Leg	**TOTAL**	**0**	**0**	**#DIV/0!**	**#DIV/0!**	**-**
East Leg	Inbound	500	550			
East Leg	Outbound	590	930			
East Leg	**TOTAL**	**1,090**	**1,480**	**7%**	**9%**	**16,211**
West Leg	Inbound	590	930			
West Leg	Outbound	500	550			
West Leg	**TOTAL**	**1,090**	**1,480**	**7%**	**9%**	**16,211**
OVERALL TOTAL		***2,180***	***2,960***	***7%***	***9%***	***32,422***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[38 Walker_Merrill-SEMI.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Vineyard Av. & Edison Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	0	-1	-100%	1	22	21	2100%
	Through	1	0	-1	-100%	1	4	3	300%
	Right	1	0	-1	-100%	1	35	34	3400%
	NB Total	3	0	-3	-100%	3	61	58	1933%
SOUTH BOUND	Left	1	18	17	1700%	1	6	5	500%
	Through	1	3	2	200%	1	1	0	0%
	Right	1	30	29	2900%	1	4	3	300%
	SB Total	3	51	48	1600%	3	11	8	267%
EAST BOUND	Left	1	5	4	400%	1	31	30	3000%
	Through	2	1,322	1,320	66000%	2	2,589	2,587	129350%
	Right	1	23	22	2200%	1	28	27	2700%
	EB Total	4	1,350	1,346	33650%	4	2,648	2,644	66100%
WEST BOUND	Left	1	24	23	2300%	1	31	30	3000%
	Through	2	2,380	2,378	118900%	2	1,775	1,773	88650%
	Right	1	5	4	400%	1	35	34	3400%
	WB Total	4	2,409	2,405	60125%	4	1,841	1,837	45925%
TOTAL ENTERING VOLUME		14	3,810	3796	27114%	14	4,561	4547	32479%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	51	11			
North Leg	Outbound	10	70			
North Leg	**TOTAL**	**61**	**81**	**5%**	**7%**	**1,115**
South Leg	Inbound	0	61			
South Leg	Outbound	50	60			
South Leg	**TOTAL**	**50**	**121**	**3%**	**7%**	**1,674**
East Leg	Inbound	2,409	1,841			
East Leg	Outbound	1,340	2,630			
East Leg	**TOTAL**	**3,749**	**4,471**	**8%**	**10%**	**44,557**
West Leg	Inbound	1,350	2,648			
West Leg	Outbound	2,410	1,801			
West Leg	**TOTAL**	**3,760**	**4,449**	**9%**	**10%**	**43,861**
OVERALL TOTAL		***7,620***	***9,122***	**8%**	***10%***	***91,207***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[41 Vineyard_Edison-SEMI.xls]Output (3)

Project: Merrill Commerce Center
Scenario: Horizon Year (2040)

Job #: 12003
Analyst: CP
Date: 4/9/19

LOCATION: Vineyard Av. & Eucalyptus Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	21	20	2000%	1	147	146	14600%
	Through	2	0	-2	-100%	2	47	45	2250%
	Right	1	9	8	800%	1	276	275	27500%
	NB Total	4	30	26	650%	4	470	466	11650%
SOUTH BOUND	Left	1	5	4	400%	1	25	24	2400%
	Through	2	35	33	1650%	2	22	20	1000%
	Right	1	11	10	1000%	1	13	12	1200%
	SB Total	4	51	47	1175%	4	60	56	1400%
EAST BOUND	Left	1	0	-1	-100%	1	7	6	600%
	Through	2	76	74	3700%	2	395	393	19650%
	Right	1	64	63	6300%	1	38	37	3700%
	EB Total	4	140	136	3400%	4	440	436	10900%
WEST BOUND	Left	1	141	140	14000%	1	31	30	3000%
	Through	2	398	396	19800%	2	173	171	8550%
	Right	1	0	-1	-100%	1	6	5	500%
	WB Total	4	539	535	13375%	4	210	206	5150%
TOTAL ENTERING VOLUME		16	760	744	4650%	16	1,180	1164	7275%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	51	60			
North Leg	Outbound	0	60			
North Leg	**TOTAL**	**51**	**120**	**3%**	**7%**	**1,674**
South Leg	Inbound	30	470			
South Leg	Outbound	240	91			
South Leg	**TOTAL**	**270**	**561**	**7%**	**15%**	**3,713**
East Leg	Inbound	539	210			
East Leg	Outbound	90	696			
East Leg	**TOTAL**	**629**	**906**	**16%**	**23%**	**4,001**
West Leg	Inbound	140	440			
West Leg	Outbound	430	333			
West Leg	**TOTAL**	**570**	**773**	**12%**	**16%**	**4,855**
OVERALL TOTAL		***1,520***	***2,360***	**11%**	***17%***	***14,243***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[42 Vineyard_Eucalyptus-SEMI.xls]Output (3)

Project: Merrill Commerce Center
Scenario: Horizon Year (2040)

Job #: 12003
Analyst: CP
Date: 4/9/19

LOCATION: Vineyard Av. & Merrill Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	0	-1	-100%	1	0	-1	-100%
	Through	1	0	-1	-100%	1	0	-1	-100%
	Right	1	0	-1	-100%	1	0	-1	-100%
	NB Total	3	0	-3	-100%	3	0	-3	-100%
SOUTH BOUND	Left	1	203	202	20200%	1	327	326	32600%
	Through	1	0	-1	-100%	1	0	-1	-100%
	Right	1	177	176	17600%	1	266	265	26500%
	SB Total	3	380	377	12567%	3	593	590	19667%
EAST BOUND	Left	1	243	242	24200%	1	431	430	43000%
	Through	2	347	345	17250%	2	503	501	25050%
	Right	1	0	-1	-100%	1	0	-1	-100%
	EB Total	4	590	586	14650%	4	934	930	23250%
WEST BOUND	Left	1	0	-1	-100%	1	0	-1	-100%
	Through	2	323	321	16050%	2	284	282	14100%
	Right	1	257	256	25600%	1	299	298	29800%
	WB Total	4	580	576	14400%	4	583	579	14475%
TOTAL ENTERING VOLUME		14	1,550	1536	10971%	14	2,110	2096	14971%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	380	593			
North Leg	Outbound	500	730			
North Leg	**TOTAL**	**880**	**1,323**	**7%**	**10%**	**13,329**
South Leg	Inbound	0	0			
South Leg	Outbound	0	0			
South Leg	**TOTAL**	**0**	**0**	**#DIV/0!**	**#DIV/0!**	**-**
East Leg	Inbound	580	583			
East Leg	Outbound	550	830			
East Leg	**TOTAL**	**1,130**	**1,413**	**6%**	**8%**	**17,822**
West Leg	Inbound	590	934			
West Leg	Outbound	500	550			
West Leg	**TOTAL**	**1,090**	**1,484**	**7%**	**9%**	**16,210**
OVERALL TOTAL		***3,100***	***4,220***	***7%***	***9%***	***47,361***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[43 Vineyard_Merrill-SEMI.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Hellman Avenue & Kimball Avenue
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	163	162	16200%	1	192	191	19100%
	Through	2	60	58	2900%	2	48	46	2300%
	Right	1	298	297	29700%	1	430	429	42900%
	NB Total	4	521	517	12925%	4	670	666	16650%
SOUTH BOUND	Left	1	21	20	2000%	1	43	42	4200%
	Through	2	28	26	1300%	2	68	66	3300%
	Right	1	11	10	1000%	1	19	18	1800%
	SB Total	4	60	56	1400%	4	130	126	3150%
EAST BOUND	Left	1	20	19	1900%	1	18	17	1700%
	Through	3	601	598	19933%	3	967	964	32133%
	Right	1	132	131	13100%	1	258	257	25700%
	EB Total	5	753	748	14960%	5	1,243	1,238	24760%
WEST BOUND	Left	1	331	330	33000%	1	483	482	48200%
	Through	3	825	822	27400%	3	809	806	26867%
	Right	1	50	49	4900%	1	34	33	3300%
	WB Total	5	1,206	1,201	24020%	5	1,326	1,321	26420%
TOTAL ENTERING VOLUME		18	2,540	2522	14011%	18	3,369	3351	18617%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	60	130			
North Leg	Outbound	130	100			
North Leg	**TOTAL**	**190**	**230**	**8%**	**9%**	**2,515**
South Leg	Inbound	521	670			
South Leg	Outbound	491	809			
South Leg	**TOTAL**	**1,012**	**1,479**	**7%**	**10%**	**14,860**
East Leg	Inbound	1,206	1,326			
East Leg	Outbound	920	1,440			
East Leg	**TOTAL**	**2,126**	**2,766**	**6%**	**8%**	**33,374**
West Leg	Inbound	753	1,243			
West Leg	Outbound	999	1,020			
West Leg	**TOTAL**	**1,752**	**2,263**	**6%**	**8%**	**27,325**
OVERALL TOTAL		***5,080***	***6,738***	***7%***	***9%***	***78,074***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[44 Hellman_Kimball-SEMI.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Hellman Av. & Edison Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	55	54	5400%	1	54	53	5300%
	Through	1	10	9	900%	1	9	8	800%
	Right	1	46	45	4500%	1	97	96	9600%
	NB Total	3	111	108	3600%	3	160	157	5233%
SOUTH BOUND	Left	1	20	19	1900%	1	58	57	5700%
	Through	1	7	6	600%	1	10	9	900%
	Right	1	24	23	2300%	1	32	31	3100%
	SB Total	3	51	48	1600%	3	100	97	3233%
EAST BOUND	Left	1	32	31	3100%	1	27	26	2600%
	Through	2	1,275	1,273	63650%	2	2,575	2,573	128650%
	Right	1	52	51	5100%	1	49	48	4800%
	EB Total	4	1,359	1,355	33875%	4	2,651	2,647	66175%
WEST BOUND	Left	1	80	79	7900%	1	61	60	6000%
	Through	2	2,352	2,350	117500%	2	1,754	1,752	87600%
	Right	1	48	47	4700%	1	34	33	3300%
	WB Total	4	2,480	2,476	61900%	4	1,849	1,845	46125%
TOTAL ENTERING VOLUME		14	4,001	3987	28479%	14	4,760	4746	33900%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	51	100			
North Leg	Outbound	90	70			
North Leg	**TOTAL**	**141**	**170**	**6%**	**8%**	**2,252**
South Leg	Inbound	111	160			
South Leg	Outbound	139	120			
South Leg	**TOTAL**	**250**	**280**	**5%**	**5%**	**5,498**
East Leg	Inbound	2,480	1,849			
East Leg	Outbound	1,341	2,730			
East Leg	**TOTAL**	**3,821**	**4,579**	**8%**	**10%**	**46,694**
West Leg	Inbound	1,359	2,651			
West Leg	Outbound	2,431	1,840			
West Leg	**TOTAL**	**3,790**	**4,491**	**8%**	**10%**	**44,592**
OVERALL TOTAL		***8,002***	***9,520***	**8%**	***10%***	***99,036***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[46 Hellman_Edison-SEMI.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Hellman Av. & Eucalyptus Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	52	51	5100%	1	57	56	5600%
	Through	1	110	109	10900%	1	216	215	21500%
	Right	1	30	29	2900%	1	230	229	22900%
	NB Total	3	192	189	6300%	3	503	500	16667%
SOUTH BOUND	Left	1	34	33	3300%	1	78	77	7700%
	Through	1	171	170	17000%	1	94	93	9300%
	Right	1	57	56	5600%	1	19	18	1800%
	SB Total	3	262	259	8633%	3	191	188	6267%
EAST BOUND	Left	1	19	18	1800%	1	58	57	5700%
	Through	2	46	44	2200%	2	561	559	27950%
	Right	1	26	25	2500%	1	75	74	7400%
	EB Total	4	91	87	2175%	4	694	690	17250%
WEST BOUND	Left	1	143	142	14200%	1	72	71	7100%
	Through	2	431	429	21450%	2	134	132	6600%
	Right	1	102	101	10100%	1	56	55	5500%
	WB Total	4	676	672	16800%	4	262	258	6450%
TOTAL ENTERING VOLUME		14	1,221	1207	8621%	14	1,650	1636	11686%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	262	191			
North Leg	Outbound	231	330			
North Leg	**TOTAL**	**493**	**521**	**6%**	**6%**	**8,227**
South Leg	Inbound	192	503			
South Leg	Outbound	340	241			
South Leg	**TOTAL**	**532**	**744**	**6%**	**8%**	**9,124**
East Leg	Inbound	676	262			
East Leg	Outbound	110	869			
East Leg	**TOTAL**	**786**	**1,131**	**13%**	**19%**	**6,096**
West Leg	Inbound	91	694			
West Leg	Outbound	540	210			
West Leg	**TOTAL**	**631**	**904**	**16%**	**23%**	**4,001**
OVERALL TOTAL		***2,442***	***3,300***	**9%**	***12%***	***27,448***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[47 Hellman_Eucalyptus-SEMI.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Archibald Av. & SR-60 Westbound Ramps
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	630	634	5	1%	379	393	14	4%
	Through	1,004	1,604	601	60%	471	706	235	50%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	NB Total	1,633	2,238	605	37%	850	1,099	249	29%
SOUTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	379	653	275	73%	1,044	1,674	631	60%
	Right	188	169	-19	-10%	435	398	-37	-8%
	SB Total	566	822	256	45%	1,478	2,072	594	40%
EAST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	EB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
WEST BOUND	Left	396	423	28	7%	376	467	91	24%
	Through	4	2	-2	-43%	5	4	-1	-20%
	Right	471	416	-55	-12%	253	259	7	3%
	WB Total	870	841	-29	-3%	634	730	97	15%
TOTAL ENTERING VOLUME		3,069	3,901	832.5	27%	2,962	3,901	940	32%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	822	2,072			
North Leg	Outbound	2,020	965			
North Leg	**TOTAL**	**2,842**	**3,037**	**7%**	**8%**	**38,285**
South Leg	Inbound	2,238	1,099			
South Leg	Outbound	1,076	2,141			
South Leg	**TOTAL**	**3,314**	**3,240**	**8%**	**8%**	**39,040**
East Leg	Inbound	841	730			
East Leg	Outbound	0	0			
East Leg	**TOTAL**	**841**	**730**	**12%**	**10%**	**7,292**
West Leg	Inbound	0	0			
West Leg	Outbound	805	795			
West Leg	**TOTAL**	**805**	**795**	**16%**	**16%**	**4,984**
OVERALL TOTAL		***7,802***	***7,802***	**9%**	***9%***	***89,601***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[48 Archibald_SR-60 WB.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Archibald Av. & SR-60 Eastbound Ramps
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	1,278	1,826	548	43%	749	1,035	286	38%
	Right	576	677	101	18%	511	586	75	15%
	NB Total	1,854	2,503	649	35%	1,260	1,621	361	29%
SOUTH BOUND	Left	152	220	68	45%	369	334	-35	-9%
	Through	622	847	225	36%	1,051	1,811	761	72%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	SB Total	774	1,067	293	38%	1,420	2,145	726	51%
EAST BOUND	Left	355	414	59	17%	101	65	-36	-36%
	Through	3	3	0	0%	0	0	0	#DIV/0!
	Right	470	423	-47	-10%	534	539	5	1%
	EB Total	828	840	13	2%	635	604	-31	-5%
WEST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	WB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
TOTAL ENTERING VOLUME		3,456	4,410	954.5	28%	3,315	4,370	1056	32%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,067	2,145			
North Leg	Outbound	2,240	1,100			
North Leg	**TOTAL**	**3,307**	**3,245**	**8%**	**8%**	**39,040**
South Leg	Inbound	2,503	1,621			
South Leg	Outbound	1,270	2,350			
South Leg	**TOTAL**	**3,773**	**3,971**	**10%**	**10%**	**38,338**
East Leg	Inbound	0	0			
East Leg	Outbound	900	920			
East Leg	**TOTAL**	**900**	**920**	**14%**	**15%**	**6,228**
West Leg	Inbound	840	604			
West Leg	Outbound	0	0			
West Leg	**TOTAL**	**840**	**604**	**15%**	**11%**	**5,573**
OVERALL TOTAL		***8,820***	***8,740***	**10%**	***10%***	***89,179***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[49 Archibald_SR-60 EB.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Archibald Av. & Riverside Dr.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	318	350	33	10%	271	387	117	43%
	Through	1,035	1,710	675	65%	575	828	254	44%
	Right	44	112	68	155%	47	55	8	17%
	NB Total	1,397	2,172	776	56%	892	1,270	378	42%
SOUTH BOUND	Left	128	162	35	27%	273	300	28	10%
	Through	483	684	202	42%	840	1,415	575	68%
	Right	233	128	-105	-45%	235	316	82	35%
	SB Total	843	974	132	16%	1,347	2,031	684	51%
EAST BOUND	Left	227	205	-22	-10%	214	268	54	25%
	Through	293	407	115	39%	598	607	10	2%
	Right	240	371	132	55%	331	515	184	56%
	EB Total	759	983	224	30%	1,143	1,390	248	22%
WEST BOUND	Left	82	162	80	98%	139	195	57	41%
	Through	452	347	-105	-23%	426	479	53	12%
	Right	166	190	25	15%	111	126	15	14%
	WB Total	700	699	-1	0%	676	800	125	18%
TOTAL ENTERING VOLUME		3,698	4,828	1130.5	31%	4,057	5,491	1434	35%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	974	2,031			
North Leg	Outbound	2,105	1,222			
North Leg	**TOTAL**	**3,079**	**3,253**	**11%**	**12%**	**27,618**
South Leg	Inbound	2,172	1,270			
South Leg	Outbound	1,217	2,125			
South Leg	**TOTAL**	**3,389**	**3,395**	**10%**	**10%**	**32,713**
East Leg	Inbound	699	800			
East Leg	Outbound	681	962			
East Leg	**TOTAL**	**1,380**	**1,762**	**6%**	**8%**	**21,232**
West Leg	Inbound	983	1,390			
West Leg	Outbound	825	1,182			
West Leg	**TOTAL**	**1,808**	**2,572**	**13%**	**19%**	**13,477**
OVERALL TOTAL		***9,656***	***10,982***	**10%**	***12%***	***95,040***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[50 Archibald_Riverside.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Archibald Av. & Chino Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	102	145	43	42%	19	57	39	208%
	Through	1,015	1,856	842	83%	717	1,097	380	53%
	Right	34	63	30	88%	35	99	64	183%
	NB Total	1,150	2,064	914	79%	771	1,253	483	63%
SOUTH BOUND	Left	111	182	72	65%	137	173	37	27%
	Through	663	965	303	46%	1,034	1,934	900	87%
	Right	24	29	6	23%	12	17	5	42%
	SB Total	797	1,176	380	48%	1,183	2,124	942	80%
EAST BOUND	Left	91	164	73	80%	20	21	1	5%
	Through	3	6	3	100%	1	2	1	100%
	Right	25	41	16	64%	6	16	11	191%
	EB Total	119	211	92	77%	27	39	13	47%
WEST BOUND	Left	66	60	-6	-9%	19	80	61	321%
	Through	4	3	-1	-25%	0	0	0	#DIV/0!
	Right	235	237	3	1%	107	164	58	54%
	WB Total	305	300	-5	-1%	126	244	119	94%
TOTAL ENTERING VOLUME		2,370	3,751	1381	58%	2,105	3,660	1555	74%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,176	2,124			
North Leg	Outbound	2,257	1,282			
North Leg	**TOTAL**	**3,433**	**3,406**	**10%**	**10%**	**33,066**
South Leg	Inbound	2,064	1,253			
South Leg	Outbound	1,066	2,030			
South Leg	**TOTAL**	**3,130**	**3,283**	**10%**	**10%**	**32,033**
East Leg	Inbound	300	244			
East Leg	Outbound	251	274			
East Leg	**TOTAL**	**551**	**518**	**9%**	**9%**	**6,085**
West Leg	Inbound	211	39			
West Leg	Outbound	177	74			
West Leg	**TOTAL**	**388**	**113**	**5%**	**1%**	**7,954**
OVERALL TOTAL		***7,502***	***7,320***	**9%**	***9%***	***79,138***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[51 Archibald_Chino.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (Post-2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Archibald Avenue / Schaefer Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	69	68	6800%	1	7	6	600%
	Through	3	1,502	1,499	49967%	3	862	859	28633%
	Right	1	8	7	700%	1	73	72	7200%
	NB Total	5	1,579	1,574	31480%	5	942	937	18740%
SOUTH BOUND	Left	1	22	21	2100%	1	322	321	32100%
	Through	3	517	514	17133%	3	1,360	1,357	45233%
	Right	1	191	190	19000%	1	29	28	2800%
	SB Total	5	730	725	14500%	5	1,711	1,706	34120%
EAST BOUND	Left	1	9	8	800%	1	351	350	35000%
	Through	2	0	-2	-100%	2	268	266	13300%
	Right	1	1	0	0%	1	126	125	12500%
	EB Total	4	10	6	150%	4	745	741	18525%
WEST BOUND	Left	1	42	41	4100%	1	23	22	2200%
	Through	2	140	138	6900%	2	4	2	100%
	Right	1	339	338	33800%	1	64	63	6300%
	WB Total	4	521	517	12925%	4	91	87	2175%
TOTAL ENTERING VOLUME		18	2,840	2822	15678%	18	3,489	3471	19283%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	730	1,711			
North Leg	Outbound	1,850	1,277			
North Leg	**TOTAL**	**2,580**	**2,988**	**7%**	**8%**	**35,439**
South Leg	Inbound	1,579	942			
South Leg	Outbound	560	1,509			
South Leg	**TOTAL**	**2,139**	**2,451**	**7%**	**8%**	**30,364**
East Leg	Inbound	521	91			
East Leg	Outbound	30	663			
East Leg	**TOTAL**	**551**	**754**	**18%**	**24%**	**3,109**
West Leg	Inbound	10	745			
West Leg	Outbound	400	40			
West Leg	**TOTAL**	**410**	**785**	**28%**	**53%**	**1,487**
OVERALL TOTAL		***5,680***	***6,978***	**8%**	***10%***	***70,399***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[52 Archibald_Schaefer-SEMI.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (Post-2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Archibald Avenue / Ontario Ranch Road
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	502	501	50100%	1	397	396	39600%
	Through	3	826	823	27433%	3	441	438	14600%
	Right	1	172	171	17100%	1	274	273	27300%
	NB Total	5	1,500	1,495	29900%	5	1,112	1,107	22140%
SOUTH BOUND	Left	1	70	69	6900%	1	278	277	27700%
	Through	3	287	284	9467%	3	822	819	27300%
	Right	1	203	202	20200%	1	403	402	40200%
	SB Total	5	560	555	11100%	5	1,503	1,498	29960%
EAST BOUND	Left	1	436	435	43500%	1	322	321	32100%
	Through	2	818	816	40800%	2	1,798	1,796	89800%
	Right	1	375	374	37400%	1	591	590	59000%
	EB Total	4	1,629	1,625	40625%	4	2,711	2,707	67675%
WEST BOUND	Left	1	257	256	25600%	1	288	287	28700%
	Through	2	1,635	1,633	81650%	2	1,270	1,268	63400%
	Right	1	299	298	29800%	1	157	156	15600%
	WB Total	4	2,191	2,187	54675%	4	1,715	1,711	42775%
TOTAL ENTERING VOLUME		18	5,880	5862	32567%	18	7,041	7023	39017%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	560	1,503			
North Leg	Outbound	1,561	920			
North Leg	**TOTAL**	**2,121**	**2,423**	**7%**	**8%**	**30,364**
South Leg	Inbound	1,500	1,112			
South Leg	Outbound	919	1,701			
South Leg	**TOTAL**	**2,419**	**2,813**	**7%**	**8%**	**33,655**
East Leg	Inbound	2,191	1,715			
East Leg	Outbound	1,060	2,350			
East Leg	**TOTAL**	**3,251**	**4,065**	**9%**	**11%**	**36,644**
West Leg	Inbound	1,629	2,711			
West Leg	Outbound	2,340	2,070			
West Leg	**TOTAL**	**3,969**	**4,781**	**8%**	**9%**	**50,661**
OVERALL TOTAL		***11,760***	***14,082***	**8%**	***9%***	***151,324***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[53 Archibald_Ontario Ranch-SEMI.xls]Output (3)

Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (Post-2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Archibald Avenue / Eucalyptus Avenue
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	237	236	23600%	1	89	88	8800%
	Through	3	1,296	1,293	43100%	3	833	830	27667%
	Right	1	84	83	8300%	1	160	159	15900%
	NB Total	5	1,617	1,612	32240%	5	1,082	1,077	21540%
SOUTH BOUND	Left	1	60	59	5900%	1	184	183	18300%
	Through	3	695	692	23067%	3	1,412	1,409	46967%
	Right	1	169	168	16800%	1	102	101	10100%
	SB Total	5	924	919	18380%	5	1,698	1,693	33860%
EAST BOUND	Left	1	47	46	4600%	1	207	206	20600%
	Through	2	27	25	1250%	2	358	356	17800%
	Right	1	36	35	3500%	1	305	304	30400%
	EB Total	4	110	106	2650%	4	870	866	21650%
WEST BOUND	Left	1	122	121	12100%	1	107	106	10600%
	Through	2	266	264	13200%	2	70	68	3400%
	Right	1	162	161	16100%	1	73	72	7200%
	WB Total	4	550	546	13650%	4	250	246	6150%
TOTAL ENTERING VOLUME		18	3,201	3183	17683%	18	3,900	3882	21567%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	924	1,698			
North Leg	Outbound	1,505	1,113			
North Leg	**TOTAL**	**2,429**	**2,811**	**7%**	**8%**	**33,655**
South Leg	Inbound	1,617	1,082			
South Leg	Outbound	853	1,824			
South Leg	**TOTAL**	**2,470**	**2,906**	**7%**	**8%**	**34,275**
East Leg	Inbound	550	250			
East Leg	Outbound	171	702			
East Leg	**TOTAL**	**721**	**952**	**9%**	**12%**	**7,897**
West Leg	Inbound	110	870			
West Leg	Outbound	672	261			
West Leg	**TOTAL**	**782**	**1,131**	**13%**	**19%**	**6,096**
OVERALL TOTAL		***6,402***	***7,800***	**8%**	***10%***	***81,923***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[54 Archibald_Eucalyptus-SEMI.xls]Output (3)

Project: Merrill Commerce Center
Scenario: Horizon Year (Post-2040)

Job #: 12003
Analyst: CP
Date: 4/9/19

LOCATION: Archibald Avenue / Merrill Avenue
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	481	480	48000%	1	270	269	26900%
	Through	3	1,206	1,203	40100%	3	1,021	1,018	33933%
	Right	1	0	-1	-100%	1	0	-1	-100%
	NB Total	5	1,687	1,682	33640%	5	1,291	1,286	25720%
SOUTH BOUND	Left	1	0	-1	-100%	1	0	-1	-100%
	Through	3	889	886	29533%	3	1,488	1,485	49500%
	Right	1	129	128	12800%	1	70	69	6900%
	SB Total	5	1,018	1,013	20260%	5	1,558	1,553	31060%
EAST BOUND	Left	1	74	73	7300%	1	99	98	9800%
	Through	2	0	-2	-100%	2	0	-2	-100%
	Right	1	201	200	20000%	1	552	551	55100%
	EB Total	4	275	271	6775%	4	651	647	16175%
WEST BOUND	Left	1	0	-1	-100%	1	0	-1	-100%
	Through	2	0	-2	-100%	2	0	-2	-100%
	Right	1	0	-1	-100%	1	0	-1	-100%
	WB Total	4	0	-4	-100%	4	0	-4	-100%
TOTAL ENTERING VOLUME		18	2,980	2962	16456%	18	3,500	3482	19344%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,018	1,558			
North Leg	Outbound	1,280	1,120			
North Leg	**TOTAL**	**2,298**	**2,678**	**7%**	**8%**	**32,491**
South Leg	Inbound	1,687	1,291			
South Leg	Outbound	1,090	2,040			
South Leg	**TOTAL**	**2,777**	**3,331**	**7%**	**8%**	**39,403**
East Leg	Inbound	0	0			
East Leg	Outbound	0	0			
East Leg	**TOTAL**	**0**	**0**	**#DIV/0!**	**#DIV/0!**	**-**
West Leg	Inbound	275	651			
West Leg	Outbound	610	340			
West Leg	**TOTAL**	**885**	**991**	**7%**	**8%**	**12,604**
OVERALL TOTAL		***5,960***	***7,000***	**7%**	***8%***	***84,498***

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Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Archibald Av. & Limonite Av.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	149	148	14800%	1	131	130	13000%
	Through	3	1,085	1,082	36067%	3	1,129	1,126	37533%
	Right	1	316	315	31500%	1	461	460	46000%
	NB Total	5	1,550	1,545	30900%	5	1,721	1,716	34320%
SOUTH BOUND	Left	1	406	405	40500%	1	968	967	96700%
	Through	3	753	750	25000%	3	1,447	1,444	48133%
	Right	1	191	190	19000%	1	275	274	27400%
	SB Total	5	1,350	1,345	26900%	5	2,690	2,685	53700%
EAST BOUND	Left	1	209	208	20800%	1	208	207	20700%
	Through	2	548	546	27300%	2	765	763	38150%
	Right	1	113	112	11200%	1	127	126	12600%
	EB Total	4	870	866	21650%	4	1,100	1,096	27400%
WEST BOUND	Left	1	354	353	35300%	1	419	418	41800%
	Through	2	810	808	40400%	2	716	714	35700%
	Right	1	656	655	65500%	1	686	685	68500%
	WB Total	4	1,820	1,816	45400%	4	1,821	1,817	45425%
TOTAL ENTERING VOLUME		18	5,590	5572	30956%	18	7,332	7314	40633%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,350	2,690			
North Leg	Outbound	1,950	2,023			
North Leg	**TOTAL**	**3,300**	**4,713**	**8%**	**11%**	**43,045**
South Leg	Inbound	1,550	1,721			
South Leg	Outbound	1,220	1,993			
South Leg	**TOTAL**	**2,770**	**3,714**	**8%**	**11%**	**32,939**
East Leg	Inbound	1,820	1,821			
East Leg	Outbound	1,270	2,194			
East Leg	**TOTAL**	**3,090**	**4,015**	**8%**	**10%**	**40,353**
West Leg	Inbound	870	1,100			
West Leg	Outbound	1,150	1,122			
West Leg	**TOTAL**	**2,020**	**2,222**	**8%**	**9%**	**25,789**
OVERALL TOTAL		***11,180***	***14,664***	**8%**	***10%***	***142,126***

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Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Archibald Av. & Schleisman Rd.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	241	164	-77	-32%	178	164	-14	-8%
	Through	776	958	182	23%	593	1,104	511	86%
	Right	215	410	195	91%	109	264	155	142%
	NB Total	1,232	1,532	300	24%	880	1,532	652	74%
SOUTH BOUND	Left	103	352	249	242%	160	575	415	259%
	Through	440	734	294	67%	641	971	330	51%
	Right	420	511	91	22%	300	411	111	37%
	SB Total	963	1,597	634	66%	1,101	1,957	856	78%
EAST BOUND	Left	383	542	159	42%	372	473	101	27%
	Through	375	820	445	119%	993	1,642	649	65%
	Right	113	121	8	7%	172	120	-52	-30%
	EB Total	871	1,483	612	70%	1,537	2,235	698	45%
WEST BOUND	Left	248	537	289	117%	108	359	251	232%
	Through	701	1,107	406	58%	308	925	617	200%
	Right	137	393	256	187%	55	333	278	505%
	WB Total	1,086	2,037	951	88%	471	1,617	1,146	243%
TOTAL ENTERING VOLUME		4,152	6,649	2497	60%	3,989	7,341	3352	84%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,597	1,957			
North Leg	Outbound	1,893	1,910			
North Leg	**TOTAL**	**3,490**	**3,867**	**12%**	**13%**	**29,670**
South Leg	Inbound	1,532	1,532			
South Leg	Outbound	1,392	1,450			
South Leg	**TOTAL**	**2,924**	**2,982**	**12%**	**12%**	**24,970**
East Leg	Inbound	2,037	1,617			
East Leg	Outbound	1,582	2,481			
East Leg	**TOTAL**	**3,619**	**4,098**	**9%**	**10%**	**41,823**
West Leg	Inbound	1,483	2,235			
West Leg	Outbound	1,782	1,500			
West Leg	**TOTAL**	**3,265**	**3,735**	**10%**	**11%**	**34,256**
OVERALL TOTAL		***13,298***	***14,682***	**10%**	***11%***	***130,719***

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Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (Post-2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Turner Avenue & Ontario Ranch Road
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	5	4	400%	1	4	3	300%
	Through	3	2	-1	-33%	3	3	0	0%
	Right	1	3	2	200%	1	4	3	300%
	NB Total	5	10	5	100%	5	11	6	120%
SOUTH BOUND	Left	1	96	95	9500%	1	126	125	12500%
	Through	3	3	0	0%	3	2	-1	-33%
	Right	1	201	200	20000%	1	122	121	12100%
	SB Total	5	300	295	5900%	5	250	245	4900%
EAST BOUND	Left	1	95	94	9400%	1	185	184	18400%
	Through	2	962	960	48000%	2	2,140	2,138	106900%
	Right	1	3	2	200%	1	4	3	300%
	EB Total	4	1,060	1,056	26400%	4	2,329	2,325	58125%
WEST BOUND	Left	1	3	2	200%	1	3	2	200%
	Through	2	1,984	1,982	99100%	2	1,585	1,583	79150%
	Right	1	93	92	9200%	1	142	141	14100%
	WB Total	4	2,080	2,076	51900%	4	1,730	1,726	43150%
TOTAL ENTERING VOLUME		18	3,450	3432	19067%	18	4,320	4302	23900%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	300	250			
North Leg	Outbound	190	330			
North Leg	**TOTAL**	**490**	**580**	**7%**	**8%**	**7,188**
South Leg	Inbound	10	11			
South Leg	Outbound	9	9			
South Leg	**TOTAL**	**19**	**20**	**#DIV/0!**	**#DIV/0!**	**-**
East Leg	Inbound	2,080	1,730			
East Leg	Outbound	1,061	2,270			
East Leg	**TOTAL**	**3,141**	**4,000**	**9%**	**11%**	**35,119**
West Leg	Inbound	1,060	2,329			
West Leg	Outbound	2,190	1,711			
West Leg	**TOTAL**	**3,250**	**4,040**	**9%**	**11%**	**36,644**
OVERALL TOTAL		***6,900***	***8,640***	**9%**	***11%***	***78,951***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[58 Turner_Ontario Ranch-SEMI.xls]Output (3)

Project: Merrill Commerce Center
Scenario: Horizon Year (2040)

Job #: 12003
Analyst: CP
Date: 2/14/19

LOCATION: Harrison Avenue / Limonite Avenue
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	105	104	10400%	1	84	83	8300%
	Through	1	34	33	3300%	1	56	55	5500%
	Right	1	173	172	17200%	1	110	109	10900%
	NB Total	3	312	309	10300%	3	250	247	8233%
SOUTH BOUND	Left	1	142	141	14100%	1	66	65	6500%
	Through	1	54	53	5300%	1	53	52	5200%
	Right	1	86	85	8500%	1	51	50	5000%
	SB Total	3	282	279	9300%	3	170	167	5567%
EAST BOUND	Left	1	27	26	2600%	1	109	108	10800%
	Through	2	1,219	1,217	60850%	2	1,918	1,916	95800%
	Right	1	52	51	5100%	1	171	170	17000%
	EB Total	4	1,298	1,294	32350%	4	2,198	2,194	54850%
WEST BOUND	Left	1	115	114	11400%	1	197	196	19600%
	Through	2	1,635	1,633	81650%	2	1,690	1,688	84400%
	Right	1	59	58	5800%	1	126	125	12500%
	WB Total	4	1,809	1,805	45125%	4	2,013	2,009	50225%
TOTAL ENTERING VOLUME		14	3,701	3687	26336%	14	4,631	4617	32979%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	282	170			
North Leg	Outbound	120	291			
North Leg	**TOTAL**	**402**	**461**	**8%**	**9%**	**5,031**
South Leg	Inbound	312	250			
South Leg	Outbound	221	421			
South Leg	**TOTAL**	**533**	**671**	**8%**	**10%**	**6,583**
East Leg	Inbound	1,809	2,013			
East Leg	Outbound	1,534	2,094			
East Leg	**TOTAL**	**3,343**	**4,107**	**8%**	**10%**	**42,753**
West Leg	Inbound	1,298	2,198			
West Leg	Outbound	1,826	1,825			
West Leg	**TOTAL**	**3,124**	**4,023**	**8%**	**10%**	**40,353**
OVERALL TOTAL		***7,402***	***9,262***	**8%**	***10%***	***94,720***

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Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Haven Av. & Ontario Ranch Rd.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	61	73	13	21%	28	79	52	187%
	Through	184	156	-28	-15%	86	242	156	181%
	Right	76	71	-5	-7%	23	47	25	109%
	NB Total	320	300	-20	-6%	136	368	232	171%
SOUTH BOUND	Left	115	319	205	179%	162	283	121	75%
	Through	56	124	69	123%	253	176	-77	-30%
	Right	66	236	170	258%	106	255	149	141%
	SB Total	236	679	443	188%	521	714	193	37%
EAST BOUND	Left	129	232	104	81%	114	329	215	189%
	Through	560	1,116	557	99%	817	1,741	924	113%
	Right	28	44	17	60%	65	55	-10	-15%
	EB Total	716	1,392	677	95%	996	2,125	1,130	113%
WEST BOUND	Left	21	26	6	27%	60	49	-11	-18%
	Through	812	1,659	847	104%	493	1,396	904	183%
	Right	79	114	35	44%	126	349	224	178%
	WB Total	912	1,799	888	97%	678	1,794	1,117	165%
TOTAL ENTERING VOLUME		2,183	4,170	1987	91%	2,330	5,001	2671	115%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	679	714			
North Leg	Outbound	502	920			
North Leg	**TOTAL**	**1,181**	**1,634**	**6%**	**9%**	**19,199**
South Leg	Inbound	300	368			
South Leg	Outbound	194	280			
South Leg	**TOTAL**	**494**	**648**	**6%**	**7%**	**8,960**
East Leg	Inbound	1,799	1,794			
East Leg	Outbound	1,506	2,071			
East Leg	**TOTAL**	**3,305**	**3,865**	**9%**	**10%**	**37,038**
West Leg	Inbound	1,392	2,125			
West Leg	Outbound	1,968	1,730			
West Leg	**TOTAL**	**3,360**	**3,855**	**10%**	**11%**	**35,119**
OVERALL TOTAL		***8,340***	***10,002***	***8%***	***10%***	***100,316***

U:\UcJobs_11600-12000_12000\12003\Post Processing\[60 Haven_Ontario Ranch.xls]Output (3)

Project: Merrill Commerce Center
Scenario: Horizon Year (2040)

Job #: 12003
Analyst: CP
Date: 2/14/19

LOCATION: Sumner Avenue / Limonite Avenue
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	111	110	11000%	1	72	71	7100%
	Through	1	26	25	2500%	1	15	14	1400%
	Right	1	9	8	800%	1	8	7	700%
	NB Total	3	146	143	4767%	3	95	92	3067%
SOUTH BOUND	Left	1	26	25	2500%	1	44	43	4300%
	Through	1	10	9	900%	1	29	28	2800%
	Right	1	334	333	33300%	1	416	415	41500%
	SB Total	3	370	367	12233%	3	489	486	16200%
EAST BOUND	Left	1	339	338	33800%	1	321	320	32000%
	Through	2	1,035	1,033	51650%	2	1,518	1,516	75800%
	Right	1	45	44	4400%	1	110	109	10900%
	EB Total	4	1,419	1,415	35375%	4	1,949	1,945	48625%
WEST BOUND	Left	1	5	4	400%	1	12	11	1100%
	Through	2	1,395	1,393	69650%	2	1,532	1,530	76500%
	Right	1	36	35	3500%	1	34	33	3300%
	WB Total	4	1,436	1,432	35800%	4	1,578	1,574	39350%
TOTAL ENTERING VOLUME		14	3,371	3357	23979%	14	4,111	4097	29264%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	370	489			
North Leg	Outbound	401	370			
North Leg	**TOTAL**	**771**	**859**	**11%**	**12%**	**7,141**
South Leg	Inbound	146	95			
South Leg	Outbound	60	151			
South Leg	**TOTAL**	**206**	**246**	**4%**	**5%**	**5,030**
East Leg	Inbound	1,436	1,578			
East Leg	Outbound	1,070	1,570			
East Leg	**TOTAL**	**2,506**	**3,148**	**7%**	**9%**	**33,591**
West Leg	Inbound	1,419	1,949			
West Leg	Outbound	1,840	2,020			
West Leg	**TOTAL**	**3,259**	**3,969**	**8%**	**9%**	**42,753**
OVERALL TOTAL		***6,742***	***8,222***	**8%**	***9%***	***88,515***

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Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	2/14/19

LOCATION: Scholar Way / Limonite Avenue
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	100	99	9900%	1	179	178	17800%
	Through	1	9	8	800%	1	18	17	1700%
	Right	1	24	23	2300%	1	31	30	3000%
	NB Total	3	133	130	4333%	3	228	225	7500%
SOUTH BOUND	Left	1	22	21	2100%	1	16	15	1500%
	Through	1	11	10	1000%	1	23	22	2200%
	Right	1	91	90	9000%	1	94	93	9300%
	SB Total	3	124	121	4033%	3	133	130	4333%
EAST BOUND	Left	1	48	47	4700%	1	86	85	8500%
	Through	2	1,099	1,097	54850%	2	1,337	1,335	66750%
	Right	1	62	61	6100%	1	209	208	20800%
	EB Total	4	1,209	1,205	30125%	4	1,632	1,628	40700%
WEST BOUND	Left	1	17	16	1600%	1	39	38	3800%
	Through	2	1,295	1,293	64650%	2	1,431	1,429	71450%
	Right	1	13	12	1200%	1	16	15	1500%
	WB Total	4	1,325	1,321	33025%	4	1,486	1,482	37050%
TOTAL ENTERING VOLUME		14	2,791	2777	19836%	14	3,479	3465	24750%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	124	133			
North Leg	Outbound	70	120			
North Leg	**TOTAL**	**194**	**253**	**7%**	**10%**	**2,611**
South Leg	Inbound	133	228			
South Leg	Outbound	90	271			
South Leg	**TOTAL**	**223**	**499**	**7%**	**15%**	**3,403**
East Leg	Inbound	1,325	1,486			
East Leg	Outbound	1,145	1,384			
East Leg	**TOTAL**	**2,470**	**2,870**	**8%**	**9%**	**32,247**
West Leg	Inbound	1,209	1,632			
West Leg	Outbound	1,486	1,704			
West Leg	**TOTAL**	**2,695**	**3,336**	**7%**	**9%**	**37,455**
OVERALL TOTAL		***5,582***	***6,958***	***7%***	***9%***	***75,716***

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Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	4/9/19

LOCATION: Hamner Av. & Ontario Ranch Rd.
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	165	334	170	103%	195	391	197	101%
	Through	674	646	-28	-4%	372	463	92	25%
	Right	484	692	208	43%	233	266	33	14%
	NB Total	1,322	1,672	350	26%	799	1,120	321	40%
SOUTH BOUND	Left	148	275	127	86%	451	529	79	17%
	Through	200	467	267	134%	790	1,050	261	33%
	Right	79	208	129	163%	107	221	114	107%
	SB Total	427	950	523	122%	1,347	1,800	453	34%
EAST BOUND	Left	93	122	30	32%	87	172	85	98%
	Through	521	1,023	502	96%	736	1,331	595	81%
	Right	79	195	116	147%	263	537	275	105%
	EB Total	693	1,340	648	94%	1,086	2,040	955	88%
WEST BOUND	Left	264	388	124	47%	580	940	361	62%
	Through	759	1,258	499	66%	422	1,063	642	152%
	Right	195	153	-42	-22%	107	167	60	56%
	WB Total	1,218	1,799	581	48%	1,108	2,170	1,062	96%
TOTAL ENTERING VOLUME		3,660	5,761	2101.5	57%	4,340	7,130	2791	64%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	950	1,800			
North Leg	Outbound	921	802			
North Leg	**TOTAL**	**1,871**	**2,602**	**8%**	**11%**	**22,880**
South Leg	Inbound	1,672	1,120			
South Leg	Outbound	1,050	2,527			
South Leg	**TOTAL**	**2,722**	**3,647**	**10%**	**13%**	**28,646**
East Leg	Inbound	1,799	2,170			
East Leg	Outbound	1,990	2,126			
East Leg	**TOTAL**	**3,789**	**4,296**	**9%**	**11%**	**40,819**
West Leg	Inbound	1,340	2,040			
West Leg	Outbound	1,800	1,675			
West Leg	**TOTAL**	**3,140**	**3,715**	**10%**	**12%**	**30,644**
OVERALL TOTAL		***11,522***	***14,260***	**9%**	***12%***	***122,989***

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Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	2/14/19

LOCATION: Hamner Avenue / Limonite Avenue
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	122	121	12100%	1	161	160	16000%
	Through	2	381	379	18950%	2	609	607	30350%
	Right	1	297	296	29600%	1	370	369	36900%
	NB Total	4	800	796	19900%	4	1,140	1,136	28400%
SOUTH BOUND	Left	1	384	383	38300%	1	490	489	48900%
	Through	2	348	346	17300%	2	617	615	30750%
	Right	1	158	157	15700%	1	214	213	21300%
	SB Total	4	890	886	22150%	4	1,321	1,317	32925%
EAST BOUND	Left	1	131	130	13000%	1	191	190	19000%
	Through	2	919	917	45850%	2	1,044	1,042	52100%
	Right	1	93	92	9200%	1	146	145	14500%
	EB Total	4	1,143	1,139	28475%	4	1,381	1,377	34425%
WEST BOUND	Left	1	239	238	23800%	1	329	328	32800%
	Through	2	979	977	48850%	2	1,028	1,026	51300%
	Right	1	338	337	33700%	1	432	431	43100%
	WB Total	4	1,556	1,552	38800%	4	1,789	1,785	44625%
TOTAL ENTERING VOLUME		16	4,389	4373	27331%	16	5,631	5615	35094%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	890	1,321			
North Leg	Outbound	850	1,232			
North Leg	**TOTAL**	**1,740**	**2,553**	**8%**	**11%**	**23,102**
South Leg	Inbound	800	1,140			
South Leg	Outbound	680	1,092			
South Leg	**TOTAL**	**1,480**	**2,232**	**8%**	**12%**	**18,534**
East Leg	Inbound	1,556	1,789			
East Leg	Outbound	1,600	1,904			
East Leg	**TOTAL**	**3,156**	**3,693**	**7%**	**9%**	**42,144**
West Leg	Inbound	1,143	1,381			
West Leg	Outbound	1,259	1,403			
West Leg	**TOTAL**	**2,402**	**2,784**	**7%**	**9%**	**32,247**
OVERALL TOTAL		***8,778***	***11,262***	**8%**	***10%***	***116,027***

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Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (Post-2040)	Analyst:	CS
		Date:	3/7/19

LOCATION: I-15 Southbound Ramps / Cantu Galleano Ranch Road
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	NB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
SOUTH BOUND	Left	310	321	11	4%	290	522	233	80%
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	1,050	1,150	100	10%	940	871	-69	-7%
	SB Total	1,360	1,471	111	8%	1,229	1,393	164	13%
EAST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	941	1,379	438	47%	1,021	1,598	578	57%
	Right	318	510	193	61%	491	490	-1	0%
	EB Total	1,259	1,889	631	50%	1,511	2,088	577	38%
WEST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	511	710	200	39%	443	879	437	99%
	Right	175	220	45	26%	418	490	73	17%
	WB Total	686	930	245	36%	860	1,369	509	59%
TOTAL ENTERING VOLUME		3,304	4,290	986	30%	3,600	4,850	1250	35%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,471	1,393			
North Leg	Outbound	220	490			
North Leg	**TOTAL**	**1,691**	**1,883**	**15%**	**17%**	**11,067**
South Leg	Inbound	0	0			
South Leg	Outbound	510	490			
South Leg	**TOTAL**	**510**	**490**	**8%**	**8%**	**6,223**
East Leg	Inbound	930	1,369			
East Leg	Outbound	1,700	2,120			
East Leg	**TOTAL**	**2,630**	**3,489**	**13%**	**17%**	**20,908**
West Leg	Inbound	1,889	2,088			
West Leg	Outbound	1,860	1,750			
West Leg	**TOTAL**	**3,749**	**3,838**	**12%**	**12%**	**32,449**
OVERALL TOTAL		***8,580***	***9,700***	**12%**	***14%***	***70,647***

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Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	2/14/19

LOCATION: I-15 Southbound Ramps / Limonite Avenue
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	NB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
SOUTH BOUND	Left	1	427	426	42600%	1	449	448	44800%
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	1	353	352	35200%	1	463	462	46200%
	SB Total	2	780	778	38900%	2	912	910	45500%
EAST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	2	1,413	1,411	70550%	2	1,601	1,599	79950%
	Right	1	699	698	69800%	1	783	782	78200%
	EB Total	3	2,112	2,109	70300%	3	2,384	2,381	79367%
WEST BOUND	Left	1	951	950	95000%	1	837	836	83600%
	Through	2	1,587	1,585	79250%	2	1,767	1,765	88250%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	WB Total	3	2,538	2,535	84500%	3	2,604	2,601	86700%
TOTAL ENTERING VOLUME		8	5,430	5422	67775%	8	5,900	5892	73650%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	780	912			
North Leg	Outbound	0	0			
North Leg	**TOTAL**	**780**	**912**	**8%**	**9%**	**10,124**
South Leg	Inbound	0	0			
South Leg	Outbound	1,650	1,620			
South Leg	**TOTAL**	**1,650**	**1,620**	**9%**	**9%**	**18,993**
East Leg	Inbound	2,538	2,604			
East Leg	Outbound	1,840	2,050			
East Leg	**TOTAL**	**4,378**	**4,654**	**8%**	**8%**	**55,404**
West Leg	Inbound	2,112	2,384			
West Leg	Outbound	1,940	2,230			
West Leg	**TOTAL**	**4,052**	**4,614**	**8%**	**9%**	**53,418**
OVERALL TOTAL		***10,860***	***11,800***	**8%**	***9%***	***137,939***

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Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (Post-2040)	Analyst:	CS
		Date:	3/7/19

LOCATION: I-15 Northbound Ramps / Cantu Galleano Ranch Road
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	243	313	70	29%	192	351	160	83%
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	289	238	-51	-18%	229	280	52	23%
	NB Total	532	551	20	4%	420	631	211	50%
SOUTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	SB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
EAST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	479	592	113	24%	635	890	255	40%
	Right	772	1,113	341	44%	707	1,258	552	78%
	EB Total	1,251	1,705	454	36%	1,342	2,148	807	60%
WEST BOUND	Left	352	367	15	4%	292	342	51	17%
	Through	443	617	175	39%	673	929	257	38%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	WB Total	795	984	190	24%	964	1,271	307	32%
TOTAL ENTERING VOLUME		2,577	3,240	663	26%	2,726	4,050	1325	49%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	0	0			
North Leg	Outbound	0	0			
North Leg	**TOTAL**	**0**	**0**	**#DIV/0!**	**#DIV/0!**	**-**
South Leg	Inbound	551	631			
South Leg	Outbound	1,480	1,600			
South Leg	**TOTAL**	**2,031**	**2,231**	**13%**	**14%**	**15,778**
East Leg	Inbound	984	1,271			
East Leg	Outbound	830	1,170			
East Leg	**TOTAL**	**1,814**	**2,441**	**18%**	**25%**	**9,816**
West Leg	Inbound	1,705	2,148			
West Leg	Outbound	930	1,280			
West Leg	**TOTAL**	**2,635**	**3,428**	**13%**	**16%**	**20,908**
OVERALL TOTAL		***6,480***	***8,100***	**14%**	***17%***	***46,502***

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Project:	Merrill Commerce Center	Job #:	12003
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	2/14/19

LOCATION: I-15 Northbound Ramps / Limonite Avenue
FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	635	634	63400%	1	588	587	58700%
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	1	565	564	56400%	1	853	852	85200%
	NB Total	2	1,200	1,198	59900%	2	1,441	1,439	71950%
SOUTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	SB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
EAST BOUND	Left	1	313	312	31200%	1	277	276	27600%
	Through	2	1,525	1,523	76150%	2	1,781	1,779	88950%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	EB Total	3	1,838	1,835	61167%	3	2,058	2,055	68500%
WEST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	2	1,905	1,903	95150%	2	2,016	2,014	100700%
	Right	1	347	346	34600%	1	455	454	45400%
	WB Total	3	2,252	2,249	74967%	3	2,471	2,468	82267%
TOTAL ENTERING VOLUME		8	5,290	5282	66025%	8	5,970	5962	74525%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	0	0			
North Leg	Outbound	660	732			
North Leg	**TOTAL**	**660**	**732**	**8%**	**9%**	**8,462**
South Leg	Inbound	1,200	1,441			
South Leg	Outbound	0	0			
South Leg	**TOTAL**	**1,200**	**1,441**	**7%**	**8%**	**17,431**
East Leg	Inbound	2,252	2,471			
East Leg	Outbound	2,090	2,634			
East Leg	**TOTAL**	**4,342**	**5,105**	**8%**	**9%**	**57,463**
West Leg	Inbound	1,838	2,058			
West Leg	Outbound	2,540	2,604			
West Leg	**TOTAL**	**4,378**	**4,662**	**8%**	**8%**	**55,404**
OVERALL TOTAL		***10,580***	***11,940***	**8%**	***9%***	***138,760***

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APPENDIX 5.1:

E+P (PHASE A) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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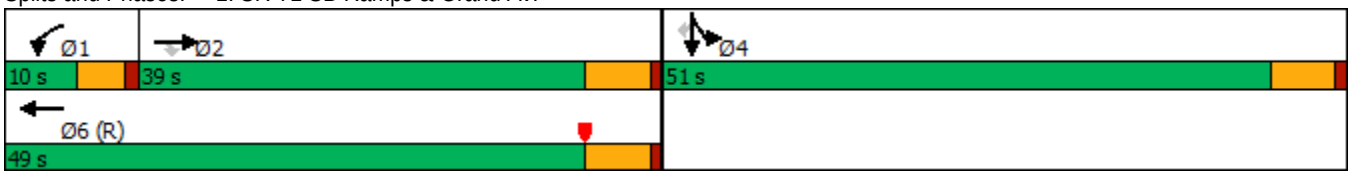
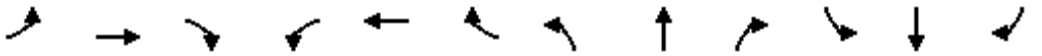
Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	736	200	63	1324	809	5	307
Future Volume (vph)	736	200	63	1324	809	5	307
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	39.0	39.0	10.0	49.0	51.0	51.0	51.0
Total Split (%)	39.0%	39.0%	10.0%	49.0%	51.0%	51.0%	51.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	736	200	63	1324	0	0	0	0	809	5	307
Future Volume (veh/h)	0	736	200	63	1324	0	0	0	0	809	5	307
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	866	146	74	1558	0				956	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85				0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1869	580	174	2334	0				1152	0	
Arrive On Green	0.00	0.36	0.36	0.05	0.45	0.00				0.32	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	866	146	74	1558	0				956	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	12.8	6.4	2.0	23.6	0.0				24.5	0.0	0.0
Cycle Q Clear(g_c), s	0.0	12.8	6.4	2.0	23.6	0.0				24.5	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1869	580	174	2334	0				1152	0	
V/C Ratio(X)	0.00	0.46	0.25	0.43	0.67	0.00				0.83	0.00	
Avail Cap(c_a), veh/h	0	1869	580	211	2334	0				1701	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.49	0.49	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	24.6	22.5	46.1	21.6	0.0				31.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	1.0	0.3	0.8	0.0				2.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.1	2.4	0.9	8.9	0.0				10.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	25.4	23.5	46.4	22.4	0.0				33.9	0.0	0.0
LnGrp LOS	A	C	C	D	C	A				C	A	
Approach Vol, veh/h		1012			1632						956	A
Approach Delay, s/veh		25.1			23.5						33.9	
Approach LOS		C			C						C	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	9.0	40.0		35.8		49.0						
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8						
Max Green Setting (Gmax), s	5.4	33.2		45.2		43.2						
Max Q Clear Time (g_c+I1), s	4.0	14.8		26.5		25.6						
Green Ext Time (p_c), s	0.0	5.8		3.6		9.8						

Intersection Summary												
HCM 6th Ctrl Delay			26.7									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

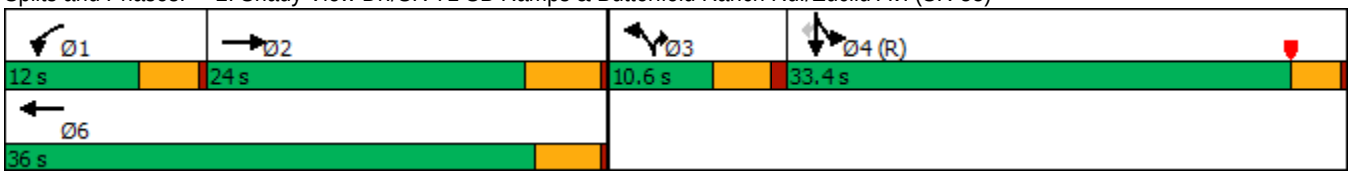
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

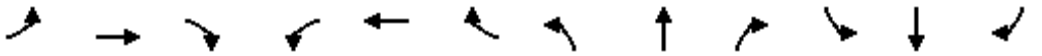
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	687	195	275	19	288	628	26	40
Future Volume (vph)	687	195	275	19	288	628	26	40
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	24.0	12.0	36.0	10.6	10.6	33.4	33.4	33.4
Total Split (%)	30.0%	15.0%	45.0%	13.3%	13.3%	41.8%	41.8%	41.8%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	687	31	195	275	9	19	0	288	628	26	40
Future Volume (veh/h)	0	687	31	195	275	9	19	0	288	628	26	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	1900	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	701	23	199	281	0	19	0	225	660	0	25
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	793	26	181	1344		0	0	0	1887	0	840
Arrive On Green	0.00	0.22	0.22	0.03	0.12	0.00	0.00	0.00	0.00	0.52	0.00	0.52
Sat Flow, veh/h	0	3662	117	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	355	369	199	281	0		0.0		660	0	25
Grp Sat Flow(s),veh/h/ln	0	1805	1879	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	15.2	15.2	8.0	5.6	0.0				8.5	0.0	0.6
Cycle Q Clear(g_c), s	0.0	15.2	15.2	8.0	5.6	0.0				8.5	0.0	0.6
Prop In Lane	0.00		0.06	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	401	418	181	1344					1887	0	840
V/C Ratio(X)	0.00	0.88	0.88	1.10	0.21					0.35	0.00	0.03
Avail Cap(c_a), veh/h	0	429	446	181	1421					1887	0	840
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.95	0.95	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	30.1	30.1	38.7	24.5	0.0				11.2	0.0	9.3
Incr Delay (d2), s/veh	0.0	17.5	17.0	94.4	0.1	0.0				0.5	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.0	8.3	8.3	2.3	0.0				3.0	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	47.6	47.1	133.1	24.5	0.0				11.7	0.0	9.4
LnGrp LOS	A	D	D	F	C					B	A	A
Approach Vol, veh/h		724			480	A					685	
Approach Delay, s/veh		47.4			69.5						11.6	
Approach LOS		D			E						B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	12.0	22.8		45.2		34.8						
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5						
Max Green Setting (Gmax), s	8.0	19.0		29.9		* 32						
Max Q Clear Time (g_c+I1), s	10.0	17.2		10.5		7.6						
Green Ext Time (p_c), s	0.0	0.6		2.4		1.3						

Intersection Summary			
HCM 6th Ctrl Delay		40.0	
HCM 6th LOS		D	

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

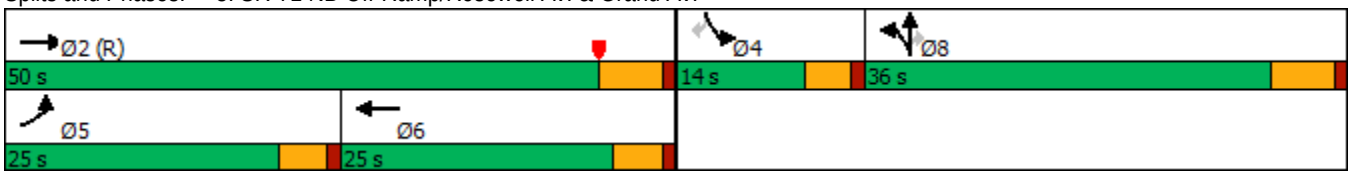
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

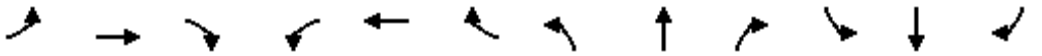
Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	319	1053	173	1050	468	70	65	41	671
Future Volume (vph)	319	1053	173	1050	468	70	65	41	671
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.6	34.8		14.7	34.8	34.8	34.8	9.5	9.5
Total Split (s)	25.0	50.0		25.0	36.0	36.0	36.0	14.0	14.0
Total Split (%)	25.0%	50.0%		25.0%	36.0%	36.0%	36.0%	14.0%	14.0%
Yellow Time (s)	3.6	4.8		3.7	4.8	4.8	4.8	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8		-0.7	-1.8	-1.8	-1.8	-0.5	-0.5
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	Max	Max	Max	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	319	1053	173	0	1050	29	468	70	65	41	0	671
Future Volume (veh/h)	319	1053	173	0	1050	29	468	70	65	41	0	671
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	347	1145	0	0	1141	32	563	0	31	45	0	453
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	380	3112		0	2232	62	1158	0	515	0	0	0
Arrive On Green	0.21	0.60	0.00	0.00	0.34	0.33	0.32	0.00	0.32	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6851	184	3619	0	1610		0	
Grp Volume(v), veh/h	347	1145	0	0	849	324	563	0	31		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1867	1810	0	1610			
Q Serve(g_s), s	18.7	11.3	0.0	0.0	13.8	13.9	12.5	0.0	1.3			
Cycle Q Clear(g_c), s	18.7	11.3	0.0	0.0	13.8	13.9	12.5	0.0	1.3			
Prop In Lane	1.00		1.00	0.00		0.10	1.00		1.00			
Lane Grp Cap(c), veh/h	380	3112		0	1662	633	1158	0	515			
V/C Ratio(X)	0.91	0.37		0.00	0.51	0.51	0.49	0.00	0.06			
Avail Cap(c_a), veh/h	380	3112		0	1662	633	1158	0	515			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.86	0.86	0.00	0.00	0.92	0.92	1.00	0.00	1.00			
Uniform Delay (d), s/veh	38.6	10.3	0.0	0.0	26.4	26.5	27.4	0.0	23.6			
Incr Delay (d2), s/veh	22.7	0.3	0.0	0.0	0.2	0.6	1.5	0.0	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	10.3	3.8	0.0	0.0	5.2	6.1	5.3	0.0	0.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.4	10.6	0.0	0.0	26.7	27.1	28.8	0.0	23.8			
LnGrp LOS	E	B		A	C	C	C	A	C			
Approach Vol, veh/h		1492	A		1173			594				
Approach Delay, s/veh		22.4			26.8			28.6				
Approach LOS		C			C			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		64.0			25.0	39.0		36.0				
Change Period (Y+Rc), s		5.8			4.6	* 5.8		5.8				
Max Green Setting (Gmax), s		44.2			20.4	* 20		30.2				
Max Q Clear Time (g_c+I1), s		13.3			20.7	15.9		14.5				
Green Ext Time (p_c), s		8.7			0.0	2.7		1.9				

Intersection Summary	
HCM 6th Ctrl Delay	25.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

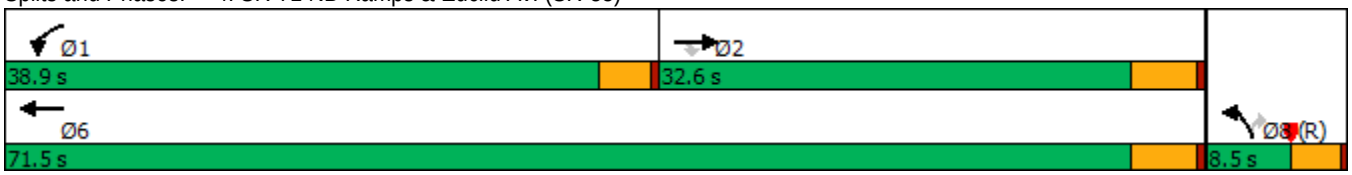
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	659	289	740	926	43	656
Future Volume (vph)	659	289	740	926	43	656
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	32.6	32.6	38.9	71.5	8.5	8.5
Total Split (%)	40.8%	40.8%	48.6%	89.4%	10.6%	10.6%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	659	289	740	926	43	656
Future Volume (veh/h)	659	289	740	926	43	656
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	701	0	787	985	46	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	901		801	2656	577	
Arrive On Green	0.08	0.00	0.44	0.74	0.16	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	701	0	787	985	46	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	15.2	0.0	34.3	7.9	0.9	0.0
Cycle Q Clear(g_c), s	15.2	0.0	34.3	7.9	0.9	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	901		801	2656	577	
V/C Ratio(X)	0.78		0.98	0.37	0.08	
Avail Cap(c_a), veh/h	1268		801	3023	577	
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.45	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.5	0.0	22.0	3.8	28.3	0.0
Incr Delay (d2), s/veh	0.8	0.0	27.5	0.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	0.0	17.8	1.3	0.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.3	0.0	49.5	3.9	28.6	0.0
LnGrp LOS	D		D	A	C	
Approach Vol, veh/h	701	A		1772	46	A
Approach Delay, s/veh	35.3			24.2	28.6	
Approach LOS	D			C	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	38.9	24.5				63.4	16.6
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	35.4	28.1				67.0	5.0
Max Q Clear Time (g_c+I1), s	36.3	17.2				9.9	2.9
Green Ext Time (p_c), s	0.0	2.7				7.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	27.3
HCM 6th LOS	C

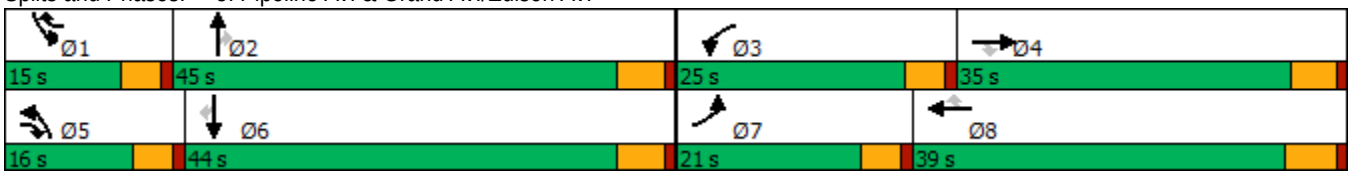
Notes

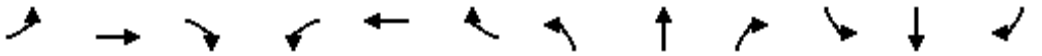
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	798	142	150	798	42	142	195	98	57	317	67
Future Volume (vph)	106	798	142	150	798	42	142	195	98	57	317	67
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	21.0	35.0	16.0	25.0	39.0	15.0	16.0	45.0	45.0	15.0	44.0	44.0
Total Split (%)	17.5%	29.2%	13.3%	20.8%	32.5%	12.5%	13.3%	37.5%	37.5%	12.5%	36.7%	36.7%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 87.1
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	798	142	150	798	42	142	195	98	57	317	67
Future Volume (veh/h)	106	798	142	150	798	42	142	195	98	57	317	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	109	823	103	155	823	28	146	201	32	59	327	35
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	211	2150	771	257	2267	762	236	704	313	89	618	271
Arrive On Green	0.07	0.44	0.43	0.08	0.46	0.45	0.08	0.21	0.21	0.05	0.18	0.18
Sat Flow, veh/h	3141	4914	1505	3141	4914	1522	2956	3420	1519	1619	3420	1498
Grp Volume(v), veh/h	109	823	103	155	823	28	146	201	32	59	327	35
Grp Sat Flow(s),veh/h/ln	1570	1638	1505	1570	1638	1522	1478	1710	1519	1619	1710	1498
Q Serve(g_s), s	2.5	8.6	2.7	3.6	8.2	0.7	3.6	3.8	1.3	2.7	6.6	1.5
Cycle Q Clear(g_c), s	2.5	8.6	2.7	3.6	8.2	0.7	3.6	3.8	1.3	2.7	6.6	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	211	2150	771	257	2267	762	236	704	313	89	618	271
V/C Ratio(X)	0.52	0.38	0.13	0.60	0.36	0.04	0.62	0.29	0.10	0.66	0.53	0.13
Avail Cap(c_a), veh/h	704	2150	771	869	2267	762	468	1848	821	235	1803	790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.2	14.4	9.7	33.7	13.2	9.7	33.8	25.4	24.4	35.2	28.2	26.1
Incr Delay (d2), s/veh	0.7	0.5	0.4	0.9	0.5	0.1	1.0	0.2	0.1	3.2	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	3.0	0.8	1.3	2.7	0.2	1.3	1.5	0.4	1.1	2.6	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.9	14.9	10.1	34.5	13.7	9.7	34.8	25.6	24.6	38.3	28.9	26.3
LnGrp LOS	C	B	B	C	B	A	C	C	C	D	C	C
Approach Vol, veh/h		1035			1006			379			421	
Approach Delay, s/veh		16.6			16.8			29.1			30.0	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	19.6	10.2	37.9	10.1	17.7	9.1	39.0
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	10.4	39.6	20.4	* 30	11.4	38.6	16.4	33.2
Max Q Clear Time (g_c+I1), s	4.7	5.8	5.6	10.6	5.6	8.6	4.5	10.2
Green Ext Time (p_c), s	0.0	1.3	0.2	5.8	0.1	2.2	0.1	5.5

Intersection Summary	
HCM 6th Ctrl Delay	20.3
HCM 6th LOS	C

Notes

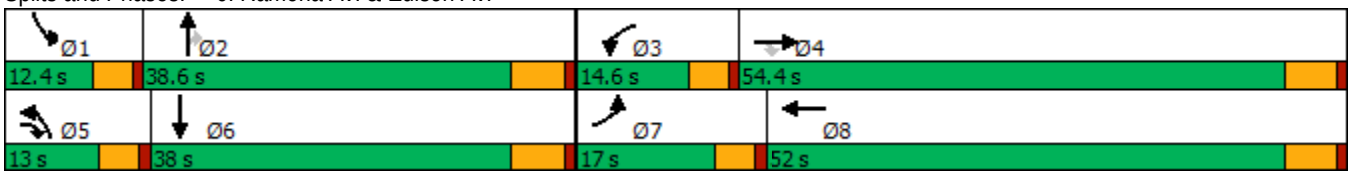
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

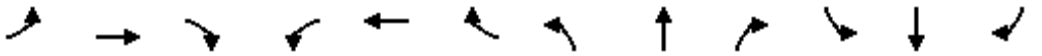
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	91	752	55	48	921	41	285	54	40	419
Future Volume (vph)	91	752	55	48	921	41	285	54	40	419
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	17.0	54.4	13.0	14.6	52.0	13.0	38.6	38.6	12.4	38.0
Total Split (%)	14.2%	45.3%	10.8%	12.2%	43.3%	10.8%	32.2%	32.2%	10.3%	31.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 104
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	752	55	48	921	61	41	285	54	40	419	86
Future Volume (veh/h)	91	752	55	48	921	61	41	285	54	40	419	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1700	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	101	836	57	53	1023	64	46	317	29	44	466	84
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	134	1803	1385	75	1603	100	69	756	336	68	636	114
Arrive On Green	0.08	0.53	0.51	0.05	0.49	0.47	0.04	0.22	0.22	0.04	0.22	0.20
Sat Flow, veh/h	1619	3420	2481	1619	3266	204	1619	3420	1521	1619	2891	518
Grp Volume(v), veh/h	101	836	57	53	536	551	46	317	29	44	274	276
Grp Sat Flow(s),veh/h/ln	1619	1710	1240	1619	1710	1760	1619	1710	1521	1619	1710	1699
Q Serve(g_s), s	6.0	15.0	1.0	3.2	22.7	22.8	2.7	7.8	1.5	2.6	14.6	14.8
Cycle Q Clear(g_c), s	6.0	15.0	1.0	3.2	22.7	22.8	2.7	7.8	1.5	2.6	14.6	14.8
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	134	1803	1385	75	839	864	69	756	336	68	376	374
V/C Ratio(X)	0.75	0.46	0.04	0.70	0.64	0.64	0.67	0.42	0.09	0.65	0.73	0.74
Avail Cap(c_a), veh/h	215	1803	1385	176	839	864	149	1210	538	139	595	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	14.5	9.8	46.0	18.5	18.5	46.1	32.7	30.2	46.1	35.4	35.8
Incr Delay (d2), s/veh	3.2	0.9	0.1	4.4	3.7	3.6	4.1	0.4	0.1	3.9	2.7	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	5.4	0.3	1.3	8.9	9.1	1.1	3.1	0.5	1.1	6.0	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.1	15.3	9.9	50.4	22.1	22.1	50.2	33.1	30.4	50.0	38.1	38.6
LnGrp LOS	D	B	A	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		994			1140			392			594	
Approach Delay, s/veh		18.2			23.5			34.9			39.2	
Approach LOS		B			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	25.6	8.5	55.5	8.2	25.5	12.1	52.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	7.8	32.8	10.0	48.6	8.4	32.2	12.4	46.2
Max Q Clear Time (g_c+I1), s	4.6	9.8	5.2	17.0	4.7	16.8	8.0	24.8
Green Ext Time (p_c), s	0.0	1.9	0.0	6.2	0.0	2.6	0.0	6.7

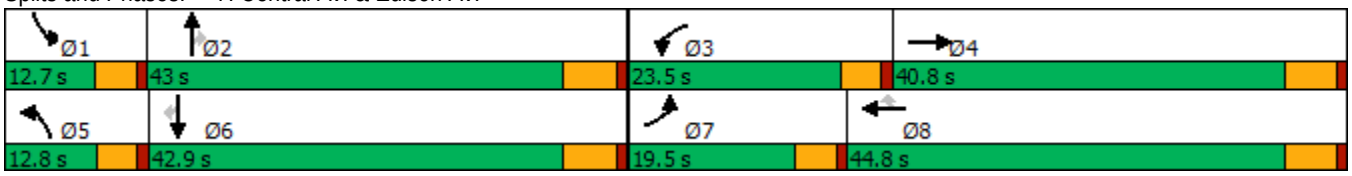
Intersection Summary	
HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

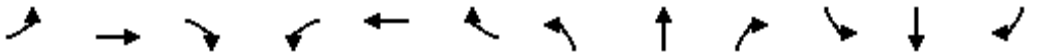
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	141	441	300	942	104	69	732	292	70	866	237
Future Volume (vph)	141	441	300	942	104	69	732	292	70	866	237
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	19.5	40.8	23.5	44.8	44.8	12.8	43.0	43.0	12.7	42.9	42.9
Total Split (%)	16.3%	34.0%	19.6%	37.3%	37.3%	10.7%	35.8%	35.8%	10.6%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 112.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	441	50	300	942	104	69	732	292	70	866	237
Future Volume (veh/h)	141	441	50	300	942	104	69	732	292	70	866	237
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	147	459	46	312	981	80	72	762	122	73	902	189
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	181	1122	112	387	1261	555	98	1073	472	99	1076	473
Arrive On Green	0.11	0.36	0.34	0.12	0.37	0.37	0.06	0.31	0.31	0.06	0.31	0.31
Sat Flow, veh/h	1619	3140	313	3141	3420	1505	1619	3420	1503	1619	3420	1504
Grp Volume(v), veh/h	147	249	256	312	981	80	72	762	122	73	902	189
Grp Sat Flow(s),veh/h/ln	1619	1710	1744	1570	1710	1505	1619	1710	1503	1619	1710	1504
Q Serve(g_s), s	9.8	12.1	12.3	10.7	28.1	3.9	4.8	21.8	6.7	4.9	27.2	10.9
Cycle Q Clear(g_c), s	9.8	12.1	12.3	10.7	28.1	3.9	4.8	21.8	6.7	4.9	27.2	10.9
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	181	611	623	387	1261	555	98	1073	472	99	1076	473
V/C Ratio(X)	0.81	0.41	0.41	0.81	0.78	0.14	0.73	0.71	0.26	0.74	0.84	0.40
Avail Cap(c_a), veh/h	227	611	623	554	1261	555	129	1206	530	127	1202	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.0	26.8	26.9	47.2	30.9	23.3	51.1	33.5	28.3	51.1	35.3	29.7
Incr Delay (d2), s/veh	13.3	2.0	2.0	3.7	4.8	0.5	8.9	1.7	0.3	10.0	4.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	5.1	5.2	4.2	11.7	1.4	2.1	8.8	2.4	2.2	11.5	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.3	28.8	28.9	50.9	35.7	23.8	60.0	35.2	28.6	61.1	40.2	30.3
LnGrp LOS	E	C	C	D	D	C	E	D	C	E	D	C
Approach Vol, veh/h		652			1373			956			1164	
Approach Delay, s/veh		36.2			38.4			36.3			39.9	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	38.7	17.6	43.5	10.7	38.8	16.3	44.8
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	8.1	37.2	18.9	35.0	8.2	37.1	14.9	39.0
Max Q Clear Time (g_c+I1), s	6.9	23.8	12.7	14.3	6.8	29.2	11.8	30.1
Green Ext Time (p_c), s	0.0	4.3	0.3	2.6	0.0	3.8	0.0	4.2

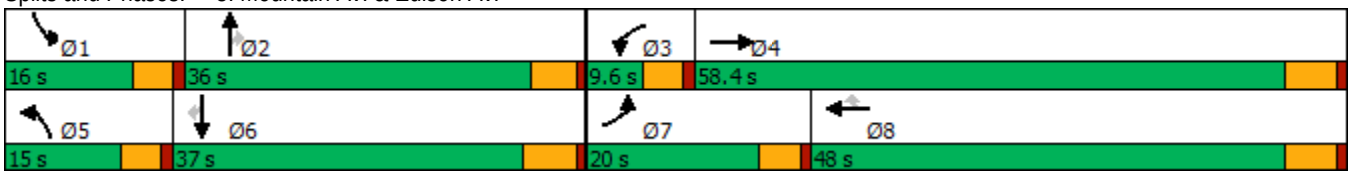
Intersection Summary	
HCM 6th Ctrl Delay	38.0
HCM 6th LOS	D

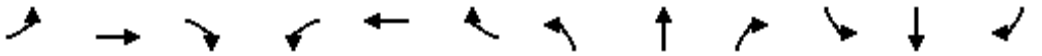
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	134	482	10	956	99	80	146	39	92	75	250
Future Volume (vph)	134	482	10	956	99	80	146	39	92	75	250
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	20.0	58.4	9.6	48.0	48.0	15.0	36.0	36.0	16.0	37.0	37.0
Total Split (%)	16.7%	48.7%	8.0%	40.0%	40.0%	12.5%	30.0%	30.0%	13.3%	30.8%	30.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 101.1
Natural Cycle: 85
Control Type: Actuated-Uncoordinated

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	482	38	10	956	99	80	146	39	92	75	250
Future Volume (veh/h)	134	482	38	10	956	99	80	146	39	92	75	250
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	146	524	37	11	1039	97	87	159	12	100	82	134
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	185	2761	193	32	1694	755	118	228	193	134	259	215
Arrive On Green	0.11	0.59	0.57	0.02	0.50	0.50	0.07	0.13	0.13	0.08	0.14	0.14
Sat Flow, veh/h	1619	4681	327	1619	3420	1524	1619	1800	1525	1619	1800	1495
Grp Volume(v), veh/h	146	365	196	11	1039	97	87	159	12	100	82	134
Grp Sat Flow(s),veh/h/ln	1619	1638	1733	1619	1710	1524	1619	1800	1525	1619	1800	1495
Q Serve(g_s), s	8.1	4.7	4.9	0.6	20.3	3.2	4.9	7.8	0.6	5.6	3.8	7.8
Cycle Q Clear(g_c), s	8.1	4.7	4.9	0.6	20.3	3.2	4.9	7.8	0.6	5.6	3.8	7.8
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	185	1932	1022	32	1694	755	118	228	193	134	259	215
V/C Ratio(X)	0.79	0.19	0.19	0.34	0.61	0.13	0.74	0.70	0.06	0.75	0.32	0.62
Avail Cap(c_a), veh/h	281	1932	1022	98	1694	755	193	624	529	211	644	535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.8	8.7	8.8	44.6	16.9	12.5	41.9	38.6	35.4	41.4	35.4	37.1
Incr Delay (d2), s/veh	4.1	0.2	0.4	2.3	1.7	0.4	3.3	3.8	0.1	3.1	0.7	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	1.5	1.7	0.3	7.4	1.0	2.0	3.6	0.2	2.2	1.6	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.9	9.0	9.3	46.9	18.5	12.9	45.2	42.4	35.6	44.5	36.1	40.1
LnGrp LOS	D	A	A	D	B	B	D	D	D	D	D	D
Approach Vol, veh/h		707			1147			258			316	
Approach Delay, s/veh		16.2			18.3			43.0			40.4	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	16.4	5.8	58.4	10.7	17.3	14.5	49.7
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	11.4	* 31	5.0	52.6	10.4	31.2	15.4	42.2
Max Q Clear Time (g_c+I1), s	7.6	9.8	2.6	6.9	6.9	9.8	10.1	22.3
Green Ext Time (p_c), s	0.0	0.8	0.0	3.5	0.0	0.8	0.1	7.1

Intersection Summary	
HCM 6th Ctrl Delay	23.2
HCM 6th LOS	C

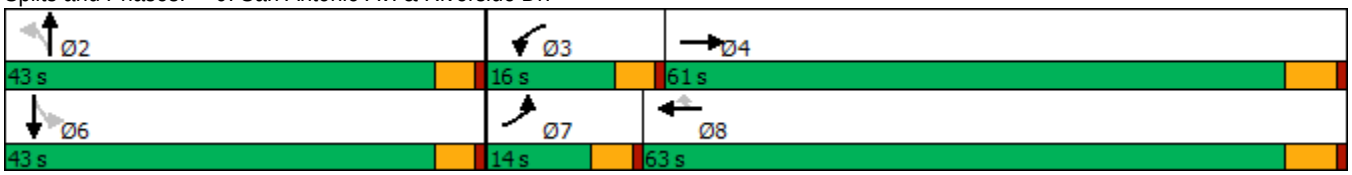
Notes

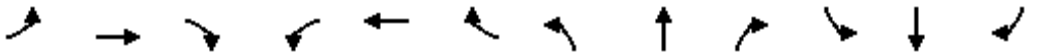
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	16	453	34	793	5	110	2	18	5
Future Volume (vph)	16	453	34	793	5	110	2	18	5
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	14.0	61.0	16.0	63.0	63.0	43.0	43.0	43.0	43.0
Total Split (%)	11.7%	50.8%	13.3%	52.5%	52.5%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 93.3
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	453	55	34	793	5	110	2	42	18	5	48
Future Volume (veh/h)	16	453	55	34	793	5	110	2	42	18	5	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	17	487	55	37	853	4	118	2	22	19	5	35
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	43	2084	235	67	2351	1026	246	19	207	260	28	199
Arrive On Green	0.03	0.67	0.65	0.04	0.69	0.69	0.15	0.15	0.14	0.15	0.15	0.14
Sat Flow, veh/h	1619	3099	349	1619	3420	1492	1312	128	1413	1328	194	1361
Grp Volume(v), veh/h	17	268	274	37	853	4	118	0	24	19	0	40
Grp Sat Flow(s),veh/h/ln	1619	1710	1737	1619	1710	1492	1312	0	1542	1328	0	1555
Q Serve(g_s), s	0.9	5.2	5.3	1.9	8.9	0.1	7.4	0.0	1.2	1.1	0.0	1.9
Cycle Q Clear(g_c), s	0.9	5.2	5.3	1.9	8.9	0.1	9.4	0.0	1.2	2.2	0.0	1.9
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.92	1.00		0.88
Lane Grp Cap(c), veh/h	43	1150	1169	67	2351	1026	246	0	226	260	0	228
V/C Ratio(X)	0.40	0.23	0.23	0.56	0.36	0.00	0.48	0.00	0.11	0.07	0.00	0.18
Avail Cap(c_a), veh/h	189	1150	1169	226	2351	1026	650	0	701	669	0	707
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.1	5.5	5.5	40.4	5.6	4.2	36.2	0.0	32.0	32.7	0.0	32.3
Incr Delay (d2), s/veh	2.2	0.5	0.5	2.7	0.4	0.0	1.4	0.0	0.2	0.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.5	1.5	0.8	2.3	0.0	2.5	0.0	0.4	0.4	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.3	5.9	6.0	43.1	6.0	4.2	37.7	0.0	32.2	32.9	0.0	32.7
LnGrp LOS	D	A	A	D	A	A	D	A	C	C	A	C
Approach Vol, veh/h		559			894			142			59	
Approach Delay, s/veh		7.1			7.5			36.7			32.7	
Approach LOS		A			A			D			C	

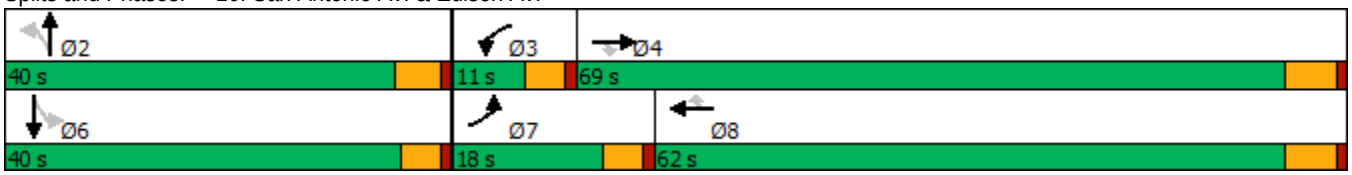
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.6	7.5	61.7		16.6	6.3	63.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		38.4	11.4	55.2		38.4	9.4	57.2				
Max Q Clear Time (g_c+I1), s		11.4	3.9	7.3		4.2	2.9	10.9				
Green Ext Time (p_c), s		0.5	0.0	3.2		0.3	0.0	6.4				

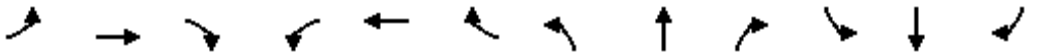
Intersection Summary												
HCM 6th Ctrl Delay			10.8									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	44	545	26	3	850	19	40	70	13	36
Future Volume (vph)	44	545	26	3	850	19	40	70	13	36
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	18.0	69.0	69.0	11.0	62.0	62.0	40.0	40.0	40.0	40.0
Total Split (%)	15.0%	57.5%	57.5%	9.2%	51.7%	51.7%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 95.2
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	545	26	3	850	19	40	70	13	13	36	89
Future Volume (veh/h)	44	545	26	3	850	19	40	70	13	13	36	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1000	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	48	592	20	3	924	21	43	76	5	14	39	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	73	2448	1090	10	2330	1039	116	163	10	60	88	113
Arrive On Green	0.05	0.72	0.72	0.01	0.68	0.68	0.14	0.14	0.13	0.14	0.14	0.13
Sat Flow, veh/h	1619	3420	1523	952	3420	1525	446	1155	67	110	651	832
Grp Volume(v), veh/h	48	592	20	3	924	21	124	0	0	111	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1523	952	1710	1525	1668	0	0	1592	0	0
Q Serve(g_s), s	2.6	5.4	0.3	0.3	10.7	0.4	0.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.6	5.4	0.3	0.3	10.7	0.4	5.9	0.0	0.0	5.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.35		0.04	0.13		0.52
Lane Grp Cap(c), veh/h	73	2448	1090	10	2330	1039	289	0	0	261	0	0
V/C Ratio(X)	0.65	0.24	0.02	0.30	0.40	0.02	0.43	0.00	0.00	0.43	0.00	0.00
Avail Cap(c_a), veh/h	250	2448	1090	73	2330	1039	693	0	0	667	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.6	4.4	3.7	44.6	6.3	4.7	36.0	0.0	0.0	36.5	0.0	0.0
Incr Delay (d2), s/veh	3.7	0.2	0.0	5.9	0.5	0.0	1.0	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.4	0.1	0.1	3.0	0.1	2.6	0.0	0.0	2.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.3	4.7	3.7	50.5	6.8	4.7	37.0	0.0	0.0	37.6	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		660			948			124			111	
Approach Delay, s/veh		7.7			6.9			37.0			37.6	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.8	5.0	69.0		16.8	8.1	65.9				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		34.9	6.4	63.2		* 35	13.4	56.2				
Max Q Clear Time (g_c+I1), s		7.9	2.3	7.4		7.8	4.6	12.7				
Green Ext Time (p_c), s		0.6	0.0	4.1		0.6	0.0	7.2				

Intersection Summary	
HCM 6th Ctrl Delay	11.1
HCM 6th LOS	B

Notes

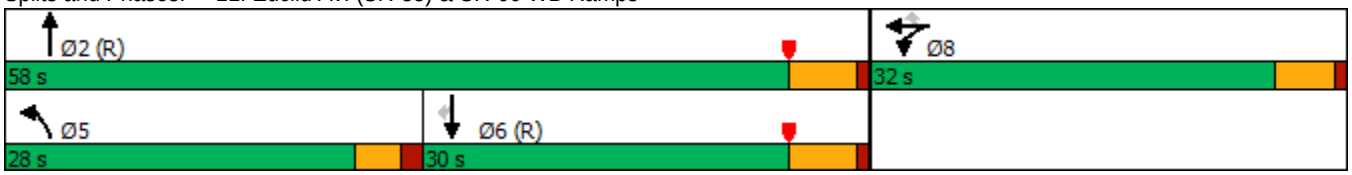
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

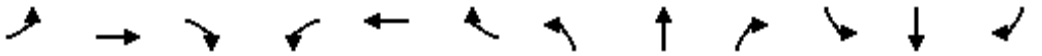
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	591	6	408	344	902	949	470
Future Volume (vph)	591	6	408	344	902	949	470
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	32.0	32.0	32.0	28.0	58.0	30.0	30.0
Total Split (%)	35.6%	35.6%	35.6%	31.1%	64.4%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	591	6	408	344	902	0	0	949	470
Future Volume (veh/h)	0	0	0	591	6	408	344	902	0	0	949	470
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				698	0	145	366	960	0	0	1010	272
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				803	0	357	393	2388	0	0	1424	635
Arrive On Green				0.22	0.00	0.22	0.43	1.00	0.00	0.00	0.39	0.39
Sat Flow, veh/h				3619	0	1610	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				698	0	145	366	960	0	0	1010	272
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1610
Q Serve(g_s), s				16.7	0.0	6.9	17.3	0.0	0.0	0.0	21.2	11.1
Cycle Q Clear(g_c), s				16.7	0.0	6.9	17.3	0.0	0.0	0.0	21.2	11.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				803	0	357	393	2388	0	0	1424	635
V/C Ratio(X)				0.87	0.00	0.41	0.93	0.40	0.00	0.00	0.71	0.43
Avail Cap(c_a), veh/h				1086	0	483	472	2388	0	0	1424	635
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.57	0.57	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.8	0.0	29.9	24.8	0.0	0.0	0.0	22.9	19.9
Incr Delay (d2), s/veh				4.7	0.0	0.3	14.2	0.3	0.0	0.0	3.0	2.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.4	0.0	2.6	6.6	0.1	0.0	0.0	8.9	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				38.5	0.0	30.2	39.0	0.3	0.0	0.0	25.9	22.0
LnGrp LOS				D	A	C	D	A	A	A	C	C
Approach Vol, veh/h					843			1326			1282	
Approach Delay, s/veh					37.1			11.0			25.1	
Approach LOS					D			B			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		65.0			24.0	41.0		25.0				
Change Period (Y+Rc), s		5.5			4.5	5.5		5.0				
Max Green Setting (Gmax), s		52.5			23.5	24.5		27.0				
Max Q Clear Time (g_c+I1), s		2.0			19.3	23.2		18.7				
Green Ext Time (p_c), s		12.0			0.3	1.1		1.2				

Intersection Summary		
HCM 6th Ctrl Delay	22.6	
HCM 6th LOS	C	

Notes

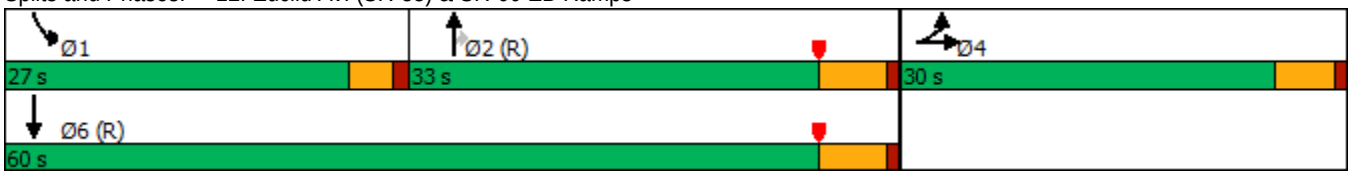
User approved volume balancing among the lanes for turning movement.

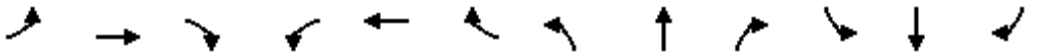
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	404	2	844	656	363	1177
Future Volume (vph)	404	2	844	656	363	1177
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	30.0	30.0	33.0	33.0	27.0	60.0
Total Split (%)	33.3%	33.3%	36.7%	36.7%	30.0%	66.7%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	404	2	325	0	0	0	0	844	656	363	1177	0
Future Volume (veh/h)	404	2	325	0	0	0	0	844	656	363	1177	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	357	97	287				0	888	492	382	1239	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	457	107	316				0	1291	561	414	2277	0
Arrive On Green	0.25	0.25	0.25				0.00	0.36	0.36	0.30	0.84	0.00
Sat Flow, veh/h	1810	423	1252				0	3705	1567	1810	3705	0
Grp Volume(v), veh/h	357	0	384				0	888	492	382	1239	0
Grp Sat Flow(s),veh/h/ln	1810	0	1675				0	1805	1567	1810	1805	0
Q Serve(g_s), s	16.5	0.0	20.0				0.0	18.9	26.4	18.4	9.2	0.0
Cycle Q Clear(g_c), s	16.5	0.0	20.0				0.0	18.9	26.4	18.4	9.2	0.0
Prop In Lane	1.00		0.75				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	457	0	423				0	1291	561	414	2277	0
V/C Ratio(X)	0.78	0.00	0.91				0.00	0.69	0.88	0.92	0.54	0.00
Avail Cap(c_a), veh/h	503	0	465				0	1291	561	462	2277	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.33	1.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.79	0.79	0.45	0.45	0.00
Uniform Delay (d), s/veh	31.3	0.0	32.6				0.0	24.6	27.1	30.6	3.4	0.0
Incr Delay (d2), s/veh	6.2	0.0	19.3				0.0	2.4	14.4	11.9	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	9.8				0.0	7.9	11.4	8.3	2.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.5	0.0	52.0				0.0	27.0	41.5	42.5	3.8	0.0
LnGrp LOS	D	A	D				A	C	D	D	A	A
Approach Vol, veh/h		741						1380			1621	
Approach Delay, s/veh		45.0						32.2			13.0	
Approach LOS		D						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	24.6	37.7		27.7		62.3
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	23.0	27.5		25.0		54.5
Max Q Clear Time (g_c+I1), s	20.4	28.4		22.0		11.2
Green Ext Time (p_c), s	0.2	0.0		0.7		16.9

Intersection Summary	
HCM 6th Ctrl Delay	26.4
HCM 6th LOS	C

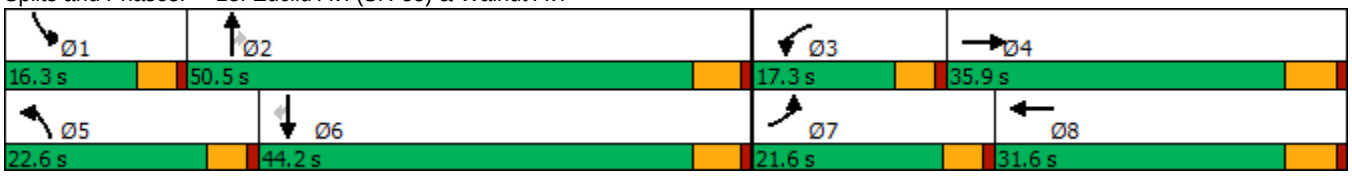
Notes

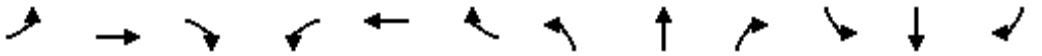
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	113	289	71	307	125	1134	45	150	1166	59
Future Volume (vph)	113	289	71	307	125	1134	45	150	1166	59
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	21.6	35.9	17.3	31.6	22.6	50.5	50.5	16.3	44.2	44.2
Total Split (%)	18.0%	29.9%	14.4%	26.3%	18.8%	42.1%	42.1%	13.6%	36.8%	36.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 107.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	289	109	71	307	204	125	1134	45	150	1166	59
Future Volume (veh/h)	113	289	109	71	307	204	125	1134	45	150	1166	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	119	304	79	75	323	175	132	1194	29	158	1227	41
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	145	589	151	94	403	213	159	2204	684	214	2076	644
Arrive On Green	0.09	0.22	0.22	0.06	0.19	0.19	0.10	0.45	0.45	0.07	0.42	0.42
Sat Flow, veh/h	1619	2696	689	1619	2157	1143	1619	4914	1524	2956	4914	1524
Grp Volume(v), veh/h	119	191	192	75	255	243	132	1194	29	158	1227	41
Grp Sat Flow(s),veh/h/ln	1619	1710	1676	1619	1710	1590	1619	1638	1524	1478	1638	1524
Q Serve(g_s), s	7.3	9.9	10.2	4.6	14.3	14.8	8.0	17.8	1.1	5.3	19.3	1.6
Cycle Q Clear(g_c), s	7.3	9.9	10.2	4.6	14.3	14.8	8.0	17.8	1.1	5.3	19.3	1.6
Prop In Lane	1.00		0.41	1.00		0.72	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	145	373	366	94	319	297	159	2204	684	214	2076	644
V/C Ratio(X)	0.82	0.51	0.52	0.80	0.80	0.82	0.83	0.54	0.04	0.74	0.59	0.06
Avail Cap(c_a), veh/h	274	512	502	204	439	408	290	2204	684	344	2076	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	34.6	34.7	46.8	39.1	39.3	44.5	20.2	15.6	45.7	22.3	17.2
Incr Delay (d2), s/veh	4.3	1.1	1.2	5.8	7.0	9.1	4.2	1.0	0.1	1.9	1.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	4.0	4.1	1.9	6.3	6.3	3.3	6.5	0.4	1.9	7.2	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.3	35.7	35.9	52.6	46.1	48.4	48.7	21.2	15.7	47.6	23.6	17.4
LnGrp LOS	D	D	D	D	D	D	D	C	B	D	C	B
Approach Vol, veh/h		502			573			1355			1426	
Approach Delay, s/veh		39.0			47.9			23.7			26.1	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	50.5	10.4	27.8	14.5	47.9	13.6	24.6
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	11.7	45.1	12.7	30.1	18.0	38.8	17.0	25.8
Max Q Clear Time (g_c+I1), s	7.3	19.8	6.6	12.2	10.0	21.3	9.3	16.8
Green Ext Time (p_c), s	0.1	9.1	0.0	1.8	0.1	7.9	0.1	1.8

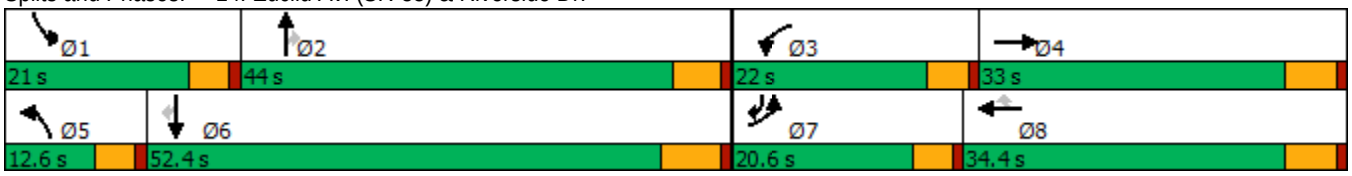
Intersection Summary	
HCM 6th Ctrl Delay	30.2
HCM 6th LOS	C

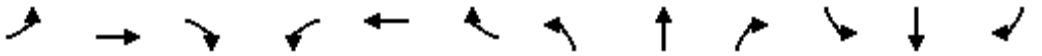
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	153	311	187	488	115	67	921	155	174	978	152
Future Volume (vph)	153	311	187	488	115	67	921	155	174	978	152
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	20.6	33.0	22.0	34.4	34.4	12.6	44.0	44.0	21.0	52.4	20.6
Total Split (%)	17.2%	27.5%	18.3%	28.7%	28.7%	10.5%	36.7%	36.7%	17.5%	43.7%	17.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 117.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	311	54	187	488	115	67	921	155	174	978	152
Future Volume (veh/h)	153	311	54	187	488	115	67	921	155	174	978	152
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	161	327	41	197	514	92	71	969	123	183	1029	101
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	186	351	44	221	841	375	88	1124	501	207	1375	788
Arrive On Green	0.11	0.22	0.22	0.14	0.25	0.25	0.05	0.33	0.33	0.13	0.40	0.40
Sat Flow, veh/h	1619	1568	197	1619	3420	1525	1619	3420	1525	1619	3420	1524
Grp Volume(v), veh/h	161	0	368	197	514	92	71	969	123	183	1029	101
Grp Sat Flow(s),veh/h/ln	1619	0	1765	1619	1710	1525	1619	1710	1525	1619	1710	1524
Q Serve(g_s), s	11.5	0.0	24.0	14.1	15.7	5.7	5.1	31.2	6.9	13.1	30.2	4.0
Cycle Q Clear(g_c), s	11.5	0.0	24.0	14.1	15.7	5.7	5.1	31.2	6.9	13.1	30.2	4.0
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	186	0	395	221	841	375	88	1124	501	207	1375	788
V/C Ratio(X)	0.87	0.00	0.93	0.89	0.61	0.25	0.81	0.86	0.25	0.88	0.75	0.13
Avail Cap(c_a), veh/h	220	0	409	240	841	375	110	1124	501	226	1375	788
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	0.0	44.7	49.8	39.3	35.6	54.9	37.0	28.8	50.3	30.0	14.7
Incr Delay (d2), s/veh	23.1	0.0	27.8	28.2	1.3	0.3	23.0	8.8	1.2	27.8	3.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	13.2	7.3	6.5	2.1	2.6	13.5	2.6	6.8	12.6	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.2	0.0	72.5	78.0	40.6	35.9	78.0	45.7	30.0	78.1	33.8	15.0
LnGrp LOS	E	A	E	E	D	D	E	D	C	E	C	B
Approach Vol, veh/h		529			803			1163			1313	
Approach Delay, s/veh		73.0			49.3			46.0			38.5	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.7	45.1	20.7	32.1	11.0	53.8	18.1	34.7
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	16.4	* 39	17.4	27.2	8.0	45.9	16.0	28.6
Max Q Clear Time (g_c+I1), s	15.1	33.2	16.1	26.0	7.1	32.2	13.5	17.7
Green Ext Time (p_c), s	0.0	2.8	0.0	0.2	0.0	6.0	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	47.9
HCM 6th LOS	D

Notes

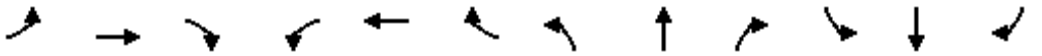
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	104	165	39	71	151	46	984	129	56	1050	92
Future Volume (vph)	104	165	39	71	151	46	984	129	56	1050	92
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	44.0	44.0	44.0	44.0	44.0	15.0	60.0	60.0	16.0	61.0	61.0
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	12.5%	50.0%	50.0%	13.3%	50.8%	50.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 102.3
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	165	39	71	151	51	46	984	129	56	1050	92
Future Volume (veh/h)	104	165	39	71	151	51	46	984	129	56	1050	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	111	176	25	76	161	42	49	1047	113	60	1117	67
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	224	438	371	113	205	48	60	1857	828	75	1888	825
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.04	0.54	0.54	0.05	0.55	0.55
Sat Flow, veh/h	1131	1800	1524	279	842	199	1619	3420	1525	1619	3420	1494
Grp Volume(v), veh/h	111	176	25	279	0	0	49	1047	113	60	1117	67
Grp Sat Flow(s),veh/h/ln	1131	1800	1524	1319	0	0	1619	1710	1525	1619	1710	1494
Q Serve(g_s), s	0.0	8.3	1.3	12.9	0.0	0.0	3.0	20.3	3.7	3.7	21.9	2.1
Cycle Q Clear(g_c), s	19.4	8.3	1.3	21.2	0.0	0.0	3.0	20.3	3.7	3.7	21.9	2.1
Prop In Lane	1.00		1.00	0.27		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	224	438	371	366	0	0	60	1857	828	75	1888	825
V/C Ratio(X)	0.50	0.40	0.07	0.76	0.00	0.00	0.81	0.56	0.14	0.80	0.59	0.08
Avail Cap(c_a), veh/h	377	681	577	575	0	0	167	1857	828	183	1888	825
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.2	32.0	29.4	37.7	0.0	0.0	48.2	15.2	11.4	47.7	15.0	10.6
Incr Delay (d2), s/veh	1.7	0.6	0.1	3.3	0.0	0.0	9.2	1.2	0.3	7.3	1.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	3.5	0.5	6.7	0.0	0.0	1.3	7.0	1.2	1.6	7.4	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.9	32.6	29.5	40.9	0.0	0.0	57.4	16.4	11.7	54.9	16.4	10.8
LnGrp LOS	D	C	C	D	A	A	E	B	B	D	B	B
Approach Vol, veh/h		312			279			1209			1244	
Approach Delay, s/veh		34.3			40.9			17.6			18.0	
Approach LOS		C			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.3	61.3		30.3	8.4	62.2		30.3				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	11.4	* 55		38.2	10.4	54.5		38.2				
Max Q Clear Time (g_c+I1), s	5.7	22.3		21.4	5.0	23.9		23.2				
Green Ext Time (p_c), s	0.0	7.9		1.2	0.0	8.3		1.3				

Intersection Summary		
HCM 6th Ctrl Delay		21.6
HCM 6th LOS		C

Notes

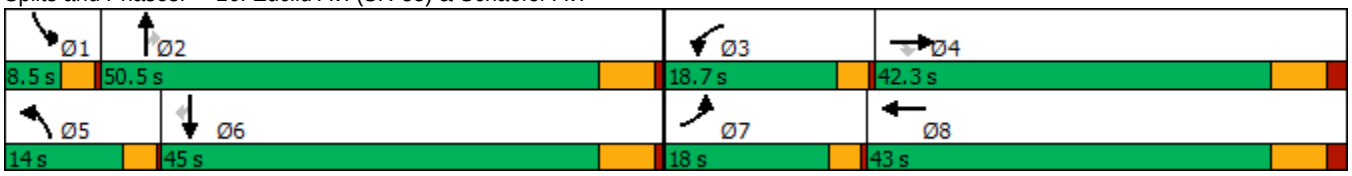
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

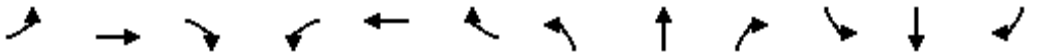
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	153	75	58	140	177	102	948	35	29	959	122
Future Volume (vph)	153	75	58	140	177	102	948	35	29	959	122
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	18.0	42.3	42.3	18.7	43.0	14.0	50.5	50.5	8.5	45.0	45.0
Total Split (%)	15.0%	35.3%	35.3%	15.6%	35.8%	11.7%	42.1%	42.1%	7.1%	37.5%	37.5%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 97.2
Natural Cycle: 110
Control Type: Actuated-Uncoordinated

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	75	58	140	177	11	102	948	35	29	959	122
Future Volume (veh/h)	153	75	58	140	177	11	102	948	35	29	959	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	165	81	43	151	190	10	110	1019	28	31	1031	97
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	199	272	230	204	261	14	137	1467	654	51	1286	572
Arrive On Green	0.12	0.15	0.15	0.13	0.15	0.15	0.08	0.43	0.43	0.03	0.38	0.38
Sat Flow, veh/h	1619	1800	1525	1619	1694	89	1619	3420	1525	1619	3420	1521
Grp Volume(v), veh/h	165	81	43	151	0	200	110	1019	28	31	1031	97
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1783	1619	1710	1525	1619	1710	1521
Q Serve(g_s), s	7.6	3.0	1.9	6.8	0.0	8.1	5.1	18.5	0.8	1.4	20.5	3.2
Cycle Q Clear(g_c), s	7.6	3.0	1.9	6.8	0.0	8.1	5.1	18.5	0.8	1.4	20.5	3.2
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	199	272	230	204	0	274	137	1467	654	51	1286	572
V/C Ratio(X)	0.83	0.30	0.19	0.74	0.00	0.73	0.81	0.69	0.04	0.61	0.80	0.17
Avail Cap(c_a), veh/h	308	835	707	323	0	843	223	1999	892	106	1752	779
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.6	28.7	28.2	32.1	0.0	30.7	34.2	17.7	12.7	36.4	21.2	15.8
Incr Delay (d2), s/veh	5.9	0.5	0.3	2.0	0.0	2.8	4.2	0.6	0.0	4.2	2.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	1.3	0.7	2.6	0.0	3.4	2.0	6.0	0.2	0.6	7.1	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.5	29.2	28.5	34.1	0.0	33.5	38.4	18.3	12.7	40.6	23.2	16.0
LnGrp LOS	D	C	C	C	A	C	D	B	B	D	C	B
Approach Vol, veh/h		289			351			1157			1159	
Approach Delay, s/veh		34.4			33.7			20.1			23.0	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	38.7	13.1	18.5	9.9	34.6	12.9	18.7
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	44.5	15.2	35.3	10.5	39.0	14.5	36.0
Max Q Clear Time (g_c+I1), s	3.4	20.5	8.8	5.0	7.1	22.5	9.6	10.1
Green Ext Time (p_c), s	0.0	6.8	0.1	0.4	0.0	6.1	0.1	0.8

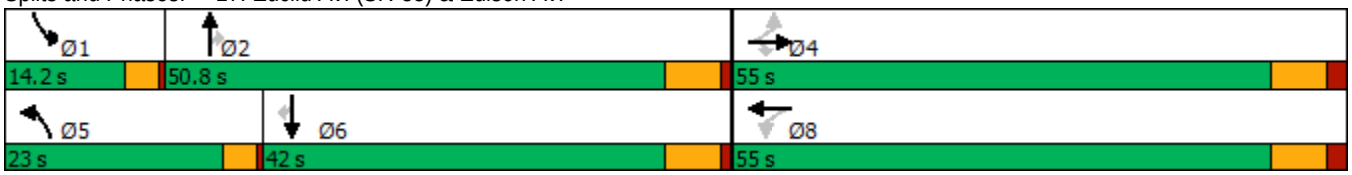
Intersection Summary	
HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	156	237	117	33	416	214	883	37	63	847	167
Future Volume (vph)	156	237	117	33	416	214	883	37	63	847	167
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	55.0	55.0	55.0	55.0	55.0	23.0	50.8	50.8	14.2	42.0	42.0
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	19.2%	42.3%	42.3%	11.8%	35.0%	35.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 109.5
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	237	117	33	416	63	214	883	37	63	847	167
Future Volume (veh/h)	156	237	117	33	416	63	214	883	37	63	847	167
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	162	247	67	34	433	61	223	920	31	66	882	123
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	226	749	634	393	642	90	248	1334	595	82	984	428
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.15	0.39	0.39	0.05	0.29	0.29
Sat Flow, veh/h	866	1800	1524	1022	1543	217	1619	3420	1525	1619	3420	1488
Grp Volume(v), veh/h	162	247	67	34	0	494	223	920	31	66	882	123
Grp Sat Flow(s),veh/h/ln	866	1800	1524	1022	0	1761	1619	1710	1525	1619	1710	1488
Q Serve(g_s), s	21.5	10.7	3.1	2.7	0.0	26.3	15.6	25.9	1.5	4.7	28.5	7.4
Cycle Q Clear(g_c), s	47.8	10.7	3.1	13.4	0.0	26.3	15.6	25.9	1.5	4.7	28.5	7.4
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	226	749	634	393	0	733	248	1334	595	82	984	428
V/C Ratio(X)	0.72	0.33	0.11	0.09	0.00	0.67	0.90	0.69	0.05	0.80	0.90	0.29
Avail Cap(c_a), veh/h	226	749	634	393	0	733	274	1334	595	150	1067	464
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.7	22.8	20.6	27.3	0.0	27.3	48.0	29.4	21.9	54.2	39.4	31.9
Incr Delay (d2), s/veh	10.5	0.3	0.1	0.1	0.0	2.4	27.0	1.5	0.0	6.6	9.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	4.4	1.1	0.6	0.0	10.9	7.8	10.1	0.5	2.0	12.5	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.2	23.0	20.6	27.4	0.0	29.8	75.0	30.9	21.9	60.8	48.9	32.3
LnGrp LOS	E	C	C	C	A	C	E	C	C	E	D	C
Approach Vol, veh/h		476			528			1174			1071	
Approach Delay, s/veh		34.3			29.6			39.0			47.8	
Approach LOS		C			C			D			D	

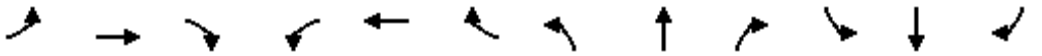
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.4	51.0		55.0	21.2	39.2		55.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	10.7	44.8		48.0	19.5	36.0		48.0				
Max Q Clear Time (g_c+I1), s	6.7	27.9		49.8	17.6	30.5		28.3				
Green Ext Time (p_c), s	0.0	5.3		0.0	0.1	2.6		2.9				

Intersection Summary			
HCM 6th Ctrl Delay		39.7	
HCM 6th LOS		D	

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	67	25	152	32	151	169	1080	12	22	1022	40
Future Volume (vph)	67	25	152	32	151	169	1080	12	22	1022	40
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	46.8	46.8	46.8	46.8	46.8	24.0	63.5	63.5	9.7	49.2	49.2
Total Split (%)	39.0%	39.0%	39.0%	39.0%	39.0%	20.0%	52.9%	52.9%	8.1%	41.0%	41.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 76.9
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	25	152	32	151	37	169	1080	12	22	1022	40
Future Volume (veh/h)	67	25	152	32	151	37	169	1080	12	22	1022	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	68	26	69	33	154	30	172	1102	11	22	1043	30
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	244	350	297	357	285	55	216	1807	806	42	1440	642
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.13	0.53	0.53	0.03	0.42	0.42
Sat Flow, veh/h	1151	1800	1525	1248	1464	285	1619	3420	1525	1619	3420	1524
Grp Volume(v), veh/h	68	26	69	33	0	184	172	1102	11	22	1043	30
Grp Sat Flow(s),veh/h/ln	1151	1800	1525	1248	0	1749	1619	1710	1525	1619	1710	1524
Q Serve(g_s), s	3.1	0.7	2.1	1.2	0.0	5.3	5.7	12.5	0.2	0.7	14.2	0.6
Cycle Q Clear(g_c), s	8.4	0.7	2.1	1.9	0.0	5.3	5.7	12.5	0.2	0.7	14.2	0.6
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	244	350	297	357	0	340	216	1807	806	42	1440	642
V/C Ratio(X)	0.28	0.07	0.23	0.09	0.00	0.54	0.80	0.61	0.01	0.52	0.72	0.05
Avail Cap(c_a), veh/h	888	1357	1150	1055	0	1318	596	3548	1582	180	2670	1189
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	18.3	18.9	19.1	0.0	20.2	23.4	9.1	6.2	26.8	13.4	9.5
Incr Delay (d2), s/veh	0.5	0.1	0.3	0.1	0.0	1.0	5.0	0.3	0.0	7.3	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.2	0.7	0.3	0.0	1.9	2.1	2.7	0.0	0.3	3.8	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.5	18.4	19.2	19.2	0.0	21.2	28.4	9.5	6.2	34.1	14.1	9.6
LnGrp LOS	C	B	B	B	A	C	C	A	A	C	B	A
Approach Vol, veh/h		163			217			1285			1095	
Approach Delay, s/veh		21.3			20.9			12.0			14.4	
Approach LOS		C			C			B			B	

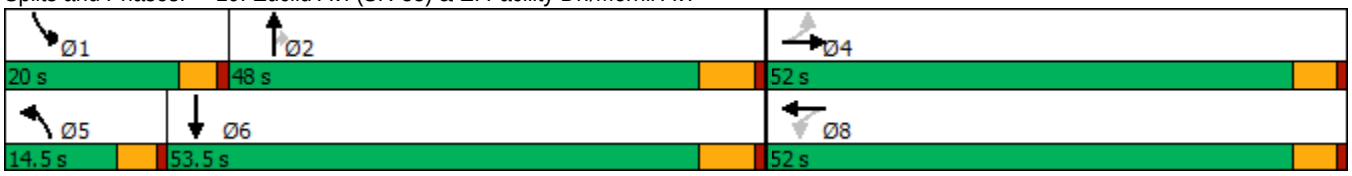
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	35.1		15.6	10.9	29.2		15.6				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	6.2	57.8		42.0	20.5	43.5		42.0				
Max Q Clear Time (g_c+I1), s	2.7	14.5		10.4	7.7	16.2		7.3				
Green Ext Time (p_c), s	0.0	8.5		0.4	0.2	7.2		0.8				

Intersection Summary			
HCM 6th Ctrl Delay		14.2	
HCM 6th LOS		B	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	4	8	235	48	10	1013	173	190	981
Future Volume (vph)	4	8	235	48	10	1013	173	190	981
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	52.0	52.0	52.0	52.0	14.5	48.0	48.0	20.0	53.5
Total Split (%)	43.3%	43.3%	43.3%	43.3%	12.1%	40.0%	40.0%	16.7%	44.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 114.3
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	8	17	235	48	249	10	1013	173	190	981	39
Future Volume (veh/h)	4	8	17	235	48	249	10	1013	173	190	981	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	4	8	17	242	49	230	10	1044	135	196	1011	26
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	94	185	340	306	52	244	39	1192	532	222	1572	40
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.02	0.35	0.35	0.14	0.46	0.46
Sat Flow, veh/h	150	502	924	695	141	661	1619	3420	1525	1619	3404	88
Grp Volume(v), veh/h	29	0	0	521	0	0	10	1044	135	196	508	529
Grp Sat Flow(s),veh/h/ln	1576	0	0	1497	0	0	1619	1710	1525	1619	1710	1782
Q Serve(g_s), s	0.0	0.0	0.0	34.6	0.0	0.0	0.6	30.5	6.7	12.6	24.2	24.2
Cycle Q Clear(g_c), s	1.2	0.0	0.0	35.8	0.0	0.0	0.6	30.5	6.7	12.6	24.2	24.2
Prop In Lane	0.14		0.59	0.46		0.44	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	619	0	0	601	0	0	39	1192	532	222	790	823
V/C Ratio(X)	0.05	0.00	0.00	0.87	0.00	0.00	0.26	0.88	0.25	0.88	0.64	0.64
Avail Cap(c_a), veh/h	730	0	0	710	0	0	152	1349	602	236	790	823
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.6	0.0	0.0	32.4	0.0	0.0	51.0	32.5	24.8	45.1	21.9	21.9
Incr Delay (d2), s/veh	0.0	0.0	0.0	8.7	0.0	0.0	1.3	6.2	0.2	27.4	1.8	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	13.3	0.0	0.0	0.3	12.5	2.3	6.5	9.0	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.6	0.0	0.0	41.1	0.0	0.0	52.3	38.7	25.0	72.4	23.7	23.6
LnGrp LOS	C	A	A	D	A	A	D	D	C	E	C	C
Approach Vol, veh/h		29			521			1189			1233	
Approach Delay, s/veh		21.6			41.1			37.3			31.4	
Approach LOS		C			D			D			C	

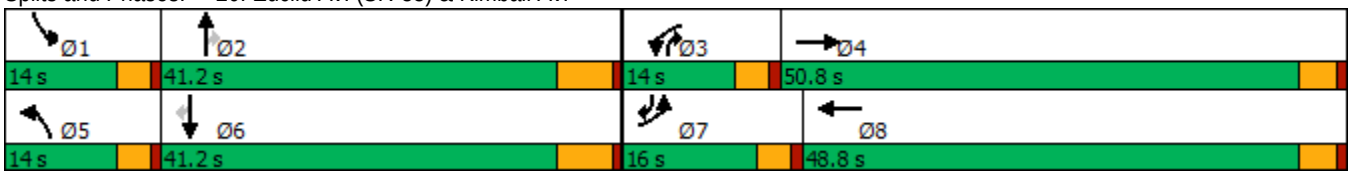
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.1	43.1		44.2	7.1	55.2		44.2				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	15.5	42.0		47.0	10.0	47.5		47.0				
Max Q Clear Time (g_c+I1), s	14.6	32.5		3.2	2.6	26.2		37.8				
Green Ext Time (p_c), s	0.0	4.6		0.1	0.0	5.8		1.4				

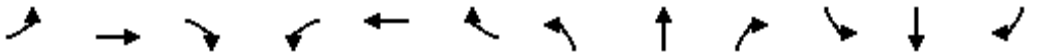
Intersection Summary			
HCM 6th Ctrl Delay		35.4	
HCM 6th LOS		D	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	126	223	44	721	84	735	28	190	595	377
Future Volume (vph)	126	223	44	721	84	735	28	190	595	377
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	16.0	50.8	14.0	48.8	14.0	41.2	14.0	14.0	41.2	16.0
Total Split (%)	13.3%	42.3%	11.7%	40.7%	11.7%	34.3%	11.7%	11.7%	34.3%	13.3%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 104.1
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	223	32	44	721	295	84	735	28	190	595	377
Future Volume (veh/h)	126	223	32	44	721	295	84	735	28	190	595	377
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	129	228	24	45	736	265	86	750	17	194	607	256
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	308	1160	121	120	840	302	156	918	523	254	883	548
Arrive On Green	0.10	0.37	0.37	0.07	0.34	0.34	0.10	0.27	0.27	0.09	0.26	0.26
Sat Flow, veh/h	2956	3126	326	1619	2463	887	1619	3420	1525	2956	3420	1506
Grp Volume(v), veh/h	129	124	128	45	511	490	86	750	17	194	607	256
Grp Sat Flow(s),veh/h/ln	1478	1710	1741	1619	1710	1640	1619	1710	1525	1478	1710	1506
Q Serve(g_s), s	3.8	4.5	4.6	2.4	25.9	25.9	4.7	19.0	0.7	5.9	14.8	12.1
Cycle Q Clear(g_c), s	3.8	4.5	4.6	2.4	25.9	25.9	4.7	19.0	0.7	5.9	14.8	12.1
Prop In Lane	1.00		0.19	1.00		0.54	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	308	635	646	120	583	559	156	918	523	254	883	548
V/C Ratio(X)	0.42	0.19	0.20	0.37	0.88	0.88	0.55	0.82	0.03	0.76	0.69	0.47
Avail Cap(c_a), veh/h	384	857	873	175	820	787	175	1303	694	320	1303	733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	19.7	19.7	40.7	28.6	28.6	39.8	31.7	20.2	41.3	30.9	22.6
Incr Delay (d2), s/veh	0.3	0.1	0.1	0.7	6.0	6.3	1.1	2.8	0.0	6.0	1.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.7	1.8	1.0	10.7	10.3	1.8	7.5	0.2	2.2	5.7	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.1	19.8	19.9	41.5	34.7	34.9	41.0	34.5	20.2	47.3	31.9	23.2
LnGrp LOS	D	B	B	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		381			1046			853			1057	
Approach Delay, s/veh		26.4			35.1			34.9			32.6	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	30.8	10.8	38.8	12.9	29.9	13.6	36.0
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	10.0	35.2	10.0	46.3	10.0	35.2	12.0	44.3
Max Q Clear Time (g_c+I1), s	7.9	21.0	4.4	6.6	6.7	16.8	5.8	27.9
Green Ext Time (p_c), s	0.1	3.8	0.0	1.3	0.0	4.2	0.1	3.6

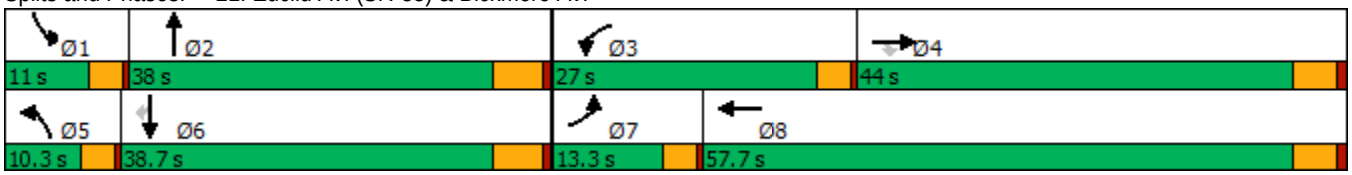
Intersection Summary	
HCM 6th Ctrl Delay	33.2
HCM 6th LOS	C

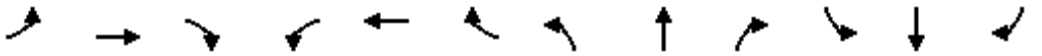
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	47	8	23	166	195	27	577	34	584	142
Future Volume (vph)	47	8	23	166	195	27	577	34	584	142
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	13.3	44.0	44.0	27.0	57.7	10.3	38.0	11.0	38.7	38.7
Total Split (%)	11.1%	36.7%	36.7%	22.5%	48.1%	8.6%	31.7%	9.2%	32.3%	32.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 66.6
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	8	23	166	195	131	27	577	20	34	584	142
Future Volume (veh/h)	47	8	23	166	195	131	27	577	20	34	584	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	52	9	22	184	217	107	30	641	15	38	649	110
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	86	286	243	232	283	140	56	903	21	68	929	414
Arrive On Green	0.05	0.16	0.16	0.14	0.25	0.25	0.03	0.26	0.26	0.04	0.27	0.27
Sat Flow, veh/h	1619	1800	1525	1619	1138	561	1619	3416	80	1619	3420	1525
Grp Volume(v), veh/h	52	9	22	184	0	324	30	321	335	38	649	110
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1699	1619	1710	1786	1619	1710	1525
Q Serve(g_s), s	1.4	0.2	0.6	4.9	0.0	7.9	0.8	7.6	7.6	1.0	7.6	2.5
Cycle Q Clear(g_c), s	1.4	0.2	0.6	4.9	0.0	7.9	0.8	7.6	7.6	1.0	7.6	2.5
Prop In Lane	1.00		1.00	1.00		0.33	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	86	286	243	232	0	423	56	452	472	68	929	414
V/C Ratio(X)	0.60	0.03	0.09	0.79	0.00	0.77	0.53	0.71	0.71	0.56	0.70	0.27
Avail Cap(c_a), veh/h	355	1570	1331	851	0	2003	246	1243	1298	272	2540	1133
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.7	15.9	16.0	18.5	0.0	15.6	21.2	14.9	14.9	21.0	14.6	12.8
Incr Delay (d2), s/veh	2.5	0.0	0.1	2.4	0.0	1.1	2.9	0.8	0.7	2.6	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.1	0.2	1.7	0.0	2.5	0.3	2.1	2.2	0.4	2.1	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	15.9	16.1	20.9	0.0	16.7	24.1	15.7	15.6	23.6	15.0	12.9
LnGrp LOS	C	B	B	C	A	B	C	B	B	C	B	B
Approach Vol, veh/h		83			508			686			797	
Approach Delay, s/veh		20.5			18.2			16.0			15.1	
Approach LOS		C			B			B			B	

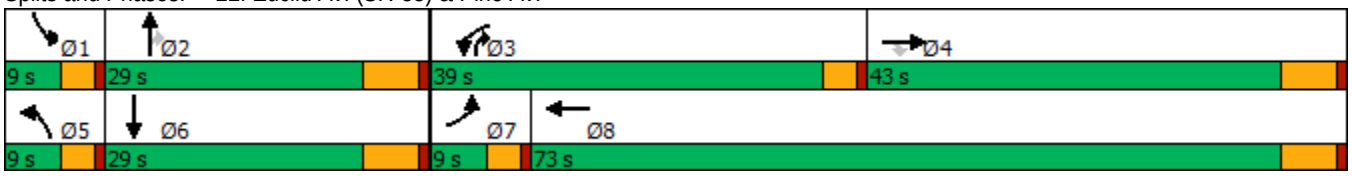
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.4	17.3	9.9	12.1	5.1	17.6	5.9	16.1
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	7.5	32.5	23.5	39.0	6.8	33.2	9.8	52.7
Max Q Clear Time (g_c+I1), s	3.0	9.6	6.9	2.6	2.8	9.6	3.4	9.9
Green Ext Time (p_c), s	0.0	1.9	0.2	0.0	0.0	2.5	0.0	1.2

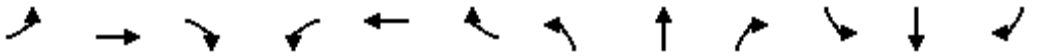
Intersection Summary	
HCM 6th Ctrl Delay	16.4
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	8	173	47	981	306	51	643	650	34	626
Future Volume (vph)	8	173	47	981	306	51	643	650	34	626
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	39.0	73.0	9.0	29.0	39.0	9.0	29.0
Total Split (%)	7.5%	35.8%	35.8%	32.5%	60.8%	7.5%	24.2%	32.5%	7.5%	24.2%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 100.2
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	173	47	981	306	25	51	643	650	34	626	16
Future Volume (veh/h)	8	173	47	981	306	25	51	643	650	34	626	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	8	178	0	1011	315	24	53	663	414	35	645	12
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	16	240		1085	810	62	68	786	903	54	759	14
Arrive On Green	0.01	0.13	0.00	0.37	0.49	0.49	0.04	0.23	0.23	0.03	0.22	0.22
Sat Flow, veh/h	1619	1800	1525	2956	1652	126	1619	3420	1492	1619	3435	64
Grp Volume(v), veh/h	8	178	0	1011	0	339	53	663	414	35	321	336
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1777	1619	1710	1492	1619	1710	1789
Q Serve(g_s), s	0.4	8.0	0.0	27.8	0.0	10.2	2.7	15.7	13.1	1.8	15.2	15.2
Cycle Q Clear(g_c), s	0.4	8.0	0.0	27.8	0.0	10.2	2.7	15.7	13.1	1.8	15.2	15.2
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	16	240		1085	0	872	68	786	903	54	378	395
V/C Ratio(X)	0.49	0.74		0.93	0.00	0.39	0.78	0.84	0.46	0.65	0.85	0.85
Avail Cap(c_a), veh/h	96	787		1223	0	1407	96	930	966	96	465	486
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.7	35.2	0.0	25.8	0.0	13.6	40.1	31.1	9.5	40.4	31.6	31.6
Incr Delay (d2), s/veh	8.1	6.2	0.0	11.3	0.0	0.4	14.5	5.4	0.1	4.9	10.1	9.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.7	0.0	10.2	0.0	3.5	1.3	6.4	3.3	0.7	6.7	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.8	41.5	0.0	37.0	0.0	14.0	54.6	36.5	9.6	45.3	41.7	41.4
LnGrp LOS	D	D		D	A	B	D	D	A	D	D	D
Approach Vol, veh/h		186	A		1350			1130			692	
Approach Delay, s/veh		41.8			31.2			27.5			41.7	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	25.4	35.1	17.3	7.6	24.7	4.9	47.5
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.0	23.0	35.0	37.0	5.0	23.0	5.0	67.0
Max Q Clear Time (g_c+I1), s	3.8	17.7	29.8	10.0	4.7	17.2	2.4	12.2
Green Ext Time (p_c), s	0.0	1.8	1.2	1.3	0.0	1.1	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	32.7
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	23
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	211	14	19	495	16	17	73	13	18	98	44
Future Vol, veh/h	48	211	14	19	495	16	17	73	13	18	98	44
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	53	232	15	21	544	18	19	80	14	20	108	48
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	14.4	32.8	11.6	12.5
HCM LOS	B	D	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	18%	4%	11%
Vol Thru, %	71%	77%	93%	61%
Vol Right, %	13%	5%	3%	28%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	103	273	530	160
LT Vol	17	48	19	18
Through Vol	73	211	495	98
RT Vol	13	14	16	44
Lane Flow Rate	113	300	582	176
Geometry Grp	1	1	1	1
Degree of Util (X)	0.213	0.489	0.862	0.316
Departure Headway (Hd)	6.765	5.867	5.331	6.478
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	532	618	670	557
Service Time	4.79	3.867	3.431	4.5
HCM Lane V/C Ratio	0.212	0.485	0.869	0.316
HCM Control Delay	11.6	14.4	32.8	12.5
HCM Lane LOS	B	B	D	B
HCM 95th-tile Q	0.8	2.7	10	1.3

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	41	3	1	172	19	17	55	3	29	57	47
Future Vol, veh/h	18	41	3	1	172	19	17	55	3	29	57	47
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	19	44	3	1	185	20	18	59	3	31	61	51
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.2	9	8.3	8.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	29%	1%	22%
Vol Thru, %	73%	66%	90%	43%
Vol Right, %	4%	5%	10%	35%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	75	62	192	133
LT Vol	17	18	1	29
Through Vol	55	41	172	57
RT Vol	3	3	19	47
Lane Flow Rate	81	67	206	143
Geometry Grp	1	1	1	1
Degree of Util (X)	0.106	0.087	0.255	0.177
Departure Headway (Hd)	4.72	4.686	4.441	4.46
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	758	764	809	804
Service Time	2.754	2.719	2.468	2.492
HCM Lane V/C Ratio	0.107	0.088	0.255	0.178
HCM Control Delay	8.3	8.2	9	8.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.3	1	0.6

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	350	569	46	21	36
Future Vol, veh/h	20	350	569	46	21	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	21	372	605	49	22	38

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	654	0	-	0	1044	630
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	414	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	943	-	-	-	342	558
Stage 1	-	-	-	-	535	-
Stage 2	-	-	-	-	671	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	943	-	-	-	332	558
Mov Cap-2 Maneuver	-	-	-	-	332	-
Stage 1	-	-	-	-	520	-
Stage 2	-	-	-	-	671	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	14.3
HCM LOS			B

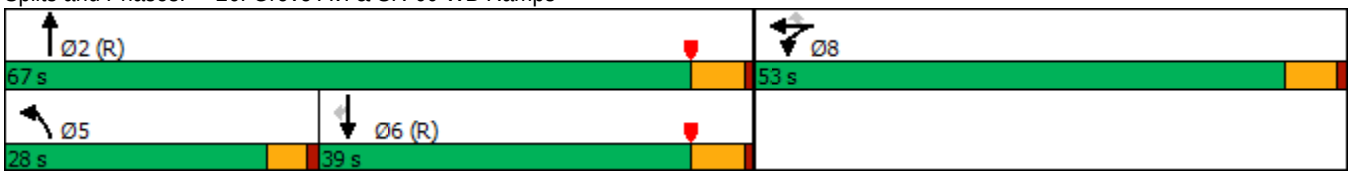
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	943	-	-	-	446
HCM Lane V/C Ratio	0.023	-	-	-	0.136
HCM Control Delay (s)	8.9	0	-	-	14.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

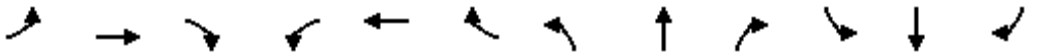
Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	544	255	1037	670	554
Future Volume (vph)	0	544	255	1037	670	554
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	53.0	53.0	28.0	67.0	39.0	39.0
Total Split (%)	44.2%	44.2%	23.3%	55.8%	32.5%	32.5%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	236	0	544	255	1037	0	0	670	554
Future Volume (veh/h)	0	0	0	236	0	544	255	1037	0	0	670	554
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				257	0	462	277	1127	0	0	728	491
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				568	0	505	299	2128	0	0	1392	619
Arrive On Green				0.31	0.00	0.31	0.33	1.00	0.00	0.00	0.39	0.39
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1604
Grp Volume(v), veh/h				257	0	462	277	1127	0	0	728	491
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1604
Q Serve(g_s), s				13.6	0.0	33.1	17.7	0.0	0.0	0.0	18.6	32.5
Cycle Q Clear(g_c), s				13.6	0.0	33.1	17.7	0.0	0.0	0.0	18.6	32.5
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				568	0	505	299	2128	0	0	1392	619
V/C Ratio(X)				0.45	0.00	0.91	0.92	0.53	0.00	0.00	0.52	0.79
Avail Cap(c_a), veh/h				712	0	633	353	2128	0	0	1392	619
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				32.9	0.0	39.6	39.4	0.0	0.0	0.0	28.4	32.6
Incr Delay (d2), s/veh				0.6	0.0	15.6	3.6	0.1	0.0	0.0	1.4	10.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.9	0.0	14.7	6.4	0.0	0.0	0.0	8.0	13.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				33.5	0.0	55.2	43.1	0.1	0.0	0.0	29.8	42.7
LnGrp LOS				C	A	E	D	A	A	A	C	D
Approach Vol, veh/h					719			1404			1219	
Approach Delay, s/veh					47.4			8.6			35.0	
Approach LOS					D			A			C	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	76.5		24.5	52.1		43.5						
Change Period (Y+Rc), s	5.8		4.6	5.8		5.8						
Max Green Setting (Gmax), s	61.2		23.4	33.2		47.2						
Max Q Clear Time (g_c+I1), s	2.0		19.7	34.5		35.1						
Green Ext Time (p_c), s	9.7		0.1	0.0		2.5						

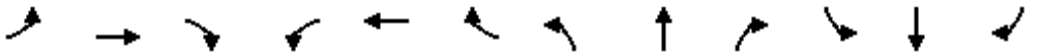
Intersection Summary		
HCM 6th Ctrl Delay		26.6
HCM 6th LOS		C

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	1	189	675	346	560
Future Volume (vph)	1	189	675	346	560
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	48.0	48.0	43.0	29.0	72.0
Total Split (%)	40.0%	40.0%	35.8%	24.2%	60.0%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	617	1	189	0	0	0	0	675	347	346	560	0
Future Volume (veh/h)	617	1	189	0	0	0	0	675	347	346	560	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	671	1	130				0	734	268	376	609	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	635	1	565				0	802	293	368	1992	0
Arrive On Green	0.35	0.35	0.35				0.00	0.31	0.31	0.41	1.00	0.00
Sat Flow, veh/h	1807	3	1607				0	2682	944	1810	3705	0
Grp Volume(v), veh/h	672	0	130				0	512	490	376	609	0
Grp Sat Flow(s),veh/h/ln	1810	0	1607				0	1805	1726	1810	1805	0
Q Serve(g_s), s	42.2	0.0	6.8				0.0	32.8	32.8	24.4	0.0	0.0
Cycle Q Clear(g_c), s	42.2	0.0	6.8				0.0	32.8	32.8	24.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.55	1.00		0.00
Lane Grp Cap(c), veh/h	636	0	565				0	560	535	368	1992	0
V/C Ratio(X)	1.06	0.00	0.23				0.00	0.92	0.92	1.02	0.31	0.00
Avail Cap(c_a), veh/h	636	0	565				0	560	535	368	1992	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.75	0.75	0.74	0.74	0.00
Uniform Delay (d), s/veh	38.9	0.0	27.4				0.0	39.9	39.9	35.6	0.0	0.0
Incr Delay (d2), s/veh	51.4	0.0	0.2				0.0	17.8	18.4	46.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.8	0.0	2.6				0.0	16.6	16.0	12.5	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	90.3	0.0	27.6				0.0	57.7	58.3	81.6	0.3	0.0
LnGrp LOS	F	A	C				A	E	E	F	A	A
Approach Vol, veh/h		802						1002			985	
Approach Delay, s/veh		80.1						58.0			31.3	
Approach LOS		F						E			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	29.0	43.0		48.0		72.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	24.4	37.2		42.2		66.2
Max Q Clear Time (g_c+I1), s	26.4	34.8		44.2		2.0
Green Ext Time (p_c), s	0.0	1.4		0.0		4.2

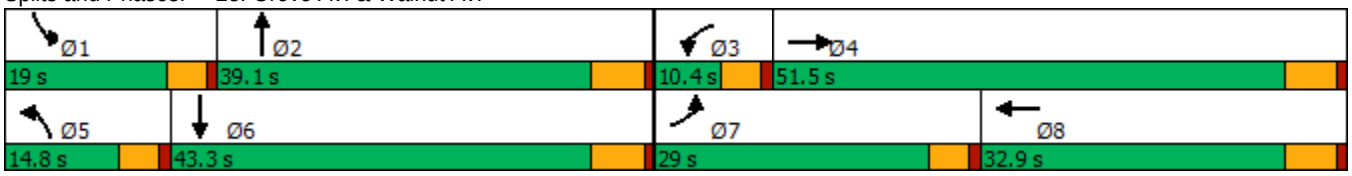
Intersection Summary		
HCM 6th Ctrl Delay		54.9
HCM 6th LOS		D

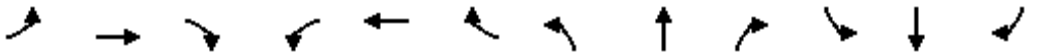
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	177	188	13	187	48	580	89	515
Future Volume (vph)	177	188	13	187	48	580	89	515
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	29.0	51.5	10.4	32.9	14.8	39.1	19.0	43.3
Total Split (%)	24.2%	42.9%	8.7%	27.4%	12.3%	32.6%	15.8%	36.1%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 98
Natural Cycle: 85
Control Type: Actuated-Uncoordinated

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	177	188	54	13	187	179	48	580	12	89	515	103
Future Volume (veh/h)	177	188	54	13	187	179	48	580	12	89	515	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	208	221	49	15	220	140	56	682	13	105	606	85
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	241	818	178	28	330	201	69	1297	25	130	1252	175
Arrive On Green	0.15	0.29	0.29	0.02	0.16	0.16	0.04	0.38	0.38	0.08	0.42	0.42
Sat Flow, veh/h	1619	2785	604	1619	2035	1238	1619	3433	65	1619	3012	422
Grp Volume(v), veh/h	208	134	136	15	183	177	56	340	355	105	344	347
Grp Sat Flow(s),veh/h/ln	1619	1710	1679	1619	1710	1563	1619	1710	1788	1619	1710	1723
Q Serve(g_s), s	11.3	5.4	5.6	0.8	9.1	9.6	3.1	13.9	13.9	5.8	13.3	13.3
Cycle Q Clear(g_c), s	11.3	5.4	5.6	0.8	9.1	9.6	3.1	13.9	13.9	5.8	13.3	13.3
Prop In Lane	1.00		0.36	1.00		0.79	1.00		0.04	1.00		0.24
Lane Grp Cap(c), veh/h	241	502	493	28	277	254	69	646	676	130	711	716
V/C Ratio(X)	0.86	0.27	0.28	0.53	0.66	0.70	0.81	0.53	0.53	0.81	0.48	0.49
Avail Cap(c_a), veh/h	438	866	850	104	514	470	183	646	676	258	711	716
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	24.4	24.5	44.0	35.5	35.7	42.8	21.8	21.8	40.8	19.3	19.3
Incr Delay (d2), s/veh	3.5	0.3	0.3	5.7	2.7	3.4	8.1	3.0	2.9	4.4	2.3	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	2.1	2.1	0.4	3.8	3.7	1.3	5.6	5.9	2.3	5.2	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	24.7	24.8	49.7	38.2	39.1	50.9	24.8	24.7	45.2	21.6	21.6
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		478			375			751			796	
Approach Delay, s/veh		31.8			39.1			26.7			24.8	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.8	39.9	6.2	32.3	8.5	43.3	18.0	20.4
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	33.3	5.8	45.7	10.2	37.5	24.4	27.1
Max Q Clear Time (g_c+I1), s	7.8	15.9	2.8	7.6	5.1	15.3	13.3	11.6
Green Ext Time (p_c), s	0.1	3.6	0.0	1.5	0.0	3.9	0.2	1.7

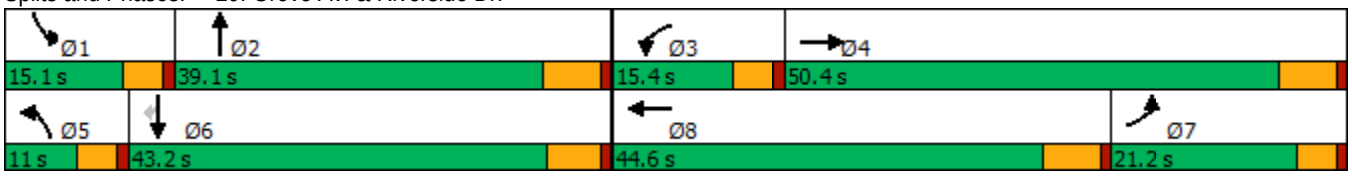
Intersection Summary	
HCM 6th Ctrl Delay	29.0
HCM 6th LOS	C

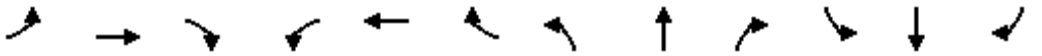
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	144	371	57	737	21	316	82	300	163
Future Volume (vph)	144	371	57	737	21	316	82	300	163
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	21.2	50.4	15.4	44.6	11.0	39.1	15.1	43.2	43.2
Total Split (%)	17.7%	42.0%	12.8%	37.2%	9.2%	32.6%	12.6%	36.0%	36.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 114.1
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	371	30	57	737	115	21	316	47	82	300	163
Future Volume (veh/h)	144	371	30	57	737	115	21	316	47	82	300	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	160	412	26	63	819	102	23	351	30	91	333	95
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	186	645	41	79	928	116	37	490	42	112	624	529
Arrive On Green	0.12	0.38	0.38	0.05	0.30	0.30	0.02	0.30	0.30	0.07	0.35	0.35
Sat Flow, veh/h	1619	1675	106	1619	3054	380	1619	1632	139	1619	1800	1525
Grp Volume(v), veh/h	160	0	438	63	459	462	23	0	381	91	333	95
Grp Sat Flow(s),veh/h/ln	1619	0	1781	1619	1710	1725	1619	0	1771	1619	1800	1525
Q Serve(g_s), s	10.6	0.0	22.0	4.2	28.0	28.0	1.5	0.0	21.0	6.1	16.3	3.1
Cycle Q Clear(g_c), s	10.6	0.0	22.0	4.2	28.0	28.0	1.5	0.0	21.0	6.1	16.3	3.1
Prop In Lane	1.00		0.06	1.00		0.22	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	186	0	685	79	519	524	37	0	532	112	624	529
V/C Ratio(X)	0.86	0.00	0.64	0.80	0.88	0.88	0.62	0.00	0.72	0.81	0.53	0.18
Avail Cap(c_a), veh/h	245	0	718	160	599	604	95	0	532	155	624	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.6	0.0	27.5	51.6	36.3	36.3	53.0	0.0	34.2	50.3	28.7	10.6
Incr Delay (d2), s/veh	16.8	0.0	1.8	6.9	13.2	13.1	6.1	0.0	8.0	14.2	3.3	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	9.0	1.8	12.8	12.9	0.7	0.0	9.7	2.8	7.2	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.4	0.0	29.3	58.5	49.5	49.4	59.1	0.0	42.2	64.5	32.0	11.3
LnGrp LOS	E	A	C	E	D	D	E	A	D	E	C	B
Approach Vol, veh/h		598			984			404			519	
Approach Delay, s/veh		38.7			50.0			43.2			33.9	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	39.1	9.9	48.4	7.1	44.2	18.8	39.5
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	10.5	32.9	10.8	44.2	6.4	* 37	16.6	* 38
Max Q Clear Time (g_c+I1), s	8.1	23.0	6.2	24.0	3.5	18.3	12.6	30.0
Green Ext Time (p_c), s	0.0	1.4	0.0	2.3	0.0	1.9	0.1	3.3

Intersection Summary	
HCM 6th Ctrl Delay	42.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	18.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	61	86	27	10	78	29	35	302	13	45	332	30
Future Vol, veh/h	61	86	27	10	78	29	35	302	13	45	332	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	68	96	30	11	87	32	39	336	14	50	369	33
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.3	11.9	18.3	21.9
HCM LOS	B	B	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	35%	9%	11%
Vol Thru, %	86%	49%	67%	82%
Vol Right, %	4%	16%	25%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	350	174	117	407
LT Vol	35	61	10	45
Through Vol	302	86	78	332
RT Vol	13	27	29	30
Lane Flow Rate	389	193	130	452
Geometry Grp	1	1	1	1
Degree of Util (X)	0.63	0.354	0.241	0.717
Departure Headway (Hd)	5.83	6.597	6.687	5.709
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	622	543	536	638
Service Time	3.847	4.651	4.749	3.725
HCM Lane V/C Ratio	0.625	0.355	0.243	0.708
HCM Control Delay	18.3	13.3	11.9	21.9
HCM Lane LOS	C	B	B	C
HCM 95th-tile Q	4.4	1.6	0.9	6

Intersection	
Intersection Delay, s/veh	13.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	42	45	24	34	97	38	34	248	10	40	256	41
Future Vol, veh/h	42	45	24	34	97	38	34	248	10	40	256	41
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	47	50	27	38	108	42	38	276	11	44	284	46
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.8	11.6	13.7	14.8
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	38%	20%	12%
Vol Thru, %	85%	41%	57%	76%
Vol Right, %	3%	22%	22%	12%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	292	111	169	337
LT Vol	34	42	34	40
Through Vol	248	45	97	256
RT Vol	10	24	38	41
Lane Flow Rate	324	123	188	374
Geometry Grp	1	1	1	1
Degree of Util (X)	0.49	0.209	0.308	0.553
Departure Headway (Hd)	5.432	6.099	5.911	5.312
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	662	585	605	678
Service Time	3.491	4.179	3.984	3.368
HCM Lane V/C Ratio	0.489	0.21	0.311	0.552
HCM Control Delay	13.7	10.8	11.6	14.8
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2.7	0.8	1.3	3.4

Intersection	
Intersection Delay, s/veh	104
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	201	6	116	495	31	18	194	39	58	201	28
Future Vol, veh/h	33	201	6	116	495	31	18	194	39	58	201	28
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	36	221	7	127	544	34	20	213	43	64	221	31
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	21.8	200.8	23.3	26.8
HCM LOS	C	F	C	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	14%	18%	20%
Vol Thru, %	77%	84%	77%	70%
Vol Right, %	16%	3%	5%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	251	240	642	287
LT Vol	18	33	116	58
Through Vol	194	201	495	201
RT Vol	39	6	31	28
Lane Flow Rate	276	264	705	315
Geometry Grp	1	1	1	1
Degree of Util (X)	0.587	0.561	1.373	0.663
Departure Headway (Hd)	8.677	8.498	7.004	8.557
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	419	427	522	426
Service Time	6.677	6.498	5.071	6.557
HCM Lane V/C Ratio	0.659	0.618	1.351	0.739
HCM Control Delay	23.3	21.8	200.8	26.8
HCM Lane LOS	C	C	F	D
HCM 95th-tile Q	3.6	3.4	31.9	4.7

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	24	33	13	12	82	12	60	249	11	15	277	47
Future Vol, veh/h	24	33	13	12	82	12	60	249	11	15	277	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	26	36	14	13	90	13	66	274	12	16	304	52

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	826	780	330	799	800	280	356	0	0	286	0	0
Stage 1	362	362	-	412	412	-	-	-	-	-	-	-
Stage 2	464	418	-	387	388	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	293	329	716	306	320	764	1214	-	-	1288	-	-
Stage 1	661	629	-	621	598	-	-	-	-	-	-	-
Stage 2	582	594	-	641	612	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	207	303	716	256	294	764	1214	-	-	1288	-	-
Mov Cap-2 Maneuver	207	303	-	256	294	-	-	-	-	-	-	-
Stage 1	618	619	-	581	559	-	-	-	-	-	-	-
Stage 2	449	555	-	582	602	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22	23.4	1.5	0.3
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1214	-	-	288	310	1288	-	-
HCM Lane V/C Ratio	0.054	-	-	0.267	0.376	0.013	-	-
HCM Control Delay (s)	8.1	0	-	22	23.4	7.8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	1.1	1.7	0	-	-

Intersection	
Intersection Delay, s/veh	68.4
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	83	315	502	237	209	93
Future Vol, veh/h	83	315	502	237	209	93
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	86	325	518	244	215	96
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	22.1	113.8	18.5
HCM LOS	C	F	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	21%	0%	69%
Vol Thru, %	79%	68%	0%
Vol Right, %	0%	32%	31%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	398	739	302
LT Vol	83	0	209
Through Vol	315	502	0
RT Vol	0	237	93
Lane Flow Rate	410	762	311
Geometry Grp	1	1	1
Degree of Util (X)	0.688	1.172	0.563
Departure Headway (Hd)	6.31	5.54	6.934
Convergence, Y/N	Yes	Yes	Yes
Cap	579	663	523
Service Time	4.31	3.552	4.934
HCM Lane V/C Ratio	0.708	1.149	0.595
HCM Control Delay	22.1	113.8	18.5
HCM Lane LOS	C	F	C
HCM 95th-tile Q	5.3	25.2	3.4

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	17	245	9	111	444	139	4	18	8	25	17	12
Future Vol, veh/h	17	245	9	111	444	139	4	18	8	25	17	12
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	17	250	9	113	453	142	4	18	8	26	17	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	595	0	0	260	0	0	1055	1111	256	1052	1044	524
Stage 1	-	-	-	-	-	-	290	290	-	750	750	-
Stage 2	-	-	-	-	-	-	765	821	-	302	294	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	991	-	-	1316	-	-	205	211	788	206	231	557
Stage 1	-	-	-	-	-	-	722	676	-	407	422	-
Stage 2	-	-	-	-	-	-	399	391	-	712	673	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	991	-	-	1315	-	-	166	180	787	167	197	557
Mov Cap-2 Maneuver	-	-	-	-	-	-	166	180	-	167	197	-
Stage 1	-	-	-	-	-	-	707	662	-	399	367	-
Stage 2	-	-	-	-	-	-	323	340	-	671	659	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.3	23.7	28.1
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	223	991	-	-	1315	-	-	210
HCM Lane V/C Ratio	0.137	0.018	-	-	0.086	-	-	0.262
HCM Control Delay (s)	23.7	8.7	0	-	8	0	-	28.1
HCM Lane LOS	C	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0.3	-	-	1

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	46	0	0	77	23	0	0	0	121	0	37
Future Vol, veh/h	10	46	0	0	77	23	0	0	0	121	0	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16965	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	12	56	0	0	94	28	0	0	0	148	0	45

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	122	0	-	-	-	0			188	188	108
Stage 1	-	-	-	-	-	-			108	108	-
Stage 2	-	-	-	-	-	-			80	80	-
Critical Hdwy	4.1	-	-	-	-	-			6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-			5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.4	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-			3.5	4	3.3
Pot Cap-1 Maneuver	1478	-	0	0	-	-			806	710	951
Stage 1	-	-	0	0	-	-			921	810	-
Stage 2	-	-	0	0	-	-			948	832	-
Platoon blocked, %		-			-	-					
Mov Cap-1 Maneuver	1478	-	-	-	-	-			800	0	951
Mov Cap-2 Maneuver	-	-	-	-	-	-			800	0	-
Stage 1	-	-	-	-	-	-			914	0	-
Stage 2	-	-	-	-	-	-			948	0	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1478	-	-	-	831
HCM Lane V/C Ratio	0.008	-	-	-	0.232
HCM Control Delay (s)	7.5	0	-	-	10.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.9

Intersection	
Int Delay, s/veh	8.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑			↕				
Traffic Vol, veh/h	0	428	96	113	569	0	170	0	98	0	0	0
Future Vol, veh/h	0	428	96	113	569	0	170	0	98	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	441	99	116	587	0	175	0	101	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	540	0	0	1260	1260	441
Stage 1	-	-	-	-	-	-	441	441	-
Stage 2	-	-	-	-	-	-	819	819	-
Critical Hdwy	-	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	1039	-	0	190	172	621
Stage 1	0	-	-	-	-	0	653	580	-
Stage 2	0	-	-	-	-	0	437	392	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1039	-	-	~ 169	0	621
Mov Cap-2 Maneuver	-	-	-	-	-	-	292	0	-
Stage 1	-	-	-	-	-	-	653	0	-
Stage 2	-	-	-	-	-	-	388	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	40.8
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	362	-	-	1039	-
HCM Lane V/C Ratio	0.763	-	-	0.112	-
HCM Control Delay (s)	40.8	-	-	8.9	-
HCM Lane LOS	E	-	-	A	-
HCM 95th %tile Q(veh)	6.1	-	-	0.4	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	121	378	27	25	636	33	10	0	31	10	0	36
Future Vol, veh/h	121	378	27	25	636	33	10	0	31	10	0	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	133	415	30	27	699	36	11	0	34	11	0	40

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	735	0	0	445	0	0	1487	1485	223	1245	1482	717
Stage 1	-	-	-	-	-	-	696	696	-	771	771	-
Stage 2	-	-	-	-	-	-	791	789	-	474	711	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	879	-	-	1126	-	-	95	126	787	142	126	433
Stage 1	-	-	-	-	-	-	403	446	-	396	413	-
Stage 2	-	-	-	-	-	-	386	405	-	545	439	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	879	-	-	1126	-	-	75	104	787	118	104	433
Mov Cap-2 Maneuver	-	-	-	-	-	-	150	187	-	223	217	-
Stage 1	-	-	-	-	-	-	342	379	-	336	403	-
Stage 2	-	-	-	-	-	-	342	395	-	443	373	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.3	0.3	15.5	16.7
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	387	879	-	-	1126	-	-	359
HCM Lane V/C Ratio	0.116	0.151	-	-	0.024	-	-	0.141
HCM Control Delay (s)	15.5	9.8	-	-	8.3	-	-	16.7
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0.5	-	-	0.1	-	-	0.5

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	364	0	2	678	44	0	3	6	13	1	16
Future Vol, veh/h	55	364	0	2	678	44	0	3	6	13	1	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	200	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	59	391	0	2	729	47	0	3	6	14	1	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	776	0	0	391	0	0	1275	1289	196	1072	1266	753
Stage 1	-	-	-	-	-	-	509	509	-	757	757	-
Stage 2	-	-	-	-	-	-	766	780	-	315	509	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	849	-	-	1179	-	-	135	165	819	188	171	413
Stage 1	-	-	-	-	-	-	520	541	-	403	419	-
Stage 2	-	-	-	-	-	-	398	409	-	676	541	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	849	-	-	1179	-	-	122	153	819	175	159	413
Mov Cap-2 Maneuver	-	-	-	-	-	-	229	254	-	286	280	-
Stage 1	-	-	-	-	-	-	484	504	-	375	418	-
Stage 2	-	-	-	-	-	-	380	408	-	620	504	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0	12.8	16
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	470	849	-	-	1179	-	-	286	402
HCM Lane V/C Ratio	-	0.021	0.07	-	-	0.002	-	-	0.049	0.045
HCM Control Delay (s)	0	12.8	9.6	-	-	8.1	-	-	18.2	14.4
HCM Lane LOS	A	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	-	0.1	0.2	-	-	0	-	-	0.2	0.1

Intersection	
Intersection Delay, s/veh	205.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	0	288	0	0	0	880	52	0	0	29	13
Future Vol, veh/h	18	0	288	0	0	0	880	52	0	0	29	13
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	19	0	303	0	0	0	926	55	0	0	31	14
Number of Lanes	1	0	1	0	0	0	1	2	0	0	2	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	3
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	3	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	3	0	2
HCM Control Delay	16.4	276.3	10.3
HCM LOS	C	F	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	100%	100%	0%	0%	100%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	880	26	26	18	288	15	15	13
LT Vol	880	0	0	18	0	0	0	0
Through Vol	0	26	26	0	0	15	15	0
RT Vol	0	0	0	0	288	0	0	13
Lane Flow Rate	926	27	27	19	303	15	15	14
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	1.594	0.043	0.03	0.038	0.504	0.03	0.03	0.018
Departure Headway (Hd)	6.196	5.69	3.969	8.254	7.068	8.135	8.135	5.667
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	584	622	886	436	515	443	443	635
Service Time	3.994	3.488	1.766	5.954	4.768	5.835	5.835	3.367
HCM Lane V/C Ratio	1.586	0.043	0.03	0.044	0.588	0.034	0.034	0.022
HCM Control Delay	292.2	8.7	6.9	11.3	16.7	11.1	11.1	8.5
HCM Lane LOS	F	A	A	B	C	B	B	A
HCM 95th-tile Q	49.4	0.1	0.1	0.1	2.8	0.1	0.1	0.1

Intersection	
Intersection Delay, s/veh	123.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	348	26	175	694	40	19	0	106	114	0	10
Future Vol, veh/h	10	348	26	175	694	40	19	0	106	114	0	10
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	11	370	28	186	738	43	20	0	113	121	0	11
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	22.9	196	13.7	15.4
HCM LOS	C	F	B	C

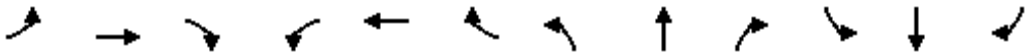
Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	15%	100%	0%	0%	100%	0%	92%
Vol Thru, %	0%	0%	100%	0%	0%	95%	0%
Vol Right, %	85%	0%	0%	100%	0%	5%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	125	10	348	26	175	734	124
LT Vol	19	10	0	0	175	0	114
Through Vol	0	0	348	0	0	694	0
RT Vol	106	0	0	26	0	40	10
Lane Flow Rate	133	11	370	28	186	781	132
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.271	0.021	0.686	0.046	0.378	1.467	0.3
Departure Headway (Hd)	8.051	7.724	7.212	6.493	7.313	6.764	8.943
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	449	466	503	555	491	539	405
Service Time	5.751	5.424	4.912	4.193	5.078	4.528	6.643
HCM Lane V/C Ratio	0.296	0.024	0.736	0.05	0.379	1.449	0.326
HCM Control Delay	13.7	10.6	24.2	9.5	14.5	239.3	15.4
HCM Lane LOS	B	B	C	A	B	F	C
HCM 95th-tile Q	1.1	0.1	5.2	0.1	1.7	38.3	1.2

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	4	471	630	1004	381
Future Volume (vph)	4	471	630	1004	381
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (%)	32.2%	32.2%	31.1%	67.8%	36.7%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	426	4	471	630	1004	0	0	381	188
Future Volume (veh/h)	0	0	0	426	4	471	630	1004	0	0	381	188
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				473	4	336	700	1116	0	0	423	199
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				459	4	411	676	3181	0	0	859	281
Arrive On Green				0.26	0.26	0.26	0.75	1.00	0.00	0.00	0.18	0.18
Sat Flow, veh/h				1795	15	1610	1810	5358	0	0	5168	1606
Grp Volume(v), veh/h				477	0	336	700	1116	0	0	423	199
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1729	0	0	1634	1606
Q Serve(g_s), s				23.0	0.0	17.7	33.6	0.0	0.0	0.0	7.0	10.5
Cycle Q Clear(g_c), s				23.0	0.0	17.7	33.6	0.0	0.0	0.0	7.0	10.5
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				463	0	411	676	3181	0	0	859	281
V/C Ratio(X)				1.03	0.00	0.82	1.04	0.35	0.00	0.00	0.49	0.71
Avail Cap(c_a), veh/h				463	0	411	676	3181	0	0	1481	485
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.57	0.57	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.5	0.0	31.5	11.4	0.0	0.0	0.0	33.5	34.9
Incr Delay (d2), s/veh				50.1	0.0	13.4	35.7	0.2	0.0	0.0	2.0	14.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				15.8	0.0	16.2	10.6	0.1	0.0	0.0	2.8	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				83.6	0.0	45.0	47.0	0.2	0.0	0.0	35.5	48.9
LnGrp LOS				F	A	D	F	A	A	A	D	D
Approach Vol, veh/h					813			1816			622	
Approach Delay, s/veh					67.6			18.2			39.8	
Approach LOS					E			B			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	61.0	29.0	39.4	21.6
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	55.2	23.0	24.0	* 27
Max Q Clear Time (g_c+I1), s	2.0	25.0	35.6	12.5
Green Ext Time (p_c), s	9.2	0.0	0.0	3.3

Intersection Summary	
HCM 6th Ctrl Delay	34.7
HCM 6th LOS	C

Notes

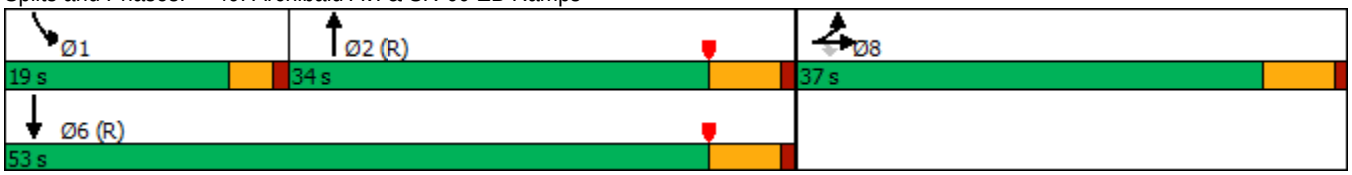
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

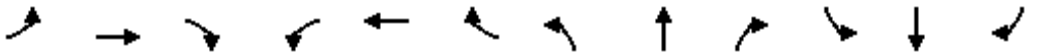
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	3	470	1278	152	653
Future Volume (vph)	3	470	1278	152	653
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (%)	41.1%	41.1%	37.8%	21.1%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	355	3	470	0	0	0	0	1278	585	152	653	0
Future Volume (veh/h)	355	3	470	0	0	0	0	1278	585	152	653	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	378	3	283				0	1360	391	162	695	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	448	4	401				0	2361	678	199	3225	0
Arrive On Green	0.25	0.25	0.25				0.00	0.47	0.47	0.04	0.21	0.00
Sat Flow, veh/h	1796	14	1610				0	5318	1450	1810	5358	0
Grp Volume(v), veh/h	381	0	283				0	1319	432	162	695	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1601	1810	1729	0
Q Serve(g_s), s	18.0	0.0	14.4				0.0	17.7	17.7	8.0	10.0	0.0
Cycle Q Clear(g_c), s	18.0	0.0	14.4				0.0	17.7	17.7	8.0	10.0	0.0
Prop In Lane	0.99		1.00				0.00		0.91	1.00		0.00
Lane Grp Cap(c), veh/h	451	0	401				0	2290	748	199	3225	0
V/C Ratio(X)	0.84	0.00	0.70				0.00	0.58	0.58	0.81	0.22	0.00
Avail Cap(c_a), veh/h	628	0	558				0	2290	748	302	3225	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.53	0.53	0.81	0.81	0.00
Uniform Delay (d), s/veh	32.1	0.0	30.8				0.0	17.5	17.5	42.4	17.5	0.0
Incr Delay (d2), s/veh	7.5	0.0	2.4				0.0	0.6	1.7	4.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	0.0	5.5				0.0	5.9	6.0	3.8	3.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.6	0.0	33.2				0.0	18.0	19.2	46.9	17.6	0.0
LnGrp LOS	D	A	C				A	B	B	D	B	A
Approach Vol, veh/h		664						1751			857	
Approach Delay, s/veh		36.9						18.3			23.2	
Approach LOS		D						B			C	

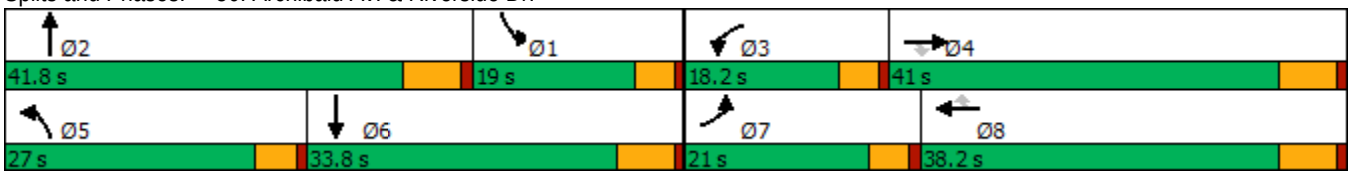
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	13.9	47.9				61.8		28.2				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	15.0	28.2				47.2		31.2				
Max Q Clear Time (g_c+I1), s	10.0	19.7				12.0		20.0				
Green Ext Time (p_c), s	0.1	6.1				4.6		2.4				

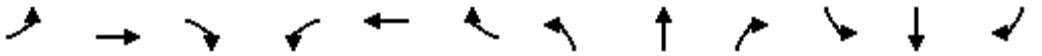
Intersection Summary			
HCM 6th Ctrl Delay			23.4
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	227	293	242	85	452	166	318	1044	128	514
Future Volume (vph)	227	293	242	85	452	166	318	1044	128	514
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.0	41.0	41.0	18.2	38.2	38.2	27.0	41.8	19.0	33.8
Total Split (%)	17.5%	34.2%	34.2%	15.2%	31.8%	31.8%	22.5%	34.8%	15.8%	28.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 105.1
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	293	242	85	452	166	318	1044	45	128	514	233
Future Volume (veh/h)	227	293	242	85	452	166	318	1044	45	128	514	233
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	241	312	123	90	481	95	338	1111	45	136	547	170
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	266	1003	439	112	678	296	363	1388	56	192	737	223
Arrive On Green	0.16	0.29	0.29	0.07	0.20	0.20	0.22	0.29	0.29	0.12	0.20	0.20
Sat Flow, veh/h	1619	3420	1498	1619	3420	1494	1619	4844	196	1619	3738	1132
Grp Volume(v), veh/h	241	312	123	90	481	95	338	751	405	136	478	239
Grp Sat Flow(s),veh/h/ln	1619	1710	1498	1619	1710	1494	1619	1638	1764	1619	1638	1594
Q Serve(g_s), s	14.6	7.1	6.3	5.5	13.1	3.8	20.4	21.2	21.2	8.1	13.7	14.2
Cycle Q Clear(g_c), s	14.6	7.1	6.3	5.5	13.1	3.8	20.4	21.2	21.2	8.1	13.7	14.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.11	1.00		0.71
Lane Grp Cap(c), veh/h	266	1003	439	112	678	296	363	939	506	192	645	314
V/C Ratio(X)	0.91	0.31	0.28	0.81	0.71	0.32	0.93	0.80	0.80	0.71	0.74	0.76
Avail Cap(c_a), veh/h	266	1192	522	221	1096	479	363	1168	629	233	905	441
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	27.4	27.2	45.8	37.4	16.7	38.0	33.0	33.0	42.3	37.7	37.9
Incr Delay (d2), s/veh	31.2	0.2	0.3	5.1	1.4	0.6	29.7	3.3	5.9	5.1	2.0	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	2.7	2.2	2.3	5.3	1.9	10.6	8.2	9.2	3.3	5.3	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.1	27.6	27.5	50.9	38.8	17.3	67.7	36.2	38.9	47.4	39.7	42.9
LnGrp LOS	E	C	C	D	D	B	E	D	D	D	D	D
Approach Vol, veh/h		676			666			1494			853	
Approach Delay, s/veh		43.5			37.3			44.1			41.8	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.1	34.8	11.5	35.5	27.0	25.9	21.0	26.0
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	14.4	* 36	13.6	34.8	22.4	27.6	16.4	32.0
Max Q Clear Time (g_c+I1), s	10.1	23.2	7.5	9.1	22.4	16.2	16.6	15.1
Green Ext Time (p_c), s	0.1	5.4	0.0	2.1	0.0	3.2	0.0	2.8

Intersection Summary	
HCM 6th Ctrl Delay	42.2
HCM 6th LOS	D

Notes

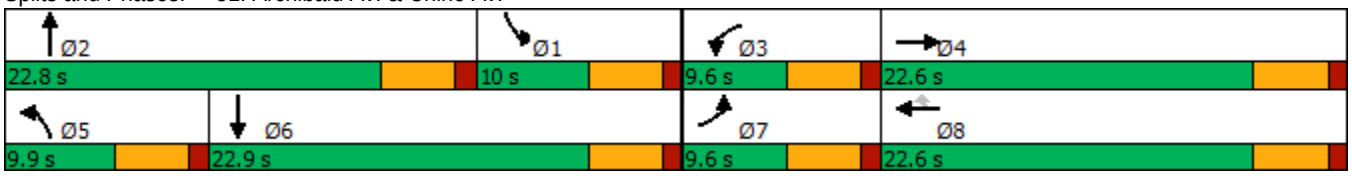
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

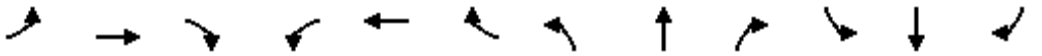
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	91	3	68	4	235	102	1026	111	699
Future Volume (vph)	91	3	68	4	235	102	1026	111	699
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	9.6	22.6	9.6	22.6	22.6	9.9	22.8	10.0	22.9
Total Split (%)	14.8%	34.8%	14.8%	34.8%	34.8%	15.2%	35.1%	15.4%	35.2%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 52.7
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	3	25	68	4	235	102	1026	34	111	699	24
Future Volume (veh/h)	91	3	25	68	4	235	102	1026	34	111	699	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	100	3	9	75	4	121	112	1127	35	122	768	24
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	127	46	138	108	189	160	137	1586	49	150	1123	35
Arrive On Green	0.08	0.12	0.12	0.07	0.11	0.11	0.08	0.32	0.32	0.09	0.33	0.33
Sat Flow, veh/h	1619	395	1185	1619	1800	1525	1619	4896	152	1619	3385	106
Grp Volume(v), veh/h	100	0	12	75	4	121	112	754	408	122	388	404
Grp Sat Flow(s),veh/h/ln	1619	0	1580	1619	1800	1525	1619	1638	1772	1619	1710	1781
Q Serve(g_s), s	2.8	0.0	0.3	2.1	0.1	2.4	3.1	9.3	9.3	3.4	9.0	9.0
Cycle Q Clear(g_c), s	2.8	0.0	0.3	2.1	0.1	2.4	3.1	9.3	9.3	3.4	9.0	9.0
Prop In Lane	1.00		0.75	1.00		1.00	1.00		0.09	1.00		0.06
Lane Grp Cap(c), veh/h	127	0	184	108	189	160	137	1061	574	150	567	591
V/C Ratio(X)	0.79	0.00	0.07	0.69	0.02	0.75	0.81	0.71	0.71	0.81	0.68	0.68
Avail Cap(c_a), veh/h	176	0	618	176	704	597	186	1295	701	190	680	708
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.8	0.0	18.1	21.0	18.5	9.1	20.7	13.7	13.7	20.5	13.3	13.3
Incr Delay (d2), s/veh	14.8	0.0	0.1	7.6	0.0	7.0	17.8	1.4	2.6	18.7	2.2	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.1	0.9	0.0	1.3	1.6	2.5	2.9	1.8	2.7	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.6	0.0	18.2	28.6	18.5	16.1	38.5	15.1	16.3	39.2	15.5	15.4
LnGrp LOS	D	A	B	C	B	B	D	B	B	D	B	B
Approach Vol, veh/h		112			200			1274			914	
Approach Delay, s/veh		33.7			20.8			17.5			18.6	
Approach LOS		C			C			B			B	

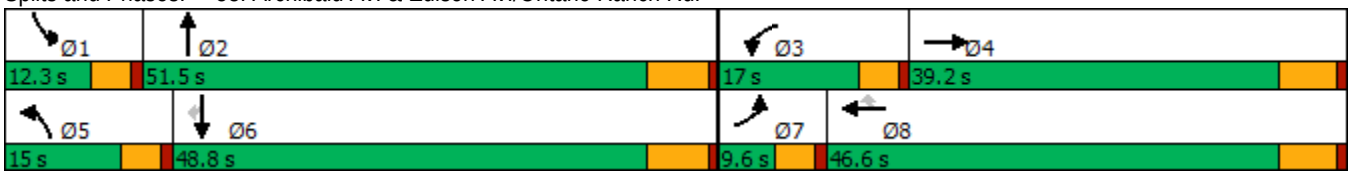
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	19.5	7.7	10.0	8.5	19.9	8.2	9.4
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	5.4	18.2	5.0	18.0	5.3	18.3	5.0	18.0
Max Q Clear Time (g_c+I1), s	5.4	11.3	4.1	2.3	5.1	11.0	4.8	4.4
Green Ext Time (p_c), s	0.0	3.6	0.0	0.0	0.0	2.5	0.0	0.3

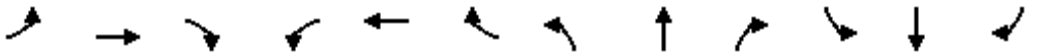
Intersection Summary	
HCM 6th Ctrl Delay	18.9
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	200	40	362	485	133	157	957	371	63	386	105
Future Volume (vph)	27	200	40	362	485	133	157	957	371	63	386	105
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	9.6	39.2		17.0	46.6	46.6	15.0	51.5		12.3	48.8	48.8
Total Split (%)	8.0%	32.7%		14.2%	38.8%	38.8%	12.5%	42.9%		10.3%	40.7%	40.7%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 98.8
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	200	40	362	485	133	157	957	371	63	386	105
Future Volume (veh/h)	27	200	40	362	485	133	157	957	371	63	386	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	28	206	0	373	500	83	162	987	0	65	398	75
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	83	693		420	570	483	192	1212		81	977	436
Arrive On Green	0.03	0.20	0.00	0.14	0.32	0.32	0.12	0.35	0.00	0.05	0.29	0.29
Sat Flow, veh/h	2956	3420	1525	2956	1800	1525	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	28	206	0	373	500	83	162	987	0	65	398	75
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1800	1525	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	0.8	4.5	0.0	10.8	22.9	3.4	8.5	22.8	0.0	3.5	8.2	3.2
Cycle Q Clear(g_c), s	0.8	4.5	0.0	10.8	22.9	3.4	8.5	22.8	0.0	3.5	8.2	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	83	693		420	570	483	192	1212		81	977	436
V/C Ratio(X)	0.34	0.30		0.89	0.88	0.17	0.84	0.81		0.81	0.41	0.17
Avail Cap(c_a), veh/h	170	1294		420	834	707	193	1765		143	1659	740
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	29.5	0.0	36.7	28.2	21.5	37.6	25.5	0.0	41.0	25.2	23.4
Incr Delay (d2), s/veh	0.9	0.2	0.0	19.3	7.4	0.2	26.0	2.0	0.0	6.9	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.7	0.0	4.8	10.0	1.1	4.5	8.4	0.0	1.4	3.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.4	29.7	0.0	56.0	35.6	21.7	63.7	27.5	0.0	47.9	25.5	23.6
LnGrp LOS	D	C		E	D	C	E	C		D	C	C
Approach Vol, veh/h		234	A		956			1149	A		538	
Approach Delay, s/veh		31.3			42.4			32.6			27.9	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	37.4	17.0	23.9	14.9	31.4	7.1	33.8
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	7.7	45.0	12.4	33.0	10.4	42.3	5.0	40.4
Max Q Clear Time (g_c+I1), s	5.5	24.8	12.8	6.5	10.5	10.2	2.8	24.9
Green Ext Time (p_c), s	0.0	6.0	0.0	1.1	0.0	2.5	0.0	2.7

Intersection Summary	
HCM 6th Ctrl Delay	34.9
HCM 6th LOS	C

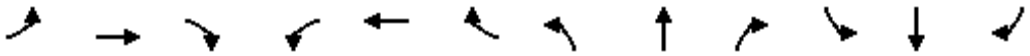
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	15	1471	8	23	765
Future Volume (vph)	11	15	1471	8	23	765
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.5	9.5	32.5	32.5	9.6	16.5
Total Split (s)	9.5	9.5	41.4	41.4	9.6	51.0
Total Split (%)	13.6%	13.6%	59.1%	59.1%	13.7%	72.9%
Yellow Time (s)	3.5	3.5	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	6.5	6.5	4.6	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 61.2
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	11	0	15	0	1471	8	23	765	0
Future Volume (veh/h)	0	0	0	11	0	15	0	1471	8	23	765	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1700	0	1800	0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h				12	0	5	0	1582	6	25	823	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				65	0	56	0	2310	1030	46	2685	0
Arrive On Green				0.02	0.00	0.02	0.00	0.68	0.68	0.03	0.79	0.00
Sat Flow, veh/h				3141	0	2685	0	3510	1525	1619	3510	0
Grp Volume(v), veh/h				12	0	5	0	1582	6	25	823	0
Grp Sat Flow(s),veh/h/ln				1570	0	1342	0	1710	1525	1619	1710	0
Q Serve(g_s), s				0.2	0.0	0.1	0.0	15.8	0.1	0.9	3.9	0.0
Cycle Q Clear(g_c), s				0.2	0.0	0.1	0.0	15.8	0.1	0.9	3.9	0.0
Prop In Lane				1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				65	0	56	0	2310	1030	46	2685	0
V/C Ratio(X)				0.18	0.00	0.09	0.00	0.68	0.01	0.54	0.31	0.00
Avail Cap(c_a), veh/h				277	0	237	0	2310	1030	143	2685	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				27.3	0.0	27.2	0.0	5.6	3.0	27.2	1.7	0.0
Incr Delay (d2), s/veh				1.3	0.0	0.7	0.0	1.7	0.0	3.6	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.1	0.0	0.0	0.0	2.2	0.0	0.3	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.6	0.0	27.9	0.0	7.2	3.0	30.7	2.0	0.0
LnGrp LOS				C	A	C	A	A	A	C	A	A
Approach Vol, veh/h					17			1588			848	
Approach Delay, s/veh					28.4			7.2			2.9	
Approach LOS					C			A			A	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	6.2	44.8				51.0		5.7				
Change Period (Y+Rc), s	4.6	6.5				6.5		4.5				
Max Green Setting (Gmax), s	5.0	34.9				44.5		5.0				
Max Q Clear Time (g_c+I1), s	2.9	17.8				5.9		2.2				
Green Ext Time (p_c), s	0.0	9.7				5.5		0.0				

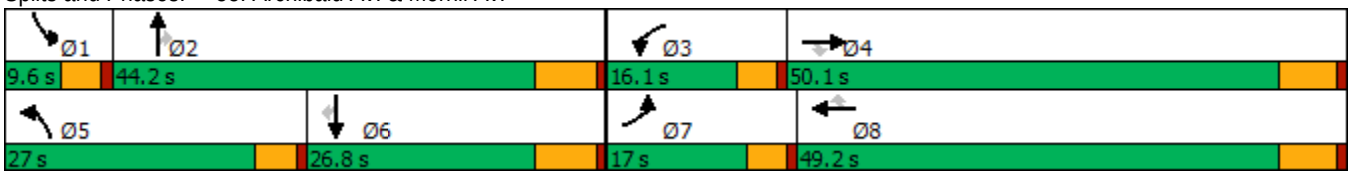
Intersection Summary		
HCM 6th Ctrl Delay		5.9
HCM 6th LOS		A

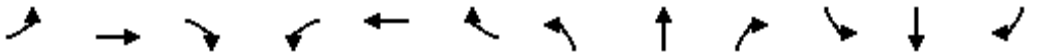
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	213	19	100	72	44	125	418	1141	36	38	487	251
Future Volume (vph)	213	19	100	72	44	125	418	1141	36	38	487	251
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	17.0	50.1	50.1	16.1	49.2	49.2	27.0	44.2	44.2	9.6	26.8	26.8
Total Split (%)	14.2%	41.8%	41.8%	13.4%	41.0%	41.0%	22.5%	36.8%	36.8%	8.0%	22.3%	22.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 91.8
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	213	19	100	72	44	125	418	1141	36	38	487	251
Future Volume (veh/h)	213	19	100	72	44	125	418	1141	36	38	487	251
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	220	20	48	74	45	34	431	1176	18	39	502	193
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	245	387	328	92	218	185	442	1454	649	106	644	287
Arrive On Green	0.15	0.22	0.22	0.06	0.12	0.12	0.27	0.43	0.43	0.04	0.19	0.19
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	1619	3420	1525	2956	3420	1525
Grp Volume(v), veh/h	220	20	48	74	45	34	431	1176	18	39	502	193
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1710	1525	1478	1710	1525
Q Serve(g_s), s	11.0	0.7	2.1	3.7	1.9	1.6	21.7	24.7	0.6	1.1	11.5	9.7
Cycle Q Clear(g_c), s	11.0	0.7	2.1	3.7	1.9	1.6	21.7	24.7	0.6	1.1	11.5	9.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	245	387	328	92	218	185	442	1454	649	106	644	287
V/C Ratio(X)	0.90	0.05	0.15	0.80	0.21	0.18	0.98	0.81	0.03	0.37	0.78	0.67
Avail Cap(c_a), veh/h	245	963	816	227	943	799	442	1571	701	180	846	377
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.2	25.6	26.1	38.3	32.5	32.4	29.6	20.7	13.7	38.7	31.7	31.0
Incr Delay (d2), s/veh	31.6	0.1	0.2	6.0	0.5	0.5	36.2	3.1	0.0	0.8	3.5	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	0.3	0.8	1.6	0.8	0.6	11.8	8.8	0.2	0.4	4.6	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.9	25.6	26.3	44.2	33.0	32.9	65.8	23.7	13.7	39.5	35.2	33.9
LnGrp LOS	E	C	C	D	C	C	E	C	B	D	D	C
Approach Vol, veh/h		288			153			1625			734	
Approach Delay, s/veh		56.5			38.4			34.8			35.1	
Approach LOS		E			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	41.4	9.3	23.9	27.0	22.0	17.0	16.1
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	37.7	11.5	43.9	22.4	20.3	12.4	43.0
Max Q Clear Time (g_c+I1), s	3.1	26.7	5.7	4.1	23.7	13.5	13.0	3.9
Green Ext Time (p_c), s	0.0	5.4	0.0	0.2	0.0	2.0	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	37.3
HCM 6th LOS	D

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	268	758	795	279	189	470
Future Volume (vph)	268	758	795	279	189	470
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	27.0	56.7	36.3	27.0	83.7
Total Split (%)	30.3%	22.5%	47.3%	30.3%	22.5%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 110.3
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	268	758	795	279	189	470
Future Volume (veh/h)	268	758	795	279	189	470
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	279	734	828	244	197	490
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	504	653	863	1180	230	1189
Arrive On Green	0.28	0.28	0.45	0.45	0.13	0.63
Sat Flow, veh/h	1810	1610	1900	1610	1810	1900
Grp Volume(v), veh/h	279	734	828	244	197	490
Grp Sat Flow(s),veh/h/ln	1810	1610	1900	1610	1810	1900
Q Serve(g_s), s	14.6	31.0	46.9	5.3	11.9	14.5
Cycle Q Clear(g_c), s	14.6	31.0	46.9	5.3	11.9	14.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	504	653	863	1180	230	1189
V/C Ratio(X)	0.55	1.12	0.96	0.21	0.86	0.41
Avail Cap(c_a), veh/h	504	653	878	1193	358	1344
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.2	33.1	29.4	4.7	47.6	10.5
Incr Delay (d2), s/veh	0.8	74.4	21.1	0.1	11.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	29.5	24.3	3.8	5.8	5.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.0	107.4	50.5	4.8	59.3	10.6
LnGrp LOS	C	F	D	A	E	B
Approach Vol, veh/h	1013		1072			687
Approach Delay, s/veh	87.5		40.1			24.5
Approach LOS	F		D			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	19.1	55.8			74.9	36.3
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	22.0	51.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	13.9	48.9			16.5	33.0
Green Ext Time (p_c), s	0.3	1.6			1.6	0.0

Intersection Summary	
HCM 6th Ctrl Delay	53.5
HCM 6th LOS	D

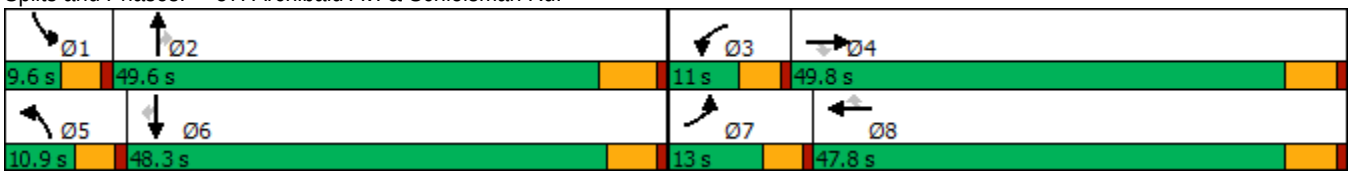
Notes

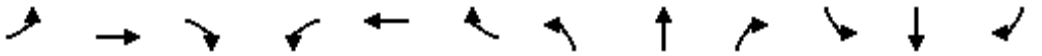
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	383	375	113	248	701	139	241	781	215	103	441	420
Future Volume (vph)	383	375	113	248	701	139	241	781	215	103	441	420
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	49.8	49.8	11.0	47.8	47.8	10.9	49.6	49.6	9.6	48.3	48.3
Total Split (%)	10.8%	41.5%	41.5%	9.2%	39.8%	39.8%	9.1%	41.3%	41.3%	8.0%	40.3%	40.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 106.8
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	383	375	113	248	701	139	241	781	215	103	441	420
Future Volume (veh/h)	383	375	113	248	701	139	241	781	215	103	441	420
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	426	417	62	276	779	77	268	868	166	114	490	345
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	279	2159	659	213	2061	632	209	1429	444	166	1365	418
Arrive On Green	0.08	0.42	0.42	0.06	0.40	0.40	0.06	0.28	0.28	0.05	0.26	0.26
Sat Flow, veh/h	3510	5187	1585	3510	5187	1590	3510	5187	1610	3510	5187	1588
Grp Volume(v), veh/h	426	417	62	276	779	77	268	868	166	114	490	345
Grp Sat Flow(s),veh/h/ln	1755	1729	1585	1755	1729	1590	1755	1729	1610	1755	1729	1588
Q Serve(g_s), s	8.4	5.4	2.5	6.4	11.3	3.2	6.3	15.4	8.8	3.4	8.1	21.6
Cycle Q Clear(g_c), s	8.4	5.4	2.5	6.4	11.3	3.2	6.3	15.4	8.8	3.4	8.1	21.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	279	2159	659	213	2061	632	209	1429	444	166	1365	418
V/C Ratio(X)	1.53	0.19	0.09	1.30	0.38	0.12	1.28	0.61	0.37	0.69	0.36	0.83
Avail Cap(c_a), veh/h	279	2159	659	213	2061	632	209	2129	661	166	2105	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	19.6	18.8	49.7	22.6	20.2	49.7	33.3	30.9	49.6	31.7	36.7
Incr Delay (d2), s/veh	254.7	0.2	0.3	164.6	0.5	0.4	157.9	0.4	0.5	9.4	0.2	5.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.4	2.1	0.9	7.6	4.4	1.2	7.2	6.1	3.3	1.6	3.2	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	303.4	19.8	19.0	214.2	23.1	20.6	207.7	33.7	31.5	59.0	31.9	41.9
LnGrp LOS	F	B	B	F	C	C	F	C	C	E	C	D
Approach Vol, veh/h		905			1132			1302			949	
Approach Delay, s/veh		153.2			69.5			69.3			38.8	
Approach LOS		F			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	35.3	11.0	49.8	10.9	34.0	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.0	43.4	6.4	44.0	6.3	* 43	8.4	42.0
Max Q Clear Time (g_c+I1), s	5.4	17.4	8.4	7.4	8.3	23.6	10.4	13.3
Green Ext Time (p_c), s	0.0	6.4	0.0	2.9	0.0	4.0	0.0	5.6

Intersection Summary	
HCM 6th Ctrl Delay	80.3
HCM 6th LOS	F

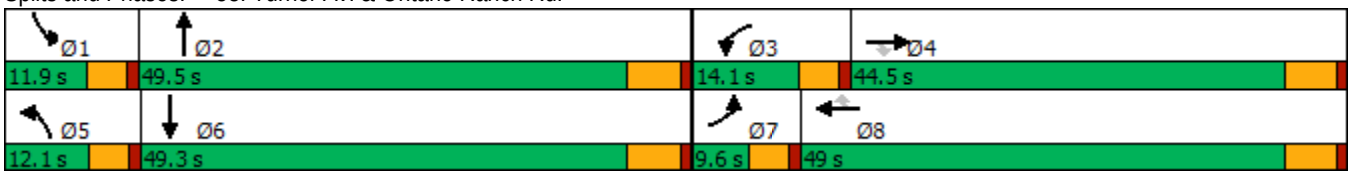
Notes

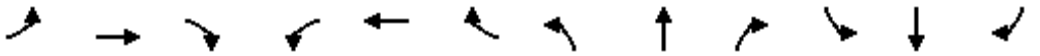
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	26	543	33	42	1030	18	56	24	33	15
Future Volume (vph)	26	543	33	42	1030	18	56	24	33	15
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	9.6	44.5	44.5	14.1	49.0	49.0	12.1	49.5	11.9	49.3
Total Split (%)	8.0%	37.1%	37.1%	11.8%	40.8%	40.8%	10.1%	41.3%	9.9%	41.1%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 85.8
Natural Cycle: 105
Control Type: Actuated-Uncoordinated

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	543	33	42	1030	18	56	24	36	33	15	58
Future Volume (veh/h)	26	543	33	42	1030	18	56	24	36	33	15	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	29	603	26	47	1144	11	62	27	27	37	17	41
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	48	1815	810	66	1852	826	76	110	110	57	57	136
Arrive On Green	0.03	0.53	0.53	0.04	0.54	0.54	0.05	0.13	0.13	0.04	0.12	0.12
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	826	826	1619	468	1129
Grp Volume(v), veh/h	29	603	26	47	1144	11	62	0	54	37	0	58
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	0	1651	1619	0	1597
Q Serve(g_s), s	1.4	8.0	0.6	2.3	18.4	0.3	3.0	0.0	2.3	1.8	0.0	2.6
Cycle Q Clear(g_c), s	1.4	8.0	0.6	2.3	18.4	0.3	3.0	0.0	2.3	1.8	0.0	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.50	1.00		0.71
Lane Grp Cap(c), veh/h	48	1815	810	66	1852	826	76	0	219	57	0	193
V/C Ratio(X)	0.60	0.33	0.03	0.72	0.62	0.01	0.81	0.00	0.25	0.65	0.00	0.30
Avail Cap(c_a), veh/h	101	1815	810	193	1852	826	152	0	905	148	0	871
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.2	10.7	8.9	37.8	12.6	8.4	37.7	0.0	31.0	38.0	0.0	32.0
Incr Delay (d2), s/veh	4.4	0.5	0.1	5.3	1.6	0.0	7.5	0.0	0.6	4.6	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.6	0.2	1.0	6.1	0.1	1.3	0.0	0.9	0.7	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.7	11.2	9.0	43.1	14.1	8.5	45.2	0.0	31.6	42.6	0.0	32.9
LnGrp LOS	D	B	A	D	B	A	D	A	C	D	A	C
Approach Vol, veh/h		658			1202			116			95	
Approach Delay, s/veh		12.5			15.2			38.8			36.7	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	16.4	7.8	48.1	8.4	15.4	7.0	49.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	7.3	43.7	9.5	38.7	7.5	43.5	5.0	43.2
Max Q Clear Time (g_c+I1), s	3.8	4.3	4.3	10.0	5.0	4.6	3.4	20.4
Green Ext Time (p_c), s	0.0	0.2	0.0	4.0	0.0	0.3	0.0	8.1

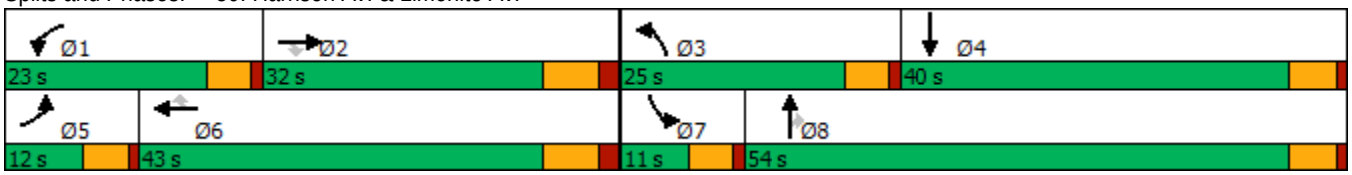
Intersection Summary	
HCM 6th Ctrl Delay	16.7
HCM 6th LOS	B

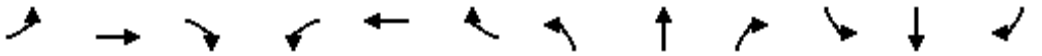
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	41	408	19	137	808	21	144	103	204	26	109
Future Volume (vph)	41	408	19	137	808	21	144	103	204	26	109
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	12.0	32.0	32.0	23.0	43.0	43.0	25.0	54.0	54.0	11.0	40.0
Total Split (%)	10.0%	26.7%	26.7%	19.2%	35.8%	35.8%	20.8%	45.0%	45.0%	9.2%	33.3%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 74.5
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 59: Harrison Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	408	19	137	808	21	144	103	204	26	109	75
Future Volume (veh/h)	41	408	19	137	808	21	144	103	204	26	109	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	43	425	13	143	842	20	150	107	94	27	114	49
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	80	1187	356	185	1487	450	193	420	355	56	183	79
Arrive On Green	0.04	0.23	0.23	0.10	0.29	0.29	0.11	0.22	0.22	0.03	0.15	0.15
Sat Flow, veh/h	1810	5187	1556	1810	5187	1570	1810	1900	1606	1810	1261	542
Grp Volume(v), veh/h	43	425	13	143	842	20	150	107	94	27	0	163
Grp Sat Flow(s),veh/h/ln	1810	1729	1556	1810	1729	1570	1810	1900	1606	1810	0	1802
Q Serve(g_s), s	1.2	3.7	0.3	4.1	7.4	0.5	4.3	2.5	2.6	0.8	0.0	4.5
Cycle Q Clear(g_c), s	1.2	3.7	0.3	4.1	7.4	0.5	4.3	2.5	2.6	0.8	0.0	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	80	1187	356	185	1487	450	193	420	355	56	0	262
V/C Ratio(X)	0.54	0.36	0.04	0.77	0.57	0.04	0.78	0.25	0.26	0.48	0.00	0.62
Avail Cap(c_a), veh/h	237	2426	728	609	3494	1058	677	1731	1463	203	0	1170
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.0	17.3	16.0	23.4	16.2	13.8	23.2	17.2	17.2	25.5	0.0	21.5
Incr Delay (d2), s/veh	2.1	0.2	0.0	2.6	0.3	0.0	2.5	0.3	0.4	2.4	0.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.2	0.1	1.6	2.3	0.1	1.7	0.9	0.8	0.3	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.1	17.5	16.1	26.0	16.6	13.8	25.8	17.5	17.6	27.9	0.0	23.9
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	A	C
Approach Vol, veh/h		481			1005			351			190	
Approach Delay, s/veh		18.3			17.9			21.1			24.5	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	19.2	10.7	13.1	7.4	22.3	6.7	17.1
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	18.0	25.0	20.0	34.7	7.0	36.0	6.0	48.7
Max Q Clear Time (g_c+I1), s	6.1	5.7	6.3	6.5	3.2	9.4	2.8	4.6
Green Ext Time (p_c), s	0.1	2.4	0.1	0.8	0.0	5.6	0.0	0.8

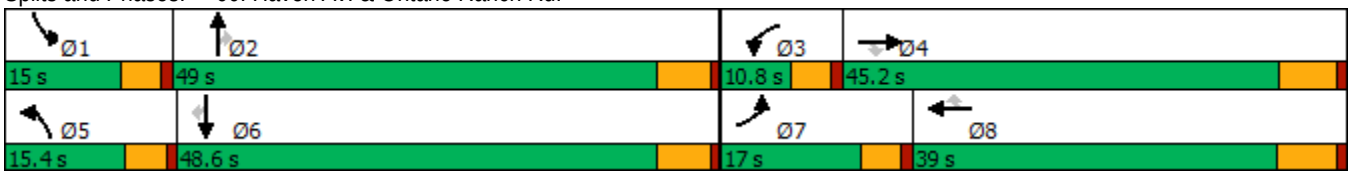
Intersection Summary	
HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

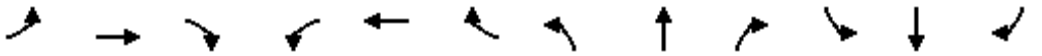
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	575	28	21	862	79	61	184	76	115	56	68
Future Volume (vph)	129	575	28	21	862	79	61	184	76	115	56	68
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	17.0	45.2	45.2	10.8	39.0	39.0	15.4	49.0	49.0	15.0	48.6	48.6
Total Split (%)	14.2%	37.7%	37.7%	9.0%	32.5%	32.5%	12.8%	40.8%	40.8%	12.5%	40.5%	40.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 95
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	575	28	21	862	79	61	184	76	115	56	68
Future Volume (veh/h)	129	575	28	21	862	79	61	184	76	115	56	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	137	612	17	22	917	39	65	196	31	122	60	39
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	167	2346	728	39	1362	608	81	257	218	150	334	283
Arrive On Green	0.10	0.48	0.48	0.02	0.40	0.40	0.05	0.14	0.14	0.09	0.19	0.19
Sat Flow, veh/h	1619	4914	1525	1619	3420	1525	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	137	612	17	22	917	39	65	196	31	122	60	39
Grp Sat Flow(s),veh/h/ln	1619	1638	1525	1619	1710	1525	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	6.8	6.1	0.5	1.1	18.0	1.3	3.2	8.6	1.5	6.0	2.3	1.7
Cycle Q Clear(g_c), s	6.8	6.1	0.5	1.1	18.0	1.3	3.2	8.6	1.5	6.0	2.3	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	167	2346	728	39	1362	608	81	257	218	150	334	283
V/C Ratio(X)	0.82	0.26	0.02	0.56	0.67	0.06	0.81	0.76	0.14	0.81	0.18	0.14
Avail Cap(c_a), veh/h	246	2346	728	123	1362	608	214	952	807	206	943	799
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.9	12.7	11.3	39.4	20.2	15.2	38.4	33.7	30.6	36.4	28.0	27.8
Incr Delay (d2), s/veh	8.3	0.3	0.1	4.7	2.7	0.2	6.9	4.7	0.3	11.5	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	1.9	0.1	0.5	6.5	0.4	1.4	3.8	0.5	2.7	1.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.2	13.0	11.3	44.1	22.9	15.4	45.4	38.4	30.9	47.9	28.3	28.0
LnGrp LOS	D	B	B	D	C	B	D	D	C	D	C	C
Approach Vol, veh/h		766			978			292			221	
Approach Delay, s/veh		18.5			23.1			39.1			39.0	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	17.5	6.6	45.5	8.7	21.0	13.0	39.0
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	10.4	43.2	6.2	* 39	10.8	42.8	12.4	32.5
Max Q Clear Time (g_c+I1), s	8.0	10.6	3.1	8.1	5.2	4.3	8.8	20.0
Green Ext Time (p_c), s	0.0	1.1	0.0	4.0	0.0	0.4	0.0	4.5

Intersection Summary	
HCM 6th Ctrl Delay	25.2
HCM 6th LOS	C

Notes

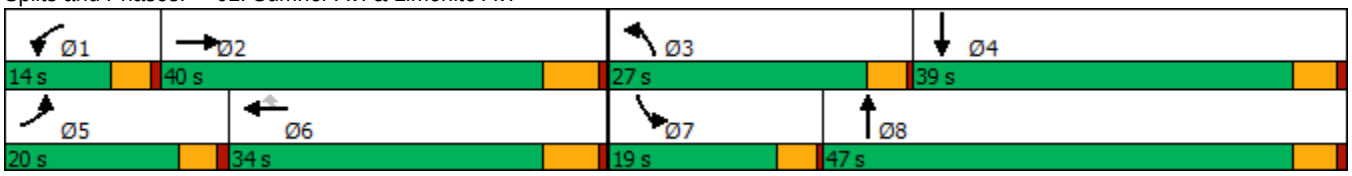
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

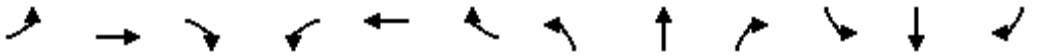
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	232	447	105	631	31	173	367	93	184
Future Volume (vph)	232	447	105	631	31	173	367	93	184
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	20.0	40.0	14.0	34.0	34.0	27.0	47.0	19.0	39.0
Total Split (%)	16.7%	33.3%	11.7%	28.3%	28.3%	22.5%	39.2%	15.8%	32.5%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 72.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 61: Sumner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	232	447	27	105	631	31	173	367	107	93	184	151
Future Volume (veh/h)	232	447	27	105	631	31	173	367	107	93	184	151
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	239	461	22	108	651	28	178	378	36	96	190	59
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	372	1399	66	222	1207	370	228	636	60	124	363	110
Arrive On Green	0.11	0.28	0.28	0.06	0.23	0.23	0.13	0.19	0.19	0.07	0.13	0.13
Sat Flow, veh/h	3510	5074	240	3510	5187	1589	1810	3332	316	1810	2732	824
Grp Volume(v), veh/h	239	313	170	108	651	28	178	204	210	96	124	125
Grp Sat Flow(s),veh/h/ln	1755	1729	1857	1755	1729	1589	1810	1805	1843	1810	1805	1752
Q Serve(g_s), s	3.2	3.5	3.5	1.4	5.3	0.7	4.6	5.0	5.1	2.5	3.1	3.2
Cycle Q Clear(g_c), s	3.2	3.5	3.5	1.4	5.3	0.7	4.6	5.0	5.1	2.5	3.1	3.2
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.17	1.00		0.47
Lane Grp Cap(c), veh/h	372	953	512	222	1207	370	228	344	351	124	240	233
V/C Ratio(X)	0.64	0.33	0.33	0.49	0.54	0.08	0.78	0.59	0.60	0.78	0.52	0.54
Avail Cap(c_a), veh/h	1122	2424	1301	688	2994	917	858	1563	1595	560	1265	1228
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.8	14.0	14.0	22.0	16.3	14.5	20.5	17.9	17.9	22.2	19.6	19.6
Incr Delay (d2), s/veh	0.7	0.2	0.4	0.6	0.4	0.1	2.2	1.2	1.2	3.9	1.3	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.1	1.2	0.5	1.7	0.2	1.8	1.8	1.9	1.0	1.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.5	14.2	14.4	22.6	16.7	14.6	22.7	19.1	19.1	26.1	20.8	21.1
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	C	C
Approach Vol, veh/h		722			787			592			345	
Approach Delay, s/veh		16.7			17.4			20.2			22.4	
Approach LOS		B			B			C			C	

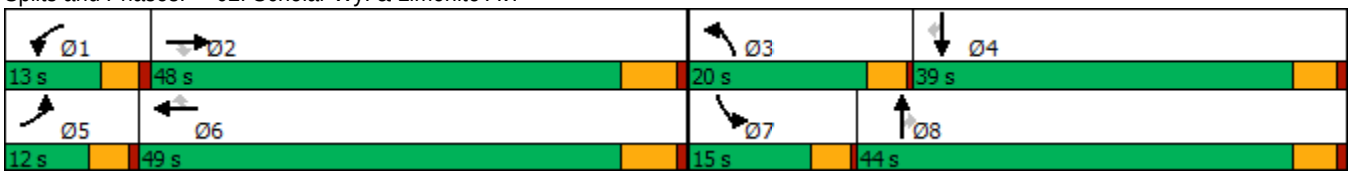
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	19.4	10.1	11.4	9.6	17.3	7.3	14.3
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	9.5	34.0	23.0	34.0	15.5	28.0	15.0	42.0
Max Q Clear Time (g_c+I1), s	3.4	5.5	6.6	5.2	5.2	7.3	4.5	7.1
Green Ext Time (p_c), s	0.0	2.7	0.1	1.0	0.2	3.9	0.0	1.8

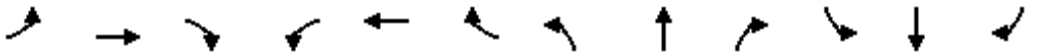
Intersection Summary	
HCM 6th Ctrl Delay	18.6
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	662	62	40	586	25	94	169	96	49	185	27
Future Volume (vph)	30	662	62	40	586	25	94	169	96	49	185	27
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	12.0	48.0	48.0	13.0	49.0	49.0	20.0	44.0	44.0	15.0	39.0	39.0
Total Split (%)	10.0%	40.0%	40.0%	10.8%	40.8%	40.8%	16.7%	36.7%	36.7%	12.5%	32.5%	32.5%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 63.5
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	662	62	40	586	25	94	169	96	49	185	27
Future Volume (veh/h)	30	662	62	40	586	25	94	169	96	49	185	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	33	720	33	43	637	16	102	184	62	53	201	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	54	1137	507	66	1162	518	132	380	321	76	611	260
Arrive On Green	0.03	0.32	0.32	0.04	0.32	0.32	0.07	0.20	0.20	0.04	0.17	0.17
Sat Flow, veh/h	1810	3610	1609	1810	3610	1610	1810	1900	1608	1810	3610	1535
Grp Volume(v), veh/h	33	720	33	43	637	16	102	184	62	53	201	27
Grp Sat Flow(s),veh/h/ln	1810	1805	1609	1810	1805	1610	1810	1900	1608	1810	1805	1535
Q Serve(g_s), s	0.9	8.2	0.7	1.1	7.0	0.3	2.7	4.1	1.5	1.4	2.4	0.7
Cycle Q Clear(g_c), s	0.9	8.2	0.7	1.1	7.0	0.3	2.7	4.1	1.5	1.4	2.4	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	54	1137	507	66	1162	518	132	380	321	76	611	260
V/C Ratio(X)	0.61	0.63	0.07	0.65	0.55	0.03	0.77	0.48	0.19	0.69	0.33	0.10
Avail Cap(c_a), veh/h	283	3160	1408	321	3235	1443	603	1544	1307	415	2558	1088
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.0	14.1	11.5	22.8	13.4	11.1	21.9	17.0	16.0	22.7	17.5	16.9
Incr Delay (d2), s/veh	4.2	0.6	0.1	4.0	0.4	0.0	3.6	0.7	0.2	4.1	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.5	0.2	0.5	2.1	0.1	1.1	1.6	0.5	0.6	0.9	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.2	14.6	11.5	26.8	13.8	11.2	25.4	17.7	16.2	26.8	17.8	17.0
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		786			696			348			281	
Approach Delay, s/veh		15.0			14.6			19.7			19.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	21.1	7.5	13.1	5.9	21.4	6.0	14.6
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	8.5	42.0	16.0	34.0	7.5	43.0	11.0	39.0
Max Q Clear Time (g_c+I1), s	3.1	10.2	4.7	4.4	2.9	9.0	3.4	6.1
Green Ext Time (p_c), s	0.0	4.9	0.0	1.1	0.0	4.2	0.0	1.0

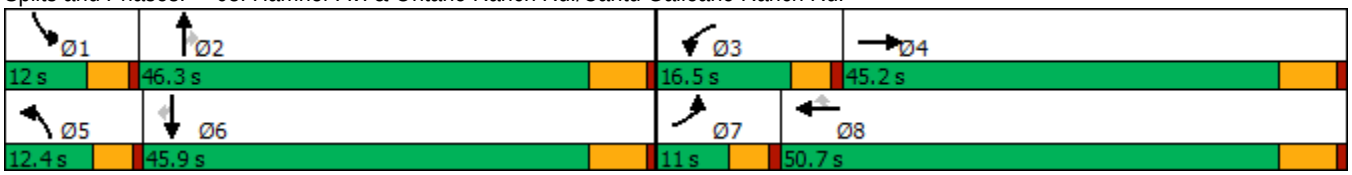
Intersection Summary	
HCM 6th Ctrl Delay	16.2
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	93	535	264	807	195	165	674	484	148	200	81
Future Volume (vph)	93	535	264	807	195	165	674	484	148	200	81
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	11.0	45.2	16.5	50.7	50.7	12.4	46.3	46.3	12.0	45.9	45.9
Total Split (%)	9.2%	37.7%	13.8%	42.3%	42.3%	10.3%	38.6%	38.6%	10.0%	38.3%	38.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 104.5
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	535	79	264	807	195	165	674	484	148	200	81
Future Volume (veh/h)	93	535	79	264	807	195	165	674	484	148	200	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	106	608	90	300	917	222	188	766	543	168	227	92
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	152	1447	208	320	1093	487	210	1794	557	199	1236	551
Arrive On Green	0.05	0.26	0.26	0.11	0.32	0.32	0.07	0.37	0.37	0.07	0.36	0.36
Sat Flow, veh/h	2956	5508	793	2956	3420	1525	2956	4914	1525	2956	3420	1524
Grp Volume(v), veh/h	106	510	188	300	917	222	188	766	543	168	227	92
Grp Sat Flow(s),veh/h/ln	1478	1548	1657	1478	1710	1525	1478	1638	1525	1478	1710	1524
Q Serve(g_s), s	3.9	10.0	10.4	11.1	27.4	12.7	6.9	12.9	38.6	6.2	5.0	4.5
Cycle Q Clear(g_c), s	3.9	10.0	10.4	11.1	27.4	12.7	6.9	12.9	38.6	6.2	5.0	4.5
Prop In Lane	1.00		0.48	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	1220	435	320	1093	487	210	1794	557	199	1236	551
V/C Ratio(X)	0.70	0.42	0.43	0.94	0.84	0.46	0.90	0.43	0.98	0.84	0.18	0.17
Avail Cap(c_a), veh/h	172	1649	588	320	1385	618	210	1794	557	199	1236	551
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.3	33.5	33.7	48.6	34.8	29.8	50.6	26.2	34.4	50.7	24.0	23.8
Incr Delay (d2), s/veh	7.6	0.2	0.7	33.7	3.8	0.7	34.3	0.2	31.8	25.5	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	3.6	4.0	5.4	11.2	4.5	3.5	4.7	18.1	2.9	1.9	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.8	33.8	34.4	82.3	38.6	30.4	85.0	26.4	66.1	76.2	24.1	24.0
LnGrp LOS	E	C	C	F	D	C	F	C	E	E	C	C
Approach Vol, veh/h		804			1439			1497			487	
Approach Delay, s/veh		37.2			46.4			48.2			42.0	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	46.3	16.5	35.1	12.4	45.9	10.3	41.3
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	7.4	40.1	11.9	39.0	7.8	39.7	6.4	44.5
Max Q Clear Time (g_c+I1), s	8.2	40.6	13.1	12.4	8.9	7.0	5.9	29.4
Green Ext Time (p_c), s	0.0	0.0	0.0	4.1	0.0	1.6	0.0	5.7

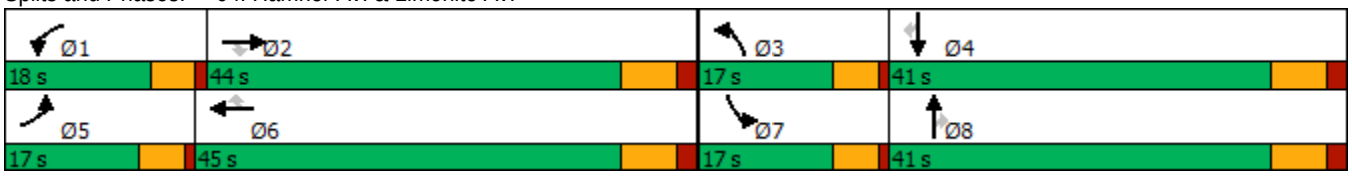
Intersection Summary	
HCM 6th Ctrl Delay	44.8
HCM 6th LOS	D

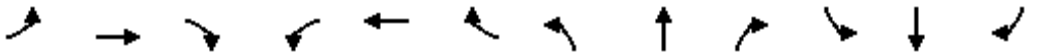
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	486	40	169	380	82	154	668	244	152	359	109
Future Volume (vph)	164	486	40	169	380	82	154	668	244	152	359	109
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	17.0	44.0	44.0	18.0	45.0	45.0	17.0	41.0	41.0	17.0	41.0	41.0
Total Split (%)	14.2%	36.7%	36.7%	15.0%	37.5%	37.5%	14.2%	34.2%	34.2%	14.2%	34.2%	34.2%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 86
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 64: Hamner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	486	40	169	380	82	154	668	244	152	359	109
Future Volume (veh/h)	164	486	40	169	380	82	154	668	244	152	359	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	174	517	30	180	404	61	164	711	162	162	382	76
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	266	1135	352	273	798	356	254	1476	458	252	1472	457
Arrive On Green	0.08	0.22	0.22	0.08	0.22	0.22	0.07	0.28	0.28	0.07	0.28	0.28
Sat Flow, veh/h	3510	5187	1608	3510	3610	1610	3510	5187	1608	3510	5187	1610
Grp Volume(v), veh/h	174	517	30	180	404	61	164	711	162	162	382	76
Grp Sat Flow(s),veh/h/ln	1755	1729	1608	1755	1805	1610	1755	1729	1608	1755	1729	1610
Q Serve(g_s), s	3.3	6.0	1.0	3.4	6.8	2.1	3.1	7.9	5.5	3.1	3.9	2.5
Cycle Q Clear(g_c), s	3.3	6.0	1.0	3.4	6.8	2.1	3.1	7.9	5.5	3.1	3.9	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	266	1135	352	273	798	356	254	1476	458	252	1472	457
V/C Ratio(X)	0.65	0.46	0.09	0.66	0.51	0.17	0.64	0.48	0.35	0.64	0.26	0.17
Avail Cap(c_a), veh/h	609	2774	860	660	1983	884	609	2549	790	609	2549	791
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.1	23.4	21.5	31.0	23.6	21.8	31.2	20.5	19.7	31.2	19.2	18.6
Incr Delay (d2), s/veh	1.0	0.6	0.2	1.0	1.1	0.5	1.0	0.5	1.0	1.0	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.3	0.4	1.4	2.7	0.8	1.3	2.9	2.0	1.2	1.4	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.1	24.1	21.7	32.0	24.7	22.3	32.2	21.0	20.7	32.3	19.4	19.0
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	B	B
Approach Vol, veh/h		721			645			1037			620	
Approach Delay, s/veh		25.9			26.5			22.8			22.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	22.1	10.0	26.6	10.2	22.3	10.0	26.7
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	13.0	37.0	12.0	34.0	12.0	38.0	12.0	34.0
Max Q Clear Time (g_c+I1), s	5.4	8.0	5.1	5.9	5.3	8.8	5.1	9.9
Green Ext Time (p_c), s	0.1	6.6	0.1	5.1	0.1	5.3	0.1	9.7

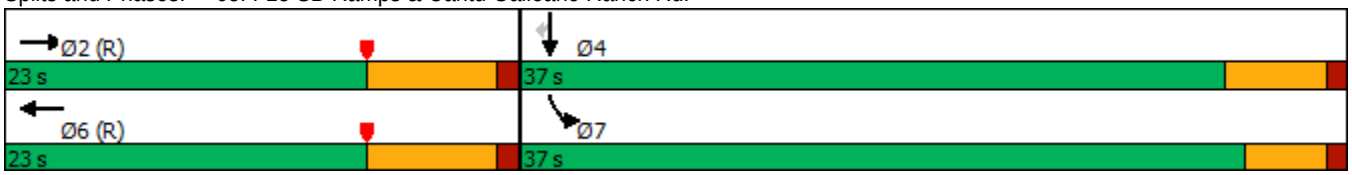
Intersection Summary	
HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

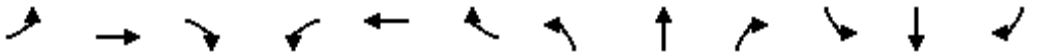
Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	955	318	513	175	310	0	1096
Future Volume (vph)	955	318	513	175	310	0	1096
Turn Type	NA	Free	NA	Free	Prot	NA	Perm
Protected Phases	2		6		7	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		7	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		9.6	10.5	10.5
Total Split (s)	23.0		23.0		37.0	37.0	37.0
Total Split (%)	38.3%		38.3%		61.7%	61.7%	61.7%
Yellow Time (s)	5.8		5.8		3.6	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8		6.8		4.6	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Min		None	Min	Min

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 53 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	✣	↱
Traffic Volume (veh/h)	0	955	318	0	513	175	0	0	0	310	0	1096
Future Volume (veh/h)	0	955	318	0	513	175	0	0	0	310	0	1096
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1061	0	0	570	0				229	0	1043
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2139		0	1489					720	0	1281
Arrive On Green	0.00	0.41	0.00	0.00	0.41	0.00				0.40	0.00	0.40
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1061	0	0	570	0				229	0	1043
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	9.1	0.0	0.0	6.6	0.0				5.2	0.0	17.3
Cycle Q Clear(g_c), s	0.0	9.1	0.0	0.0	6.6	0.0				5.2	0.0	17.3
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2139		0	1489					720	0	1281
V/C Ratio(X)	0.00	0.50		0.00	0.38					0.32	0.00	0.81
Avail Cap(c_a), veh/h	0	2139		0	1489					977	0	1739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.74	0.00	0.00	0.93	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.0	0.0	0.0	12.3	0.0				12.5	0.0	16.1
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.0	0.7	0.0				0.3	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.8	0.0	0.0	2.2	0.0				1.7	0.0	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.6	0.0	0.0	13.0	0.0				12.7	0.0	18.3
LnGrp LOS	A	B		A	B					B	A	B
Approach Vol, veh/h		1061	A		570	A					1272	
Approach Delay, s/veh		13.6			13.0						17.3	
Approach LOS		B			B						B	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	31.5	28.5	31.5
Change Period (Y+Rc), s	6.8	4.6	6.8
Max Green Setting (Gmax), s	16.2	32.4	16.2
Max Q Clear Time (g_c+I1), s	11.1	19.3	8.6
Green Ext Time (p_c), s	2.8	4.5	2.0

Intersection Summary	
HCM 6th Ctrl Delay	15.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1033	512	634	618	143	0	392
Future Volume (vph)	1033	512	634	618	143	0	392
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	10.0	36.5	23.5	23.5	23.5
Total Split (s)	55.1	55.1	22.9	78.0	32.0	32.0	32.0
Total Split (%)	50.1%	50.1%	20.8%	70.9%	29.1%	29.1%	29.1%
Yellow Time (s)	4.5	4.5	4.0	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	0.5	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.5	5.5	5.5	5.5	5.5
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	Min	Min	Min

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1033	512	634	618	0	0	0	0	143	0	392
Future Volume (veh/h)	0	1033	512	634	618	0	0	0	0	143	0	392
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1099	423	674	657	0				189	0	79
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2234	996	587	2985	0				264	0	116
Arrive On Green	0.00	0.62	0.62	0.06	0.27	0.00				0.07	0.00	0.07
Sat Flow, veh/h	0	3705	1609	3510	3705	0				3619	0	1586
Grp Volume(v), veh/h	0	1099	423	674	657	0				189	0	79
Grp Sat Flow(s),veh/h/ln	0	1805	1609	1755	1805	0				1810	0	1586
Q Serve(g_s), s	0.0	18.4	15.0	18.4	15.5	0.0				5.6	0.0	5.3
Cycle Q Clear(g_c), s	0.0	18.4	15.0	18.4	15.5	0.0				5.6	0.0	5.3
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2234	996	587	2985	0				264	0	116
V/C Ratio(X)	0.00	0.49	0.42	1.15	0.22	0.00				0.72	0.00	0.68
Avail Cap(c_a), veh/h	0	2234	996	587	2985	0				872	0	382
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.90	0.90	0.63	0.63	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	11.5	10.8	52.0	12.5	0.0				49.9	0.0	49.7
Incr Delay (d2), s/veh	0.0	0.7	1.2	79.1	0.1	0.0				1.4	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.6	5.0	15.1	7.4	0.0				2.5	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.2	12.0	131.1	12.7	0.0				51.2	0.0	52.4
LnGrp LOS	A	B	B	F	B	A				D	A	D
Approach Vol, veh/h		1522			1331						268	
Approach Delay, s/veh		12.1			72.6						51.6	
Approach LOS		B			E						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	22.9	73.6		13.5		96.5
Change Period (Y+Rc), s	4.5	5.5		5.5		5.5
Max Green Setting (Gmax), s	18.4	49.6		26.5		72.5
Max Q Clear Time (g_c+I1), s	20.4	20.4		7.6		17.5
Green Ext Time (p_c), s	0.0	6.1		0.4		2.8

Intersection Summary		
HCM 6th Ctrl Delay		41.3
HCM 6th LOS		D

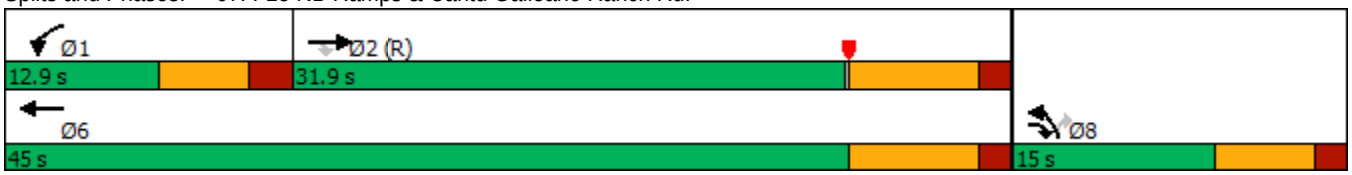
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	479	786	352	445	243	289
Future Volume (vph)	479	786	352	445	243	289
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	31.9	15.0	12.9	45.0	15.0	15.0
Total Split (%)	53.2%	25.0%	21.5%	75.0%	25.0%	25.0%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.0	6.0	7.3	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	479	786	352	445	243	289
Future Volume (veh/h)	479	786	352	445	243	289
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	526	530	387	489	290	146
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2144	907	404	3259	543	242
Arrive On Green	0.69	0.69	0.11	0.63	0.15	0.15
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	526	530	387	489	290	146
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	2.3	10.1	6.6	2.3	4.4	5.1
Cycle Q Clear(g_c), s	2.3	10.1	6.6	2.3	4.4	5.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2144	907	404	3259	543	242
V/C Ratio(X)	0.25	0.58	0.96	0.15	0.53	0.60
Avail Cap(c_a), veh/h	2144	907	404	3259	543	242
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.70	0.70	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.8	4.2	26.4	4.6	23.6	23.8
Incr Delay (d2), s/veh	0.2	1.9	35.5	0.0	3.7	10.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.5	4.4	0.4	1.9	2.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.0	6.1	61.9	4.6	27.3	34.6
LnGrp LOS	A	A	E	A	C	C
Approach Vol, veh/h	1056			876	436	
Approach Delay, s/veh	6.1			29.9	29.7	
Approach LOS	A			C	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	12.9	32.1				45.0	15.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	6.9	24.6				37.7	9.0
Max Q Clear Time (g_c+I1), s	8.6	12.1				4.3	7.1
Green Ext Time (p_c), s	0.0	4.2				3.1	0.3

Intersection Summary			
HCM 6th Ctrl Delay		19.2	
HCM 6th LOS		B	

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	687	489	1062	378	190	0	308
Future Volume (vph)	687	489	1062	378	190	0	308
Turn Type	Prot	NA	NA	Perm	Split	NA	Perm
Protected Phases	5	2	6		8	8	
Permitted Phases				6			8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	26.0	72.0	46.0	46.0	38.0	38.0	38.0
Total Split (%)	23.6%	65.5%	41.8%	41.8%	34.5%	34.5%	34.5%
Yellow Time (s)	4.0	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	687	489	0	0	1062	378	190	0	308	0	0	0
Future Volume (veh/h)	687	489	0	0	1062	378	190	0	308	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	716	509	0	0	1106	274	231	0	72			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	686	2928	0	0	2074	925	322	0	141			
Arrive On Green	0.33	1.00	0.00	0.00	0.57	0.57	0.09	0.00	0.09			
Sat Flow, veh/h	3510	3705	0	0	3705	1610	3619	0	1583			
Grp Volume(v), veh/h	716	509	0	0	1106	274	231	0	72			
Grp Sat Flow(s),veh/h/ln	1755	1805	0	0	1805	1610	1810	0	1583			
Q Serve(g_s), s	21.5	0.0	0.0	0.0	20.7	9.6	6.8	0.0	4.8			
Cycle Q Clear(g_c), s	21.5	0.0	0.0	0.0	20.7	9.6	6.8	0.0	4.8			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	686	2928	0	0	2074	925	322	0	141			
V/C Ratio(X)	1.04	0.17	0.00	0.00	0.53	0.30	0.72	0.00	0.51			
Avail Cap(c_a), veh/h	686	2928	0	0	2074	925	1069	0	468			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.70	0.70	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	37.0	0.0	0.0	0.0	14.3	12.0	48.8	0.0	47.8			
Incr Delay (d2), s/veh	40.7	0.1	0.0	0.0	1.0	0.8	3.0	0.0	2.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	11.3	0.0	0.0	0.0	7.8	3.3	3.1	0.0	1.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.8	0.1	0.0	0.0	15.3	12.8	51.8	0.0	50.7			
LnGrp LOS	F	A	A	A	B	B	D	A	D			
Approach Vol, veh/h		1225			1380			303				
Approach Delay, s/veh		45.5			14.8			51.5				
Approach LOS		D			B			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		94.7			26.0	68.7		15.3				
Change Period (Y+Rc), s		5.5			4.5	5.5		5.5				
Max Green Setting (Gmax), s		66.5			21.5	40.5		32.5				
Max Q Clear Time (g_c+I1), s		2.0			23.5	22.7		8.8				
Green Ext Time (p_c), s		2.1			0.0	5.2		1.0				

Intersection Summary	
HCM 6th Ctrl Delay	31.6
HCM 6th LOS	C

Notes

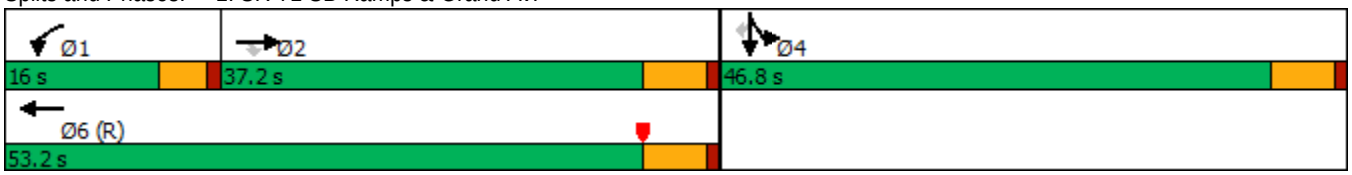
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1316	523	280	1267	824	1	440
Future Volume (vph)	1316	523	280	1267	824	1	440
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	37.2	37.2	16.0	53.2	46.8	46.8	46.8
Total Split (%)	37.2%	37.2%	16.0%	53.2%	46.8%	46.8%	46.8%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1316	523	280	1267	0	0	0	0	824	1	440
Future Volume (veh/h)	0	1316	523	280	1267	0	0	0	0	824	1	440
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1548	526	329	1491	0				970	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85				0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1735	539	412	2552	0				1159	0	
Arrive On Green	0.00	0.33	0.33	0.12	0.49	0.00				0.32	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	1548	526	329	1491	0				970	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	28.3	32.3	9.1	20.5	0.0				24.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	28.3	32.3	9.1	20.5	0.0				24.9	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1735	539	412	2552	0				1159	0	
V/C Ratio(X)	0.00	0.89	0.98	0.80	0.58	0.00				0.84	0.00	
Avail Cap(c_a), veh/h	0	1735	539	421	2552	0				1549	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.35	0.35	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	31.6	32.9	43.0	18.1	0.0				31.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	7.4	33.4	3.5	0.3	0.0				3.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.2	16.7	4.0	7.4	0.0				10.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	39.0	66.3	46.4	18.5	0.0				34.7	0.0	0.0
LnGrp LOS	A	D	E	D	B	A				C	A	
Approach Vol, veh/h		2074			1820						970	A
Approach Delay, s/veh		45.9			23.5						34.7	
Approach LOS		D			C						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	15.7	37.5		36.0		53.2
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	11.4	31.4		41.0		47.4
Max Q Clear Time (g_c+I1), s	11.1	34.3		26.9		22.5
Green Ext Time (p_c), s	0.0	0.0		3.3		11.3

Intersection Summary		
HCM 6th Ctrl Delay		35.3
HCM 6th LOS		D

Notes

User approved volume balancing among the lanes for turning movement.

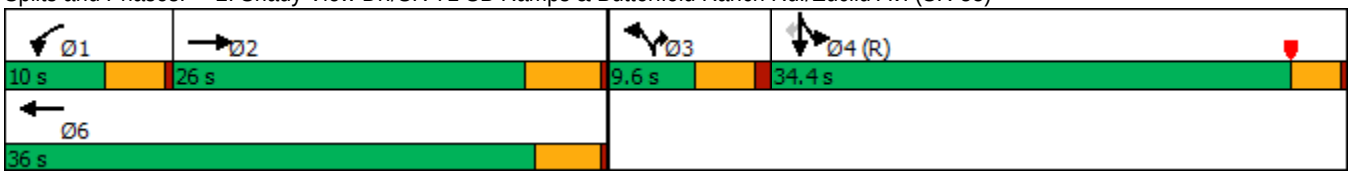
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

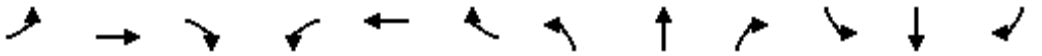
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	842	121	255	17	147	629	66	67
Future Volume (vph)	842	121	255	17	147	629	66	67
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	26.0	10.0	36.0	9.6	9.6	34.4	34.4	34.4
Total Split (%)	32.5%	12.5%	45.0%	12.0%	12.0%	43.0%	43.0%	43.0%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	842	58	121	255	32	17	0	147	629	66	67
Future Volume (veh/h)	0	842	58	121	255	32	17	0	147	629	66	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	1900	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	877	48	126	266	0	18	0	94	704	0	43
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	914	50	136	1399		0	0	0	1832	0	815
Arrive On Green	0.00	0.26	0.26	0.02	0.13	0.00	0.00	0.00	0.00	0.51	0.00	0.51
Sat Flow, veh/h	0	3575	190	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	455	470	126	266	0		0.0		704	0	43
Grp Sat Flow(s),veh/h/ln	0	1805	1866	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	19.9	19.9	5.6	5.3	0.0				9.5	0.0	1.1
Cycle Q Clear(g_c), s	0.0	19.9	19.9	5.6	5.3	0.0				9.5	0.0	1.1
Prop In Lane	0.00		0.10	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	474	490	136	1399					1832	0	815
V/C Ratio(X)	0.00	0.96	0.96	0.93	0.19					0.38	0.00	0.05
Avail Cap(c_a), veh/h	0	474	490	136	1421					1832	0	815
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.84	0.84	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.1	29.1	38.8	23.7	0.0				12.1	0.0	10.0
Incr Delay (d2), s/veh	0.0	31.0	30.4	50.2	0.0	0.0				0.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.9	12.2	4.3	2.1	0.0				3.4	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	60.1	59.5	89.0	23.7	0.0				12.7	0.0	10.1
LnGrp LOS	A	E	E	F	C					B	A	B
Approach Vol, veh/h		925			392	A					747	
Approach Delay, s/veh		59.8			44.7						12.6	
Approach LOS		E			D						B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	10.0	26.0		44.0		36.0						
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5						
Max Green Setting (Gmax), s	6.0	21.0		30.9		* 32						
Max Q Clear Time (g_c+I1), s	7.6	21.9		11.5		7.3						
Green Ext Time (p_c), s	0.0	0.0		2.6		1.2						

Intersection Summary			
HCM 6th Ctrl Delay		39.8	
HCM 6th LOS		D	

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

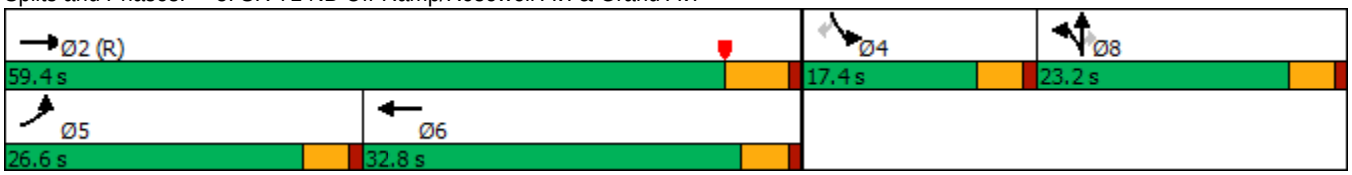
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

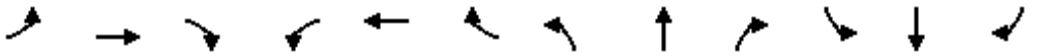
Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	346	1495	298	1512	357	130	202	153	753
Future Volume (vph)	346	1495	298	1512	357	130	202	153	753
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	34.8		14.7	21.5	21.5	21.5	9.5	9.5
Total Split (s)	26.6	59.4		32.8	23.2	23.2	23.2	17.4	17.4
Total Split (%)	26.6%	59.4%		32.8%	23.2%	23.2%	23.2%	17.4%	17.4%
Yellow Time (s)	3.5	4.8		3.7	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.8		4.7	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	None	None	None	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	346	1495	298	0	1512	82	357	130	202	153	0	753
Future Volume (veh/h)	346	1495	298	0	1512	82	357	130	202	153	0	753
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	376	1625	0	0	1643	89	264	314	79	166	0	500
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	400	3704		0	2864	155	331	348	295	0	0	0
Arrive On Green	0.22	0.71	0.00	0.00	0.45	0.45	0.18	0.18	0.18	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6659	346	1810	1900	1610		0	
Grp Volume(v), veh/h	376	1625	0	0	1260	472	264	314	79		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1838	1810	1900	1610			
Q Serve(g_s), s	20.4	13.0	0.0	0.0	19.1	19.1	14.0	16.2	4.2			
Cycle Q Clear(g_c), s	20.4	13.0	0.0	0.0	19.1	19.1	14.0	16.2	4.2			
Prop In Lane	1.00		1.00	0.00		0.19	1.00		1.00			
Lane Grp Cap(c), veh/h	400	3704		0	2196	823	331	348	295			
V/C Ratio(X)	0.94	0.44		0.00	0.57	0.57	0.80	0.90	0.27			
Avail Cap(c_a), veh/h	400	3704		0	2196	823	338	355	301			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.53	0.53	0.00	0.00	0.77	0.77	1.00	1.00	1.00			
Uniform Delay (d), s/veh	38.3	6.0	0.0	0.0	20.5	20.5	39.1	40.0	35.1			
Incr Delay (d2), s/veh	19.4	0.2	0.0	0.0	0.3	0.7	11.3	24.4	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	10.7	3.5	0.0	0.0	7.0	7.9	7.0	9.6	1.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.7	6.2	0.0	0.0	20.8	21.3	50.4	64.3	35.3			
LnGrp LOS	E	A		A	C	C	D	E	D			
Approach Vol, veh/h		2001	A		1732			657				
Approach Delay, s/veh		15.8			20.9			55.2				
Approach LOS		B			C			E				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		77.2			26.6	50.6		22.8				
Change Period (Y+Rc), s		5.8			4.5	* 5.8		4.5				
Max Green Setting (Gmax), s		53.6			22.1	* 28		18.7				
Max Q Clear Time (g_c+I1), s		15.0			22.4	21.1		18.2				
Green Ext Time (p_c), s		15.3			0.0	5.3		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	23.7
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

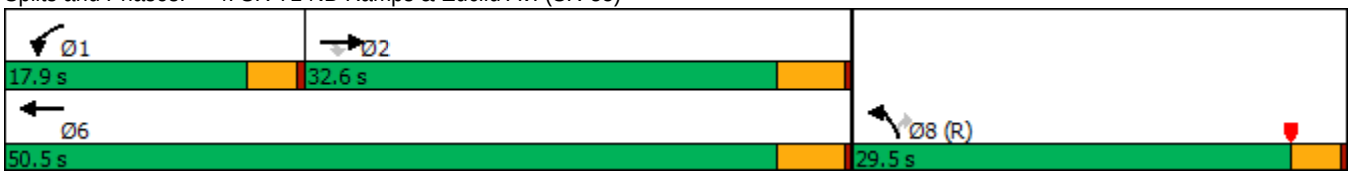
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	807	150	355	972	127	919
Future Volume (vph)	807	150	355	972	127	919
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	32.6	32.6	17.9	50.5	29.5	29.5
Total Split (%)	40.8%	40.8%	22.4%	63.1%	36.9%	36.9%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	807	150	355	972	127	919
Future Volume (veh/h)	807	150	355	972	127	919
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	938	0	413	1130	148	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1081		326	1889	1322	
Arrive On Green	0.40	0.00	0.18	0.52	0.38	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	938	0	413	1130	148	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	19.1	0.0	14.4	17.4	2.2	0.0
Cycle Q Clear(g_c), s	19.1	0.0	14.4	17.4	2.2	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1081		326	1889	1322	
V/C Ratio(X)	0.87		1.27	0.60	0.11	
Avail Cap(c_a), veh/h	1268		326	2076	1322	
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.46	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.6	0.0	32.8	13.2	16.2	0.0
Incr Delay (d2), s/veh	2.7	0.0	142.7	0.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	18.5	5.5	0.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.3	0.0	175.5	13.6	16.4	0.0
LnGrp LOS	C		F	B	B	
Approach Vol, veh/h	938	A		1543	148	A
Approach Delay, s/veh	25.3			57.0	16.4	
Approach LOS	C			E	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	17.9	28.5				46.4	33.6
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	14.4	28.1				46.0	26.0
Max Q Clear Time (g_c+I1), s	16.4	21.1				19.4	4.2
Green Ext Time (p_c), s	0.0	2.9				7.9	0.2

Intersection Summary	
HCM 6th Ctrl Delay	43.4
HCM 6th LOS	D

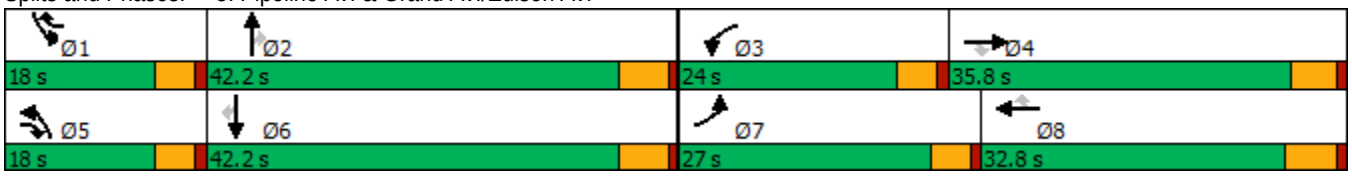
Notes

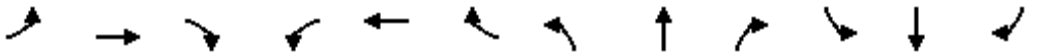
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	249	988	225	220	843	77	268	412	161	123	518	148
Future Volume (vph)	249	988	225	220	843	77	268	412	161	123	518	148
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	27.0	35.8	18.0	24.0	32.8	18.0	18.0	42.2	42.2	18.0	42.2	42.2
Total Split (%)	22.5%	29.8%	15.0%	20.0%	27.3%	15.0%	15.0%	35.2%	35.2%	15.0%	35.2%	35.2%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 99.6
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	249	988	225	220	843	77	268	412	161	123	518	148
Future Volume (veh/h)	249	988	225	220	843	77	268	412	161	123	518	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	274	1086	181	242	926	47	295	453	90	135	569	87
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	367	1687	707	332	1670	661	374	903	403	173	835	363
Arrive On Green	0.12	0.34	0.34	0.11	0.34	0.33	0.13	0.26	0.26	0.11	0.24	0.24
Sat Flow, veh/h	3141	4914	1523	3141	4914	1524	2956	3420	1525	1619	3420	1486
Grp Volume(v), veh/h	274	1086	181	242	926	47	295	453	90	135	569	87
Grp Sat Flow(s),veh/h/ln	1570	1638	1523	1570	1638	1524	1478	1710	1525	1619	1710	1486
Q Serve(g_s), s	7.8	17.3	6.7	6.9	14.2	1.7	9.0	10.4	4.3	7.5	14.0	4.4
Cycle Q Clear(g_c), s	7.8	17.3	6.7	6.9	14.2	1.7	9.0	10.4	4.3	7.5	14.0	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	367	1687	707	332	1670	661	374	903	403	173	835	363
V/C Ratio(X)	0.75	0.64	0.26	0.73	0.55	0.07	0.79	0.50	0.22	0.78	0.68	0.24
Avail Cap(c_a), veh/h	780	1687	707	678	1670	661	447	1410	629	245	1410	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	25.6	15.1	40.1	24.9	15.3	39.3	28.9	26.7	40.3	31.7	28.1
Incr Delay (d2), s/veh	1.2	1.9	0.9	1.2	1.3	0.2	6.3	0.4	0.3	6.1	1.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	6.7	2.3	2.6	5.3	0.6	3.5	4.1	1.5	3.2	5.6	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.7	27.6	16.0	41.3	26.2	15.5	45.6	29.4	26.9	46.5	32.7	28.4
LnGrp LOS	D	C	B	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1541			1215			838			791	
Approach Delay, s/veh		28.5			28.8			34.8			34.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	28.4	13.8	36.5	15.7	26.6	14.8	35.5
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	13.4	36.8	19.4	* 31	13.4	36.8	22.4	27.0
Max Q Clear Time (g_c+I1), s	9.5	12.4	8.9	19.3	11.0	16.0	9.8	16.2
Green Ext Time (p_c), s	0.1	3.1	0.3	6.0	0.1	3.8	0.4	4.4

Intersection Summary	
HCM 6th Ctrl Delay	30.9
HCM 6th LOS	C

Notes

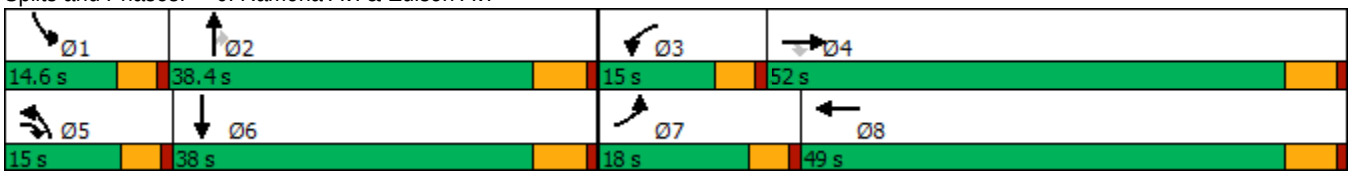
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

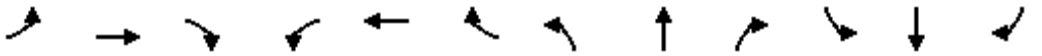
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	107	1064	107	82	862	87	407	69	55	377
Future Volume (vph)	107	1064	107	82	862	87	407	69	55	377
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	18.0	52.0	15.0	15.0	49.0	15.0	38.4	38.4	14.6	38.0
Total Split (%)	15.0%	43.3%	12.5%	12.5%	40.8%	12.5%	32.0%	32.0%	12.2%	31.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 107.9
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	1064	107	82	862	53	87	407	69	55	377	96
Future Volume (veh/h)	107	1064	107	82	862	53	87	407	69	55	377	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1700	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	120	1196	96	92	969	58	98	457	56	62	424	87
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	155	1640	1389	123	1508	90	130	790	353	87	578	118
Arrive On Green	0.10	0.48	0.47	0.08	0.46	0.44	0.08	0.23	0.23	0.05	0.20	0.19
Sat Flow, veh/h	1619	3420	2536	1619	3278	196	1619	3420	1525	1619	2830	576
Grp Volume(v), veh/h	120	1196	96	92	505	522	98	457	56	62	255	256
Grp Sat Flow(s),veh/h/ln	1619	1710	1268	1619	1710	1765	1619	1710	1525	1619	1710	1696
Q Serve(g_s), s	7.2	28.0	1.8	5.6	22.7	22.7	5.9	11.9	2.9	3.8	13.9	14.2
Cycle Q Clear(g_c), s	7.2	28.0	1.8	5.6	22.7	22.7	5.9	11.9	2.9	3.8	13.9	14.2
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	155	1640	1389	123	787	812	130	790	353	87	349	347
V/C Ratio(X)	0.78	0.73	0.07	0.75	0.64	0.64	0.75	0.58	0.16	0.72	0.73	0.74
Avail Cap(c_a), veh/h	226	1640	1389	178	787	812	178	1175	524	171	581	576
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.2	20.8	10.6	45.3	20.7	20.8	45.1	34.2	30.7	46.6	37.2	37.6
Incr Delay (d2), s/veh	5.2	2.9	0.1	4.7	4.0	3.9	7.0	0.7	0.2	4.1	2.9	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	10.7	0.5	2.3	9.1	9.4	2.5	4.8	1.1	1.6	5.8	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.4	23.7	10.7	50.0	24.7	24.7	52.0	34.8	30.9	50.7	40.2	40.7
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		1412			1119			611			573	
Approach Delay, s/veh		25.0			26.8			37.2			41.5	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	27.1	11.6	52.0	12.0	24.5	13.6	50.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.0	32.6	10.4	46.2	10.4	32.2	13.4	43.2
Max Q Clear Time (g_c+I1), s	5.8	13.9	7.6	30.0	7.9	16.2	9.2	24.7
Green Ext Time (p_c), s	0.0	2.7	0.0	7.6	0.0	2.5	0.0	5.9

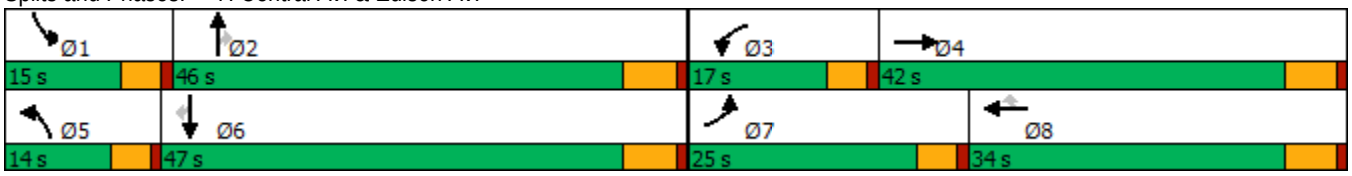
Intersection Summary	
HCM 6th Ctrl Delay	30.1
HCM 6th LOS	C

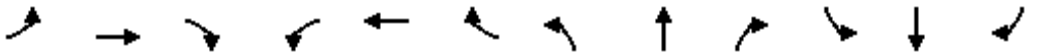
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	207	822	242	584	80	77	934	391	102	746	129
Future Volume (vph)	207	822	242	584	80	77	934	391	102	746	129
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	25.0	42.0	17.0	34.0	34.0	14.0	46.0	46.0	15.0	47.0	47.0
Total Split (%)	20.8%	35.0%	14.2%	28.3%	28.3%	11.7%	38.3%	38.3%	12.5%	39.2%	39.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 116.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	822	78	242	584	80	77	934	391	102	746	129
Future Volume (veh/h)	207	822	78	242	584	80	77	934	391	102	746	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	213	847	76	249	602	71	79	963	322	105	769	99
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	247	1069	96	318	979	437	106	1148	503	136	1210	539
Arrive On Green	0.15	0.34	0.32	0.10	0.29	0.29	0.07	0.34	0.34	0.08	0.35	0.35
Sat Flow, veh/h	1619	3170	284	3141	3420	1525	1619	3420	1498	1619	3420	1524
Grp Volume(v), veh/h	213	457	466	249	602	71	79	963	322	105	769	99
Grp Sat Flow(s),veh/h/ln	1619	1710	1744	1570	1710	1525	1619	1710	1498	1619	1710	1524
Q Serve(g_s), s	14.5	27.2	27.3	8.7	17.2	3.9	5.4	29.3	20.5	7.2	21.1	5.1
Cycle Q Clear(g_c), s	14.5	27.2	27.3	8.7	17.2	3.9	5.4	29.3	20.5	7.2	21.1	5.1
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	247	577	588	318	979	437	106	1148	503	136	1210	539
V/C Ratio(X)	0.86	0.79	0.79	0.78	0.61	0.16	0.74	0.84	0.64	0.77	0.64	0.18
Avail Cap(c_a), veh/h	302	577	588	362	979	437	144	1275	559	158	1306	582
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.6	33.7	33.9	49.4	34.8	30.1	51.7	34.6	31.7	50.6	30.3	25.1
Incr Delay (d2), s/veh	16.7	10.7	10.5	8.0	2.9	0.8	7.9	4.7	2.1	15.2	0.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	12.4	12.7	3.7	7.2	1.5	2.4	12.3	7.4	3.4	8.4	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.3	44.4	44.4	57.5	37.7	30.9	59.6	39.3	33.8	65.8	31.3	25.3
LnGrp LOS	E	D	D	E	D	C	E	D	C	E	C	C
Approach Vol, veh/h		1136			922			1364			973	
Approach Delay, s/veh		47.9			42.5			39.2			34.4	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	41.8	15.4	42.0	11.4	43.9	21.2	36.2
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.4	40.2	12.4	36.2	9.4	41.2	20.4	28.2
Max Q Clear Time (g_c+I1), s	9.2	31.3	10.7	29.3	7.4	23.1	16.5	19.2
Green Ext Time (p_c), s	0.0	4.7	0.1	3.0	0.0	4.9	0.1	2.6

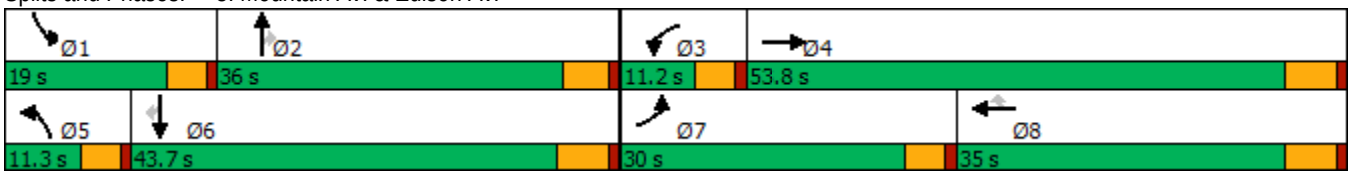
Intersection Summary	
HCM 6th Ctrl Delay	41.1
HCM 6th LOS	D

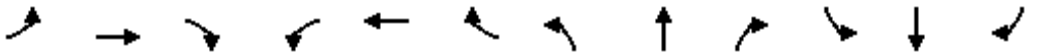
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	196	1063	34	624	79	36	88	27	102	162	204
Future Volume (vph)	196	1063	34	624	79	36	88	27	102	162	204
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	30.0	53.8	11.2	35.0	35.0	11.3	36.0	36.0	19.0	43.7	43.7
Total Split (%)	25.0%	44.8%	9.3%	29.2%	29.2%	9.4%	30.0%	30.0%	15.8%	36.4%	36.4%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 92.8
Natural Cycle: 85
Control Type: Actuated-Uncoordinated

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	1063	77	34	624	79	36	88	27	102	162	204
Future Volume (veh/h)	196	1063	77	34	624	79	36	88	27	102	162	204
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	200	1085	77	35	637	69	37	90	13	104	165	143
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	243	2601	184	63	1523	680	65	237	197	139	334	283
Arrive On Green	0.15	0.56	0.54	0.04	0.45	0.45	0.04	0.13	0.13	0.09	0.19	0.19
Sat Flow, veh/h	1619	4674	331	1619	3420	1525	1619	1800	1492	1619	1800	1525
Grp Volume(v), veh/h	200	760	402	35	637	69	37	90	13	104	165	143
Grp Sat Flow(s),veh/h/ln	1619	1638	1729	1619	1710	1525	1619	1800	1492	1619	1800	1525
Q Serve(g_s), s	10.7	12.0	12.1	1.9	11.4	2.4	2.0	4.1	0.7	5.6	7.4	7.5
Cycle Q Clear(g_c), s	10.7	12.0	12.1	1.9	11.4	2.4	2.0	4.1	0.7	5.6	7.4	7.5
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	243	1823	962	63	1523	680	65	237	197	139	334	283
V/C Ratio(X)	0.82	0.42	0.42	0.55	0.42	0.10	0.57	0.38	0.07	0.75	0.49	0.51
Avail Cap(c_a), veh/h	470	1823	962	130	1523	680	132	644	533	271	798	677
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.9	11.5	11.6	42.2	16.9	14.4	42.2	35.5	34.0	40.0	32.7	32.8
Incr Delay (d2), s/veh	2.7	0.7	1.3	2.8	0.8	0.3	2.9	1.0	0.1	3.0	1.1	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	3.9	4.3	0.8	4.2	0.8	0.8	1.8	0.2	2.2	3.1	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.6	12.2	12.9	45.0	17.8	14.7	45.0	36.5	34.2	42.9	33.8	34.2
LnGrp LOS	D	B	B	D	B	B	D	D	C	D	C	C
Approach Vol, veh/h		1362			741			140			412	
Approach Delay, s/veh		16.4			18.8			38.5			36.2	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	16.5	7.5	53.8	7.6	20.6	17.4	43.9
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	* 31	6.6	48.0	6.7	37.9	25.4	29.2
Max Q Clear Time (g_c+I1), s	7.6	6.1	3.9	14.1	4.0	9.5	12.7	13.4
Green Ext Time (p_c), s	0.1	0.4	0.0	8.5	0.0	1.3	0.2	3.7

Intersection Summary	
HCM 6th Ctrl Delay	21.3
HCM 6th LOS	C

Notes

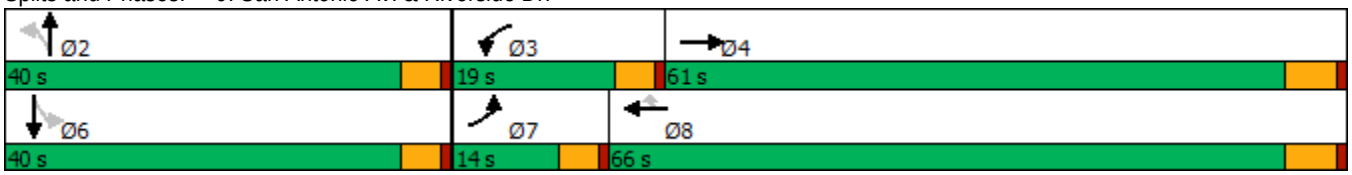
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

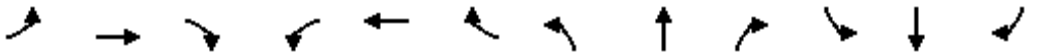
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	29	753	56	693	23	85	14	11	7
Future Volume (vph)	29	753	56	693	23	85	14	11	7
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	14.0	61.0	19.0	66.0	66.0	40.0	40.0	40.0	40.0
Total Split (%)	11.7%	50.8%	15.8%	55.0%	55.0%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 93.9
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	753	109	56	693	23	85	14	39	11	7	29
Future Volume (veh/h)	29	753	109	56	693	23	85	14	39	11	7	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	30	784	108	58	722	24	89	15	17	11	7	7
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	59	2078	286	83	2410	1074	236	94	107	220	101	101
Arrive On Green	0.04	0.69	0.67	0.05	0.70	0.70	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1619	3010	415	1619	3420	1524	1343	768	870	1315	826	826
Grp Volume(v), veh/h	30	445	447	58	722	24	89	0	32	11	0	14
Grp Sat Flow(s),veh/h/ln	1619	1710	1715	1619	1710	1524	1343	0	1638	1315	0	1651
Q Serve(g_s), s	1.6	9.6	9.7	3.1	6.9	0.4	5.5	0.0	1.5	0.7	0.0	0.7
Cycle Q Clear(g_c), s	1.6	9.6	9.7	3.1	6.9	0.4	6.2	0.0	1.5	2.2	0.0	0.7
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.53	1.00		0.50
Lane Grp Cap(c), veh/h	59	1180	1183	83	2410	1074	236	0	201	220	0	202
V/C Ratio(X)	0.51	0.38	0.38	0.70	0.30	0.02	0.38	0.00	0.16	0.05	0.00	0.07
Avail Cap(c_a), veh/h	184	1180	1183	276	2410	1074	621	0	670	597	0	676
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.6	5.7	5.8	41.1	4.9	3.9	36.9	0.0	34.7	35.5	0.0	34.3
Incr Delay (d2), s/veh	2.5	0.9	0.9	4.0	0.3	0.0	1.0	0.0	0.4	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.7	2.8	1.3	1.8	0.1	1.9	0.0	0.6	0.2	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.1	6.6	6.7	45.1	5.2	3.9	37.9	0.0	35.1	35.6	0.0	34.4
LnGrp LOS	D	A	A	D	A	A	D	A	D	D	A	C
Approach Vol, veh/h		922			804			121			25	
Approach Delay, s/veh		7.9			8.0			37.1			35.0	
Approach LOS		A			A			D			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.8	8.5	64.7		14.8	7.2	66.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		35.4	14.4	55.2		35.4	9.4	60.2				
Max Q Clear Time (g_c+I1), s		8.2	5.1	11.7		4.2	3.6	8.9				
Green Ext Time (p_c), s		0.4	0.0	6.0		0.1	0.0	5.3				

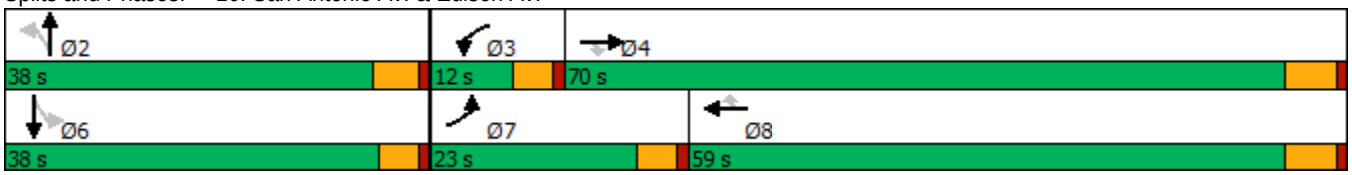
Intersection Summary												
HCM 6th Ctrl Delay			10.2									
HCM 6th LOS			B									

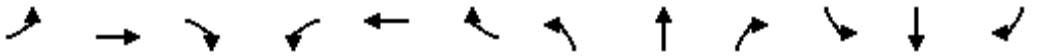
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	80	1016	37	7	666	13	21	29	10	40
Future Volume (vph)	80	1016	37	7	666	13	21	29	10	40
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	23.0	70.0	70.0	12.0	59.0	59.0	38.0	38.0	38.0	38.0
Total Split (%)	19.2%	58.3%	58.3%	10.0%	49.2%	49.2%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 95.7
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	1016	37	7	666	13	21	29	10	10	40	48
Future Volume (veh/h)	80	1016	37	7	666	13	21	29	10	10	40	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1000	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	85	1081	38	7	709	11	22	31	7	11	43	21
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	117	2503	1117	15	2310	1030	104	124	23	61	122	53
Arrive On Green	0.07	0.73	0.73	0.02	0.68	0.68	0.12	0.12	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1619	3420	1525	952	3420	1525	412	1038	192	133	1074	469
Grp Volume(v), veh/h	85	1081	38	7	709	11	60	0	0	75	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	952	1710	1525	1642	0	0	1676	0	0
Q Serve(g_s), s	4.6	11.2	0.6	0.7	7.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.6	11.2	0.6	0.7	7.7	0.2	2.8	0.0	0.0	3.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.37		0.12	0.15		0.28
Lane Grp Cap(c), veh/h	117	2503	1117	15	2310	1030	250	0	0	237	0	0
V/C Ratio(X)	0.73	0.43	0.03	0.47	0.31	0.01	0.24	0.00	0.00	0.32	0.00	0.00
Avail Cap(c_a), veh/h	341	2503	1117	85	2310	1030	657	0	0	670	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	41.0	4.7	3.3	44.0	6.0	4.8	36.3	0.0	0.0	37.1	0.0	0.0
Incr Delay (d2), s/veh	3.2	0.5	0.1	8.4	0.3	0.0	0.5	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	2.7	0.1	0.2	2.1	0.1	1.2	0.0	0.0	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.2	5.3	3.4	52.4	6.3	4.8	36.7	0.0	0.0	37.9	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1204			727			60			75	
Approach Delay, s/veh		8.0			6.8			36.7			37.9	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.8	5.4	70.0		14.8	10.5	64.9				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		32.9	7.4	64.2		* 33	18.4	53.2				
Max Q Clear Time (g_c+I1), s		4.8	2.7	13.2		5.7	6.6	9.7				
Green Ext Time (p_c), s		0.3	0.0	9.2		0.4	0.1	5.0				

Intersection Summary	
HCM 6th Ctrl Delay	9.5
HCM 6th LOS	A

Notes

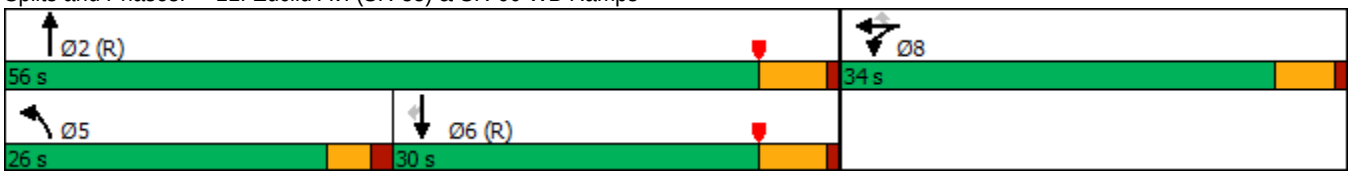
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

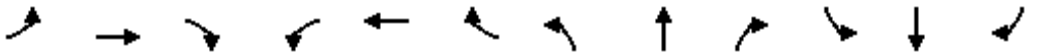
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	580	6	392	271	1036	968	473
Future Volume (vph)	580	6	392	271	1036	968	473
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	34.0	34.0	34.0	26.0	56.0	30.0	30.0
Total Split (%)	37.8%	37.8%	37.8%	28.9%	62.2%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	580	6	392	271	1036	0	0	968	473
Future Volume (veh/h)	0	0	0	580	6	392	271	1036	0	0	968	473
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				677	0	153	282	1079	0	0	1008	288
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				786	0	349	313	2405	0	0	1601	714
Arrive On Green				0.22	0.00	0.22	0.35	1.00	0.00	0.00	0.44	0.44
Sat Flow, veh/h				3619	0	1608	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				677	0	153	282	1079	0	0	1008	288
Grp Sat Flow(s),veh/h/ln				1810	0	1608	1810	1805	0	0	1805	1610
Q Serve(g_s), s				16.2	0.0	7.4	13.3	0.0	0.0	0.0	19.4	10.9
Cycle Q Clear(g_c), s				16.2	0.0	7.4	13.3	0.0	0.0	0.0	19.4	10.9
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				786	0	349	313	2405	0	0	1601	714
V/C Ratio(X)				0.86	0.00	0.44	0.90	0.45	0.00	0.00	0.63	0.40
Avail Cap(c_a), veh/h				1166	0	518	432	2405	0	0	1601	714
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.57	0.57	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.9	0.0	30.5	28.7	0.0	0.0	0.0	19.3	17.0
Incr Delay (d2), s/veh				3.1	0.0	0.3	9.0	0.3	0.0	0.0	1.9	1.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.0	0.0	2.7	5.2	0.1	0.0	0.0	7.8	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				37.0	0.0	30.8	37.8	0.3	0.0	0.0	21.2	18.7
LnGrp LOS				D	A	C	D	A	A	A	C	B
Approach Vol, veh/h					830			1361			1296	
Approach Delay, s/veh					35.9			8.1			20.7	
Approach LOS					D			A			C	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	65.5		20.0	45.4		24.5						
Change Period (Y+Rc), s	5.5		4.5	5.5		5.0						
Max Green Setting (Gmax), s	50.5		21.5	24.5		29.0						
Max Q Clear Time (g_c+I1), s	2.0		15.3	21.4		18.2						
Green Ext Time (p_c), s	14.2		0.2	2.4		1.3						

Intersection Summary		
HCM 6th Ctrl Delay	19.4	
HCM 6th LOS	B	

Notes

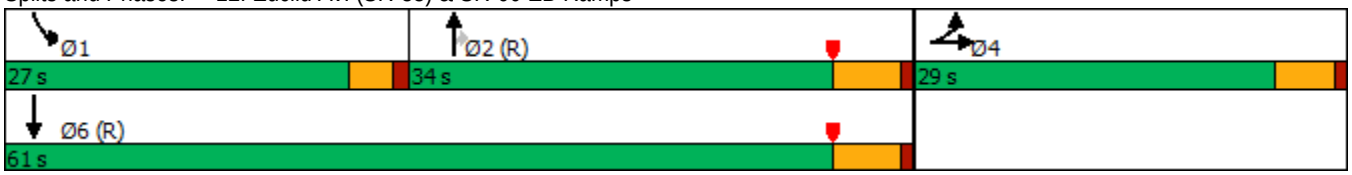
User approved volume balancing among the lanes for turning movement.

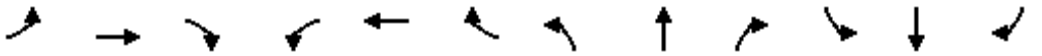
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	400	3	908	551	361	1188
Future Volume (vph)	400	3	908	551	361	1188
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	29.0	29.0	34.0	34.0	27.0	61.0
Total Split (%)	32.2%	32.2%	37.8%	37.8%	30.0%	67.8%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	400	3	320	0	0	0	0	908	551	361	1188	0
Future Volume (veh/h)	400	3	320	0	0	0	0	908	551	361	1188	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	335	105	260				0	927	368	368	1212	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	435	116	288				0	1374	598	395	2322	0
Arrive On Green	0.24	0.24	0.24				0.00	0.38	0.38	0.44	1.00	0.00
Sat Flow, veh/h	1810	484	1200				0	3705	1572	1810	3705	0
Grp Volume(v), veh/h	335	0	365				0	927	368	368	1212	0
Grp Sat Flow(s),veh/h/ln	1810	0	1684				0	1805	1572	1810	1805	0
Q Serve(g_s), s	15.5	0.0	18.9				0.0	19.3	17.0	17.4	0.0	0.0
Cycle Q Clear(g_c), s	15.5	0.0	18.9				0.0	19.3	17.0	17.4	0.0	0.0
Prop In Lane	1.00		0.71				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	435	0	405				0	1374	598	395	2322	0
V/C Ratio(X)	0.77	0.00	0.90				0.00	0.67	0.61	0.93	0.52	0.00
Avail Cap(c_a), veh/h	483	0	449				0	1374	598	462	2322	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.69	0.69	0.58	0.58	0.00
Uniform Delay (d), s/veh	31.9	0.0	33.2				0.0	23.2	22.5	24.8	0.0	0.0
Incr Delay (d2), s/veh	5.8	0.0	18.9				0.0	1.9	3.3	15.2	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.0	9.3				0.0	7.9	6.4	6.7	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.6	0.0	52.0				0.0	25.1	25.8	40.0	0.5	0.0
LnGrp LOS	D	A	D				A	C	C	D	A	A
Approach Vol, veh/h		700						1295			1580	
Approach Delay, s/veh		45.1						25.3			9.7	
Approach LOS		D						C			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.6	39.8		26.6		63.4
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	23.0	28.5		24.0		55.5
Max Q Clear Time (g_c+I1), s	19.4	21.3		20.9		2.0
Green Ext Time (p_c), s	0.2	5.0		0.7		17.4

Intersection Summary	
HCM 6th Ctrl Delay	22.3
HCM 6th LOS	C

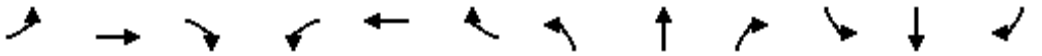
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	103	356	67	356	178	1198	70	253	1076	141
Future Volume (vph)	103	356	67	356	178	1198	70	253	1076	141
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	20.0	35.1	15.9	31.0	27.0	47.0	47.0	22.0	42.0	42.0
Total Split (%)	16.7%	29.3%	13.3%	25.8%	22.5%	39.2%	39.2%	18.3%	35.0%	35.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 108.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	356	133	67	356	135	178	1198	70	253	1076	141
Future Volume (veh/h)	103	356	133	67	356	135	178	1198	70	253	1076	141
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	110	379	118	71	379	118	189	1274	47	269	1145	96
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	135	553	170	89	479	147	219	2038	632	330	1922	596
Arrive On Green	0.08	0.22	0.22	0.05	0.19	0.19	0.14	0.41	0.41	0.11	0.39	0.39
Sat Flow, veh/h	1619	2567	788	1619	2561	786	1619	4914	1523	2956	4914	1524
Grp Volume(v), veh/h	110	251	246	71	251	246	189	1274	47	269	1145	96
Grp Sat Flow(s),veh/h/ln	1619	1710	1645	1619	1710	1637	1619	1638	1523	1478	1638	1524
Q Serve(g_s), s	6.7	13.5	13.9	4.3	14.0	14.4	11.5	20.5	1.9	8.9	18.5	4.1
Cycle Q Clear(g_c), s	6.7	13.5	13.9	4.3	14.0	14.4	11.5	20.5	1.9	8.9	18.5	4.1
Prop In Lane	1.00		0.48	1.00		0.48	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	135	368	354	89	320	306	219	2038	632	330	1922	596
V/C Ratio(X)	0.82	0.68	0.69	0.80	0.79	0.80	0.86	0.62	0.07	0.82	0.60	0.16
Avail Cap(c_a), veh/h	249	500	480	182	430	411	362	2038	632	513	1922	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.2	36.2	36.3	46.9	38.9	39.0	42.5	23.2	17.7	43.5	24.2	19.8
Incr Delay (d2), s/veh	4.5	2.2	2.7	6.1	6.7	8.1	5.8	1.5	0.2	2.9	1.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	5.6	5.6	1.8	6.2	6.2	4.8	7.7	0.7	3.3	7.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.7	38.4	39.0	53.0	45.6	47.1	48.3	24.6	17.9	46.5	25.6	20.4
LnGrp LOS	D	D	D	D	D	D	D	C	B	D	C	C
Approach Vol, veh/h		607			568			1510			1510	
Approach Delay, s/veh		40.7			47.2			27.4			29.0	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.8	47.0	10.1	27.4	18.2	44.6	13.0	24.5
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	17.4	41.6	11.3	29.3	22.4	36.6	15.4	25.2
Max Q Clear Time (g_c+I1), s	10.9	22.5	6.3	15.9	13.5	20.5	8.7	16.4
Green Ext Time (p_c), s	0.3	8.7	0.0	2.2	0.2	7.2	0.1	1.8

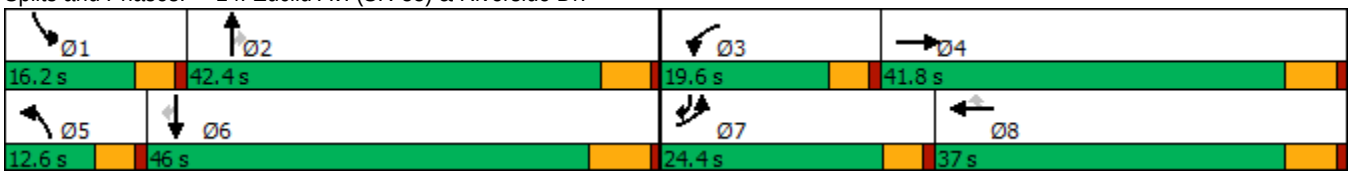
Intersection Summary	
HCM 6th Ctrl Delay	32.6
HCM 6th LOS	C

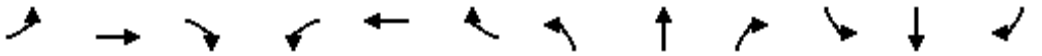
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	145	440	178	393	62	69	1015	230	134	895	185
Future Volume (vph)	145	440	178	393	62	69	1015	230	134	895	185
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	24.4	41.8	19.6	37.0	37.0	12.6	42.4	42.4	16.2	46.0	24.4
Total Split (%)	20.3%	34.8%	16.3%	30.8%	30.8%	10.5%	35.3%	35.3%	13.5%	38.3%	20.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 119.7
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	440	74	178	393	62	69	1015	230	134	895	185
Future Volume (veh/h)	145	440	74	178	393	62	69	1015	230	134	895	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	151	458	52	185	409	49	72	1057	186	140	932	102
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	175	472	54	201	1070	477	89	1045	466	155	1184	687
Arrive On Green	0.11	0.30	0.30	0.12	0.31	0.31	0.06	0.31	0.31	0.10	0.35	0.35
Sat Flow, veh/h	1619	1587	180	1619	3420	1524	1619	3420	1525	1619	3420	1506
Grp Volume(v), veh/h	151	0	510	185	409	49	72	1057	186	140	932	102
Grp Sat Flow(s),veh/h/ln	1619	0	1768	1619	1710	1524	1619	1710	1525	1619	1710	1506
Q Serve(g_s), s	11.1	0.0	34.5	13.7	11.3	2.8	5.3	37.0	11.7	10.4	29.7	4.8
Cycle Q Clear(g_c), s	11.1	0.0	34.5	13.7	11.3	2.8	5.3	37.0	11.7	10.4	29.7	4.8
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	0	525	201	1070	477	89	1045	466	155	1184	687
V/C Ratio(X)	0.86	0.00	0.97	0.92	0.38	0.10	0.81	1.01	0.40	0.90	0.79	0.15
Avail Cap(c_a), veh/h	265	0	525	201	1070	477	107	1045	466	155	1184	687
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.1	0.0	42.0	52.5	32.5	29.5	56.6	42.0	33.3	54.2	35.6	19.3
Incr Delay (d2), s/veh	11.3	0.0	31.7	41.7	0.2	0.1	25.8	30.7	2.5	44.1	5.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	0.0	19.0	7.7	4.6	1.0	2.7	19.0	4.5	6.1	12.8	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.4	0.0	73.8	94.2	32.7	29.6	82.4	72.8	35.8	98.3	40.9	19.8
LnGrp LOS	E	A	E	F	C	C	F	F	D	F	D	B
Approach Vol, veh/h		661			643			1315			1174	
Approach Delay, s/veh		71.6			50.2			68.1			45.9	
Approach LOS		E			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	43.5	19.6	41.8	11.3	48.4	17.7	43.7
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	11.6	* 37	15.0	36.0	8.0	39.5	19.8	31.2
Max Q Clear Time (g_c+I1), s	12.4	39.0	15.7	36.5	7.3	31.7	13.1	13.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	3.8	0.1	2.4

Intersection Summary	
HCM 6th Ctrl Delay	58.8
HCM 6th LOS	E

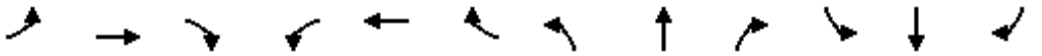
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	93	273	48	75	108	41	1210	219	24	1017	69
Future Volume (vph)	93	273	48	75	108	41	1210	219	24	1017	69
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	44.0	44.0	44.0	44.0	44.0	12.4	65.0	65.0	11.0	63.6	63.6
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	10.3%	54.2%	54.2%	9.2%	53.0%	53.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 103.1
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	273	48	75	108	9	41	1210	219	24	1017	69
Future Volume (veh/h)	93	273	48	75	108	9	41	1210	219	24	1017	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	100	294	29	81	116	6	44	1301	164	26	1094	41
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	268	490	415	119	153	7	55	1875	819	40	1845	806
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.03	0.55	0.55	0.02	0.54	0.54
Sat Flow, veh/h	1218	1800	1525	269	561	25	1619	3420	1494	1619	3420	1494
Grp Volume(v), veh/h	100	294	29	203	0	0	44	1301	164	26	1094	41
Grp Sat Flow(s),veh/h/ln	1218	1800	1525	856	0	0	1619	1710	1494	1619	1710	1494
Q Serve(g_s), s	0.0	15.5	1.5	11.5	0.0	0.0	2.9	30.3	6.1	1.7	23.6	1.4
Cycle Q Clear(g_c), s	13.4	15.5	1.5	27.0	0.0	0.0	2.9	30.3	6.1	1.7	23.6	1.4
Prop In Lane	1.00		1.00	0.40		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	268	490	415	279	0	0	55	1875	819	40	1845	806
V/C Ratio(X)	0.37	0.60	0.07	0.73	0.00	0.00	0.81	0.69	0.20	0.64	0.59	0.05
Avail Cap(c_a), veh/h	363	630	534	389	0	0	116	1875	819	95	1845	806
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	34.6	29.5	41.5	0.0	0.0	52.4	18.0	12.5	52.7	17.0	11.9
Incr Delay (d2), s/veh	0.9	1.2	0.1	4.2	0.0	0.0	9.8	2.1	0.5	6.2	1.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	6.7	0.6	5.5	0.0	0.0	1.3	10.7	1.9	0.7	8.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.6	35.7	29.5	45.7	0.0	0.0	62.2	20.1	13.1	58.9	18.4	12.0
LnGrp LOS	C	D	C	D	A	A	E	C	B	E	B	B
Approach Vol, veh/h		423			203			1509			1161	
Approach Delay, s/veh		35.1			45.7			20.6			19.1	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	66.3		35.5	8.3	65.3		35.5				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	6.4	* 60		38.2	7.8	57.1		38.2				
Max Q Clear Time (g_c+I1), s	3.7	32.3		17.5	4.9	25.6		29.0				
Green Ext Time (p_c), s	0.0	10.4		1.9	0.0	8.1		0.7				

Intersection Summary			
HCM 6th Ctrl Delay		23.5	
HCM 6th LOS		C	

Notes

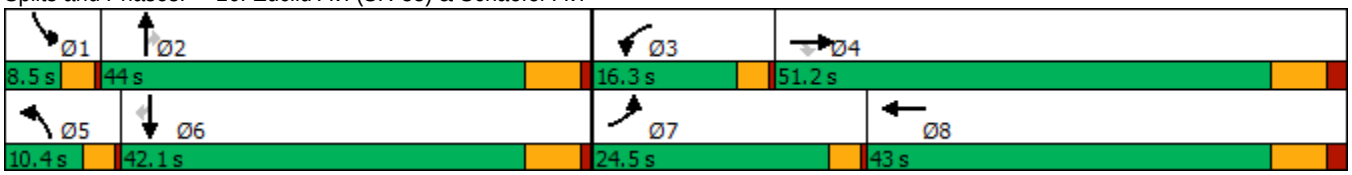
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

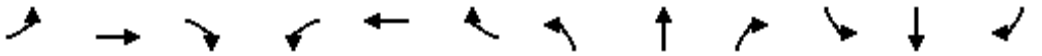
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	280	277	178	76	66	82	1139	80	28	1035	111
Future Volume (vph)	280	277	178	76	66	82	1139	80	28	1035	111
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	24.5	51.2	51.2	16.3	43.0	10.4	44.0	44.0	8.5	42.1	42.1
Total Split (%)	20.4%	42.7%	42.7%	13.6%	35.8%	8.7%	36.7%	36.7%	7.1%	35.1%	35.1%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 95.1
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	277	178	76	66	25	82	1139	80	28	1035	111
Future Volume (veh/h)	280	277	178	76	66	25	82	1139	80	28	1035	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	283	280	139	77	67	20	83	1151	63	28	1045	82
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	321	350	297	171	135	40	103	1396	623	48	1278	570
Arrive On Green	0.20	0.19	0.19	0.11	0.10	0.10	0.06	0.41	0.41	0.03	0.37	0.37
Sat Flow, veh/h	1619	1800	1525	1619	1331	397	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	283	280	139	77	0	87	83	1151	63	28	1045	82
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1728	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	12.9	11.3	6.2	3.4	0.0	3.6	3.9	22.9	1.9	1.3	21.0	2.7
Cycle Q Clear(g_c), s	12.9	11.3	6.2	3.4	0.0	3.6	3.9	22.9	1.9	1.3	21.0	2.7
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	321	350	297	171	0	176	103	1396	623	48	1278	570
V/C Ratio(X)	0.88	0.80	0.47	0.45	0.00	0.50	0.81	0.82	0.10	0.59	0.82	0.14
Avail Cap(c_a), veh/h	446	1045	885	272	0	817	147	1706	761	106	1621	723
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.7	29.3	27.2	32.0	0.0	32.4	35.2	20.1	13.9	36.5	21.5	15.8
Incr Delay (d2), s/veh	11.2	3.2	0.9	0.7	0.0	1.6	12.7	2.9	0.1	4.3	2.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	4.8	2.1	1.3	0.0	1.5	1.7	7.9	0.6	0.5	7.4	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.9	32.5	28.0	32.7	0.0	34.0	47.9	23.0	14.0	40.8	24.2	15.9
LnGrp LOS	D	C	C	C	A	C	D	C	B	D	C	B
Approach Vol, veh/h		702			164			1297			1155	
Approach Delay, s/veh		35.0			33.4			24.1			24.0	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.7	37.1	11.5	21.8	8.3	34.5	18.6	14.7
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	38.0	12.8	44.2	6.9	36.1	21.0	36.0
Max Q Clear Time (g_c+I1), s	3.3	24.9	5.4	13.3	5.9	23.0	14.9	5.6
Green Ext Time (p_c), s	0.0	6.0	0.0	1.5	0.0	5.5	0.2	0.3

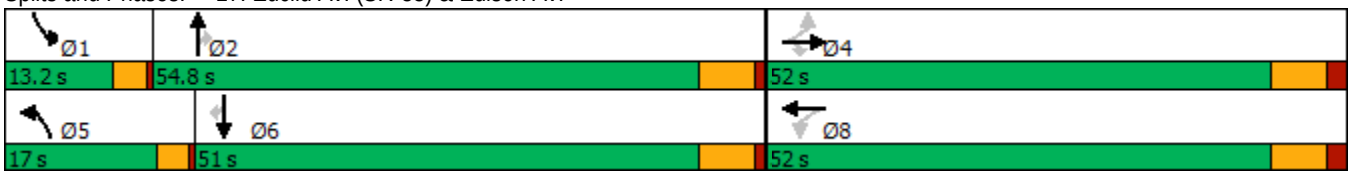
Intersection Summary	
HCM 6th Ctrl Delay	26.8
HCM 6th LOS	C

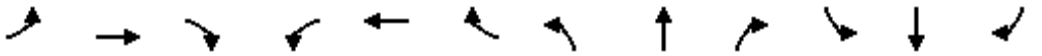
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	265	463	289	39	252	165	1095	68	82	1112	175
Future Volume (vph)	265	463	289	39	252	165	1095	68	82	1112	175
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	17.0	54.8	54.8	13.2	51.0	51.0
Total Split (%)	43.3%	43.3%	43.3%	43.3%	43.3%	14.2%	45.7%	45.7%	11.0%	42.5%	42.5%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 115.9
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	463	289	39	252	34	165	1095	68	82	1112	175
Future Volume (veh/h)	265	463	289	39	252	34	165	1095	68	82	1112	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	279	487	222	41	265	30	174	1153	64	86	1171	152
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	326	683	579	167	601	68	184	1424	633	106	1258	561
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.11	0.42	0.42	0.07	0.37	0.37
Sat Flow, veh/h	1040	1800	1525	710	1586	179	1619	3420	1522	1619	3420	1525
Grp Volume(v), veh/h	279	487	222	41	0	295	174	1153	64	86	1171	152
Grp Sat Flow(s),veh/h/ln	1040	1800	1525	710	0	1765	1619	1710	1522	1619	1710	1525
Q Serve(g_s), s	30.2	27.3	12.5	6.2	0.0	14.8	12.7	35.2	3.0	6.2	39.1	8.3
Cycle Q Clear(g_c), s	45.0	27.3	12.5	33.5	0.0	14.8	12.7	35.2	3.0	6.2	39.1	8.3
Prop In Lane	1.00		1.00	1.00		0.10	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	326	683	579	167	0	670	184	1424	633	106	1258	561
V/C Ratio(X)	0.86	0.71	0.38	0.25	0.00	0.44	0.94	0.81	0.10	0.81	0.93	0.27
Avail Cap(c_a), veh/h	326	683	579	167	0	670	184	1424	633	132	1297	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	31.3	26.7	45.6	0.0	27.4	52.2	30.5	21.1	54.7	36.1	26.3
Incr Delay (d2), s/veh	19.6	3.5	0.4	0.8	0.0	0.5	49.8	3.6	0.1	21.1	11.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	11.9	4.5	1.1	0.0	6.1	7.5	14.0	1.0	3.1	17.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.6	34.8	27.2	46.3	0.0	27.9	102.0	34.1	21.2	75.8	47.9	26.6
LnGrp LOS	E	C	C	D	A	C	F	C	C	E	D	C
Approach Vol, veh/h		988			336			1391			1409	
Approach Delay, s/veh		41.5			30.1			42.0			47.3	
Approach LOS		D			C			D			D	

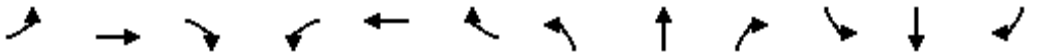
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.2	55.4		52.0	17.0	49.6		52.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	9.7	48.8		45.0	13.5	45.0		45.0				
Max Q Clear Time (g_c+I1), s	8.2	37.2		47.0	14.7	41.1		35.5				
Green Ext Time (p_c), s	0.0	5.6		0.0	0.0	2.6		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			42.7									
HCM 6th LOS			D									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	37	157	203	8	21	104	1155	17	44	1269	62
Future Volume (vph)	37	157	203	8	21	104	1155	17	44	1269	62
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	46.8	46.8	46.8	46.8	46.8	14.0	63.2	63.2	10.0	59.2	59.2
Total Split (%)	39.0%	39.0%	39.0%	39.0%	39.0%	11.7%	52.7%	52.7%	8.3%	49.3%	49.3%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 85.8
Natural Cycle: 105
Control Type: Actuated-Uncoordinated

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	157	203	8	21	9	104	1155	17	44	1269	62
Future Volume (veh/h)	37	157	203	8	21	9	104	1155	17	44	1269	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	42	176	112	9	24	7	117	1298	18	49	1426	58
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	282	256	217	166	190	55	146	2015	899	74	1863	814
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.09	0.59	0.59	0.05	0.54	0.54
Sat Flow, veh/h	1322	1800	1525	1047	1339	391	1619	3420	1525	1619	3420	1494
Grp Volume(v), veh/h	42	176	112	9	0	31	117	1298	18	49	1426	58
Grp Sat Flow(s),veh/h/ln	1322	1800	1525	1047	0	1730	1619	1710	1525	1619	1710	1494
Q Serve(g_s), s	1.8	5.8	4.3	0.5	0.0	1.0	4.5	15.8	0.3	1.9	20.4	1.2
Cycle Q Clear(g_c), s	2.8	5.8	4.3	6.4	0.0	1.0	4.5	15.8	0.3	1.9	20.4	1.2
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	282	256	217	166	0	246	146	2015	899	74	1863	814
V/C Ratio(X)	0.15	0.69	0.52	0.05	0.00	0.13	0.80	0.64	0.02	0.66	0.77	0.07
Avail Cap(c_a), veh/h	978	1204	1020	717	0	1157	271	3131	1396	168	2913	1272
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	25.6	24.9	28.6	0.0	23.5	28.0	8.5	5.4	29.5	11.2	6.8
Incr Delay (d2), s/veh	0.2	2.4	1.4	0.1	0.0	0.2	7.3	0.3	0.0	7.3	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.4	1.5	0.1	0.0	0.4	1.8	3.4	0.1	0.8	5.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.9	28.1	26.4	28.7	0.0	23.7	35.4	8.9	5.4	36.8	11.8	6.8
LnGrp LOS	C	C	C	C	A	C	D	A	A	D	B	A
Approach Vol, veh/h		330			40			1433			1533	
Approach Delay, s/veh		27.1			24.8			11.0			12.4	
Approach LOS		C			C			B			B	

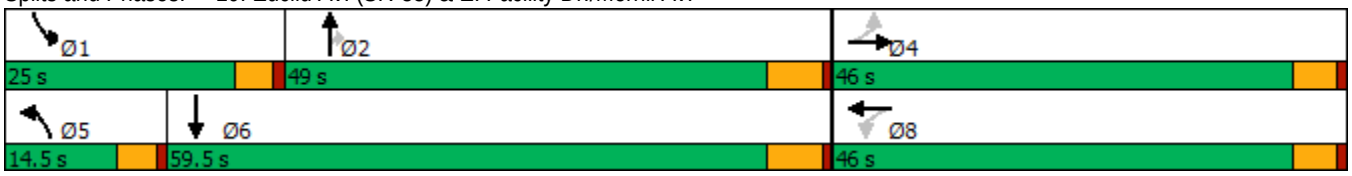
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	42.7		13.7	9.2	39.9		13.7				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	6.5	57.5		42.0	10.5	53.5		42.0				
Max Q Clear Time (g_c+I1), s	3.9	17.8		7.8	6.5	22.4		8.4				
Green Ext Time (p_c), s	0.0	10.7		1.1	0.1	11.8		0.1				

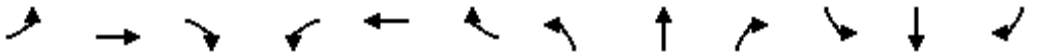
Intersection Summary			
HCM 6th Ctrl Delay		13.4	
HCM 6th LOS		B	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	11	29	219	2	4	1136	238	282	1155
Future Volume (vph)	11	29	219	2	4	1136	238	282	1155
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	14.5	49.0	49.0	25.0	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	12.1%	40.8%	40.8%	20.8%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 119.2
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	29	12	219	2	217	4	1136	238	282	1155	1
Future Volume (veh/h)	11	29	12	219	2	217	4	1136	238	282	1155	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	12	32	12	241	2	228	4	1248	197	310	1269	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	124	317	110	297	2	237	17	1241	553	280	1796	0
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.01	0.36	0.36	0.17	0.53	0.00
Sat Flow, veh/h	262	950	331	753	6	712	1619	3420	1525	1619	3510	0
Grp Volume(v), veh/h	56	0	0	471	0	0	4	1248	197	310	1269	0
Grp Sat Flow(s),veh/h/ln	1543	0	0	1471	0	0	1619	1710	1525	1619	1710	0
Q Serve(g_s), s	0.0	0.0	0.0	34.5	0.0	0.0	0.3	43.0	11.2	20.5	33.2	0.0
Cycle Q Clear(g_c), s	2.6	0.0	0.0	37.2	0.0	0.0	0.3	43.0	11.2	20.5	33.2	0.0
Prop In Lane	0.21		0.21	0.51		0.48	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	552	0	0	537	0	0	17	1241	553	280	1796	0
V/C Ratio(X)	0.10	0.00	0.00	0.88	0.00	0.00	0.24	1.01	0.36	1.11	0.71	0.00
Avail Cap(c_a), veh/h	571	0	0	554	0	0	137	1241	553	280	1796	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.2	0.0	0.0	38.5	0.0	0.0	58.2	37.8	27.6	49.0	21.2	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	13.9	0.0	0.0	2.6	27.0	0.4	85.6	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	14.6	0.0	0.0	0.1	21.2	3.9	14.5	12.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.2	0.0	0.0	52.4	0.0	0.0	60.8	64.8	28.0	134.7	22.5	0.0
LnGrp LOS	C	A	A	D	A	A	E	F	C	F	C	A
Approach Vol, veh/h		56			471			1449			1579	
Approach Delay, s/veh		27.2			52.4			59.8			44.5	
Approach LOS		C			D			E			D	

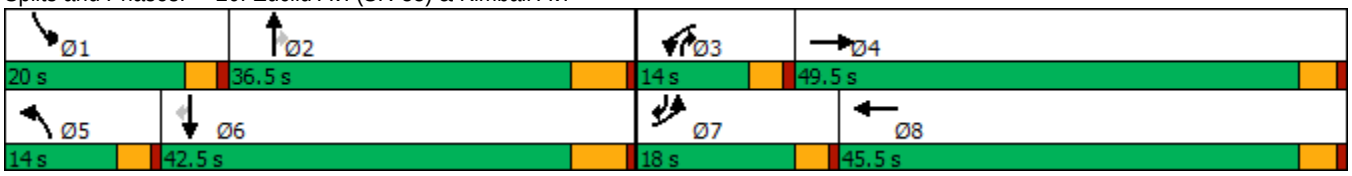
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.0	49.0		44.5	5.7	68.3		44.5				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	20.5	43.0		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	22.5	45.0		4.6	2.3	35.2		39.2				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	7.8		0.4				

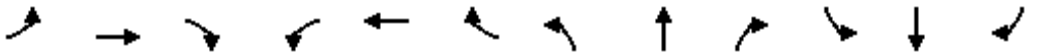
Intersection Summary												
HCM 6th Ctrl Delay			51.5									
HCM 6th LOS			D									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	345	743	58	305	60	815	36	412	759	230
Future Volume (vph)	345	743	58	305	60	815	36	412	759	230
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	18.0	49.5	14.0	45.5	14.0	36.5	14.0	20.0	42.5	18.0
Total Split (%)	15.0%	41.3%	11.7%	37.9%	11.7%	30.4%	11.7%	16.7%	35.4%	15.0%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 104.7
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	345	743	45	58	305	165	60	815	36	412	759	230
Future Volume (veh/h)	345	743	45	58	305	165	60	815	36	412	759	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	356	766	43	60	314	132	62	840	22	425	782	139
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	410	944	53	133	544	224	135	958	553	478	1225	758
Arrive On Green	0.14	0.29	0.29	0.08	0.23	0.23	0.08	0.28	0.28	0.16	0.36	0.36
Sat Flow, veh/h	2956	3292	185	1619	2362	973	1619	3420	1525	2956	3420	1524
Grp Volume(v), veh/h	356	398	411	60	225	221	62	840	22	425	782	139
Grp Sat Flow(s),veh/h/ln	1478	1710	1767	1619	1710	1625	1619	1710	1525	1478	1710	1524
Q Serve(g_s), s	11.5	21.1	21.1	3.4	11.4	11.8	3.6	22.9	0.9	13.7	18.6	4.9
Cycle Q Clear(g_c), s	11.5	21.1	21.1	3.4	11.4	11.8	3.6	22.9	0.9	13.7	18.6	4.9
Prop In Lane	1.00		0.10	1.00		0.60	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	410	490	506	133	393	374	135	958	553	478	1225	758
V/C Ratio(X)	0.87	0.81	0.81	0.45	0.57	0.59	0.46	0.88	0.04	0.89	0.64	0.18
Avail Cap(c_a), veh/h	424	788	814	166	718	682	166	1068	602	484	1278	782
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.2	32.4	32.4	42.7	33.3	33.5	42.7	33.5	20.1	40.1	26.1	13.6
Incr Delay (d2), s/veh	16.0	3.4	3.3	0.9	0.5	0.6	0.9	7.8	0.0	17.4	1.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	8.6	8.9	1.4	4.5	4.5	1.4	9.7	0.3	5.8	7.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.1	35.8	35.7	43.6	33.8	34.0	43.6	41.4	20.2	57.5	27.1	13.7
LnGrp LOS	E	D	D	D	C	C	D	D	C	E	C	B
Approach Vol, veh/h		1165			506			924			1346	
Approach Delay, s/veh		42.3			35.1			41.0			35.3	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.8	33.3	12.0	32.5	12.1	41.0	17.6	27.0
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	16.0	30.5	10.0	45.0	10.0	36.5	14.0	41.0
Max Q Clear Time (g_c+I1), s	15.7	24.9	5.4	23.1	5.6	20.6	13.5	13.8
Green Ext Time (p_c), s	0.0	2.4	0.0	4.6	0.0	4.6	0.0	1.5

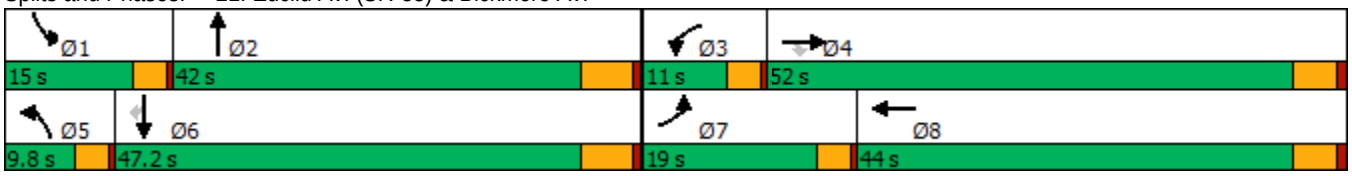
Intersection Summary	
HCM 6th Ctrl Delay	38.7
HCM 6th LOS	D

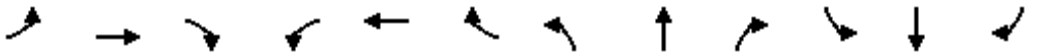
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	115	96	55	35	21	22	630	75	665	134
Future Volume (vph)	115	96	55	35	21	22	630	75	665	134
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	19.0	52.0	52.0	11.0	44.0	9.8	42.0	15.0	47.2	47.2
Total Split (%)	15.8%	43.3%	43.3%	9.2%	36.7%	8.2%	35.0%	12.5%	39.3%	39.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 66.3
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	96	55	35	21	49	22	630	73	75	665	134
Future Volume (veh/h)	115	96	55	35	21	49	22	630	73	75	665	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	125	104	45	38	23	25	24	685	56	82	723	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	156	299	253	69	89	96	47	947	77	119	1164	519
Arrive On Green	0.10	0.17	0.17	0.04	0.11	0.11	0.03	0.30	0.30	0.07	0.34	0.34
Sat Flow, veh/h	1619	1800	1525	1619	789	857	1619	3201	262	1619	3420	1525
Grp Volume(v), veh/h	125	104	45	38	0	48	24	366	375	82	723	114
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1646	1619	1710	1753	1619	1710	1525
Q Serve(g_s), s	3.1	2.1	1.1	1.0	0.0	1.1	0.6	7.9	8.0	2.1	7.3	2.2
Cycle Q Clear(g_c), s	3.1	2.1	1.1	1.0	0.0	1.1	0.6	7.9	8.0	2.1	7.3	2.2
Prop In Lane	1.00		1.00	1.00		0.52	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	156	299	253	69	0	185	47	506	519	119	1164	519
V/C Ratio(X)	0.80	0.35	0.18	0.55	0.00	0.26	0.51	0.72	0.72	0.69	0.62	0.22
Avail Cap(c_a), veh/h	605	2039	1728	293	0	1547	246	1504	1542	449	3437	1533
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.4	15.3	14.9	19.5	0.0	16.8	19.9	13.1	13.1	18.8	11.4	9.8
Incr Delay (d2), s/veh	3.6	0.3	0.1	2.5	0.0	0.3	3.1	0.7	0.7	2.6	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.7	0.3	0.3	0.0	0.4	0.2	2.0	2.1	0.7	1.7	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.0	15.6	15.0	22.0	0.0	17.1	23.0	13.8	13.8	21.4	11.7	9.8
LnGrp LOS	C	B	B	C	A	B	C	B	B	C	B	A
Approach Vol, veh/h		274			86			765			919	
Approach Delay, s/veh		18.4			19.3			14.1			12.3	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	17.8	5.3	11.9	4.7	19.6	7.5	9.7
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	11.5	36.5	7.5	47.0	6.3	41.7	15.5	39.0
Max Q Clear Time (g_c+I1), s	4.1	10.0	3.0	4.1	2.6	9.3	5.1	3.1
Green Ext Time (p_c), s	0.0	2.3	0.0	0.4	0.0	2.9	0.1	0.1

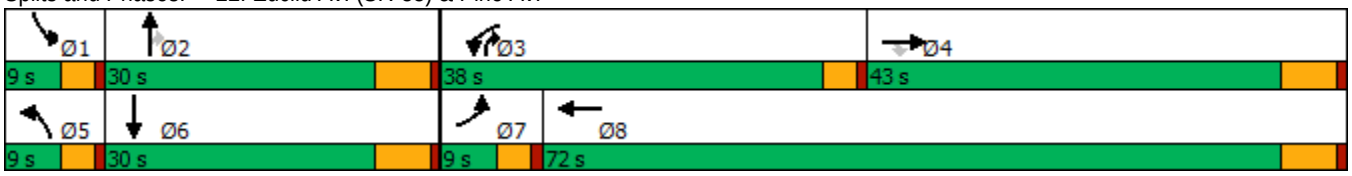
Intersection Summary	
HCM 6th Ctrl Delay	14.1
HCM 6th LOS	B

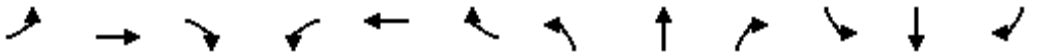
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	5	424	90	517	64	54	674	1061	50	723
Future Volume (vph)	5	424	90	517	64	54	674	1061	50	723
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	38.0	72.0	9.0	30.0	38.0	9.0	30.0
Total Split (%)	7.5%	35.8%	35.8%	31.7%	60.0%	7.5%	25.0%	31.7%	7.5%	25.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 115.3
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	424	90	517	64	22	54	674	1061	50	723	4
Future Volume (veh/h)	5	424	90	517	64	22	54	674	1061	50	723	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	5	433	0	528	65	20	55	688	666	51	738	4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	11	504		604	631	194	68	888	708	64	898	5
Arrive On Green	0.01	0.28	0.00	0.20	0.48	0.48	0.04	0.26	0.26	0.04	0.26	0.26
Sat Flow, veh/h	1619	1800	1525	2956	1321	406	1619	3420	1525	1619	3488	19
Grp Volume(v), veh/h	5	433	0	528	0	85	55	688	666	51	362	380
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1727	1619	1710	1525	1619	1710	1797
Q Serve(g_s), s	0.3	21.1	0.0	16.0	0.0	2.5	3.1	17.2	24.0	2.9	18.4	18.4
Cycle Q Clear(g_c), s	0.3	21.1	0.0	16.0	0.0	2.5	3.1	17.2	24.0	2.9	18.4	18.4
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	11	504		604	0	825	68	888	708	64	440	462
V/C Ratio(X)	0.47	0.86		0.87	0.00	0.10	0.81	0.77	0.94	0.80	0.82	0.82
Avail Cap(c_a), veh/h	88	721		1088	0	1233	88	888	708	88	444	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.7	31.5	0.0	35.6	0.0	13.3	43.9	31.7	23.6	44.0	32.3	32.3
Incr Delay (d2), s/veh	11.7	8.6	0.0	1.6	0.0	0.1	27.3	3.9	20.5	20.9	11.0	10.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	9.7	0.0	5.5	0.0	0.9	1.7	6.9	15.8	1.5	8.2	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.5	40.1	0.0	37.2	0.0	13.3	71.2	35.6	44.0	64.9	43.3	42.8
LnGrp LOS	E	D		D	A	B	E	D	D	E	D	D
Approach Vol, veh/h		438	A		613			1409			793	
Approach Delay, s/veh		40.3			33.9			41.0			44.4	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	30.0	22.9	31.9	7.9	29.8	4.6	50.1
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.0	24.0	34.0	37.0	5.0	24.0	5.0	66.0
Max Q Clear Time (g_c+I1), s	4.9	26.0	18.0	23.1	5.1	20.4	2.3	4.5
Green Ext Time (p_c), s	0.0	0.0	0.9	2.8	0.0	0.9	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	40.4
HCM 6th LOS	D

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	22.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	470	22	6	281	6	13	88	10	17	79	46
Future Vol, veh/h	68	470	22	6	281	6	13	88	10	17	79	46
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	72	495	23	6	296	6	14	93	11	18	83	48
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	32.4	14	11.6	11.8
HCM LOS	D	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	12%	2%	12%
Vol Thru, %	79%	84%	96%	56%
Vol Right, %	9%	4%	2%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	111	560	293	142
LT Vol	13	68	6	17
Through Vol	88	470	281	79
RT Vol	10	22	6	46
Lane Flow Rate	117	589	308	149
Geometry Grp	1	1	1	1
Degree of Util (X)	0.217	0.862	0.485	0.269
Departure Headway (Hd)	6.701	5.267	5.656	6.472
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	539	684	629	559
Service Time	4.71	3.347	3.753	4.472
HCM Lane V/C Ratio	0.217	0.861	0.49	0.267
HCM Control Delay	11.6	32.4	14	11.8
HCM Lane LOS	B	D	B	B
HCM 95th-tile Q	0.8	10	2.7	1.1

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	206	4	2	54	9	5	81	7	20	63	13
Future Vol, veh/h	15	206	4	2	54	9	5	81	7	20	63	13
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	17	237	5	2	62	10	6	93	8	23	72	15
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.7	8.2	8.6	8.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	7%	3%	21%
Vol Thru, %	87%	92%	83%	66%
Vol Right, %	8%	2%	14%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	93	225	65	96
LT Vol	5	15	2	20
Through Vol	81	206	54	63
RT Vol	7	4	9	13
Lane Flow Rate	107	259	75	110
Geometry Grp	1	1	1	1
Degree of Util (X)	0.142	0.324	0.096	0.146
Departure Headway (Hd)	4.778	4.515	4.648	4.768
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	748	797	769	750
Service Time	2.82	2.547	2.69	2.81
HCM Lane V/C Ratio	0.143	0.325	0.098	0.147
HCM Control Delay	8.6	9.7	8.2	8.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	1.4	0.3	0.5

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	76	634	441	29	36	30
Future Vol, veh/h	76	634	441	29	36	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	81	674	469	31	38	32

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	500	0	-	0	1321	485
Stage 1	-	-	-	-	485	-
Stage 2	-	-	-	-	836	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1075	-	-	-	252	653
Stage 1	-	-	-	-	623	-
Stage 2	-	-	-	-	429	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1075	-	-	-	222	653
Mov Cap-2 Maneuver	-	-	-	-	222	-
Stage 1	-	-	-	-	548	-
Stage 2	-	-	-	-	429	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	19.6
HCM LOS			C

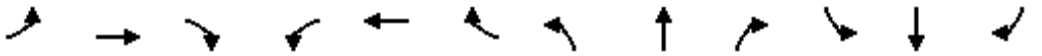
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1075	-	-	-	317
HCM Lane V/C Ratio	0.075	-	-	-	0.221
HCM Control Delay (s)	8.6	0	-	-	19.6
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.8

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	328	204	837	952	636
Future Volume (vph)	0	328	204	837	952	636
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	38.0	38.0	28.0	82.0	54.0	54.0
Total Split (%)	31.7%	31.7%	23.3%	68.3%	45.0%	45.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	280	0	328	204	837	0	0	952	636
Future Volume (veh/h)	0	0	0	280	0	328	204	837	0	0	952	636
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				292	0	162	212	872	0	0	992	487
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				338	0	301	237	2587	0	0	1976	862
Arrive On Green				0.19	0.00	0.19	0.26	1.00	0.00	0.00	0.55	0.55
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1575
Grp Volume(v), veh/h				292	0	162	212	872	0	0	992	487
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1575
Q Serve(g_s), s				18.8	0.0	10.9	13.6	0.0	0.0	0.0	20.6	24.3
Cycle Q Clear(g_c), s				18.8	0.0	10.9	13.6	0.0	0.0	0.0	20.6	24.3
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				338	0	301	237	2587	0	0	1976	862
V/C Ratio(X)				0.86	0.00	0.54	0.89	0.34	0.00	0.00	0.50	0.56
Avail Cap(c_a), veh/h				486	0	432	353	2587	0	0	1976	862
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.44	0.44	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				47.3	0.0	44.1	43.5	0.0	0.0	0.0	17.0	17.8
Incr Delay (d2), s/veh				10.8	0.0	1.5	6.6	0.2	0.0	0.0	0.9	2.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				9.2	0.0	4.4	5.5	0.1	0.0	0.0	8.1	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				58.1	0.0	45.6	50.1	0.2	0.0	0.0	17.9	20.5
LnGrp LOS				E	A	D	D	A	A	A	B	C
Approach Vol, veh/h					454			1084			1479	
Approach Delay, s/veh					53.7			9.9			18.7	
Approach LOS					D			A			B	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		91.8			20.3	71.5		28.2				
Change Period (Y+Rc), s		5.8			4.6	5.8		5.8				
Max Green Setting (Gmax), s		76.2			23.4	48.2		32.2				
Max Q Clear Time (g_c+I1), s		2.0			15.6	26.3		20.8				
Green Ext Time (p_c), s		6.7			0.2	8.9		1.6				

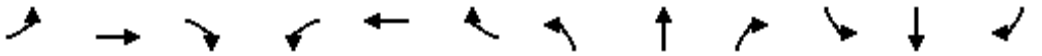
Intersection Summary												
HCM 6th Ctrl Delay			20.8									
HCM 6th LOS			C									

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	323	636	418	813
Future Volume (vph)	0	323	636	418	813
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	38.0	38.0	44.0	38.0	82.0
Total Split (%)	31.7%	31.7%	36.7%	31.7%	68.3%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	406	0	323	0	0	0	0	636	299	418	813	0
Future Volume (veh/h)	406	0	323	0	0	0	0	636	299	418	813	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	437	0	260				0	684	239	449	874	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	468	0	416				0	908	317	466	2328	0
Arrive On Green	0.26	0.00	0.26				0.00	0.35	0.35	0.52	1.00	0.00
Sat Flow, veh/h	1810	0	1610				0	2697	909	1810	3705	0
Grp Volume(v), veh/h	437	0	260				0	474	449	449	874	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1706	1810	1805	0
Q Serve(g_s), s	28.3	0.0	17.1				0.0	27.9	27.9	28.7	0.0	0.0
Cycle Q Clear(g_c), s	28.3	0.0	17.1				0.0	27.9	27.9	28.7	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.53	1.00		0.00
Lane Grp Cap(c), veh/h	468	0	416				0	630	595	466	2328	0
V/C Ratio(X)	0.93	0.00	0.62				0.00	0.75	0.75	0.96	0.38	0.00
Avail Cap(c_a), veh/h	486	0	432				0	630	595	504	2328	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.82	0.82	0.82	0.82	0.00
Uniform Delay (d), s/veh	43.5	0.0	39.3				0.0	34.5	34.5	28.6	0.0	0.0
Incr Delay (d2), s/veh	24.9	0.0	2.7				0.0	6.7	7.1	25.9	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.4	0.0	6.9				0.0	12.9	12.2	11.4	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.4	0.0	42.0				0.0	41.3	41.6	54.5	0.4	0.0
LnGrp LOS	E	A	D				A	D	D	D	A	A
Approach Vol, veh/h		697						923			1323	
Approach Delay, s/veh		58.6						41.4			18.7	
Approach LOS		E						D			B	

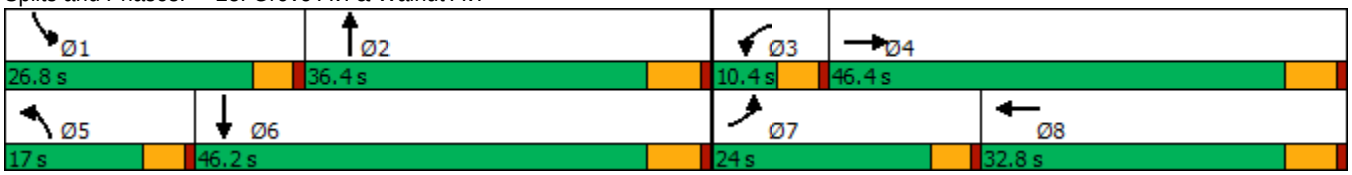
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	35.5	47.7		36.8		83.2
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	33.4	38.2		32.2		76.2
Max Q Clear Time (g_c+I1), s	30.7	29.9		30.3		2.0
Green Ext Time (p_c), s	0.2	3.5		0.7		6.7

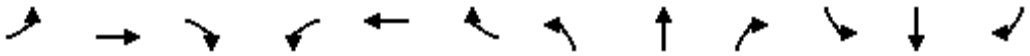
Intersection Summary	
HCM 6th Ctrl Delay	35.3
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	146	283	16	153	79	566	168	672
Future Volume (vph)	146	283	16	153	79	566	168	672
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	24.0	46.4	10.4	32.8	17.0	36.4	26.8	46.2
Total Split (%)	20.0%	38.7%	8.7%	27.3%	14.2%	30.3%	22.3%	38.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 96.3
Natural Cycle: 85
Control Type: Actuated-Uncoordinated

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	283	77	16	153	121	79	566	20	168	672	165
Future Volume (veh/h)	146	283	77	16	153	121	79	566	20	168	672	165
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	152	295	65	17	159	91	82	590	11	175	700	104
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	183	591	128	31	251	135	102	1376	26	208	1391	207
Arrive On Green	0.11	0.21	0.21	0.02	0.12	0.12	0.06	0.40	0.40	0.13	0.47	0.47
Sat Flow, veh/h	1619	2794	607	1619	2129	1149	1619	3434	64	1619	2987	443
Grp Volume(v), veh/h	152	179	181	17	126	124	82	294	307	175	401	403
Grp Sat Flow(s),veh/h/ln	1619	1710	1691	1619	1710	1568	1619	1710	1788	1619	1710	1720
Q Serve(g_s), s	8.0	8.0	8.2	0.9	6.1	6.6	4.3	10.8	10.8	9.2	14.2	14.2
Cycle Q Clear(g_c), s	8.0	8.0	8.2	0.9	6.1	6.6	4.3	10.8	10.8	9.2	14.2	14.2
Prop In Lane	1.00		0.36	1.00		0.73	1.00		0.04	1.00		0.26
Lane Grp Cap(c), veh/h	183	362	358	31	201	185	102	685	716	208	797	801
V/C Ratio(X)	0.83	0.49	0.51	0.54	0.63	0.67	0.80	0.43	0.43	0.84	0.50	0.50
Avail Cap(c_a), veh/h	362	801	792	108	532	488	232	685	716	414	797	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	30.1	30.2	42.1	36.4	36.7	40.1	18.8	18.8	36.9	16.2	16.2
Incr Delay (d2), s/veh	3.6	1.0	1.1	5.3	3.2	4.2	5.3	2.0	1.9	3.5	2.3	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	3.2	3.2	0.4	2.6	2.6	1.8	4.2	4.4	3.6	5.4	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	31.1	31.3	47.5	39.6	40.9	45.4	20.8	20.7	40.4	18.4	18.4
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	B	B
Approach Vol, veh/h		512			267			683			979	
Approach Delay, s/veh		34.2			40.7			23.7			22.3	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	40.5	6.3	24.2	10.1	46.2	14.4	16.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	22.2	30.6	5.8	40.6	12.4	40.4	19.4	27.0
Max Q Clear Time (g_c+I1), s	11.2	12.8	2.9	10.2	6.3	16.2	10.0	8.6
Green Ext Time (p_c), s	0.2	3.0	0.0	1.9	0.0	4.8	0.1	1.2

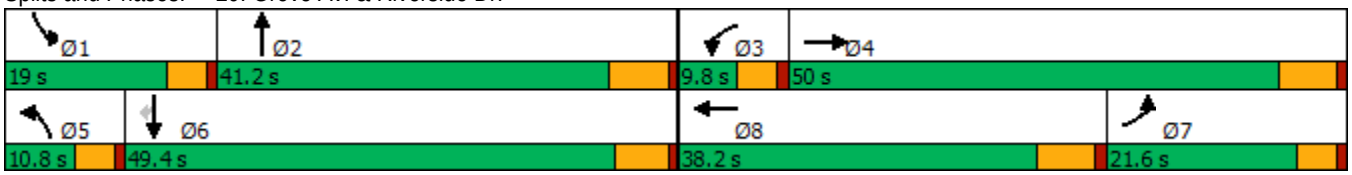
Intersection Summary	
HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

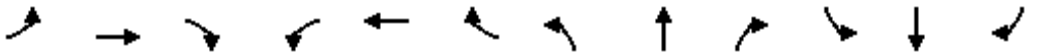
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	160	565	37	531	22	377	150	339	168
Future Volume (vph)	160	565	37	531	22	377	150	339	168
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	21.6	50.0	9.8	38.2	10.8	41.2	19.0	49.4	49.4
Total Split (%)	18.0%	41.7%	8.2%	31.8%	9.0%	34.3%	15.8%	41.2%	41.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 114.9
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	565	19	37	531	103	22	377	66	150	339	168
Future Volume (veh/h)	160	565	19	37	531	103	22	377	66	150	339	168
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	167	589	19	39	553	61	23	393	52	156	353	118
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	269	623	20	50	654	72	37	479	63	181	714	605
Arrive On Green	0.17	0.36	0.36	0.03	0.21	0.21	0.02	0.31	0.31	0.11	0.40	0.40
Sat Flow, veh/h	1619	1733	56	1619	3106	342	1619	1557	206	1619	1800	1525
Grp Volume(v), veh/h	167	0	608	39	304	310	23	0	445	156	353	118
Grp Sat Flow(s),veh/h/ln	1619	0	1788	1619	1710	1738	1619	0	1763	1619	1800	1525
Q Serve(g_s), s	10.9	0.0	37.5	2.7	19.4	19.5	1.6	0.0	26.6	10.8	16.7	3.1
Cycle Q Clear(g_c), s	10.9	0.0	37.5	2.7	19.4	19.5	1.6	0.0	26.6	10.8	16.7	3.1
Prop In Lane	1.00		0.03	1.00		0.20	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	269	0	643	50	360	366	37	0	542	181	714	605
V/C Ratio(X)	0.62	0.00	0.95	0.77	0.84	0.85	0.63	0.00	0.82	0.86	0.49	0.20
Avail Cap(c_a), veh/h	269	0	689	74	481	489	88	0	542	205	714	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	0.0	35.3	54.7	43.1	43.2	55.1	0.0	36.5	49.7	25.8	6.6
Incr Delay (d2), s/veh	3.2	0.0	21.2	14.0	10.0	10.2	6.3	0.0	13.1	24.9	2.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	18.9	1.3	8.8	9.0	0.7	0.0	12.7	5.5	7.3	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.3	0.0	56.6	68.7	53.1	53.4	61.4	0.0	49.5	74.6	28.2	7.4
LnGrp LOS	D	A	E	E	D	D	E	A	D	E	C	A
Approach Vol, veh/h		775			653			468			627	
Approach Delay, s/veh		54.6			54.2			50.1			35.8	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.3	41.2	8.1	47.1	7.2	51.3	25.1	30.1
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	14.4	35.0	5.2	43.8	6.2	* 44	17.0	* 32
Max Q Clear Time (g_c+I1), s	12.8	28.6	4.7	39.5	3.6	18.7	12.9	21.5
Green Ext Time (p_c), s	0.0	1.3	0.0	1.4	0.0	2.3	0.1	2.4

Intersection Summary	
HCM 6th Ctrl Delay	49.0
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	21.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	74	176	25	9	38	38	35	384	19	35	334	21
Future Vol, veh/h	74	176	25	9	38	38	35	384	19	35	334	21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	77	183	26	9	40	40	36	400	20	36	348	22
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	17	11.7	25.6	21.5
HCM LOS	C	B	D	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	27%	11%	9%
Vol Thru, %	88%	64%	45%	86%
Vol Right, %	4%	9%	45%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	438	275	85	390
LT Vol	35	74	9	35
Through Vol	384	176	38	334
RT Vol	19	25	38	21
Lane Flow Rate	456	286	89	406
Geometry Grp	1	1	1	1
Degree of Util (X)	0.76	0.529	0.174	0.686
Departure Headway (Hd)	5.994	6.654	7.075	6.079
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	602	541	505	593
Service Time	4.046	4.715	5.158	4.133
HCM Lane V/C Ratio	0.757	0.529	0.176	0.685
HCM Control Delay	25.6	17	11.7	21.5
HCM Lane LOS	D	C	B	C
HCM 95th-tile Q	6.9	3.1	0.6	5.3

Intersection	
Intersection Delay, s/veh	19.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	96	138	86	2	45	36	21	323	30	52	247	53
Future Vol, veh/h	96	138	86	2	45	36	21	323	30	52	247	53
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	103	148	92	2	48	39	23	347	32	56	266	57
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	18.7	11.5	21.1	19.5
HCM LOS	C	B	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	30%	2%	15%
Vol Thru, %	86%	43%	54%	70%
Vol Right, %	8%	27%	43%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	374	320	83	352
LT Vol	21	96	2	52
Through Vol	323	138	45	247
RT Vol	30	86	36	53
Lane Flow Rate	402	344	89	378
Geometry Grp	1	1	1	1
Degree of Util (X)	0.679	0.606	0.172	0.641
Departure Headway (Hd)	6.075	6.339	6.946	6.098
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	595	568	513	590
Service Time	4.131	4.397	5.03	4.155
HCM Lane V/C Ratio	0.676	0.606	0.173	0.641
HCM Control Delay	21.1	18.7	11.5	19.5
HCM Lane LOS	C	C	B	C
HCM 95th-tile Q	5.2	4	0.6	4.6

Intersection	
Intersection Delay, s/veh	169.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	430	7	87	266	50	13	281	198	128	195	22
Future Vol, veh/h	43	430	7	87	266	50	13	281	198	128	195	22
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	46	462	8	94	286	54	14	302	213	138	210	24
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	215.5	132.9	213.9	86.4
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	9%	22%	37%
Vol Thru, %	57%	90%	66%	57%
Vol Right, %	40%	1%	12%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	492	480	403	345
LT Vol	13	43	87	128
Through Vol	281	430	266	195
RT Vol	198	7	50	22
Lane Flow Rate	529	516	433	371
Geometry Grp	1	1	1	1
Degree of Util (X)	1.37	1.371	1.147	0.984
Departure Headway (Hd)	10.88	11.204	11.867	12.493
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	339	330	312	293
Service Time	8.88	9.204	9.867	10.493
HCM Lane V/C Ratio	1.56	1.564	1.388	1.266
HCM Control Delay	213.9	215.5	132.9	86.4
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	22.8	22.3	14.5	10

Intersection	
Int Delay, s/veh	301

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	89	83	68	5	17	13	14	414	4	12	246	29
Future Vol, veh/h	89	83	68	5	17	13	14	414	4	12	246	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	25	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	99	92	76	6	19	14	16	1656	4	13	273	32

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2022	2007	289	2089	2021	1658	305	0	0	1660	0	0
Stage 1	315	315	-	1690	1690	-	-	-	-	-	-	-
Stage 2	1707	1692	-	399	331	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 44	~ 60	755	39	59	122	1267	-	-	393	-	-
Stage 1	700	659	-	120	151	-	-	-	-	-	-	-
Stage 2	117	151	-	631	649	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 23	~ 48	755	-	47	122	1267	-	-	393	-	-
Mov Cap-2 Maneuver	~ 23	~ 48	-	-	47	-	-	-	-	-	-	-
Stage 1	585	633	-	100	126	-	-	-	-	-	-	-
Stage 2	~ 73	126	-	466	623	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, $	2595.6		0.1	0.6
HCM LOS	F	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1267	-	-	42	-	393	-	-
HCM Lane V/C Ratio	0.012	-	-	6.349	-	0.034	-	-
HCM Control Delay (s)	7.9	0	-	$ 2595.6	-	14.5	0	-
HCM Lane LOS	A	A	-	F	-	B	A	-
HCM 95th %tile Q(veh)	0	-	-	31.3	-	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	94
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	177	501	373	255	225	93
Future Vol, veh/h	177	501	373	255	225	93
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	184	522	389	266	234	97
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	136.5	84.3	22.7
HCM LOS	F	F	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	26%	0%	71%
Vol Thru, %	74%	59%	0%
Vol Right, %	0%	41%	29%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	678	628	318
LT Vol	177	0	225
Through Vol	501	373	0
RT Vol	0	255	93
Lane Flow Rate	706	654	331
Geometry Grp	1	1	1
Degree of Util (X)	1.221	1.077	0.638
Departure Headway (Hd)	6.402	6.257	7.454
Convergence, Y/N	Yes	Yes	Yes
Cap	572	582	487
Service Time	4.402	4.257	5.454
HCM Lane V/C Ratio	1.234	1.124	0.68
HCM Control Delay	136.5	84.3	22.7
HCM Lane LOS	F	F	C
HCM 95th-tile Q	25.6	18.3	4.4

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	20	721	1	15	378	30	3	20	49	64	13	10
Future Vol, veh/h	20	721	1	15	378	30	3	20	49	64	13	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	21	759	1	16	398	32	3	21	52	67	14	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	430	0	0	760	0	0	1261	1264	760	1284	1248	414
Stage 1	-	-	-	-	-	-	802	802	-	446	446	-
Stage 2	-	-	-	-	-	-	459	462	-	838	802	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1140	-	-	861	-	-	148	171	409	143	175	643
Stage 1	-	-	-	-	-	-	381	399	-	595	577	-
Stage 2	-	-	-	-	-	-	586	568	-	364	399	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1140	-	-	861	-	-	131	161	409	108	165	643
Mov Cap-2 Maneuver	-	-	-	-	-	-	131	161	-	108	165	-
Stage 1	-	-	-	-	-	-	369	386	-	576	563	-
Stage 2	-	-	-	-	-	-	548	554	-	291	386	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	23.5	85.2
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	270	1140	-	-	861	-	-	127
HCM Lane V/C Ratio	0.281	0.018	-	-	0.018	-	-	0.721
HCM Control Delay (s)	23.5	8.2	0	-	9.3	0	-	85.2
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	1.1	0.1	-	-	0.1	-	-	4.1

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	62	0	0	32	31	0	0	0	21	0	3
Future Vol, veh/h	40	62	0	0	32	31	0	0	0	21	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16965	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	43	67	0	0	35	34	0	0	0	23	0	3

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	69	0	-	-	-	0			205	205	52
Stage 1	-	-	-	-	-	-			52	52	-
Stage 2	-	-	-	-	-	-			153	153	-
Critical Hdwy	4.1	-	-	-	-	-			6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-			5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.4	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-			3.5	4	3.3
Pot Cap-1 Maneuver	1545	-	0	0	-	-			788	695	1021
Stage 1	-	-	0	0	-	-			976	856	-
Stage 2	-	-	0	0	-	-			880	775	-
Platoon blocked, %		-			-	-					
Mov Cap-1 Maneuver	1545	-	-	-	-	-			765	0	1021
Mov Cap-2 Maneuver	-	-	-	-	-	-			765	0	-
Stage 1	-	-	-	-	-	-			948	0	-
Stage 2	-	-	-	-	-	-			880	0	-

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1545	-	-	-	790
HCM Lane V/C Ratio	0.028	-	-	-	0.033
HCM Control Delay (s)	7.4	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑			↕				
Traffic Vol, veh/h	0	617	110	87	525	0	102	0	121	0	0	0
Future Vol, veh/h	0	617	110	87	525	0	102	0	121	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	25	91	91	91	91	91	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	678	121	96	577	0	112	0	133	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	799	0	0	1447	1447	678
Stage 1	-	-	-	-	-	-	678	678	-
Stage 2	-	-	-	-	-	-	769	769	-
Critical Hdwy	-	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	833	-	0	146	133	456
Stage 1	0	-	-	-	-	0	508	455	-
Stage 2	0	-	-	-	-	0	461	413	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	833	-	-	129	0	456
Mov Cap-2 Maneuver	-	-	-	-	-	-	264	0	-
Stage 1	-	-	-	-	-	-	508	0	-
Stage 2	-	-	-	-	-	-	408	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	38.1
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	342	-	-	833	-
HCM Lane V/C Ratio	0.717	-	-	0.115	-
HCM Control Delay (s)	38.1	-	-	9.9	-
HCM Lane LOS	E	-	-	A	-
HCM 95th %tile Q(veh)	5.3	-	-	0.4	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	678	5	10	456	14	12	0	18	36	0	144
Future Vol, veh/h	55	678	5	10	456	14	12	0	18	36	0	144
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	63	770	6	11	518	16	14	0	20	41	0	164

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	534	0	0	777	0	0	1530	1456	389	1059	1451	526
Stage 1	-	-	-	-	-	-	900	900	-	548	548	-
Stage 2	-	-	-	-	-	-	630	556	-	511	903	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1044	-	-	848	-	-	89	131	615	192	132	556
Stage 1	-	-	-	-	-	-	304	360	-	524	520	-
Stage 2	-	-	-	-	-	-	473	516	-	519	359	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1044	-	-	847	-	-	59	121	614	175	122	556
Mov Cap-2 Maneuver	-	-	-	-	-	-	152	229	-	297	234	-
Stage 1	-	-	-	-	-	-	285	338	-	493	513	-
Stage 2	-	-	-	-	-	-	329	509	-	471	337	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.2	19.8	18.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	277	1044	-	-	847	-	-	473
HCM Lane V/C Ratio	0.123	0.06	-	-	0.013	-	-	0.432
HCM Control Delay (s)	19.8	8.7	-	-	9.3	-	-	18.3
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0.2	-	-	0	-	-	2.1

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	705	0	20	411	18	0	2	20	47	4	69
Future Vol, veh/h	27	705	0	20	411	18	0	2	20	47	4	69
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	200	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	30	783	0	22	457	20	0	2	22	52	4	77

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	477	0	0	784	0	0	1396	1365	393	964	1355	467
Stage 1	-	-	-	-	-	-	844	844	-	511	511	-
Stage 2	-	-	-	-	-	-	552	521	-	453	844	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1096	-	-	843	-	-	111	149	612	224	151	600
Stage 1	-	-	-	-	-	-	328	382	-	549	540	-
Stage 2	-	-	-	-	-	-	522	535	-	561	382	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1096	-	-	842	-	-	92	141	611	206	143	600
Mov Cap-2 Maneuver	-	-	-	-	-	-	205	255	-	330	253	-
Stage 1	-	-	-	-	-	-	319	371	-	534	526	-
Stage 2	-	-	-	-	-	-	440	521	-	523	371	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4	12	14.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	542	1096	-	-	842	-	-	330	558
HCM Lane V/C Ratio	-	0.045	0.027	-	-	0.026	-	-	0.158	0.145
HCM Control Delay (s)	0	12	8.4	-	-	9.4	-	-	17.9	12.5
HCM Lane LOS	A	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	-	0.1	0.1	-	-	0.1	-	-	0.6	0.5

Intersection	
Intersection Delay, s/veh	78.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	0	733	0	0	0	288	21	0	0	49	91
Future Vol, veh/h	14	0	733	0	0	0	288	21	0	0	49	91
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	15	0	772	0	0	0	303	22	0	0	52	96
Number of Lanes	1	0	1	0	0	0	1	2	0	0	2	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	3
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	3	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	3	0	2
HCM Control Delay	115.1	22.6	10
HCM LOS	F	C	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	100%	100%	0%	0%	100%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	288	11	11	14	733	25	25	91
LT Vol	288	0	0	14	0	0	0	0
Through Vol	0	11	11	0	0	25	25	0
RT Vol	0	0	0	0	733	0	0	91
Lane Flow Rate	303	11	11	15	772	26	26	96
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.633	0.022	0.016	0.027	1.182	0.055	0.055	0.137
Departure Headway (Hd)	8.021	7.505	5.749	6.709	5.513	8.18	8.18	5.677
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	455	480	626	537	664	440	440	636
Service Time	5.721	5.205	3.449	4.409	3.213	5.88	5.88	3.377
HCM Lane V/C Ratio	0.666	0.023	0.018	0.028	1.163	0.059	0.059	0.151
HCM Control Delay	23.6	10.4	8.5	9.6	117.1	11.4	11.4	9.3
HCM Lane LOS	C	B	A	A	F	B	B	A
HCM 95th-tile Q	4.3	0.1	0	0.1	26	0.2	0.2	0.5

Intersection	
Intersection Delay, s/veh	133.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	747	21	25	410	7	36	4	99	52	5	2
Future Vol, veh/h	4	747	21	25	410	7	36	4	99	52	5	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	4	830	23	28	456	8	40	4	110	58	6	2
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	214	45.9	14.6	13.8
HCM LOS	F	E	B	B

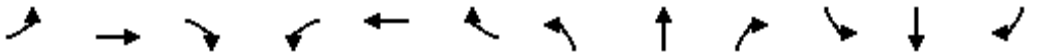
Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	26%	100%	0%	0%	100%	0%	88%
Vol Thru, %	3%	0%	100%	0%	0%	98%	8%
Vol Right, %	71%	0%	0%	100%	0%	2%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	139	4	747	21	25	417	59
LT Vol	36	4	0	0	25	0	52
Through Vol	4	0	747	0	0	410	5
RT Vol	99	0	0	21	0	7	2
Lane Flow Rate	154	4	830	23	28	463	66
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.317	0.008	1.429	0.036	0.058	0.898	0.155
Departure Headway (Hd)	8.164	6.708	6.199	5.486	8.267	7.743	9.391
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	443	533	589	651	436	473	384
Service Time	5.864	4.455	3.946	3.233	5.967	5.443	7.091
HCM Lane V/C Ratio	0.348	0.008	1.409	0.035	0.064	0.979	0.172
HCM Control Delay	14.6	9.5	220.9	8.4	11.5	48	13.8
HCM Lane LOS	B	A	F	A	B	E	B
HCM 95th-tile Q	1.3	0	38.9	0.1	0.2	9.9	0.5

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	5	253	379	473	1045
Future Volume (vph)	5	253	379	473	1045
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (%)	32.2%	32.2%	31.1%	67.8%	36.7%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	388	5	253	379	473	0	0	1045	435
Future Volume (veh/h)	0	0	0	388	5	253	379	473	0	0	1045	435
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				404	5	119	395	493	0	0	1089	318
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				444	5	399	510	3220	0	0	1387	400
Arrive On Green				0.25	0.25	0.25	0.56	1.00	0.00	0.00	0.27	0.27
Sat Flow, veh/h				1788	22	1610	1810	5358	0	0	5312	1456
Grp Volume(v), veh/h				409	0	119	395	493	0	0	1058	349
Grp Sat Flow(s),veh/h/ln				1811	0	1610	1810	1729	0	0	1634	1600
Q Serve(g_s), s				19.7	0.0	5.4	15.2	0.0	0.0	0.0	18.0	18.2
Cycle Q Clear(g_c), s				19.7	0.0	5.4	15.2	0.0	0.0	0.0	18.0	18.2
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.91
Lane Grp Cap(c), veh/h				449	0	399	510	3220	0	0	1347	440
V/C Ratio(X)				0.91	0.00	0.30	0.78	0.15	0.00	0.00	0.78	0.79
Avail Cap(c_a), veh/h				463	0	411	510	3220	0	0	1481	484
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.70	0.70	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				32.9	0.0	27.5	17.5	0.0	0.0	0.0	30.2	30.3
Incr Delay (d2), s/veh				22.8	0.0	0.9	4.8	0.1	0.0	0.0	4.7	13.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				10.9	0.0	5.3	4.7	0.0	0.0	0.0	7.1	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				55.7	0.0	28.4	22.2	0.1	0.0	0.0	34.8	44.1
LnGrp LOS				E	A	C	C	A	A	A	C	D
Approach Vol, veh/h					528			888			1407	
Approach Delay, s/veh					49.5			9.9			37.1	
Approach LOS					D			A			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	61.7	28.3	31.1	30.5
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	55.2	23.0	24.0	* 27
Max Q Clear Time (g_c+I1), s	2.0	21.7	17.2	20.2
Green Ext Time (p_c), s	3.3	0.6	0.4	4.5

Intersection Summary	
HCM 6th Ctrl Delay	30.9
HCM 6th LOS	C

Notes

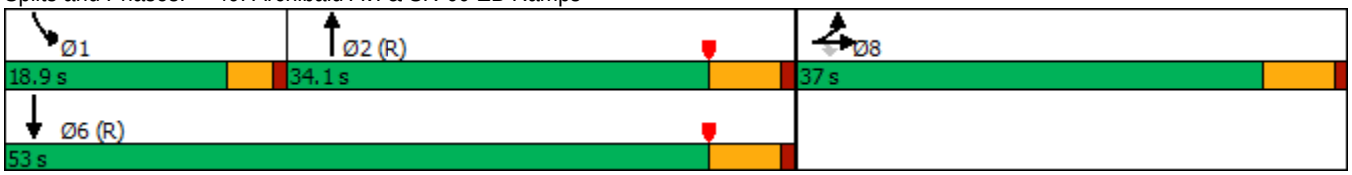
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

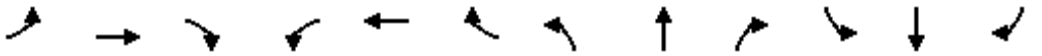
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	534	751	369	1064
Future Volume (vph)	0	534	751	369	1064
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	10.8	10.8	25.8	9.0	25.8
Total Split (s)	37.0	37.0	34.1	18.9	53.0
Total Split (%)	41.1%	41.1%	37.9%	21.0%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	0	534	0	0	0	0	751	543	369	1064	0
Future Volume (veh/h)	101	0	534	0	0	0	0	751	543	369	1064	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	105	0	306				0	782	391	384	1108	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	397	0	353				0	2165	710	300	3380	0
Arrive On Green	0.22	0.00	0.22				0.00	0.44	0.44	0.05	0.22	0.00
Sat Flow, veh/h	1810	0	1610				0	5168	1607	1810	5358	0
Grp Volume(v), veh/h	105	0	306				0	782	391	384	1108	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1607	1810	1729	0
Q Serve(g_s), s	4.3	0.0	16.5				0.0	9.5	16.2	14.9	16.2	0.0
Cycle Q Clear(g_c), s	4.3	0.0	16.5				0.0	9.5	16.2	14.9	16.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	397	0	353				0	2165	710	300	3380	0
V/C Ratio(X)	0.26	0.00	0.87				0.00	0.36	0.55	1.28	0.33	0.00
Avail Cap(c_a), veh/h	627	0	558				0	2165	710	300	3380	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.61	0.61	0.59	0.59	0.00
Uniform Delay (d), s/veh	29.1	0.0	33.8				0.0	16.7	18.5	42.5	18.7	0.0
Incr Delay (d2), s/veh	0.4	0.0	8.4				0.0	0.3	1.9	141.3	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	6.8				0.0	3.2	5.6	18.8	7.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.5	0.0	42.3				0.0	17.0	20.4	183.8	18.8	0.0
LnGrp LOS	C	A	D				A	B	C	F	B	A
Approach Vol, veh/h		411						1173			1492	
Approach Delay, s/veh		39.0						18.1			61.3	
Approach LOS		D						B			E	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	18.9	45.5				64.4		25.6				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	14.9	28.3				47.2		31.2				
Max Q Clear Time (g_c+I1), s	16.9	18.2				18.2		18.5				
Green Ext Time (p_c), s	0.0	5.0				7.9		1.3				

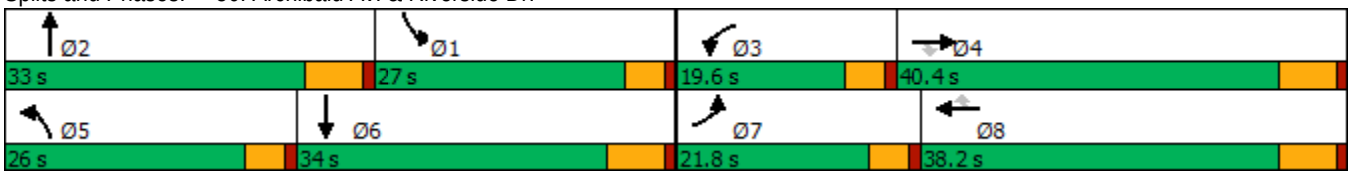
Intersection Summary			
HCM 6th Ctrl Delay			41.9
HCM 6th LOS			D

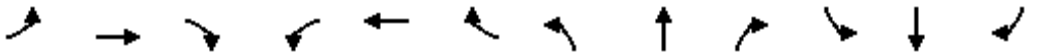
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	214	598	332	141	426	111	273	609	273	853
Future Volume (vph)	214	598	332	141	426	111	273	609	273	853
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.8	40.4	40.4	19.6	38.2	38.2	26.0	33.0	27.0	34.0
Total Split (%)	18.2%	33.7%	33.7%	16.3%	31.8%	31.8%	21.7%	27.5%	22.5%	28.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 112.6
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	598	332	141	426	111	273	609	51	273	853	235
Future Volume (veh/h)	214	598	332	141	426	111	273	609	51	273	853	235
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	228	636	196	150	453	59	290	648	45	290	907	186
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	254	818	356	177	654	290	316	883	61	394	1029	210
Arrive On Green	0.16	0.24	0.24	0.11	0.19	0.19	0.19	0.19	0.19	0.24	0.25	0.25
Sat Flow, veh/h	1619	3420	1490	1619	3420	1518	1619	4688	323	1619	4083	834
Grp Volume(v), veh/h	228	636	196	150	453	59	290	451	242	290	727	366
Grp Sat Flow(s),veh/h/ln	1619	1710	1490	1619	1710	1518	1619	1638	1735	1619	1638	1641
Q Serve(g_s), s	14.6	18.3	12.2	9.6	13.0	1.9	18.5	13.7	13.8	17.4	22.5	22.7
Cycle Q Clear(g_c), s	14.6	18.3	12.2	9.6	13.0	1.9	18.5	13.7	13.8	17.4	22.5	22.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.51
Lane Grp Cap(c), veh/h	254	818	356	177	654	290	316	617	327	394	826	413
V/C Ratio(X)	0.90	0.78	0.55	0.85	0.69	0.20	0.92	0.73	0.74	0.74	0.88	0.89
Avail Cap(c_a), veh/h	264	1109	483	230	1038	461	328	832	441	394	863	432
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	37.5	35.2	46.1	39.8	11.0	41.6	40.3	40.4	36.8	37.9	38.0
Incr Delay (d2), s/veh	28.4	2.5	1.3	16.6	1.3	0.3	28.4	2.2	4.4	6.2	10.2	18.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	7.5	4.3	4.5	5.3	1.2	9.5	5.4	6.0	7.2	9.6	10.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.1	40.0	36.5	62.7	41.1	11.4	70.0	42.5	44.7	43.0	48.1	56.7
LnGrp LOS	E	D	D	E	D	B	E	D	D	D	D	E
Approach Vol, veh/h		1060			662			983			1383	
Approach Delay, s/veh		46.2			43.3			51.2			49.3	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.9	26.1	16.1	31.4	25.2	32.8	21.2	26.4
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	22.4	* 27	15.0	34.2	21.4	27.8	17.2	32.0
Max Q Clear Time (g_c+I1), s	19.4	15.8	11.6	20.3	20.5	24.7	16.6	15.0
Green Ext Time (p_c), s	0.1	2.9	0.1	3.8	0.0	1.8	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	48.0
HCM 6th LOS	D

Notes

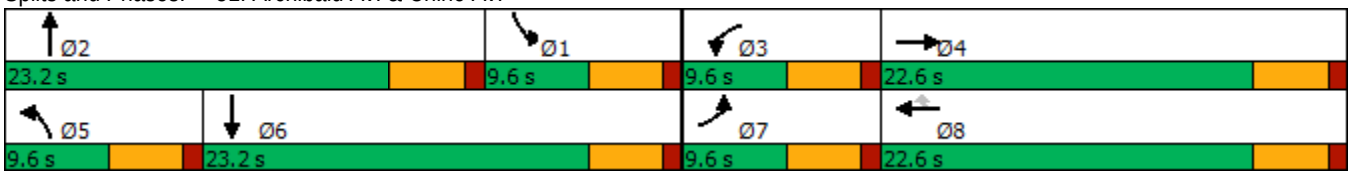
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

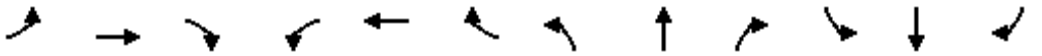
Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	20	1	20	107	19	758	137	1049
Future Volume (vph)	20	1	20	107	19	758	137	1049
Turn Type	Prot	NA	Prot	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3		5	2	1	6
Permitted Phases				8				
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	9.6	22.6	9.6	22.6	9.6	23.2	9.6	23.2
Total Split (%)	14.8%	34.8%	14.8%	34.8%	14.8%	35.7%	14.8%	35.7%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 40.3
Natural Cycle: 75
Control Type: Actuated-Uncoordinated

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	1	6	20	0	107	19	758	37	137	1049	12
Future Volume (veh/h)	20	1	6	20	0	107	19	758	37	137	1049	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	22	1	5	22	0	35	21	842	32	152	1166	12
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	44	16	82	44	114	96	42	1422	54	245	1449	15
Arrive On Green	0.03	0.06	0.06	0.03	0.00	0.06	0.03	0.29	0.29	0.15	0.42	0.42
Sat Flow, veh/h	1619	261	1304	1619	1800	1525	1619	4858	184	1619	3468	36
Grp Volume(v), veh/h	22	0	6	22	0	35	21	567	307	152	575	603
Grp Sat Flow(s),veh/h/ln	1619	0	1565	1619	1800	1525	1619	1638	1766	1619	1710	1794
Q Serve(g_s), s	0.5	0.0	0.1	0.5	0.0	0.5	0.5	5.9	5.9	3.5	11.6	11.6
Cycle Q Clear(g_c), s	0.5	0.0	0.1	0.5	0.0	0.5	0.5	5.9	5.9	3.5	11.6	11.6
Prop In Lane	1.00		0.83	1.00		1.00	1.00		0.10	1.00		0.02
Lane Grp Cap(c), veh/h	44	0	99	44	114	96	42	959	517	245	714	749
V/C Ratio(X)	0.50	0.00	0.06	0.50	0.00	0.36	0.50	0.59	0.59	0.62	0.80	0.80
Avail Cap(c_a), veh/h	205	0	713	205	820	695	205	1543	832	245	805	845
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	0.0	17.4	18.9	0.0	6.2	19.0	12.0	12.0	15.7	10.1	10.1
Incr Delay (d2), s/veh	8.5	0.0	0.3	8.5	0.0	2.3	8.8	0.6	1.1	4.8	5.4	5.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.3	0.0	0.3	0.2	1.4	1.6	1.3	3.3	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.5	0.0	17.7	27.5	0.0	8.5	27.8	12.5	13.1	20.5	15.5	15.2
LnGrp LOS	C	A	B	C	A	A	C	B	B	C	B	B
Approach Vol, veh/h		28			57			895			1330	
Approach Delay, s/veh		25.4			15.8			13.1			15.9	
Approach LOS		C			B			B			B	

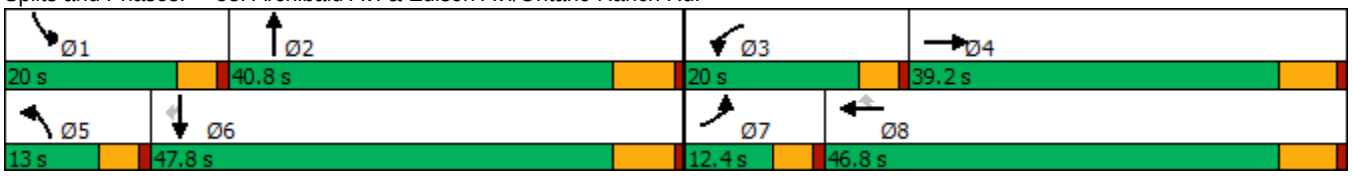
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	16.2	5.7	7.1	5.6	21.1	5.7	7.1
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	5.0	18.6	5.0	18.0	5.0	18.6	5.0	18.0
Max Q Clear Time (g_c+I1), s	5.5	7.9	2.5	2.1	2.5	13.6	2.5	2.5
Green Ext Time (p_c), s	0.0	3.6	0.0	0.0	0.0	2.8	0.0	0.0

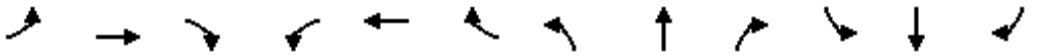
Intersection Summary	
HCM 6th Ctrl Delay	14.9
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	578	120	281	218	71	68	552	298	131	773	77
Future Volume (vph)	105	578	120	281	218	71	68	552	298	131	773	77
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	12.4	39.2		20.0	46.8	46.8	13.0	40.8		20.0	47.8	47.8
Total Split (%)	10.3%	32.7%		16.7%	39.0%	39.0%	10.8%	34.0%		16.7%	39.8%	39.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 95
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	578	120	281	218	71	68	552	298	131	773	77
Future Volume (veh/h)	105	578	120	281	218	71	68	552	298	131	773	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	108	596	0	290	225	39	70	569	0	135	797	57
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	172	790		368	535	453	87	886		166	1054	459
Arrive On Green	0.06	0.23	0.00	0.12	0.30	0.30	0.05	0.26	0.00	0.10	0.31	0.31
Sat Flow, veh/h	2956	3420	1525	2956	1800	1525	1619	3420	1525	1619	3420	1491
Grp Volume(v), veh/h	108	596	0	290	225	39	70	569	0	135	797	57
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1800	1525	1619	1710	1525	1619	1710	1491
Q Serve(g_s), s	2.8	12.6	0.0	7.4	7.8	1.4	3.3	11.4	0.0	6.3	16.3	2.1
Cycle Q Clear(g_c), s	2.8	12.6	0.0	7.4	7.8	1.4	3.3	11.4	0.0	6.3	16.3	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	172	790		368	535	453	87	886		166	1054	459
V/C Ratio(X)	0.63	0.75		0.79	0.42	0.09	0.81	0.64		0.81	0.76	0.12
Avail Cap(c_a), veh/h	298	1458		588	944	800	176	1515		322	1824	795
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	27.7	0.0	32.9	21.9	19.6	36.2	25.5	0.0	34.0	24.2	19.3
Incr Delay (d2), s/veh	1.4	1.5	0.0	1.4	0.5	0.1	6.5	0.8	0.0	3.6	1.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	4.8	0.0	2.5	3.0	0.5	1.4	4.2	0.0	2.4	5.8	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.0	29.2	0.0	34.3	22.4	19.7	42.8	26.3	0.0	37.6	25.3	19.4
LnGrp LOS	D	C		C	C	B	D	C		D	C	B
Approach Vol, veh/h		704	A		554			639	A		989	
Approach Delay, s/veh		30.4			28.5			28.1			26.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	26.6	14.2	24.1	8.7	30.4	9.1	29.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	15.4	34.3	15.4	33.0	8.4	41.3	7.8	40.6
Max Q Clear Time (g_c+I1), s	8.3	13.4	9.4	14.6	5.3	18.3	4.8	9.8
Green Ext Time (p_c), s	0.1	3.2	0.3	3.3	0.0	5.0	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	28.2
HCM 6th LOS	C

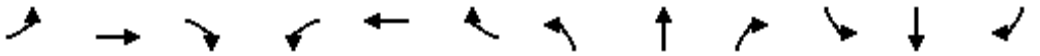
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	10	908	1	9	1165
Future Volume (vph)	2	10	908	1	9	1165
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.5	9.5	32.5	32.5	9.6	16.5
Total Split (s)	10.0	10.0	40.0	40.0	10.0	50.0
Total Split (%)	14.3%	14.3%	57.1%	57.1%	14.3%	71.4%
Yellow Time (s)	3.5	3.5	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	6.5	6.5	4.6	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 63.8
Natural Cycle: 65
Control Type: Actuated-Uncoordinated

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	2	0	10	0	908	1	9	1165	0
Future Volume (veh/h)	0	0	0	2	0	10	0	908	1	9	1165	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1700	0	1800	0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h				2	0	2	0	966	1	10	1239	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				17	0	14	0	2384	1063	21	2715	0
Arrive On Green				0.01	0.00	0.01	0.00	0.70	0.70	0.01	0.79	0.00
Sat Flow, veh/h				3141	0	2685	0	3510	1524	1619	3510	0
Grp Volume(v), veh/h				2	0	2	0	966	1	10	1239	0
Grp Sat Flow(s),veh/h/ln				1570	0	1342	0	1710	1524	1619	1710	0
Q Serve(g_s), s				0.0	0.0	0.0	0.0	6.5	0.0	0.3	6.4	0.0
Cycle Q Clear(g_c), s				0.0	0.0	0.0	0.0	6.5	0.0	0.3	6.4	0.0
Prop In Lane				1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				17	0	14	0	2384	1063	21	2715	0
V/C Ratio(X)				0.12	0.00	0.14	0.00	0.41	0.00	0.48	0.46	0.00
Avail Cap(c_a), veh/h				315	0	269	0	2384	1063	160	2715	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				27.1	0.0	27.1	0.0	3.5	2.5	26.9	1.8	0.0
Incr Delay (d2), s/veh				3.1	0.0	4.3	0.0	0.5	0.0	6.2	0.6	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.0	0.0	0.0	0.0	0.6	0.0	0.1	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				30.2	0.0	31.4	0.0	4.0	2.5	33.1	2.4	0.0
LnGrp LOS				C	A	C	A	A	A	C	A	A
Approach Vol, veh/h					4			967			1249	
Approach Delay, s/veh					30.8			4.0			2.6	
Approach LOS					C			A			A	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	5.3	44.7				50.0		4.8				
Change Period (Y+Rc), s	4.6	6.5				6.5		4.5				
Max Green Setting (Gmax), s	5.4	33.5				43.5		5.5				
Max Q Clear Time (g_c+I1), s	2.3	8.5				8.4		2.0				
Green Ext Time (p_c), s	0.0	6.3				9.7		0.0				

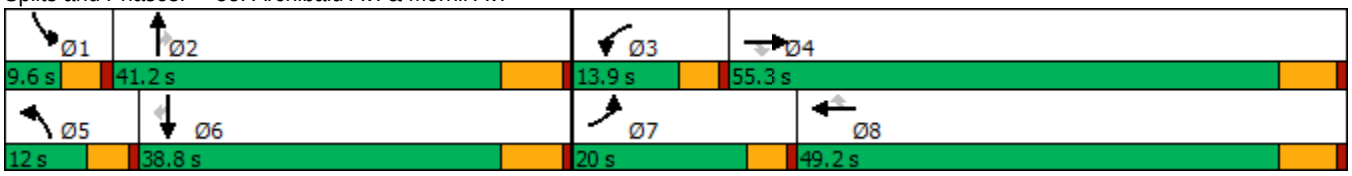
Intersection Summary			
HCM 6th Ctrl Delay			3.3
HCM 6th LOS			A

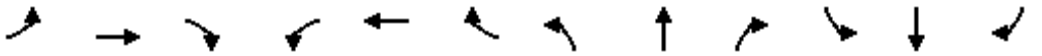
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	279	69	438	44	23	53	126	577	38	70	920	178
Future Volume (vph)	279	69	438	44	23	53	126	577	38	70	920	178
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	20.0	55.3	55.3	13.9	49.2	49.2	12.0	41.2	41.2	9.6	38.8	38.8
Total Split (%)	16.7%	46.1%	46.1%	11.6%	41.0%	41.0%	10.0%	34.3%	34.3%	8.0%	32.3%	32.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 92.7
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	279	69	438	44	23	53	126	577	38	70	920	178
Future Volume (veh/h)	279	69	438	44	23	53	126	577	38	70	920	178
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	288	71	267	45	24	16	130	595	25	72	948	126
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	305	488	414	63	220	186	146	1274	561	145	1133	506
Arrive On Green	0.19	0.27	0.27	0.04	0.12	0.12	0.09	0.37	0.37	0.05	0.33	0.33
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	1619	3420	1506	2956	3420	1525
Grp Volume(v), veh/h	288	71	267	45	24	16	130	595	25	72	948	126
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1710	1506	1478	1710	1525
Q Serve(g_s), s	14.4	2.4	12.6	2.2	1.0	0.8	6.5	10.8	0.9	1.9	21.0	4.9
Cycle Q Clear(g_c), s	14.4	2.4	12.6	2.2	1.0	0.8	6.5	10.8	0.9	1.9	21.0	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	305	488	414	63	220	186	146	1274	561	145	1133	506
V/C Ratio(X)	0.95	0.15	0.65	0.71	0.11	0.09	0.89	0.47	0.04	0.49	0.84	0.25
Avail Cap(c_a), veh/h	305	1080	915	184	946	802	146	1451	639	181	1350	602
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.8	22.6	26.3	38.8	31.9	31.9	36.8	19.5	16.4	37.9	25.3	19.9
Incr Delay (d2), s/veh	36.7	0.1	1.7	5.4	0.2	0.2	42.1	0.3	0.0	1.0	4.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	1.0	4.5	1.0	0.4	0.3	4.1	3.7	0.3	0.7	8.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.5	22.7	28.0	44.2	32.2	32.0	78.9	19.8	16.4	38.9	29.4	20.2
LnGrp LOS	E	C	C	D	C	C	E	B	B	D	C	C
Approach Vol, veh/h		626			85			750			1146	
Approach Delay, s/veh		46.5			38.5			29.9			29.0	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	37.0	7.8	28.4	12.0	33.6	20.0	16.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	34.7	9.3	49.1	7.4	32.3	15.4	43.0
Max Q Clear Time (g_c+I1), s	3.9	12.8	4.2	14.6	8.5	23.0	16.4	3.0
Green Ext Time (p_c), s	0.0	3.5	0.0	1.2	0.0	4.1	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	33.8
HCM 6th LOS	C

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	333	240	519	328	553	849
Future Volume (vph)	333	240	519	328	553	849
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	37.0	46.7	36.3	37.0	83.7
Total Split (%)	30.3%	30.8%	38.9%	30.3%	30.8%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 105.8
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	333	240	519	328	553	849
Future Volume (veh/h)	333	240	519	328	553	849
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	340	195	530	314	564	866
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	375	843	613	842	572	1308
Arrive On Green	0.21	0.21	0.32	0.32	0.32	0.69
Sat Flow, veh/h	1810	1610	1900	1576	1810	1900
Grp Volume(v), veh/h	340	195	530	314	564	866
Grp Sat Flow(s),veh/h/ln	1810	1610	1900	1576	1810	1900
Q Serve(g_s), s	18.6	6.6	26.5	11.8	31.3	26.4
Cycle Q Clear(g_c), s	18.6	6.6	26.5	11.8	31.3	26.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	375	843	613	842	572	1308
V/C Ratio(X)	0.91	0.23	0.87	0.37	0.99	0.66
Avail Cap(c_a), veh/h	554	1003	777	978	572	1478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	13.1	32.2	14.0	34.4	9.0
Incr Delay (d2), s/veh	10.8	0.1	8.7	0.3	33.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	2.1	12.7	6.1	17.8	7.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	50.0	13.1	40.9	14.3	68.2	9.7
LnGrp LOS	D	B	D	B	E	A
Approach Vol, veh/h	535		844			1430
Approach Delay, s/veh	36.5		31.0			32.7
Approach LOS	D		C			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	37.0	37.9			74.9	26.3
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	32.0	41.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	33.3	28.5			28.4	20.6
Green Ext Time (p_c), s	0.0	4.1			3.5	0.4

Intersection Summary	
HCM 6th Ctrl Delay	32.9
HCM 6th LOS	C

Notes

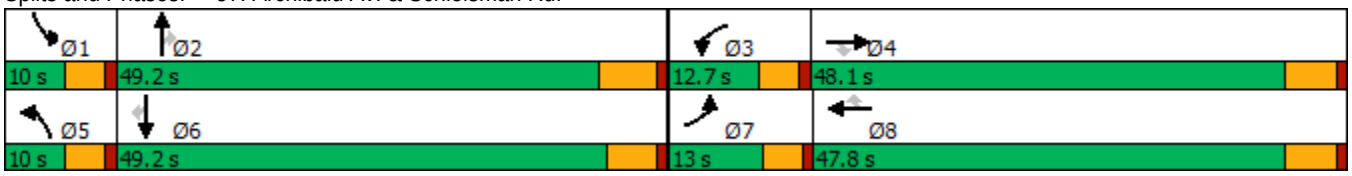
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

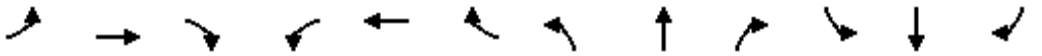
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	993	172	108	308	56	178	596	109	162	647	300
Future Volume (vph)	372	993	172	108	308	56	178	596	109	162	647	300
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	48.1	48.1	12.7	47.8	47.8	10.0	49.2	49.2	10.0	49.2	49.2
Total Split (%)	10.8%	40.1%	40.1%	10.6%	39.8%	39.8%	8.3%	41.0%	41.0%	8.3%	41.0%	41.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 99.4
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	372	993	172	108	308	56	178	596	109	162	647	300
Future Volume (veh/h)	372	993	172	108	308	56	178	596	109	162	647	300
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	380	1013	94	110	314	31	182	608	74	165	660	192
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	307	2463	765	173	2265	702	197	1034	321	197	1034	320
Arrive On Green	0.09	0.47	0.47	0.05	0.44	0.44	0.06	0.20	0.20	0.06	0.20	0.20
Sat Flow, veh/h	3510	5187	1610	3510	5187	1608	3510	5187	1610	3510	5187	1603
Grp Volume(v), veh/h	380	1013	94	110	314	31	182	608	74	165	660	192
Grp Sat Flow(s),veh/h/ln	1755	1729	1610	1755	1729	1608	1755	1729	1610	1755	1729	1603
Q Serve(g_s), s	8.4	12.3	3.1	3.0	3.5	1.1	5.0	10.2	3.7	4.5	11.2	10.5
Cycle Q Clear(g_c), s	8.4	12.3	3.1	3.0	3.5	1.1	5.0	10.2	3.7	4.5	11.2	10.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	2463	765	173	2265	702	197	1034	321	197	1034	320
V/C Ratio(X)	1.24	0.41	0.12	0.64	0.14	0.04	0.92	0.59	0.23	0.84	0.64	0.60
Avail Cap(c_a), veh/h	307	2463	765	296	2265	702	197	2319	720	197	2362	730
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	16.5	14.1	44.9	16.2	15.6	45.2	34.9	32.3	45.0	35.3	35.0
Incr Delay (d2), s/veh	132.4	0.5	0.3	1.4	0.1	0.1	42.4	0.5	0.4	24.6	0.7	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	4.5	1.1	1.3	1.3	0.4	3.2	4.1	1.4	2.5	4.5	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	176.3	17.0	14.4	46.3	16.4	15.7	87.6	35.5	32.7	69.6	36.0	36.8
LnGrp LOS	F	B	B	D	B	B	F	D	C	E	D	D
Approach Vol, veh/h		1487			455			864			1017	
Approach Delay, s/veh		57.5			23.6			46.2			41.6	
Approach LOS		E			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	25.4	9.3	51.5	10.0	25.4	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.4	43.0	8.1	42.3	5.4	* 44	8.4	42.0
Max Q Clear Time (g_c+I1), s	6.5	12.2	5.0	14.3	7.0	13.2	10.4	5.5
Green Ext Time (p_c), s	0.0	4.2	0.0	7.7	0.0	5.0	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	46.7
HCM 6th LOS	D

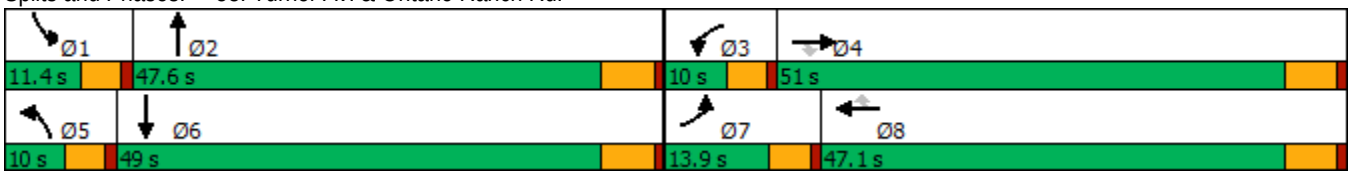
Notes

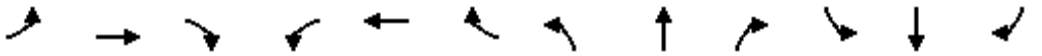
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	43	1070	38	31	590	13	25	7	27	7
Future Volume (vph)	43	1070	38	31	590	13	25	7	27	7
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	13.9	51.0	51.0	10.0	47.1	47.1	10.0	47.6	11.4	49.0
Total Split (%)	11.6%	42.5%	42.5%	8.3%	39.3%	39.3%	8.3%	39.7%	9.5%	40.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	6.9	57.7	57.7	5.5	56.4	56.4	5.5	14.8	6.1	15.2
Actuated g/C Ratio	0.08	0.70	0.70	0.07	0.68	0.68	0.07	0.18	0.07	0.18
v/c Ratio	0.35	0.49	0.04	0.32	0.28	0.01	0.25	0.16	0.25	0.10
Control Delay	49.4	16.0	0.1	53.0	14.3	0.0	51.2	13.0	49.4	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.4	16.0	0.1	53.0	14.3	0.0	51.2	13.0	49.4	15.1
LOS	D	B	A	D	B	A	D	B	D	B
Approach Delay		16.7			15.9			26.4		31.7
Approach LOS		B			B			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 82.9	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 17.2	Intersection LOS: B
Intersection Capacity Utilization 60.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	1070	38	31	590	13	25	7	38	27	7	22
Future Volume (veh/h)	43	1070	38	31	590	13	25	7	38	27	7	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	47	1176	30	34	648	11	27	8	23	30	8	10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	65	1914	854	53	1889	843	46	49	139	49	88	110
Arrive On Green	0.04	0.56	0.56	0.03	0.55	0.55	0.03	0.12	0.12	0.03	0.12	0.12
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	407	1169	1619	727	909
Grp Volume(v), veh/h	47	1176	30	34	648	11	27	0	31	30	0	18
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	0	1576	1619	0	1636
Q Serve(g_s), s	2.3	18.6	0.7	1.7	8.4	0.3	1.3	0.0	1.4	1.5	0.0	0.8
Cycle Q Clear(g_c), s	2.3	18.6	0.7	1.7	8.4	0.3	1.3	0.0	1.4	1.5	0.0	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.74	1.00		0.56
Lane Grp Cap(c), veh/h	65	1914	854	53	1889	843	46	0	188	49	0	199
V/C Ratio(X)	0.72	0.61	0.04	0.64	0.34	0.01	0.59	0.00	0.16	0.61	0.00	0.09
Avail Cap(c_a), veh/h	186	1914	854	108	1889	843	108	0	816	136	0	875
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.3	11.9	8.0	38.6	10.0	8.1	38.8	0.0	31.9	38.7	0.0	31.5
Incr Delay (d2), s/veh	5.4	1.5	0.1	4.6	0.5	0.0	4.5	0.0	0.4	4.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	6.0	0.2	0.7	2.7	0.1	0.6	0.0	0.5	0.6	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.7	13.4	8.1	43.1	10.5	8.2	43.3	0.0	32.4	43.2	0.0	31.7
LnGrp LOS	D	B	A	D	B	A	D	A	C	D	A	C
Approach Vol, veh/h		1253			693			58			48	
Approach Delay, s/veh		14.4			12.0			37.4			38.9	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	15.4	7.3	51.0	6.9	15.6	7.9	50.4
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	6.8	41.8	5.4	45.2	5.4	43.2	9.3	41.3
Max Q Clear Time (g_c+I1), s	3.5	3.4	3.7	20.6	3.3	2.8	4.3	10.4
Green Ext Time (p_c), s	0.0	0.1	0.0	8.8	0.0	0.1	0.0	4.4

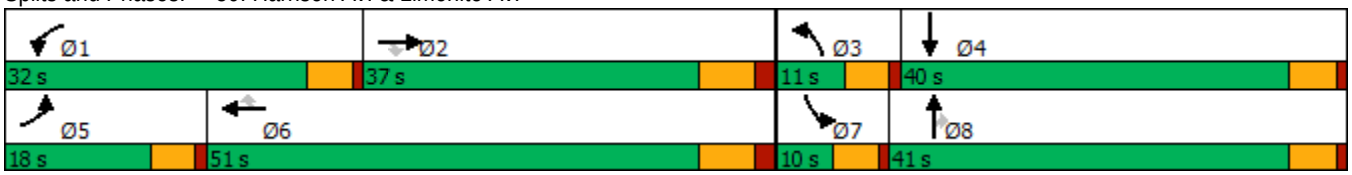
Intersection Summary	
HCM 6th Ctrl Delay	14.8
HCM 6th LOS	B

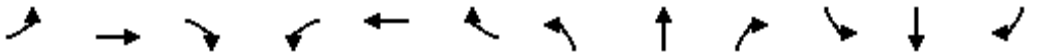
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	76	753	52	202	509	5	33	43	151	16	45
Future Volume (vph)	76	753	52	202	509	5	33	43	151	16	45
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	18.0	37.0	37.0	32.0	51.0	51.0	11.0	41.0	41.0	10.0	40.0
Total Split (%)	15.0%	30.8%	30.8%	26.7%	42.5%	42.5%	9.2%	34.2%	34.2%	8.3%	33.3%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 64.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 59: Harrison Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	753	52	202	509	5	33	43	151	16	45	31
Future Volume (veh/h)	76	753	52	202	509	5	33	43	151	16	45	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	78	768	48	206	519	3	34	44	69	16	46	23
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	119	1364	423	260	1769	549	68	257	215	36	141	70
Arrive On Green	0.07	0.26	0.26	0.14	0.34	0.34	0.04	0.14	0.14	0.02	0.12	0.12
Sat Flow, veh/h	1810	5187	1610	1810	5187	1610	1810	1900	1588	1810	1195	597
Grp Volume(v), veh/h	78	768	48	206	519	3	34	44	69	16	0	69
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1610	1810	1900	1588	1810	0	1792
Q Serve(g_s), s	2.1	6.5	1.2	5.6	3.7	0.1	0.9	1.0	2.0	0.4	0.0	1.8
Cycle Q Clear(g_c), s	2.1	6.5	1.2	5.6	3.7	0.1	0.9	1.0	2.0	0.4	0.0	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	119	1364	423	260	1769	549	68	257	215	36	0	211
V/C Ratio(X)	0.66	0.56	0.11	0.79	0.29	0.01	0.50	0.17	0.32	0.44	0.00	0.33
Avail Cap(c_a), veh/h	462	3057	949	960	4483	1392	213	1332	1114	178	0	1222
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.2	16.2	14.3	21.1	12.3	11.1	24.0	19.5	19.9	24.7	0.0	20.6
Incr Delay (d2), s/veh	2.3	0.4	0.1	2.1	0.1	0.0	2.1	0.3	0.9	3.2	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.0	0.4	2.1	1.1	0.0	0.4	0.4	0.7	0.2	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.5	16.6	14.4	23.1	12.4	11.1	26.1	19.8	20.7	27.8	0.0	21.5
LnGrp LOS	C	B	B	C	B	B	C	B	C	C	A	C
Approach Vol, veh/h		894			728			147			85	
Approach Delay, s/veh		17.3			15.4			21.7			22.7	
Approach LOS		B			B			C			C	

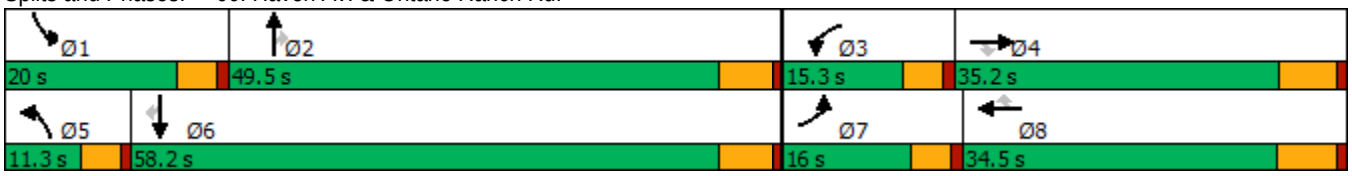
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	20.4	6.9	11.3	8.3	24.4	6.0	12.2
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	27.0	30.0	6.0	34.7	13.0	44.0	5.0	35.7
Max Q Clear Time (g_c+I1), s	7.6	8.5	2.9	3.8	4.1	5.7	2.4	4.0
Green Ext Time (p_c), s	0.1	4.9	0.0	0.3	0.0	3.4	0.0	0.4

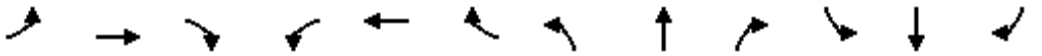
Intersection Summary	
HCM 6th Ctrl Delay	17.1
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	116	875	65	60	515	126	28	86	23	162	253	107
Future Volume (vph)	116	875	65	60	515	126	28	86	23	162	253	107
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	16.0	35.2	35.2	15.3	34.5	34.5	11.3	49.5	49.5	20.0	58.2	58.2
Total Split (%)	13.3%	29.3%	29.3%	12.8%	28.8%	28.8%	9.4%	41.3%	41.3%	16.7%	48.5%	48.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	10.5	34.9	34.9	7.7	29.1	29.1	6.0	15.4	15.4	14.2	26.1	26.1
Actuated g/C Ratio	0.12	0.40	0.40	0.09	0.33	0.33	0.07	0.18	0.18	0.16	0.30	0.30
v/c Ratio	0.63	0.46	0.10	0.44	0.47	0.21	0.26	0.28	0.06	0.64	0.49	0.21
Control Delay	56.2	25.1	0.3	52.8	28.3	4.9	51.0	34.1	0.3	50.5	28.2	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.2	25.1	0.3	52.8	28.3	4.9	51.0	34.1	0.3	50.5	28.2	5.2
LOS	E	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		27.0			26.2			31.9			30.4	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 87.2	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 27.8	Intersection LOS: C
Intersection Capacity Utilization 58.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	875	65	60	515	126	28	86	23	162	253	107
Future Volume (veh/h)	116	875	65	60	515	126	28	86	23	162	253	107
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	121	911	37	62	536	57	29	90	10	169	264	38
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	150	2026	629	78	1258	561	49	236	200	204	409	346
Arrive On Green	0.09	0.41	0.41	0.05	0.37	0.37	0.03	0.13	0.13	0.13	0.23	0.23
Sat Flow, veh/h	1619	4914	1525	1619	3420	1525	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	121	911	37	62	536	57	29	90	10	169	264	38
Grp Sat Flow(s),veh/h/ln	1619	1638	1525	1619	1710	1525	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	5.6	10.2	1.1	2.9	8.9	1.9	1.3	3.5	0.4	7.8	10.1	1.5
Cycle Q Clear(g_c), s	5.6	10.2	1.1	2.9	8.9	1.9	1.3	3.5	0.4	7.8	10.1	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	150	2026	629	78	1258	561	49	236	200	204	409	346
V/C Ratio(X)	0.81	0.45	0.06	0.80	0.43	0.10	0.59	0.38	0.05	0.83	0.65	0.11
Avail Cap(c_a), veh/h	243	2026	629	228	1258	561	143	1034	876	328	1239	1050
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	16.1	13.5	35.9	18.0	15.8	36.4	30.2	28.9	32.5	26.6	23.3
Incr Delay (d2), s/veh	3.9	0.7	0.2	6.8	1.1	0.4	4.3	1.0	0.1	4.4	1.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	3.4	0.3	1.2	3.2	0.6	0.6	1.5	0.2	3.1	4.1	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.8	16.9	13.6	42.7	19.1	16.2	40.7	31.2	29.0	36.9	28.4	23.5
LnGrp LOS	D	B	B	D	B	B	D	C	C	D	C	C
Approach Vol, veh/h		1069			655			129			471	
Approach Delay, s/veh		19.1			21.1			33.2			31.0	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	15.8	8.3	37.9	6.9	23.1	11.6	34.5
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	15.4	43.7	10.7	* 29	6.7	52.4	11.4	28.0
Max Q Clear Time (g_c+I1), s	9.8	5.5	4.9	12.2	3.3	12.1	7.6	10.9
Green Ext Time (p_c), s	0.1	0.5	0.0	5.3	0.0	1.6	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	22.9
HCM 6th LOS	C

Notes

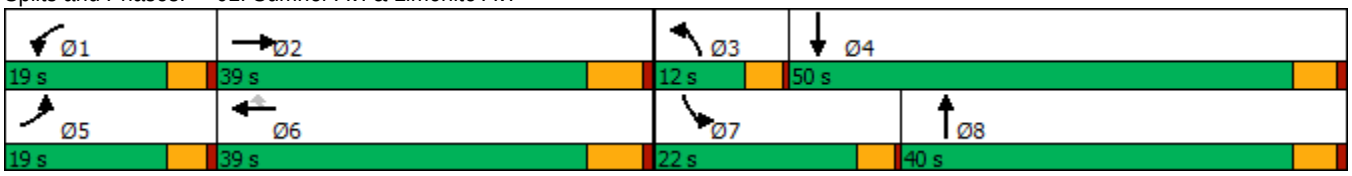
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	208	591	207	498	44	42	208	113	428
Future Volume (vph)	208	591	207	498	44	42	208	113	428
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	19.0	39.0	19.0	39.0	39.0	12.0	40.0	22.0	50.0
Total Split (%)	15.8%	32.5%	15.8%	32.5%	32.5%	10.0%	33.3%	18.3%	41.7%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 69.5
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 61: Sumner Av. & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	208	591	79	207	498	44	42	208	135	113	428	189
Future Volume (veh/h)	208	591	79	207	498	44	42	208	135	113	428	189
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	214	609	69	213	513	37	43	214	68	116	441	97
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	340	1121	126	339	1227	381	65	508	157	151	693	151
Arrive On Green	0.10	0.24	0.24	0.10	0.24	0.24	0.04	0.19	0.19	0.08	0.24	0.24
Sat Flow, veh/h	3510	4731	530	3510	5187	1610	1810	2703	833	1810	2946	643
Grp Volume(v), veh/h	214	443	235	213	513	37	43	141	141	116	269	269
Grp Sat Flow(s),veh/h/ln	1755	1729	1804	1755	1729	1610	1810	1805	1731	1810	1805	1784
Q Serve(g_s), s	2.9	5.5	5.6	2.9	4.1	0.9	1.2	3.4	3.6	3.1	6.6	6.7
Cycle Q Clear(g_c), s	2.9	5.5	5.6	2.9	4.1	0.9	1.2	3.4	3.6	3.1	6.6	6.7
Prop In Lane	1.00		0.29	1.00		1.00	1.00		0.48	1.00		0.36
Lane Grp Cap(c), veh/h	340	819	427	339	1227	381	65	339	326	151	425	420
V/C Ratio(X)	0.63	0.54	0.55	0.63	0.42	0.10	0.66	0.41	0.43	0.77	0.63	0.64
Avail Cap(c_a), veh/h	1032	2313	1206	1032	3469	1077	293	1280	1228	660	1646	1627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	16.5	16.5	21.4	16.0	14.7	23.5	17.6	17.7	22.2	17.0	17.0
Incr Delay (d2), s/veh	0.7	0.6	1.1	0.7	0.2	0.1	4.1	0.6	0.7	3.1	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.8	1.9	1.0	1.3	0.3	0.5	1.2	1.2	1.2	2.3	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.1	17.0	17.6	22.1	16.2	14.8	27.6	18.2	18.4	25.3	18.1	18.2
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		892			763			325			654	
Approach Delay, s/veh		18.4			17.8			19.5			19.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	17.7	5.8	16.6	9.3	17.7	8.1	14.3
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	14.5	33.0	8.0	45.0	14.5	33.0	18.0	35.0
Max Q Clear Time (g_c+I1), s	4.9	7.6	3.2	8.7	4.9	6.1	5.1	5.6
Green Ext Time (p_c), s	0.2	4.0	0.0	2.4	0.2	3.3	0.1	1.2

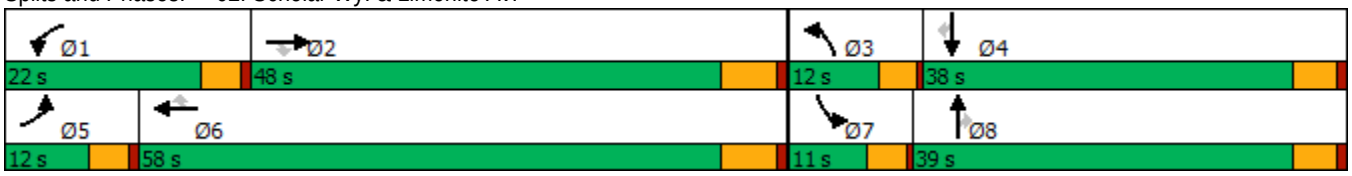
Intersection Summary	
HCM 6th Ctrl Delay	18.6
HCM 6th LOS	B

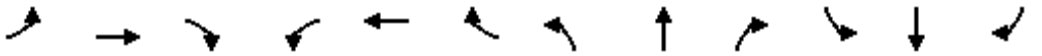
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	767	41	119	685	54	41	91	122	28	128	29
Future Volume (vph)	38	767	41	119	685	54	41	91	122	28	128	29
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	12.0	48.0	48.0	22.0	58.0	58.0	12.0	39.0	39.0	11.0	38.0	38.0
Total Split (%)	10.0%	40.0%	40.0%	18.3%	48.3%	48.3%	10.0%	32.5%	32.5%	9.2%	31.7%	31.7%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 66.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	767	41	119	685	54	41	91	122	28	128	29
Future Volume (veh/h)	38	767	41	119	685	54	41	91	122	28	128	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	40	816	30	127	729	33	44	97	50	30	136	24
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	62	1258	561	165	1462	652	67	245	207	50	431	188
Arrive On Green	0.03	0.35	0.35	0.09	0.41	0.41	0.04	0.13	0.13	0.03	0.12	0.12
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	1900	1610	1810	3610	1572
Grp Volume(v), veh/h	40	816	30	127	729	33	44	97	50	30	136	24
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1900	1610	1810	1805	1572
Q Serve(g_s), s	1.1	9.2	0.6	3.3	7.3	0.6	1.2	2.3	1.3	0.8	1.7	0.7
Cycle Q Clear(g_c), s	1.1	9.2	0.6	3.3	7.3	0.6	1.2	2.3	1.3	0.8	1.7	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	62	1258	561	165	1462	652	67	245	207	50	431	188
V/C Ratio(X)	0.64	0.65	0.05	0.77	0.50	0.05	0.66	0.40	0.24	0.60	0.32	0.13
Avail Cap(c_a), veh/h	281	3144	1402	657	3892	1736	300	1339	1135	263	2470	1076
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.0	13.2	10.4	21.4	10.7	8.7	22.9	19.3	18.9	23.2	19.4	19.0
Incr Delay (d2), s/veh	4.1	0.6	0.0	2.9	0.3	0.0	4.0	0.8	0.4	4.3	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.7	0.2	1.3	2.0	0.2	0.5	0.9	0.5	0.4	0.6	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.0	13.8	10.5	24.3	11.0	8.7	27.0	20.1	19.3	27.5	19.7	19.2
LnGrp LOS	C	B	B	C	B	A	C	C	B	C	B	B
Approach Vol, veh/h		886			889			191			190	
Approach Delay, s/veh		14.3			12.8			21.5			20.9	
Approach LOS		B			B			C			C	

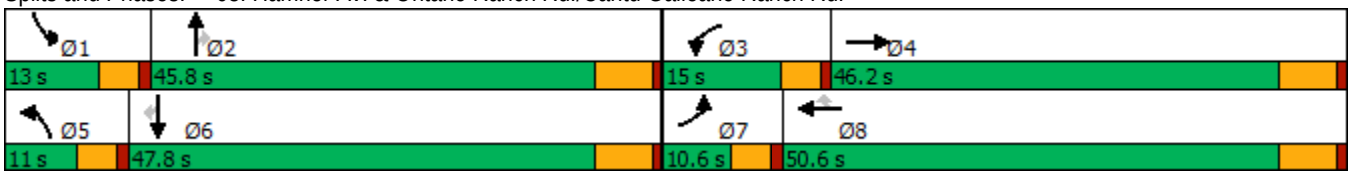
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	22.8	5.8	10.8	6.2	25.5	5.3	11.2
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	17.5	42.0	8.0	33.0	7.5	52.0	7.0	34.0
Max Q Clear Time (g_c+I1), s	5.3	11.2	3.2	3.7	3.1	9.3	2.8	4.3
Green Ext Time (p_c), s	0.1	5.6	0.0	0.7	0.0	5.1	0.0	0.5

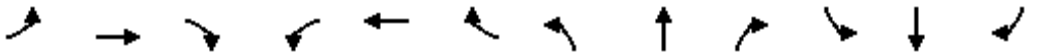
Intersection Summary	
HCM 6th Ctrl Delay	14.9
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	89	792	580	443	107	195	372	233	451	790	108
Future Volume (vph)	89	792	580	443	107	195	372	233	451	790	108
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	10.6	46.2	15.0	50.6	50.6	11.0	45.8	45.8	13.0	47.8	47.8
Total Split (%)	8.8%	38.5%	12.5%	42.2%	42.2%	9.2%	38.2%	38.2%	10.8%	39.8%	39.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.0	25.6	10.6	32.7	32.7	6.5	27.4	27.4	8.6	29.4	29.4
Actuated g/C Ratio	0.06	0.27	0.11	0.35	0.35	0.07	0.29	0.29	0.09	0.31	0.31
v/c Ratio	0.50	0.66	1.82	0.39	0.18	1.00	0.27	0.44	1.75	0.77	0.21
Control Delay	56.8	30.4	406.5	25.9	5.4	108.9	26.5	13.3	381.5	35.2	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.8	30.4	406.5	25.9	5.4	108.9	26.5	13.3	381.5	35.2	5.9
LOS	E	C	F	C	A	F	C	B	F	D	A
Approach Delay		32.5		219.5			42.7			148.6	
Approach LOS		C		F			D			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 94.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.82	
Intersection Signal Delay: 117.5	Intersection LOS: F
Intersection Capacity Utilization 84.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	792	263	580	443	107	195	372	233	451	790	108
Future Volume (veh/h)	89	792	263	580	443	107	195	372	233	451	790	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	93	825	217	604	461	77	203	388	164	470	823	57
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	152	1249	320	353	1096	489	217	1392	432	285	1047	467
Arrive On Green	0.05	0.25	0.25	0.12	0.32	0.32	0.07	0.28	0.28	0.10	0.31	0.31
Sat Flow, veh/h	2956	4948	1268	2956	3420	1525	2956	4914	1524	2956	3420	1524
Grp Volume(v), veh/h	93	773	269	604	461	77	203	388	164	470	823	57
Grp Sat Flow(s),veh/h/ln	1478	1548	1572	1478	1710	1525	1478	1638	1524	1478	1710	1524
Q Serve(g_s), s	2.7	13.0	13.4	10.4	9.2	3.1	5.9	5.3	7.5	8.4	19.1	2.3
Cycle Q Clear(g_c), s	2.7	13.0	13.4	10.4	9.2	3.1	5.9	5.3	7.5	8.4	19.1	2.3
Prop In Lane	1.00		0.81	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	1173	397	353	1096	489	217	1392	432	285	1047	467
V/C Ratio(X)	0.61	0.66	0.68	1.71	0.42	0.16	0.93	0.28	0.38	1.65	0.79	0.12
Avail Cap(c_a), veh/h	204	2135	722	353	1745	778	217	2236	693	285	1635	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	29.2	29.3	38.3	23.2	21.2	40.1	24.3	25.0	39.3	27.6	21.8
Incr Delay (d2), s/veh	1.5	0.6	2.0	331.2	0.3	0.1	42.3	0.1	0.6	306.4	1.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.4	4.8	19.8	3.4	1.0	3.3	1.9	2.5	15.0	7.2	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.9	29.8	31.4	369.5	23.5	21.3	82.4	24.4	25.6	345.7	29.0	21.9
LnGrp LOS	D	C	C	F	C	C	F	C	C	F	C	C
Approach Vol, veh/h		1135			1142			755			1350	
Approach Delay, s/veh		31.2			206.3			40.2			138.9	
Approach LOS		C			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	30.9	15.0	28.2	11.0	32.9	9.1	34.1
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	8.4	39.6	10.4	40.0	6.4	41.6	6.0	44.4
Max Q Clear Time (g_c+I1), s	10.4	9.5	12.4	15.4	7.9	21.1	4.7	11.2
Green Ext Time (p_c), s	0.0	2.9	0.0	6.5	0.0	5.2	0.0	3.1

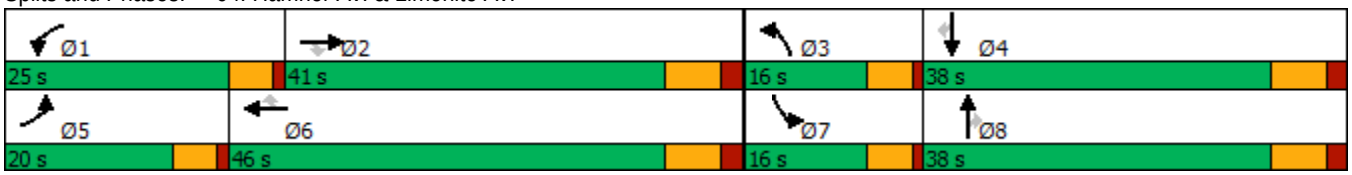
Intersection Summary	
HCM 6th Ctrl Delay	111.6
HCM 6th LOS	F

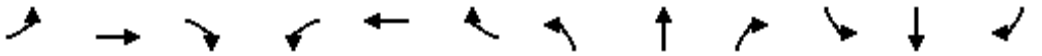
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	275	510	68	356	399	144	187	560	173	182	605	209
Future Volume (vph)	275	510	68	356	399	144	187	560	173	182	605	209
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	20.0	41.0	41.0	25.0	46.0	46.0	16.0	38.0	38.0	16.0	38.0	38.0
Total Split (%)	16.7%	34.2%	34.2%	20.8%	38.3%	38.3%	13.3%	31.7%	31.7%	13.3%	31.7%	31.7%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 89.6
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 64: Hamner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	275	510	68	356	399	144	187	560	173	182	605	209
Future Volume (veh/h)	275	510	68	356	399	144	187	560	173	182	605	209
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	284	526	49	367	411	103	193	577	94	188	624	152
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	378	1100	340	465	855	375	281	1324	402	276	1316	401
Arrive On Green	0.11	0.21	0.21	0.13	0.24	0.24	0.08	0.26	0.26	0.08	0.25	0.25
Sat Flow, veh/h	3510	5187	1606	3510	3610	1585	3510	5187	1577	3510	5187	1581
Grp Volume(v), veh/h	284	526	49	367	411	103	193	577	94	188	624	152
Grp Sat Flow(s),veh/h/ln	1755	1729	1606	1755	1805	1585	1755	1729	1577	1755	1729	1581
Q Serve(g_s), s	5.9	6.6	1.9	7.6	7.3	4.0	4.0	7.0	3.5	3.9	7.6	5.9
Cycle Q Clear(g_c), s	5.9	6.6	1.9	7.6	7.3	4.0	4.0	7.0	3.5	3.9	7.6	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	378	1100	340	465	855	375	281	1324	402	276	1316	401
V/C Ratio(X)	0.75	0.48	0.14	0.79	0.48	0.27	0.69	0.44	0.23	0.68	0.47	0.38
Avail Cap(c_a), veh/h	706	2364	732	941	1887	829	518	2155	655	518	2155	657
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.3	25.8	23.9	31.3	24.5	23.2	33.4	23.3	22.0	33.5	23.6	23.0
Incr Delay (d2), s/veh	1.1	0.7	0.4	1.1	0.9	0.8	1.1	0.5	0.6	1.1	0.6	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	2.6	0.7	3.0	2.9	1.4	1.6	2.6	1.3	1.6	2.9	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.4	26.5	24.3	32.5	25.4	24.1	34.5	23.8	22.6	34.6	24.2	24.3
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		859			881			864			964	
Approach Delay, s/veh		28.7			28.2			26.0			26.2	
Approach LOS		C			C			C			C	

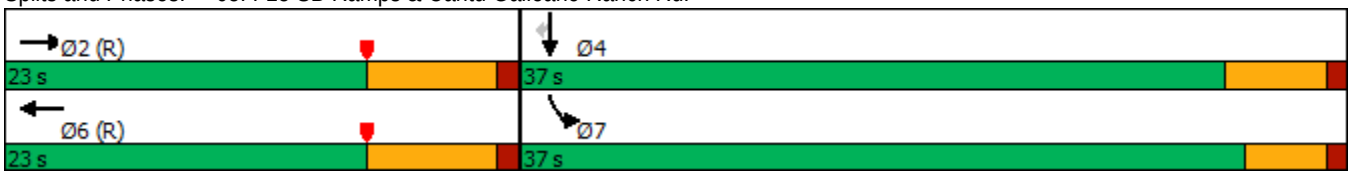
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	22.8	11.0	25.9	13.0	24.7	10.9	26.0
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	20.0	34.0	11.0	31.0	15.0	39.0	11.0	31.0
Max Q Clear Time (g_c+I1), s	9.6	8.6	6.0	9.6	7.9	9.3	5.9	9.0
Green Ext Time (p_c), s	0.3	6.6	0.1	8.1	0.2	5.8	0.1	7.2

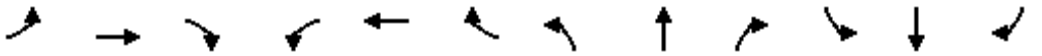
Intersection Summary	
HCM 6th Ctrl Delay	27.3
HCM 6th LOS	C

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1077	491	444	418	290	0	960
Future Volume (vph)	1077	491	444	418	290	0	960
Turn Type	NA	Free	NA	Free	Prot	NA	Perm
Protected Phases	2		6		7	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		7	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		9.6	10.5	10.5
Total Split (s)	23.0		23.0		37.0	37.0	37.0
Total Split (%)	38.3%		38.3%		61.7%	61.7%	61.7%
Yellow Time (s)	5.8		5.8		3.6	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8		6.8		4.6	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Min		None	Min	Min
Act Effct Green (s)	16.2	60.0	16.2	60.0	32.4	31.5	31.5
Actuated g/C Ratio	0.27	1.00	0.27	1.00	0.54	0.52	0.52
v/c Ratio	0.79	0.31	0.47	0.27	0.29	0.62	0.59
Control Delay	25.5	0.5	16.2	0.9	8.6	11.5	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.5	0.5	16.2	0.9	8.6	11.5	10.7
LOS	C	A	B	A	A	B	B
Approach Delay	17.7		8.8			10.6	
Approach LOS	B		A			B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 53 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 13.2	Intersection LOS: B
Intersection Capacity Utilization 62.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	✣	↱
Traffic Volume (veh/h)	0	1077	491	0	444	418	0	0	0	290	0	960
Future Volume (veh/h)	0	1077	491	0	444	418	0	0	0	290	0	960
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1110	0	0	458	0				199	0	765
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2599		0	1809					559	0	995
Arrive On Green	0.00	0.50	0.00	0.00	0.50	0.00				0.31	0.00	0.31
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1110	0	0	458	0				199	0	765
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	8.1	0.0	0.0	4.3	0.0				5.1	0.0	12.9
Cycle Q Clear(g_c), s	0.0	8.1	0.0	0.0	4.3	0.0				5.1	0.0	12.9
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2599		0	1809					559	0	995
V/C Ratio(X)	0.00	0.43		0.00	0.25					0.36	0.00	0.77
Avail Cap(c_a), veh/h	0	2599		0	1809					977	0	1739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.29	0.00	0.00	0.97	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.5	0.0	0.0	8.6	0.0				16.1	0.0	18.8
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.3	0.0				0.4	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.2	0.0	0.0	1.3	0.0				1.8	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	9.6	0.0	0.0	8.9	0.0				16.5	0.0	20.1
LnGrp LOS	A	A		A	A					B	A	C
Approach Vol, veh/h		1110	A		458	A					964	
Approach Delay, s/veh		9.6			8.9						19.3	
Approach LOS		A			A						B	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		36.9		23.1		36.9						
Change Period (Y+Rc), s		6.8		4.6		6.8						
Max Green Setting (Gmax), s		16.2		32.4		16.2						
Max Q Clear Time (g_c+I1), s		10.1		14.9		6.3						
Green Ext Time (p_c), s		3.3		3.6		1.8						

Intersection Summary	
HCM 6th Ctrl Delay	13.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

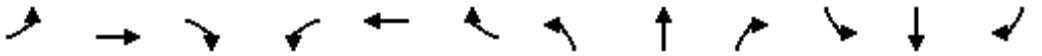
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1102	523	513	940	129	1	400
Future Volume (vph)	1102	523	513	940	129	1	400
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	10.0	36.5	23.5	23.5	23.5
Total Split (s)	55.1	55.1	22.9	78.0	32.0	32.0	32.0
Total Split (%)	50.1%	50.1%	20.8%	70.9%	29.1%	29.1%	29.1%
Yellow Time (s)	4.5	4.5	4.0	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	0.5	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.5	5.5	5.5	5.5	5.5
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	Min	Min	Min

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1102	523	513	940	0	0	0	0	129	1	400
Future Volume (veh/h)	0	1102	523	513	940	0	0	0	0	129	1	400
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1124	388	523	959	0				193	0	109
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2184	974	581	2929	0				320	0	143
Arrive On Green	0.00	0.60	0.60	0.11	0.54	0.00				0.09	0.00	0.09
Sat Flow, veh/h	0	3705	1610	3510	3705	0				3619	0	1610
Grp Volume(v), veh/h	0	1124	388	523	959	0				193	0	109
Grp Sat Flow(s),veh/h/ln	0	1805	1610	1755	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	19.6	13.8	16.2	16.2	0.0				5.6	0.0	7.3
Cycle Q Clear(g_c), s	0.0	19.6	13.8	16.2	16.2	0.0				5.6	0.0	7.3
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2184	974	581	2929	0				320	0	143
V/C Ratio(X)	0.00	0.51	0.40	0.90	0.33	0.00				0.60	0.00	0.76
Avail Cap(c_a), veh/h	0	2184	974	587	2929	0				872	0	388
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.89	0.89	0.63	0.63	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.5	11.3	48.0	8.4	0.0				48.3	0.0	49.0
Incr Delay (d2), s/veh	0.0	0.8	1.1	11.2	0.2	0.0				0.7	0.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.2	4.6	8.1	6.8	0.0				2.5	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.2	12.4	59.2	8.6	0.0				48.9	0.0	52.2
LnGrp LOS	A	B	B	E	A	A				D	A	D
Approach Vol, veh/h		1512			1482						302	
Approach Delay, s/veh		13.0			26.5						50.1	
Approach LOS		B			C						D	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	22.7	72.0		15.2		94.8						
Change Period (Y+Rc), s	4.5	5.5		5.5		5.5						
Max Green Setting (Gmax), s	18.4	49.6		26.5		72.5						
Max Q Clear Time (g_c+I1), s	18.2	21.6		9.3		18.2						
Green Ext Time (p_c), s	0.0	6.2		0.5		4.5						

Intersection Summary												
HCM 6th Ctrl Delay			22.5									
HCM 6th LOS			C									

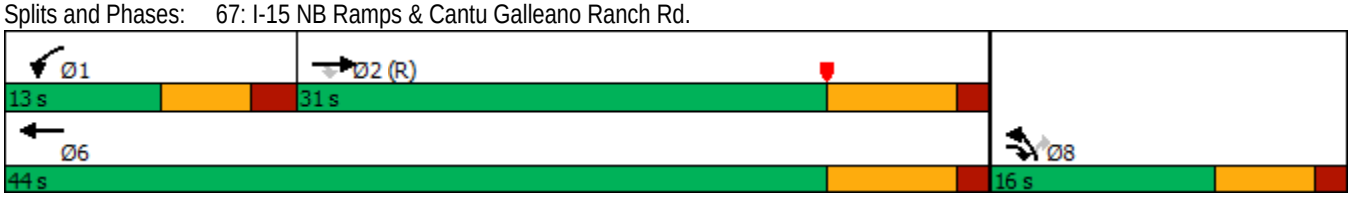
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	637	761	292	674	192	229
Future Volume (vph)	637	761	292	674	192	229
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	31.0	16.0	13.0	44.0	16.0	16.0
Total Split (%)	51.7%	26.7%	21.7%	73.3%	26.7%	26.7%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.0	6.0	7.3	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max
Act Effct Green (s)	23.7	41.0	7.0	36.7	10.0	10.0
Actuated g/C Ratio	0.40	0.68	0.12	0.61	0.17	0.17
v/c Ratio	0.33	0.72	0.75	0.22	0.47	0.39
Control Delay	9.1	9.3	39.5	5.5	17.5	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.1	9.3	39.5	5.5	17.5	8.4
LOS	A	A	D	A	B	A
Approach Delay	9.2			15.7	14.7	
Approach LOS	A			B	B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 12.3	Intersection LOS: B
Intersection Capacity Utilization 65.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	637	761	292	674	192	229
Future Volume (veh/h)	637	761	292	674	192	229
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	671	585	307	709	225	113
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2049	904	410	3173	603	268
Arrive On Green	0.66	0.66	0.12	0.61	0.17	0.17
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	671	585	307	709	225	113
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	3.4	13.7	5.1	3.7	3.3	3.8
Cycle Q Clear(g_c), s	3.4	13.7	5.1	3.7	3.3	3.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2049	904	410	3173	603	268
V/C Ratio(X)	0.33	0.65	0.75	0.22	0.37	0.42
Avail Cap(c_a), veh/h	2049	904	410	3173	603	268
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.66	0.66	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.8	4.9	25.7	5.2	22.2	22.4
Incr Delay (d2), s/veh	0.3	2.4	11.9	0.0	1.8	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	3.2	2.5	0.7	1.4	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.0	7.3	37.6	5.3	24.0	27.2
LnGrp LOS	A	A	D	A	C	C
Approach Vol, veh/h	1256			1016	338	
Approach Delay, s/veh	7.2			15.0	25.1	
Approach LOS	A			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.0	31.0				44.0	16.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	7.0	23.7				36.7	10.0
Max Q Clear Time (g_c+I1), s	7.1	15.7				5.7	5.8
Green Ext Time (p_c), s	0.0	3.9				4.7	0.5

Intersection Summary			
HCM 6th Ctrl Delay		12.5	
HCM 6th LOS		B	

Notes

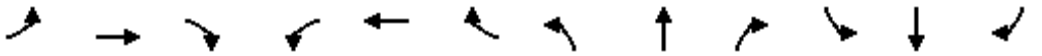
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	450	781	1092	186	361	2	757
Future Volume (vph)	450	781	1092	186	361	2	757
Turn Type	Prot	NA	NA	Perm	Split	NA	Perm
Protected Phases	5	2	6		8	8	
Permitted Phases				6			8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	26.0	72.0	46.0	46.0	38.0	38.0	38.0
Total Split (%)	23.6%	65.5%	41.8%	41.8%	34.5%	34.5%	34.5%
Yellow Time (s)	4.0	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	450	781	0	0	1092	186	361	2	757	0	0	0
Future Volume (veh/h)	450	781	0	0	1092	186	361	2	757	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	455	789	0	0	1103	97	529	0	298			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	523	2456	0	0	1771	789	795	0	349			
Arrive On Green	0.30	1.00	0.00	0.00	0.49	0.49	0.22	0.00	0.22			
Sat Flow, veh/h	3510	3705	0	0	3705	1608	3619	0	1588			
Grp Volume(v), veh/h	455	789	0	0	1103	97	529	0	298			
Grp Sat Flow(s),veh/h/ln	1755	1805	0	0	1805	1608	1810	0	1588			
Q Serve(g_s), s	13.5	0.0	0.0	0.0	24.7	3.6	14.7	0.0	19.8			
Cycle Q Clear(g_c), s	13.5	0.0	0.0	0.0	24.7	3.6	14.7	0.0	19.8			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	523	2456	0	0	1771	789	795	0	349			
V/C Ratio(X)	0.87	0.32	0.00	0.00	0.62	0.12	0.67	0.00	0.85			
Avail Cap(c_a), veh/h	686	2456	0	0	1771	789	1069	0	469			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.80	0.80	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	37.6	0.0	0.0	0.0	20.6	15.2	39.2	0.0	41.2			
Incr Delay (d2), s/veh	7.7	0.3	0.0	0.0	1.7	0.3	1.0	0.0	11.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.3	0.1	0.0	0.0	10.0	1.3	6.4	0.0	8.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	0.3	0.0	0.0	22.2	15.5	40.2	0.0	52.3			
LnGrp LOS	D	A	A	A	C	B	D	A	D			
Approach Vol, veh/h		1244			1200			827				
Approach Delay, s/veh		16.7			21.7			44.6				
Approach LOS		B			C			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		80.3			20.9	59.4		29.7				
Change Period (Y+Rc), s		5.5			4.5	5.5		5.5				
Max Green Setting (Gmax), s		66.5			21.5	40.5		32.5				
Max Q Clear Time (g_c+I1), s		2.0			15.5	26.7		21.8				
Green Ext Time (p_c), s		3.5			0.9	4.4		2.3				
Intersection Summary												
HCM 6th Ctrl Delay			25.6									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

APPENDIX 5.2:

E+P (PHASE B) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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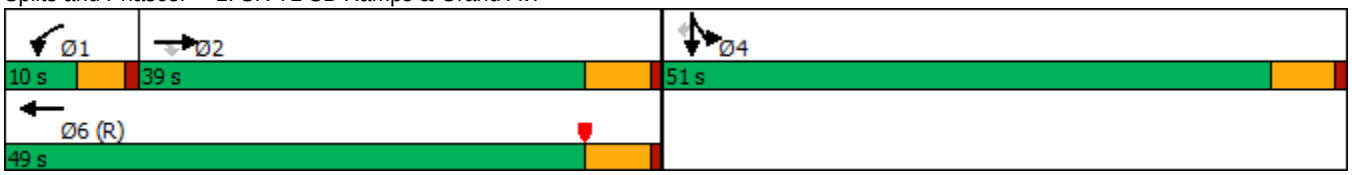
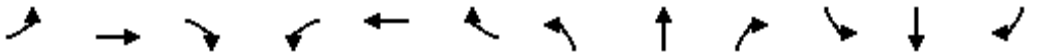
Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	739	200	63	1326	843	5	307
Future Volume (vph)	739	200	63	1326	843	5	307
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	39.0	39.0	10.0	49.0	51.0	51.0	51.0
Total Split (%)	39.0%	39.0%	10.0%	49.0%	51.0%	51.0%	51.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	739	200	63	1326	0	0	0	0	843	5	307
Future Volume (veh/h)	0	739	200	63	1326	0	0	0	0	843	5	307
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	869	146	74	1560	0				996	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85				0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1869	580	174	2334	0				1193	0	
Arrive On Green	0.00	0.36	0.36	0.05	0.45	0.00				0.33	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	869	146	74	1560	0				996	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	12.9	6.4	2.0	23.7	0.0				25.5	0.0	0.0
Cycle Q Clear(g_c), s	0.0	12.9	6.4	2.0	23.7	0.0				25.5	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1869	580	174	2334	0				1193	0	
V/C Ratio(X)	0.00	0.46	0.25	0.43	0.67	0.00				0.84	0.00	
Avail Cap(c_a), veh/h	0	1869	580	211	2334	0				1701	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.49	0.49	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	24.6	22.5	46.1	21.6	0.0				31.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	1.0	0.3	0.8	0.0				2.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.1	2.4	0.9	8.9	0.0				10.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	25.4	23.5	46.4	22.4	0.0				33.6	0.0	0.0
LnGrp LOS	A	C	C	D	C	A				C	A	
Approach Vol, veh/h		1015			1634						996	A
Approach Delay, s/veh		25.1			23.5						33.6	
Approach LOS		C			C						C	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	9.0	40.0		37.0		49.0						
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8						
Max Green Setting (Gmax), s	5.4	33.2		45.2		43.2						
Max Q Clear Time (g_c+I1), s	4.0	14.9		27.5		25.7						
Green Ext Time (p_c), s	0.0	5.8		3.7		9.8						

Intersection Summary			
HCM 6th Ctrl Delay		26.7	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

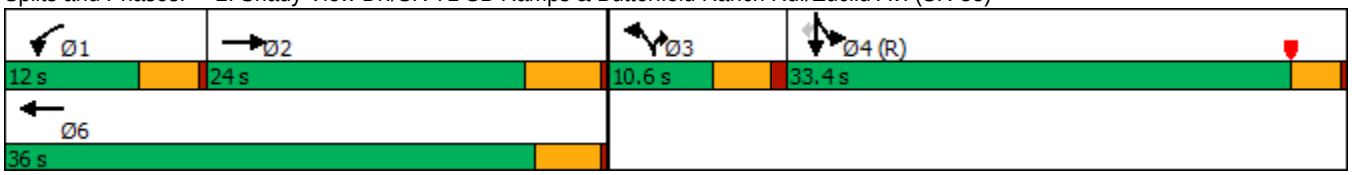
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

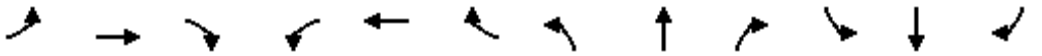
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	690	195	277	19	288	628	26	40
Future Volume (vph)	690	195	277	19	288	628	26	40
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	24.0	12.0	36.0	10.6	10.6	33.4	33.4	33.4
Total Split (%)	30.0%	15.0%	45.0%	13.3%	13.3%	41.8%	41.8%	41.8%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	690	31	195	277	0	19	0	288	628	26	40
Future Volume (veh/h)	0	690	31	195	277	0	19	0	288	628	26	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	704	23	199	283	0	19	0	225	660	0	25
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	795	26	181	1346		0	0	0	1885	0	839
Arrive On Green	0.00	0.22	0.22	0.03	0.12	0.00	0.00	0.00	0.00	0.52	0.00	0.52
Sat Flow, veh/h	0	3663	117	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	356	371	199	283	0		0.0		660	0	25
Grp Sat Flow(s),veh/h/ln	0	1805	1879	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	15.3	15.3	8.0	5.6	0.0				8.5	0.0	0.6
Cycle Q Clear(g_c), s	0.0	15.3	15.3	8.0	5.6	0.0				8.5	0.0	0.6
Prop In Lane	0.00		0.06	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	402	419	181	1346					1885	0	839
V/C Ratio(X)	0.00	0.89	0.89	1.10	0.21					0.35	0.00	0.03
Avail Cap(c_a), veh/h	0	429	446	181	1421					1885	0	839
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.94	0.94	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	30.1	30.1	38.7	24.5	0.0				11.2	0.0	9.3
Incr Delay (d2), s/veh	0.0	17.7	17.2	94.1	0.1	0.0				0.5	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.0	8.3	8.3	2.3	0.0				3.0	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	47.8	47.3	132.8	24.5	0.0				11.7	0.0	9.4
LnGrp LOS	A	D	D	F	C					B	A	A
Approach Vol, veh/h		727			482	A					685	
Approach Delay, s/veh		47.5			69.2						11.7	
Approach LOS		D			E						B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	12.0	22.8		45.2		34.8						
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5						
Max Green Setting (Gmax), s	8.0	19.0		29.9		* 32						
Max Q Clear Time (g_c+I1), s	10.0	17.3		10.5		7.6						
Green Ext Time (p_c), s	0.0	0.5		2.4		1.3						

Intersection Summary												
HCM 6th Ctrl Delay			40.1									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

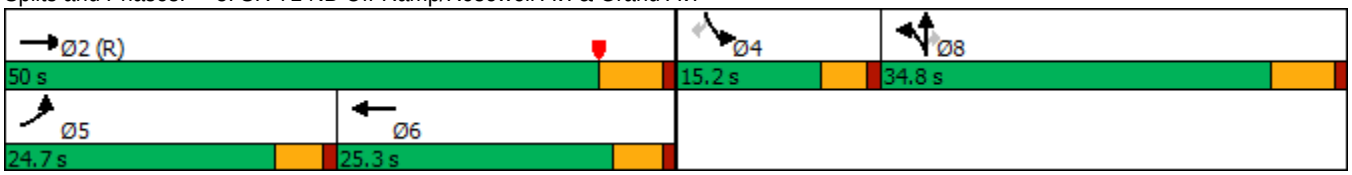
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

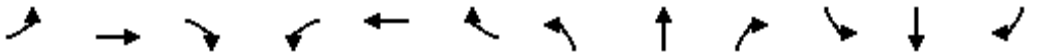
Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	319	1090	173	1052	468	70	65	41	671
Future Volume (vph)	319	1090	173	1052	468	70	65	41	671
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.6	34.8		14.7	34.8	34.8	34.8	9.5	9.5
Total Split (s)	24.7	50.0		25.3	34.8	34.8	34.8	15.2	15.2
Total Split (%)	24.7%	50.0%		25.3%	34.8%	34.8%	34.8%	15.2%	15.2%
Yellow Time (s)	3.6	4.8		3.7	4.8	4.8	4.8	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8		-0.7	-1.8	-1.8	-1.8	-0.5	-0.5
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	Max	Max	Max	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	319	1090	173	0	1052	39	468	70	65	41	0	671
Future Volume (veh/h)	319	1090	173	0	1052	39	468	70	65	41	0	671
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	347	1185	0	0	1143	42	563	0	31	45	0	453
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	375	3174		0	2308	85	1115	0	496	0	0	0
Arrive On Green	0.21	0.61	0.00	0.00	0.35	0.35	0.31	0.00	0.31	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6786	239	3619	0	1610		0	
Grp Volume(v), veh/h	347	1185	0	0	859	326	563	0	31		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1857	1810	0	1610			
Q Serve(g_s), s	18.8	11.5	0.0	0.0	13.7	13.8	12.7	0.0	1.4			
Cycle Q Clear(g_c), s	18.8	11.5	0.0	0.0	13.7	13.8	12.7	0.0	1.4			
Prop In Lane	1.00		1.00	0.00		0.13	1.00		1.00			
Lane Grp Cap(c), veh/h	375	3174		0	1735	657	1115	0	496			
V/C Ratio(X)	0.93	0.37		0.00	0.49	0.50	0.51	0.00	0.06			
Avail Cap(c_a), veh/h	375	3174		0	1735	657	1115	0	496			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.85	0.85	0.00	0.00	0.92	0.92	1.00	0.00	1.00			
Uniform Delay (d), s/veh	38.9	9.8	0.0	0.0	25.3	25.4	28.4	0.0	24.4			
Incr Delay (d2), s/veh	25.2	0.3	0.0	0.0	0.2	0.5	1.6	0.0	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	10.5	3.8	0.0	0.0	5.2	6.0	5.5	0.0	0.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.1	10.0	0.0	0.0	25.5	25.9	30.0	0.0	24.7			
LnGrp LOS	E	B		A	C	C	C	A	C			
Approach Vol, veh/h		1532	A		1185			594				
Approach Delay, s/veh		22.3			25.6			29.7				
Approach LOS		C			C			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		65.2			24.7	40.5		34.8				
Change Period (Y+Rc), s		5.8			4.6	* 5.8		5.8				
Max Green Setting (Gmax), s		44.2			20.1	* 21		29.0				
Max Q Clear Time (g_c+I1), s		13.5			20.8	15.8		14.7				
Green Ext Time (p_c), s		9.1			0.0	3.0		1.8				

Intersection Summary	
HCM 6th Ctrl Delay	24.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

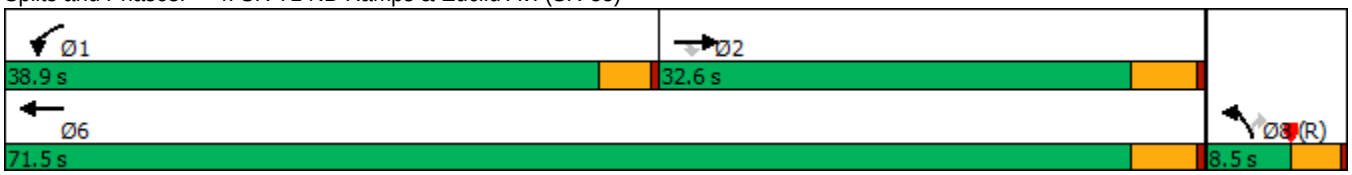
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	662	289	740	947	43	721
Future Volume (vph)	662	289	740	947	43	721
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	32.6	32.6	38.9	71.5	8.5	8.5
Total Split (%)	40.8%	40.8%	48.6%	89.4%	10.6%	10.6%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	662	289	740	947	43	721
Future Volume (veh/h)	662	289	740	947	43	721
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	704	0	787	1007	46	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	904		801	2659	574	
Arrive On Green	0.08	0.00	0.44	0.74	0.16	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	704	0	787	1007	46	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	15.3	0.0	34.3	8.2	0.9	0.0
Cycle Q Clear(g_c), s	15.3	0.0	34.3	8.2	0.9	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	904		801	2659	574	
V/C Ratio(X)	0.78		0.98	0.38	0.08	
Avail Cap(c_a), veh/h	1268		801	3023	574	
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.45	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.5	0.0	22.0	3.8	28.4	0.0
Incr Delay (d2), s/veh	0.8	0.0	27.5	0.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	0.0	17.8	1.3	0.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.3	0.0	49.5	3.9	28.6	0.0
LnGrp LOS	D		D	A	C	
Approach Vol, veh/h	704	A		1794	46	A
Approach Delay, s/veh	35.3			23.9	28.6	
Approach LOS	D			C	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	38.9	24.5				63.4	16.6
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	35.4	28.1				67.0	5.0
Max Q Clear Time (g_c+I1), s	36.3	17.3				10.2	2.9
Green Ext Time (p_c), s	0.0	2.7				7.5	0.0

Intersection Summary	
HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

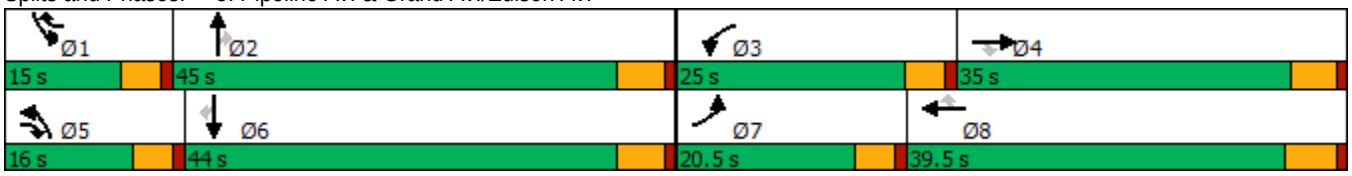
Notes

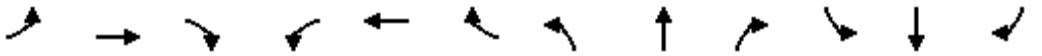
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	835	142	150	809	42	142	195	98	57	317	67
Future Volume (vph)	106	835	142	150	809	42	142	195	98	57	317	67
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	20.5	35.0	16.0	25.0	39.5	15.0	16.0	45.0	45.0	15.0	44.0	44.0
Total Split (%)	17.1%	29.2%	13.3%	20.8%	32.9%	12.5%	13.3%	37.5%	37.5%	12.5%	36.7%	36.7%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 87.7
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	835	142	150	809	42	142	195	98	57	317	67
Future Volume (veh/h)	106	835	142	150	809	42	142	195	98	57	317	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	109	861	103	155	834	28	146	201	32	59	327	35
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	210	2163	775	256	2281	766	236	702	312	88	616	270
Arrive On Green	0.07	0.44	0.43	0.08	0.46	0.45	0.08	0.21	0.21	0.05	0.18	0.18
Sat Flow, veh/h	3141	4914	1505	3141	4914	1522	2956	3420	1519	1619	3420	1498
Grp Volume(v), veh/h	109	861	103	155	834	28	146	201	32	59	327	35
Grp Sat Flow(s),veh/h/ln	1570	1638	1505	1570	1638	1522	1478	1710	1519	1619	1710	1498
Q Serve(g_s), s	2.6	9.1	2.7	3.6	8.4	0.7	3.7	3.8	1.3	2.7	6.6	1.5
Cycle Q Clear(g_c), s	2.6	9.1	2.7	3.6	8.4	0.7	3.7	3.8	1.3	2.7	6.6	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	210	2163	775	256	2281	766	236	702	312	88	616	270
V/C Ratio(X)	0.52	0.40	0.13	0.61	0.37	0.04	0.62	0.29	0.10	0.67	0.53	0.13
Avail Cap(c_a), veh/h	678	2163	775	862	2281	766	464	1833	814	233	1789	783
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.5	14.5	9.7	33.9	13.2	9.6	34.1	25.7	24.7	35.5	28.4	26.3
Incr Delay (d2), s/veh	0.7	0.5	0.4	0.9	0.5	0.1	1.0	0.2	0.1	3.2	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	3.2	0.8	1.3	2.7	0.2	1.3	1.5	0.4	1.1	2.6	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.2	15.1	10.1	34.8	13.7	9.7	35.1	25.9	24.8	38.7	29.1	26.5
LnGrp LOS	D	B	B	C	B	A	D	C	C	D	C	C
Approach Vol, veh/h		1073			1017			379			421	
Approach Delay, s/veh		16.6			16.8			29.3			30.3	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	19.7	10.2	38.4	10.1	17.8	9.1	39.5
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	10.4	39.6	20.4	* 30	11.4	38.6	15.9	33.7
Max Q Clear Time (g_c+I1), s	4.7	5.8	5.6	11.1	5.7	8.6	4.6	10.4
Green Ext Time (p_c), s	0.0	1.3	0.2	6.0	0.1	2.2	0.1	5.6

Intersection Summary	
HCM 6th Ctrl Delay	20.3
HCM 6th LOS	C

Notes

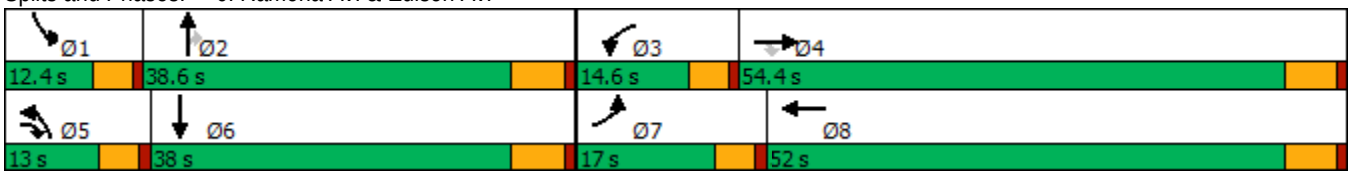
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

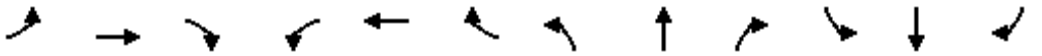
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	91	789	55	48	932	41	285	54	40	419
Future Volume (vph)	91	789	55	48	932	41	285	54	40	419
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	17.0	54.4	13.0	14.6	52.0	13.0	38.6	38.6	12.4	38.0
Total Split (%)	14.2%	45.3%	10.8%	12.2%	43.3%	10.8%	32.2%	32.2%	10.3%	31.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 104
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	789	55	48	932	61	41	285	54	40	419	86
Future Volume (veh/h)	91	789	55	48	932	61	41	285	54	40	419	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1700	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	101	877	57	53	1036	64	46	317	29	44	466	84
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	134	1803	1385	75	1605	99	69	756	336	68	636	114
Arrive On Green	0.08	0.53	0.51	0.05	0.49	0.47	0.04	0.22	0.22	0.04	0.22	0.20
Sat Flow, veh/h	1619	3420	2481	1619	3269	202	1619	3420	1521	1619	2891	518
Grp Volume(v), veh/h	101	877	57	53	542	558	46	317	29	44	274	276
Grp Sat Flow(s),veh/h/ln	1619	1710	1240	1619	1710	1761	1619	1710	1521	1619	1710	1699
Q Serve(g_s), s	6.0	15.9	1.0	3.2	23.1	23.2	2.7	7.8	1.5	2.6	14.6	14.8
Cycle Q Clear(g_c), s	6.0	15.9	1.0	3.2	23.1	23.2	2.7	7.8	1.5	2.6	14.6	14.8
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	134	1803	1385	75	839	864	69	756	336	68	376	374
V/C Ratio(X)	0.75	0.49	0.04	0.70	0.65	0.65	0.67	0.42	0.09	0.65	0.73	0.74
Avail Cap(c_a), veh/h	215	1803	1385	176	839	864	149	1210	538	139	595	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	14.7	9.8	46.0	18.6	18.6	46.1	32.7	30.2	46.1	35.4	35.8
Incr Delay (d2), s/veh	3.2	0.9	0.1	4.4	3.8	3.7	4.1	0.4	0.1	3.9	2.7	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	5.7	0.3	1.3	9.0	9.3	1.1	3.1	0.5	1.1	6.0	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.1	15.6	9.9	50.4	22.4	22.4	50.2	33.1	30.4	50.0	38.1	38.6
LnGrp LOS	D	B	A	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		1035			1153			392			594	
Approach Delay, s/veh		18.4			23.6			34.9			39.2	
Approach LOS		B			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	25.6	8.5	55.5	8.2	25.5	12.1	52.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	7.8	32.8	10.0	48.6	8.4	32.2	12.4	46.2
Max Q Clear Time (g_c+I1), s	4.6	9.8	5.2	17.9	4.7	16.8	8.0	25.2
Green Ext Time (p_c), s	0.0	1.9	0.0	6.6	0.0	2.6	0.0	6.8

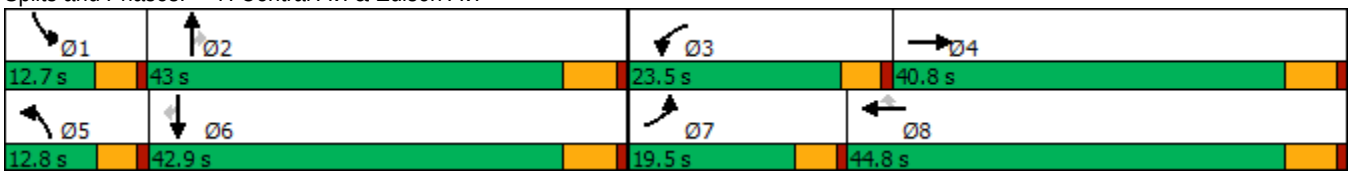
Intersection Summary	
HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

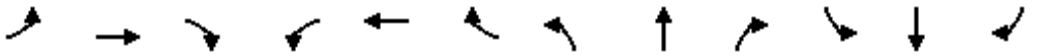
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	141	478	300	953	106	69	732	292	73	866	237
Future Volume (vph)	141	478	300	953	106	69	732	292	73	866	237
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	19.5	40.8	23.5	44.8	44.8	12.8	43.0	43.0	12.7	42.9	42.9
Total Split (%)	16.3%	34.0%	19.6%	37.3%	37.3%	10.7%	35.8%	35.8%	10.6%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 112.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	478	50	300	953	106	69	732	292	73	866	237
Future Volume (veh/h)	141	478	50	300	953	106	69	732	292	73	866	237
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	147	498	46	312	993	82	72	762	122	76	902	189
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	181	1131	104	387	1261	555	98	1066	468	103	1076	473
Arrive On Green	0.11	0.36	0.34	0.12	0.37	0.37	0.06	0.31	0.31	0.06	0.31	0.31
Sat Flow, veh/h	1619	3166	292	3141	3420	1505	1619	3420	1503	1619	3420	1504
Grp Volume(v), veh/h	147	268	276	312	993	82	72	762	122	76	902	189
Grp Sat Flow(s),veh/h/ln	1619	1710	1748	1570	1710	1505	1619	1710	1503	1619	1710	1504
Q Serve(g_s), s	9.8	13.2	13.4	10.7	28.6	4.0	4.8	21.8	6.7	5.1	27.2	10.9
Cycle Q Clear(g_c), s	9.8	13.2	13.4	10.7	28.6	4.0	4.8	21.8	6.7	5.1	27.2	10.9
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	181	611	624	387	1261	555	98	1066	468	103	1076	473
V/C Ratio(X)	0.81	0.44	0.44	0.81	0.79	0.15	0.73	0.71	0.26	0.74	0.84	0.40
Avail Cap(c_a), veh/h	227	611	624	554	1261	555	129	1206	530	127	1202	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.0	27.1	27.3	47.2	31.1	23.3	51.1	33.7	28.5	50.9	35.3	29.7
Incr Delay (d2), s/veh	13.3	2.3	2.3	3.7	5.0	0.6	8.9	1.8	0.3	11.7	4.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	5.5	5.7	4.2	12.0	1.5	2.1	8.9	2.4	2.3	11.5	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.3	29.4	29.5	50.9	36.1	23.9	60.0	35.5	28.8	62.6	40.2	30.3
LnGrp LOS	E	C	C	D	D	C	E	D	C	E	D	C
Approach Vol, veh/h		691			1387			956			1167	
Approach Delay, s/veh		36.2			38.7			36.5			40.1	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	38.5	17.6	43.5	10.7	38.8	16.3	44.8
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	8.1	37.2	18.9	35.0	8.2	37.1	14.9	39.0
Max Q Clear Time (g_c+I1), s	7.1	23.8	12.7	15.4	6.8	29.2	11.8	30.6
Green Ext Time (p_c), s	0.0	4.3	0.3	2.8	0.0	3.8	0.0	4.1

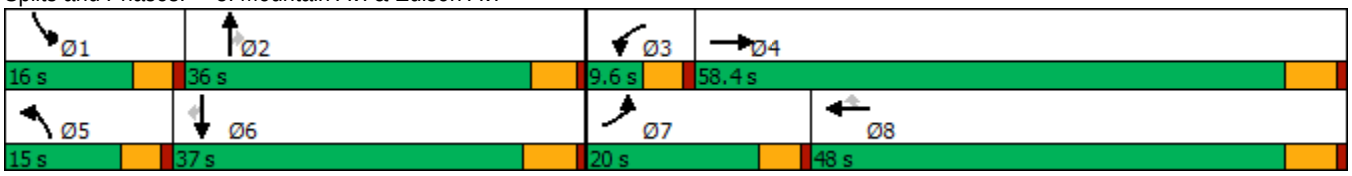
Intersection Summary	
HCM 6th Ctrl Delay	38.2
HCM 6th LOS	D

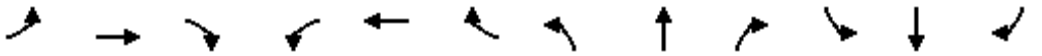
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	134	524	10	969	101	80	146	39	95	75	250
Future Volume (vph)	134	524	10	969	101	80	146	39	95	75	250
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	20.0	58.4	9.6	48.0	48.0	15.0	36.0	36.0	16.0	37.0	37.0
Total Split (%)	16.7%	48.7%	8.0%	40.0%	40.0%	12.5%	30.0%	30.0%	13.3%	30.8%	30.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 101.3
Natural Cycle: 85
Control Type: Actuated-Uncoordinated

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	524	38	10	969	101	80	146	39	95	75	250
Future Volume (veh/h)	134	524	38	10	969	101	80	146	39	95	75	250
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	146	570	37	11	1053	99	87	159	12	103	82	134
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	185	2771	178	32	1689	753	118	228	193	137	263	218
Arrive On Green	0.11	0.59	0.57	0.02	0.49	0.49	0.07	0.13	0.13	0.08	0.15	0.15
Sat Flow, veh/h	1619	4710	303	1619	3420	1524	1619	1800	1525	1619	1800	1495
Grp Volume(v), veh/h	146	395	212	11	1053	99	87	159	12	103	82	134
Grp Sat Flow(s),veh/h/ln	1619	1638	1738	1619	1710	1524	1619	1800	1525	1619	1800	1495
Q Serve(g_s), s	8.1	5.2	5.3	0.6	20.8	3.3	4.9	7.8	0.6	5.8	3.8	7.8
Cycle Q Clear(g_c), s	8.1	5.2	5.3	0.6	20.8	3.3	4.9	7.8	0.6	5.8	3.8	7.8
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	185	1927	1022	32	1689	753	118	228	193	137	263	218
V/C Ratio(X)	0.79	0.20	0.21	0.34	0.62	0.13	0.74	0.70	0.06	0.75	0.31	0.61
Avail Cap(c_a), veh/h	280	1927	1022	98	1689	753	193	623	528	210	642	534
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.9	8.9	9.0	44.7	17.1	12.7	42.0	38.7	35.5	41.4	35.3	37.1
Incr Delay (d2), s/veh	4.2	0.2	0.5	2.3	1.7	0.4	3.3	3.8	0.1	3.1	0.7	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	1.6	1.8	0.3	7.6	1.1	2.0	3.6	0.2	2.3	1.6	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.1	9.2	9.5	47.1	18.9	13.0	45.3	42.5	35.7	44.5	36.0	39.8
LnGrp LOS	D	A	A	D	B	B	D	D	D	D	D	D
Approach Vol, veh/h		753			1163			258			319	
Approach Delay, s/veh		16.0			18.6			43.1			40.4	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.8	16.4	5.8	58.4	10.8	17.5	14.6	49.7
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	11.4	* 31	5.0	52.6	10.4	31.2	15.4	42.2
Max Q Clear Time (g_c+I1), s	7.8	9.8	2.6	7.3	6.9	9.8	10.1	22.8
Green Ext Time (p_c), s	0.0	0.8	0.0	3.9	0.0	0.8	0.1	7.2

Intersection Summary	
HCM 6th Ctrl Delay	23.2
HCM 6th LOS	C

Notes

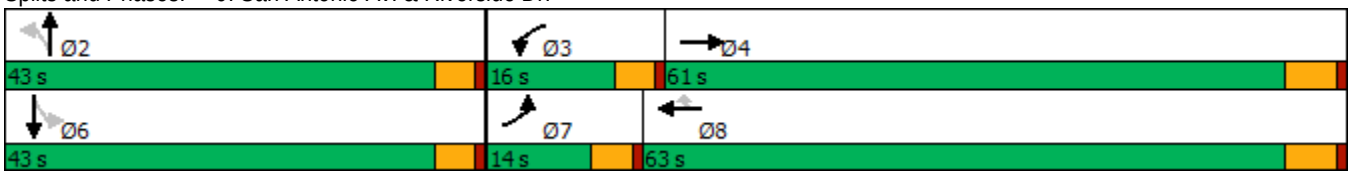
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

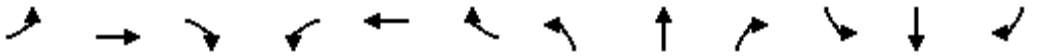
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	16	456	34	795	7	110	2	26	5
Future Volume (vph)	16	456	34	795	7	110	2	26	5
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	14.0	61.0	16.0	63.0	63.0	43.0	43.0	43.0	43.0
Total Split (%)	11.7%	50.8%	13.3%	52.5%	52.5%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 93.1
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	456	55	34	795	7	110	2	42	26	5	48
Future Volume (veh/h)	16	456	55	34	795	7	110	2	42	26	5	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	17	490	55	37	855	7	118	2	22	28	5	35
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	43	2085	233	67	2350	1025	246	19	207	260	28	199
Arrive On Green	0.03	0.67	0.65	0.04	0.69	0.69	0.15	0.15	0.14	0.15	0.15	0.14
Sat Flow, veh/h	1619	3101	347	1619	3420	1492	1312	128	1413	1328	194	1361
Grp Volume(v), veh/h	17	269	276	37	855	7	118	0	24	28	0	40
Grp Sat Flow(s),veh/h/ln	1619	1710	1738	1619	1710	1492	1312	0	1542	1328	0	1555
Q Serve(g_s), s	0.9	5.3	5.4	1.9	8.9	0.1	7.4	0.0	1.2	1.6	0.0	1.9
Cycle Q Clear(g_c), s	0.9	5.3	5.4	1.9	8.9	0.1	9.4	0.0	1.2	2.8	0.0	1.9
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.92	1.00		0.88
Lane Grp Cap(c), veh/h	43	1150	1169	67	2350	1025	246	0	226	260	0	228
V/C Ratio(X)	0.40	0.23	0.24	0.56	0.36	0.01	0.48	0.00	0.11	0.11	0.00	0.18
Avail Cap(c_a), veh/h	189	1150	1169	226	2350	1025	650	0	701	669	0	706
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.1	5.5	5.6	40.4	5.6	4.2	36.2	0.0	32.0	33.0	0.0	32.3
Incr Delay (d2), s/veh	2.2	0.5	0.5	2.7	0.4	0.0	1.4	0.0	0.2	0.2	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.5	1.6	0.8	2.4	0.0	2.5	0.0	0.4	0.5	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.3	5.9	6.0	43.1	6.0	4.2	37.6	0.0	32.2	33.1	0.0	32.7
LnGrp LOS	D	A	A	D	A	A	D	A	C	C	A	C
Approach Vol, veh/h		562			899			142			68	
Approach Delay, s/veh		7.1			7.5			36.7			32.9	
Approach LOS		A			A			D			C	

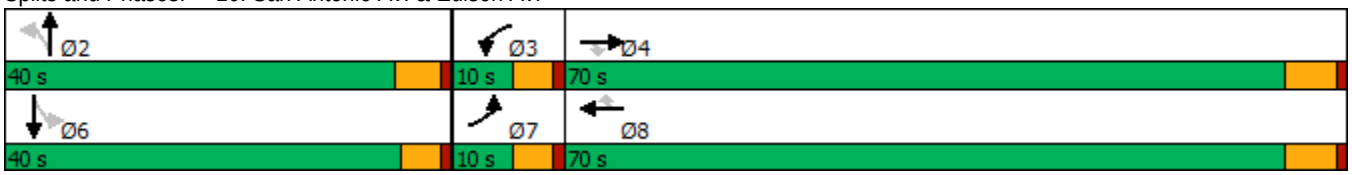
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.6	7.5	61.7		16.6	6.3	63.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		38.4	11.4	55.2		38.4	9.4	57.2				
Max Q Clear Time (g_c+I1), s		11.4	3.9	7.4		4.8	2.9	10.9				
Green Ext Time (p_c), s		0.5	0.0	3.2		0.3	0.0	6.4				

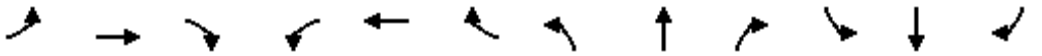
Intersection Summary												
HCM 6th Ctrl Delay			10.9									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	44	590	26	3	863	19	40	70	13	36
Future Volume (vph)	44	590	26	3	863	19	40	70	13	36
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	10.0	70.0	70.0	10.0	70.0	70.0	40.0	40.0	40.0	40.0
Total Split (%)	8.3%	58.3%	58.3%	8.3%	58.3%	58.3%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 100.2
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	590	26	3	863	19	40	70	13	13	36	89
Future Volume (veh/h)	44	590	26	3	863	19	40	70	13	13	36	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1000	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	48	641	20	3	938	21	43	76	5	14	39	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	71	2489	1108	10	2373	1058	112	156	9	57	85	109
Arrive On Green	0.04	0.73	0.73	0.01	0.69	0.69	0.14	0.14	0.12	0.13	0.13	0.12
Sat Flow, veh/h	1619	3420	1523	952	3420	1525	452	1152	67	112	651	835
Grp Volume(v), veh/h	48	641	20	3	938	21	124	0	0	111	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1523	952	1710	1525	1671	0	0	1598	0	0
Q Serve(g_s), s	2.8	6.0	0.3	0.3	11.0	0.4	0.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.8	6.0	0.3	0.3	11.0	0.4	6.2	0.0	0.0	6.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.35		0.04	0.13		0.52
Lane Grp Cap(c), veh/h	71	2489	1108	10	2373	1058	278	0	0	251	0	0
V/C Ratio(X)	0.67	0.26	0.02	0.31	0.40	0.02	0.45	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	102	2489	1108	60	2373	1058	662	0	0	637	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	44.8	4.3	3.6	46.7	6.1	4.5	38.2	0.0	0.0	38.7	0.0	0.0
Incr Delay (d2), s/veh	4.0	0.3	0.0	6.3	0.5	0.0	1.1	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.5	0.1	0.1	3.1	0.1	2.7	0.0	0.0	2.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.8	4.6	3.6	53.1	6.6	4.6	39.3	0.0	0.0	40.0	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		709			962			124			111	
Approach Delay, s/veh		7.6			6.7			39.3			40.0	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.9	5.0	73.2		16.9	8.2	70.0				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		34.9	5.4	64.2		* 35	5.4	64.2				
Max Q Clear Time (g_c+I1), s		8.2	2.3	8.0		8.0	4.8	13.0				
Green Ext Time (p_c), s		0.6	0.0	4.5		0.6	0.0	7.4				

Intersection Summary	
HCM 6th Ctrl Delay	11.1
HCM 6th LOS	B

Notes

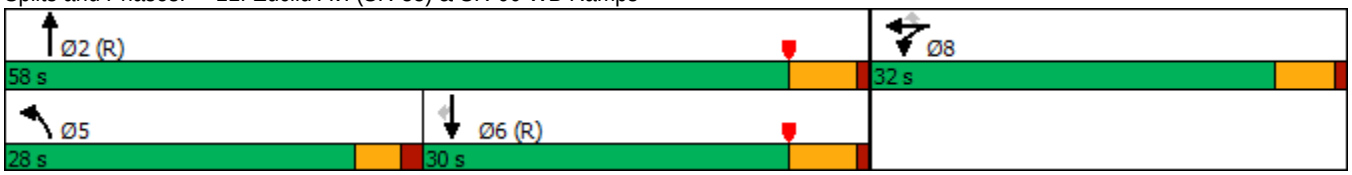
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

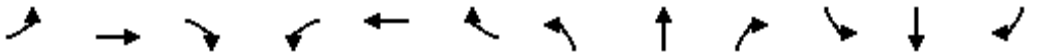
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	591	6	408	368	904	952	470
Future Volume (vph)	591	6	408	368	904	952	470
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	32.0	32.0	32.0	28.0	58.0	30.0	30.0
Total Split (%)	35.6%	35.6%	35.6%	31.1%	64.4%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	591	6	408	368	904	0	0	952	470
Future Volume (veh/h)	0	0	0	591	6	408	368	904	0	0	952	470
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				698	0	145	391	962	0	0	1013	272
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				803	0	357	416	2388	0	0	1377	614
Arrive On Green				0.22	0.00	0.22	0.46	1.00	0.00	0.00	0.38	0.38
Sat Flow, veh/h				3619	0	1610	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				698	0	145	391	962	0	0	1013	272
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1610
Q Serve(g_s), s				16.7	0.0	6.9	18.5	0.0	0.0	0.0	21.7	11.3
Cycle Q Clear(g_c), s				16.7	0.0	6.9	18.5	0.0	0.0	0.0	21.7	11.3
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				803	0	357	416	2388	0	0	1377	614
V/C Ratio(X)				0.87	0.00	0.41	0.94	0.40	0.00	0.00	0.74	0.44
Avail Cap(c_a), veh/h				1086	0	483	472	2388	0	0	1377	614
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.52	0.52	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.8	0.0	29.9	23.7	0.0	0.0	0.0	23.9	20.7
Incr Delay (d2), s/veh				4.7	0.0	0.3	15.2	0.3	0.0	0.0	3.5	2.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.4	0.0	2.6	6.9	0.1	0.0	0.0	9.2	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				38.5	0.0	30.2	38.9	0.3	0.0	0.0	27.5	23.0
LnGrp LOS				D	A	C	D	A	A	A	C	C
Approach Vol, veh/h					843			1353			1285	
Approach Delay, s/veh					37.1			11.4			26.5	
Approach LOS					D			B			C	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	65.0		25.2	39.8		25.0						
Change Period (Y+Rc), s	5.5		4.5	5.5		5.0						
Max Green Setting (Gmax), s	52.5		23.5	24.5		27.0						
Max Q Clear Time (g_c+I1), s	2.0		20.5	23.7		18.7						
Green Ext Time (p_c), s	12.0		0.2	0.6		1.2						

Intersection Summary		
HCM 6th Ctrl Delay	23.2	
HCM 6th LOS	C	

Notes

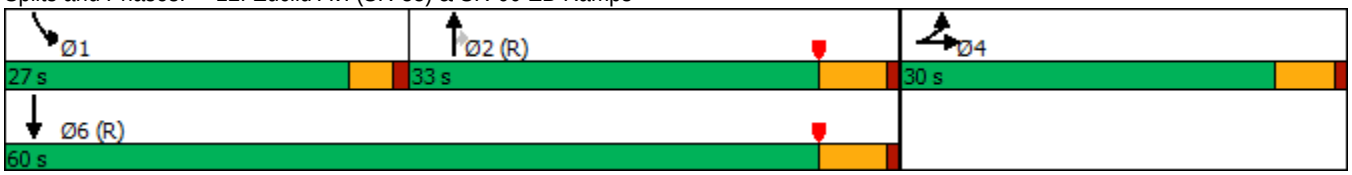
User approved volume balancing among the lanes for turning movement.

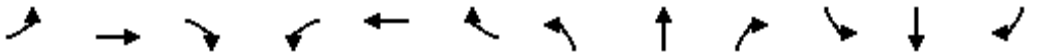
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	404	2	869	656	363	1180
Future Volume (vph)	404	2	869	656	363	1180
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	30.0	30.0	33.0	33.0	27.0	60.0
Total Split (%)	33.3%	33.3%	36.7%	36.7%	30.0%	66.7%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	404	2	405	0	0	0	0	869	656	363	1180	0
Future Volume (veh/h)	404	2	405	0	0	0	0	869	656	363	1180	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	399	38	371				0	915	492	382	1242	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	488	41	400				0	1229	534	414	2215	0
Arrive On Green	0.27	0.27	0.27				0.00	0.34	0.34	0.30	0.82	0.00
Sat Flow, veh/h	1810	152	1482				0	3705	1567	1810	3705	0
Grp Volume(v), veh/h	399	0	409				0	915	492	382	1242	0
Grp Sat Flow(s),veh/h/ln	1810	0	1633				0	1805	1567	1810	1805	0
Q Serve(g_s), s	18.6	0.0	22.0				0.0	20.2	27.2	18.4	10.5	0.0
Cycle Q Clear(g_c), s	18.6	0.0	22.0				0.0	20.2	27.2	18.4	10.5	0.0
Prop In Lane	1.00		0.91				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	488	0	441				0	1229	534	414	2215	0
V/C Ratio(X)	0.82	0.00	0.93				0.00	0.74	0.92	0.92	0.56	0.00
Avail Cap(c_a), veh/h	503	0	454				0	1229	534	462	2215	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.33	1.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.78	0.78	0.41	0.41	0.00
Uniform Delay (d), s/veh	30.8	0.0	32.0				0.0	26.2	28.5	30.6	4.2	0.0
Incr Delay (d2), s/veh	9.2	0.0	24.5				0.0	3.2	19.9	11.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	0.0	11.0				0.0	8.6	12.4	8.2	2.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.0	0.0	56.6				0.0	29.5	48.4	41.7	4.6	0.0
LnGrp LOS	D	A	E				A	C	D	D	A	A
Approach Vol, veh/h		808						1407			1624	
Approach Delay, s/veh		48.4						36.1			13.3	
Approach LOS		D						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	24.6	36.1		29.3		60.7
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	23.0	27.5		25.0		54.5
Max Q Clear Time (g_c+I1), s	20.4	29.2		24.0		12.5
Green Ext Time (p_c), s	0.2	0.0		0.3		16.7

Intersection Summary	
HCM 6th Ctrl Delay	29.0
HCM 6th LOS	C

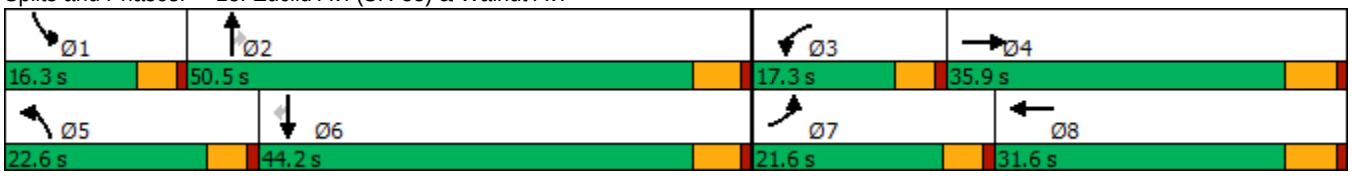
Notes

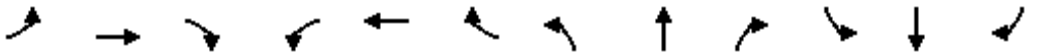
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	113	289	71	307	125	1159	45	150	1250	59
Future Volume (vph)	113	289	71	307	125	1159	45	150	1250	59
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	21.6	35.9	17.3	31.6	22.6	50.5	50.5	16.3	44.2	44.2
Total Split (%)	18.0%	29.9%	14.4%	26.3%	18.8%	42.1%	42.1%	13.6%	36.8%	36.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 107.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	289	109	71	307	204	125	1159	45	150	1250	59
Future Volume (veh/h)	113	289	109	71	307	204	125	1159	45	150	1250	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	119	304	79	75	323	175	132	1220	29	158	1316	41
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	145	589	151	94	403	213	159	2204	684	214	2076	644
Arrive On Green	0.09	0.22	0.22	0.06	0.19	0.19	0.10	0.45	0.45	0.07	0.42	0.42
Sat Flow, veh/h	1619	2696	689	1619	2157	1143	1619	4914	1524	2956	4914	1524
Grp Volume(v), veh/h	119	191	192	75	255	243	132	1220	29	158	1316	41
Grp Sat Flow(s),veh/h/ln	1619	1710	1676	1619	1710	1590	1619	1638	1524	1478	1638	1524
Q Serve(g_s), s	7.3	9.9	10.2	4.6	14.3	14.8	8.0	18.3	1.1	5.3	21.2	1.6
Cycle Q Clear(g_c), s	7.3	9.9	10.2	4.6	14.3	14.8	8.0	18.3	1.1	5.3	21.2	1.6
Prop In Lane	1.00		0.41	1.00		0.72	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	145	373	366	94	319	297	159	2204	684	214	2076	644
V/C Ratio(X)	0.82	0.51	0.52	0.80	0.80	0.82	0.83	0.55	0.04	0.74	0.63	0.06
Avail Cap(c_a), veh/h	274	512	502	204	439	408	290	2204	684	344	2076	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	34.6	34.7	46.8	39.1	39.3	44.5	20.3	15.6	45.7	22.9	17.2
Incr Delay (d2), s/veh	4.3	1.1	1.2	5.8	7.0	9.1	4.2	1.0	0.1	1.9	1.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	4.0	4.1	1.9	6.3	6.3	3.3	6.7	0.4	1.9	7.9	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.3	35.7	35.9	52.6	46.1	48.4	48.7	21.3	15.7	47.6	24.4	17.4
LnGrp LOS	D	D	D	D	D	D	D	C	B	D	C	B
Approach Vol, veh/h		502			573			1381			1515	
Approach Delay, s/veh		39.0			47.9			23.8			26.6	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	50.5	10.4	27.8	14.5	47.9	13.6	24.6
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	11.7	45.1	12.7	30.1	18.0	38.8	17.0	25.8
Max Q Clear Time (g_c+I1), s	7.3	20.3	6.6	12.2	10.0	23.2	9.3	16.8
Green Ext Time (p_c), s	0.1	9.3	0.0	1.8	0.1	8.0	0.1	1.8

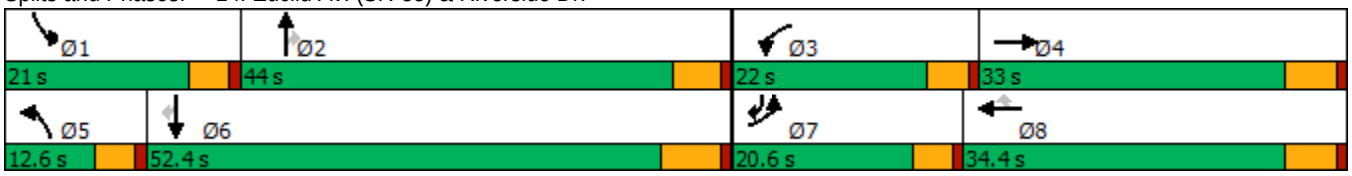
Intersection Summary	
HCM 6th Ctrl Delay	30.3
HCM 6th LOS	C

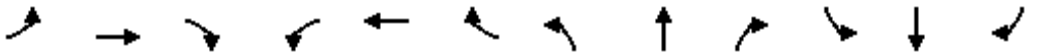
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	153	311	187	488	115	71	946	155	174	1062	152
Future Volume (vph)	153	311	187	488	115	71	946	155	174	1062	152
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	20.6	33.0	22.0	34.4	34.4	12.6	44.0	44.0	21.0	52.4	20.6
Total Split (%)	17.2%	27.5%	18.3%	28.7%	28.7%	10.5%	36.7%	36.7%	17.5%	43.7%	17.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 118.2
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	311	65	187	488	115	71	946	155	174	1062	152
Future Volume (veh/h)	153	311	65	187	488	115	71	946	155	174	1062	152
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	161	327	52	197	514	92	75	996	123	183	1118	101
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	185	347	55	221	859	383	93	1113	496	207	1354	778
Arrive On Green	0.11	0.23	0.23	0.14	0.25	0.25	0.06	0.33	0.33	0.13	0.40	0.40
Sat Flow, veh/h	1619	1516	241	1619	3420	1525	1619	3420	1525	1619	3420	1524
Grp Volume(v), veh/h	161	0	379	197	514	92	75	996	123	183	1118	101
Grp Sat Flow(s),veh/h/ln	1619	0	1757	1619	1710	1525	1619	1710	1525	1619	1710	1524
Q Serve(g_s), s	11.6	0.0	25.2	14.2	15.7	5.7	5.4	32.9	7.0	13.2	34.8	4.1
Cycle Q Clear(g_c), s	11.6	0.0	25.2	14.2	15.7	5.7	5.4	32.9	7.0	13.2	34.8	4.1
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	185	0	402	221	859	383	93	1113	496	207	1354	778
V/C Ratio(X)	0.87	0.00	0.94	0.89	0.60	0.24	0.81	0.90	0.25	0.88	0.83	0.13
Avail Cap(c_a), veh/h	218	0	403	237	859	383	109	1113	496	224	1354	778
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	45.0	50.4	39.2	35.4	55.3	38.1	29.4	50.9	32.2	15.2
Incr Delay (d2), s/veh	23.7	0.0	30.5	28.8	1.2	0.3	26.4	11.2	1.2	28.4	5.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	0.0	14.0	7.4	6.5	2.1	2.8	14.5	2.7	6.9	14.9	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.4	0.0	75.4	79.2	40.3	35.7	81.7	49.3	30.6	79.3	38.0	15.6
LnGrp LOS	E	A	E	E	D	D	F	D	C	E	D	B
Approach Vol, veh/h		540			803			1194			1402	
Approach Delay, s/veh		75.4			49.3			49.4			41.8	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.8	45.1	20.8	33.0	11.4	53.5	18.2	35.6
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	16.4	* 39	17.4	27.2	8.0	45.9	16.0	28.6
Max Q Clear Time (g_c+I1), s	15.2	34.9	16.2	27.2	7.4	36.8	13.6	17.7
Green Ext Time (p_c), s	0.0	2.1	0.0	0.0	0.0	5.0	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	50.2
HCM 6th LOS	D

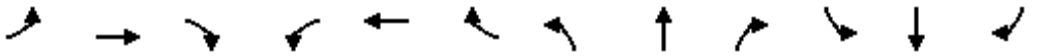
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	104	165	42	71	151	48	1012	129	56	1146	92
Future Volume (vph)	104	165	42	71	151	48	1012	129	56	1146	92
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	44.0	44.0	44.0	44.0	44.0	15.0	60.0	60.0	16.0	61.0	61.0
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	12.5%	50.0%	50.0%	13.3%	50.8%	50.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 102.4
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	165	42	71	151	51	48	1012	129	56	1146	92
Future Volume (veh/h)	104	165	42	71	151	51	48	1012	129	56	1146	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	111	176	29	76	161	42	51	1077	113	60	1219	67
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	224	438	371	113	205	48	63	1857	828	75	1882	822
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.04	0.54	0.54	0.05	0.55	0.55
Sat Flow, veh/h	1131	1800	1524	278	841	198	1619	3420	1525	1619	3420	1494
Grp Volume(v), veh/h	111	176	29	279	0	0	51	1077	113	60	1219	67
Grp Sat Flow(s),veh/h/ln	1131	1800	1524	1318	0	0	1619	1710	1525	1619	1710	1494
Q Serve(g_s), s	0.0	8.3	1.5	12.9	0.0	0.0	3.2	21.2	3.7	3.7	25.1	2.1
Cycle Q Clear(g_c), s	19.4	8.3	1.5	21.2	0.0	0.0	3.2	21.2	3.7	3.7	25.1	2.1
Prop In Lane	1.00		1.00	0.27		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	224	438	371	366	0	0	63	1857	828	75	1882	822
V/C Ratio(X)	0.50	0.40	0.08	0.76	0.00	0.00	0.81	0.58	0.14	0.80	0.65	0.08
Avail Cap(c_a), veh/h	377	681	577	575	0	0	167	1857	828	183	1882	822
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.2	32.0	29.4	37.6	0.0	0.0	48.1	15.4	11.4	47.7	15.9	10.7
Incr Delay (d2), s/veh	1.7	0.6	0.1	3.3	0.0	0.0	8.8	1.3	0.3	7.3	1.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	3.5	0.5	6.7	0.0	0.0	1.4	7.3	1.2	1.6	8.6	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.9	32.6	29.5	40.9	0.0	0.0	56.9	16.7	11.7	54.9	17.6	10.9
LnGrp LOS	D	C	C	D	A	A	E	B	B	D	B	B
Approach Vol, veh/h		316			279			1241			1346	
Approach Delay, s/veh		34.2			40.9			17.9			18.9	
Approach LOS		C			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.3	61.3		30.4	8.5	62.0		30.4				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	11.4	* 55		38.2	10.4	54.5		38.2				
Max Q Clear Time (g_c+I1), s	5.7	23.2		21.4	5.2	27.1		23.2				
Green Ext Time (p_c), s	0.0	8.2		1.2	0.0	9.1		1.3				

Intersection Summary			
HCM 6th Ctrl Delay		22.0	
HCM 6th LOS		C	

Notes

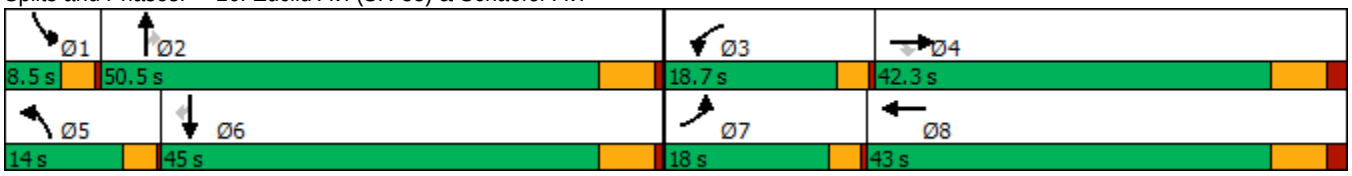
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

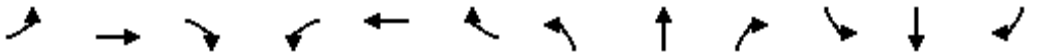
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	153	78	58	140	179	102	977	35	29	1058	122
Future Volume (vph)	153	78	58	140	179	102	977	35	29	1058	122
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	18.0	42.3	42.3	18.7	43.0	14.0	50.5	50.5	8.5	45.0	45.0
Total Split (%)	15.0%	35.3%	35.3%	15.6%	35.8%	11.7%	42.1%	42.1%	7.1%	37.5%	37.5%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 101
Natural Cycle: 110
Control Type: Actuated-Uncoordinated

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	78	58	140	179	11	102	977	35	29	1058	122
Future Volume (veh/h)	153	78	58	140	179	11	102	977	35	29	1058	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	165	84	43	151	192	10	110	1051	28	31	1138	97
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	198	281	238	192	258	13	136	1539	686	50	1357	604
Arrive On Green	0.12	0.16	0.16	0.12	0.15	0.15	0.08	0.45	0.45	0.03	0.40	0.40
Sat Flow, veh/h	1619	1800	1525	1619	1695	88	1619	3420	1525	1619	3420	1522
Grp Volume(v), veh/h	165	84	43	151	0	202	110	1051	28	31	1138	97
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1783	1619	1710	1525	1619	1710	1522
Q Serve(g_s), s	8.1	3.4	2.0	7.4	0.0	8.8	5.5	20.0	0.8	1.5	24.6	3.4
Cycle Q Clear(g_c), s	8.1	3.4	2.0	7.4	0.0	8.8	5.5	20.0	0.8	1.5	24.6	3.4
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	198	281	238	192	0	272	136	1539	686	50	1357	604
V/C Ratio(X)	0.83	0.30	0.18	0.79	0.00	0.74	0.81	0.68	0.04	0.62	0.84	0.16
Avail Cap(c_a), veh/h	287	777	659	301	0	785	208	1862	830	99	1632	726
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1	30.5	29.9	35.0	0.0	33.1	36.8	17.9	12.6	39.1	22.3	15.9
Incr Delay (d2), s/veh	8.9	0.4	0.3	2.8	0.0	3.0	6.9	0.8	0.0	4.6	3.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	1.4	0.7	2.9	0.0	3.8	2.2	6.6	0.3	0.6	8.9	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.0	31.0	30.2	37.9	0.0	36.1	43.7	18.7	12.6	43.7	25.8	16.0
LnGrp LOS	D	C	C	D	A	D	D	B	B	D	C	B
Approach Vol, veh/h		292			353			1189			1266	
Approach Delay, s/veh		38.2			36.9			20.8			25.4	
Approach LOS		D			D			C			C	

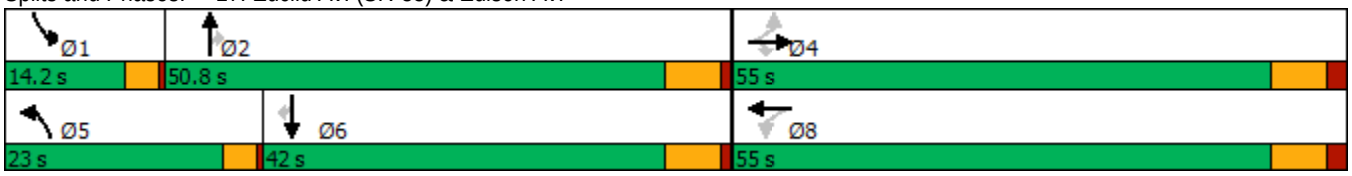
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.0	42.8	13.2	19.8	10.4	38.4	13.5	19.5
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	44.5	15.2	35.3	10.5	39.0	14.5	36.0
Max Q Clear Time (g_c+I1), s	3.5	22.0	9.4	5.4	7.5	26.6	10.1	10.8
Green Ext Time (p_c), s	0.0	6.9	0.1	0.4	0.0	5.8	0.1	0.8

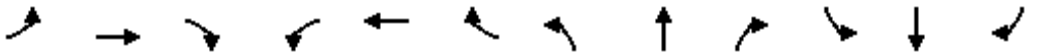
Intersection Summary	
HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	156	237	162	33	416	227	915	37	63	954	167
Future Volume (vph)	156	237	162	33	416	227	915	37	63	954	167
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	55.0	55.0	55.0	55.0	55.0	23.0	50.8	50.8	14.2	42.0	42.0
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	19.2%	42.3%	42.3%	11.8%	35.0%	35.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 113
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	237	162	33	416	63	227	915	37	63	954	167
Future Volume (veh/h)	156	237	162	33	416	63	227	915	37	63	954	167
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	162	247	114	34	433	61	236	953	31	66	994	123
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	205	722	611	360	619	87	259	1403	626	82	1029	448
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.16	0.41	0.41	0.05	0.30	0.30
Sat Flow, veh/h	866	1800	1524	979	1543	217	1619	3420	1525	1619	3420	1489
Grp Volume(v), veh/h	162	247	114	34	0	494	236	953	31	66	994	123
Grp Sat Flow(s),veh/h/ln	866	1800	1524	979	0	1761	1619	1710	1525	1619	1710	1489
Q Serve(g_s), s	20.1	11.4	5.8	3.0	0.0	27.9	17.1	27.3	1.5	4.8	34.3	7.5
Cycle Q Clear(g_c), s	48.0	11.4	5.8	14.4	0.0	27.9	17.1	27.3	1.5	4.8	34.3	7.5
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	205	722	611	360	0	706	259	1403	626	82	1029	448
V/C Ratio(X)	0.79	0.34	0.19	0.09	0.00	0.70	0.91	0.68	0.05	0.80	0.97	0.27
Avail Cap(c_a), veh/h	205	722	611	360	0	706	264	1403	626	145	1029	448
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	24.9	23.2	29.9	0.0	29.8	49.4	28.9	21.2	56.2	41.2	31.9
Incr Delay (d2), s/veh	18.4	0.3	0.1	0.1	0.0	3.1	31.8	1.3	0.0	6.6	20.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	4.7	2.0	0.7	0.0	11.8	8.9	10.6	0.5	2.0	16.4	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.2	25.1	23.3	30.0	0.0	32.9	81.2	30.2	21.3	62.8	61.5	32.2
LnGrp LOS	E	C	C	C	A	C	F	C	C	E	E	C
Approach Vol, veh/h		523			528			1220			1183	
Approach Delay, s/veh		38.4			32.7			39.8			58.5	
Approach LOS		D			C			D			E	

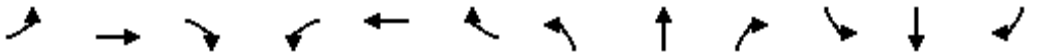
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	55.1		55.0	22.7	42.0		55.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	10.7	44.8		48.0	19.5	36.0		48.0				
Max Q Clear Time (g_c+I1), s	6.8	29.3		50.0	19.1	36.3		29.9				
Green Ext Time (p_c), s	0.0	5.3		0.0	0.0	0.0		2.8				

Intersection Summary			
HCM 6th Ctrl Delay		44.9	
HCM 6th LOS		D	

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	67	25	155	32	151	171	1125	12	22	1174	40
Future Volume (vph)	67	25	155	32	151	171	1125	12	22	1174	40
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	46.8	46.8	46.8	46.8	46.8	24.0	63.5	63.5	9.7	49.2	49.2
Total Split (%)	39.0%	39.0%	39.0%	39.0%	39.0%	20.0%	52.9%	52.9%	8.1%	41.0%	41.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 84.4
Natural Cycle: 105
Control Type: Actuated-Uncoordinated

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	25	155	32	151	37	171	1125	12	22	1174	40
Future Volume (veh/h)	67	25	155	32	151	37	171	1125	12	22	1174	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	68	26	72	33	154	30	174	1148	11	22	1198	30
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	223	343	290	336	279	54	215	1925	859	41	1557	694
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.13	0.56	0.56	0.03	0.46	0.46
Sat Flow, veh/h	1151	1800	1525	1245	1464	285	1619	3420	1525	1619	3420	1524
Grp Volume(v), veh/h	68	26	72	33	0	184	174	1148	11	22	1198	30
Grp Sat Flow(s),veh/h/ln	1151	1800	1525	1245	0	1749	1619	1710	1525	1619	1710	1524
Q Serve(g_s), s	3.6	0.8	2.5	1.4	0.0	6.0	6.6	14.0	0.2	0.8	18.6	0.7
Cycle Q Clear(g_c), s	9.6	0.8	2.5	2.2	0.0	6.0	6.6	14.0	0.2	0.8	18.6	0.7
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	223	343	290	336	0	333	215	1925	859	41	1557	694
V/C Ratio(X)	0.30	0.08	0.25	0.10	0.00	0.55	0.81	0.60	0.01	0.54	0.77	0.04
Avail Cap(c_a), veh/h	769	1195	1013	926	0	1161	525	3125	1394	159	2352	1048
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	21.0	21.8	21.9	0.0	23.2	26.6	9.1	6.1	30.5	14.4	9.6
Incr Delay (d2), s/veh	0.6	0.1	0.3	0.1	0.0	1.1	5.3	0.3	0.0	7.8	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.3	0.8	0.4	0.0	2.3	2.5	3.3	0.0	0.4	5.3	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.1	21.1	22.1	22.0	0.0	24.2	31.9	9.4	6.1	38.3	15.3	9.6
LnGrp LOS	C	C	C	C	A	C	C	A	A	D	B	A
Approach Vol, veh/h		166			217			1333			1250	
Approach Delay, s/veh		24.4			23.9			12.3			15.6	
Approach LOS		C			C			B			B	

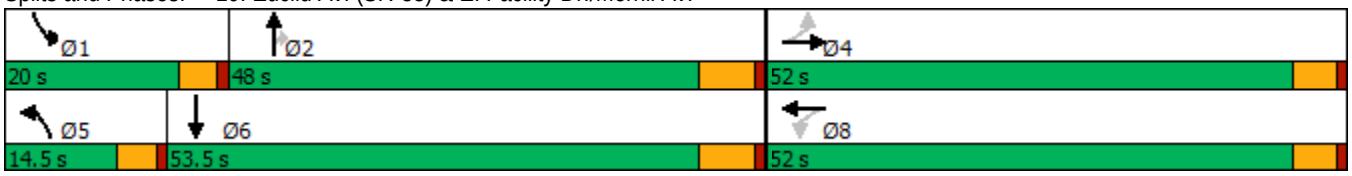
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.1	41.3		16.8	11.9	34.5		16.8				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	6.2	57.8		42.0	20.5	43.5		42.0				
Max Q Clear Time (g_c+I1), s	2.8	16.0		11.6	8.6	20.6		8.0				
Green Ext Time (p_c), s	0.0	8.9		0.4	0.2	8.2		0.8				

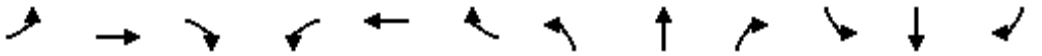
Intersection Summary			
HCM 6th Ctrl Delay		15.2	
HCM 6th LOS		B	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	4	8	256	48	10	1013	245	345	981
Future Volume (vph)	4	8	256	48	10	1013	245	345	981
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	52.0	52.0	52.0	52.0	14.5	48.0	48.0	20.0	53.5
Total Split (%)	43.3%	43.3%	43.3%	43.3%	12.1%	40.0%	40.0%	16.7%	44.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 118.2
Natural Cycle: 110
Control Type: Actuated-Uncoordinated

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	8	17	256	48	295	10	1013	245	345	981	39
Future Volume (veh/h)	4	8	17	256	48	295	10	1013	245	345	981	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	4	8	17	264	49	277	10	1044	210	356	1011	26
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	98	195	366	312	50	281	38	1151	513	213	1514	39
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.02	0.34	0.34	0.13	0.44	0.44
Sat Flow, veh/h	157	489	915	669	124	702	1619	3420	1525	1619	3404	88
Grp Volume(v), veh/h	29	0	0	590	0	0	10	1044	210	356	508	529
Grp Sat Flow(s),veh/h/ln	1562	0	0	1496	0	0	1619	1710	1525	1619	1710	1782
Q Serve(g_s), s	0.0	0.0	0.0	44.7	0.0	0.0	0.7	34.3	12.5	15.5	27.6	27.6
Cycle Q Clear(g_c), s	1.3	0.0	0.0	45.9	0.0	0.0	0.7	34.3	12.5	15.5	27.6	27.6
Prop In Lane	0.14		0.59	0.45		0.47	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	659	0	0	642	0	0	38	1151	513	213	760	792
V/C Ratio(X)	0.04	0.00	0.00	0.92	0.00	0.00	0.26	0.91	0.41	1.67	0.67	0.67
Avail Cap(c_a), veh/h	659	0	0	642	0	0	138	1222	545	213	760	792
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.6	0.0	0.0	34.8	0.0	0.0	56.4	37.2	30.0	51.0	25.8	25.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	18.0	0.0	0.0	1.3	9.6	0.5	320.2	2.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	18.6	0.0	0.0	0.3	14.8	4.4	25.0	10.7	11.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.6	0.0	0.0	52.8	0.0	0.0	57.7	46.8	30.5	371.3	28.0	27.9
LnGrp LOS	C	A	A	D	A	A	E	D	C	F	C	C
Approach Vol, veh/h		29			590			1264			1393	
Approach Delay, s/veh		21.6			52.8			44.2			115.7	
Approach LOS		C			D			D			F	

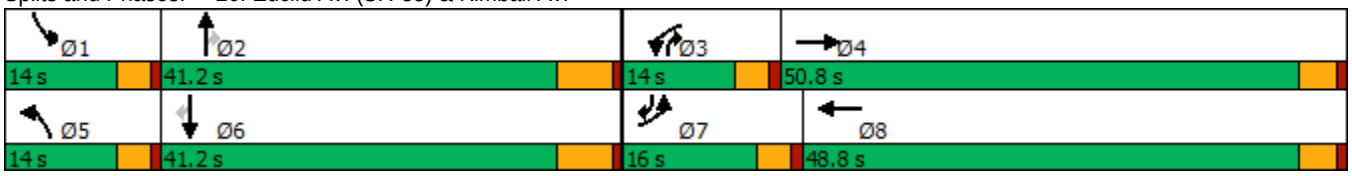
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.0	45.6		52.0	7.3	58.3		52.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	15.5	42.0		47.0	10.0	47.5		47.0				
Max Q Clear Time (g_c+I1), s	17.5	36.3		3.3	2.7	29.6		47.9				
Green Ext Time (p_c), s	0.0	3.3		0.1	0.0	5.5		0.0				

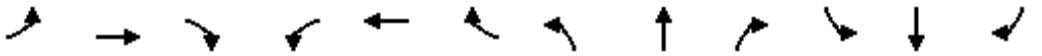
Intersection Summary												
HCM 6th Ctrl Delay			76.0									
HCM 6th LOS			E									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	129	223	44	721	84	804	28	190	616	379
Future Volume (vph)	129	223	44	721	84	804	28	190	616	379
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	16.0	50.8	14.0	48.8	14.0	41.2	14.0	14.0	41.2	16.0
Total Split (%)	13.3%	42.3%	11.7%	40.7%	11.7%	34.3%	11.7%	11.7%	34.3%	13.3%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 106.9
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	223	32	44	721	295	84	804	28	190	616	379
Future Volume (veh/h)	129	223	32	44	721	295	84	804	28	190	616	379
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	132	228	24	45	736	265	86	820	17	194	629	258
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	297	1145	119	117	834	300	151	975	545	251	948	570
Arrive On Green	0.10	0.37	0.37	0.07	0.34	0.34	0.09	0.29	0.29	0.09	0.28	0.28
Sat Flow, veh/h	2956	3126	326	1619	2463	887	1619	3420	1525	2956	3420	1506
Grp Volume(v), veh/h	132	124	128	45	511	490	86	820	17	194	629	258
Grp Sat Flow(s),veh/h/ln	1478	1710	1741	1619	1710	1640	1619	1710	1525	1478	1710	1506
Q Serve(g_s), s	4.1	4.8	4.9	2.6	27.3	27.3	4.9	21.8	0.7	6.2	15.8	12.5
Cycle Q Clear(g_c), s	4.1	4.8	4.9	2.6	27.3	27.3	4.9	21.8	0.7	6.2	15.8	12.5
Prop In Lane	1.00		0.19	1.00		0.54	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	297	626	638	117	579	555	151	975	545	251	948	570
V/C Ratio(X)	0.44	0.20	0.20	0.38	0.88	0.88	0.57	0.84	0.03	0.77	0.66	0.45
Avail Cap(c_a), veh/h	367	818	833	167	783	751	167	1244	665	305	1244	701
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	21.0	21.0	42.8	30.2	30.2	42.0	32.5	20.2	43.4	31.0	22.6
Incr Delay (d2), s/veh	0.4	0.2	0.2	0.8	7.4	7.7	1.7	4.3	0.0	7.4	0.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.8	1.9	1.0	11.6	11.1	1.9	8.8	0.2	2.4	6.1	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.4	21.1	21.1	43.6	37.6	37.9	43.7	36.8	20.2	50.8	31.8	23.2
LnGrp LOS	D	C	C	D	D	D	D	D	C	D	C	C
Approach Vol, veh/h		384			1046			923			1081	
Approach Delay, s/veh		28.1			38.0			37.2			33.2	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	33.6	11.0	39.9	13.0	32.8	13.7	37.2
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	10.0	35.2	10.0	46.3	10.0	35.2	12.0	44.3
Max Q Clear Time (g_c+I1), s	8.2	23.8	4.6	6.9	6.9	17.8	6.1	29.3
Green Ext Time (p_c), s	0.1	3.8	0.0	1.3	0.0	4.2	0.1	3.5

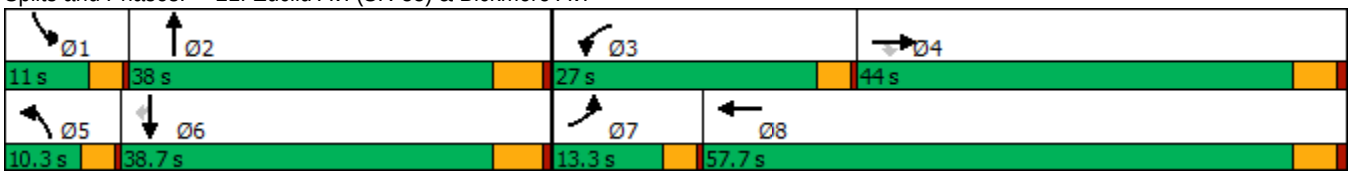
Intersection Summary	
HCM 6th Ctrl Delay	35.2
HCM 6th LOS	D

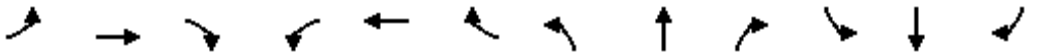
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	47	8	23	166	195	27	646	34	605	142
Future Volume (vph)	47	8	23	166	195	27	646	34	605	142
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	13.3	44.0	44.0	27.0	57.7	10.3	38.0	11.0	38.7	38.7
Total Split (%)	11.1%	36.7%	36.7%	22.5%	48.1%	8.6%	31.7%	9.2%	32.3%	32.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 68.8
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	8	23	166	195	131	27	646	20	34	605	142
Future Volume (veh/h)	47	8	23	166	195	131	27	646	20	34	605	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	52	9	22	184	217	107	30	718	15	38	672	110
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	85	282	239	231	281	138	56	964	20	68	987	440
Arrive On Green	0.05	0.16	0.16	0.14	0.25	0.25	0.03	0.28	0.28	0.04	0.29	0.29
Sat Flow, veh/h	1619	1800	1525	1619	1138	561	1619	3426	72	1619	3420	1525
Grp Volume(v), veh/h	52	9	22	184	0	324	30	358	375	38	672	110
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1699	1619	1710	1787	1619	1710	1525
Q Serve(g_s), s	1.5	0.2	0.6	5.1	0.0	8.2	0.8	8.8	8.8	1.1	8.1	2.6
Cycle Q Clear(g_c), s	1.5	0.2	0.6	5.1	0.0	8.2	0.8	8.8	8.8	1.1	8.1	2.6
Prop In Lane	1.00		1.00	1.00		0.33	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	85	282	239	231	0	419	56	481	503	68	987	440
V/C Ratio(X)	0.61	0.03	0.09	0.80	0.00	0.77	0.54	0.74	0.75	0.56	0.68	0.25
Avail Cap(c_a), veh/h	342	1514	1283	821	0	1931	237	1199	1253	262	2449	1092
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	16.6	16.7	19.2	0.0	16.2	22.0	15.1	15.1	21.8	14.6	12.6
Incr Delay (d2), s/veh	2.6	0.0	0.1	2.4	0.0	1.2	2.9	0.9	0.8	2.7	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.1	0.2	1.8	0.0	2.7	0.3	2.5	2.6	0.4	2.2	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.1	16.6	16.8	21.6	0.0	17.4	25.0	16.0	16.0	24.5	14.9	12.8
LnGrp LOS	C	B	B	C	A	B	C	B	B	C	B	B
Approach Vol, veh/h		83			508			763			820	
Approach Delay, s/veh		21.4			18.9			16.4			15.1	
Approach LOS		C			B			B			B	

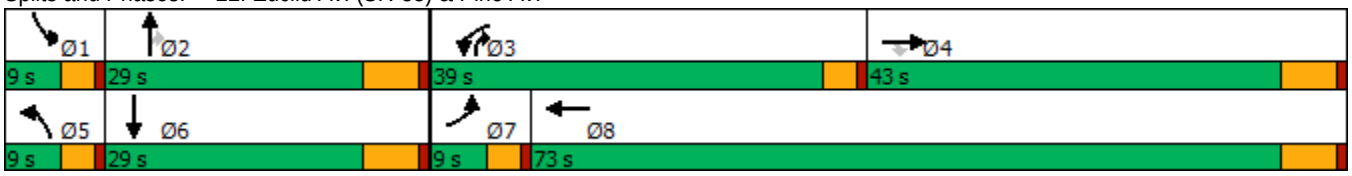
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.4	18.5	10.1	12.3	5.1	18.9	5.9	16.4
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	7.5	32.5	23.5	39.0	6.8	33.2	9.8	52.7
Max Q Clear Time (g_c+I1), s	3.1	10.8	7.1	2.6	2.8	10.1	3.5	10.2
Green Ext Time (p_c), s	0.0	2.2	0.2	0.0	0.0	2.6	0.0	1.2

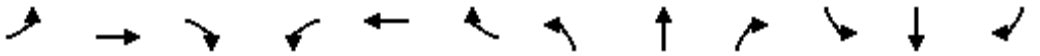
Intersection Summary	
HCM 6th Ctrl Delay	16.7
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	8	173	47	981	306	51	712	650	34	647
Future Volume (vph)	8	173	47	981	306	51	712	650	34	647
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	39.0	73.0	9.0	29.0	39.0	9.0	29.0
Total Split (%)	7.5%	35.8%	35.8%	32.5%	60.8%	7.5%	24.2%	32.5%	7.5%	24.2%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 100.2
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	173	47	981	306	25	51	712	650	34	647	16
Future Volume (veh/h)	8	173	47	981	306	25	51	712	650	34	647	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	8	178	0	1011	315	24	53	734	414	35	667	12
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	16	238		1078	804	61	67	831	919	53	806	14
Arrive On Green	0.01	0.13	0.00	0.36	0.49	0.49	0.04	0.24	0.24	0.03	0.23	0.23
Sat Flow, veh/h	1619	1800	1525	2956	1652	126	1619	3420	1493	1619	3437	62
Grp Volume(v), veh/h	8	178	0	1011	0	339	53	734	414	35	332	347
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1777	1619	1710	1493	1619	1710	1789
Q Serve(g_s), s	0.4	8.4	0.0	29.0	0.0	10.6	2.9	18.2	13.2	1.9	16.2	16.2
Cycle Q Clear(g_c), s	0.4	8.4	0.0	29.0	0.0	10.6	2.9	18.2	13.2	1.9	16.2	16.2
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	16	238		1078	0	865	67	831	919	53	401	419
V/C Ratio(X)	0.49	0.75		0.94	0.00	0.39	0.79	0.88	0.45	0.66	0.83	0.83
Avail Cap(c_a), veh/h	92	757		1176	0	1354	92	894	947	92	447	468
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	36.8	0.0	27.0	0.0	14.3	41.8	32.1	9.4	42.1	32.0	32.0
Incr Delay (d2), s/veh	8.2	6.5	0.0	12.8	0.0	0.4	18.9	9.3	0.1	5.2	10.0	9.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.9	0.0	10.9	0.0	3.8	1.4	7.8	3.3	0.8	7.2	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.5	43.3	0.0	39.8	0.0	14.7	60.7	41.4	9.5	47.2	42.0	41.6
LnGrp LOS	D	D		D	A	B	E	D	A	D	D	D
Approach Vol, veh/h		186	A		1350			1201			714	
Approach Delay, s/veh		43.6			33.5			31.2			42.1	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	27.4	36.1	17.6	7.6	26.6	4.9	48.8
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.0	23.0	35.0	37.0	5.0	23.0	5.0	67.0
Max Q Clear Time (g_c+I1), s	3.9	20.2	31.0	10.4	4.9	18.2	2.4	12.6
Green Ext Time (p_c), s	0.0	1.2	1.0	1.3	0.0	1.1	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	35.0
HCM 6th LOS	D

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	23.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	211	14	19	495	16	17	75	13	18	101	44
Future Vol, veh/h	48	211	14	19	495	16	17	75	13	18	101	44
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	53	232	15	21	544	18	19	82	14	20	111	48
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	14.5	33.6	11.7	12.6
HCM LOS	B	D	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	18%	4%	11%
Vol Thru, %	71%	77%	93%	62%
Vol Right, %	12%	5%	3%	27%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	105	273	530	163
LT Vol	17	48	19	18
Through Vol	75	211	495	101
RT Vol	13	14	16	44
Lane Flow Rate	115	300	582	179
Geometry Grp	1	1	1	1
Degree of Util (X)	0.218	0.492	0.867	0.324
Departure Headway (Hd)	6.792	5.904	5.462	6.502
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	530	615	670	553
Service Time	4.82	3.904	3.462	4.526
HCM Lane V/C Ratio	0.217	0.488	0.869	0.324
HCM Control Delay	11.7	14.5	33.6	12.6
HCM Lane LOS	B	B	D	B
HCM 95th-tile Q	0.8	2.7	10.2	1.4

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	41	3	1	172	19	17	57	3	29	60	47
Future Vol, veh/h	18	41	3	1	172	19	17	57	3	29	60	47
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	19	44	3	1	185	20	18	61	3	31	65	51
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.2	9	8.3	8.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	29%	1%	21%
Vol Thru, %	74%	66%	90%	44%
Vol Right, %	4%	5%	10%	35%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	77	62	192	136
LT Vol	17	18	1	29
Through Vol	57	41	172	60
RT Vol	3	3	19	47
Lane Flow Rate	83	67	206	146
Geometry Grp	1	1	1	1
Degree of Util (X)	0.109	0.087	0.255	0.181
Departure Headway (Hd)	4.725	4.701	4.454	4.468
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	758	761	807	803
Service Time	2.757	2.733	2.481	2.498
HCM Lane V/C Ratio	0.109	0.088	0.255	0.182
HCM Control Delay	8.3	8.2	9	8.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.3	1	0.7

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	577	636	48	24	36
Future Vol, veh/h	20	577	636	48	24	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	21	614	677	51	26	38

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	728	0	-	0	1359	703
Stage 1	-	-	-	-	703	-
Stage 2	-	-	-	-	656	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	885	-	-	-	241	516
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	520	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	885	-	-	-	232	516
Mov Cap-2 Maneuver	-	-	-	-	232	-
Stage 1	-	-	-	-	477	-
Stage 2	-	-	-	-	520	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	17.7
HCM LOS			C

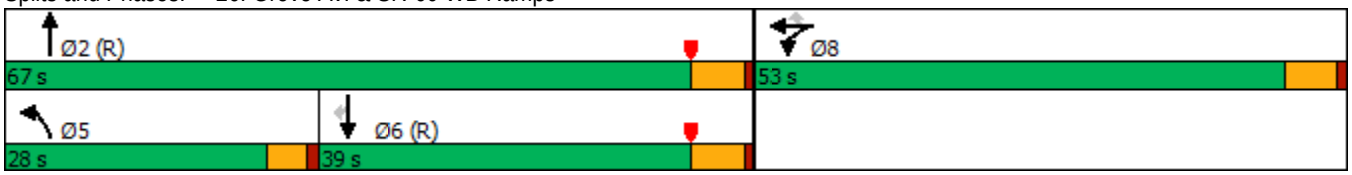
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	885	-	-	-	346
HCM Lane V/C Ratio	0.024	-	-	-	0.184
HCM Control Delay (s)	9.2	0	-	-	17.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7

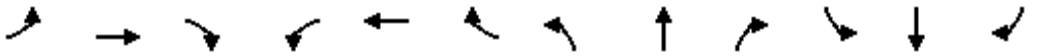
Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	544	259	1041	681	554
Future Volume (vph)	0	544	259	1041	681	554
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	53.0	53.0	28.0	67.0	39.0	39.0
Total Split (%)	44.2%	44.2%	23.3%	55.8%	32.5%	32.5%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	244	0	544	259	1041	0	0	681	554
Future Volume (veh/h)	0	0	0	244	0	544	259	1041	0	0	681	554
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				265	0	462	282	1132	0	0	740	491
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				568	0	506	304	2127	0	0	1382	614
Arrive On Green				0.31	0.00	0.31	0.34	1.00	0.00	0.00	0.38	0.38
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1604
Grp Volume(v), veh/h				265	0	462	282	1132	0	0	740	491
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1604
Q Serve(g_s), s				14.1	0.0	33.1	18.0	0.0	0.0	0.0	19.1	32.7
Cycle Q Clear(g_c), s				14.1	0.0	33.1	18.0	0.0	0.0	0.0	19.1	32.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				568	0	506	304	2127	0	0	1382	614
V/C Ratio(X)				0.47	0.00	0.91	0.93	0.53	0.00	0.00	0.54	0.80
Avail Cap(c_a), veh/h				712	0	633	353	2127	0	0	1382	614
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.10	0.10	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.1	0.0	39.6	39.1	0.0	0.0	0.0	28.7	32.9
Incr Delay (d2), s/veh				0.6	0.0	15.5	4.2	0.1	0.0	0.0	1.5	10.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.1	0.0	14.7	6.6	0.0	0.0	0.0	8.2	13.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				33.7	0.0	55.1	43.3	0.1	0.0	0.0	30.2	43.4
LnGrp LOS				C	A	E	D	A	A	A	C	D
Approach Vol, veh/h					727			1414			1231	
Approach Delay, s/veh					47.3			8.7			35.5	
Approach LOS					D			A			D	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	76.5		24.8	51.7		43.5						
Change Period (Y+Rc), s	5.8		4.6	5.8		5.8						
Max Green Setting (Gmax), s	61.2		23.4	33.2		47.2						
Max Q Clear Time (g_c+I1), s	2.0		20.0	34.7		35.1						
Green Ext Time (p_c), s	9.8		0.1	0.0		2.6						

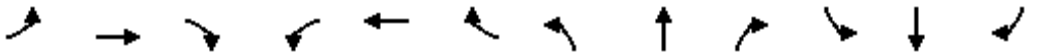
Intersection Summary		
HCM 6th Ctrl Delay	26.8	
HCM 6th LOS	C	

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	1	200	682	346	579
Future Volume (vph)	1	200	682	346	579
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	48.0	48.0	43.7	28.3	72.0
Total Split (%)	40.0%	40.0%	36.4%	23.6%	60.0%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	617	1	200	0	0	0	0	682	349	346	579	0
Future Volume (veh/h)	617	1	200	0	0	0	0	682	349	346	579	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	671	1	142				0	741	270	376	629	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	635	1	565				0	818	298	357	1992	0
Arrive On Green	0.35	0.35	0.35				0.00	0.32	0.32	0.40	1.00	0.00
Sat Flow, veh/h	1807	3	1607				0	2684	943	1810	3705	0
Grp Volume(v), veh/h	672	0	142				0	517	494	376	629	0
Grp Sat Flow(s),veh/h/ln	1810	0	1607				0	1805	1727	1810	1805	0
Q Serve(g_s), s	42.2	0.0	7.5				0.0	32.9	32.9	23.7	0.0	0.0
Cycle Q Clear(g_c), s	42.2	0.0	7.5				0.0	32.9	32.9	23.7	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.55	1.00		0.00
Lane Grp Cap(c), veh/h	636	0	565				0	570	545	357	1992	0
V/C Ratio(X)	1.06	0.00	0.25				0.00	0.91	0.91	1.05	0.32	0.00
Avail Cap(c_a), veh/h	636	0	565				0	570	545	357	1992	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.74	0.74	0.72	0.72	0.00
Uniform Delay (d), s/veh	38.9	0.0	27.7				0.0	39.3	39.4	36.3	0.0	0.0
Incr Delay (d2), s/veh	51.4	0.0	0.2				0.0	16.3	16.9	54.8	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.8	0.0	2.8				0.0	16.5	15.9	13.1	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	90.3	0.0	27.9				0.0	55.6	56.2	91.1	0.3	0.0
LnGrp LOS	F	A	C				A	E	E	F	A	A
Approach Vol, veh/h		814						1011			1005	
Approach Delay, s/veh		79.4						55.9			34.3	
Approach LOS		E						E			C	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	28.3	43.7		48.0		72.0						
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8						
Max Green Setting (Gmax), s	23.7	37.9		42.2		66.2						
Max Q Clear Time (g_c+I1), s	25.7	34.9		44.2		2.0						
Green Ext Time (p_c), s	0.0	1.7		0.0		4.4						

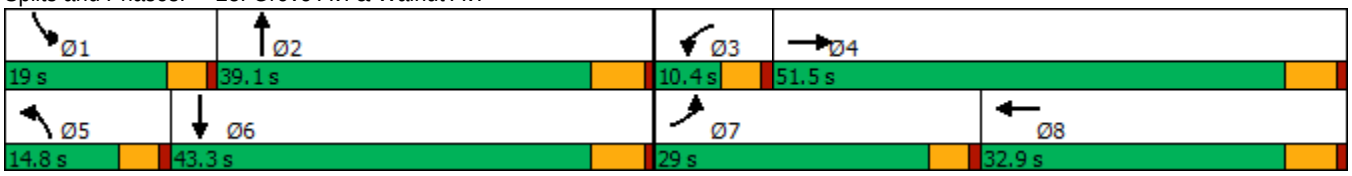
Intersection Summary			
HCM 6th Ctrl Delay			55.0
HCM 6th LOS			D

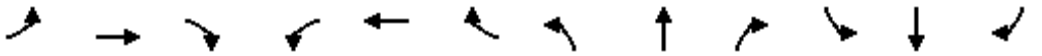
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	177	188	13	187	48	589	89	545
Future Volume (vph)	177	188	13	187	48	589	89	545
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	29.0	51.5	10.4	32.9	14.8	39.1	19.0	43.3
Total Split (%)	24.2%	42.9%	8.7%	27.4%	12.3%	32.6%	15.8%	36.1%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 98
Natural Cycle: 85
Control Type: Actuated-Uncoordinated

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	177	188	54	13	187	179	48	589	12	89	545	103
Future Volume (veh/h)	177	188	54	13	187	179	48	589	12	89	545	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	208	221	49	15	220	140	56	693	13	105	641	85
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	241	818	178	28	330	201	69	1298	24	130	1261	167
Arrive On Green	0.15	0.29	0.29	0.02	0.16	0.16	0.04	0.38	0.38	0.08	0.42	0.42
Sat Flow, veh/h	1619	2785	604	1619	2035	1238	1619	3434	64	1619	3035	402
Grp Volume(v), veh/h	208	134	136	15	183	177	56	345	361	105	361	365
Grp Sat Flow(s),veh/h/ln	1619	1710	1679	1619	1710	1563	1619	1710	1788	1619	1710	1727
Q Serve(g_s), s	11.3	5.4	5.6	0.8	9.1	9.6	3.1	14.2	14.2	5.8	14.1	14.1
Cycle Q Clear(g_c), s	11.3	5.4	5.6	0.8	9.1	9.6	3.1	14.2	14.2	5.8	14.1	14.1
Prop In Lane	1.00		0.36	1.00		0.79	1.00		0.04	1.00		0.23
Lane Grp Cap(c), veh/h	241	502	493	28	277	254	69	646	676	130	711	718
V/C Ratio(X)	0.86	0.27	0.28	0.53	0.66	0.70	0.81	0.53	0.53	0.81	0.51	0.51
Avail Cap(c_a), veh/h	438	866	850	104	514	470	183	646	676	258	711	718
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	24.4	24.5	44.0	35.5	35.7	42.8	21.9	21.9	40.8	19.5	19.5
Incr Delay (d2), s/veh	3.5	0.3	0.3	5.7	2.7	3.4	8.1	3.1	3.0	4.4	2.6	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	2.1	2.1	0.4	3.8	3.7	1.3	5.8	6.0	2.3	5.6	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	24.7	24.8	49.7	38.2	39.1	50.9	25.0	24.9	45.2	22.1	22.1
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		478			375			762			831	
Approach Delay, s/veh		31.8			39.1			26.9			25.0	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.8	39.9	6.2	32.3	8.5	43.3	18.0	20.4
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	33.3	5.8	45.7	10.2	37.5	24.4	27.1
Max Q Clear Time (g_c+I1), s	7.8	16.2	2.8	7.6	5.1	16.1	13.3	11.6
Green Ext Time (p_c), s	0.1	3.6	0.0	1.5	0.0	4.1	0.2	1.7

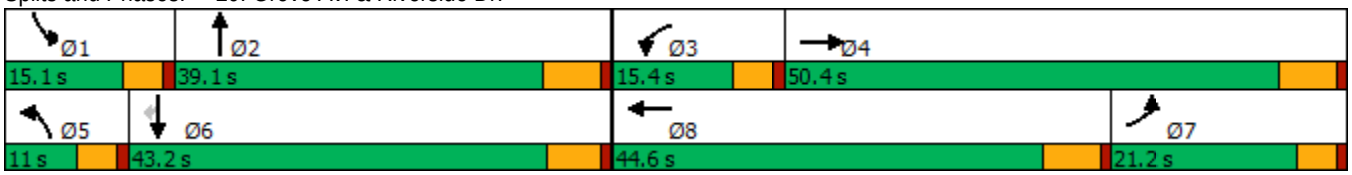
Intersection Summary	
HCM 6th Ctrl Delay	29.1
HCM 6th LOS	C

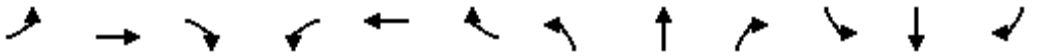
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	144	371	60	737	23	325	82	330	163
Future Volume (vph)	144	371	60	737	23	325	82	330	163
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	21.2	50.4	15.4	44.6	11.0	39.1	15.1	43.2	43.2
Total Split (%)	17.7%	42.0%	12.8%	37.2%	9.2%	32.6%	12.6%	36.0%	36.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 114.1
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	371	33	60	737	115	23	325	49	82	330	163
Future Volume (veh/h)	144	371	33	60	737	115	23	325	49	82	330	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	160	412	30	67	819	102	26	361	32	91	367	95
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	186	633	46	84	928	116	40	488	43	112	620	526
Arrive On Green	0.12	0.38	0.38	0.05	0.30	0.30	0.02	0.30	0.30	0.07	0.34	0.34
Sat Flow, veh/h	1619	1658	121	1619	3054	380	1619	1626	144	1619	1800	1525
Grp Volume(v), veh/h	160	0	442	67	459	462	26	0	393	91	367	95
Grp Sat Flow(s),veh/h/ln	1619	0	1778	1619	1710	1725	1619	0	1770	1619	1800	1525
Q Serve(g_s), s	10.6	0.0	22.4	4.5	28.0	28.0	1.7	0.0	21.9	6.1	18.4	3.1
Cycle Q Clear(g_c), s	10.6	0.0	22.4	4.5	28.0	28.0	1.7	0.0	21.9	6.1	18.4	3.1
Prop In Lane	1.00		0.07	1.00		0.22	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	186	0	679	84	519	524	40	0	532	112	620	526
V/C Ratio(X)	0.86	0.00	0.65	0.80	0.88	0.88	0.64	0.00	0.74	0.81	0.59	0.18
Avail Cap(c_a), veh/h	245	0	717	160	599	604	95	0	532	155	620	526
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.6	0.0	27.9	51.4	36.3	36.3	52.9	0.0	34.5	50.3	29.6	10.7
Incr Delay (d2), s/veh	16.8	0.0	1.9	6.5	13.2	13.1	6.2	0.0	8.9	14.2	4.1	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	9.2	1.9	12.8	12.9	0.8	0.0	10.2	2.8	8.3	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.4	0.0	29.8	57.9	49.5	49.4	59.2	0.0	43.4	64.5	33.7	11.4
LnGrp LOS	E	A	C	E	D	D	E	A	D	E	C	B
Approach Vol, veh/h		602			988			419			553	
Approach Delay, s/veh		39.0			50.0			44.4			34.9	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	39.1	10.3	48.0	7.3	44.0	18.8	39.5
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	10.5	32.9	10.8	44.2	6.4	* 37	16.6	* 38
Max Q Clear Time (g_c+I1), s	8.1	23.9	6.5	24.4	3.7	20.4	12.6	30.0
Green Ext Time (p_c), s	0.0	1.4	0.0	2.3	0.0	2.1	0.1	3.3

Intersection Summary	
HCM 6th Ctrl Delay	43.2
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	20.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	61	86	27	10	78	29	35	313	13	45	369	30
Future Vol, veh/h	61	86	27	10	78	29	35	313	13	45	369	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	68	96	30	11	87	32	39	348	14	50	410	33
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.7	12.3	19.8	27
HCM LOS	B	B	C	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	35%	9%	10%
Vol Thru, %	87%	49%	67%	83%
Vol Right, %	4%	16%	25%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	361	174	117	444
LT Vol	35	61	10	45
Through Vol	313	86	78	369
RT Vol	13	27	29	30
Lane Flow Rate	401	193	130	493
Geometry Grp	1	1	1	1
Degree of Util (X)	0.66	0.365	0.249	0.789
Departure Headway (Hd)	5.927	6.789	6.898	5.759
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	610	528	519	627
Service Time	3.976	4.846	4.962	3.804
HCM Lane V/C Ratio	0.657	0.366	0.25	0.786
HCM Control Delay	19.8	13.7	12.3	27
HCM Lane LOS	C	B	B	D
HCM 95th-tile Q	4.9	1.7	1	7.6

Intersection	
Intersection Delay, s/veh	14.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	42	45	27	34	97	38	36	259	10	40	293	41
Future Vol, veh/h	42	45	27	34	97	38	36	259	10	40	293	41
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	47	50	30	38	108	42	40	288	11	44	326	46
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.2	12	14.6	17
HCM LOS	B	B	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	37%	20%	11%
Vol Thru, %	85%	39%	57%	78%
Vol Right, %	3%	24%	22%	11%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	305	114	169	374
LT Vol	36	42	34	40
Through Vol	259	45	97	293
RT Vol	10	27	38	41
Lane Flow Rate	339	127	188	416
Geometry Grp	1	1	1	1
Degree of Util (X)	0.522	0.221	0.318	0.622
Departure Headway (Hd)	5.547	6.274	6.097	5.389
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	647	567	586	665
Service Time	3.618	4.371	4.184	3.455
HCM Lane V/C Ratio	0.524	0.224	0.321	0.626
HCM Control Delay	14.6	11.2	12	17
HCM Lane LOS	B	B	B	C
HCM 95th-tile Q	3	0.8	1.4	4.3

Intersection	
Intersection Delay, s/veh	196.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	201	6	232	495	31	18	205	74	58	238	28
Future Vol, veh/h	33	201	6	232	495	31	18	205	74	58	238	28
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	36	221	7	255	544	34	20	225	81	64	262	31
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	27.4	380.7	34.6	40.6
HCM LOS	D	F	D	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	14%	31%	18%
Vol Thru, %	69%	84%	65%	73%
Vol Right, %	25%	3%	4%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	297	240	758	324
LT Vol	18	33	232	58
Through Vol	205	201	495	238
RT Vol	74	6	31	28
Lane Flow Rate	326	264	833	356
Geometry Grp	1	1	1	1
Degree of Util (X)	0.718	0.605	1.785	0.782
Departure Headway (Hd)	9.969	10.079	7.715	9.911
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	366	361	483	370
Service Time	7.969	8.079	5.715	7.911
HCM Lane V/C Ratio	0.891	0.731	1.725	0.962
HCM Control Delay	34.6	27.4	380.7	40.6
HCM Lane LOS	D	D	F	E
HCM 95th-tile Q	5.4	3.8	51.8	6.5

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	24	33	13	12	82	12	60	295	11	15	431	47
Future Vol, veh/h	24	33	13	12	82	12	60	295	11	15	431	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	26	36	14	13	90	13	66	324	12	16	474	52

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1046	1000	500	1019	1020	330	526	0	0	336	0	0
Stage 1	532	532	-	462	462	-	-	-	-	-	-	-
Stage 2	514	468	-	557	558	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	208	245	575	217	239	716	1051	-	-	1235	-	-
Stage 1	535	529	-	584	568	-	-	-	-	-	-	-
Stage 2	547	565	-	518	515	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	129	222	575	172	217	716	1051	-	-	1235	-	-
Mov Cap-2 Maneuver	129	222	-	172	217	-	-	-	-	-	-	-
Stage 1	494	519	-	539	524	-	-	-	-	-	-	-
Stage 2	410	521	-	461	506	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	34.8	36.2	1.4	0.2
HCM LOS	D	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1051	-	-	196	228	1235	-	-
HCM Lane V/C Ratio	0.063	-	-	0.392	0.511	0.013	-	-
HCM Control Delay (s)	8.7	0	-	34.8	36.2	8	0	-
HCM Lane LOS	A	A	-	D	E	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	1.7	2.6	0	-	-

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	31	355	38	418
Future Volume (vph)	31	355	38	418
Turn Type	Prot	NA	Prot	NA
Protected Phases	8	2	1	6
Permitted Phases				
Detector Phase	8	2	1	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	5.0	10.0
Minimum Split (s)	26.6	23.2	9.6	16.2
Total Split (s)	26.6	28.7	9.7	38.4
Total Split (%)	40.9%	44.2%	14.9%	59.1%
Yellow Time (s)	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2
Lead/Lag		Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	
Recall Mode	None	Min	None	Min

Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 42.4
Natural Cycle: 65
Control Type: Actuated-Uncoordinated

Splits and Phases: 34: Grove Av. & Street A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	31	11	355	103	38	418
Future Volume (veh/h)	31	11	355	103	38	418
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	34	12	386	112	41	454
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	128	45	509	148	77	1019
Arrive On Green	0.11	0.11	0.38	0.38	0.05	0.57
Sat Flow, veh/h	1203	425	1341	389	1619	1800
Grp Volume(v), veh/h	47	0	0	498	41	454
Grp Sat Flow(s),veh/h/ln	1663	0	0	1730	1619	1800
Q Serve(g_s), s	0.9	0.0	0.0	8.3	0.8	4.8
Cycle Q Clear(g_c), s	0.9	0.0	0.0	8.3	0.8	4.8
Prop In Lane	0.72	0.26		0.22	1.00	
Lane Grp Cap(c), veh/h	176	0	0	656	77	1019
V/C Ratio(X)	0.27	0.00	0.00	0.76	0.53	0.45
Avail Cap(c_a), veh/h	1110	0	0	1181	250	1758
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.6	0.0	0.0	8.9	15.3	4.1
Incr Delay (d2), s/veh	0.8	0.0	0.0	1.8	2.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	1.6	0.3	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.4	0.0	0.0	10.8	17.5	4.5
LnGrp LOS	B	A	A	B	B	A
Approach Vol, veh/h	47		498			495
Approach Delay, s/veh	14.4		10.8			5.5
Approach LOS	B		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.2	18.7			24.9	8.1
Change Period (Y+Rc), s	4.6	6.2			6.2	4.6
Max Green Setting (Gmax), s	5.1	22.5			32.2	22.0
Max Q Clear Time (g_c+I1), s	2.8	10.3			6.8	2.9
Green Ext Time (p_c), s	0.0	2.2			2.5	0.1

Intersection Summary	
HCM 6th Ctrl Delay	8.4
HCM 6th LOS	A

Intersection	
Intersection Delay, s/veh	200.5
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	136	493	555	321	340	109
Future Vol, veh/h	136	493	555	321	340	109
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	140	508	572	331	351	112
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	145.5	316.9	50.3
HCM LOS	F	F	F

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	0%	76%
Vol Thru, %	78%	63%	0%
Vol Right, %	0%	37%	24%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	629	876	449
LT Vol	136	0	340
Through Vol	493	555	0
RT Vol	0	321	109
Lane Flow Rate	648	903	463
Geometry Grp	1	1	1
Degree of Util (X)	1.229	1.645	0.9
Departure Headway (Hd)	7.721	6.943	8.137
Convergence, Y/N	Yes	Yes	Yes
Cap	473	533	449
Service Time	5.721	4.943	6.137
HCM Lane V/C Ratio	1.37	1.694	1.031
HCM Control Delay	145.5	316.9	50.3
HCM Lane LOS	F	F	F
HCM 95th-tile Q	22.8	48.4	9.8

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	17	280	9	111	560	139	4	18	8	25	17	12
Future Vol, veh/h	17	280	9	111	560	139	4	18	8	25	17	12
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	17	286	9	113	571	142	4	18	8	26	17	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	713	0	0	296	0	0	1209	1265	292	1206	1198	642
Stage 1	-	-	-	-	-	-	326	326	-	868	868	-
Stage 2	-	-	-	-	-	-	883	939	-	338	330	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	896	-	-	1277	-	-	161	171	752	162	187	478
Stage 1	-	-	-	-	-	-	691	652	-	350	372	-
Stage 2	-	-	-	-	-	-	343	345	-	681	649	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	896	-	-	1276	-	-	125	142	751	126	155	478
Mov Cap-2 Maneuver	-	-	-	-	-	-	125	142	-	126	155	-
Stage 1	-	-	-	-	-	-	674	636	-	342	316	-
Stage 2	-	-	-	-	-	-	268	293	-	639	633	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.1	29.5	38.3
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	177	896	-	-	1276	-	-	162
HCM Lane V/C Ratio	0.173	0.019	-	-	0.089	-	-	0.34
HCM Control Delay (s)	29.5	9.1	0	-	8.1	0	-	38.3
HCM Lane LOS	D	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0.3	-	-	1.4

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	10	46	0	0	77	23	0	0	0	121	0	37
Future Vol, veh/h	10	46	0	0	77	23	0	0	0	121	0	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	12	56	0	0	94	28	0	0	0	148	0	45

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	122	0	0	56	0	0	211	202	56	188	188	108
Stage 1	-	-	-	-	-	-	80	80	-	108	108	-
Stage 2	-	-	-	-	-	-	131	122	-	80	80	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1478	-	-	1562	-	-	750	698	1016	777	710	951
Stage 1	-	-	-	-	-	-	934	832	-	902	810	-
Stage 2	-	-	-	-	-	-	877	799	-	934	832	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1478	-	-	1562	-	-	710	692	1016	772	704	951
Mov Cap-2 Maneuver	-	-	-	-	-	-	710	692	-	772	704	-
Stage 1	-	-	-	-	-	-	927	825	-	895	810	-
Stage 2	-	-	-	-	-	-	835	799	-	927	825	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0	0	10.8
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1478	-	-	1562	-	-	808
HCM Lane V/C Ratio	-	0.008	-	-	-	-	-	0.238
HCM Control Delay (s)	0	7.5	0	-	0	-	-	10.8
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.9

Intersection	
Int Delay, s/veh	793.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	210	527	96	112	644	50	170	11	95	15	3	63
Future Vol, veh/h	210	527	96	112	644	50	170	11	95	15	3	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	216	543	99	115	664	52	175	11	98	15	3	65

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	716	0	0	642	0	0	1929	1921	543	1999	1994	690
Stage 1	-	-	-	-	-	-	975	975	-	920	920	-
Stage 2	-	-	-	-	-	-	954	946	-	1079	1074	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	894	-	-	952	-	-	~ 51	68	544	45	61	449
Stage 1	-	-	-	-	-	-	305	332	-	327	352	-
Stage 2	-	-	-	-	-	-	313	343	-	267	299	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	894	-	-	952	-	-	~ 32	45	544	24	41	449
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 14	72	-	39	89	-
Stage 1	-	-	-	-	-	-	231	252	-	248	309	-
Stage 2	-	-	-	-	-	-	233	301	-	159	227	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.6	1.3	$ 5710.5	59.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	22	894	-	-	952	-	-	145
HCM Lane V/C Ratio	12.933	0.242	-	-	0.121	-	-	0.576
HCM Control Delay (s)	$ 5710.5	10.3	-	-	9.3	-	-	59.1
HCM Lane LOS	F	B	-	-	A	-	-	F
HCM 95th %tile Q(veh)	35.8	0.9	-	-	0.4	-	-	2.9

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	109	500	27	25	763	45	10	0	31	13	0	33
Future Vol, veh/h	109	500	27	25	763	45	10	0	31	13	0	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	120	549	30	27	838	49	11	0	34	14	0	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	887	0	0	579	0	0	1739	1745	290	1432	1736	863
Stage 1	-	-	-	-	-	-	804	804	-	917	917	-
Stage 2	-	-	-	-	-	-	935	941	-	515	819	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	772	-	-	1005	-	-	63	87	713	104	88	357
Stage 1	-	-	-	-	-	-	347	398	-	329	354	-
Stage 2	-	-	-	-	-	-	321	345	-	516	392	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	772	-	-	1005	-	-	49	72	713	85	72	357
Mov Cap-2 Maneuver	-	-	-	-	-	-	115	151	-	185	180	-
Stage 1	-	-	-	-	-	-	293	336	-	278	344	-
Stage 2	-	-	-	-	-	-	281	336	-	415	331	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0.3	18.4	20.5
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	314	772	-	-	1005	-	-	283
HCM Lane V/C Ratio	0.143	0.155	-	-	0.027	-	-	0.179
HCM Control Delay (s)	18.4	10.5	-	-	8.7	-	-	20.5
HCM Lane LOS	C	B	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.5	0.5	-	-	0.1	-	-	0.6

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	101	444	0	2	803	64	0	11	6	19	3	30
Future Vol, veh/h	101	444	0	2	803	64	0	11	6	19	3	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	200	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	109	477	0	2	863	69	0	12	6	20	3	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	932	0	0	477	0	0	1614	1631	239	1365	1597	898
Stage 1	-	-	-	-	-	-	695	695	-	902	902	-
Stage 2	-	-	-	-	-	-	919	936	-	463	695	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	743	-	-	1096	-	-	77	103	768	117	108	341
Stage 1	-	-	-	-	-	-	403	447	-	335	359	-
Stage 2	-	-	-	-	-	-	328	346	-	554	447	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	743	-	-	1096	-	-	61	88	768	97	92	341
Mov Cap-2 Maneuver	-	-	-	-	-	-	134	170	-	201	210	-
Stage 1	-	-	-	-	-	-	344	381	-	286	358	-
Stage 2	-	-	-	-	-	-	294	345	-	454	381	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0	21.7	20.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	234	743	-	-	1096	-	-	201	323
HCM Lane V/C Ratio	-	0.078	0.146	-	-	0.002	-	-	0.102	0.11
HCM Control Delay (s)	0	21.7	10.7	-	-	8.3	-	-	24.9	17.5
HCM Lane LOS	A	C	B	-	-	A	-	-	C	C
HCM 95th %tile Q(veh)	-	0.3	0.5	-	-	0	-	-	0.3	0.4

Intersection	
Intersection Delay, s/veh	204.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	0	288	0	0	0	880	60	0	0	31	13
Future Vol, veh/h	18	0	288	0	0	0	880	60	0	0	31	13
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	19	0	303	0	0	0	926	63	0	0	33	14
Number of Lanes	1	0	1	0	0	0	1	2	0	0	2	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	3
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	3	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	3	0	2
HCM Control Delay	16.5	275.4	10.3
HCM LOS	C	F	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	100%	100%	0%	0%	100%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	880	30	30	18	288	16	16	13
LT Vol	880	0	0	18	0	0	0	0
Through Vol	0	30	30	0	0	16	16	0
RT Vol	0	0	0	0	288	0	0	13
Lane Flow Rate	926	32	32	19	303	16	16	14
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	1.597	0.05	0.035	0.038	0.506	0.032	0.032	0.018
Departure Headway (Hd)	6.206	5.7	3.979	8.265	7.079	8.147	8.147	5.678
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	584	621	884	436	512	442	442	634
Service Time	4.005	3.498	1.776	5.965	4.779	5.847	5.847	3.378
HCM Lane V/C Ratio	1.586	0.052	0.036	0.044	0.592	0.036	0.036	0.022
HCM Control Delay	293.6	8.8	6.9	11.3	16.8	11.1	11.1	8.5
HCM Lane LOS	F	A	A	B	C	B	B	A
HCM 95th-tile Q	49.5	0.2	0.1	0.1	2.8	0.1	0.1	0.1

Intersection	
Intersection Delay, s/veh	225.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	57	387	26	175	826	76	19	0	106	125	0	24
Future Vol, veh/h	57	387	26	175	826	76	19	0	106	125	0	24
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	61	412	28	186	879	81	20	0	113	133	0	26
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	29.5	363.8	15	17.6
HCM LOS	D	F	B	C

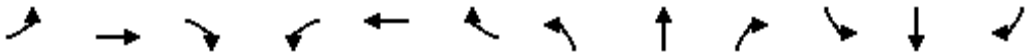
Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	15%	100%	0%	0%	100%	0%	84%
Vol Thru, %	0%	0%	100%	0%	0%	92%	0%
Vol Right, %	85%	0%	0%	100%	0%	8%	16%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	125	57	387	26	175	902	149
LT Vol	19	57	0	0	175	0	125
Through Vol	0	0	387	0	0	826	0
RT Vol	106	0	0	26	0	76	24
Lane Flow Rate	133	61	412	28	186	960	159
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.282	0.124	0.783	0.047	0.399	1.904	0.366
Departure Headway (Hd)	8.857	8.302	7.787	7.065	7.717	7.145	9.525
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	408	435	469	510	465	509	380
Service Time	6.557	6.002	5.487	4.765	5.493	4.92	7.225
HCM Lane V/C Ratio	0.326	0.14	0.878	0.055	0.4	1.886	0.418
HCM Control Delay	15	12.2	33.3	10.1	15.6	431.4	17.6
HCM Lane LOS	B	B	D	B	C	F	C
HCM 95th-tile Q	1.1	0.4	7	0.1	1.9	62.1	1.6

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	4	471	630	1006	384
Future Volume (vph)	4	471	630	1006	384
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (%)	32.2%	32.2%	31.1%	67.8%	36.7%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	490	4	471	630	1006	0	0	384	188
Future Volume (veh/h)	0	0	0	490	4	471	630	1006	0	0	384	188
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				544	4	336	700	1118	0	0	427	199
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				459	3	411	676	3181	0	0	860	282
Arrive On Green				0.26	0.26	0.26	0.75	1.00	0.00	0.00	0.18	0.18
Sat Flow, veh/h				1797	13	1610	1810	5358	0	0	5168	1606
Grp Volume(v), veh/h				548	0	336	700	1118	0	0	427	199
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1729	0	0	1634	1606
Q Serve(g_s), s				23.0	0.0	17.7	33.6	0.0	0.0	0.0	7.1	10.5
Cycle Q Clear(g_c), s				23.0	0.0	17.7	33.6	0.0	0.0	0.0	7.1	10.5
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				463	0	411	676	3181	0	0	860	282
V/C Ratio(X)				1.18	0.00	0.82	1.04	0.35	0.00	0.00	0.50	0.71
Avail Cap(c_a), veh/h				463	0	411	676	3181	0	0	1481	485
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.54	0.54	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.5	0.0	31.5	11.4	0.0	0.0	0.0	33.5	34.9
Incr Delay (d2), s/veh				103.2	0.0	13.4	35.2	0.2	0.0	0.0	2.0	13.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				22.6	0.0	16.2	10.5	0.0	0.0	0.0	2.8	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				136.7	0.0	45.0	46.6	0.2	0.0	0.0	35.6	48.8
LnGrp LOS				F	A	D	F	A	A	A	D	D
Approach Vol, veh/h					884			1818			626	
Approach Delay, s/veh					101.8			18.0			39.8	
Approach LOS					F			B			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	61.0	29.0	39.4	21.6
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	55.2	23.0	24.0	* 27
Max Q Clear Time (g_c+I1), s	2.0	25.0	35.6	12.5
Green Ext Time (p_c), s	9.3	0.0	0.0	3.3

Intersection Summary	
HCM 6th Ctrl Delay	44.4
HCM 6th LOS	D

Notes

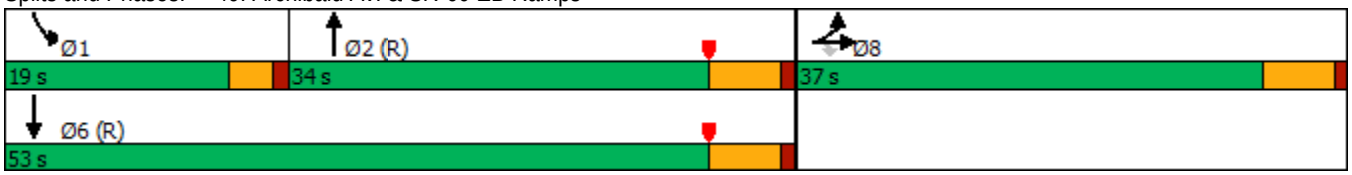
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

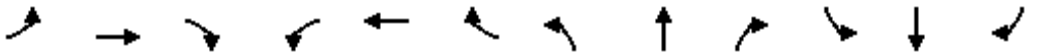
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	3	470	1280	152	722
Future Volume (vph)	3	470	1280	152	722
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (%)	41.1%	41.1%	37.8%	21.1%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	355	3	470	0	0	0	0	1280	604	152	722	0
Future Volume (veh/h)	355	3	470	0	0	0	0	1280	604	152	722	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	378	3	283				0	1362	412	162	768	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	448	4	401				0	2329	704	199	3225	0
Arrive On Green	0.25	0.25	0.25				0.00	0.47	0.47	0.04	0.21	0.00
Sat Flow, veh/h	1796	14	1610				0	5251	1506	1810	5358	0
Grp Volume(v), veh/h	381	0	283				0	1339	435	162	768	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1589	1810	1729	0
Q Serve(g_s), s	18.0	0.0	14.4				0.0	18.0	18.1	8.0	11.1	0.0
Cycle Q Clear(g_c), s	18.0	0.0	14.4				0.0	18.0	18.1	8.0	11.1	0.0
Prop In Lane	0.99		1.00				0.00		0.95	1.00		0.00
Lane Grp Cap(c), veh/h	451	0	401				0	2290	743	199	3225	0
V/C Ratio(X)	0.84	0.00	0.70				0.00	0.58	0.59	0.81	0.24	0.00
Avail Cap(c_a), veh/h	628	0	558				0	2290	743	302	3225	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.51	0.51	0.81	0.81	0.00
Uniform Delay (d), s/veh	32.1	0.0	30.8				0.0	17.6	17.6	42.4	18.0	0.0
Incr Delay (d2), s/veh	7.5	0.0	2.4				0.0	0.6	1.7	4.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	0.0	5.5				0.0	6.0	6.1	3.8	4.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.6	0.0	33.2				0.0	18.1	19.3	46.9	18.1	0.0
LnGrp LOS	D	A	C				A	B	B	D	B	A
Approach Vol, veh/h		664						1774			930	
Approach Delay, s/veh		36.9						18.4			23.1	
Approach LOS		D						B			C	

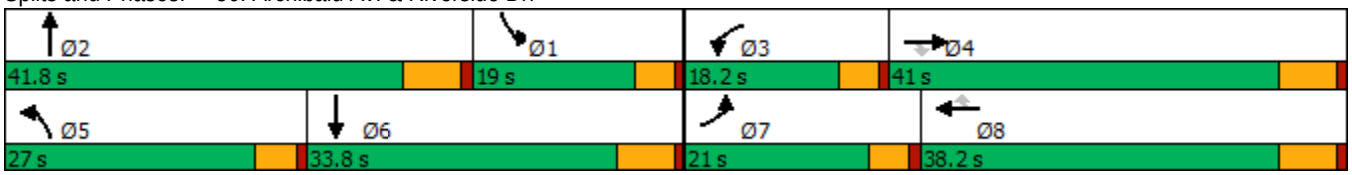
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	13.9	47.9				61.8		28.2				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	15.0	28.2				47.2		31.2				
Max Q Clear Time (g_c+I1), s	10.0	20.1				13.1		20.0				
Green Ext Time (p_c), s	0.1	5.9				5.2		2.4				

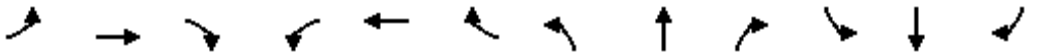
Intersection Summary			
HCM 6th Ctrl Delay			23.4
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	227	293	245	93	452	166	320	1065	128	583
Future Volume (vph)	227	293	245	93	452	166	320	1065	128	583
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.0	41.0	41.0	18.2	38.2	38.2	27.0	41.8	19.0	33.8
Total Split (%)	17.5%	34.2%	34.2%	15.2%	31.8%	31.8%	22.5%	34.8%	15.8%	28.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 106.2
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	293	245	93	452	166	320	1065	47	128	583	233
Future Volume (veh/h)	227	293	245	93	452	166	320	1065	47	128	583	233
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	241	312	127	99	481	95	340	1133	47	136	620	170
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	261	967	424	122	673	294	357	1399	58	202	806	217
Arrive On Green	0.16	0.28	0.28	0.08	0.20	0.20	0.22	0.29	0.29	0.12	0.21	0.21
Sat Flow, veh/h	1619	3420	1498	1619	3420	1494	1619	4839	201	1619	3851	1036
Grp Volume(v), veh/h	241	312	127	99	481	95	340	767	413	136	526	264
Grp Sat Flow(s),veh/h/ln	1619	1710	1498	1619	1710	1494	1619	1638	1763	1619	1638	1612
Q Serve(g_s), s	14.9	7.3	6.8	6.1	13.4	3.8	21.1	22.1	22.1	8.2	15.4	15.8
Cycle Q Clear(g_c), s	14.9	7.3	6.8	6.1	13.4	3.8	21.1	22.1	22.1	8.2	15.4	15.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.11	1.00		0.64
Lane Grp Cap(c), veh/h	261	967	424	122	673	294	357	947	510	202	685	337
V/C Ratio(X)	0.92	0.32	0.30	0.81	0.71	0.32	0.95	0.81	0.81	0.67	0.77	0.78
Avail Cap(c_a), veh/h	261	1170	513	217	1076	470	357	1147	617	229	889	437
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.0	28.8	28.6	46.3	38.2	16.8	39.1	33.6	33.6	42.5	37.9	38.0
Incr Delay (d2), s/veh	35.2	0.2	0.4	4.8	1.4	0.6	35.2	3.7	6.7	4.5	3.0	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	2.9	2.3	2.5	5.4	1.9	11.3	8.7	9.8	3.4	6.1	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.2	29.0	29.0	51.1	39.6	17.4	74.4	37.3	40.3	47.0	40.9	44.9
LnGrp LOS	E	C	C	D	D	B	E	D	D	D	D	D
Approach Vol, veh/h		680			675			1520			926	
Approach Delay, s/veh		46.1			38.2			46.4			43.0	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.9	35.6	12.3	35.0	27.0	27.5	21.0	26.2
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	14.4	* 36	13.6	34.8	22.4	27.6	16.4	32.0
Max Q Clear Time (g_c+I1), s	10.2	24.1	8.1	9.3	23.1	17.8	16.9	15.4
Green Ext Time (p_c), s	0.1	5.3	0.0	2.2	0.0	3.2	0.0	2.8

Intersection Summary	
HCM 6th Ctrl Delay	44.0
HCM 6th LOS	D

Notes

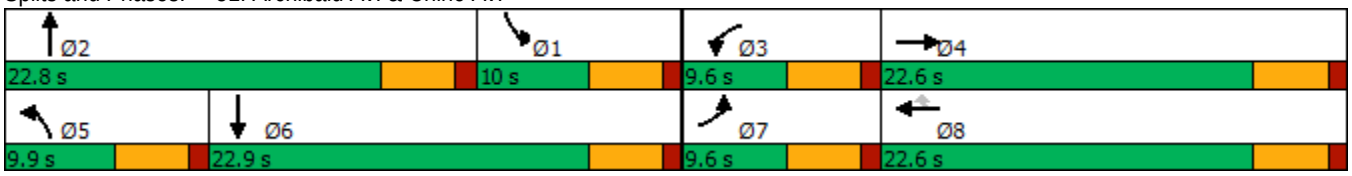
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

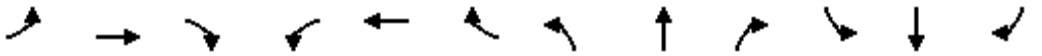
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	91	3	71	4	235	102	1050	111	779
Future Volume (vph)	91	3	71	4	235	102	1050	111	779
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	9.6	22.6	9.6	22.6	22.6	9.9	22.8	10.0	22.9
Total Split (%)	14.8%	34.8%	14.8%	34.8%	34.8%	15.2%	35.1%	15.4%	35.2%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 52.7
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	3	25	71	4	235	102	1050	36	111	779	24
Future Volume (veh/h)	91	3	25	71	4	235	102	1050	36	111	779	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	100	3	9	78	4	121	112	1154	38	122	856	24
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	126	45	136	111	189	160	138	1601	53	150	1140	32
Arrive On Green	0.08	0.11	0.11	0.07	0.10	0.10	0.08	0.33	0.33	0.09	0.34	0.34
Sat Flow, veh/h	1619	395	1185	1619	1800	1525	1619	4886	161	1619	3398	95
Grp Volume(v), veh/h	100	0	12	78	4	121	112	774	418	122	431	449
Grp Sat Flow(s),veh/h/ln	1619	0	1579	1619	1800	1525	1619	1638	1771	1619	1710	1783
Q Serve(g_s), s	2.8	0.0	0.3	2.2	0.1	2.4	3.2	9.6	9.6	3.4	10.4	10.4
Cycle Q Clear(g_c), s	2.8	0.0	0.3	2.2	0.1	2.4	3.2	9.6	9.6	3.4	10.4	10.4
Prop In Lane	1.00		0.75	1.00		1.00	1.00		0.09	1.00		0.05
Lane Grp Cap(c), veh/h	126	0	181	111	189	160	138	1073	580	150	574	598
V/C Ratio(X)	0.79	0.00	0.07	0.70	0.02	0.76	0.81	0.72	0.72	0.81	0.75	0.75
Avail Cap(c_a), veh/h	175	0	613	175	699	592	185	1286	695	189	675	703
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.0	0.0	18.3	21.1	18.6	9.2	20.9	13.7	13.7	20.6	13.7	13.7
Incr Delay (d2), s/veh	15.3	0.0	0.2	7.9	0.0	7.1	18.0	1.6	2.9	18.9	4.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.1	1.0	0.0	1.4	1.6	2.6	3.0	1.8	3.4	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.3	0.0	18.5	29.1	18.7	16.3	38.9	15.3	16.7	39.6	17.6	17.5
LnGrp LOS	D	A	B	C	B	B	D	B	B	D	B	B
Approach Vol, veh/h		112			203			1304			1002	
Approach Delay, s/veh		34.4			21.3			17.8			20.3	
Approach LOS		C			C			B			C	

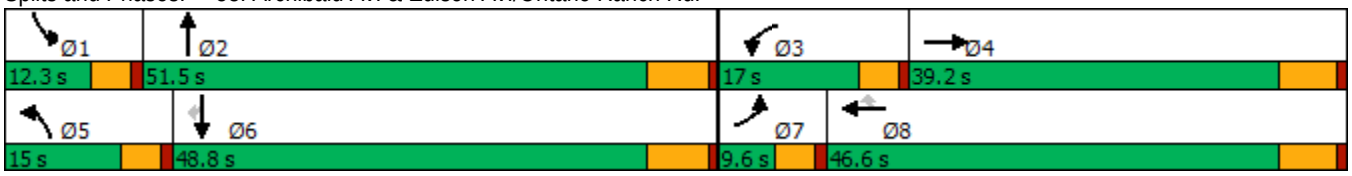
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	19.8	7.8	9.9	8.5	20.2	8.2	9.5
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	5.4	18.2	5.0	18.0	5.3	18.3	5.0	18.0
Max Q Clear Time (g_c+I1), s	5.4	11.6	4.2	2.3	5.2	12.4	4.8	4.4
Green Ext Time (p_c), s	0.0	3.5	0.0	0.0	0.0	2.4	0.0	0.3

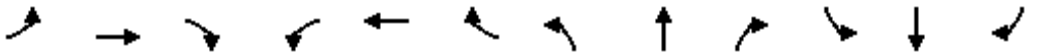
Intersection Summary	
HCM 6th Ctrl Delay	19.7
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	224	40	400	564	133	157	971	383	63	432	142
Future Volume (vph)	38	224	40	400	564	133	157	971	383	63	432	142
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	9.6	39.2		17.0	46.6	46.6	15.0	51.5		12.3	48.8	48.8
Total Split (%)	8.0%	32.7%		14.2%	38.8%	38.8%	12.5%	42.9%		10.3%	40.7%	40.7%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 103.5
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	224	40	400	564	133	157	971	383	63	432	142
Future Volume (veh/h)	38	224	40	400	564	133	157	971	383	63	432	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	39	231	0	412	581	83	162	1001	0	65	445	113
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	98	889		367	632	536	169	1184		81	999	445
Arrive On Green	0.03	0.26	0.00	0.12	0.35	0.35	0.10	0.35	0.00	0.05	0.29	0.29
Sat Flow, veh/h	2956	3420	1525	2956	1800	1525	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	39	231	0	412	581	83	162	1001	0	65	445	113
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1800	1525	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	1.3	5.3	0.0	12.4	30.9	3.7	9.9	27.0	0.0	4.0	10.6	5.7
Cycle Q Clear(g_c), s	1.3	5.3	0.0	12.4	30.9	3.7	9.9	27.0	0.0	4.0	10.6	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	98	889		367	632	536	169	1184		81	999	445
V/C Ratio(X)	0.40	0.26		1.12	0.92	0.15	0.96	0.85		0.80	0.45	0.25
Avail Cap(c_a), veh/h	148	1131		367	729	618	169	1543		125	1450	647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.3	29.3	0.0	43.7	31.0	22.2	44.5	30.1	0.0	46.9	28.7	27.0
Incr Delay (d2), s/veh	1.0	0.2	0.0	84.0	15.5	0.1	56.9	3.6	0.0	9.6	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.1	0.0	8.6	14.9	1.3	6.4	10.6	0.0	1.7	4.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.2	29.5	0.0	127.7	46.5	22.3	101.4	33.7	0.0	56.5	29.1	27.3
LnGrp LOS	D	C		F	D	C	F	C		E	C	C
Approach Vol, veh/h		270	A		1076			1163	A		623	
Approach Delay, s/veh		32.2			75.7			43.1			31.6	
Approach LOS		C			E			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	41.0	17.0	32.1	15.0	35.6	7.9	41.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	7.7	45.0	12.4	33.0	10.4	42.3	5.0	40.4
Max Q Clear Time (g_c+I1), s	6.0	29.0	14.4	7.3	11.9	12.6	3.3	32.9
Green Ext Time (p_c), s	0.0	5.6	0.0	1.2	0.0	2.9	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	51.1
HCM 6th LOS	D

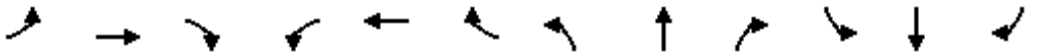
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	15	1496	8	23	849
Future Volume (vph)	11	15	1496	8	23	849
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.5	9.5	32.5	32.5	9.6	16.5
Total Split (s)	9.5	9.5	41.4	41.4	9.6	51.0
Total Split (%)	13.6%	13.6%	59.1%	59.1%	13.7%	72.9%
Yellow Time (s)	3.5	3.5	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	6.5	6.5	4.6	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 61.2
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	11	0	15	0	1496	8	23	849	0
Future Volume (veh/h)	0	0	0	11	0	15	0	1496	8	23	849	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1700	0	1800	0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h				12	0	5	0	1609	6	25	913	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				65	0	56	0	2310	1030	46	2685	0
Arrive On Green				0.02	0.00	0.02	0.00	0.68	0.68	0.03	0.79	0.00
Sat Flow, veh/h				3141	0	2685	0	3510	1525	1619	3510	0
Grp Volume(v), veh/h				12	0	5	0	1609	6	25	913	0
Grp Sat Flow(s),veh/h/ln				1570	0	1342	0	1710	1525	1619	1710	0
Q Serve(g_s), s				0.2	0.0	0.1	0.0	16.3	0.1	0.9	4.4	0.0
Cycle Q Clear(g_c), s				0.2	0.0	0.1	0.0	16.3	0.1	0.9	4.4	0.0
Prop In Lane				1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				65	0	56	0	2310	1030	46	2685	0
V/C Ratio(X)				0.18	0.00	0.09	0.00	0.70	0.01	0.54	0.34	0.00
Avail Cap(c_a), veh/h				277	0	237	0	2310	1030	143	2685	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				27.3	0.0	27.2	0.0	5.6	3.0	27.2	1.8	0.0
Incr Delay (d2), s/veh				1.3	0.0	0.7	0.0	1.8	0.0	3.6	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.1	0.0	0.0	0.0	2.3	0.0	0.3	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.6	0.0	27.9	0.0	7.4	3.0	30.7	2.1	0.0
LnGrp LOS				C	A	C	A	A	A	C	A	A
Approach Vol, veh/h					17			1615			938	
Approach Delay, s/veh					28.4			7.4			2.9	
Approach LOS					C			A			A	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	6.2	44.8				51.0		5.7				
Change Period (Y+Rc), s	4.6	6.5				6.5		4.5				
Max Green Setting (Gmax), s	5.0	34.9				44.5		5.0				
Max Q Clear Time (g_c+I1), s	2.9	18.3				6.4		2.2				
Green Ext Time (p_c), s	0.0	9.7				6.3		0.0				

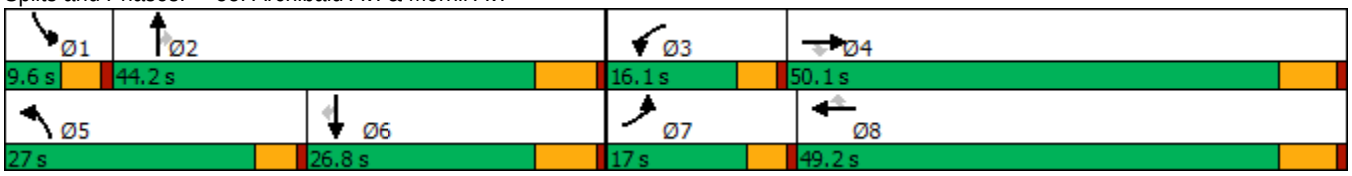
Intersection Summary		
HCM 6th Ctrl Delay		5.9
HCM 6th LOS		A

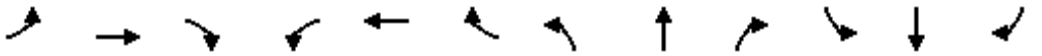
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	238	21	123	72	47	125	497	1141	36	38	487	335
Future Volume (vph)	238	21	123	72	47	125	497	1141	36	38	487	335
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	17.0	50.1	50.1	16.1	49.2	49.2	27.0	44.2	44.2	9.6	26.8	26.8
Total Split (%)	14.2%	41.8%	41.8%	13.4%	41.0%	41.0%	22.5%	36.8%	36.8%	8.0%	22.3%	22.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 91.8
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	21	123	72	47	125	497	1141	36	38	487	335
Future Volume (veh/h)	238	21	123	72	47	125	497	1141	36	38	487	335
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	245	22	72	74	48	34	512	1176	18	39	502	279
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	237	372	315	92	211	179	427	1515	676	105	734	327
Arrive On Green	0.15	0.21	0.21	0.06	0.12	0.12	0.26	0.44	0.44	0.04	0.21	0.21
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	1619	3420	1525	2956	3420	1525
Grp Volume(v), veh/h	245	22	72	74	48	34	512	1176	18	39	502	279
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1710	1525	1478	1710	1525
Q Serve(g_s), s	12.4	0.8	3.3	3.8	2.1	1.7	22.4	24.8	0.6	1.1	11.5	14.9
Cycle Q Clear(g_c), s	12.4	0.8	3.3	3.8	2.1	1.7	22.4	24.8	0.6	1.1	11.5	14.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	237	372	315	92	211	179	427	1515	676	105	734	327
V/C Ratio(X)	1.04	0.06	0.23	0.80	0.23	0.19	1.20	0.78	0.03	0.37	0.68	0.85
Avail Cap(c_a), veh/h	237	931	789	219	912	773	427	1519	678	174	818	365
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.2	27.0	28.0	39.5	34.0	33.8	31.2	20.1	13.3	40.0	30.7	32.0
Incr Delay (d2), s/veh	68.2	0.1	0.4	5.9	0.5	0.5	109.9	2.6	0.0	0.8	2.1	16.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	0.3	1.2	1.6	0.9	0.6	20.8	8.7	0.2	0.4	4.5	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	104.4	27.1	28.4	45.5	34.5	34.3	141.2	22.7	13.3	40.8	32.8	48.2
LnGrp LOS	F	C	C	D	C	C	F	C	B	D	C	D
Approach Vol, veh/h		339			156			1706			820	
Approach Delay, s/veh		83.3			39.7			58.1			38.4	
Approach LOS		F			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	44.1	9.4	23.7	27.0	24.7	17.0	16.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	37.7	11.5	43.9	22.4	20.3	12.4	43.0
Max Q Clear Time (g_c+I1), s	3.1	26.8	5.8	5.3	24.4	16.9	14.4	4.1
Green Ext Time (p_c), s	0.0	5.4	0.0	0.3	0.0	1.3	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	54.6
HCM 6th LOS	D

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	268	822	810	279	208	474
Future Volume (vph)	268	822	810	279	208	474
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	27.0	56.7	36.3	27.0	83.7
Total Split (%)	30.3%	22.5%	47.3%	30.3%	22.5%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 110.3
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	268	822	810	279	208	474
Future Volume (veh/h)	268	822	810	279	208	474
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	279	800	844	244	217	494
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	494	661	859	1168	249	1204
Arrive On Green	0.27	0.27	0.45	0.45	0.14	0.63
Sat Flow, veh/h	1810	1610	1900	1610	1810	1900
Grp Volume(v), veh/h	279	800	844	244	217	494
Grp Sat Flow(s),veh/h/ln	1810	1610	1900	1610	1810	1900
Q Serve(g_s), s	15.1	31.0	49.7	5.6	13.4	14.6
Cycle Q Clear(g_c), s	15.1	31.0	49.7	5.6	13.4	14.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	494	661	859	1168	249	1204
V/C Ratio(X)	0.57	1.21	0.98	0.21	0.87	0.41
Avail Cap(c_a), veh/h	494	661	859	1168	350	1316
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	33.5	30.7	5.1	48.0	10.3
Incr Delay (d2), s/veh	0.9	108.5	26.3	0.1	15.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	36.5	26.8	3.9	6.8	5.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.5	142.0	56.9	5.2	63.6	10.4
LnGrp LOS	D	F	E	A	E	B
Approach Vol, veh/h	1079		1088			711
Approach Delay, s/veh	114.7		45.3			26.6
Approach LOS	F		D			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	20.6	56.7			77.3	36.3
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	22.0	51.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	15.4	51.7			16.6	33.0
Green Ext Time (p_c), s	0.3	0.0			1.6	0.0

Intersection Summary	
HCM 6th Ctrl Delay	66.7
HCM 6th LOS	E

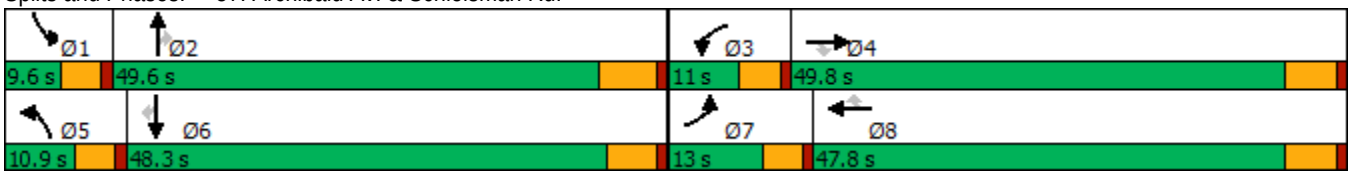
Notes

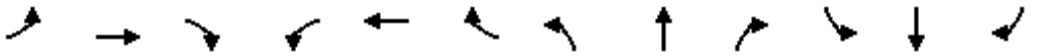
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	383	375	113	248	701	142	241	792	215	105	445	420
Future Volume (vph)	383	375	113	248	701	142	241	792	215	105	445	420
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	49.8	49.8	11.0	47.8	47.8	10.9	49.6	49.6	9.6	48.3	48.3
Total Split (%)	10.8%	41.5%	41.5%	9.2%	39.8%	39.8%	9.1%	41.3%	41.3%	8.0%	40.3%	40.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 106.8
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	383	375	113	248	701	142	241	792	215	105	445	420
Future Volume (veh/h)	383	375	113	248	701	142	241	792	215	105	445	420
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	426	417	62	276	779	81	268	880	166	117	494	345
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	279	2158	659	212	2060	631	209	1430	444	166	1366	418
Arrive On Green	0.08	0.42	0.42	0.06	0.40	0.40	0.06	0.28	0.28	0.05	0.26	0.26
Sat Flow, veh/h	3510	5187	1585	3510	5187	1590	3510	5187	1610	3510	5187	1588
Grp Volume(v), veh/h	426	417	62	276	779	81	268	880	166	117	494	345
Grp Sat Flow(s),veh/h/ln	1755	1729	1585	1755	1729	1590	1755	1729	1610	1755	1729	1588
Q Serve(g_s), s	8.4	5.4	2.5	6.4	11.3	3.4	6.3	15.7	8.8	3.5	8.2	21.6
Cycle Q Clear(g_c), s	8.4	5.4	2.5	6.4	11.3	3.4	6.3	15.7	8.8	3.5	8.2	21.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	279	2158	659	212	2060	631	209	1430	444	166	1366	418
V/C Ratio(X)	1.53	0.19	0.09	1.30	0.38	0.13	1.28	0.62	0.37	0.70	0.36	0.83
Avail Cap(c_a), veh/h	279	2158	659	212	2060	631	209	2129	661	166	2104	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	19.6	18.8	49.7	22.6	20.2	49.7	33.4	30.9	49.6	31.7	36.7
Incr Delay (d2), s/veh	254.9	0.2	0.3	164.7	0.5	0.4	158.1	0.4	0.5	10.9	0.2	5.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.4	2.1	0.9	7.6	4.4	1.3	7.2	6.2	3.3	1.7	3.3	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	303.6	19.8	19.0	214.4	23.1	20.7	207.8	33.8	31.5	60.6	31.9	41.8
LnGrp LOS	F	B	B	F	C	C	F	C	C	E	C	D
Approach Vol, veh/h		905			1136			1314			956	
Approach Delay, s/veh		153.3			69.4			69.0			39.0	
Approach LOS		F			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	35.4	11.0	49.8	10.9	34.1	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.0	43.4	6.4	44.0	6.3	* 43	8.4	42.0
Max Q Clear Time (g_c+I1), s	5.5	17.7	8.4	7.4	8.3	23.6	10.4	13.3
Green Ext Time (p_c), s	0.0	6.4	0.0	2.9	0.0	4.0	0.0	5.6

Intersection Summary	
HCM 6th Ctrl Delay	80.2
HCM 6th LOS	F

Notes

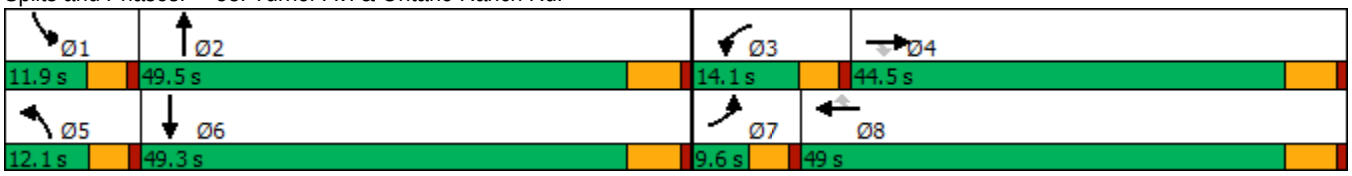
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

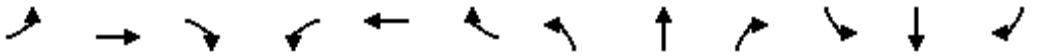
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	28	577	33	42	1144	18	56	24	33	15
Future Volume (vph)	28	577	33	42	1144	18	56	24	33	15
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	9.6	44.5	44.5	14.1	49.0	49.0	12.1	49.5	11.9	49.3
Total Split (%)	8.0%	37.1%	37.1%	11.8%	40.8%	40.8%	10.1%	41.3%	9.9%	41.1%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 86.3
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	577	33	42	1144	18	56	24	36	33	15	61
Future Volume (veh/h)	28	577	33	42	1144	18	56	24	36	33	15	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	31	641	26	47	1271	11	62	27	27	37	17	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	50	1816	810	66	1849	825	76	110	110	57	53	140
Arrive On Green	0.03	0.53	0.53	0.04	0.54	0.54	0.05	0.13	0.13	0.04	0.12	0.12
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	826	826	1619	437	1155
Grp Volume(v), veh/h	31	641	26	47	1271	11	62	0	54	37	0	62
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	0	1651	1619	0	1592
Q Serve(g_s), s	1.5	8.6	0.6	2.3	21.7	0.3	3.0	0.0	2.3	1.8	0.0	2.8
Cycle Q Clear(g_c), s	1.5	8.6	0.6	2.3	21.7	0.3	3.0	0.0	2.3	1.8	0.0	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.50	1.00		0.73
Lane Grp Cap(c), veh/h	50	1816	810	66	1849	825	76	0	220	57	0	193
V/C Ratio(X)	0.62	0.35	0.03	0.72	0.69	0.01	0.81	0.00	0.25	0.65	0.00	0.32
Avail Cap(c_a), veh/h	101	1816	810	192	1849	825	152	0	903	148	0	866
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.2	10.8	8.9	37.9	13.4	8.5	37.7	0.0	31.1	38.1	0.0	32.1
Incr Delay (d2), s/veh	4.5	0.5	0.1	5.3	2.1	0.0	7.5	0.0	0.6	4.6	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.8	0.2	1.0	7.3	0.1	1.3	0.0	0.9	0.7	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.7	11.4	9.0	43.2	15.5	8.5	45.2	0.0	31.6	42.7	0.0	33.1
LnGrp LOS	D	B	A	D	B	A	D	A	C	D	A	C
Approach Vol, veh/h		698			1329			116			99	
Approach Delay, s/veh		12.7			16.5			38.9			36.7	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	16.4	7.8	48.2	8.4	15.5	7.1	49.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	7.3	43.7	9.5	38.7	7.5	43.5	5.0	43.2
Max Q Clear Time (g_c+I1), s	3.8	4.3	4.3	10.6	5.0	4.8	3.5	23.7
Green Ext Time (p_c), s	0.0	0.2	0.0	4.3	0.0	0.3	0.0	8.6

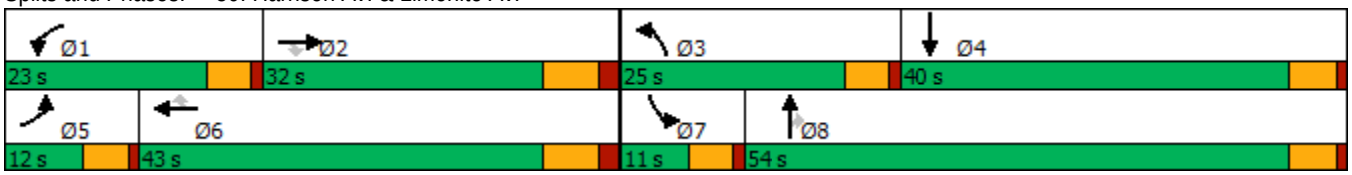
Intersection Summary	
HCM 6th Ctrl Delay	17.3
HCM 6th LOS	B

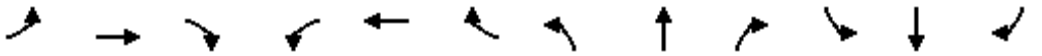
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	41	427	19	137	872	21	144	103	204	26	109
Future Volume (vph)	41	427	19	137	872	21	144	103	204	26	109
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	12.0	32.0	32.0	23.0	43.0	43.0	25.0	54.0	54.0	11.0	40.0
Total Split (%)	10.0%	26.7%	26.7%	19.2%	35.8%	35.8%	20.8%	45.0%	45.0%	9.2%	33.3%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 75.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 59: Harrison Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	427	19	137	872	21	144	103	204	26	109	75
Future Volume (veh/h)	41	427	19	137	872	21	144	103	204	26	109	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	43	445	13	143	908	20	150	107	94	27	114	49
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	79	1257	378	184	1558	472	193	417	353	56	181	78
Arrive On Green	0.04	0.24	0.24	0.10	0.30	0.30	0.11	0.22	0.22	0.03	0.14	0.14
Sat Flow, veh/h	1810	5187	1558	1810	5187	1571	1810	1900	1606	1810	1261	542
Grp Volume(v), veh/h	43	445	13	143	908	20	150	107	94	27	0	163
Grp Sat Flow(s),veh/h/ln	1810	1729	1558	1810	1729	1571	1810	1900	1606	1810	0	1802
Q Serve(g_s), s	1.3	3.9	0.4	4.2	8.2	0.5	4.4	2.6	2.7	0.8	0.0	4.7
Cycle Q Clear(g_c), s	1.3	3.9	0.4	4.2	8.2	0.5	4.4	2.6	2.7	0.8	0.0	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	79	1257	378	184	1558	472	193	417	353	56	0	259
V/C Ratio(X)	0.54	0.35	0.03	0.78	0.58	0.04	0.78	0.26	0.27	0.49	0.00	0.63
Avail Cap(c_a), veh/h	230	2357	708	592	3394	1028	658	1682	1422	197	0	1137
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.8	17.3	15.9	24.1	16.3	13.6	23.9	17.7	17.8	26.2	0.0	22.2
Incr Delay (d2), s/veh	2.1	0.2	0.0	2.6	0.3	0.0	2.5	0.3	0.4	2.4	0.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.3	0.1	1.7	2.6	0.1	1.8	1.0	0.9	0.3	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.9	17.4	16.0	26.7	16.7	13.7	26.5	18.1	18.2	28.7	0.0	24.7
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	A	C
Approach Vol, veh/h		501			1071			351			190	
Approach Delay, s/veh		18.3			18.0			21.7			25.2	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	20.3	10.9	13.2	7.4	23.5	6.7	17.4
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	18.0	25.0	20.0	34.7	7.0	36.0	6.0	48.7
Max Q Clear Time (g_c+I1), s	6.2	5.9	6.4	6.7	3.3	10.2	2.8	4.7
Green Ext Time (p_c), s	0.1	2.5	0.1	0.8	0.0	6.1	0.0	0.8

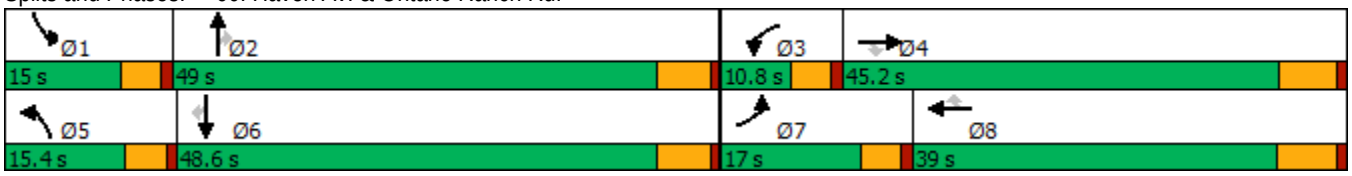
Intersection Summary	
HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

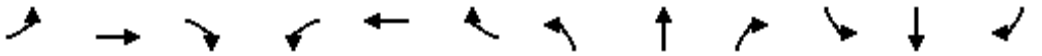
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	131	607	28	21	971	79	61	184	76	115	56	71
Future Volume (vph)	131	607	28	21	971	79	61	184	76	115	56	71
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	17.0	45.2	45.2	10.8	39.0	39.0	15.4	49.0	49.0	15.0	48.6	48.6
Total Split (%)	14.2%	37.7%	37.7%	9.0%	32.5%	32.5%	12.8%	40.8%	40.8%	12.5%	40.5%	40.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 95.1
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	607	28	21	971	79	61	184	76	115	56	71
Future Volume (veh/h)	131	607	28	21	971	79	61	184	76	115	56	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	139	646	17	22	1033	39	65	196	31	122	60	43
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	169	2348	729	39	1359	606	81	257	218	150	334	283
Arrive On Green	0.10	0.48	0.48	0.02	0.40	0.40	0.05	0.14	0.14	0.09	0.19	0.19
Sat Flow, veh/h	1619	4914	1525	1619	3420	1525	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	139	646	17	22	1033	39	65	196	31	122	60	43
Grp Sat Flow(s),veh/h/ln	1619	1638	1525	1619	1710	1525	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	6.9	6.5	0.5	1.1	21.3	1.3	3.3	8.6	1.5	6.0	2.3	1.9
Cycle Q Clear(g_c), s	6.9	6.5	0.5	1.1	21.3	1.3	3.3	8.6	1.5	6.0	2.3	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	169	2348	729	39	1359	606	81	257	218	150	334	283
V/C Ratio(X)	0.82	0.28	0.02	0.57	0.76	0.06	0.81	0.76	0.14	0.81	0.18	0.15
Avail Cap(c_a), veh/h	245	2348	729	123	1359	606	214	951	806	206	942	798
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.9	12.8	11.3	39.5	21.3	15.2	38.5	33.7	30.7	36.4	28.1	27.9
Incr Delay (d2), s/veh	8.9	0.3	0.1	4.7	4.0	0.2	6.9	4.7	0.3	11.6	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	2.1	0.1	0.5	7.9	0.4	1.4	3.8	0.5	2.7	1.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.8	13.1	11.3	44.2	25.3	15.4	45.4	38.4	31.0	48.0	28.3	28.2
LnGrp LOS	D	B	B	D	C	B	D	D	C	D	C	C
Approach Vol, veh/h		802			1094			292			225	
Approach Delay, s/veh		18.6			25.4			39.2			39.0	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	17.5	6.6	45.6	8.7	21.0	13.1	39.0
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	10.4	43.2	6.2	* 39	10.8	42.8	12.4	32.5
Max Q Clear Time (g_c+I1), s	8.0	10.6	3.1	8.5	5.3	4.3	8.9	23.3
Green Ext Time (p_c), s	0.0	1.1	0.0	4.2	0.0	0.4	0.0	4.3

Intersection Summary	
HCM 6th Ctrl Delay	26.0
HCM 6th LOS	C

Notes

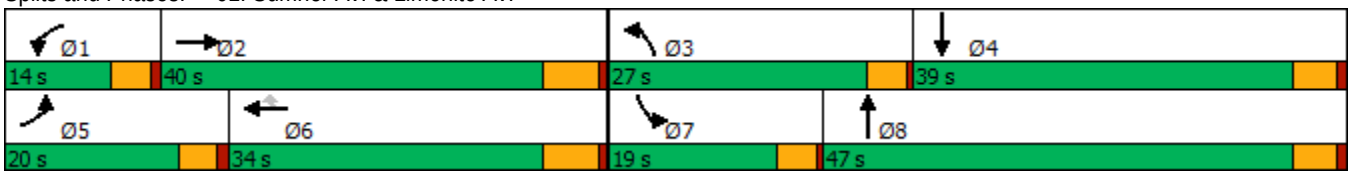
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	232	465	105	692	31	176	367	93	184
Future Volume (vph)	232	465	105	692	31	176	367	93	184
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	20.0	40.0	14.0	34.0	34.0	27.0	47.0	19.0	39.0
Total Split (%)	16.7%	33.3%	11.7%	28.3%	28.3%	22.5%	39.2%	15.8%	32.5%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 74.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 61: Sumner Av. & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	232	465	29	105	692	31	176	367	107	93	184	151
Future Volume (veh/h)	232	465	29	105	692	31	176	367	107	93	184	151
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	239	479	24	108	713	28	181	378	36	96	190	59
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	369	1465	73	218	1278	392	232	635	60	124	358	108
Arrive On Green	0.11	0.29	0.29	0.06	0.25	0.25	0.13	0.19	0.19	0.07	0.13	0.13
Sat Flow, veh/h	3510	5061	252	3510	5187	1589	1810	3332	316	1810	2732	824
Grp Volume(v), veh/h	239	326	177	108	713	28	181	204	210	96	124	125
Grp Sat Flow(s),veh/h/ln	1755	1729	1855	1755	1729	1589	1810	1805	1843	1810	1805	1752
Q Serve(g_s), s	3.3	3.7	3.7	1.5	6.0	0.7	4.9	5.2	5.2	2.6	3.2	3.4
Cycle Q Clear(g_c), s	3.3	3.7	3.7	1.5	6.0	0.7	4.9	5.2	5.2	2.6	3.2	3.4
Prop In Lane	1.00		0.14	1.00		1.00	1.00		0.17	1.00		0.47
Lane Grp Cap(c), veh/h	369	1001	537	218	1278	392	232	344	351	124	237	230
V/C Ratio(X)	0.65	0.33	0.33	0.50	0.56	0.07	0.78	0.59	0.60	0.77	0.52	0.55
Avail Cap(c_a), veh/h	1087	2348	1259	666	2901	889	831	1514	1546	542	1226	1190
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	14.0	14.0	22.7	16.5	14.5	21.2	18.5	18.5	22.9	20.3	20.4
Incr Delay (d2), s/veh	0.7	0.2	0.4	0.6	0.4	0.1	2.2	1.2	1.2	3.8	1.3	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.1	1.2	0.5	1.9	0.2	1.9	1.9	1.9	1.1	1.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.2	14.1	14.3	23.4	16.9	14.6	23.3	19.7	19.7	26.8	21.6	21.9
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	C	C
Approach Vol, veh/h		742			849			595			345	
Approach Delay, s/veh		16.8			17.6			20.8			23.1	
Approach LOS		B			B			C			C	

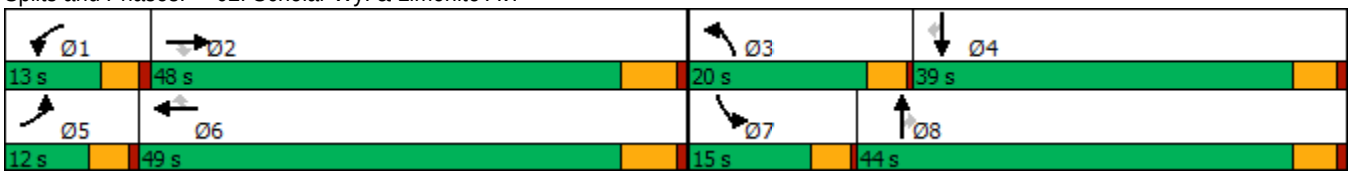
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	20.5	10.4	11.6	9.8	18.3	7.4	14.5
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	9.5	34.0	23.0	34.0	15.5	28.0	15.0	42.0
Max Q Clear Time (g_c+I1), s	3.5	5.7	6.9	5.4	5.3	8.0	4.6	7.2
Green Ext Time (p_c), s	0.0	2.8	0.1	1.0	0.2	4.3	0.0	1.8

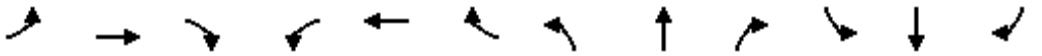
Intersection Summary	
HCM 6th Ctrl Delay	18.9
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	680	62	40	647	25	94	169	96	49	185	27
Future Volume (vph)	30	680	62	40	647	25	94	169	96	49	185	27
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	12.0	48.0	48.0	13.0	49.0	49.0	20.0	44.0	44.0	15.0	39.0	39.0
Total Split (%)	10.0%	40.0%	40.0%	10.8%	40.8%	40.8%	16.7%	36.7%	36.7%	12.5%	32.5%	32.5%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 64.1
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	680	62	40	647	25	94	169	96	49	185	27
Future Volume (veh/h)	30	680	62	40	647	25	94	169	96	49	185	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	33	739	33	43	703	16	102	184	62	53	201	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	54	1158	516	66	1182	527	132	378	320	76	608	258
Arrive On Green	0.03	0.32	0.32	0.04	0.33	0.33	0.07	0.20	0.20	0.04	0.17	0.17
Sat Flow, veh/h	1810	3610	1609	1810	3610	1610	1810	1900	1608	1810	3610	1535
Grp Volume(v), veh/h	33	739	33	43	703	16	102	184	62	53	201	27
Grp Sat Flow(s),veh/h/ln	1810	1805	1609	1810	1805	1610	1810	1900	1608	1810	1805	1535
Q Serve(g_s), s	0.9	8.5	0.7	1.1	7.9	0.3	2.7	4.2	1.6	1.4	2.4	0.7
Cycle Q Clear(g_c), s	0.9	8.5	0.7	1.1	7.9	0.3	2.7	4.2	1.6	1.4	2.4	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	54	1158	516	66	1182	527	132	378	320	76	608	258
V/C Ratio(X)	0.62	0.64	0.06	0.66	0.59	0.03	0.77	0.49	0.19	0.70	0.33	0.10
Avail Cap(c_a), veh/h	280	3124	1392	317	3199	1427	597	1527	1292	410	2529	1076
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.3	14.1	11.4	23.1	13.6	11.1	22.1	17.2	16.2	22.9	17.8	17.1
Incr Delay (d2), s/veh	4.2	0.6	0.1	4.1	0.5	0.0	3.6	0.7	0.2	4.2	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.6	0.2	0.5	2.4	0.1	1.1	1.6	0.5	0.6	0.9	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.5	14.7	11.5	27.2	14.1	11.1	25.7	17.9	16.4	27.1	18.0	17.2
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		805			762			348			281	
Approach Delay, s/veh		15.1			14.8			19.9			19.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	21.6	7.5	13.2	5.9	21.9	6.0	14.7
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	8.5	42.0	16.0	34.0	7.5	43.0	11.0	39.0
Max Q Clear Time (g_c+I1), s	3.1	10.5	4.7	4.4	2.9	9.9	3.4	6.2
Green Ext Time (p_c), s	0.0	5.0	0.0	1.1	0.0	4.7	0.0	1.0

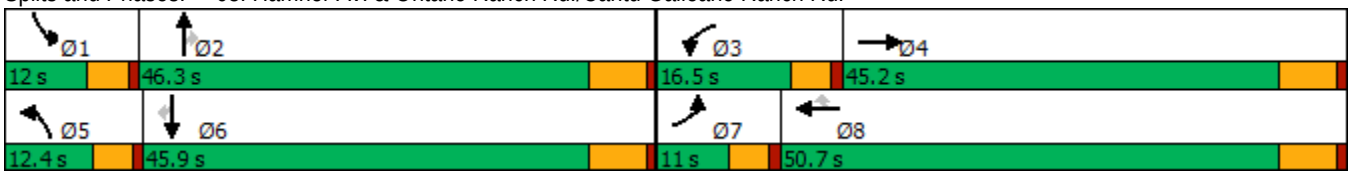
Intersection Summary	
HCM 6th Ctrl Delay	16.3
HCM 6th LOS	B

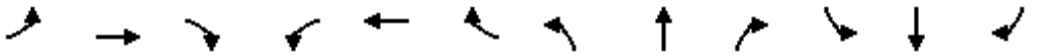
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	95	567	264	913	195	165	674	484	148	200	84
Future Volume (vph)	95	567	264	913	195	165	674	484	148	200	84
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	11.0	45.2	16.5	50.7	50.7	12.4	46.3	46.3	12.0	45.9	45.9
Total Split (%)	9.2%	37.7%	13.8%	42.3%	42.3%	10.3%	38.6%	38.6%	10.0%	38.3%	38.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 109
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	567	79	264	913	195	165	674	484	148	200	84
Future Volume (veh/h)	95	567	79	264	913	195	165	674	484	148	200	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	108	644	90	300	1038	222	188	766	543	168	227	95
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	153	1631	222	307	1183	528	201	1718	533	191	1184	528
Arrive On Green	0.05	0.29	0.29	0.10	0.35	0.35	0.07	0.35	0.35	0.06	0.35	0.35
Sat Flow, veh/h	2956	5551	757	2956	3420	1525	2956	4914	1525	2956	3420	1524
Grp Volume(v), veh/h	108	536	198	300	1038	222	188	766	543	168	227	95
Grp Sat Flow(s),veh/h/ln	1478	1548	1664	1478	1710	1525	1478	1638	1525	1478	1710	1524
Q Serve(g_s), s	4.1	10.6	10.9	11.6	32.7	12.8	7.3	13.8	40.1	6.5	5.3	5.0
Cycle Q Clear(g_c), s	4.1	10.6	10.9	11.6	32.7	12.8	7.3	13.8	40.1	6.5	5.3	5.0
Prop In Lane	1.00		0.45	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	153	1365	489	307	1183	528	201	1718	533	191	1184	528
V/C Ratio(X)	0.71	0.39	0.40	0.98	0.88	0.42	0.94	0.45	1.02	0.88	0.19	0.18
Avail Cap(c_a), veh/h	165	1579	566	307	1327	592	201	1718	533	191	1184	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.5	32.3	32.5	51.3	35.2	28.7	53.2	28.7	37.3	53.2	26.3	26.2
Incr Delay (d2), s/veh	9.6	0.2	0.5	45.1	6.4	0.5	44.8	0.2	43.6	33.5	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	3.8	4.2	6.1	13.8	4.5	3.9	5.1	20.3	3.2	2.1	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.2	32.5	33.0	96.4	41.7	29.3	98.0	28.9	80.9	86.7	26.3	26.3
LnGrp LOS	E	C	C	F	D	C	F	C	F	F	C	C
Approach Vol, veh/h		842			1560			1497			490	
Approach Delay, s/veh		36.6			50.4			56.5			47.0	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	46.3	16.5	39.9	12.4	45.9	10.5	45.9
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	7.4	40.1	11.9	39.0	7.8	39.7	6.4	44.5
Max Q Clear Time (g_c+I1), s	8.5	42.1	13.6	12.9	9.3	7.3	6.1	34.7
Green Ext Time (p_c), s	0.0	0.0	0.0	4.3	0.0	1.6	0.0	5.0

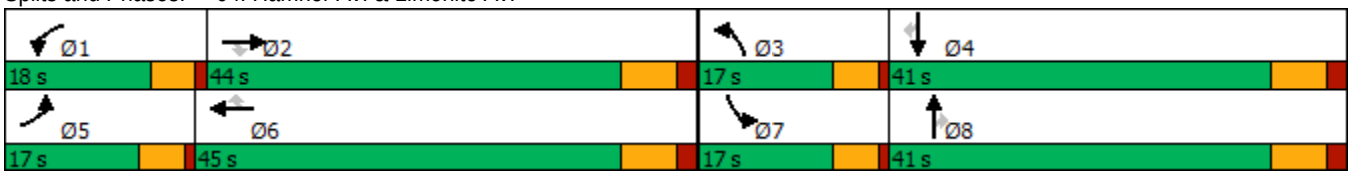
Intersection Summary	
HCM 6th Ctrl Delay	49.5
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	503	42	169	436	82	157	668	244	152	359	109
Future Volume (vph)	164	503	42	169	436	82	157	668	244	152	359	109
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	17.0	44.0	44.0	18.0	45.0	45.0	17.0	41.0	41.0	17.0	41.0	41.0
Total Split (%)	14.2%	36.7%	36.7%	15.0%	37.5%	37.5%	14.2%	34.2%	34.2%	14.2%	34.2%	34.2%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 87.8
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 64: Hamner Av. & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	503	42	169	436	82	157	668	244	152	359	109
Future Volume (veh/h)	164	503	42	169	436	82	157	668	244	152	359	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	174	535	32	180	464	61	167	711	162	162	382	76
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	265	1182	367	272	830	370	257	1462	453	251	1453	451
Arrive On Green	0.08	0.23	0.23	0.08	0.23	0.23	0.07	0.28	0.28	0.07	0.28	0.28
Sat Flow, veh/h	3510	5187	1608	3510	3610	1610	3510	5187	1608	3510	5187	1610
Grp Volume(v), veh/h	174	535	32	180	464	61	167	711	162	162	382	76
Grp Sat Flow(s),veh/h/ln	1755	1729	1608	1755	1805	1610	1755	1729	1608	1755	1729	1610
Q Serve(g_s), s	3.4	6.2	1.1	3.5	8.0	2.1	3.3	8.0	5.7	3.2	4.0	2.5
Cycle Q Clear(g_c), s	3.4	6.2	1.1	3.5	8.0	2.1	3.3	8.0	5.7	3.2	4.0	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	265	1182	367	272	830	370	257	1462	453	251	1453	451
V/C Ratio(X)	0.66	0.45	0.09	0.66	0.56	0.16	0.65	0.49	0.36	0.65	0.26	0.17
Avail Cap(c_a), veh/h	599	2729	846	649	1950	870	599	2507	778	599	2507	778
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	23.4	21.4	31.5	23.9	21.7	31.7	21.0	20.2	31.8	19.7	19.1
Incr Delay (d2), s/veh	1.0	0.6	0.2	1.0	1.3	0.4	1.0	0.5	1.0	1.0	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.4	0.4	1.4	3.2	0.8	1.3	2.9	2.0	1.3	1.5	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.7	24.0	21.6	32.6	25.2	22.1	32.8	21.6	21.2	32.8	19.9	19.5
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	B	B
Approach Vol, veh/h		741			705			1040			620	
Approach Delay, s/veh		25.9			26.8			23.3			23.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	23.0	10.1	26.7	10.3	23.2	10.0	26.8
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	13.0	37.0	12.0	34.0	12.0	38.0	12.0	34.0
Max Q Clear Time (g_c+I1), s	5.5	8.2	5.3	6.0	5.4	10.0	5.2	10.0
Green Ext Time (p_c), s	0.1	6.8	0.1	5.1	0.1	6.1	0.1	9.7

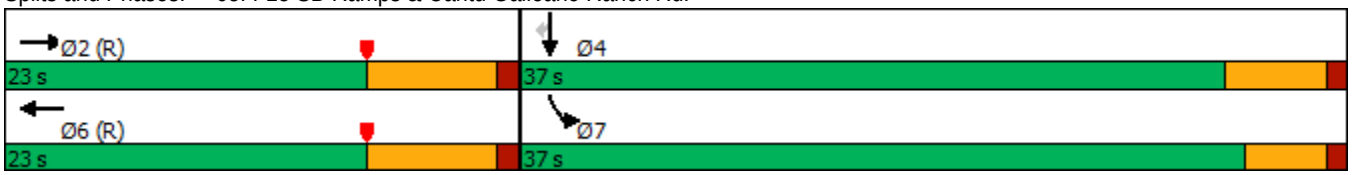
Intersection Summary	
HCM 6th Ctrl Delay	24.7
HCM 6th LOS	C

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	987	318	516	175	310	0	1198
Future Volume (vph)	987	318	516	175	310	0	1198
Turn Type	NA	Free	NA	Free	Prot	NA	Perm
Protected Phases	2		6		7	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		7	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		9.6	10.5	10.5
Total Split (s)	23.0		23.0		37.0	37.0	37.0
Total Split (%)	38.3%		38.3%		61.7%	61.7%	61.7%
Yellow Time (s)	5.8		5.8		3.6	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8		6.8		4.6	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Min		None	Min	Min

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 53 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	987	318	0	516	175	0	0	0	310	0	1198
Future Volume (veh/h)	0	987	318	0	516	175	0	0	0	310	0	1198
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1097	0	0	573	0				229	0	1156
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1970		0	1371					778	0	1385
Arrive On Green	0.00	0.38	0.00	0.00	0.38	0.00				0.43	0.00	0.43
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1097	0	0	573	0				229	0	1156
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	10.0	0.0	0.0	7.0	0.0				5.0	0.0	19.1
Cycle Q Clear(g_c), s	0.0	10.0	0.0	0.0	7.0	0.0				5.0	0.0	19.1
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1970		0	1371					778	0	1385
V/C Ratio(X)	0.00	0.56		0.00	0.42					0.29	0.00	0.83
Avail Cap(c_a), veh/h	0	1970		0	1371					977	0	1739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.74	0.00	0.00	0.93	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	14.6	0.0	0.0	13.7	0.0				11.2	0.0	15.2
Incr Delay (d2), s/veh	0.0	0.8	0.0	0.0	0.9	0.0				0.2	0.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.2	0.0	0.0	2.4	0.0				1.6	0.0	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	15.5	0.0	0.0	14.6	0.0				11.4	0.0	18.2
LnGrp LOS	A	B		A	B					B	A	B
Approach Vol, veh/h		1097	A		573	A					1385	
Approach Delay, s/veh		15.5			14.6						17.1	
Approach LOS		B			B						B	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	29.6	30.4	29.6
Change Period (Y+Rc), s	6.8	4.6	6.8
Max Green Setting (Gmax), s	16.2	32.4	16.2
Max Q Clear Time (g_c+I1), s	12.0	21.1	9.0
Green Ext Time (p_c), s	2.4	4.7	1.9

Intersection Summary	
HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

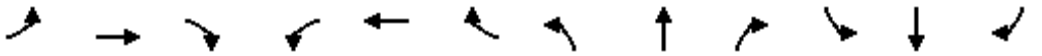
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1037	526	634	674	143	0	392
Future Volume (vph)	1037	526	634	674	143	0	392
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	10.0	36.5	23.5	23.5	23.5
Total Split (s)	55.2	55.2	22.8	78.0	32.0	32.0	32.0
Total Split (%)	50.2%	50.2%	20.7%	70.9%	29.1%	29.1%	29.1%
Yellow Time (s)	4.5	4.5	4.0	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	0.5	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.5	5.5	5.5	5.5	5.5
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	Min	Min	Min

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1037	526	634	674	0	0	0	0	143	0	392
Future Volume (veh/h)	0	1037	526	634	674	0	0	0	0	143	0	392
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1103	438	674	717	0				189	0	79
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2237	997	584	2985	0				264	0	116
Arrive On Green	0.00	0.62	0.62	0.05	0.27	0.00				0.07	0.00	0.07
Sat Flow, veh/h	0	3705	1609	3510	3705	0				3619	0	1586
Grp Volume(v), veh/h	0	1103	438	674	717	0				189	0	79
Grp Sat Flow(s),veh/h/ln	0	1805	1609	1755	1805	0				1810	0	1586
Q Serve(g_s), s	0.0	18.4	15.6	18.3	17.0	0.0				5.6	0.0	5.3
Cycle Q Clear(g_c), s	0.0	18.4	15.6	18.3	17.0	0.0				5.6	0.0	5.3
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2237	997	584	2985	0				264	0	116
V/C Ratio(X)	0.00	0.49	0.44	1.15	0.24	0.00				0.72	0.00	0.68
Avail Cap(c_a), veh/h	0	2237	997	584	2985	0				872	0	382
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.90	0.90	0.60	0.60	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	11.5	10.9	52.0	13.1	0.0				49.9	0.0	49.7
Incr Delay (d2), s/veh	0.0	0.7	1.3	81.2	0.1	0.0				1.4	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.6	5.2	15.1	8.1	0.0				2.5	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.2	12.2	133.1	13.2	0.0				51.2	0.0	52.4
LnGrp LOS	A	B	B	F	B	A				D	A	D
Approach Vol, veh/h		1541			1391						268	
Approach Delay, s/veh		12.2			71.3						51.6	
Approach LOS		B			E						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	22.8	73.7		13.5		96.5
Change Period (Y+Rc), s	4.5	5.5		5.5		5.5
Max Green Setting (Gmax), s	18.3	49.7		26.5		72.5
Max Q Clear Time (g_c+I1), s	20.3	20.4		7.6		19.0
Green Ext Time (p_c), s	0.0	6.2		0.4		3.1

Intersection Summary		
HCM 6th Ctrl Delay		41.2
HCM 6th LOS		D

Notes

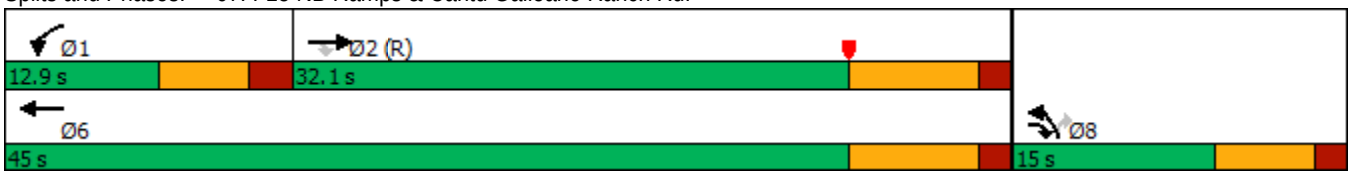
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	481	816	352	448	243	289
Future Volume (vph)	481	816	352	448	243	289
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	32.1	15.0	12.9	45.0	15.0	15.0
Total Split (%)	53.5%	25.0%	21.5%	75.0%	25.0%	25.0%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.0	6.0	7.3	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	481	816	352	448	243	289
Future Volume (veh/h)	481	816	352	448	243	289
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	529	563	387	492	290	146
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2144	907	404	3259	543	242
Arrive On Green	0.69	0.69	0.11	0.63	0.15	0.15
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	529	563	387	492	290	146
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	2.3	11.6	6.6	2.3	4.4	5.1
Cycle Q Clear(g_c), s	2.3	11.6	6.6	2.3	4.4	5.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2144	907	404	3259	543	242
V/C Ratio(X)	0.25	0.62	0.96	0.15	0.53	0.60
Avail Cap(c_a), veh/h	2144	907	404	3259	543	242
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.8	4.4	26.4	4.6	23.6	23.8
Incr Delay (d2), s/veh	0.2	2.1	35.5	0.0	3.7	10.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.7	4.4	0.4	1.9	2.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.0	6.5	61.9	4.6	27.3	34.6
LnGrp LOS	A	A	E	A	C	C
Approach Vol, veh/h	1092			879	436	
Approach Delay, s/veh	6.3			29.8	29.7	
Approach LOS	A			C	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	12.9	32.1				45.0	15.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	6.9	24.8				37.7	9.0
Max Q Clear Time (g_c+I1), s	8.6	13.6				4.3	7.1
Green Ext Time (p_c), s	0.0	4.1				3.1	0.3

Intersection Summary	
HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	687	493	1073	378	235	0	308
Future Volume (vph)	687	493	1073	378	235	0	308
Turn Type	Prot	NA	NA	Perm	Split	NA	Perm
Protected Phases	5	2	6		8	8	
Permitted Phases				6			8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	26.0	72.0	46.0	46.0	38.0	38.0	38.0
Total Split (%)	23.6%	65.5%	41.8%	41.8%	34.5%	34.5%	34.5%
Yellow Time (s)	4.0	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	687	493	0	0	1073	378	235	0	308	0	0	0
Future Volume (veh/h)	687	493	0	0	1073	378	235	0	308	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	716	514	0	0	1118	274	278	0	72			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	686	2877	0	0	2024	903	373	0	163			
Arrive On Green	0.33	1.00	0.00	0.00	0.56	0.56	0.10	0.00	0.10			
Sat Flow, veh/h	3510	3705	0	0	3705	1610	3619	0	1584			
Grp Volume(v), veh/h	716	514	0	0	1118	274	278	0	72			
Grp Sat Flow(s),veh/h/ln	1755	1805	0	0	1805	1610	1810	0	1584			
Q Serve(g_s), s	21.5	0.0	0.0	0.0	21.7	9.9	8.2	0.0	4.7			
Cycle Q Clear(g_c), s	21.5	0.0	0.0	0.0	21.7	9.9	8.2	0.0	4.7			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	686	2877	0	0	2024	903	373	0	163			
V/C Ratio(X)	1.04	0.18	0.00	0.00	0.55	0.30	0.75	0.00	0.44			
Avail Cap(c_a), veh/h	686	2877	0	0	2024	903	1069	0	468			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.70	0.70	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	37.0	0.0	0.0	0.0	15.4	12.8	47.9	0.0	46.4			
Incr Delay (d2), s/veh	40.7	0.1	0.0	0.0	1.1	0.9	3.0	0.0	1.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	11.3	0.0	0.0	0.0	8.3	3.5	3.7	0.0	1.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.8	0.1	0.0	0.0	16.5	13.7	50.9	0.0	48.2			
LnGrp LOS	F	A	A	A	B	B	D	A	D			
Approach Vol, veh/h		1230			1392			350				
Approach Delay, s/veh		45.3			15.9			50.4				
Approach LOS		D			B			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		93.2			26.0	67.2		16.8				
Change Period (Y+Rc), s		5.5			4.5	5.5		5.5				
Max Green Setting (Gmax), s		66.5			21.5	40.5		32.5				
Max Q Clear Time (g_c+I1), s		2.0			23.5	23.7		10.2				
Green Ext Time (p_c), s		2.1			0.0	5.1		1.1				

Intersection Summary	
HCM 6th Ctrl Delay	32.1
HCM 6th LOS	C

Notes

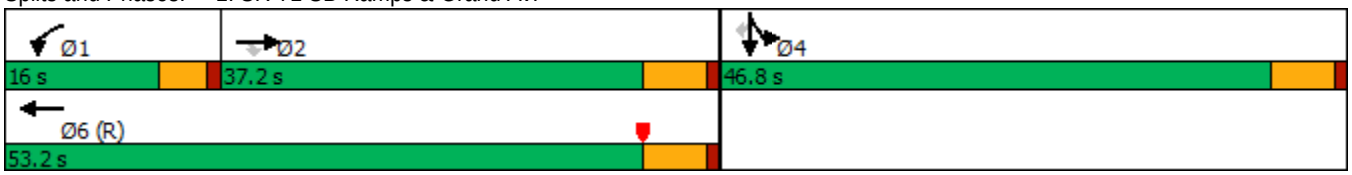
User approved volume balancing among the lanes for turning movement.

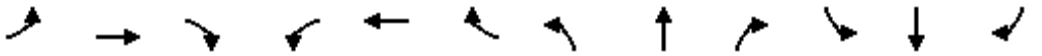
Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1318	523	280	1272	840	1	440
Future Volume (vph)	1318	523	280	1272	840	1	440
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	37.2	37.2	16.0	53.2	46.8	46.8	46.8
Total Split (%)	37.2%	37.2%	16.0%	53.2%	46.8%	46.8%	46.8%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1318	523	280	1272	0	0	0	0	840	1	440
Future Volume (veh/h)	0	1318	523	280	1272	0	0	0	0	840	1	440
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1551	526	329	1496	0				989	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85				0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1735	539	412	2552	0				1177	0	
Arrive On Green	0.00	0.33	0.33	0.12	0.49	0.00				0.33	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	1551	526	329	1496	0				989	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	28.4	32.3	9.1	20.6	0.0				25.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	28.4	32.3	9.1	20.6	0.0				25.4	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1735	539	412	2552	0				1177	0	
V/C Ratio(X)	0.00	0.89	0.98	0.80	0.59	0.00				0.84	0.00	
Avail Cap(c_a), veh/h	0	1735	539	421	2552	0				1549	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.31	0.31	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	31.6	32.9	43.0	18.1	0.0				31.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	7.5	33.4	3.1	0.3	0.0				3.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.2	16.7	4.0	7.5	0.0				10.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	39.1	66.3	46.1	18.4	0.0				34.7	0.0	0.0
LnGrp LOS	A	D	E	D	B	A				C	A	
Approach Vol, veh/h		2077			1825						989	A
Approach Delay, s/veh		46.0			23.4						34.7	
Approach LOS		D			C						C	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	15.7	37.5		36.5		53.2						
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8						
Max Green Setting (Gmax), s	11.4	31.4		41.0		47.4						
Max Q Clear Time (g_c+I1), s	11.1	34.3		27.4		22.6						
Green Ext Time (p_c), s	0.0	0.0		3.4		11.4						

Intersection Summary												
HCM 6th Ctrl Delay			35.3									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

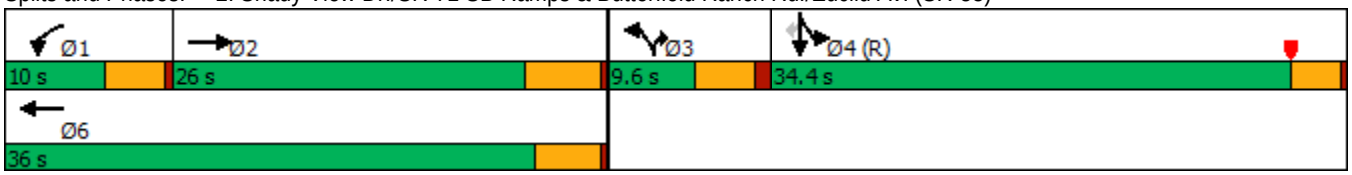
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

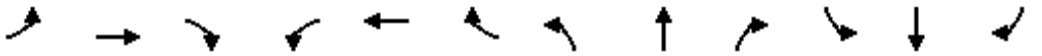
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	844	121	260	17	147	629	66	67
Future Volume (vph)	844	121	260	17	147	629	66	67
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	26.0	10.0	36.0	9.6	9.6	34.4	34.4	34.4
Total Split (%)	32.5%	12.5%	45.0%	12.0%	12.0%	43.0%	43.0%	43.0%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	844	58	121	260	0	17	0	147	629	66	67
Future Volume (veh/h)	0	844	58	121	260	0	17	0	147	629	66	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	879	48	126	271	0	18	0	94	704	0	43
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	914	50	136	1399		0	0	0	1832	0	815
Arrive On Green	0.00	0.26	0.26	0.02	0.13	0.00	0.00	0.00	0.00	0.51	0.00	0.51
Sat Flow, veh/h	0	3576	190	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	456	471	126	271	0		0.0		704	0	43
Grp Sat Flow(s),veh/h/ln	0	1805	1866	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	19.9	19.9	5.6	5.4	0.0				9.5	0.0	1.1
Cycle Q Clear(g_c), s	0.0	19.9	19.9	5.6	5.4	0.0				9.5	0.0	1.1
Prop In Lane	0.00		0.10	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	474	490	136	1399					1832	0	815
V/C Ratio(X)	0.00	0.96	0.96	0.93	0.19					0.38	0.00	0.05
Avail Cap(c_a), veh/h	0	474	490	136	1421					1832	0	815
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.80	0.80	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.1	29.1	38.8	23.7	0.0				12.1	0.0	10.0
Incr Delay (d2), s/veh	0.0	31.5	30.9	48.7	0.0	0.0				0.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.0	12.3	4.3	2.2	0.0				3.4	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	60.6	60.0	87.5	23.7	0.0				12.7	0.0	10.1
LnGrp LOS	A	E	E	F	C					B	A	B
Approach Vol, veh/h		927			397	A					747	
Approach Delay, s/veh		60.3			44.0						12.6	
Approach LOS		E			D						B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	10.0	26.0		44.0		36.0						
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5						
Max Green Setting (Gmax), s	6.0	21.0		30.9		* 32						
Max Q Clear Time (g_c+I1), s	7.6	21.9		11.5		7.4						
Green Ext Time (p_c), s	0.0	0.0		2.6		1.2						

Intersection Summary												
HCM 6th Ctrl Delay			39.9									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

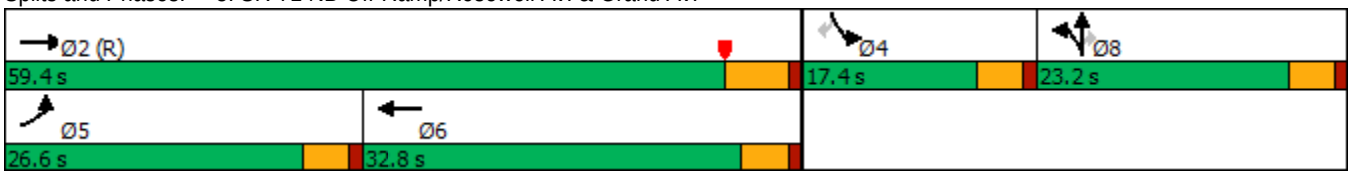
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

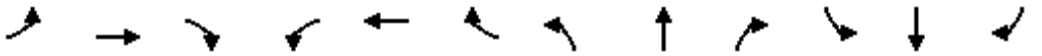
Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	346	1514	298	1517	357	130	202	153	753
Future Volume (vph)	346	1514	298	1517	357	130	202	153	753
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	34.8		14.7	21.5	21.5	21.5	9.5	9.5
Total Split (s)	26.6	59.4		32.8	23.2	23.2	23.2	17.4	17.4
Total Split (%)	26.6%	59.4%		32.8%	23.2%	23.2%	23.2%	17.4%	17.4%
Yellow Time (s)	3.5	4.8		3.7	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.8		4.7	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	None	None	None	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	346	1514	298	0	1517	126	357	130	202	153	0	753
Future Volume (veh/h)	346	1514	298	0	1517	126	357	130	202	153	0	753
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	376	1646	0	0	1649	137	264	314	79	166	0	500
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	400	3704		0	2775	231	331	348	295	0	0	0
Arrive On Green	0.22	0.71	0.00	0.00	0.45	0.45	0.18	0.18	0.18	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6461	515	1810	1900	1610		0	
Grp Volume(v), veh/h	376	1646	0	0	1305	481	264	314	79		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1807	1810	1900	1610			
Q Serve(g_s), s	20.4	13.3	0.0	0.0	20.0	20.0	14.0	16.2	4.2			
Cycle Q Clear(g_c), s	20.4	13.3	0.0	0.0	20.0	20.0	14.0	16.2	4.2			
Prop In Lane	1.00		1.00	0.00		0.28	1.00		1.00			
Lane Grp Cap(c), veh/h	400	3704		0	2196	810	331	348	295			
V/C Ratio(X)	0.94	0.44		0.00	0.59	0.59	0.80	0.90	0.27			
Avail Cap(c_a), veh/h	400	3704		0	2196	810	338	355	301			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.52	0.52	0.00	0.00	0.74	0.74	1.00	1.00	1.00			
Uniform Delay (d), s/veh	38.3	6.0	0.0	0.0	20.8	20.8	39.1	40.0	35.1			
Incr Delay (d2), s/veh	19.1	0.2	0.0	0.0	0.3	0.9	11.3	24.4	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	10.7	3.6	0.0	0.0	7.3	8.2	7.0	9.6	1.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.4	6.2	0.0	0.0	21.1	21.6	50.4	64.3	35.3			
LnGrp LOS	E	A		A	C	C	D	E	D			
Approach Vol, veh/h		2022	A		1786			657				
Approach Delay, s/veh		15.7			21.2			55.2				
Approach LOS		B			C			E				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		77.2			26.6	50.6		22.8				
Change Period (Y+Rc), s		5.8			4.5	* 5.8		4.5				
Max Green Setting (Gmax), s		53.6			22.1	* 28		18.7				
Max Q Clear Time (g_c+I1), s		15.3			22.4	22.0		18.2				
Green Ext Time (p_c), s		15.6			0.0	4.8		0.1				

Intersection Summary		
HCM 6th Ctrl Delay	23.7	
HCM 6th LOS	C	

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

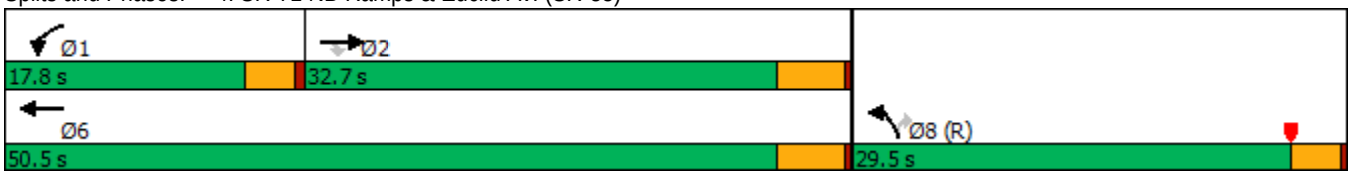
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	809	150	355	1048	127	946
Future Volume (vph)	809	150	355	1048	127	946
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	32.7	32.7	17.8	50.5	29.5	29.5
Total Split (%)	40.9%	40.9%	22.3%	63.1%	36.9%	36.9%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	809	150	355	1048	127	946
Future Volume (veh/h)	809	150	355	1048	127	946
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	941	0	413	1219	148	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1085		323	1888	1323	
Arrive On Green	0.40	0.00	0.18	0.52	0.38	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	941	0	413	1219	148	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	19.2	0.0	14.3	19.5	2.2	0.0
Cycle Q Clear(g_c), s	19.2	0.0	14.3	19.5	2.2	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1085		323	1888	1323	
V/C Ratio(X)	0.87		1.28	0.65	0.11	
Avail Cap(c_a), veh/h	1273		323	2076	1323	
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.46	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.5	0.0	32.8	13.7	16.2	0.0
Incr Delay (d2), s/veh	2.7	0.0	146.4	0.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	18.8	6.2	0.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.2	0.0	179.3	14.4	16.4	0.0
LnGrp LOS	C		F	B	B	
Approach Vol, veh/h	941	A		1632	148	A
Approach Delay, s/veh	25.2			56.1	16.4	
Approach LOS	C			E	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	17.8	28.5				46.3	33.7
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	14.3	28.2				46.0	26.0
Max Q Clear Time (g_c+I1), s	16.3	21.2				21.5	4.2
Green Ext Time (p_c), s	0.0	2.9				8.5	0.2

Intersection Summary	
HCM 6th Ctrl Delay	43.3
HCM 6th LOS	D

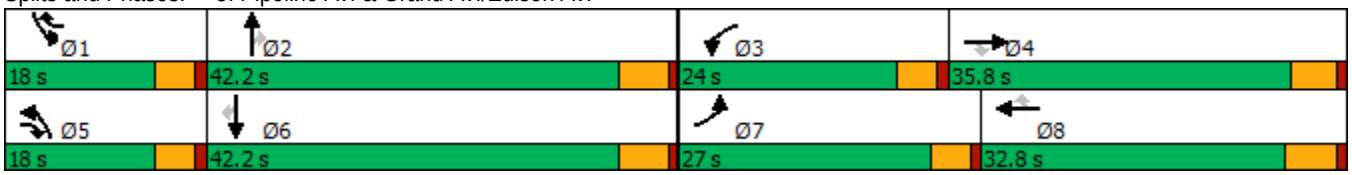
Notes

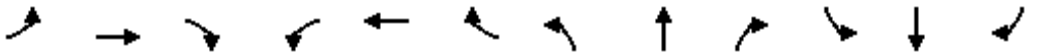
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	249	1007	225	220	891	77	268	412	161	123	518	148
Future Volume (vph)	249	1007	225	220	891	77	268	412	161	123	518	148
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	27.0	35.8	18.0	24.0	32.8	18.0	18.0	42.2	42.2	18.0	42.2	42.2
Total Split (%)	22.5%	29.8%	15.0%	20.0%	27.3%	15.0%	15.0%	35.2%	35.2%	15.0%	35.2%	35.2%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 99.6
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	249	1007	225	220	891	77	268	412	161	123	518	148
Future Volume (veh/h)	249	1007	225	220	891	77	268	412	161	123	518	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	274	1107	181	242	979	47	295	453	90	135	569	87
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	367	1687	707	332	1670	661	374	903	403	173	835	363
Arrive On Green	0.12	0.34	0.34	0.11	0.34	0.33	0.13	0.26	0.26	0.11	0.24	0.24
Sat Flow, veh/h	3141	4914	1523	3141	4914	1524	2956	3420	1525	1619	3420	1486
Grp Volume(v), veh/h	274	1107	181	242	979	47	295	453	90	135	569	87
Grp Sat Flow(s),veh/h/ln	1570	1638	1523	1570	1638	1524	1478	1710	1525	1619	1710	1486
Q Serve(g_s), s	7.8	17.7	6.7	6.9	15.2	1.7	9.0	10.4	4.3	7.5	14.0	4.4
Cycle Q Clear(g_c), s	7.8	17.7	6.7	6.9	15.2	1.7	9.0	10.4	4.3	7.5	14.0	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	367	1687	707	332	1670	661	374	903	403	173	835	363
V/C Ratio(X)	0.75	0.66	0.26	0.73	0.59	0.07	0.79	0.50	0.22	0.78	0.68	0.24
Avail Cap(c_a), veh/h	780	1687	707	678	1670	661	447	1410	629	245	1410	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	25.8	15.1	40.1	25.2	15.3	39.3	28.9	26.7	40.3	31.7	28.1
Incr Delay (d2), s/veh	1.2	2.0	0.9	1.2	1.5	0.2	6.3	0.4	0.3	6.1	1.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	6.9	2.3	2.6	5.7	0.6	3.5	4.1	1.5	3.2	5.6	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.7	27.8	16.0	41.3	26.7	15.5	45.6	29.4	26.9	46.5	32.7	28.4
LnGrp LOS	D	C	B	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1562			1268			838			791	
Approach Delay, s/veh		28.7			29.1			34.8			34.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	28.4	13.8	36.5	15.7	26.6	14.8	35.5
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	13.4	36.8	19.4	* 31	13.4	36.8	22.4	27.0
Max Q Clear Time (g_c+I1), s	9.5	12.4	8.9	19.7	11.0	16.0	9.8	17.2
Green Ext Time (p_c), s	0.1	3.1	0.3	5.9	0.1	3.8	0.4	4.4

Intersection Summary	
HCM 6th Ctrl Delay	31.0
HCM 6th LOS	C

Notes

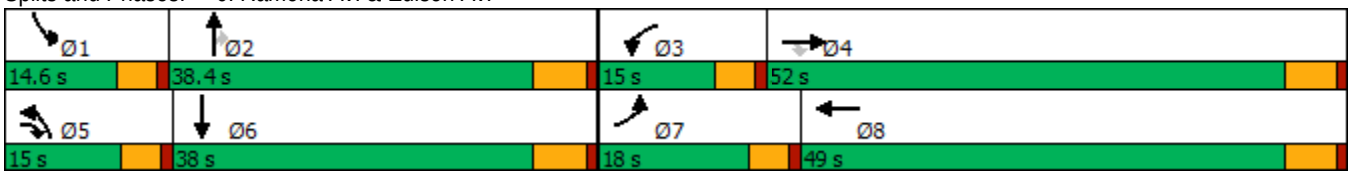
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

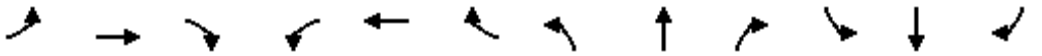
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	107	1083	107	82	910	87	407	69	55	377
Future Volume (vph)	107	1083	107	82	910	87	407	69	55	377
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	18.0	52.0	15.0	15.0	49.0	15.0	38.4	38.4	14.6	38.0
Total Split (%)	15.0%	43.3%	12.5%	12.5%	40.8%	12.5%	32.0%	32.0%	12.2%	31.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 107.9
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	1083	107	82	910	53	87	407	69	55	377	96
Future Volume (veh/h)	107	1083	107	82	910	53	87	407	69	55	377	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1700	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	120	1217	96	92	1022	58	98	457	56	62	424	87
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	155	1640	1389	123	1513	86	130	790	353	87	578	118
Arrive On Green	0.10	0.48	0.47	0.08	0.46	0.44	0.08	0.23	0.23	0.05	0.20	0.19
Sat Flow, veh/h	1619	3420	2536	1619	3290	187	1619	3420	1525	1619	2830	576
Grp Volume(v), veh/h	120	1217	96	92	531	549	98	457	56	62	255	256
Grp Sat Flow(s),veh/h/ln	1619	1710	1268	1619	1710	1766	1619	1710	1525	1619	1710	1696
Q Serve(g_s), s	7.2	28.8	1.8	5.6	24.4	24.4	5.9	11.9	2.9	3.8	13.9	14.2
Cycle Q Clear(g_c), s	7.2	28.8	1.8	5.6	24.4	24.4	5.9	11.9	2.9	3.8	13.9	14.2
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	155	1640	1389	123	787	812	130	790	353	87	349	347
V/C Ratio(X)	0.78	0.74	0.07	0.75	0.68	0.68	0.75	0.58	0.16	0.72	0.73	0.74
Avail Cap(c_a), veh/h	226	1640	1389	178	787	812	178	1175	524	171	581	576
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.2	21.0	10.6	45.3	21.2	21.3	45.1	34.2	30.7	46.6	37.2	37.6
Incr Delay (d2), s/veh	5.2	3.1	0.1	4.7	4.6	4.5	7.0	0.7	0.2	4.1	2.9	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	11.0	0.5	2.3	9.8	10.2	2.5	4.8	1.1	1.6	5.8	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.4	24.1	10.7	50.0	25.8	25.7	52.0	34.8	30.9	50.7	40.2	40.7
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		1433			1172			611			573	
Approach Delay, s/veh		25.3			27.7			37.2			41.5	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	27.1	11.6	52.0	12.0	24.5	13.6	50.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.0	32.6	10.4	46.2	10.4	32.2	13.4	43.2
Max Q Clear Time (g_c+I1), s	5.8	13.9	7.6	30.8	7.9	16.2	9.2	26.4
Green Ext Time (p_c), s	0.0	2.7	0.0	7.5	0.0	2.5	0.0	6.0

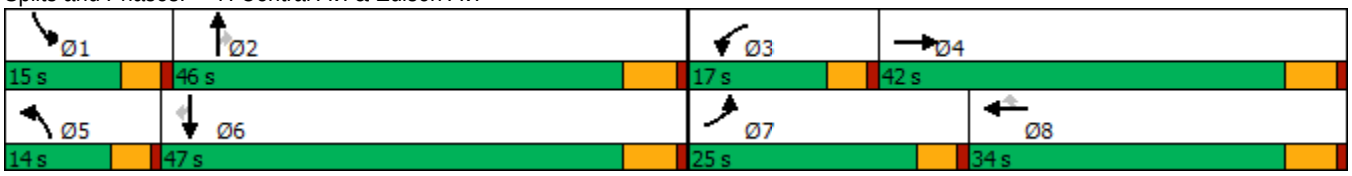
Intersection Summary	
HCM 6th Ctrl Delay	30.4
HCM 6th LOS	C

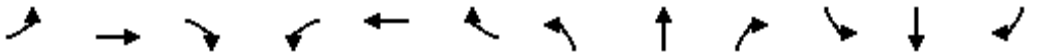
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	207	841	242	632	85	77	934	391	104	746	129
Future Volume (vph)	207	841	242	632	85	77	934	391	104	746	129
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	25.0	42.0	17.0	34.0	34.0	14.0	46.0	46.0	15.0	47.0	47.0
Total Split (%)	20.8%	35.0%	14.2%	28.3%	28.3%	11.7%	38.3%	38.3%	12.5%	39.2%	39.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 116.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	841	78	242	632	85	77	934	391	104	746	129
Future Volume (veh/h)	207	841	78	242	632	85	77	934	391	104	746	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	213	867	76	249	652	77	79	963	322	107	769	99
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	246	1070	94	318	977	436	106	1147	503	138	1214	541
Arrive On Green	0.15	0.34	0.32	0.10	0.29	0.29	0.07	0.34	0.34	0.09	0.35	0.35
Sat Flow, veh/h	1619	3177	278	3141	3420	1525	1619	3420	1498	1619	3420	1524
Grp Volume(v), veh/h	213	467	476	249	652	77	79	963	322	107	769	99
Grp Sat Flow(s),veh/h/ln	1619	1710	1745	1570	1710	1525	1619	1710	1498	1619	1710	1524
Q Serve(g_s), s	14.5	28.1	28.1	8.7	19.0	4.3	5.4	29.4	20.5	7.3	21.1	5.1
Cycle Q Clear(g_c), s	14.5	28.1	28.1	8.7	19.0	4.3	5.4	29.4	20.5	7.3	21.1	5.1
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	246	576	588	318	977	436	106	1147	503	138	1214	541
V/C Ratio(X)	0.86	0.81	0.81	0.78	0.67	0.18	0.74	0.84	0.64	0.78	0.63	0.18
Avail Cap(c_a), veh/h	301	576	588	362	977	436	143	1273	558	158	1303	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.7	34.2	34.3	49.5	35.6	30.3	51.8	34.7	31.7	50.6	30.3	25.1
Incr Delay (d2), s/veh	16.8	11.8	11.5	8.1	3.6	0.9	8.0	4.8	2.1	16.1	0.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	12.9	13.2	3.7	8.1	1.6	2.4	12.4	7.4	3.5	8.4	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.5	45.9	45.8	57.6	39.2	31.2	59.8	39.4	33.9	66.7	31.2	25.3
LnGrp LOS	E	D	D	E	D	C	E	D	C	E	C	C
Approach Vol, veh/h		1156			978			1364			975	
Approach Delay, s/veh		49.1			43.3			39.3			34.5	
Approach LOS		D			D			D			C	

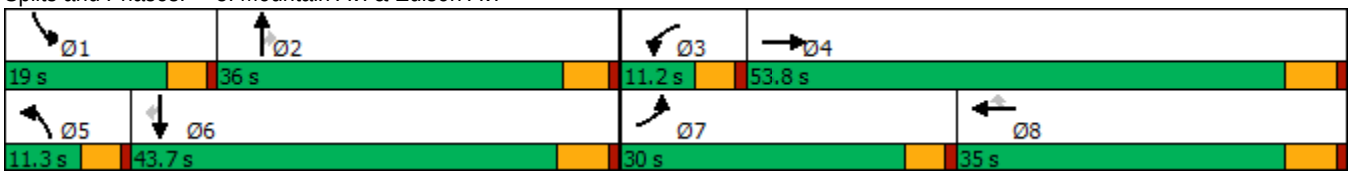
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	41.9	15.4	42.0	11.4	44.1	21.2	36.2
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.4	40.2	12.4	36.2	9.4	41.2	20.4	28.2
Max Q Clear Time (g_c+I1), s	9.3	31.4	10.7	30.1	7.4	23.1	16.5	21.0
Green Ext Time (p_c), s	0.0	4.7	0.1	2.8	0.0	4.9	0.1	2.5

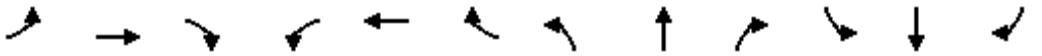
Intersection Summary	
HCM 6th Ctrl Delay	41.7
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	196	1084	34	677	84	36	88	27	104	162	204
Future Volume (vph)	196	1084	34	677	84	36	88	27	104	162	204
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	30.0	53.8	11.2	35.0	35.0	11.3	36.0	36.0	19.0	43.7	43.7
Total Split (%)	25.0%	44.8%	9.3%	29.2%	29.2%	9.4%	30.0%	30.0%	15.8%	36.4%	36.4%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 92.9
Natural Cycle: 85
Control Type: Actuated-Uncoordinated

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	1084	77	34	677	84	36	88	27	104	162	204
Future Volume (veh/h)	196	1084	77	34	677	84	36	88	27	104	162	204
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	200	1106	77	35	691	74	37	90	13	106	165	143
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	243	2600	181	63	1520	678	65	237	197	141	336	285
Arrive On Green	0.15	0.56	0.54	0.04	0.44	0.44	0.04	0.13	0.13	0.09	0.19	0.19
Sat Flow, veh/h	1619	4681	326	1619	3420	1525	1619	1800	1492	1619	1800	1525
Grp Volume(v), veh/h	200	774	409	35	691	74	37	90	13	106	165	143
Grp Sat Flow(s),veh/h/ln	1619	1638	1731	1619	1710	1525	1619	1800	1492	1619	1800	1525
Q Serve(g_s), s	10.7	12.3	12.4	1.9	12.6	2.5	2.0	4.1	0.7	5.7	7.4	7.5
Cycle Q Clear(g_c), s	10.7	12.3	12.4	1.9	12.6	2.5	2.0	4.1	0.7	5.7	7.4	7.5
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	243	1820	961	63	1520	678	65	237	197	141	336	285
V/C Ratio(X)	0.82	0.43	0.43	0.55	0.45	0.11	0.57	0.38	0.07	0.75	0.49	0.50
Avail Cap(c_a), veh/h	470	1820	961	130	1520	678	132	642	532	271	797	676
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.9	11.6	11.7	42.3	17.3	14.5	42.3	35.6	34.1	40.0	32.6	32.7
Incr Delay (d2), s/veh	2.7	0.7	1.4	2.8	1.0	0.3	2.9	1.0	0.1	3.0	1.1	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	4.0	4.4	0.8	4.6	0.9	0.8	1.8	0.2	2.3	3.1	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.6	12.3	13.1	45.1	18.3	14.9	45.1	36.6	34.2	42.9	33.8	34.1
LnGrp LOS	D	B	B	D	B	B	D	D	C	D	C	C
Approach Vol, veh/h		1383			800			140			414	
Approach Delay, s/veh		16.5			19.2			38.6			36.2	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.8	16.5	7.5	53.8	7.6	20.7	17.5	43.9
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	* 31	6.6	48.0	6.7	37.9	25.4	29.2
Max Q Clear Time (g_c+I1), s	7.7	6.1	3.9	14.4	4.0	9.5	12.7	14.6
Green Ext Time (p_c), s	0.1	0.4	0.0	8.7	0.0	1.3	0.2	3.9

Intersection Summary	
HCM 6th Ctrl Delay	21.4
HCM 6th LOS	C

Notes

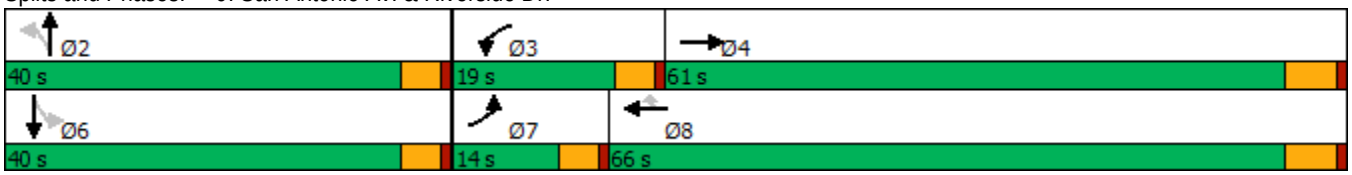
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

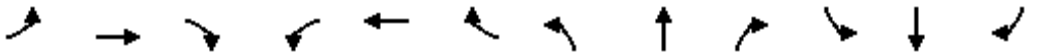
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	29	755	56	698	33	85	14	14	7
Future Volume (vph)	29	755	56	698	33	85	14	14	7
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	14.0	61.0	19.0	66.0	66.0	40.0	40.0	40.0	40.0
Total Split (%)	11.7%	50.8%	15.8%	55.0%	55.0%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 93.9
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	755	109	56	698	33	85	14	39	14	7	29
Future Volume (veh/h)	29	755	109	56	698	33	85	14	39	14	7	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	30	786	108	58	727	34	89	15	17	15	7	7
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	59	2078	285	83	2410	1074	236	94	107	220	101	101
Arrive On Green	0.04	0.69	0.67	0.05	0.70	0.70	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1619	3011	414	1619	3420	1524	1343	768	870	1316	826	826
Grp Volume(v), veh/h	30	446	448	58	727	34	89	0	32	15	0	14
Grp Sat Flow(s),veh/h/ln	1619	1710	1715	1619	1710	1524	1343	0	1638	1316	0	1651
Q Serve(g_s), s	1.6	9.6	9.8	3.1	7.0	0.6	5.5	0.0	1.5	0.9	0.0	0.7
Cycle Q Clear(g_c), s	1.6	9.6	9.8	3.1	7.0	0.6	6.2	0.0	1.5	2.5	0.0	0.7
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.53	1.00		0.50
Lane Grp Cap(c), veh/h	59	1180	1183	83	2410	1074	236	0	201	220	0	203
V/C Ratio(X)	0.51	0.38	0.38	0.70	0.30	0.03	0.38	0.00	0.16	0.07	0.00	0.07
Avail Cap(c_a), veh/h	184	1180	1183	276	2410	1074	621	0	670	597	0	676
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.6	5.7	5.8	41.1	4.9	3.9	36.9	0.0	34.7	35.6	0.0	34.3
Incr Delay (d2), s/veh	2.5	0.9	0.9	4.0	0.3	0.1	1.0	0.0	0.4	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.7	2.8	1.3	1.8	0.1	1.9	0.0	0.6	0.3	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.2	6.6	6.8	45.1	5.2	4.0	37.9	0.0	35.1	35.8	0.0	34.4
LnGrp LOS	D	A	A	D	A	A	D	A	D	D	A	C
Approach Vol, veh/h		924			819			121			29	
Approach Delay, s/veh		7.9			8.0			37.1			35.1	
Approach LOS		A			A			D			D	

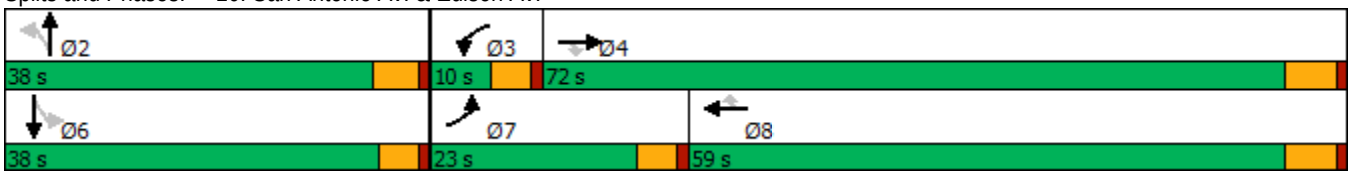
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.8	8.5	64.7		14.8	7.2	66.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		35.4	14.4	55.2		35.4	9.4	60.2				
Max Q Clear Time (g_c+I1), s		8.2	5.1	11.8		4.5	3.6	9.0				
Green Ext Time (p_c), s		0.4	0.0	6.0		0.1	0.0	5.3				

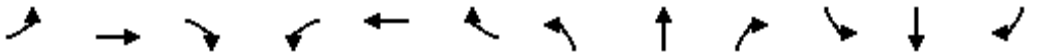
Intersection Summary												
HCM 6th Ctrl Delay			10.2									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	80	1039	37	7	724	13	21	29	10	40
Future Volume (vph)	80	1039	37	7	724	13	21	29	10	40
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	23.0	72.0	72.0	10.0	59.0	59.0	38.0	38.0	38.0	38.0
Total Split (%)	19.2%	60.0%	60.0%	8.3%	49.2%	49.2%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 96.3
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	1039	37	7	724	13	21	29	10	10	40	48
Future Volume (veh/h)	80	1039	37	7	724	13	21	29	10	10	40	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1000	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	85	1105	38	7	770	11	22	31	7	11	43	21
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	116	2522	1125	15	2329	1039	102	121	22	60	120	52
Arrive On Green	0.07	0.74	0.74	0.02	0.68	0.68	0.12	0.12	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1619	3420	1525	952	3420	1525	413	1038	192	134	1073	469
Grp Volume(v), veh/h	85	1105	38	7	770	11	60	0	0	75	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	952	1710	1525	1643	0	0	1676	0	0
Q Serve(g_s), s	4.7	11.6	0.6	0.7	8.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.7	11.6	0.6	0.7	8.5	0.2	2.9	0.0	0.0	3.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.37		0.12	0.15		0.28
Lane Grp Cap(c), veh/h	116	2522	1125	15	2329	1039	246	0	0	232	0	0
V/C Ratio(X)	0.73	0.44	0.03	0.48	0.33	0.01	0.24	0.00	0.00	0.32	0.00	0.00
Avail Cap(c_a), veh/h	334	2522	1125	62	2329	1039	643	0	0	655	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	41.9	4.7	3.3	45.0	6.1	4.7	37.3	0.0	0.0	38.1	0.0	0.0
Incr Delay (d2), s/veh	3.3	0.6	0.1	8.7	0.4	0.0	0.5	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	2.8	0.1	0.2	2.4	0.1	1.2	0.0	0.0	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	5.2	3.3	53.7	6.4	4.7	37.8	0.0	0.0	38.9	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1228			788			60			75	
Approach Delay, s/veh		8.0			6.8			37.8			38.9	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.8	5.4	72.0		14.8	10.6	66.8				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		32.9	5.4	66.2		* 33	18.4	53.2				
Max Q Clear Time (g_c+I1), s		4.9	2.7	13.6		5.8	6.7	10.5				
Green Ext Time (p_c), s		0.3	0.0	9.6		0.4	0.1	5.6				

Intersection Summary	
HCM 6th Ctrl Delay	9.5
HCM 6th LOS	A

Notes

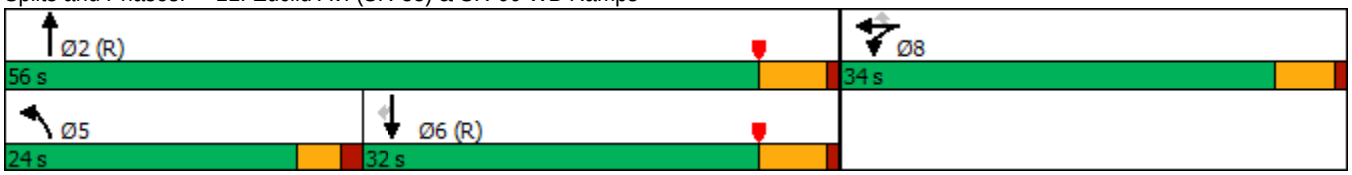
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

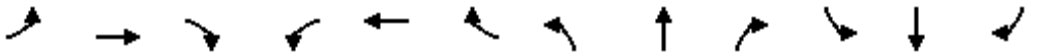
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	580	6	392	356	1041	970	473
Future Volume (vph)	580	6	392	356	1041	970	473
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	34.0	34.0	34.0	24.0	56.0	32.0	32.0
Total Split (%)	37.8%	37.8%	37.8%	26.7%	62.2%	35.6%	35.6%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	580	6	392	356	1041	0	0	970	473
Future Volume (veh/h)	0	0	0	580	6	392	356	1041	0	0	970	473
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				677	0	153	371	1084	0	0	1010	288
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				786	0	349	392	2405	0	0	1442	643
Arrive On Green				0.22	0.00	0.22	0.43	1.00	0.00	0.00	0.40	0.40
Sat Flow, veh/h				3619	0	1608	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				677	0	153	371	1084	0	0	1010	288
Grp Sat Flow(s),veh/h/ln				1810	0	1608	1810	1805	0	0	1805	1610
Q Serve(g_s), s				16.2	0.0	7.4	17.7	0.0	0.0	0.0	21.0	11.8
Cycle Q Clear(g_c), s				16.2	0.0	7.4	17.7	0.0	0.0	0.0	21.0	11.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				786	0	349	392	2405	0	0	1442	643
V/C Ratio(X)				0.86	0.00	0.44	0.95	0.45	0.00	0.00	0.70	0.45
Avail Cap(c_a), veh/h				1166	0	518	392	2405	0	0	1442	643
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.49	0.49	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.9	0.0	30.5	25.0	0.0	0.0	0.0	22.5	19.8
Incr Delay (d2), s/veh				3.1	0.0	0.3	19.7	0.3	0.0	0.0	2.9	2.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.0	0.0	2.7	7.3	0.1	0.0	0.0	8.7	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				37.0	0.0	30.8	44.7	0.3	0.0	0.0	25.4	22.0
LnGrp LOS				D	A	C	D	A	A	A	C	C
Approach Vol, veh/h					830			1455			1298	
Approach Delay, s/veh					35.9			11.6			24.6	
Approach LOS					D			B			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		65.5			24.0	41.5		24.5				
Change Period (Y+Rc), s		5.5			4.5	5.5		5.0				
Max Green Setting (Gmax), s		50.5			19.5	26.5		29.0				
Max Q Clear Time (g_c+I1), s		2.0			19.7	23.0		18.2				
Green Ext Time (p_c), s		14.3			0.0	2.7		1.3				

Intersection Summary												
HCM 6th Ctrl Delay			22.0									
HCM 6th LOS			C									

Notes

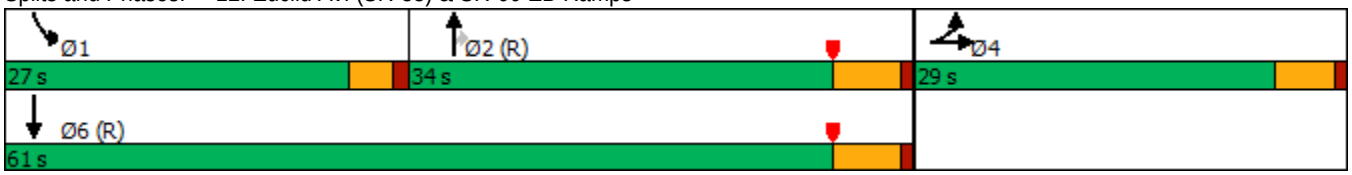
User approved volume balancing among the lanes for turning movement.

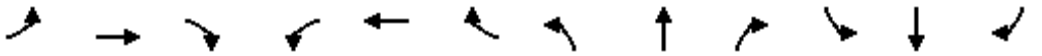
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	400	3	998	551	361	1190
Future Volume (vph)	400	3	998	551	361	1190
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	29.0	29.0	34.0	34.0	27.0	61.0
Total Split (%)	32.2%	32.2%	37.8%	37.8%	30.0%	67.8%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	400	3	353	0	0	0	0	998	551	361	1190	0
Future Volume (veh/h)	400	3	353	0	0	0	0	998	551	361	1190	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	352	82	293				0	1018	368	368	1214	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	448	90	322				0	1348	587	395	2296	0
Arrive On Green	0.25	0.25	0.25				0.00	0.37	0.37	0.44	1.00	0.00
Sat Flow, veh/h	1810	364	1301				0	3705	1572	1810	3705	0
Grp Volume(v), veh/h	352	0	375				0	1018	368	368	1214	0
Grp Sat Flow(s),veh/h/ln	1810	0	1666				0	1805	1572	1810	1805	0
Q Serve(g_s), s	16.4	0.0	19.7				0.0	22.1	17.2	17.4	0.0	0.0
Cycle Q Clear(g_c), s	16.4	0.0	19.7				0.0	22.1	17.2	17.4	0.0	0.0
Prop In Lane	1.00		0.78				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	448	0	412				0	1348	587	395	2296	0
V/C Ratio(X)	0.79	0.00	0.91				0.00	0.75	0.63	0.93	0.53	0.00
Avail Cap(c_a), veh/h	483	0	444				0	1348	587	462	2296	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.63	0.63	0.47	0.47	0.00
Uniform Delay (d), s/veh	31.6	0.0	32.9				0.0	24.6	23.1	24.8	0.0	0.0
Incr Delay (d2), s/veh	6.9	0.0	20.8				0.0	2.5	3.2	13.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	9.8				0.0	9.2	6.4	6.5	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.6	0.0	53.7				0.0	27.1	26.2	37.7	0.4	0.0
LnGrp LOS	D	A	D				A	C	C	D	A	A
Approach Vol, veh/h		727						1386			1582	
Approach Delay, s/veh		46.4						26.9			9.1	
Approach LOS		D						C			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.6	39.1		27.3		62.7
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	23.0	28.5		24.0		55.5
Max Q Clear Time (g_c+I1), s	19.4	24.1		21.7		2.0
Green Ext Time (p_c), s	0.2	3.4		0.6		17.5

Intersection Summary	
HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

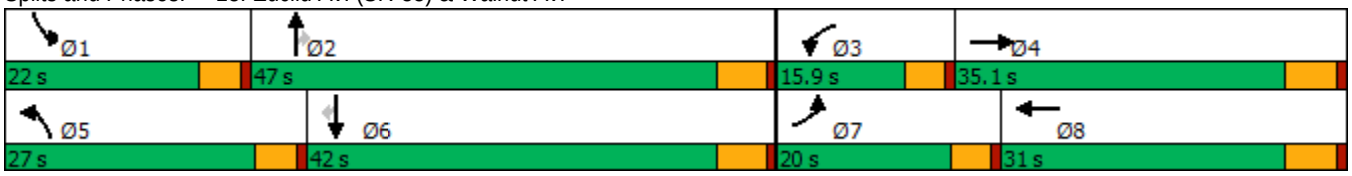
Notes

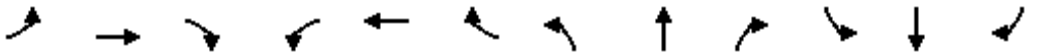
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	103	356	67	356	178	1288	70	253	1111	141
Future Volume (vph)	103	356	67	356	178	1288	70	253	1111	141
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	20.0	35.1	15.9	31.0	27.0	47.0	47.0	22.0	42.0	42.0
Total Split (%)	16.7%	29.3%	13.3%	25.8%	22.5%	39.2%	39.2%	18.3%	35.0%	35.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 108.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	356	133	67	356	135	178	1288	70	253	1111	141
Future Volume (veh/h)	103	356	133	67	356	135	178	1288	70	253	1111	141
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	110	379	118	71	379	118	189	1370	47	269	1182	96
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	135	553	170	89	479	147	219	2038	632	330	1922	596
Arrive On Green	0.08	0.22	0.22	0.05	0.19	0.19	0.14	0.41	0.41	0.11	0.39	0.39
Sat Flow, veh/h	1619	2567	788	1619	2561	786	1619	4914	1523	2956	4914	1524
Grp Volume(v), veh/h	110	251	246	71	251	246	189	1370	47	269	1182	96
Grp Sat Flow(s),veh/h/ln	1619	1710	1645	1619	1710	1637	1619	1638	1523	1478	1638	1524
Q Serve(g_s), s	6.7	13.5	13.9	4.3	14.0	14.4	11.5	22.7	1.9	8.9	19.3	4.1
Cycle Q Clear(g_c), s	6.7	13.5	13.9	4.3	14.0	14.4	11.5	22.7	1.9	8.9	19.3	4.1
Prop In Lane	1.00		0.48	1.00		0.48	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	135	368	354	89	320	306	219	2038	632	330	1922	596
V/C Ratio(X)	0.82	0.68	0.69	0.80	0.79	0.80	0.86	0.67	0.07	0.82	0.61	0.16
Avail Cap(c_a), veh/h	249	500	480	182	430	411	362	2038	632	513	1922	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.2	36.2	36.3	46.9	38.9	39.0	42.5	23.8	17.7	43.5	24.5	19.8
Incr Delay (d2), s/veh	4.5	2.2	2.7	6.1	6.7	8.1	5.8	1.8	0.2	2.9	1.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	5.6	5.6	1.8	6.2	6.2	4.8	8.5	0.7	3.3	7.3	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.7	38.4	39.0	53.0	45.6	47.1	48.3	25.6	17.9	46.5	26.0	20.4
LnGrp LOS	D	D	D	D	D	D	D	C	B	D	C	C
Approach Vol, veh/h		607			568			1606			1547	
Approach Delay, s/veh		40.7			47.2			28.0			29.2	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.8	47.0	10.1	27.4	18.2	44.6	13.0	24.5
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	17.4	41.6	11.3	29.3	22.4	36.6	15.4	25.2
Max Q Clear Time (g_c+I1), s	10.9	24.7	6.3	15.9	13.5	21.3	8.7	16.4
Green Ext Time (p_c), s	0.3	8.8	0.0	2.2	0.2	7.3	0.1	1.8

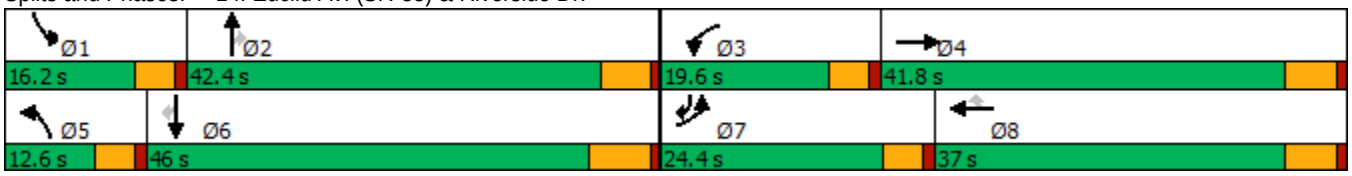
Intersection Summary	
HCM 6th Ctrl Delay	32.7
HCM 6th LOS	C

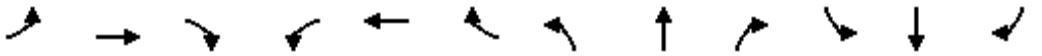
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	145	440	178	393	62	84	1105	230	134	930	185
Future Volume (vph)	145	440	178	393	62	84	1105	230	134	930	185
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	24.4	41.8	19.6	37.0	37.0	12.6	42.4	42.4	16.2	46.0	24.4
Total Split (%)	20.3%	34.8%	16.3%	30.8%	30.8%	10.5%	35.3%	35.3%	13.5%	38.3%	20.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 119.7
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	440	79	178	393	62	84	1105	230	134	930	185
Future Volume (veh/h)	145	440	79	178	393	62	84	1105	230	134	930	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	151	458	57	185	409	49	88	1151	186	140	969	102
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	175	467	58	201	1070	477	107	1045	466	155	1147	670
Arrive On Green	0.11	0.30	0.30	0.12	0.31	0.31	0.07	0.31	0.31	0.10	0.34	0.34
Sat Flow, veh/h	1619	1570	195	1619	3420	1524	1619	3420	1525	1619	3420	1506
Grp Volume(v), veh/h	151	0	515	185	409	49	88	1151	186	140	969	102
Grp Sat Flow(s),veh/h/ln	1619	0	1765	1619	1710	1524	1619	1710	1525	1619	1710	1506
Q Serve(g_s), s	11.1	0.0	35.1	13.7	11.3	2.8	6.5	37.0	11.7	10.4	31.8	4.9
Cycle Q Clear(g_c), s	11.1	0.0	35.1	13.7	11.3	2.8	6.5	37.0	11.7	10.4	31.8	4.9
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	0	525	201	1070	477	107	1045	466	155	1147	670
V/C Ratio(X)	0.86	0.00	0.98	0.92	0.38	0.10	0.82	1.10	0.40	0.90	0.85	0.15
Avail Cap(c_a), veh/h	265	0	525	201	1070	477	107	1045	466	155	1147	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.1	0.0	42.2	52.5	32.5	29.5	55.8	42.0	33.3	54.2	37.3	20.1
Incr Delay (d2), s/veh	11.3	0.0	34.5	41.7	0.2	0.1	36.2	59.9	2.5	44.1	7.7	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	0.0	19.6	7.7	4.6	1.0	3.6	23.3	4.5	6.1	14.1	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.4	0.0	76.7	94.2	32.7	29.6	92.1	102.0	35.8	98.3	45.0	20.6
LnGrp LOS	E	A	E	F	C	C	F	F	D	F	D	C
Approach Vol, veh/h		666			643			1425			1211	
Approach Delay, s/veh		73.9			50.2			92.7			49.1	
Approach LOS		E			D			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	43.5	19.6	41.8	12.6	47.1	17.7	43.7
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	11.6	* 37	15.0	36.0	8.0	39.5	19.8	31.2
Max Q Clear Time (g_c+I1), s	12.4	39.0	15.7	37.1	8.5	33.8	13.1	13.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	3.1	0.1	2.4

Intersection Summary	
HCM 6th Ctrl Delay	69.2
HCM 6th LOS	E

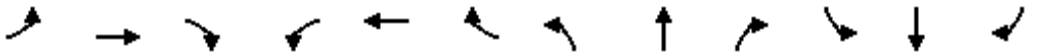
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	93	273	50	75	108	46	1314	219	24	1057	69
Future Volume (vph)	93	273	50	75	108	46	1314	219	24	1057	69
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	44.0	44.0	44.0	44.0	44.0	12.4	65.0	65.0	11.0	63.6	63.6
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	10.3%	54.2%	54.2%	9.2%	53.0%	53.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 105
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	273	50	75	108	9	46	1314	219	24	1057	69
Future Volume (veh/h)	93	273	50	75	108	9	46	1314	219	24	1057	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	100	294	31	81	116	6	49	1413	164	26	1137	41
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	268	490	415	119	153	7	61	1874	819	40	1832	800
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.04	0.55	0.55	0.02	0.54	0.54
Sat Flow, veh/h	1218	1800	1525	269	561	25	1619	3420	1494	1619	3420	1494
Grp Volume(v), veh/h	100	294	31	203	0	0	49	1413	164	26	1137	41
Grp Sat Flow(s),veh/h/ln	1218	1800	1525	855	0	0	1619	1710	1494	1619	1710	1494
Q Serve(g_s), s	0.0	15.5	1.6	11.5	0.0	0.0	3.3	34.7	6.1	1.7	25.2	1.4
Cycle Q Clear(g_c), s	13.4	15.5	1.6	27.0	0.0	0.0	3.3	34.7	6.1	1.7	25.2	1.4
Prop In Lane	1.00		1.00	0.40		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	268	490	415	279	0	0	61	1874	819	40	1832	800
V/C Ratio(X)	0.37	0.60	0.07	0.73	0.00	0.00	0.81	0.75	0.20	0.64	0.62	0.05
Avail Cap(c_a), veh/h	363	630	534	389	0	0	116	1874	819	95	1832	800
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	34.6	29.5	41.5	0.0	0.0	52.1	19.0	12.5	52.7	17.6	12.1
Incr Delay (d2), s/veh	0.9	1.2	0.1	4.2	0.0	0.0	9.1	2.9	0.5	6.2	1.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	6.7	0.6	5.5	0.0	0.0	1.4	12.4	1.9	0.7	9.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.6	35.7	29.6	45.7	0.0	0.0	61.2	21.9	13.1	58.9	19.2	12.2
LnGrp LOS	C	D	C	D	A	A	E	C	B	E	B	B
Approach Vol, veh/h		425			203			1626			1204	
Approach Delay, s/veh		35.0			45.7			22.2			19.8	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	66.3		35.5	8.7	64.9		35.5				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	6.4	* 60		38.2	7.8	57.1		38.2				
Max Q Clear Time (g_c+I1), s	3.7	36.7		17.5	5.3	27.2		29.0				
Green Ext Time (p_c), s	0.0	10.7		1.9	0.0	8.4		0.7				

Intersection Summary			
HCM 6th Ctrl Delay		24.3	
HCM 6th LOS		C	

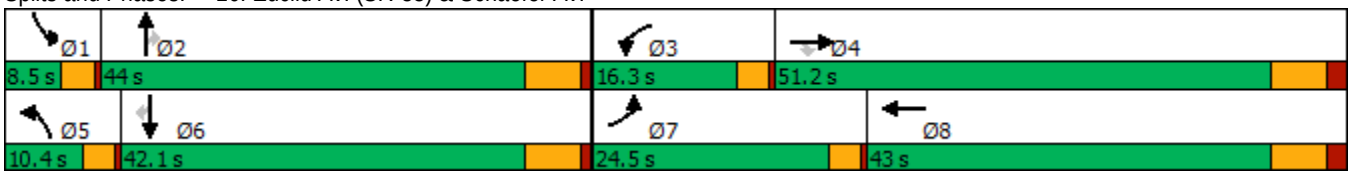
Notes

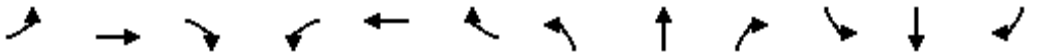
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	280	279	178	76	71	82	1248	80	28	1077	111
Future Volume (vph)	280	279	178	76	71	82	1248	80	28	1077	111
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	24.5	51.2	51.2	16.3	43.0	10.4	44.0	44.0	8.5	42.1	42.1
Total Split (%)	20.4%	42.7%	42.7%	13.6%	35.8%	8.7%	36.7%	36.7%	7.1%	35.1%	35.1%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 95.6
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	279	178	76	71	25	82	1248	80	28	1077	111
Future Volume (veh/h)	280	279	178	76	71	25	82	1248	80	28	1077	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	283	282	139	77	72	20	83	1261	63	28	1088	82
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	319	349	295	166	134	37	103	1454	649	47	1336	596
Arrive On Green	0.20	0.19	0.19	0.10	0.10	0.10	0.06	0.43	0.43	0.03	0.39	0.39
Sat Flow, veh/h	1619	1800	1525	1619	1356	377	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	283	282	139	77	0	92	83	1261	63	28	1088	82
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1732	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	13.6	12.0	6.5	3.6	0.0	4.0	4.1	26.9	2.0	1.4	22.8	2.8
Cycle Q Clear(g_c), s	13.6	12.0	6.5	3.6	0.0	4.0	4.1	26.9	2.0	1.4	22.8	2.8
Prop In Lane	1.00		1.00	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	319	349	295	166	0	171	103	1454	649	47	1336	596
V/C Ratio(X)	0.89	0.81	0.47	0.46	0.00	0.54	0.80	0.87	0.10	0.60	0.81	0.14
Avail Cap(c_a), veh/h	425	994	842	259	0	779	140	1623	724	101	1542	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.3	30.9	28.6	33.9	0.0	34.3	37.0	20.9	13.8	38.4	21.8	15.7
Incr Delay (d2), s/veh	13.5	3.4	0.9	0.8	0.0	1.9	15.6	4.9	0.1	4.5	3.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	5.1	2.3	1.4	0.0	1.7	1.9	9.8	0.6	0.6	8.2	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.7	34.2	29.5	34.6	0.0	36.3	52.6	25.8	13.9	42.9	24.9	15.8
LnGrp LOS	D	C	C	C	A	D	D	C	B	D	C	B
Approach Vol, veh/h		704			169			1407			1198	
Approach Delay, s/veh		37.5			35.5			26.8			24.7	
Approach LOS		D			D			C			C	

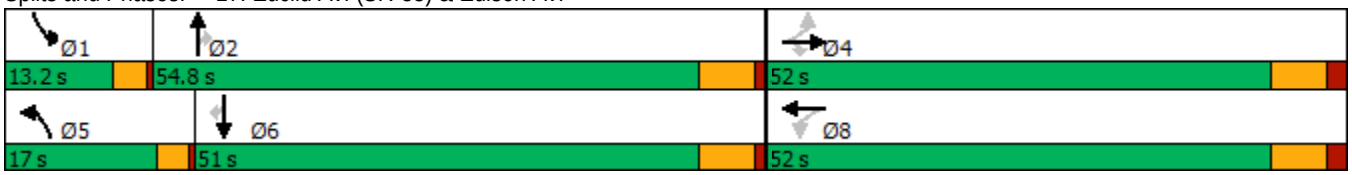
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	40.1	11.7	22.5	8.6	37.3	19.3	14.9
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	38.0	12.8	44.2	6.9	36.1	21.0	36.0
Max Q Clear Time (g_c+I1), s	3.4	28.9	5.6	14.0	6.1	24.8	15.6	6.0
Green Ext Time (p_c), s	0.0	5.2	0.0	1.5	0.0	5.2	0.2	0.3

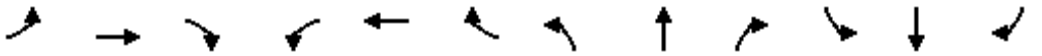
Intersection Summary	
HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	265	463	312	39	252	223	1214	68	82	1158	175
Future Volume (vph)	265	463	312	39	252	223	1214	68	82	1158	175
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	17.0	54.8	54.8	13.2	51.0	51.0
Total Split (%)	43.3%	43.3%	43.3%	43.3%	43.3%	14.2%	45.7%	45.7%	11.0%	42.5%	42.5%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 116.8
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	463	312	39	252	34	223	1214	68	82	1158	175
Future Volume (veh/h)	265	463	312	39	252	34	223	1214	68	82	1158	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	279	487	246	41	265	30	235	1278	64	86	1219	152
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	321	677	574	161	597	68	183	1438	640	106	1275	569
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.11	0.42	0.42	0.07	0.37	0.37
Sat Flow, veh/h	1040	1800	1525	694	1586	179	1619	3420	1522	1619	3420	1525
Grp Volume(v), veh/h	279	487	246	41	0	295	235	1278	64	86	1219	152
Grp Sat Flow(s),veh/h/ln	1040	1800	1525	694	0	1765	1619	1710	1522	1619	1710	1525
Q Serve(g_s), s	30.0	27.7	14.3	6.4	0.0	15.0	13.5	41.4	3.0	6.3	41.5	8.3
Cycle Q Clear(g_c), s	45.0	27.7	14.3	34.1	0.0	15.0	13.5	41.4	3.0	6.3	41.5	8.3
Prop In Lane	1.00		1.00	1.00		0.10	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	321	677	574	161	0	664	183	1438	640	106	1275	569
V/C Ratio(X)	0.87	0.72	0.43	0.25	0.00	0.44	1.29	0.89	0.10	0.81	0.96	0.27
Avail Cap(c_a), veh/h	321	677	574	161	0	664	183	1438	640	131	1287	574
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.7	31.9	27.7	46.5	0.0	27.9	53.1	32.1	21.0	55.2	36.5	26.1
Incr Delay (d2), s/veh	21.5	3.7	0.5	0.8	0.0	0.5	163.5	7.2	0.1	21.6	15.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	12.2	5.1	1.1	0.0	6.2	13.5	17.0	1.0	3.1	18.7	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.2	35.6	28.2	47.3	0.0	28.4	216.6	39.3	21.0	76.8	52.2	26.4
LnGrp LOS	E	D	C	D	A	C	F	D	C	E	D	C
Approach Vol, veh/h		1012			336			1577			1457	
Approach Delay, s/veh		42.5			30.7			64.9			51.0	
Approach LOS		D			C			E			D	

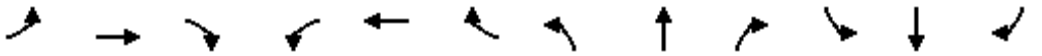
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.3	56.3		52.0	17.0	50.6		52.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	9.7	48.8		45.0	13.5	45.0		45.0				
Max Q Clear Time (g_c+I1), s	8.3	43.4		47.0	15.5	43.5		36.1				
Green Ext Time (p_c), s	0.0	3.5		0.0	0.0	1.1		1.2				

Intersection Summary	
HCM 6th Ctrl Delay	52.5
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	37	157	205	8	21	109	1332	17	44	1338	62
Future Volume (vph)	37	157	205	8	21	109	1332	17	44	1338	62
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	46.8	46.8	46.8	46.8	46.8	14.0	63.2	63.2	10.0	59.2	59.2
Total Split (%)	39.0%	39.0%	39.0%	39.0%	39.0%	11.7%	52.7%	52.7%	8.3%	49.3%	49.3%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 91.7
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	157	205	8	21	9	109	1332	17	44	1338	62
Future Volume (veh/h)	37	157	205	8	21	9	109	1332	17	44	1338	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	42	176	114	9	24	7	122	1497	18	49	1503	58
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	271	251	213	155	187	54	152	2077	927	72	1909	834
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.09	0.61	0.61	0.04	0.56	0.56
Sat Flow, veh/h	1322	1800	1525	1045	1339	391	1619	3420	1525	1619	3420	1494
Grp Volume(v), veh/h	42	176	114	9	0	31	122	1497	18	49	1503	58
Grp Sat Flow(s),veh/h/ln	1322	1800	1525	1045	0	1730	1619	1710	1525	1619	1710	1494
Q Serve(g_s), s	1.9	6.3	4.7	0.6	0.0	1.1	5.0	20.5	0.3	2.0	23.2	1.2
Cycle Q Clear(g_c), s	3.0	6.3	4.7	6.8	0.0	1.1	5.0	20.5	0.3	2.0	23.2	1.2
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	271	251	213	155	0	241	152	2077	927	72	1909	834
V/C Ratio(X)	0.16	0.70	0.54	0.06	0.00	0.13	0.80	0.72	0.02	0.68	0.79	0.07
Avail Cap(c_a), veh/h	914	1126	955	664	0	1082	253	2930	1307	157	2726	1191
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	27.5	26.9	30.8	0.0	25.3	29.8	9.2	5.2	31.6	11.7	6.8
Incr Delay (d2), s/veh	0.2	2.7	1.6	0.1	0.0	0.2	7.2	0.5	0.0	8.0	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.7	1.6	0.1	0.0	0.4	2.0	4.6	0.1	0.9	5.9	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.8	30.2	28.4	30.9	0.0	25.5	37.0	9.7	5.2	39.6	12.7	6.8
LnGrp LOS	C	C	C	C	A	C	D	A	A	D	B	A
Approach Vol, veh/h		332			40			1637			1610	
Approach Delay, s/veh		29.2			26.7			11.7			13.3	
Approach LOS		C			C			B			B	

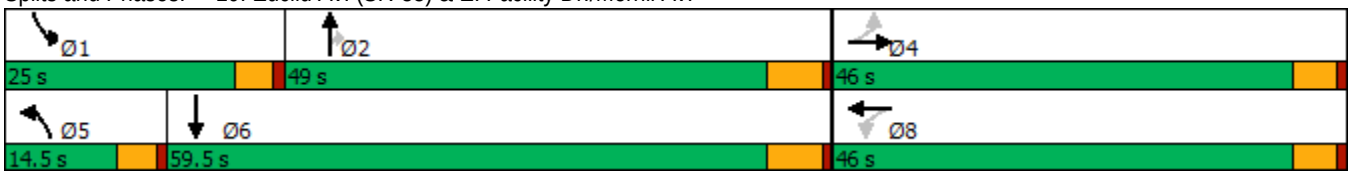
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	46.5		14.2	9.8	43.2		14.2				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	6.5	57.5		42.0	10.5	53.5		42.0				
Max Q Clear Time (g_c+I1), s	4.0	22.5		8.3	7.0	25.2		8.8				
Green Ext Time (p_c), s	0.0	13.0		1.1	0.1	12.2		0.1				

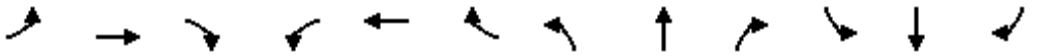
Intersection Summary			
HCM 6th Ctrl Delay		14.2	
HCM 6th LOS		B	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	11	29	300	2	4	1136	269	352	1155
Future Volume (vph)	11	29	300	2	4	1136	269	352	1155
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	14.5	49.0	49.0	25.0	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	12.1%	40.8%	40.8%	20.8%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	29	12	300	2	399	4	1136	269	352	1155	1
Future Volume (veh/h)	11	29	12	300	2	399	4	1136	269	352	1155	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	12	32	12	330	2	428	4	1248	231	387	1269	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	121	309	107	263	1	285	17	1226	547	277	1774	0
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.01	0.36	0.36	0.17	0.52	0.00
Sat Flow, veh/h	248	904	314	643	4	834	1619	3420	1525	1619	3510	0
Grp Volume(v), veh/h	56	0	0	760	0	0	4	1248	231	387	1269	0
Grp Sat Flow(s),veh/h/ln	1467	0	0	1480	0	0	1619	1710	1525	1619	1710	0
Q Serve(g_s), s	0.0	0.0	0.0	38.4	0.0	0.0	0.3	43.0	13.7	20.5	34.1	0.0
Cycle Q Clear(g_c), s	2.6	0.0	0.0	41.0	0.0	0.0	0.3	43.0	13.7	20.5	34.1	0.0
Prop In Lane	0.21		0.21	0.43		0.56	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	538	0	0	549	0	0	17	1226	547	277	1774	0
V/C Ratio(X)	0.10	0.00	0.00	1.38	0.00	0.00	0.24	1.02	0.42	1.40	0.72	0.00
Avail Cap(c_a), veh/h	538	0	0	549	0	0	135	1226	547	277	1774	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.9	0.0	0.0	40.9	0.0	0.0	58.9	38.5	29.1	49.7	22.1	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	184.2	0.0	0.0	2.7	30.4	0.5	200.1	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	43.9	0.0	0.0	0.1	21.8	4.8	23.2	12.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.9	0.0	0.0	225.1	0.0	0.0	61.6	68.9	29.6	249.9	23.5	0.0
LnGrp LOS	C	A	A	F	A	A	E	F	C	F	C	A
Approach Vol, veh/h		56			760			1483			1656	
Approach Delay, s/veh		26.9			225.1			62.8			76.4	
Approach LOS		C			F			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.0	49.0		46.0	5.7	68.3		46.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	20.5	43.0		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	22.5	45.0		4.6	2.3	36.1		43.0				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	7.6		0.0				

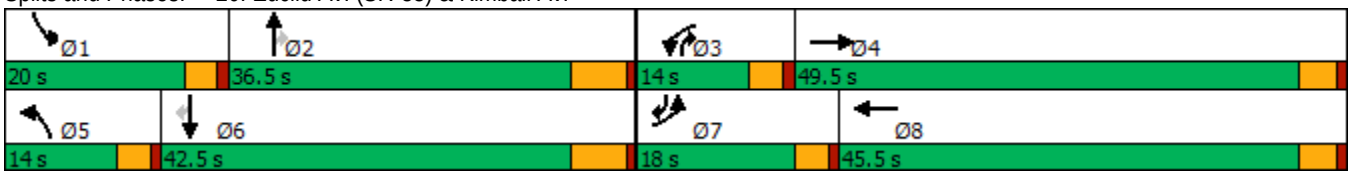
Intersection Summary			
HCM 6th Ctrl Delay		99.2	
HCM 6th LOS		F	

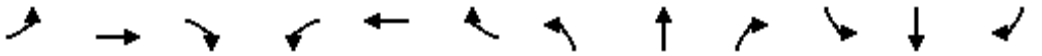
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	347	743	58	305	60	844	36	412	835	235
Future Volume (vph)	347	743	58	305	60	844	36	412	835	235
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	18.0	49.5	14.0	45.5	14.0	36.5	14.0	20.0	42.5	18.0
Total Split (%)	15.0%	41.3%	11.7%	37.9%	11.7%	30.4%	11.7%	16.7%	35.4%	15.0%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 105.9
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	347	743	45	58	305	165	60	844	36	412	835	235
Future Volume (veh/h)	347	743	45	58	305	165	60	844	36	412	835	235
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	358	766	43	60	314	132	62	870	22	425	861	144
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	411	940	53	132	539	222	134	975	559	476	1243	766
Arrive On Green	0.14	0.29	0.29	0.08	0.23	0.23	0.08	0.28	0.28	0.16	0.36	0.36
Sat Flow, veh/h	2956	3292	185	1619	2362	973	1619	3420	1525	2956	3420	1524
Grp Volume(v), veh/h	358	398	411	60	225	221	62	870	22	425	861	144
Grp Sat Flow(s),veh/h/ln	1478	1710	1767	1619	1710	1625	1619	1710	1525	1478	1710	1524
Q Serve(g_s), s	11.8	21.5	21.5	3.5	11.6	12.0	3.6	24.2	0.9	14.0	21.2	5.1
Cycle Q Clear(g_c), s	11.8	21.5	21.5	3.5	11.6	12.0	3.6	24.2	0.9	14.0	21.2	5.1
Prop In Lane	1.00		0.10	1.00		0.60	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	411	489	505	132	390	371	134	975	559	476	1243	766
V/C Ratio(X)	0.87	0.81	0.81	0.45	0.58	0.59	0.46	0.89	0.04	0.89	0.69	0.19
Avail Cap(c_a), veh/h	418	777	802	163	708	672	163	1053	594	477	1260	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.8	32.9	32.9	43.4	34.0	34.1	43.4	34.0	20.2	40.7	26.8	13.5
Incr Delay (d2), s/veh	16.9	3.6	3.5	0.9	0.5	0.6	0.9	9.4	0.0	18.2	1.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	8.8	9.1	1.4	4.6	4.6	1.4	10.4	0.3	5.9	8.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.7	36.6	36.5	44.3	34.5	34.7	44.3	43.3	20.2	58.9	28.5	13.7
LnGrp LOS	E	D	D	D	C	C	D	D	C	E	C	B
Approach Vol, veh/h		1167			506			954			1430	
Approach Delay, s/veh		43.3			35.8			42.9			36.0	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	34.2	12.1	32.8	12.2	42.0	17.8	27.1
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	16.0	30.5	10.0	45.0	10.0	36.5	14.0	41.0
Max Q Clear Time (g_c+I1), s	16.0	26.2	5.5	23.5	5.6	23.2	13.8	14.0
Green Ext Time (p_c), s	0.0	2.0	0.0	4.6	0.0	4.7	0.0	1.5

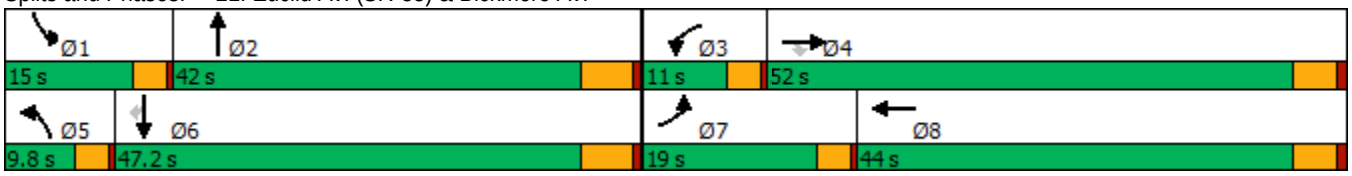
Intersection Summary	
HCM 6th Ctrl Delay	39.7
HCM 6th LOS	D

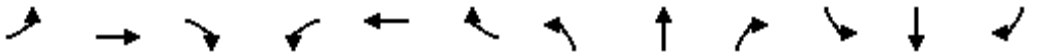
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	115	96	55	35	21	22	659	75	741	134
Future Volume (vph)	115	96	55	35	21	22	659	75	741	134
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	19.0	52.0	52.0	11.0	44.0	9.8	42.0	15.0	47.2	47.2
Total Split (%)	15.8%	43.3%	43.3%	9.2%	36.7%	8.2%	35.0%	12.5%	39.3%	39.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 67.2
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	96	55	35	21	49	22	659	73	75	741	134
Future Volume (veh/h)	115	96	55	35	21	49	22	659	73	75	741	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	125	104	45	38	23	25	24	716	56	82	805	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	156	297	251	69	88	95	47	979	76	118	1192	532
Arrive On Green	0.10	0.16	0.16	0.04	0.11	0.11	0.03	0.30	0.30	0.07	0.35	0.35
Sat Flow, veh/h	1619	1800	1525	1619	789	857	1619	3214	251	1619	3420	1525
Grp Volume(v), veh/h	125	104	45	38	0	48	24	381	391	82	805	114
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1646	1619	1710	1755	1619	1710	1525
Q Serve(g_s), s	3.2	2.2	1.1	1.0	0.0	1.1	0.6	8.4	8.4	2.1	8.5	2.2
Cycle Q Clear(g_c), s	3.2	2.2	1.1	1.0	0.0	1.1	0.6	8.4	8.4	2.1	8.5	2.2
Prop In Lane	1.00		1.00	1.00		0.52	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	156	297	251	69	0	183	47	521	534	118	1192	532
V/C Ratio(X)	0.80	0.35	0.18	0.55	0.00	0.26	0.51	0.73	0.73	0.69	0.68	0.21
Avail Cap(c_a), veh/h	595	2006	1700	288	0	1522	242	1480	1519	441	3381	1508
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.7	15.6	15.2	19.8	0.0	17.2	20.2	13.1	13.1	19.1	11.7	9.7
Incr Delay (d2), s/veh	3.6	0.3	0.1	2.5	0.0	0.3	3.2	0.8	0.7	2.7	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.7	0.3	0.4	0.0	0.4	0.2	2.1	2.2	0.7	1.9	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.2	15.9	15.3	22.3	0.0	17.4	23.3	13.9	13.9	21.8	12.0	9.7
LnGrp LOS	C	B	B	C	A	B	C	B	B	C	B	A
Approach Vol, veh/h		274			86			796			1001	
Approach Delay, s/veh		18.7			19.6			14.2			12.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	18.3	5.3	11.9	4.7	20.2	7.6	9.7
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	11.5	36.5	7.5	47.0	6.3	41.7	15.5	39.0
Max Q Clear Time (g_c+I1), s	4.1	10.4	3.0	4.2	2.6	10.5	5.2	3.1
Green Ext Time (p_c), s	0.0	2.4	0.0	0.4	0.0	3.3	0.1	0.1

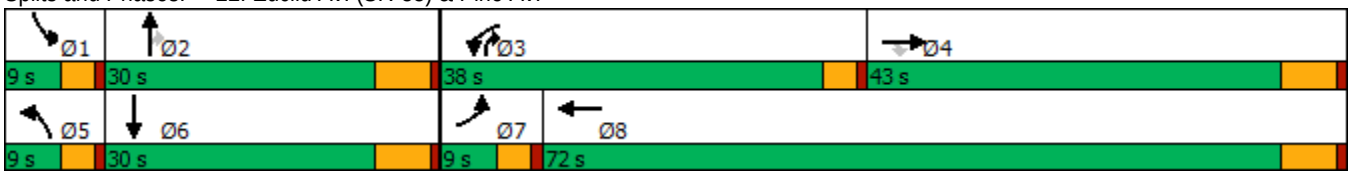
Intersection Summary	
HCM 6th Ctrl Delay	14.2
HCM 6th LOS	B

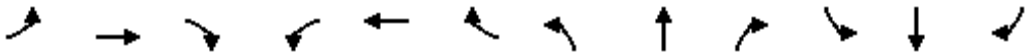
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	5	424	90	517	64	54	703	1061	50	799
Future Volume (vph)	5	424	90	517	64	54	703	1061	50	799
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	38.0	72.0	9.0	30.0	38.0	9.0	30.0
Total Split (%)	7.5%	35.8%	35.8%	31.7%	60.0%	7.5%	25.0%	31.7%	7.5%	25.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 115.3
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	424	90	517	64	22	54	703	1061	50	799	4
Future Volume (veh/h)	5	424	90	517	64	22	54	703	1061	50	799	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	5	433	0	528	65	20	55	717	666	51	815	4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	11	504		604	631	194	68	888	708	64	898	4
Arrive On Green	0.01	0.28	0.00	0.20	0.48	0.48	0.04	0.26	0.26	0.04	0.26	0.26
Sat Flow, veh/h	1619	1800	1525	2956	1321	406	1619	3420	1525	1619	3490	17
Grp Volume(v), veh/h	5	433	0	528	0	85	55	717	666	51	399	420
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1727	1619	1710	1525	1619	1710	1797
Q Serve(g_s), s	0.3	21.1	0.0	16.0	0.0	2.5	3.1	18.1	24.0	2.9	20.9	20.9
Cycle Q Clear(g_c), s	0.3	21.1	0.0	16.0	0.0	2.5	3.1	18.1	24.0	2.9	20.9	20.9
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	11	504		604	0	825	68	888	708	64	440	463
V/C Ratio(X)	0.47	0.86		0.87	0.00	0.10	0.81	0.81	0.94	0.80	0.91	0.91
Avail Cap(c_a), veh/h	88	721		1088	0	1233	88	888	708	88	444	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.7	31.5	0.0	35.6	0.0	13.3	43.9	32.0	23.6	44.0	33.2	33.2
Incr Delay (d2), s/veh	11.7	8.6	0.0	1.6	0.0	0.1	27.3	5.2	20.5	20.9	21.5	20.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	9.7	0.0	5.5	0.0	0.9	1.7	7.4	15.8	1.5	10.5	10.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.5	40.1	0.0	37.2	0.0	13.3	71.2	37.2	44.0	64.9	54.8	54.0
LnGrp LOS	E	D		D	A	B	E	D	D	E	D	D
Approach Vol, veh/h		438	A		613			1438			870	
Approach Delay, s/veh		40.3			33.9			41.7			55.0	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	30.0	22.9	31.9	7.9	29.8	4.6	50.1
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.0	24.0	34.0	37.0	5.0	24.0	5.0	66.0
Max Q Clear Time (g_c+I1), s	4.9	26.0	18.0	23.1	5.1	22.9	2.3	4.5
Green Ext Time (p_c), s	0.0	0.0	0.9	2.8	0.0	0.4	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	43.5
HCM 6th LOS	D

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	23.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	470	22	6	281	6	13	93	10	17	81	46
Future Vol, veh/h	68	470	22	6	281	6	13	93	10	17	81	46
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	72	495	23	6	296	6	14	98	11	18	85	48
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	33.4	14.4	11.7	12
HCM LOS	D	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	12%	2%	12%
Vol Thru, %	80%	84%	96%	56%
Vol Right, %	9%	4%	2%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	116	560	293	144
LT Vol	13	68	6	17
Through Vol	93	470	281	81
RT Vol	10	22	6	46
Lane Flow Rate	122	589	308	152
Geometry Grp	1	1	1	1
Degree of Util (X)	0.228	0.868	0.497	0.274
Departure Headway (Hd)	6.728	5.299	5.797	6.503
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	535	678	626	553
Service Time	4.752	3.394	3.797	4.525
HCM Lane V/C Ratio	0.228	0.869	0.492	0.275
HCM Control Delay	11.7	33.4	14.4	12
HCM Lane LOS	B	D	B	B
HCM 95th-tile Q	0.9	10.2	2.8	1.1

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	206	4	2	54	9	5	86	7	20	65	13
Future Vol, veh/h	15	206	4	2	54	9	5	86	7	20	65	13
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	17	237	5	2	62	10	6	99	8	23	75	15
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.8	8.2	8.7	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	7%	3%	20%
Vol Thru, %	88%	92%	83%	66%
Vol Right, %	7%	2%	14%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	98	225	65	98
LT Vol	5	15	2	20
Through Vol	86	206	54	65
RT Vol	7	4	9	13
Lane Flow Rate	113	259	75	113
Geometry Grp	1	1	1	1
Degree of Util (X)	0.15	0.326	0.097	0.15
Departure Headway (Hd)	4.786	4.535	4.67	4.78
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	747	791	764	748
Service Time	2.831	2.571	2.716	2.825
HCM Lane V/C Ratio	0.151	0.327	0.098	0.151
HCM Control Delay	8.7	9.8	8.2	8.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	1.4	0.3	0.5

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	76	735	703	34	38	30
Future Vol, veh/h	76	735	703	34	38	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	81	782	748	36	40	32

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	784	0	-	0	1710	766
Stage 1	-	-	-	-	766	-
Stage 2	-	-	-	-	944	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	843	-	-	-	162	481
Stage 1	-	-	-	-	462	-
Stage 2	-	-	-	-	381	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	843	-	-	-	134	481
Mov Cap-2 Maneuver	-	-	-	-	134	-
Stage 1	-	-	-	-	383	-
Stage 2	-	-	-	-	381	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	33.5
HCM LOS			D

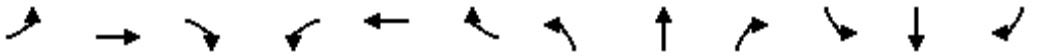
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	843	-	-	-	197
HCM Lane V/C Ratio	0.096	-	-	-	0.367
HCM Control Delay (s)	9.7	0	-	-	33.5
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.3	-	-	-	1.6

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	328	219	852	957	636
Future Volume (vph)	0	328	219	852	957	636
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	38.0	38.0	28.0	82.0	54.0	54.0
Total Split (%)	31.7%	31.7%	23.3%	68.3%	45.0%	45.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	283	0	328	219	852	0	0	957	636
Future Volume (veh/h)	0	0	0	283	0	328	219	852	0	0	957	636
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				295	0	162	228	888	0	0	997	487
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				341	0	303	252	2581	0	0	1939	846
Arrive On Green				0.19	0.00	0.19	0.28	1.00	0.00	0.00	0.54	0.54
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1575
Grp Volume(v), veh/h				295	0	162	228	888	0	0	997	487
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1575
Q Serve(g_s), s				19.0	0.0	10.9	14.6	0.0	0.0	0.0	21.2	24.9
Cycle Q Clear(g_c), s				19.0	0.0	10.9	14.6	0.0	0.0	0.0	21.2	24.9
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				341	0	303	252	2581	0	0	1939	846
V/C Ratio(X)				0.87	0.00	0.53	0.90	0.34	0.00	0.00	0.51	0.58
Avail Cap(c_a), veh/h				486	0	432	353	2581	0	0	1939	846
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.37	0.37	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				47.2	0.0	43.9	42.5	0.0	0.0	0.0	17.8	18.6
Incr Delay (d2), s/veh				11.0	0.0	1.5	7.4	0.1	0.0	0.0	1.0	2.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				9.3	0.0	4.3	5.9	0.0	0.0	0.0	8.4	9.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				58.3	0.0	45.4	49.8	0.1	0.0	0.0	18.7	21.4
LnGrp LOS				E	A	D	D	A	A	A	B	C
Approach Vol, veh/h					457			1116			1484	
Approach Delay, s/veh					53.7			10.3			19.6	
Approach LOS					D			B			B	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		91.6			21.3	70.3		28.4				
Change Period (Y+Rc), s		5.8			4.6	5.8		5.8				
Max Green Setting (Gmax), s		76.2			23.4	48.2		32.2				
Max Q Clear Time (g_c+I1), s		2.0			16.6	26.9		21.0				
Green Ext Time (p_c), s		6.9			0.2	8.8		1.6				

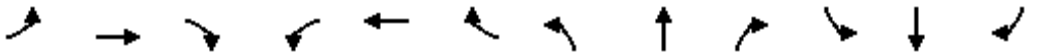
Intersection Summary		
HCM 6th Ctrl Delay	21.3	
HCM 6th LOS	C	

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	329	665	418	823
Future Volume (vph)	0	329	665	418	823
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	38.0	38.0	44.0	38.0	82.0
Total Split (%)	31.7%	31.7%	36.7%	31.7%	68.3%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	406	0	329	0	0	0	0	665	309	418	823	0
Future Volume (veh/h)	406	0	329	0	0	0	0	665	309	418	823	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	437	0	267				0	715	249	449	885	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	468	0	416				0	909	316	466	2327	0
Arrive On Green	0.26	0.00	0.26				0.00	0.35	0.35	0.52	1.00	0.00
Sat Flow, veh/h	1810	0	1610				0	2700	907	1810	3705	0
Grp Volume(v), veh/h	437	0	267				0	496	468	449	885	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1707	1810	1805	0
Q Serve(g_s), s	28.3	0.0	17.7				0.0	29.6	29.6	28.7	0.0	0.0
Cycle Q Clear(g_c), s	28.3	0.0	17.7				0.0	29.6	29.6	28.7	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.53	1.00		0.00
Lane Grp Cap(c), veh/h	468	0	416				0	630	595	466	2327	0
V/C Ratio(X)	0.93	0.00	0.64				0.00	0.79	0.79	0.96	0.38	0.00
Avail Cap(c_a), veh/h	486	0	432				0	630	595	504	2327	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.80	0.80	0.81	0.81	0.00
Uniform Delay (d), s/veh	43.5	0.0	39.5				0.0	35.1	35.1	28.6	0.0	0.0
Incr Delay (d2), s/veh	24.9	0.0	3.0				0.0	7.8	8.2	25.8	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.4	0.0	7.1				0.0	13.8	13.1	11.4	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.4	0.0	42.6				0.0	42.9	43.3	54.3	0.4	0.0
LnGrp LOS	E	A	D				A	D	D	D	A	A
Approach Vol, veh/h		704						964			1334	
Approach Delay, s/veh		58.6						43.1			18.5	
Approach LOS		E						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	35.5	47.7		36.8		83.2
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	33.4	38.2		32.2		76.2
Max Q Clear Time (g_c+I1), s	30.7	31.6		30.3		2.0
Green Ext Time (p_c), s	0.2	3.1		0.7		6.8

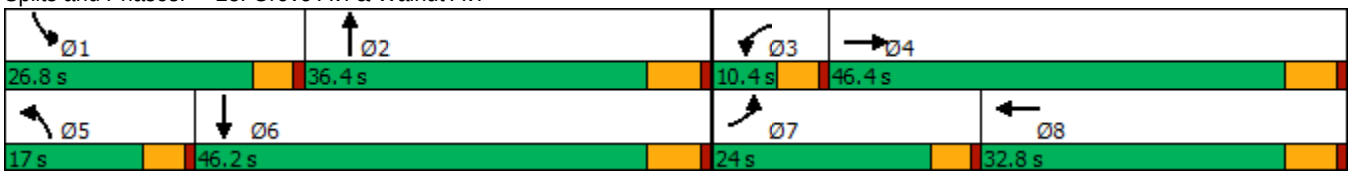
Intersection Summary	
HCM 6th Ctrl Delay	35.8
HCM 6th LOS	D

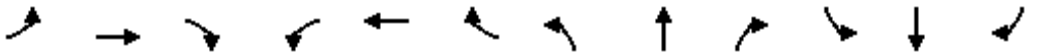
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	146	283	16	153	79	605	168	687
Future Volume (vph)	146	283	16	153	79	605	168	687
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	24.0	46.4	10.4	32.8	17.0	36.4	26.8	46.2
Total Split (%)	20.0%	38.7%	8.7%	27.3%	14.2%	30.3%	22.3%	38.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 96.3
Natural Cycle: 85
Control Type: Actuated-Uncoordinated

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	283	77	16	153	121	79	605	20	168	687	165
Future Volume (veh/h)	146	283	77	16	153	121	79	605	20	168	687	165
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	152	295	65	17	159	91	82	630	11	175	716	104
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	183	591	128	31	251	135	102	1378	24	208	1396	203
Arrive On Green	0.11	0.21	0.21	0.02	0.12	0.12	0.06	0.40	0.40	0.13	0.47	0.47
Sat Flow, veh/h	1619	2794	607	1619	2129	1149	1619	3439	60	1619	2997	435
Grp Volume(v), veh/h	152	179	181	17	126	124	82	313	328	175	408	412
Grp Sat Flow(s),veh/h/ln	1619	1710	1691	1619	1710	1568	1619	1710	1789	1619	1710	1722
Q Serve(g_s), s	8.0	8.0	8.2	0.9	6.1	6.6	4.3	11.7	11.7	9.2	14.5	14.6
Cycle Q Clear(g_c), s	8.0	8.0	8.2	0.9	6.1	6.6	4.3	11.7	11.7	9.2	14.5	14.6
Prop In Lane	1.00		0.36	1.00		0.73	1.00		0.03	1.00		0.25
Lane Grp Cap(c), veh/h	183	362	358	31	201	185	102	685	717	208	797	802
V/C Ratio(X)	0.83	0.49	0.51	0.54	0.63	0.67	0.80	0.46	0.46	0.84	0.51	0.51
Avail Cap(c_a), veh/h	362	801	792	108	532	488	232	685	717	414	797	802
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	30.1	30.2	42.1	36.4	36.7	40.1	19.1	19.1	36.9	16.3	16.3
Incr Delay (d2), s/veh	3.6	1.0	1.1	5.3	3.2	4.2	5.3	2.2	2.1	3.5	2.4	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	3.2	3.2	0.4	2.6	2.6	1.8	4.6	4.8	3.6	5.5	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	31.1	31.3	47.5	39.6	40.9	45.4	21.3	21.2	40.4	18.6	18.6
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	B	B
Approach Vol, veh/h		512			267			723			995	
Approach Delay, s/veh		34.2			40.7			24.0			22.4	
Approach LOS		C			D			C			C	

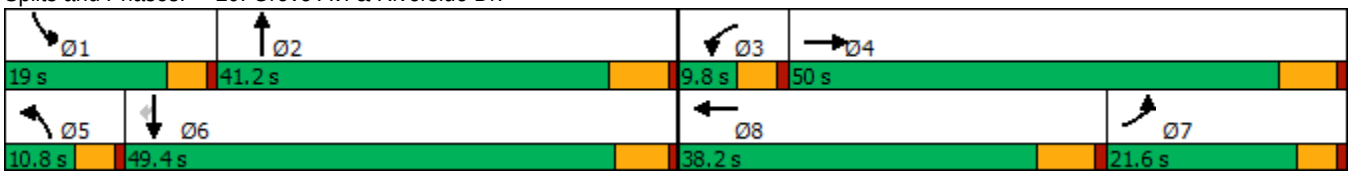
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	40.5	6.3	24.2	10.1	46.2	14.4	16.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	22.2	30.6	5.8	40.6	12.4	40.4	19.4	27.0
Max Q Clear Time (g_c+I1), s	11.2	13.7	2.9	10.2	6.3	16.6	10.0	8.6
Green Ext Time (p_c), s	0.2	3.2	0.0	1.9	0.0	4.9	0.1	1.2

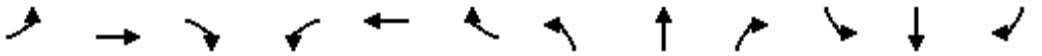
Intersection Summary	
HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	160	565	39	531	27	416	150	354	168
Future Volume (vph)	160	565	39	531	27	416	150	354	168
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	21.6	50.0	9.8	38.2	10.8	41.2	19.0	49.4	49.4
Total Split (%)	18.0%	41.7%	8.2%	31.8%	9.0%	34.3%	15.8%	41.2%	41.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 114.9
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	565	21	39	531	103	27	416	71	150	354	168
Future Volume (veh/h)	160	565	21	39	531	103	27	416	71	150	354	168
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	167	589	21	41	553	61	28	433	57	156	369	118
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	272	622	22	52	653	72	42	478	63	181	707	599
Arrive On Green	0.17	0.36	0.36	0.03	0.21	0.21	0.03	0.31	0.31	0.11	0.39	0.39
Sat Flow, veh/h	1619	1726	62	1619	3106	342	1619	1558	205	1619	1800	1525
Grp Volume(v), veh/h	167	0	610	41	304	310	28	0	490	156	369	118
Grp Sat Flow(s),veh/h/ln	1619	0	1787	1619	1710	1738	1619	0	1763	1619	1800	1525
Q Serve(g_s), s	10.9	0.0	37.8	2.9	19.5	19.6	2.0	0.0	30.5	10.8	17.9	3.2
Cycle Q Clear(g_c), s	10.9	0.0	37.8	2.9	19.5	19.6	2.0	0.0	30.5	10.8	17.9	3.2
Prop In Lane	1.00		0.03	1.00		0.20	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	272	0	644	52	360	366	42	0	541	181	707	599
V/C Ratio(X)	0.61	0.00	0.95	0.79	0.84	0.85	0.67	0.00	0.91	0.86	0.52	0.20
Avail Cap(c_a), veh/h	272	0	686	74	479	487	88	0	541	204	707	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.0	0.0	35.4	54.9	43.3	43.3	55.1	0.0	38.0	49.8	26.5	6.8
Incr Delay (d2), s/veh	3.0	0.0	21.6	20.2	10.1	10.3	6.7	0.0	21.4	25.1	2.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	19.1	1.4	8.9	9.1	0.8	0.0	15.6	5.5	7.8	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.0	0.0	57.0	75.1	53.4	53.6	61.9	0.0	59.3	74.9	29.2	7.5
LnGrp LOS	D	A	E	E	D	D	E	A	E	E	C	A
Approach Vol, veh/h		777			655			518			643	
Approach Delay, s/veh		54.9			54.9			59.5			36.3	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.3	41.2	8.2	47.3	7.5	51.0	25.4	30.2
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	14.4	35.0	5.2	43.8	6.2	* 44	17.0	* 32
Max Q Clear Time (g_c+I1), s	12.8	32.5	4.9	39.8	4.0	19.9	12.9	21.6
Green Ext Time (p_c), s	0.0	0.7	0.0	1.3	0.0	2.4	0.1	2.4

Intersection Summary	
HCM 6th Ctrl Delay	51.2
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	27
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	74	176	25	9	38	38	35	433	19	35	353	21
Future Vol, veh/h	74	176	25	9	38	38	35	433	19	35	353	21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	77	183	26	9	40	40	36	451	20	36	368	22
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	18.2	12.2	36.1	25.3
HCM LOS	C	B	E	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	27%	11%	9%
Vol Thru, %	89%	64%	45%	86%
Vol Right, %	4%	9%	45%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	487	275	85	409
LT Vol	35	74	9	35
Through Vol	433	176	38	353
RT Vol	19	25	38	21
Lane Flow Rate	507	286	89	426
Geometry Grp	1	1	1	1
Degree of Util (X)	0.862	0.55	0.185	0.741
Departure Headway (Hd)	6.117	6.915	7.524	6.259
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	588	518	480	575
Service Time	4.188	4.997	5.524	4.335
HCM Lane V/C Ratio	0.862	0.552	0.185	0.741
HCM Control Delay	36.1	18.2	12.2	25.3
HCM Lane LOS	E	C	B	D
HCM 95th-tile Q	9.6	3.3	0.7	6.4

Intersection	
Intersection Delay, s/veh	24.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	96	138	88	2	45	36	26	372	30	52	266	53
Future Vol, veh/h	96	138	88	2	45	36	26	372	30	52	266	53
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	103	148	95	2	48	39	28	400	32	56	286	57
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	20.8	12.2	29.7	23.1
HCM LOS	C	B	D	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	30%	2%	14%
Vol Thru, %	87%	43%	54%	72%
Vol Right, %	7%	27%	43%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	428	322	83	371
LT Vol	26	96	2	52
Through Vol	372	138	45	266
RT Vol	30	88	36	53
Lane Flow Rate	460	346	89	399
Geometry Grp	1	1	1	1
Degree of Util (X)	0.798	0.638	0.185	0.702
Departure Headway (Hd)	6.239	6.636	7.48	6.331
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	575	540	483	566
Service Time	4.317	4.721	5.48	4.414
HCM Lane V/C Ratio	0.8	0.641	0.184	0.705
HCM Control Delay	29.7	20.8	12.2	23.1
HCM Lane LOS	D	C	B	C
HCM 95th-tile Q	7.7	4.5	0.7	5.6

Intersection	
Intersection Delay, s/veh	277.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	430	7	145	266	50	13	329	349	128	214	22
Future Vol, veh/h	43	430	7	145	266	50	13	329	349	128	214	22
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	46	462	8	156	286	54	14	354	375	138	230	24
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	225.4	203.9	449.1	113.8
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	9%	31%	35%
Vol Thru, %	48%	90%	58%	59%
Vol Right, %	51%	1%	11%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	691	480	461	364
LT Vol	13	43	145	128
Through Vol	329	430	266	214
RT Vol	349	7	50	22
Lane Flow Rate	743	516	496	391
Geometry Grp	1	1	1	1
Degree of Util (X)	1.915	1.374	1.318	1.047
Departure Headway (Hd)	11.524	13.657	13.871	15.12
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	327	274	268	243
Service Time	9.524	11.657	11.871	13.12
HCM Lane V/C Ratio	2.272	1.883	1.851	1.609
HCM Control Delay	449.1	225.4	203.9	113.8
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	41.2	19.3	17.6	10.4

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	89	83	68	5	17	13	14	613	4	12	324	29
Future Vol, veh/h	89	83	68	5	17	13	14	613	4	12	324	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	25	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	99	92	76	6	19	14	16	2452	4	13	360	32

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2905	2890	376	2972	2904	2454	392	0	0	2456	0	0
Stage 1	402	402	-	2486	2486	-	-	-	-	-	-	-
Stage 2	2503	2488	-	486	418	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 10	~ 16	675	9	~ 16	40	1178	-	-	193	-	-
Stage 1	629	604	-	40	59	-	-	-	-	-	-	-
Stage 2	~ 39	~ 59	-	566	594	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 15	675	-	~ 15	40	1178	-	-	193	-	-
Mov Cap-2 Maneuver	-	~ 15	-	-	~ 15	-	-	-	-	-	-	-
Stage 1	629	551	-	40	59	-	-	-	-	-	-	-
Stage 2	~ 17	~ 59	-	382	542	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			0.1	0.8
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1178	-	-	-	-	193	-	-
HCM Lane V/C Ratio	0.013	-	-	-	-	0.069	-	-
HCM Control Delay (s)	8.1	0	-	-	-	25	0	-
HCM Lane LOS	A	A	-	-	-	D	A	-
HCM 95th %tile Q(veh)	0	-	-	-	-	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	109	581	19	376
Future Volume (vph)	109	581	19	376
Turn Type	Prot	NA	Prot	NA
Protected Phases	8	2	1	6
Permitted Phases				
Detector Phase	8	2	1	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	5.0	10.0
Minimum Split (s)	26.6	23.2	9.6	16.2
Total Split (s)	26.7	38.7	9.6	48.3
Total Split (%)	35.6%	51.6%	12.8%	64.4%
Yellow Time (s)	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2
Lead/Lag		Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	
Recall Mode	None	Min	None	Min

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 54.5
Natural Cycle: 75
Control Type: Actuated-Uncoordinated

Splits and Phases: 34: Grove Av. & Street A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	109	49	581	42	19	376
Future Volume (veh/h)	109	49	581	42	19	376
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	118	53	632	46	21	409
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	216	97	754	55	41	1041
Arrive On Green	0.19	0.19	0.45	0.45	0.03	0.58
Sat Flow, veh/h	1133	509	1658	121	1619	1800
Grp Volume(v), veh/h	172	0	0	678	21	409
Grp Sat Flow(s),veh/h/ln	1652	0	0	1778	1619	1800
Q Serve(g_s), s	4.4	0.0	0.0	15.7	0.6	5.8
Cycle Q Clear(g_c), s	4.4	0.0	0.0	15.7	0.6	5.8
Prop In Lane	0.69	0.31		0.07	1.00	
Lane Grp Cap(c), veh/h	315	0	0	809	41	1041
V/C Ratio(X)	0.55	0.00	0.00	0.84	0.51	0.39
Avail Cap(c_a), veh/h	780	0	0	1234	173	1618
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	0.0	0.0	11.2	22.5	5.4
Incr Delay (d2), s/veh	1.5	0.0	0.0	3.2	3.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.0	4.3	0.2	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.6	0.0	0.0	14.5	26.1	5.6
LnGrp LOS	B	A	A	B	C	A
Approach Vol, veh/h	172		678			430
Approach Delay, s/veh	18.6		14.5			6.6
Approach LOS	B		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.8	27.5			33.3	13.5
Change Period (Y+Rc), s	4.6	6.2			6.2	4.6
Max Green Setting (Gmax), s	5.0	32.5			42.1	22.1
Max Q Clear Time (g_c+I1), s	2.6	17.7			7.8	6.4
Green Ext Time (p_c), s	0.0	3.6			2.3	0.4

Intersection Summary	
HCM 6th Ctrl Delay	12.4
HCM 6th LOS	B

Intersection	
Intersection Delay, s/veh	319.3
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	198	583	586	426	338	147
Future Vol, veh/h	198	583	586	426	338	147
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	206	607	610	444	352	153
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	294.6	458.8	68.2
HCM LOS	F	F	F

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	0%	70%
Vol Thru, %	75%	58%	0%
Vol Right, %	0%	42%	30%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	781	1012	485
LT Vol	198	0	338
Through Vol	583	586	0
RT Vol	0	426	147
Lane Flow Rate	814	1054	505
Geometry Grp	1	1	1
Degree of Util (X)	1.583	1.963	0.976
Departure Headway (Hd)	8.33	7.54	8.656
Convergence, Y/N	Yes	Yes	Yes
Cap	447	495	424
Service Time	6.33	5.54	6.656
HCM Lane V/C Ratio	1.821	2.129	1.191
HCM Control Delay	294.6	458.8	68.2
HCM Lane LOS	F	F	F
HCM 95th-tile Q	38.2	63	11.7

Intersection	
Int Delay, s/veh	13.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	20	872	1	15	436	30	3	20	49	64	13	10
Future Vol, veh/h	20	872	1	15	436	30	3	20	49	64	13	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	21	918	1	16	459	32	3	21	52	67	14	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	491	0	0	919	0	0	1481	1484	919	1504	1468	475
Stage 1	-	-	-	-	-	-	961	961	-	507	507	-
Stage 2	-	-	-	-	-	-	520	523	-	997	961	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1083	-	-	751	-	-	105	126	332	101	129	594
Stage 1	-	-	-	-	-	-	311	337	-	552	543	-
Stage 2	-	-	-	-	-	-	543	534	-	297	337	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1083	-	-	751	-	-	89	117	332	70	120	594
Mov Cap-2 Maneuver	-	-	-	-	-	-	89	117	-	70	120	-
Stage 1	-	-	-	-	-	-	299	324	-	530	527	-
Stage 2	-	-	-	-	-	-	504	519	-	225	324	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	32.7	214.6
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	204	1083	-	-	751	-	-	84
HCM Lane V/C Ratio	0.372	0.019	-	-	0.021	-	-	1.09
HCM Control Delay (s)	32.7	8.4	0	-	9.9	0	-	214.6
HCM Lane LOS	D	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	1.6	0.1	-	-	0.1	-	-	6.4

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	40	62	0	0	32	31	0	0	0	21	0	3
Future Vol, veh/h	40	62	0	0	32	31	0	0	0	21	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	43	67	0	0	35	34	0	0	0	23	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	69	0	0	67	0	0	207	222	67	205	205	52
Stage 1	-	-	-	-	-	-	153	153	-	52	52	-
Stage 2	-	-	-	-	-	-	54	69	-	153	153	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1545	-	-	1547	-	-	755	680	1002	757	695	1021
Stage 1	-	-	-	-	-	-	854	775	-	966	856	-
Stage 2	-	-	-	-	-	-	963	841	-	854	775	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1545	-	-	1547	-	-	736	660	1002	740	675	1021
Mov Cap-2 Maneuver	-	-	-	-	-	-	736	660	-	740	675	-
Stage 1	-	-	-	-	-	-	829	753	-	938	856	-
Stage 2	-	-	-	-	-	-	960	841	-	829	753	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.9	0	0	9.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1545	-	-	1547	-	-	766
HCM Lane V/C Ratio	-	0.028	-	-	-	-	-	0.034
HCM Control Delay (s)	0	7.4	0	-	0	-	-	9.9
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	81.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	100	713	110	83	652	21	102	5	119	55	14	258
Future Vol, veh/h	100	713	110	83	652	21	102	5	119	55	14	258
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	25	91	91	91	91	91	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	110	784	121	91	716	84	112	5	131	60	15	266

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	800	0	0	905	0	0	2085	1986	784	2073	2065	758
Stage 1	-	-	-	-	-	-	1004	1004	-	940	940	-
Stage 2	-	-	-	-	-	-	1081	982	-	1133	1125	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	832	-	-	760	-	-	~ 39	62	396	~ 40	55	410
Stage 1	-	-	-	-	-	-	294	322	-	319	345	-
Stage 2	-	-	-	-	-	-	266	330	-	249	283	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	832	-	-	760	-	-	~ 10	47	396	~ 21	42	410
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ -37	120	-	~ 44	110	-
Stage 1	-	-	-	-	-	-	255	279	-	277	304	-
Stage 2	-	-	-	-	-	-	~ 78	290	-	142	246	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	1.1		$ 590.7
HCM LOS			-	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	+	832	-	-	760	-	-	158
HCM Lane V/C Ratio	-	0.132	-	-	0.12	-	-	2.163
HCM Control Delay (s)	-	10	-	-	10.4	-	-	$ 590.7
HCM Lane LOS	-	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	-	0.5	-	-	0.4	-	-	27.6

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	51	831	5	10	611	18	12	0	18	48	0	132
Future Vol, veh/h	51	831	5	10	611	18	12	0	18	48	0	132
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	58	944	6	11	694	20	14	0	20	55	0	150

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	714	0	0	951	0	0	1865	1800	476	1314	1793	704
Stage 1	-	-	-	-	-	-	1064	1064	-	726	726	-
Stage 2	-	-	-	-	-	-	801	736	-	588	1067	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	895	-	-	730	-	-	51	81	541	127	82	440
Stage 1	-	-	-	-	-	-	242	302	-	419	433	-
Stage 2	-	-	-	-	-	-	381	428	-	467	301	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	895	-	-	729	-	-	32	75	540	115	75	440
Mov Cap-2 Maneuver	-	-	-	-	-	-	108	179	-	235	183	-
Stage 1	-	-	-	-	-	-	226	282	-	392	427	-
Stage 2	-	-	-	-	-	-	247	422	-	420	281	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	25.7	27.8
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	208	895	-	-	729	-	-	357
HCM Lane V/C Ratio	0.164	0.065	-	-	0.016	-	-	0.573
HCM Control Delay (s)	25.7	9.3	-	-	10	-	-	27.8
HCM Lane LOS	D	A	-	-	B	-	-	D
HCM 95th %tile Q(veh)	0.6	0.2	-	-	0	-	-	3.4

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	49	848	0	20	513	26	0	5	20	68	14	126
Future Vol, veh/h	49	848	0	20	513	26	0	5	20	68	14	126
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	200	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	54	942	0	22	570	29	0	6	22	76	16	140

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	599	0	0	943	0	0	1758	1694	472	1211	1680	585
Stage 1	-	-	-	-	-	-	1051	1051	-	629	629	-
Stage 2	-	-	-	-	-	-	707	643	-	582	1051	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	988	-	-	736	-	-	61	94	544	150	96	515
Stage 1	-	-	-	-	-	-	246	306	-	474	478	-
Stage 2	-	-	-	-	-	-	429	472	-	471	306	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	988	-	-	735	-	-	39	86	543	132	88	515
Mov Cap-2 Maneuver	-	-	-	-	-	-	125	192	-	252	191	-
Stage 1	-	-	-	-	-	-	232	289	-	448	464	-
Stage 2	-	-	-	-	-	-	293	458	-	419	289	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.4	14.7	20.1
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	398	988	-	-	735	-	-	252	440
HCM Lane V/C Ratio	-	0.07	0.055	-	-	0.03	-	-	0.3	0.354
HCM Control Delay (s)	0	14.7	8.9	-	-	10.1	-	-	25.3	17.6
HCM Lane LOS	A	B	A	-	-	B	-	-	D	C
HCM 95th %tile Q(veh)	-	0.2	0.2	-	-	0.1	-	-	1.2	1.6

Intersection	
Intersection Delay, s/veh	80.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	0	733	0	0	0	288	24	0	0	59	91
Future Vol, veh/h	14	0	733	0	0	0	288	24	0	0	59	91
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	15	0	772	0	0	0	303	25	0	0	62	96
Number of Lanes	1	0	1	0	0	0	1	2	0	0	2	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	3
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	3	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	3	0	2
HCM Control Delay	119	22.7	10.2
HCM LOS	F	C	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	100%	100%	0%	0%	100%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	288	12	12	14	733	30	30	91
LT Vol	288	0	0	14	0	0	0	0
Through Vol	0	12	12	0	0	30	30	0
RT Vol	0	0	0	0	733	0	0	91
Lane Flow Rate	303	13	13	15	772	31	31	96
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.636	0.025	0.019	0.028	1.192	0.066	0.066	0.138
Departure Headway (Hd)	8.077	7.56	5.802	6.757	5.56	8.214	8.214	5.709
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	452	476	621	533	656	439	439	632
Service Time	5.777	5.26	3.502	4.457	3.26	5.914	5.914	3.409
HCM Lane V/C Ratio	0.67	0.027	0.021	0.028	1.177	0.071	0.071	0.152
HCM Control Delay	23.8	10.5	8.6	9.7	121.1	11.5	11.5	9.3
HCM Lane LOS	C	B	A	A	F	B	B	A
HCM 95th-tile Q	4.3	0.1	0.1	0.1	26.5	0.2	0.2	0.5

Intersection	
Intersection Delay, s/veh	254.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	890	21	25	466	23	36	4	99	93	5	58
Future Vol, veh/h	25	890	21	25	466	23	36	4	99	93	5	58
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	28	989	23	28	518	26	40	4	110	103	6	64
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	405.9	114.7	17.6	19.3
HCM LOS	F	F	C	C

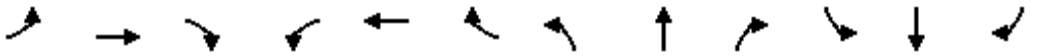
Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	26%	100%	0%	0%	100%	0%	60%
Vol Thru, %	3%	0%	100%	0%	0%	95%	3%
Vol Right, %	71%	0%	0%	100%	0%	5%	37%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	139	25	890	21	25	489	156
LT Vol	36	25	0	0	25	0	93
Through Vol	4	0	890	0	0	466	5
RT Vol	99	0	0	21	0	23	58
Lane Flow Rate	154	28	989	23	28	543	173
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.346	0.057	1.893	0.04	0.063	1.144	0.402
Departure Headway (Hd)	9.782	7.705	7.19	6.47	9.655	9.1	10.043
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	371	468	514	557	373	402	361
Service Time	7.482	5.405	4.89	4.17	7.355	6.8	7.743
HCM Lane V/C Ratio	0.415	0.06	1.924	0.041	0.075	1.351	0.479
HCM Control Delay	17.6	10.9	426.4	9.4	13	119.9	19.3
HCM Lane LOS	C	B	F	A	B	F	C
HCM 95th-tile Q	1.5	0.2	61.7	0.1	0.2	17.1	1.9

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	5	253	379	478	1047
Future Volume (vph)	5	253	379	478	1047
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (%)	32.2%	32.2%	31.1%	67.8%	36.7%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	415	5	253	379	478	0	0	1047	435
Future Volume (veh/h)	0	0	0	415	5	253	379	478	0	0	1047	435
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				432	5	119	395	498	0	0	1091	318
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				457	5	411	496	3181	0	0	1388	400
Arrive On Green				0.26	0.26	0.26	0.55	1.00	0.00	0.00	0.28	0.28
Sat Flow, veh/h				1790	21	1610	1810	5358	0	0	5314	1454
Grp Volume(v), veh/h				437	0	119	395	498	0	0	1059	350
Grp Sat Flow(s),veh/h/ln				1811	0	1610	1810	1729	0	0	1634	1601
Q Serve(g_s), s				21.3	0.0	5.3	15.8	0.0	0.0	0.0	18.0	18.3
Cycle Q Clear(g_c), s				21.3	0.0	5.3	15.8	0.0	0.0	0.0	18.0	18.3
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.91
Lane Grp Cap(c), veh/h				463	0	411	496	3181	0	0	1348	440
V/C Ratio(X)				0.94	0.00	0.29	0.80	0.16	0.00	0.00	0.79	0.80
Avail Cap(c_a), veh/h				463	0	411	496	3181	0	0	1481	484
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.66	0.66	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				32.9	0.0	26.9	18.3	0.0	0.0	0.0	30.2	30.3
Incr Delay (d2), s/veh				28.9	0.0	0.8	5.6	0.1	0.0	0.0	4.7	13.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				12.4	0.0	5.3	4.9	0.0	0.0	0.0	7.1	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				61.7	0.0	27.8	23.9	0.1	0.0	0.0	34.8	44.1
LnGrp LOS				E	A	C	C	A	A	A	C	D
Approach Vol, veh/h					556			893			1409	
Approach Delay, s/veh					54.5			10.6			37.1	
Approach LOS					D			B			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	61.0	29.0	30.4	30.6
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	55.2	23.0	24.0	* 27
Max Q Clear Time (g_c+I1), s	2.0	23.3	17.8	20.3
Green Ext Time (p_c), s	3.4	0.0	0.3	4.5

Intersection Summary	
HCM 6th Ctrl Delay	32.2
HCM 6th LOS	C

Notes

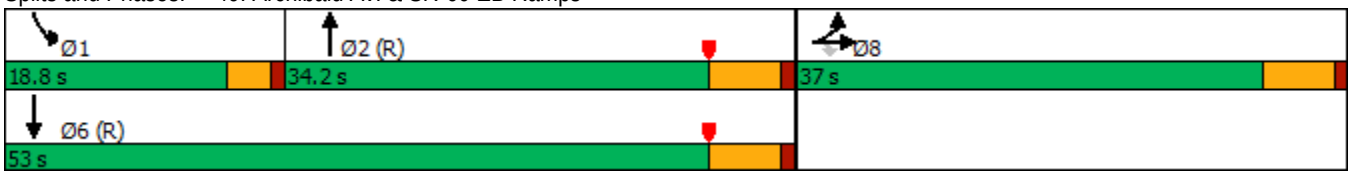
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

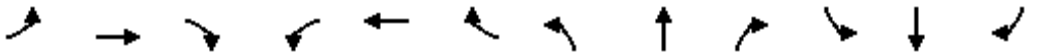
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	534	756	369	1093
Future Volume (vph)	0	534	756	369	1093
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	10.8	10.8	25.8	9.0	25.8
Total Split (s)	37.0	37.0	34.2	18.8	53.0
Total Split (%)	41.1%	41.1%	38.0%	20.9%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	0	534	0	0	0	0	756	614	369	1093	0
Future Volume (veh/h)	101	0	534	0	0	0	0	756	614	369	1093	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	105	0	306				0	788	465	384	1139	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	397	0	353				0	2170	711	298	3380	0
Arrive On Green	0.22	0.00	0.22				0.00	0.44	0.44	0.05	0.22	0.00
Sat Flow, veh/h	1810	0	1610				0	5168	1607	1810	5358	0
Grp Volume(v), veh/h	105	0	306				0	788	465	384	1139	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1607	1810	1729	0
Q Serve(g_s), s	4.3	0.0	16.5				0.0	9.6	20.4	14.8	16.7	0.0
Cycle Q Clear(g_c), s	4.3	0.0	16.5				0.0	9.6	20.4	14.8	16.7	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	397	0	353				0	2170	711	298	3380	0
V/C Ratio(X)	0.26	0.00	0.87				0.00	0.36	0.65	1.29	0.34	0.00
Avail Cap(c_a), veh/h	627	0	558				0	2170	711	298	3380	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.58	0.58	0.56	0.56	0.00
Uniform Delay (d), s/veh	29.1	0.0	33.8				0.0	16.7	19.7	42.6	18.9	0.0
Incr Delay (d2), s/veh	0.4	0.0	8.4				0.0	0.3	2.7	144.3	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	6.8				0.0	3.2	7.2	19.0	7.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.5	0.0	42.3				0.0	16.9	22.4	186.9	19.0	0.0
LnGrp LOS	C	A	D				A	B	C	F	B	A
Approach Vol, veh/h		411						1253			1523	
Approach Delay, s/veh		39.0						19.0			61.3	
Approach LOS		D						B			E	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	18.8	45.6				64.4		25.6				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	14.8	28.4				47.2		31.2				
Max Q Clear Time (g_c+I1), s	16.8	22.4				18.7		18.5				
Green Ext Time (p_c), s	0.0	3.6				8.2		1.3				

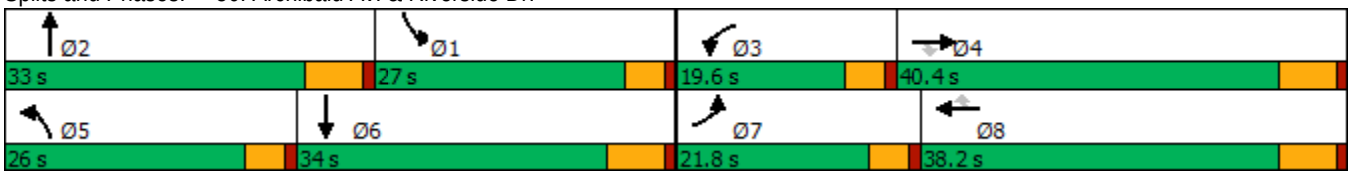
Intersection Summary												
HCM 6th Ctrl Delay			41.8									
HCM 6th LOS			D									

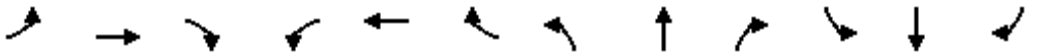
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	214	598	334	144	426	111	278	685	273	882
Future Volume (vph)	214	598	334	144	426	111	278	685	273	882
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.8	40.4	40.4	19.6	38.2	38.2	26.0	33.0	27.0	34.0
Total Split (%)	18.2%	33.7%	33.7%	16.3%	31.8%	31.8%	21.7%	27.5%	22.5%	28.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 112.7
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	598	334	144	426	111	278	685	61	273	882	235
Future Volume (veh/h)	214	598	334	144	426	111	278	685	61	273	882	235
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	228	636	198	153	453	59	296	729	56	290	938	186
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	254	813	354	179	655	291	321	942	72	377	1036	205
Arrive On Green	0.16	0.24	0.24	0.11	0.19	0.19	0.20	0.20	0.20	0.23	0.25	0.25
Sat Flow, veh/h	1619	3420	1490	1619	3420	1518	1619	4650	355	1619	4109	812
Grp Volume(v), veh/h	228	636	198	153	453	59	296	512	273	290	747	377
Grp Sat Flow(s),veh/h/ln	1619	1710	1490	1619	1710	1518	1619	1638	1729	1619	1638	1645
Q Serve(g_s), s	14.8	18.7	12.5	10.0	13.2	2.0	19.3	15.9	16.0	18.0	23.7	23.9
Cycle Q Clear(g_c), s	14.8	18.7	12.5	10.0	13.2	2.0	19.3	15.9	16.0	18.0	23.7	23.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		0.49
Lane Grp Cap(c), veh/h	254	813	354	179	655	291	321	664	350	377	826	415
V/C Ratio(X)	0.90	0.78	0.56	0.85	0.69	0.20	0.92	0.77	0.78	0.77	0.90	0.91
Avail Cap(c_a), veh/h	259	1090	475	226	1019	453	323	818	432	377	848	426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.4	38.3	36.0	46.9	40.4	11.8	42.2	40.5	40.5	38.5	38.9	38.9
Incr Delay (d2), s/veh	29.6	2.7	1.4	18.5	1.3	0.3	30.4	3.7	7.1	8.5	12.9	22.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	7.7	4.5	4.8	5.4	1.2	10.0	6.4	7.2	7.6	10.4	11.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.0	41.0	37.4	65.3	41.7	12.2	72.6	44.1	47.6	47.0	51.7	61.6
LnGrp LOS	E	D	D	E	D	B	E	D	D	D	D	E
Approach Vol, veh/h		1062			665			1081			1414	
Approach Delay, s/veh		47.4			44.5			52.8			53.4	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.2	28.0	16.5	31.7	25.9	33.3	21.4	26.8
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	22.4	* 27	15.0	34.2	21.4	27.8	17.2	32.0
Max Q Clear Time (g_c+I1), s	20.0	18.0	12.0	20.7	21.3	25.9	16.8	15.2
Green Ext Time (p_c), s	0.1	3.0	0.1	3.8	0.0	1.2	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	50.3
HCM 6th LOS	D

Notes

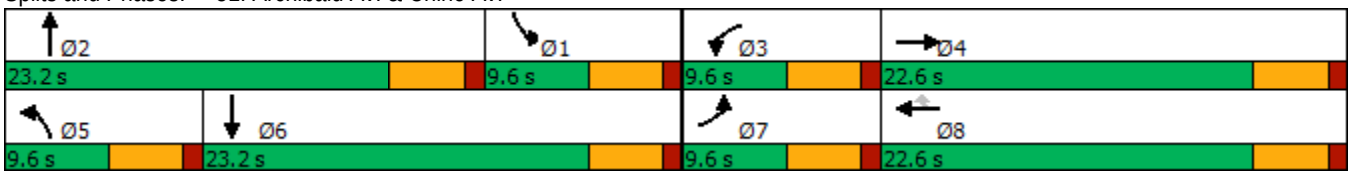
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

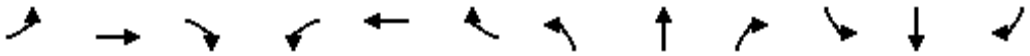
Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	20	1	22	107	19	848	137	1084
Future Volume (vph)	20	1	22	107	19	848	137	1084
Turn Type	Prot	NA	Prot	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3		5	2	1	6
Permitted Phases				8				
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	9.6	22.6	9.6	22.6	9.6	23.2	9.6	23.2
Total Split (%)	14.8%	34.8%	14.8%	34.8%	14.8%	35.7%	14.8%	35.7%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 41.1
Natural Cycle: 75
Control Type: Actuated-Uncoordinated

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	1	6	22	0	107	19	848	42	137	1084	12
Future Volume (veh/h)	20	1	6	22	0	107	19	848	42	137	1084	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	22	1	5	24	0	35	21	942	38	152	1204	12
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	44	16	82	47	117	99	42	1525	61	216	1465	15
Arrive On Green	0.03	0.06	0.06	0.03	0.00	0.07	0.03	0.31	0.31	0.13	0.42	0.42
Sat Flow, veh/h	1619	261	1304	1619	1800	1525	1619	4845	195	1619	3469	35
Grp Volume(v), veh/h	22	0	6	24	0	35	21	637	343	152	593	623
Grp Sat Flow(s),veh/h/ln	1619	0	1565	1619	1800	1525	1619	1638	1764	1619	1710	1794
Q Serve(g_s), s	0.5	0.0	0.1	0.6	0.0	0.5	0.5	6.6	6.6	3.6	12.3	12.3
Cycle Q Clear(g_c), s	0.5	0.0	0.1	0.6	0.0	0.5	0.5	6.6	6.6	3.6	12.3	12.3
Prop In Lane	1.00		0.83	1.00		1.00	1.00		0.11	1.00		0.02
Lane Grp Cap(c), veh/h	44	0	98	47	117	99	42	1031	555	216	722	757
V/C Ratio(X)	0.50	0.00	0.06	0.51	0.00	0.35	0.50	0.62	0.62	0.70	0.82	0.82
Avail Cap(c_a), veh/h	202	0	704	202	809	686	202	1522	820	216	794	833
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	0.0	17.6	19.1	0.0	6.7	19.2	11.7	11.7	16.6	10.2	10.2
Incr Delay (d2), s/veh	8.6	0.0	0.3	8.1	0.0	2.1	8.8	0.6	1.1	9.8	6.4	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.3	0.0	0.3	0.2	1.5	1.7	1.6	3.7	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.8	0.0	17.9	27.3	0.0	8.8	28.1	12.3	12.8	26.4	16.7	16.4
LnGrp LOS	C	A	B	C	A	A	C	B	B	C	B	B
Approach Vol, veh/h		28			59			1001			1368	
Approach Delay, s/veh		25.7			16.3			12.8			17.6	
Approach LOS		C			B			B			B	

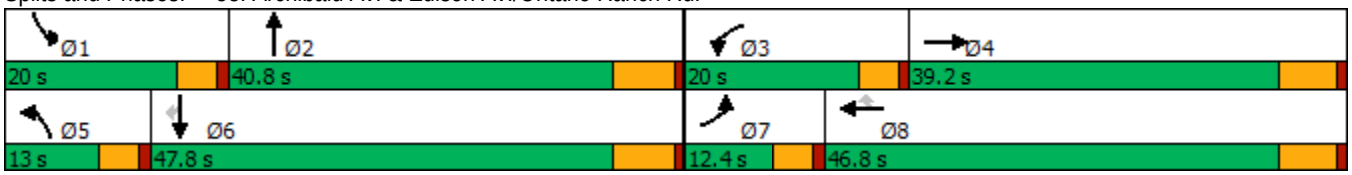
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	17.2	5.8	7.1	5.6	21.5	5.7	7.2
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	5.0	18.6	5.0	18.0	5.0	18.6	5.0	18.0
Max Q Clear Time (g_c+I1), s	5.6	8.6	2.6	2.1	2.5	14.3	2.5	2.5
Green Ext Time (p_c), s	0.0	3.9	0.0	0.0	0.0	2.6	0.0	0.0

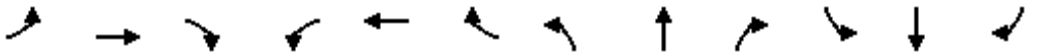
Intersection Summary	
HCM 6th Ctrl Delay	15.7
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	681	120	295	257	71	68	599	335	131	791	96
Future Volume (vph)	153	681	120	295	257	71	68	599	335	131	791	96
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	12.4	39.2		20.0	46.8	46.8	13.0	40.8		20.0	47.8	47.8
Total Split (%)	10.3%	32.7%		16.7%	39.0%	39.0%	10.8%	34.0%		16.7%	39.8%	39.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 100.8
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	681	120	295	257	71	68	599	335	131	791	96
Future Volume (veh/h)	153	681	120	295	257	71	68	599	335	131	791	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	158	702	0	304	265	39	70	618	0	135	815	77
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	220	882		374	558	473	87	883		165	1047	456
Arrive On Green	0.07	0.26	0.00	0.13	0.31	0.31	0.05	0.26	0.00	0.10	0.31	0.31
Sat Flow, veh/h	2956	3420	1525	2956	1800	1525	1619	3420	1525	1619	3420	1491
Grp Volume(v), veh/h	158	702	0	304	265	39	70	618	0	135	815	77
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1800	1525	1619	1710	1525	1619	1710	1491
Q Serve(g_s), s	4.5	16.4	0.0	8.6	10.2	1.5	3.7	14.0	0.0	7.0	18.6	3.2
Cycle Q Clear(g_c), s	4.5	16.4	0.0	8.6	10.2	1.5	3.7	14.0	0.0	7.0	18.6	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	220	882		374	558	473	87	883		165	1047	456
V/C Ratio(X)	0.72	0.80		0.81	0.48	0.08	0.80	0.70		0.82	0.78	0.17
Avail Cap(c_a), veh/h	270	1320		532	854	724	159	1372		292	1652	720
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.7	29.6	0.0	36.4	23.9	20.9	40.0	28.7	0.0	37.6	27.0	21.7
Incr Delay (d2), s/veh	4.8	2.1	0.0	4.2	0.6	0.1	6.4	1.0	0.0	3.8	1.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	6.4	0.0	3.1	4.0	0.5	1.5	5.3	0.0	2.7	6.9	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.6	31.7	0.0	40.6	24.5	21.0	46.4	29.8	0.0	41.5	28.3	21.9
LnGrp LOS	D	C		D	C	C	D	C		D	C	C
Approach Vol, veh/h		860	A		608			688	A		1027	
Approach Delay, s/veh		33.9			32.3			31.4			29.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	28.6	15.4	28.2	9.2	32.7	11.0	32.7
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	15.4	34.3	15.4	33.0	8.4	41.3	7.8	40.6
Max Q Clear Time (g_c+I1), s	9.0	16.0	10.6	18.4	5.7	20.6	6.5	12.2
Green Ext Time (p_c), s	0.1	3.3	0.3	3.7	0.0	5.1	0.0	1.5

Intersection Summary	
HCM 6th Ctrl Delay	31.7
HCM 6th LOS	C

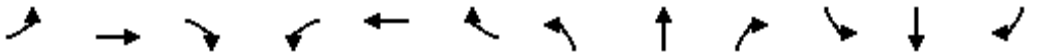
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	10	991	1	9	1197
Future Volume (vph)	2	10	991	1	9	1197
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.5	9.5	32.5	32.5	9.6	16.5
Total Split (s)	10.0	10.0	40.0	40.0	10.0	50.0
Total Split (%)	14.3%	14.3%	57.1%	57.1%	14.3%	71.4%
Yellow Time (s)	3.5	3.5	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	6.5	6.5	4.6	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 63.8
Natural Cycle: 65
Control Type: Actuated-Uncoordinated

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	2	0	10	0	991	1	9	1197	0
Future Volume (veh/h)	0	0	0	2	0	10	0	991	1	9	1197	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1700	0	1800	0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h				2	0	2	0	1054	1	10	1273	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				17	0	14	0	2384	1063	21	2715	0
Arrive On Green				0.01	0.00	0.01	0.00	0.70	0.70	0.01	0.79	0.00
Sat Flow, veh/h				3141	0	2685	0	3510	1524	1619	3510	0
Grp Volume(v), veh/h				2	0	2	0	1054	1	10	1273	0
Grp Sat Flow(s),veh/h/ln				1570	0	1342	0	1710	1524	1619	1710	0
Q Serve(g_s), s				0.0	0.0	0.0	0.0	7.4	0.0	0.3	6.7	0.0
Cycle Q Clear(g_c), s				0.0	0.0	0.0	0.0	7.4	0.0	0.3	6.7	0.0
Prop In Lane				1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				17	0	14	0	2384	1063	21	2715	0
V/C Ratio(X)				0.12	0.00	0.14	0.00	0.44	0.00	0.48	0.47	0.00
Avail Cap(c_a), veh/h				315	0	269	0	2384	1063	160	2715	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				27.1	0.0	27.1	0.0	3.6	2.5	26.9	1.9	0.0
Incr Delay (d2), s/veh				3.1	0.0	4.3	0.0	0.6	0.0	6.2	0.6	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.0	0.0	0.0	0.0	0.7	0.0	0.1	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				30.2	0.0	31.4	0.0	4.2	2.5	33.1	2.4	0.0
LnGrp LOS				C	A	C	A	A	A	C	A	A
Approach Vol, veh/h					4			1055			1283	
Approach Delay, s/veh					30.8			4.2			2.7	
Approach LOS					C			A			A	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	5.3	44.7				50.0		4.8				
Change Period (Y+Rc), s	4.6	6.5				6.5		4.5				
Max Green Setting (Gmax), s	5.4	33.5				43.5		5.5				
Max Q Clear Time (g_c+I1), s	2.3	9.4				8.7		2.0				
Green Ext Time (p_c), s	0.0	7.0				10.0		0.0				

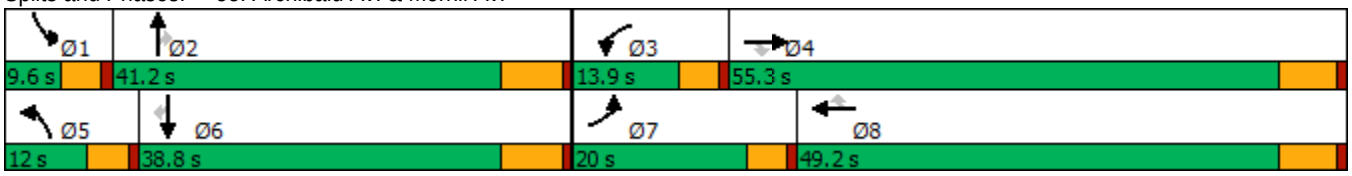
Intersection Summary		
HCM 6th Ctrl Delay		3.4
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	362	74	534	44	25	53	163	577	38	70	920	210
Future Volume (vph)	362	74	534	44	25	53	163	577	38	70	920	210
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	20.0	55.3	55.3	13.9	49.2	49.2	12.0	41.2	41.2	9.6	38.8	38.8
Total Split (%)	16.7%	46.1%	46.1%	11.6%	41.0%	41.0%	10.0%	34.3%	34.3%	8.0%	32.3%	32.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 97
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 55: Archibald Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	362	74	534	44	25	53	163	577	38	70	920	210
Future Volume (veh/h)	362	74	534	44	25	53	163	577	38	70	920	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	373	76	366	45	26	16	168	595	25	72	948	158
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	303	492	417	63	225	191	146	1274	561	145	1134	506
Arrive On Green	0.19	0.27	0.27	0.04	0.12	0.12	0.09	0.37	0.37	0.05	0.33	0.33
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	1619	3420	1506	2956	3420	1525
Grp Volume(v), veh/h	373	76	366	45	26	16	168	595	25	72	948	158
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1710	1506	1478	1710	1525
Q Serve(g_s), s	15.4	2.6	18.9	2.3	1.1	0.8	7.4	10.9	0.9	2.0	21.1	6.4
Cycle Q Clear(g_c), s	15.4	2.6	18.9	2.3	1.1	0.8	7.4	10.9	0.9	2.0	21.1	6.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	303	492	417	63	225	191	146	1274	561	145	1134	506
V/C Ratio(X)	1.23	0.15	0.88	0.71	0.12	0.08	1.15	0.47	0.04	0.50	0.84	0.31
Avail Cap(c_a), veh/h	303	1075	911	183	941	798	146	1443	636	180	1343	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.4	22.7	28.6	39.1	31.9	31.8	37.4	19.6	16.5	38.1	25.4	20.5
Incr Delay (d2), s/veh	129.1	0.1	6.1	5.4	0.2	0.2	121.6	0.3	0.0	1.0	4.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.4	1.0	7.2	1.0	0.5	0.3	7.6	3.8	0.3	0.7	8.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	162.5	22.8	34.6	44.5	32.2	32.0	159.0	19.9	16.5	39.1	29.6	20.8
LnGrp LOS	F	C	C	D	C	C	F	B	B	D	C	C
Approach Vol, veh/h		815			87			788			1178	
Approach Delay, s/veh		92.0			38.5			49.4			29.0	
Approach LOS		F			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	37.1	7.8	28.7	12.0	33.8	20.0	16.5
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	34.7	9.3	49.1	7.4	32.3	15.4	43.0
Max Q Clear Time (g_c+I1), s	4.0	12.9	4.3	20.9	9.4	23.1	17.4	3.1
Green Ext Time (p_c), s	0.0	3.5	0.0	1.6	0.0	4.2	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	52.8
HCM 6th LOS	D

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	333	270	527	328	630	868
Future Volume (vph)	333	270	527	328	630	868
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	37.0	46.7	36.3	37.0	83.7
Total Split (%)	30.3%	30.8%	38.9%	30.3%	30.8%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 106.3
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	333	270	527	328	630	868
Future Volume (veh/h)	333	270	527	328	630	868
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	340	226	538	314	643	886
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	375	839	619	847	568	1309
Arrive On Green	0.21	0.21	0.33	0.33	0.31	0.69
Sat Flow, veh/h	1810	1610	1900	1576	1810	1900
Grp Volume(v), veh/h	340	226	538	314	643	886
Grp Sat Flow(s),veh/h/ln	1810	1610	1900	1576	1810	1900
Q Serve(g_s), s	18.7	8.0	27.1	11.8	32.0	27.7
Cycle Q Clear(g_c), s	18.7	8.0	27.1	11.8	32.0	27.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	375	839	619	847	568	1309
V/C Ratio(X)	0.91	0.27	0.87	0.37	1.13	0.68
Avail Cap(c_a), veh/h	550	995	772	974	568	1467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	13.6	32.3	13.9	35.0	9.2
Incr Delay (d2), s/veh	11.0	0.1	9.2	0.3	79.5	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	2.6	13.1	6.1	25.3	8.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	50.4	13.7	41.5	14.2	114.5	10.0
LnGrp LOS	D	B	D	B	F	B
Approach Vol, veh/h	566		852			1529
Approach Delay, s/veh	35.7		31.5			53.9
Approach LOS	D		C			D

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	37.0	38.5			75.5	26.4
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	32.0	41.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	34.0	29.1			29.7	20.7
Green Ext Time (p_c), s	0.0	4.1			3.6	0.4

Intersection Summary	
HCM 6th Ctrl Delay	44.0
HCM 6th LOS	D

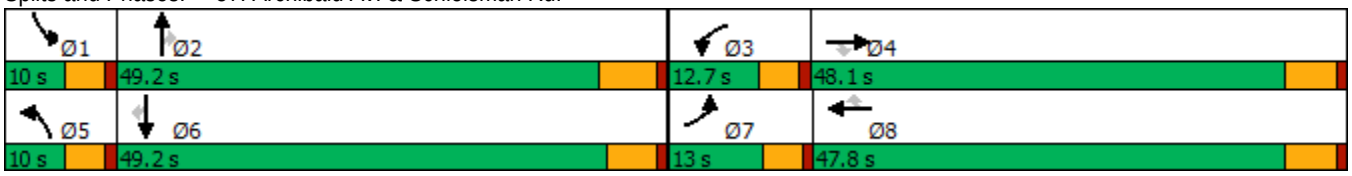
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	993	172	108	308	58	178	601	109	167	662	300
Future Volume (vph)	372	993	172	108	308	58	178	601	109	167	662	300
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	48.1	48.1	12.7	47.8	47.8	10.0	49.2	49.2	10.0	49.2	49.2
Total Split (%)	10.8%	40.1%	40.1%	10.6%	39.8%	39.8%	8.3%	41.0%	41.0%	8.3%	41.0%	41.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 99.9
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 57: Archibald Av. & Schleisman Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	372	993	172	108	308	58	178	601	109	167	662	300
Future Volume (veh/h)	372	993	172	108	308	58	178	601	109	167	662	300
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	380	1013	94	110	314	33	182	613	74	170	676	192
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	305	2451	761	173	2255	699	196	1052	327	196	1052	325
Arrive On Green	0.09	0.47	0.47	0.05	0.43	0.43	0.06	0.20	0.20	0.06	0.20	0.20
Sat Flow, veh/h	3510	5187	1610	3510	5187	1608	3510	5187	1610	3510	5187	1603
Grp Volume(v), veh/h	380	1013	94	110	314	33	182	613	74	170	676	192
Grp Sat Flow(s),veh/h/ln	1755	1729	1610	1755	1729	1608	1755	1729	1610	1755	1729	1603
Q Serve(g_s), s	8.4	12.4	3.2	3.0	3.5	1.1	5.0	10.3	3.7	4.6	11.5	10.5
Cycle Q Clear(g_c), s	8.4	12.4	3.2	3.0	3.5	1.1	5.0	10.3	3.7	4.6	11.5	10.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	305	2451	761	173	2255	699	196	1052	327	196	1052	325
V/C Ratio(X)	1.24	0.41	0.12	0.64	0.14	0.05	0.93	0.58	0.23	0.87	0.64	0.59
Avail Cap(c_a), veh/h	305	2451	761	294	2255	699	196	2309	717	196	2352	727
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	16.7	14.3	45.1	16.4	15.7	45.4	34.8	32.2	45.2	35.3	34.9
Incr Delay (d2), s/veh	134.6	0.5	0.3	1.5	0.1	0.1	43.5	0.5	0.3	29.9	0.7	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.2	4.6	1.1	1.3	1.3	0.4	3.3	4.1	1.4	2.7	4.6	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	178.7	17.2	14.6	46.5	16.5	15.9	88.9	35.3	32.5	75.1	36.0	36.6
LnGrp LOS	F	B	B	D	B	B	F	D	C	E	D	D
Approach Vol, veh/h		1487			457			869			1038	
Approach Delay, s/veh		58.3			23.7			46.3			42.5	
Approach LOS		E			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	25.8	9.3	51.5	10.0	25.8	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.4	43.0	8.1	42.3	5.4	* 44	8.4	42.0
Max Q Clear Time (g_c+I1), s	6.6	12.3	5.0	14.4	7.0	13.5	10.4	5.5
Green Ext Time (p_c), s	0.0	4.2	0.0	7.7	0.0	5.1	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	47.2
HCM 6th LOS	D

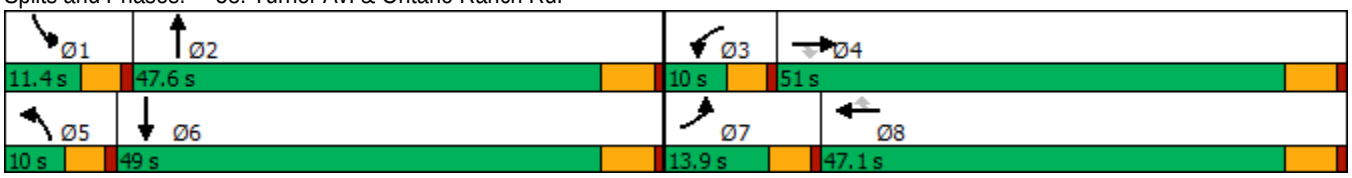
Notes

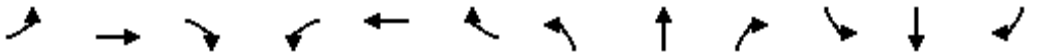
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	48	1204	38	31	642	13	25	7	27	7
Future Volume (vph)	48	1204	38	31	642	13	25	7	27	7
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	13.9	51.0	51.0	10.0	47.1	47.1	10.0	47.6	11.4	49.0
Total Split (%)	11.6%	42.5%	42.5%	8.3%	39.3%	39.3%	8.3%	39.7%	9.5%	40.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	7.1	57.6	57.6	5.5	56.1	56.1	5.5	14.8	6.1	15.2
Actuated g/C Ratio	0.09	0.70	0.70	0.07	0.68	0.68	0.07	0.18	0.07	0.18
v/c Ratio	0.38	0.56	0.04	0.32	0.30	0.01	0.25	0.16	0.25	0.11
Control Delay	50.0	17.0	0.1	52.9	14.7	0.0	51.3	13.0	49.4	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.0	17.0	0.1	52.9	14.7	0.0	51.3	13.0	49.4	14.7
LOS	D	B	A	D	B	A	D	B	D	B
Approach Delay		17.8			16.1			26.4		31.0
Approach LOS		B			B			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 82.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 17.9	Intersection LOS: B
Intersection Capacity Utilization 64.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	1204	38	31	642	13	25	7	38	27	7	24
Future Volume (veh/h)	48	1204	38	31	642	13	25	7	38	27	7	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	53	1323	30	34	705	11	27	8	23	30	8	12
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	70	1913	853	53	1878	838	46	49	140	49	79	119
Arrive On Green	0.04	0.56	0.56	0.03	0.55	0.55	0.03	0.12	0.12	0.03	0.12	0.12
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	407	1169	1619	650	975
Grp Volume(v), veh/h	53	1323	30	34	705	11	27	0	31	30	0	20
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	0	1576	1619	0	1625
Q Serve(g_s), s	2.6	22.5	0.7	1.7	9.5	0.3	1.3	0.0	1.4	1.5	0.0	0.9
Cycle Q Clear(g_c), s	2.6	22.5	0.7	1.7	9.5	0.3	1.3	0.0	1.4	1.5	0.0	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.74	1.00		0.60
Lane Grp Cap(c), veh/h	70	1913	853	53	1878	838	46	0	189	49	0	199
V/C Ratio(X)	0.76	0.69	0.04	0.64	0.38	0.01	0.59	0.00	0.16	0.61	0.00	0.10
Avail Cap(c_a), veh/h	186	1913	853	108	1878	838	108	0	815	136	0	868
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.3	12.8	8.0	38.6	10.3	8.3	38.8	0.0	31.9	38.7	0.0	31.5
Incr Delay (d2), s/veh	6.2	2.1	0.1	4.6	0.6	0.0	4.5	0.0	0.4	4.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	7.4	0.2	0.7	3.1	0.1	0.6	0.0	0.5	0.6	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.5	14.9	8.1	43.2	10.9	8.3	43.3	0.0	32.3	43.2	0.0	31.7
LnGrp LOS	D	B	A	D	B	A	D	A	C	D	A	C
Approach Vol, veh/h		1406			750			58			50	
Approach Delay, s/veh		15.9			12.3			37.4			38.6	
Approach LOS		B			B			D			D	

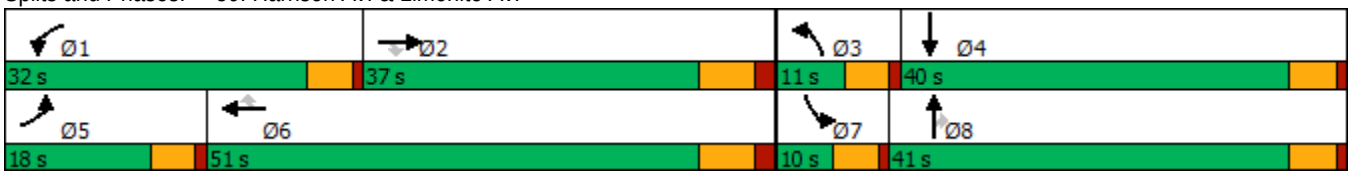
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	15.5	7.3	51.0	6.9	15.7	8.1	50.2
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	6.8	41.8	5.4	45.2	5.4	43.2	9.3	41.3
Max Q Clear Time (g_c+I1), s	3.5	3.4	3.7	24.5	3.3	2.9	4.6	11.5
Green Ext Time (p_c), s	0.0	0.1	0.0	9.4	0.0	0.1	0.0	4.8

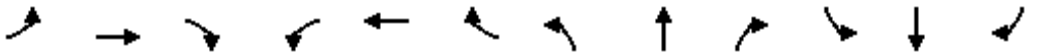
Intersection Summary	
HCM 6th Ctrl Delay	15.7
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	76	830	52	202	539	5	33	43	151	16	45
Future Volume (vph)	76	830	52	202	539	5	33	43	151	16	45
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	18.0	37.0	37.0	32.0	51.0	51.0	11.0	41.0	41.0	10.0	40.0
Total Split (%)	15.0%	30.8%	30.8%	26.7%	42.5%	42.5%	9.2%	34.2%	34.2%	8.3%	33.3%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 66.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 59: Harrison Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	830	52	202	539	5	33	43	151	16	45	31
Future Volume (veh/h)	76	830	52	202	539	5	33	43	151	16	45	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	78	847	48	206	550	3	34	44	69	16	46	23
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	117	1455	452	259	1862	578	67	250	209	36	137	68
Arrive On Green	0.06	0.28	0.28	0.14	0.36	0.36	0.04	0.13	0.13	0.02	0.11	0.11
Sat Flow, veh/h	1810	5187	1610	1810	5187	1610	1810	1900	1588	1810	1195	597
Grp Volume(v), veh/h	78	847	48	206	550	3	34	44	69	16	0	69
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1610	1810	1900	1588	1810	0	1792
Q Serve(g_s), s	2.2	7.4	1.2	5.8	4.0	0.1	1.0	1.1	2.1	0.5	0.0	1.9
Cycle Q Clear(g_c), s	2.2	7.4	1.2	5.8	4.0	0.1	1.0	1.1	2.1	0.5	0.0	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	117	1455	452	259	1862	578	67	250	209	36	0	205
V/C Ratio(X)	0.67	0.58	0.11	0.79	0.30	0.01	0.50	0.18	0.33	0.45	0.00	0.34
Avail Cap(c_a), veh/h	448	2964	920	931	4347	1349	207	1292	1080	172	0	1185
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.0	16.2	14.0	21.7	12.1	10.8	24.8	20.3	20.7	25.4	0.0	21.4
Incr Delay (d2), s/veh	2.4	0.4	0.1	2.1	0.1	0.0	2.2	0.3	0.9	3.2	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.3	0.4	2.2	1.2	0.0	0.4	0.4	0.7	0.2	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.4	16.6	14.1	23.8	12.2	10.8	27.0	20.6	21.6	28.6	0.0	22.4
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	A	C
Approach Vol, veh/h		973			759			147			85	
Approach Delay, s/veh		17.3			15.3			22.5			23.6	
Approach LOS		B			B			C			C	

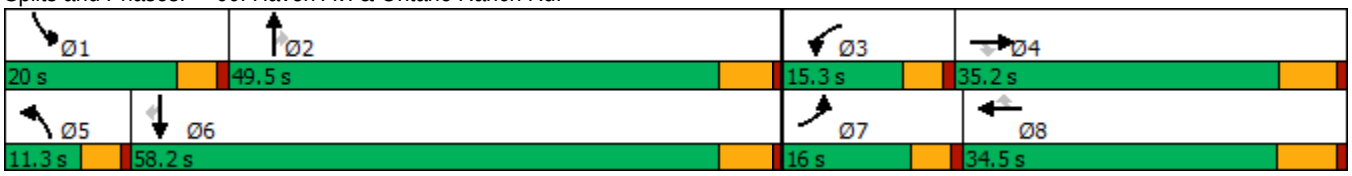
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	21.7	7.0	11.3	8.4	25.8	6.0	12.2
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	27.0	30.0	6.0	34.7	13.0	44.0	5.0	35.7
Max Q Clear Time (g_c+I1), s	7.8	9.4	3.0	3.9	4.2	6.0	2.5	4.1
Green Ext Time (p_c), s	0.1	5.4	0.0	0.3	0.0	3.6	0.0	0.4

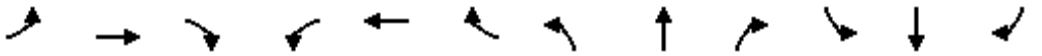
Intersection Summary	
HCM 6th Ctrl Delay	17.2
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	1004	65	60	565	126	28	86	23	162	253	109
Future Volume (vph)	121	1004	65	60	565	126	28	86	23	162	253	109
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	16.0	35.2	35.2	15.3	34.5	34.5	11.3	49.5	49.5	20.0	58.2	58.2
Total Split (%)	13.3%	29.3%	29.3%	12.8%	28.8%	28.8%	9.4%	41.3%	41.3%	16.7%	48.5%	48.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	10.7	35.1	35.1	7.7	29.1	29.1	6.0	15.4	15.4	14.2	26.1	26.1
Actuated g/C Ratio	0.12	0.40	0.40	0.09	0.33	0.33	0.07	0.18	0.18	0.16	0.30	0.30
v/c Ratio	0.64	0.53	0.10	0.44	0.52	0.21	0.26	0.28	0.06	0.65	0.49	0.21
Control Delay	56.7	26.1	0.3	52.9	29.1	4.9	51.0	34.2	0.3	50.7	28.2	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.7	26.1	0.3	52.9	29.1	4.9	51.0	34.2	0.3	50.7	28.2	5.4
LOS	E	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		27.8			27.0			31.9			30.4	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 87.4	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 28.3	Intersection LOS: C
Intersection Capacity Utilization 60.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	1004	65	60	565	126	28	86	23	162	253	109
Future Volume (veh/h)	121	1004	65	60	565	126	28	86	23	162	253	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	126	1046	37	62	589	57	29	90	10	169	264	41
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	155	2036	632	78	1253	559	49	235	200	204	408	345
Arrive On Green	0.10	0.41	0.41	0.05	0.37	0.37	0.03	0.13	0.13	0.13	0.23	0.23
Sat Flow, veh/h	1619	4914	1525	1619	3420	1525	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	126	1046	37	62	589	57	29	90	10	169	264	41
Grp Sat Flow(s),veh/h/ln	1619	1638	1525	1619	1710	1525	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	5.8	12.1	1.1	2.9	10.1	1.9	1.4	3.5	0.4	7.8	10.2	1.6
Cycle Q Clear(g_c), s	5.8	12.1	1.1	2.9	10.1	1.9	1.4	3.5	0.4	7.8	10.2	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	155	2036	632	78	1253	559	49	235	200	204	408	345
V/C Ratio(X)	0.81	0.51	0.06	0.80	0.47	0.10	0.60	0.38	0.05	0.83	0.65	0.12
Avail Cap(c_a), veh/h	241	2036	632	227	1253	559	142	1029	872	326	1234	1046
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	16.7	13.4	36.0	18.5	15.9	36.6	30.4	29.1	32.6	26.8	23.5
Incr Delay (d2), s/veh	5.6	0.9	0.2	6.9	1.3	0.4	4.3	1.0	0.1	4.6	1.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	4.0	0.3	1.2	3.6	0.6	0.6	1.5	0.2	3.1	4.2	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.5	17.6	13.6	42.9	19.8	16.3	40.9	31.4	29.2	37.2	28.5	23.7
LnGrp LOS	D	B	B	D	B	B	D	C	C	D	C	C
Approach Vol, veh/h		1209			708			129			474	
Approach Delay, s/veh		19.8			21.6			33.4			31.2	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	15.8	8.3	38.2	6.9	23.1	11.9	34.5
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	15.4	43.7	10.7	* 29	6.7	52.4	11.4	28.0
Max Q Clear Time (g_c+I1), s	9.8	5.5	4.9	14.1	3.4	12.2	7.8	12.1
Green Ext Time (p_c), s	0.1	0.5	0.0	5.8	0.0	1.6	0.0	3.2

Intersection Summary	
HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Notes

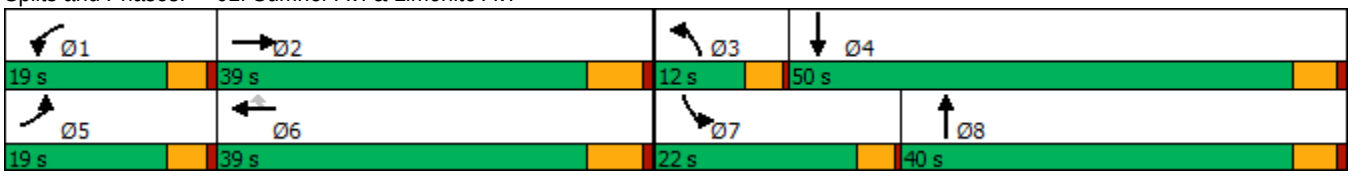
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

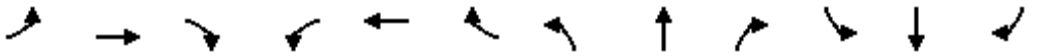
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	208	663	207	526	44	44	208	113	428
Future Volume (vph)	208	663	207	526	44	44	208	113	428
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	19.0	39.0	19.0	39.0	39.0	12.0	40.0	22.0	50.0
Total Split (%)	15.8%	32.5%	15.8%	32.5%	32.5%	10.0%	33.3%	18.3%	41.7%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 72.2
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 61: Sumner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	208	663	84	207	526	44	44	208	135	113	428	189
Future Volume (veh/h)	208	663	84	207	526	44	44	208	135	113	428	189
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	214	684	75	213	542	37	45	214	68	116	441	97
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	337	1210	132	336	1320	410	67	502	155	151	684	149
Arrive On Green	0.10	0.25	0.25	0.10	0.25	0.25	0.04	0.19	0.19	0.08	0.23	0.23
Sat Flow, veh/h	3510	4748	516	3510	5187	1610	1810	2703	833	1810	2946	643
Grp Volume(v), veh/h	214	497	262	213	542	37	45	141	141	116	269	269
Grp Sat Flow(s),veh/h/ln	1755	1729	1806	1755	1729	1610	1810	1805	1731	1810	1805	1784
Q Serve(g_s), s	3.0	6.4	6.5	3.0	4.5	0.9	1.3	3.5	3.7	3.2	6.9	7.0
Cycle Q Clear(g_c), s	3.0	6.4	6.5	3.0	4.5	0.9	1.3	3.5	3.7	3.2	6.9	7.0
Prop In Lane	1.00		0.29	1.00		1.00	1.00		0.48	1.00		0.36
Lane Grp Cap(c), veh/h	337	881	460	336	1320	410	67	336	322	151	419	414
V/C Ratio(X)	0.63	0.56	0.57	0.63	0.41	0.09	0.67	0.42	0.44	0.77	0.64	0.65
Avail Cap(c_a), veh/h	993	2226	1163	993	3339	1037	282	1232	1182	635	1585	1566
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.3	16.6	16.7	22.3	15.9	14.6	24.4	18.4	18.5	23.0	17.8	17.8
Incr Delay (d2), s/veh	0.7	0.6	1.1	0.7	0.2	0.1	4.3	0.6	0.7	3.1	1.2	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.0	2.2	1.1	1.4	0.3	0.5	1.3	1.3	1.3	2.5	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	17.2	17.8	23.1	16.1	14.7	28.7	19.0	19.2	26.1	19.0	19.1
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		973			792			327			654	
Approach Delay, s/veh		18.6			17.9			20.4			20.3	
Approach LOS		B			B			C			C	

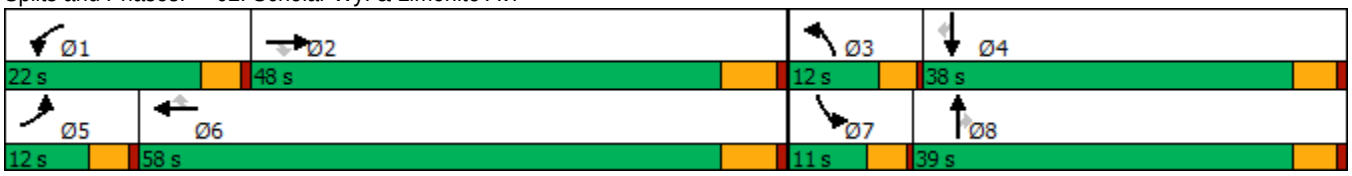
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	19.1	5.9	16.9	9.4	19.0	8.3	14.5
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	14.5	33.0	8.0	45.0	14.5	33.0	18.0	35.0
Max Q Clear Time (g_c+I1), s	5.0	8.5	3.3	9.0	5.0	6.5	5.2	5.7
Green Ext Time (p_c), s	0.2	4.5	0.0	2.4	0.2	3.5	0.1	1.2

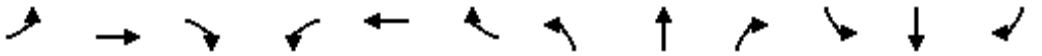
Intersection Summary	
HCM 6th Ctrl Delay	19.0
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	839	41	119	713	54	41	91	122	28	128	29
Future Volume (vph)	38	839	41	119	713	54	41	91	122	28	128	29
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	12.0	48.0	48.0	22.0	58.0	58.0	12.0	39.0	39.0	11.0	38.0	38.0
Total Split (%)	10.0%	40.0%	40.0%	18.3%	48.3%	48.3%	10.0%	32.5%	32.5%	9.2%	31.7%	31.7%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 68.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	839	41	119	713	54	41	91	122	28	128	29
Future Volume (veh/h)	38	839	41	119	713	54	41	91	122	28	128	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	40	893	30	127	759	33	44	97	50	30	136	24
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	62	1338	597	165	1544	689	66	236	200	49	415	180
Arrive On Green	0.03	0.37	0.37	0.09	0.43	0.43	0.04	0.12	0.12	0.03	0.11	0.11
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	1900	1610	1810	3610	1571
Grp Volume(v), veh/h	40	893	30	127	759	33	44	97	50	30	136	24
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1900	1610	1810	1805	1571
Q Serve(g_s), s	1.1	10.4	0.6	3.5	7.7	0.6	1.2	2.4	1.4	0.8	1.7	0.7
Cycle Q Clear(g_c), s	1.1	10.4	0.6	3.5	7.7	0.6	1.2	2.4	1.4	0.8	1.7	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	62	1338	597	165	1544	689	66	236	200	49	415	180
V/C Ratio(X)	0.65	0.67	0.05	0.77	0.49	0.05	0.67	0.41	0.25	0.61	0.33	0.13
Avail Cap(c_a), veh/h	269	3009	1342	628	3725	1662	287	1282	1086	251	2364	1029
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	13.3	10.2	22.4	10.5	8.4	24.0	20.4	19.9	24.2	20.5	20.0
Incr Delay (d2), s/veh	4.2	0.6	0.0	2.9	0.2	0.0	4.2	0.9	0.5	4.4	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.1	0.2	1.4	2.1	0.2	0.5	1.0	0.5	0.4	0.7	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.3	13.8	10.2	25.3	10.7	8.5	28.2	21.2	20.4	28.7	20.9	20.3
LnGrp LOS	C	B	B	C	B	A	C	C	C	C	C	C
Approach Vol, veh/h		963			919			191			190	
Approach Delay, s/veh		14.3			12.6			22.6			22.0	
Approach LOS		B			B			C			C	

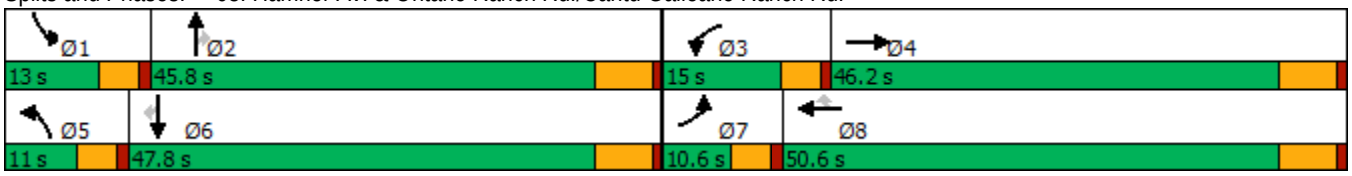
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	24.7	5.8	10.8	6.2	27.5	5.4	11.3
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	17.5	42.0	8.0	33.0	7.5	52.0	7.0	34.0
Max Q Clear Time (g_c+I1), s	5.5	12.4	3.2	3.7	3.1	9.7	2.8	4.4
Green Ext Time (p_c), s	0.1	6.3	0.0	0.7	0.0	5.3	0.0	0.5

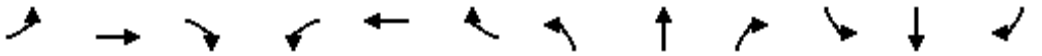
Intersection Summary	
HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	94	916	580	491	107	195	372	233	451	790	110
Future Volume (vph)	94	916	580	491	107	195	372	233	451	790	110
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	10.6	46.2	15.0	50.6	50.6	11.0	45.8	45.8	13.0	47.8	47.8
Total Split (%)	8.8%	38.5%	12.5%	42.2%	42.2%	9.2%	38.2%	38.2%	10.8%	39.8%	39.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.0	27.9	10.6	32.5	32.5	6.5	28.2	28.2	8.6	30.2	30.2
Actuated g/C Ratio	0.06	0.29	0.11	0.33	0.33	0.07	0.29	0.29	0.09	0.31	0.31
v/c Ratio	0.54	0.70	1.88	0.45	0.19	1.03	0.27	0.45	1.81	0.78	0.21
Control Delay	60.0	31.7	435.2	27.2	5.4	119.5	27.4	15.0	409.0	36.4	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.0	31.7	435.2	27.2	5.4	119.5	27.4	15.0	409.0	36.4	6.2
LOS	E	C	F	C	A	F	C	B	F	D	A
Approach Delay		33.8		226.3			46.2			158.3	
Approach LOS		C		F			D			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.88	
Intersection Signal Delay: 121.7	Intersection LOS: F
Intersection Capacity Utilization 86.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	916	263	580	491	107	195	372	233	451	790	110
Future Volume (veh/h)	94	916	263	580	491	107	195	372	233	451	790	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	98	954	217	604	511	77	203	388	164	470	823	60
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	149	1393	312	339	1154	515	209	1380	428	274	1036	462
Arrive On Green	0.05	0.27	0.27	0.11	0.34	0.34	0.07	0.28	0.28	0.09	0.30	0.30
Sat Flow, veh/h	2956	5098	1141	2956	3420	1525	2956	4914	1524	2956	3420	1524
Grp Volume(v), veh/h	98	868	303	604	511	77	203	388	164	470	823	60
Grp Sat Flow(s),veh/h/ln	1478	1548	1595	1478	1710	1525	1478	1638	1524	1478	1710	1524
Q Serve(g_s), s	2.9	15.1	15.5	10.4	10.5	3.2	6.2	5.6	7.9	8.4	20.0	2.6
Cycle Q Clear(g_c), s	2.9	15.1	15.5	10.4	10.5	3.2	6.2	5.6	7.9	8.4	20.0	2.6
Prop In Lane	1.00		0.72	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	149	1269	436	339	1154	515	209	1380	428	274	1036	462
V/C Ratio(X)	0.66	0.68	0.70	1.78	0.44	0.15	0.97	0.28	0.38	1.72	0.79	0.13
Avail Cap(c_a), veh/h	196	2050	704	339	1676	747	209	2148	666	274	1570	700
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.2	29.4	29.6	40.1	23.4	20.9	42.0	25.4	26.3	41.1	29.0	22.9
Incr Delay (d2), s/veh	1.9	0.7	2.0	362.8	0.3	0.1	53.9	0.1	0.6	336.8	1.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.2	5.6	20.6	3.9	1.1	3.7	2.0	2.7	15.7	7.7	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.1	30.1	31.6	402.9	23.6	21.1	95.9	25.5	26.8	377.9	30.7	23.0
LnGrp LOS	D	C	C	F	C	C	F	C	C	F	C	C
Approach Vol, veh/h		1269			1192			755			1353	
Approach Delay, s/veh		31.5			215.6			44.7			150.9	
Approach LOS		C			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	31.7	15.0	31.0	11.0	33.7	9.2	36.8
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	8.4	39.6	10.4	40.0	6.4	41.6	6.0	44.4
Max Q Clear Time (g_c+I1), s	10.4	9.9	12.4	17.5	8.2	22.0	4.9	12.5
Green Ext Time (p_c), s	0.0	2.9	0.0	7.3	0.0	5.1	0.0	3.4

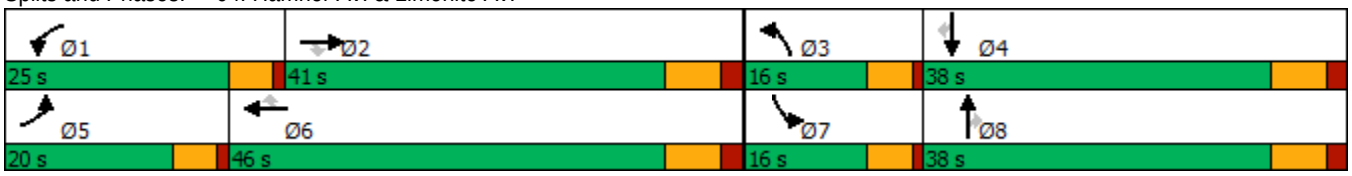
Intersection Summary	
HCM 6th Ctrl Delay	117.1
HCM 6th LOS	F

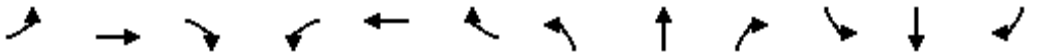
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	275	577	73	356	425	144	189	560	173	182	605	209
Future Volume (vph)	275	577	73	356	425	144	189	560	173	182	605	209
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	20.0	41.0	41.0	25.0	46.0	46.0	16.0	38.0	38.0	16.0	38.0	38.0
Total Split (%)	16.7%	34.2%	34.2%	20.8%	38.3%	38.3%	13.3%	31.7%	31.7%	13.3%	31.7%	31.7%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 91.5
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 64: Hamner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	275	577	73	356	425	144	189	560	173	182	605	209
Future Volume (veh/h)	275	577	73	356	425	144	189	560	173	182	605	209
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	284	595	54	367	438	103	195	577	94	188	624	152
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	375	1186	367	462	914	402	281	1301	396	273	1290	393
Arrive On Green	0.11	0.23	0.23	0.13	0.25	0.25	0.08	0.25	0.25	0.08	0.25	0.25
Sat Flow, veh/h	3510	5187	1606	3510	3610	1586	3510	5187	1577	3510	5187	1580
Grp Volume(v), veh/h	284	595	54	367	438	103	195	577	94	188	624	152
Grp Sat Flow(s),veh/h/ln	1755	1729	1606	1755	1805	1586	1755	1729	1577	1755	1729	1580
Q Serve(g_s), s	6.1	7.7	2.1	7.8	8.0	4.0	4.2	7.2	3.7	4.0	7.9	6.2
Cycle Q Clear(g_c), s	6.1	7.7	2.1	7.8	8.0	4.0	4.2	7.2	3.7	4.0	7.9	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	375	1186	367	462	914	402	281	1301	396	273	1290	393
V/C Ratio(X)	0.76	0.50	0.15	0.79	0.48	0.26	0.69	0.44	0.24	0.69	0.48	0.39
Avail Cap(c_a), veh/h	683	2286	708	910	1825	802	501	2084	634	501	2084	635
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	25.9	23.8	32.5	24.5	23.0	34.6	24.4	23.0	34.7	24.7	24.1
Incr Delay (d2), s/veh	1.2	0.7	0.4	1.2	0.8	0.7	1.2	0.5	0.7	1.2	0.6	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	3.0	0.8	3.2	3.2	1.4	1.7	2.8	1.3	1.7	3.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.7	26.6	24.1	33.7	25.3	23.7	35.7	24.9	23.7	35.8	25.4	25.4
LnGrp LOS	C	C	C	C	C	C	D	C	C	D	C	C
Approach Vol, veh/h		933			908			866			964	
Approach Delay, s/veh		28.9			28.5			27.2			27.4	
Approach LOS		C			C			C			C	

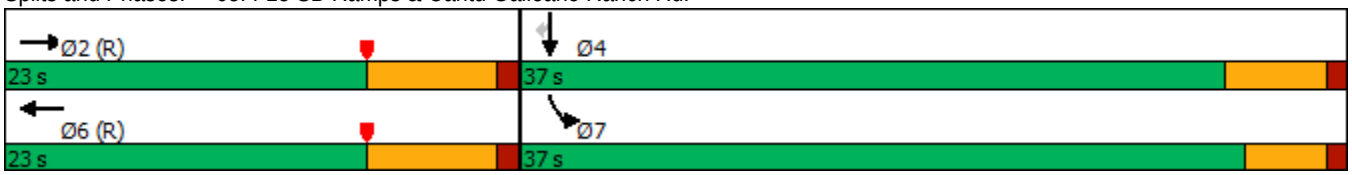
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.2	24.6	11.2	26.2	13.2	26.5	11.0	26.4
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	20.0	34.0	11.0	31.0	15.0	39.0	11.0	31.0
Max Q Clear Time (g_c+I1), s	9.8	9.7	6.2	9.9	8.1	10.0	6.0	9.2
Green Ext Time (p_c), s	0.3	7.4	0.1	8.0	0.2	6.1	0.1	7.1

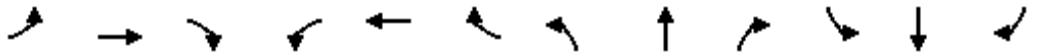
Intersection Summary	
HCM 6th Ctrl Delay	28.0
HCM 6th LOS	C

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1201	491	446	418	290	0	1007
Future Volume (vph)	1201	491	446	418	290	0	1007
Turn Type	NA	Free	NA	Free	Prot	NA	Perm
Protected Phases	2		6		7	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		7	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		9.6	10.5	10.5
Total Split (s)	23.0		23.0		37.0	37.0	37.0
Total Split (%)	38.3%		38.3%		61.7%	61.7%	61.7%
Yellow Time (s)	5.8		5.8		3.6	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8		6.8		4.6	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Min		None	Min	Min
Act Effct Green (s)	16.2	60.0	16.2	60.0	32.4	31.5	31.5
Actuated g/C Ratio	0.27	1.00	0.27	1.00	0.54	0.52	0.52
v/c Ratio	0.88	0.31	0.47	0.27	0.29	0.65	0.62
Control Delay	30.6	0.5	16.2	0.9	8.6	12.4	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.6	0.5	16.2	0.9	8.6	12.4	11.4
LOS	C	A	B	A	A	B	B
Approach Delay	21.9		8.8			11.3	
Approach LOS	C		A			B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 53 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 15.4	Intersection LOS: B
Intersection Capacity Utilization 64.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	✣	↱
Traffic Volume (veh/h)	0	1201	491	0	446	418	0	0	0	290	0	1007
Future Volume (veh/h)	0	1201	491	0	446	418	0	0	0	290	0	1007
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1238	0	0	460	0				199	0	813
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2518		0	1752					587	0	1045
Arrive On Green	0.00	0.49	0.00	0.00	0.49	0.00				0.32	0.00	0.32
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1238	0	0	460	0				199	0	813
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	9.7	0.0	0.0	4.5	0.0				5.0	0.0	13.7
Cycle Q Clear(g_c), s	0.0	9.7	0.0	0.0	4.5	0.0				5.0	0.0	13.7
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2518		0	1752					587	0	1045
V/C Ratio(X)	0.00	0.49		0.00	0.26					0.34	0.00	0.78
Avail Cap(c_a), veh/h	0	2518		0	1752					977	0	1739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.24	0.00	0.00	0.96	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.4	0.0	0.0	9.1	0.0				15.4	0.0	18.3
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.4	0.0				0.3	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.6	0.0	0.0	1.4	0.0				1.8	0.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	10.6	0.0	0.0	9.5	0.0				15.7	0.0	19.6
LnGrp LOS	A	B		A	A					B	A	B
Approach Vol, veh/h		1238	A		460	A					1012	
Approach Delay, s/veh		10.6			9.5						18.8	
Approach LOS		B			A						B	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		35.9		24.1		35.9						
Change Period (Y+Rc), s		6.8		4.6		6.8						
Max Green Setting (Gmax), s		16.2		32.4		16.2						
Max Q Clear Time (g_c+I1), s		11.7		15.7		6.5						
Green Ext Time (p_c), s		2.9		3.8		1.8						

Intersection Summary												
HCM 6th Ctrl Delay			13.5									
HCM 6th LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.

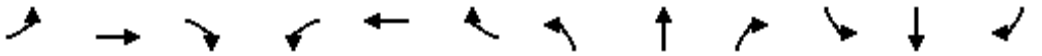
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1117	575	513	966	129	1	400
Future Volume (vph)	1117	575	513	966	129	1	400
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	10.0	36.5	23.5	23.5	23.5
Total Split (s)	55.1	55.1	22.0	78.0	32.0	32.0	32.0
Total Split (%)	50.1%	50.1%	20.0%	70.9%	29.1%	29.1%	29.1%
Yellow Time (s)	4.5	4.5	4.0	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	0.5	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.5	5.5	5.5	5.5	5.5
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	Min	Min	Min

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1117	575	513	966	0	0	0	0	129	1	400
Future Volume (veh/h)	0	1117	575	513	966	0	0	0	0	129	1	400
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1140	441	523	986	0				193	0	109
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2207	985	558	2929	0				320	0	143
Arrive On Green	0.00	0.61	0.61	0.11	0.54	0.00				0.09	0.00	0.09
Sat Flow, veh/h	0	3705	1610	3510	3705	0				3619	0	1610
Grp Volume(v), veh/h	0	1140	441	523	986	0				193	0	109
Grp Sat Flow(s),veh/h/ln	0	1805	1610	1755	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	19.7	16.1	16.3	16.8	0.0				5.6	0.0	7.3
Cycle Q Clear(g_c), s	0.0	19.7	16.1	16.3	16.8	0.0				5.6	0.0	7.3
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2207	985	558	2929	0				320	0	143
V/C Ratio(X)	0.00	0.52	0.45	0.94	0.34	0.00				0.60	0.00	0.76
Avail Cap(c_a), veh/h	0	2207	985	558	2929	0				872	0	388
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.87	0.87	0.61	0.61	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.1	11.4	48.6	8.6	0.0				48.3	0.0	49.0
Incr Delay (d2), s/veh	0.0	0.8	1.3	16.3	0.2	0.0				0.7	0.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.2	5.4	8.5	7.1	0.0				2.5	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.9	12.7	64.9	8.7	0.0				48.9	0.0	52.2
LnGrp LOS	A	B	B	E	A	A				D	A	D
Approach Vol, veh/h		1581			1509						302	
Approach Delay, s/veh		12.8			28.2						50.1	
Approach LOS		B			C						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	22.0	72.8		15.2		94.8
Change Period (Y+Rc), s	4.5	5.5		5.5		5.5
Max Green Setting (Gmax), s	17.5	49.6		26.5		72.5
Max Q Clear Time (g_c+I1), s	18.3	21.7		9.3		18.8
Green Ext Time (p_c), s	0.0	6.4		0.5		4.6

Intersection Summary	
HCM 6th Ctrl Delay	23.0
HCM 6th LOS	C

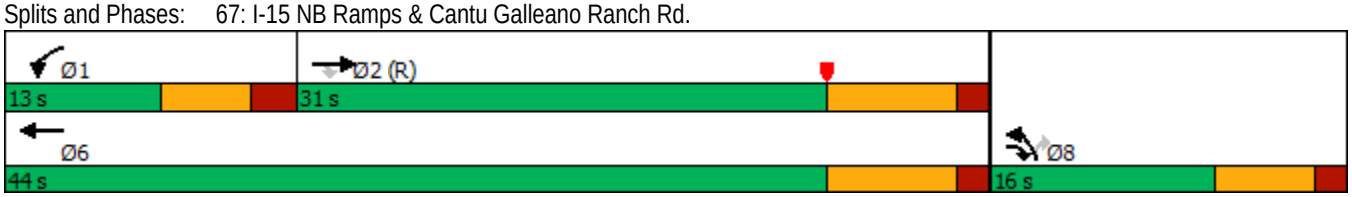
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	642	880	292	676	192	229
Future Volume (vph)	642	880	292	676	192	229
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	31.0	16.0	13.0	44.0	16.0	16.0
Total Split (%)	51.7%	26.7%	21.7%	73.3%	26.7%	26.7%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.0	6.0	7.3	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max
Act Effct Green (s)	23.7	41.0	7.0	36.7	10.0	10.0
Actuated g/C Ratio	0.40	0.68	0.12	0.61	0.17	0.17
v/c Ratio	0.33	0.83	0.75	0.22	0.47	0.39
Control Delay	10.0	14.6	39.5	5.5	17.5	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	14.6	39.5	5.5	17.5	8.4
LOS	B	B	D	A	B	A
Approach Delay	12.7			15.7	14.7	
Approach LOS	B			B	B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 14.0	Intersection LOS: B
Intersection Capacity Utilization 72.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	642	880	292	676	192	229
Future Volume (veh/h)	642	880	292	676	192	229
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	676	710	307	712	225	113
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2049	904	410	3173	603	268
Arrive On Green	0.66	0.66	0.12	0.61	0.17	0.17
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	676	710	307	712	225	113
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	3.4	23.7	5.1	3.7	3.3	3.8
Cycle Q Clear(g_c), s	3.4	23.7	5.1	3.7	3.3	3.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2049	904	410	3173	603	268
V/C Ratio(X)	0.33	0.79	0.75	0.22	0.37	0.42
Avail Cap(c_a), veh/h	2049	904	410	3173	603	268
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.54	0.54	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.8	6.2	25.7	5.2	22.2	22.4
Incr Delay (d2), s/veh	0.2	3.8	11.9	0.0	1.8	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.3	2.5	0.7	1.4	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.0	9.9	37.6	5.3	24.0	27.2
LnGrp LOS	A	A	D	A	C	C
Approach Vol, veh/h	1386			1019	338	
Approach Delay, s/veh	8.5			15.0	25.1	
Approach LOS	A			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.0	31.0				44.0	16.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	7.0	23.7				36.7	10.0
Max Q Clear Time (g_c+I1), s	7.1	25.7				5.7	5.8
Green Ext Time (p_c), s	0.0	0.0				4.7	0.5

Intersection Summary			
HCM 6th Ctrl Delay		13.0	
HCM 6th LOS		B	

Notes

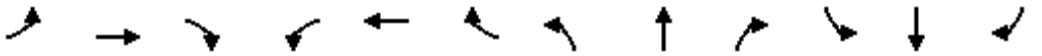
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	450	796	1097	186	381	2	757
Future Volume (vph)	450	796	1097	186	381	2	757
Turn Type	Prot	NA	NA	Perm	Split	NA	Perm
Protected Phases	5	2	6		8	8	
Permitted Phases				6			8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	26.0	72.0	46.0	46.0	38.0	38.0	38.0
Total Split (%)	23.6%	65.5%	41.8%	41.8%	34.5%	34.5%	34.5%
Yellow Time (s)	4.0	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	450	796	0	0	1097	186	381	2	757	0	0	0
Future Volume (veh/h)	450	796	0	0	1097	186	381	2	757	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	455	804	0	0	1108	97	546	0	301			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	523	2448	0	0	1763	785	803	0	352			
Arrive On Green	0.30	1.00	0.00	0.00	0.49	0.49	0.22	0.00	0.22			
Sat Flow, veh/h	3510	3705	0	0	3705	1608	3619	0	1588			
Grp Volume(v), veh/h	455	804	0	0	1108	97	546	0	301			
Grp Sat Flow(s),veh/h/ln	1755	1805	0	0	1805	1608	1810	0	1588			
Q Serve(g_s), s	13.5	0.0	0.0	0.0	24.9	3.6	15.2	0.0	20.0			
Cycle Q Clear(g_c), s	13.5	0.0	0.0	0.0	24.9	3.6	15.2	0.0	20.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	523	2448	0	0	1763	785	803	0	352			
V/C Ratio(X)	0.87	0.33	0.00	0.00	0.63	0.12	0.68	0.00	0.85			
Avail Cap(c_a), veh/h	686	2448	0	0	1763	785	1069	0	469			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.79	0.79	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	37.6	0.0	0.0	0.0	20.8	15.3	39.2	0.0	41.1			
Incr Delay (d2), s/veh	7.6	0.3	0.0	0.0	1.7	0.3	1.1	0.0	11.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.3	0.1	0.0	0.0	10.1	1.3	6.6	0.0	8.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	0.3	0.0	0.0	22.5	15.6	40.3	0.0	52.3			
LnGrp LOS	D	A	A	A	C	B	D	A	D			
Approach Vol, veh/h		1259			1205			847				
Approach Delay, s/veh		16.5			21.9			44.6				
Approach LOS		B			C			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		80.1			20.9	59.2		29.9				
Change Period (Y+Rc), s		5.5			4.5	5.5		5.5				
Max Green Setting (Gmax), s		66.5			21.5	40.5		32.5				
Max Q Clear Time (g_c+I1), s		2.0			15.5	26.9		22.0				
Green Ext Time (p_c), s		3.5			0.9	4.4		2.4				

Intersection Summary	
HCM 6th Ctrl Delay	25.7
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

APPENDIX 5.3:

E+P (PHASE C) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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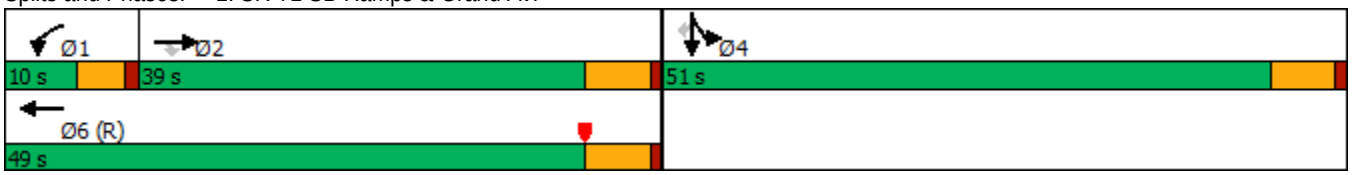
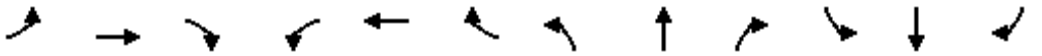
Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	743	200	63	1327	879	5	307
Future Volume (vph)	743	200	63	1327	879	5	307
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	39.0	39.0	10.0	49.0	51.0	51.0	51.0
Total Split (%)	39.0%	39.0%	10.0%	49.0%	51.0%	51.0%	51.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	743	200	63	1327	0	0	0	0	879	5	307
Future Volume (veh/h)	0	743	200	63	1327	0	0	0	0	879	5	307
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	874	146	74	1561	0				1038	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85				0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1869	580	174	2334	0				1235	0	
Arrive On Green	0.00	0.36	0.36	0.05	0.45	0.00				0.34	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	874	146	74	1561	0				1038	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	13.0	6.4	2.0	23.7	0.0				26.5	0.0	0.0
Cycle Q Clear(g_c), s	0.0	13.0	6.4	2.0	23.7	0.0				26.5	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1869	580	174	2334	0				1235	0	
V/C Ratio(X)	0.00	0.47	0.25	0.43	0.67	0.00				0.84	0.00	
Avail Cap(c_a), veh/h	0	1869	580	211	2334	0				1701	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.48	0.48	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	24.6	22.5	46.1	21.6	0.0				30.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	1.0	0.3	0.7	0.0				2.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.1	2.4	0.9	8.9	0.0				11.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	25.4	23.5	46.4	22.4	0.0				33.3	0.0	0.0
LnGrp LOS	A	C	C	D	C	A				C	A	
Approach Vol, veh/h		1020			1635						1038	A
Approach Delay, s/veh		25.2			23.5						33.3	
Approach LOS		C			C						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.0	40.0		38.1		49.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	5.4	33.2		45.2		43.2
Max Q Clear Time (g_c+I1), s	4.0	15.0		28.5		25.7
Green Ext Time (p_c), s	0.0	5.8		3.8		9.8

Intersection Summary		
HCM 6th Ctrl Delay		26.7
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

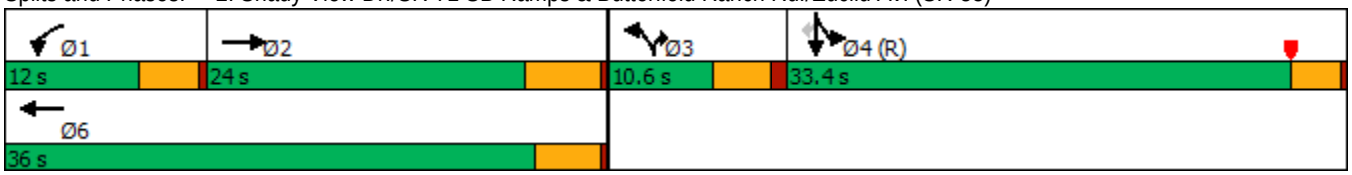
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

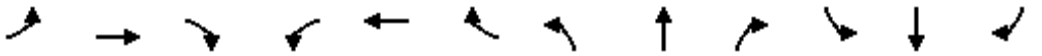
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	694	195	278	19	288	628	26	40
Future Volume (vph)	694	195	278	19	288	628	26	40
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	24.0	12.0	36.0	10.6	10.6	33.4	33.4	33.4
Total Split (%)	30.0%	15.0%	45.0%	13.3%	13.3%	41.8%	41.8%	41.8%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	694	31	195	278	0	19	0	288	628	26	40
Future Volume (veh/h)	0	694	31	195	278	0	19	0	288	628	26	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	708	23	199	284	0	19	0	225	660	0	25
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	798	26	181	1349		0	0	0	1882	0	837
Arrive On Green	0.00	0.22	0.22	0.03	0.12	0.00	0.00	0.00	0.00	0.52	0.00	0.52
Sat Flow, veh/h	0	3663	116	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	358	373	199	284	0		0.0		660	0	25
Grp Sat Flow(s),veh/h/ln	0	1805	1879	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	15.4	15.4	8.0	5.7	0.0				8.6	0.0	0.6
Cycle Q Clear(g_c), s	0.0	15.4	15.4	8.0	5.7	0.0				8.6	0.0	0.6
Prop In Lane	0.00		0.06	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	404	420	181	1349					1882	0	837
V/C Ratio(X)	0.00	0.89	0.89	1.10	0.21					0.35	0.00	0.03
Avail Cap(c_a), veh/h	0	429	446	181	1421					1882	0	837
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.94	0.94	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	30.1	30.1	38.7	24.4	0.0				11.3	0.0	9.4
Incr Delay (d2), s/veh	0.0	18.0	17.5	94.1	0.1	0.0				0.5	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.1	8.4	8.3	2.3	0.0				3.0	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	48.0	47.6	132.8	24.5	0.0				11.8	0.0	9.4
LnGrp LOS	A	D	D	F	C					B	A	A
Approach Vol, veh/h		731			483	A					685	
Approach Delay, s/veh		47.8			69.1						11.7	
Approach LOS		D			E						B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	12.0	22.9		45.1		34.9						
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5						
Max Green Setting (Gmax), s	8.0	19.0		29.9		* 32						
Max Q Clear Time (g_c+I1), s	10.0	17.4		10.6		7.7						
Green Ext Time (p_c), s	0.0	0.5		2.4		1.3						

Intersection Summary												
HCM 6th Ctrl Delay			40.2									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

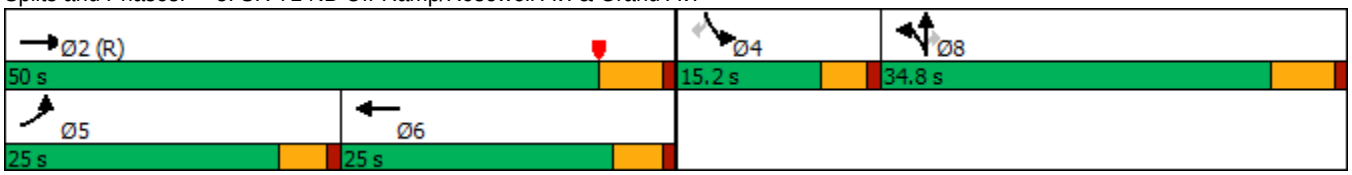
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

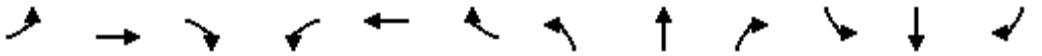
Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	319	1131	173	1053	468	70	65	41	671
Future Volume (vph)	319	1131	173	1053	468	70	65	41	671
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.6	34.8		14.7	34.8	34.8	34.8	9.5	9.5
Total Split (s)	25.0	50.0		25.0	34.8	34.8	34.8	15.2	15.2
Total Split (%)	25.0%	50.0%		25.0%	34.8%	34.8%	34.8%	15.2%	15.2%
Yellow Time (s)	3.6	4.8		3.7	4.8	4.8	4.8	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8		-0.7	-1.8	-1.8	-1.8	-0.5	-0.5
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	Max	Max	Max	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	319	1131	173	0	1053	48	468	70	65	41	0	671
Future Volume (veh/h)	319	1131	173	0	1053	48	468	70	65	41	0	671
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	347	1229	0	0	1145	52	563	0	31	45	0	453
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	380	3174		0	2266	103	1115	0	496	0	0	0
Arrive On Green	0.21	0.61	0.00	0.00	0.35	0.34	0.31	0.00	0.31	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6723	292	3619	0	1610		0	
Grp Volume(v), veh/h	347	1229	0	0	868	329	563	0	31		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1847	1810	0	1610			
Q Serve(g_s), s	18.7	12.0	0.0	0.0	14.0	14.1	12.7	0.0	1.4			
Cycle Q Clear(g_c), s	18.7	12.0	0.0	0.0	14.0	14.1	12.7	0.0	1.4			
Prop In Lane	1.00		1.00	0.00		0.16	1.00		1.00			
Lane Grp Cap(c), veh/h	380	3174		0	1721	648	1115	0	496			
V/C Ratio(X)	0.91	0.39		0.00	0.50	0.51	0.51	0.00	0.06			
Avail Cap(c_a), veh/h	380	3174		0	1721	648	1115	0	496			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.84	0.84	0.00	0.00	0.92	0.92	1.00	0.00	1.00			
Uniform Delay (d), s/veh	38.6	9.9	0.0	0.0	25.6	25.7	28.4	0.0	24.4			
Incr Delay (d2), s/veh	22.4	0.3	0.0	0.0	0.2	0.6	1.6	0.0	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	10.2	4.0	0.0	0.0	5.3	6.1	5.5	0.0	0.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.0	10.2	0.0	0.0	25.8	26.3	30.0	0.0	24.7			
LnGrp LOS	E	B		A	C	C	C	A	C			
Approach Vol, veh/h		1576	A		1197			594				
Approach Delay, s/veh		21.4			25.9			29.7				
Approach LOS		C			C			C				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		65.2			25.0	40.2		34.8				
Change Period (Y+Rc), s		5.8			4.6	* 5.8		5.8				
Max Green Setting (Gmax), s		44.2			20.4	* 20		29.0				
Max Q Clear Time (g_c+I1), s		14.0			20.7	16.1		14.7				
Green Ext Time (p_c), s		9.5			0.0	2.7		1.8				

Intersection Summary	
HCM 6th Ctrl Delay	24.5
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

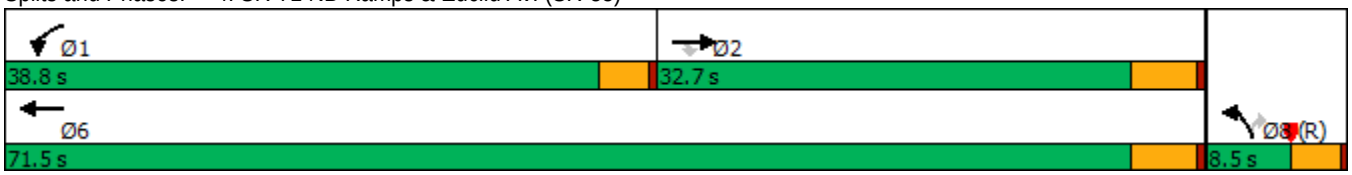
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	666	289	740	961	43	781
Future Volume (vph)	666	289	740	961	43	781
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	32.7	32.7	38.8	71.5	8.5	8.5
Total Split (%)	40.9%	40.9%	48.5%	89.4%	10.6%	10.6%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	666	289	740	961	43	781
Future Volume (veh/h)	666	289	740	961	43	781
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	709	0	787	1022	46	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	909		798	2660	572	
Arrive On Green	0.08	0.00	0.44	0.74	0.16	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	709	0	787	1022	46	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	15.4	0.0	34.4	8.3	0.9	0.0
Cycle Q Clear(g_c), s	15.4	0.0	34.4	8.3	0.9	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	909		798	2660	572	
V/C Ratio(X)	0.78		0.99	0.38	0.08	
Avail Cap(c_a), veh/h	1273		798	3023	572	
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.45	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.5	0.0	22.1	3.9	28.4	0.0
Incr Delay (d2), s/veh	0.8	0.0	28.2	0.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	0.0	18.0	1.4	0.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.3	0.0	50.3	4.0	28.7	0.0
LnGrp LOS	D		D	A	C	
Approach Vol, veh/h	709	A		1809	46	A
Approach Delay, s/veh	35.3			24.1	28.7	
Approach LOS	D			C	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	38.8	24.7				63.5	16.5
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	35.3	28.2				67.0	5.0
Max Q Clear Time (g_c+I1), s	36.4	17.4				10.3	2.9
Green Ext Time (p_c), s	0.0	2.8				7.7	0.0

Intersection Summary	
HCM 6th Ctrl Delay	27.3
HCM 6th LOS	C

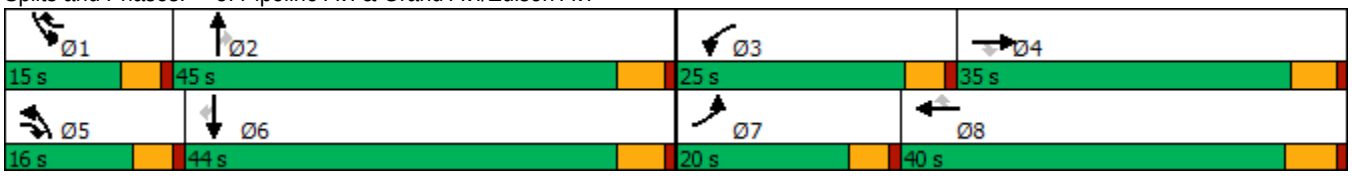
Notes

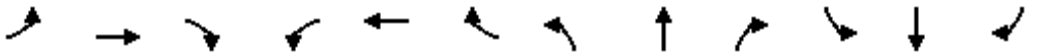
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	876	142	150	819	42	142	195	98	57	317	67
Future Volume (vph)	106	876	142	150	819	42	142	195	98	57	317	67
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	20.0	35.0	16.0	25.0	40.0	15.0	16.0	45.0	45.0	15.0	44.0	44.0
Total Split (%)	16.7%	29.2%	13.3%	20.8%	33.3%	12.5%	13.3%	37.5%	37.5%	12.5%	36.7%	36.7%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 88.2
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	876	142	150	819	42	142	195	98	57	317	67
Future Volume (veh/h)	106	876	142	150	819	42	142	195	98	57	317	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	109	903	103	155	844	28	146	201	32	59	327	35
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	208	2177	778	255	2295	770	235	701	311	88	614	269
Arrive On Green	0.07	0.44	0.44	0.08	0.47	0.45	0.08	0.20	0.20	0.05	0.18	0.18
Sat Flow, veh/h	3141	4914	1505	3141	4914	1522	2956	3420	1519	1619	3420	1498
Grp Volume(v), veh/h	109	903	103	155	844	28	146	201	32	59	327	35
Grp Sat Flow(s),veh/h/ln	1570	1638	1505	1570	1638	1522	1478	1710	1519	1619	1710	1498
Q Serve(g_s), s	2.6	9.7	2.7	3.7	8.5	0.7	3.7	3.8	1.3	2.8	6.7	1.5
Cycle Q Clear(g_c), s	2.6	9.7	2.7	3.7	8.5	0.7	3.7	3.8	1.3	2.8	6.7	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	208	2177	778	255	2295	770	235	701	311	88	614	269
V/C Ratio(X)	0.52	0.41	0.13	0.61	0.37	0.04	0.62	0.29	0.10	0.67	0.53	0.13
Avail Cap(c_a), veh/h	652	2177	778	856	2295	770	460	1819	808	231	1774	777
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.8	14.7	9.7	34.2	13.2	9.6	34.4	25.9	24.9	35.8	28.7	26.6
Incr Delay (d2), s/veh	0.8	0.6	0.4	0.9	0.5	0.1	1.0	0.2	0.1	3.3	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	3.4	0.8	1.3	2.8	0.2	1.3	1.5	0.5	1.1	2.6	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.6	15.2	10.0	35.1	13.7	9.7	35.3	26.1	25.0	39.1	29.4	26.8
LnGrp LOS	D	B	B	D	B	A	D	C	C	D	C	C
Approach Vol, veh/h		1115			1027			379			421	
Approach Delay, s/veh		16.7			16.8			29.6			30.5	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	19.8	10.3	38.8	10.1	17.8	9.1	40.0
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	10.4	39.6	20.4	* 30	11.4	38.6	15.4	34.2
Max Q Clear Time (g_c+I1), s	4.8	5.8	5.7	11.7	5.7	8.7	4.6	10.5
Green Ext Time (p_c), s	0.0	1.3	0.2	6.3	0.1	2.2	0.1	5.7

Intersection Summary	
HCM 6th Ctrl Delay	20.4
HCM 6th LOS	C

Notes

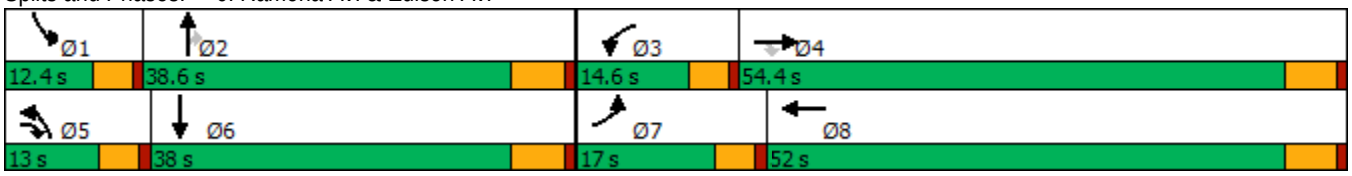
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

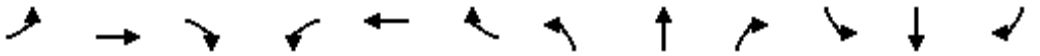
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	91	830	55	48	942	41	285	54	40	419
Future Volume (vph)	91	830	55	48	942	41	285	54	40	419
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	17.0	54.4	13.0	14.6	52.0	13.0	38.6	38.6	12.4	38.0
Total Split (%)	14.2%	45.3%	10.8%	12.2%	43.3%	10.8%	32.2%	32.2%	10.3%	31.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 104
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	830	55	48	942	61	41	285	54	40	419	86
Future Volume (veh/h)	91	830	55	48	942	61	41	285	54	40	419	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1700	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	101	922	57	53	1047	64	46	317	29	44	466	84
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	134	1803	1385	75	1606	98	69	756	336	68	636	114
Arrive On Green	0.08	0.53	0.51	0.05	0.49	0.47	0.04	0.22	0.22	0.04	0.22	0.20
Sat Flow, veh/h	1619	3420	2481	1619	3271	200	1619	3420	1521	1619	2891	518
Grp Volume(v), veh/h	101	922	57	53	547	564	46	317	29	44	274	276
Grp Sat Flow(s),veh/h/ln	1619	1710	1240	1619	1710	1761	1619	1710	1521	1619	1710	1699
Q Serve(g_s), s	6.0	17.1	1.0	3.2	23.4	23.5	2.7	7.8	1.5	2.6	14.6	14.8
Cycle Q Clear(g_c), s	6.0	17.1	1.0	3.2	23.4	23.5	2.7	7.8	1.5	2.6	14.6	14.8
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	134	1803	1385	75	839	864	69	756	336	68	376	374
V/C Ratio(X)	0.75	0.51	0.04	0.70	0.65	0.65	0.67	0.42	0.09	0.65	0.73	0.74
Avail Cap(c_a), veh/h	215	1803	1385	176	839	864	149	1210	538	139	595	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	15.0	9.8	46.0	18.6	18.7	46.1	32.7	30.2	46.1	35.4	35.8
Incr Delay (d2), s/veh	3.2	1.0	0.1	4.4	3.9	3.8	4.1	0.4	0.1	3.9	2.7	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	6.1	0.3	1.3	9.2	9.5	1.1	3.1	0.5	1.1	6.0	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.1	16.0	9.9	50.4	22.6	22.5	50.2	33.1	30.4	50.0	38.1	38.6
LnGrp LOS	D	B	A	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		1080			1164			392			594	
Approach Delay, s/veh		18.6			23.8			34.9			39.2	
Approach LOS		B			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	25.6	8.5	55.5	8.2	25.5	12.1	52.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	7.8	32.8	10.0	48.6	8.4	32.2	12.4	46.2
Max Q Clear Time (g_c+I1), s	4.6	9.8	5.2	19.1	4.7	16.8	8.0	25.5
Green Ext Time (p_c), s	0.0	1.9	0.0	6.9	0.0	2.6	0.0	6.8

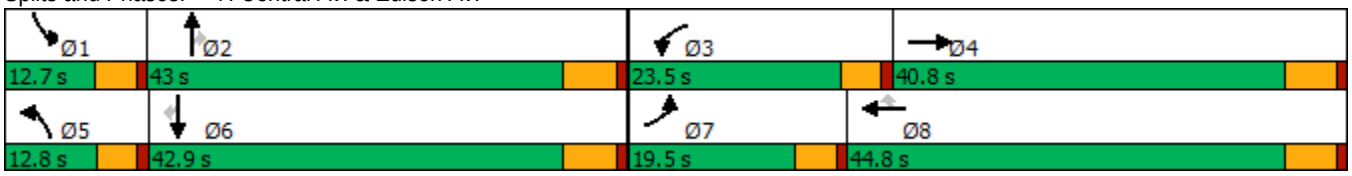
Intersection Summary	
HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

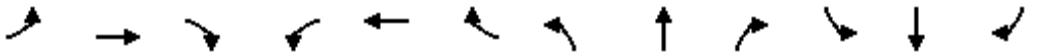
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	141	519	300	963	107	69	732	292	77	866	237
Future Volume (vph)	141	519	300	963	107	69	732	292	77	866	237
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	19.5	40.8	23.5	44.8	44.8	12.8	43.0	43.0	12.7	42.9	42.9
Total Split (%)	16.3%	34.0%	19.6%	37.3%	37.3%	10.7%	35.8%	35.8%	10.6%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 112.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	519	50	300	963	107	69	732	292	77	866	237
Future Volume (veh/h)	141	519	50	300	963	107	69	732	292	77	866	237
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	147	541	46	312	1003	83	72	762	122	80	902	189
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	181	1140	97	387	1261	555	98	1056	464	107	1076	473
Arrive On Green	0.11	0.36	0.34	0.12	0.37	0.37	0.06	0.31	0.31	0.07	0.31	0.31
Sat Flow, veh/h	1619	3191	271	3141	3420	1505	1619	3420	1503	1619	3420	1504
Grp Volume(v), veh/h	147	289	298	312	1003	83	72	762	122	80	902	189
Grp Sat Flow(s),veh/h/ln	1619	1710	1751	1570	1710	1505	1619	1710	1503	1619	1710	1504
Q Serve(g_s), s	9.8	14.5	14.6	10.7	29.0	4.1	4.8	21.9	6.8	5.4	27.2	10.9
Cycle Q Clear(g_c), s	9.8	14.5	14.6	10.7	29.0	4.1	4.8	21.9	6.8	5.4	27.2	10.9
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	181	611	626	387	1261	555	98	1056	464	107	1076	473
V/C Ratio(X)	0.81	0.47	0.48	0.81	0.80	0.15	0.73	0.72	0.26	0.74	0.84	0.40
Avail Cap(c_a), veh/h	227	611	626	554	1261	555	129	1206	530	127	1202	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.0	27.5	27.7	47.2	31.2	23.3	51.1	34.0	28.8	50.7	35.3	29.7
Incr Delay (d2), s/veh	13.3	2.6	2.6	3.7	5.2	0.6	8.9	1.8	0.3	13.8	4.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	6.1	6.3	4.2	12.1	1.5	2.1	8.9	2.4	2.5	11.5	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.3	30.1	30.2	50.9	36.4	23.9	60.0	35.9	29.1	64.5	40.2	30.3
LnGrp LOS	E	C	C	D	D	C	E	D	C	E	D	C
Approach Vol, veh/h		734			1398			956			1171	
Approach Delay, s/veh		36.4			38.9			36.8			40.3	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	38.2	17.6	43.5	10.7	38.8	16.3	44.8
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	8.1	37.2	18.9	35.0	8.2	37.1	14.9	39.0
Max Q Clear Time (g_c+I1), s	7.4	23.9	12.7	16.6	6.8	29.2	11.8	31.0
Green Ext Time (p_c), s	0.0	4.3	0.3	3.0	0.0	3.8	0.0	4.0

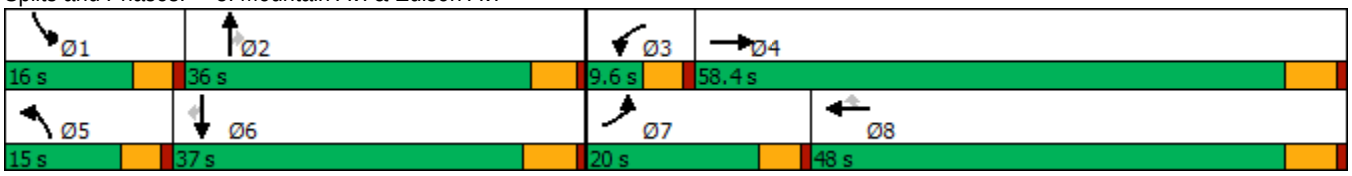
Intersection Summary	
HCM 6th Ctrl Delay	38.4
HCM 6th LOS	D

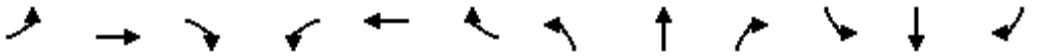
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	134	568	10	979	102	80	146	39	99	75	250
Future Volume (vph)	134	568	10	979	102	80	146	39	99	75	250
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	20.0	58.4	9.6	48.0	48.0	15.0	36.0	36.0	16.0	37.0	37.0
Total Split (%)	16.7%	48.7%	8.0%	40.0%	40.0%	12.5%	30.0%	30.0%	13.3%	30.8%	30.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 101.5
Natural Cycle: 85
Control Type: Actuated-Uncoordinated

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	568	38	10	979	102	80	146	39	99	75	250
Future Volume (veh/h)	134	568	38	10	979	102	80	146	39	99	75	250
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	146	617	37	11	1064	100	87	159	12	108	82	134
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	185	2774	165	32	1681	749	118	228	193	143	269	223
Arrive On Green	0.11	0.59	0.57	0.02	0.49	0.49	0.07	0.13	0.13	0.09	0.15	0.15
Sat Flow, veh/h	1619	4736	282	1619	3420	1524	1619	1800	1525	1619	1800	1496
Grp Volume(v), veh/h	146	426	228	11	1064	100	87	159	12	108	82	134
Grp Sat Flow(s),veh/h/ln	1619	1638	1742	1619	1710	1524	1619	1800	1525	1619	1800	1496
Q Serve(g_s), s	8.2	5.7	5.8	0.6	21.3	3.3	4.9	7.9	0.6	6.1	3.8	7.8
Cycle Q Clear(g_c), s	8.2	5.7	5.8	0.6	21.3	3.3	4.9	7.9	0.6	6.1	3.8	7.8
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	185	1919	1020	32	1681	749	118	228	193	143	269	223
V/C Ratio(X)	0.79	0.22	0.22	0.34	0.63	0.13	0.74	0.70	0.06	0.76	0.31	0.60
Avail Cap(c_a), veh/h	279	1919	1020	98	1681	749	192	620	526	209	640	531
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.1	9.2	9.2	44.9	17.4	12.9	42.2	38.9	35.7	41.4	35.2	36.9
Incr Delay (d2), s/veh	4.3	0.3	0.5	2.3	1.8	0.4	3.3	3.8	0.1	4.2	0.6	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	1.8	2.0	0.3	7.8	1.1	2.0	3.6	0.2	2.5	1.6	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.4	9.4	9.8	47.3	19.3	13.2	45.5	42.7	35.8	45.5	35.9	39.5
LnGrp LOS	D	A	A	D	B	B	D	D	D	D	D	D
Approach Vol, veh/h		800			1175			258			324	
Approach Delay, s/veh		15.9			19.0			43.3			40.6	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	16.4	5.8	58.4	10.8	17.9	14.6	49.6
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	11.4	* 31	5.0	52.6	10.4	31.2	15.4	42.2
Max Q Clear Time (g_c+I1), s	8.1	9.9	2.6	7.8	6.9	9.8	10.2	23.3
Green Ext Time (p_c), s	0.0	0.8	0.0	4.2	0.0	0.8	0.1	7.2

Intersection Summary	
HCM 6th Ctrl Delay	23.2
HCM 6th LOS	C

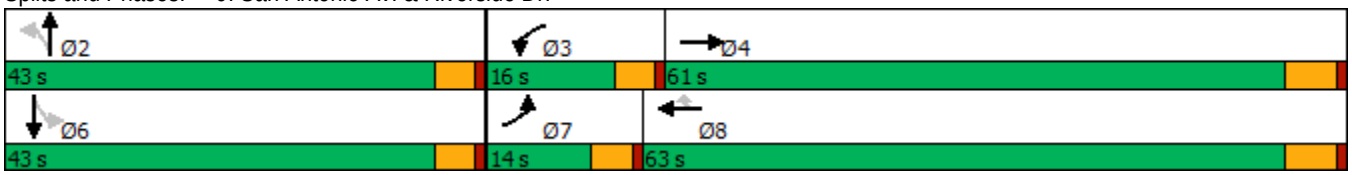
Notes

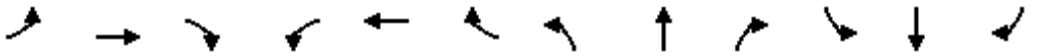
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	16	460	34	796	9	110	2	34	5
Future Volume (vph)	16	460	34	796	9	110	2	34	5
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	14.0	61.0	16.0	63.0	63.0	43.0	43.0	43.0	43.0
Total Split (%)	11.7%	50.8%	13.3%	52.5%	52.5%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 93.1
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	460	55	34	796	9	110	2	42	34	5	48
Future Volume (veh/h)	16	460	55	34	796	9	110	2	42	34	5	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	17	495	55	37	856	9	118	2	22	37	5	35
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	43	2087	231	67	2350	1025	247	19	207	261	29	200
Arrive On Green	0.03	0.67	0.65	0.04	0.69	0.69	0.15	0.15	0.14	0.15	0.15	0.14
Sat Flow, veh/h	1619	3104	344	1619	3420	1492	1312	128	1413	1328	194	1361
Grp Volume(v), veh/h	17	272	278	37	856	9	118	0	24	37	0	40
Grp Sat Flow(s),veh/h/ln	1619	1710	1738	1619	1710	1492	1312	0	1542	1328	0	1555
Q Serve(g_s), s	0.9	5.3	5.4	1.9	9.0	0.2	7.4	0.0	1.2	2.1	0.0	1.9
Cycle Q Clear(g_c), s	0.9	5.3	5.4	1.9	9.0	0.2	9.4	0.0	1.2	3.3	0.0	1.9
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.92	1.00		0.88
Lane Grp Cap(c), veh/h	43	1150	1169	67	2350	1025	247	0	226	261	0	228
V/C Ratio(X)	0.40	0.24	0.24	0.56	0.36	0.01	0.48	0.00	0.11	0.14	0.00	0.18
Avail Cap(c_a), veh/h	189	1150	1169	226	2350	1025	650	0	700	669	0	706
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.1	5.5	5.6	40.4	5.6	4.2	36.2	0.0	32.0	33.2	0.0	32.3
Incr Delay (d2), s/veh	2.2	0.5	0.5	2.7	0.4	0.0	1.4	0.0	0.2	0.2	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.5	1.6	0.8	2.4	0.0	2.5	0.0	0.4	0.7	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.3	6.0	6.0	43.1	6.0	4.2	37.6	0.0	32.2	33.4	0.0	32.7
LnGrp LOS	D	A	A	D	A	A	D	A	C	C	A	C
Approach Vol, veh/h		567			902			142			77	
Approach Delay, s/veh		7.1			7.5			36.7			33.0	
Approach LOS		A			A			D			C	

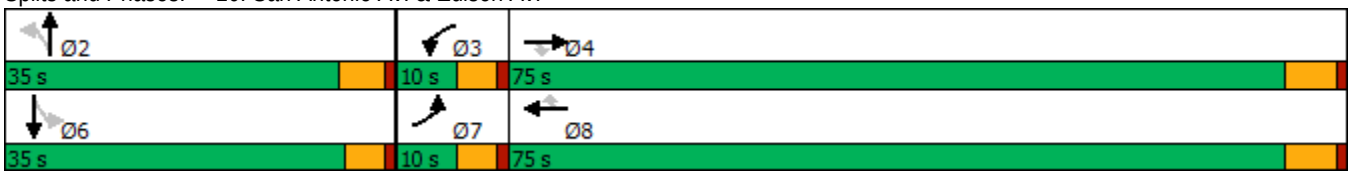
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.6	7.5	61.7		16.6	6.3	63.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		38.4	11.4	55.2		38.4	9.4	57.2				
Max Q Clear Time (g_c+I1), s		11.4	3.9	7.4		5.3	2.9	11.0				
Green Ext Time (p_c), s		0.5	0.0	3.2		0.3	0.0	6.5				

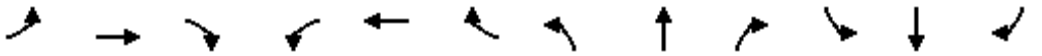
Intersection Summary												
HCM 6th Ctrl Delay			11.0									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	44	639	26	3	875	19	40	70	13	36
Future Volume (vph)	44	639	26	3	875	19	40	70	13	36
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	10.0	75.0	75.0	10.0	75.0	75.0	35.0	35.0	35.0	35.0
Total Split (%)	8.3%	62.5%	62.5%	8.3%	62.5%	62.5%	29.2%	29.2%	29.2%	29.2%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 105.4
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	639	26	3	875	19	40	70	13	13	36	89
Future Volume (veh/h)	44	639	26	3	875	19	40	70	13	13	36	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1000	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	48	695	20	3	951	21	43	76	5	14	39	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	69	2533	1128	10	2421	1080	108	149	9	55	81	105
Arrive On Green	0.04	0.74	0.74	0.01	0.71	0.71	0.13	0.13	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1619	3420	1523	952	3420	1525	459	1147	67	114	652	839
Grp Volume(v), veh/h	48	695	20	3	951	21	124	0	0	111	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1523	952	1710	1525	1674	0	0	1605	0	0
Q Serve(g_s), s	2.9	6.6	0.3	0.3	11.3	0.4	0.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.9	6.6	0.3	0.3	11.3	0.4	6.6	0.0	0.0	6.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.35		0.04	0.13		0.52
Lane Grp Cap(c), veh/h	69	2533	1128	10	2421	1080	266	0	0	241	0	0
V/C Ratio(X)	0.69	0.27	0.02	0.32	0.39	0.02	0.47	0.00	0.00	0.46	0.00	0.00
Avail Cap(c_a), veh/h	97	2533	1128	57	2421	1080	549	0	0	528	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	47.4	4.2	3.4	49.3	5.9	4.3	40.8	0.0	0.0	41.4	0.0	0.0
Incr Delay (d2), s/veh	4.6	0.3	0.0	6.9	0.5	0.0	1.3	0.0	0.0	1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.7	0.1	0.1	3.2	0.1	2.9	0.0	0.0	2.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.9	4.5	3.4	56.2	6.4	4.4	42.1	0.0	0.0	42.8	0.0	0.0
LnGrp LOS	D	A	A	E	A	A	D	A	A	D	A	A
Approach Vol, veh/h		763			975			124			111	
Approach Delay, s/veh		7.5			6.5			42.1			42.8	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		17.0	5.0	78.3		17.0	8.3	75.0				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		29.9	5.4	69.2		* 30	5.4	69.2				
Max Q Clear Time (g_c+I1), s		8.6	2.3	8.6		8.4	4.9	13.3				
Green Ext Time (p_c), s		0.6	0.0	5.0		0.6	0.0	7.6				

Intersection Summary	
HCM 6th Ctrl Delay	11.2
HCM 6th LOS	B

Notes

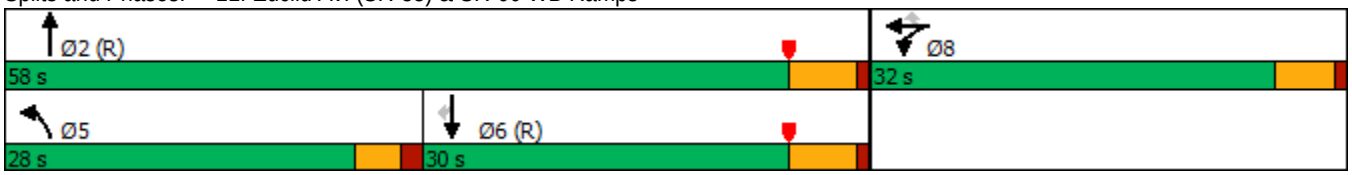
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

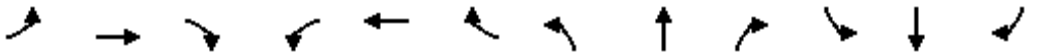
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	591	6	408	384	905	956	470
Future Volume (vph)	591	6	408	384	905	956	470
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	32.0	32.0	32.0	28.0	58.0	30.0	30.0
Total Split (%)	35.6%	35.6%	35.6%	31.1%	64.4%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	591	6	408	384	905	0	0	956	470
Future Volume (veh/h)	0	0	0	591	6	408	384	905	0	0	956	470
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				698	0	145	409	963	0	0	1017	272
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				803	0	357	433	2388	0	0	1344	599
Arrive On Green				0.22	0.00	0.22	0.48	1.00	0.00	0.00	0.37	0.37
Sat Flow, veh/h				3619	0	1610	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				698	0	145	409	963	0	0	1017	272
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1610
Q Serve(g_s), s				16.7	0.0	6.9	19.4	0.0	0.0	0.0	22.2	11.5
Cycle Q Clear(g_c), s				16.7	0.0	6.9	19.4	0.0	0.0	0.0	22.2	11.5
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				803	0	357	433	2388	0	0	1344	599
V/C Ratio(X)				0.87	0.00	0.41	0.94	0.40	0.00	0.00	0.76	0.45
Avail Cap(c_a), veh/h				1086	0	483	472	2388	0	0	1344	599
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.50	0.50	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.8	0.0	29.9	22.9	0.0	0.0	0.0	24.7	21.3
Incr Delay (d2), s/veh				4.7	0.0	0.3	16.2	0.3	0.0	0.0	4.0	2.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.4	0.0	2.6	7.1	0.1	0.0	0.0	9.5	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				38.5	0.0	30.2	39.1	0.3	0.0	0.0	28.7	23.8
LnGrp LOS				D	A	C	D	A	A	A	C	C
Approach Vol, veh/h					843			1372			1289	
Approach Delay, s/veh					37.1			11.8			27.7	
Approach LOS					D			B			C	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	65.0		26.0	39.0		25.0						
Change Period (Y+Rc), s	5.5		4.5	5.5		5.0						
Max Green Setting (Gmax), s	52.5		23.5	24.5		27.0						
Max Q Clear Time (g_c+I1), s	2.0		21.4	24.2		18.7						
Green Ext Time (p_c), s	12.1		0.2	0.3		1.2						

Intersection Summary		
HCM 6th Ctrl Delay	23.7	
HCM 6th LOS	C	

Notes

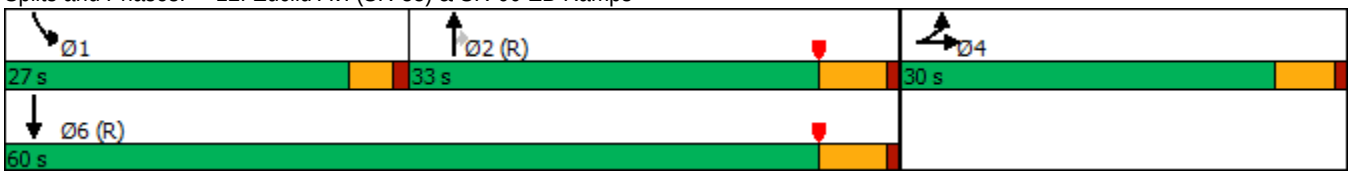
User approved volume balancing among the lanes for turning movement.

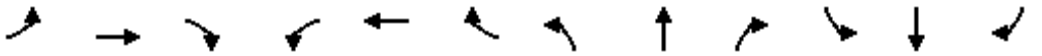
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	404	2	886	656	363	1184
Future Volume (vph)	404	2	886	656	363	1184
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	30.0	30.0	33.0	33.0	27.0	60.0
Total Split (%)	33.3%	33.3%	36.7%	36.7%	30.0%	66.7%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	404	2	476	0	0	0	0	886	656	363	1184	0
Future Volume (veh/h)	404	2	476	0	0	0	0	886	656	363	1184	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	425	2	446				0	933	492	382	1246	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	503	2	446				0	1200	521	414	2186	0
Arrive On Green	0.28	0.28	0.28				0.00	0.33	0.33	0.30	0.81	0.00
Sat Flow, veh/h	1810	7	1604				0	3705	1567	1810	3705	0
Grp Volume(v), veh/h	425	0	448				0	933	492	382	1246	0
Grp Sat Flow(s),veh/h/ln	1810	0	1611				0	1805	1567	1810	1805	0
Q Serve(g_s), s	20.0	0.0	25.0				0.0	20.9	27.5	18.4	11.2	0.0
Cycle Q Clear(g_c), s	20.0	0.0	25.0				0.0	20.9	27.5	18.4	11.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	503	0	448				0	1200	521	414	2186	0
V/C Ratio(X)	0.85	0.00	1.00				0.00	0.78	0.94	0.92	0.57	0.00
Avail Cap(c_a), veh/h	503	0	448				0	1200	521	462	2186	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.33	1.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.77	0.77	0.38	0.38	0.00
Uniform Delay (d), s/veh	30.7	0.0	32.5				0.0	27.0	29.2	30.6	4.5	0.0
Incr Delay (d2), s/veh	12.0	0.0	42.8				0.0	3.9	23.4	10.4	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	0.0	14.3				0.0	9.0	13.0	8.1	2.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.6	0.0	75.3				0.0	30.9	52.6	41.0	5.0	0.0
LnGrp LOS	D	A	F				A	C	D	D	A	A
Approach Vol, veh/h		873						1425			1628	
Approach Delay, s/veh		59.4						38.4			13.4	
Approach LOS		E						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	24.6	35.4		30.0		60.0
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	23.0	27.5		25.0		54.5
Max Q Clear Time (g_c+I1), s	20.4	29.5		27.0		13.2
Green Ext Time (p_c), s	0.2	0.0		0.0		16.7

Intersection Summary	
HCM 6th Ctrl Delay	32.7
HCM 6th LOS	C

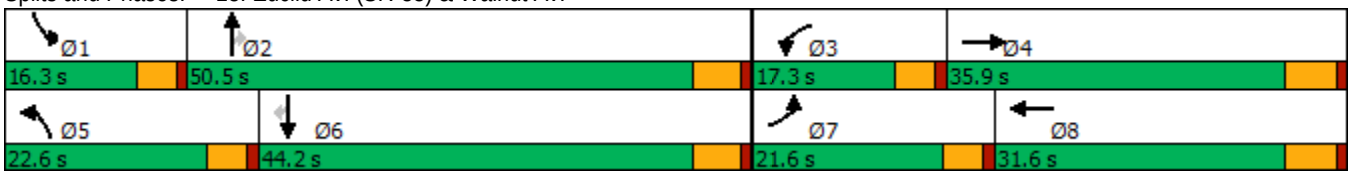
Notes

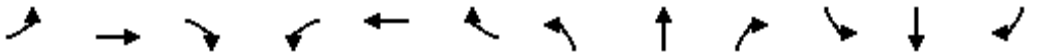
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	113	289	71	307	125	1176	45	150	1326	59
Future Volume (vph)	113	289	71	307	125	1176	45	150	1326	59
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	21.6	35.9	17.3	31.6	22.6	50.5	50.5	16.3	44.2	44.2
Total Split (%)	18.0%	29.9%	14.4%	26.3%	18.8%	42.1%	42.1%	13.6%	36.8%	36.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 107.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	289	109	71	307	204	125	1176	45	150	1326	59
Future Volume (veh/h)	113	289	109	71	307	204	125	1176	45	150	1326	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	119	304	79	75	323	175	132	1238	29	158	1396	41
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	145	589	151	94	403	213	159	2204	684	214	2076	644
Arrive On Green	0.09	0.22	0.22	0.06	0.19	0.19	0.10	0.45	0.45	0.07	0.42	0.42
Sat Flow, veh/h	1619	2696	689	1619	2157	1143	1619	4914	1524	2956	4914	1524
Grp Volume(v), veh/h	119	191	192	75	255	243	132	1238	29	158	1396	41
Grp Sat Flow(s),veh/h/ln	1619	1710	1676	1619	1710	1590	1619	1638	1524	1478	1638	1524
Q Serve(g_s), s	7.3	9.9	10.2	4.6	14.3	14.8	8.0	18.7	1.1	5.3	23.0	1.6
Cycle Q Clear(g_c), s	7.3	9.9	10.2	4.6	14.3	14.8	8.0	18.7	1.1	5.3	23.0	1.6
Prop In Lane	1.00		0.41	1.00		0.72	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	145	373	366	94	319	297	159	2204	684	214	2076	644
V/C Ratio(X)	0.82	0.51	0.52	0.80	0.80	0.82	0.83	0.56	0.04	0.74	0.67	0.06
Avail Cap(c_a), veh/h	274	512	502	204	439	408	290	2204	684	344	2076	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	34.6	34.7	46.8	39.1	39.3	44.5	20.4	15.6	45.7	23.4	17.2
Incr Delay (d2), s/veh	4.3	1.1	1.2	5.8	7.0	9.1	4.2	1.0	0.1	1.9	1.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	4.0	4.1	1.9	6.3	6.3	3.3	6.9	0.4	1.9	8.6	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.3	35.7	35.9	52.6	46.1	48.4	48.7	21.5	15.7	47.6	25.2	17.4
LnGrp LOS	D	D	D	D	D	D	D	C	B	D	C	B
Approach Vol, veh/h		502			573			1399			1595	
Approach Delay, s/veh		39.0			47.9			23.9			27.2	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	50.5	10.4	27.8	14.5	47.9	13.6	24.6
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	11.7	45.1	12.7	30.1	18.0	38.8	17.0	25.8
Max Q Clear Time (g_c+I1), s	7.3	20.7	6.6	12.2	10.0	25.0	9.3	16.8
Green Ext Time (p_c), s	0.1	9.4	0.0	1.8	0.1	7.8	0.1	1.8

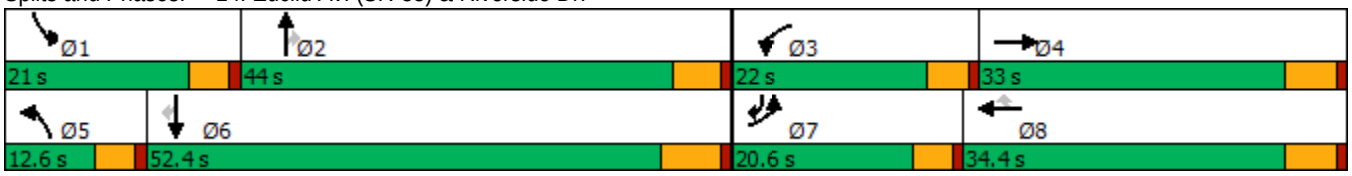
Intersection Summary	
HCM 6th Ctrl Delay	30.4
HCM 6th LOS	C

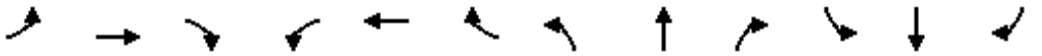
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	153	311	187	488	115	74	963	155	174	1138	152
Future Volume (vph)	153	311	187	488	115	74	963	155	174	1138	152
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	20.6	33.0	22.0	34.4	34.4	12.6	44.0	44.0	21.0	52.4	20.6
Total Split (%)	17.2%	27.5%	18.3%	28.7%	28.7%	10.5%	36.7%	36.7%	17.5%	43.7%	17.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 118.7
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	311	77	187	488	115	74	963	155	174	1138	152
Future Volume (veh/h)	153	311	77	187	488	115	74	963	155	174	1138	152
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	161	327	65	197	514	92	78	1014	123	183	1198	101
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	185	334	66	221	859	383	96	1112	496	207	1346	775
Arrive On Green	0.11	0.23	0.23	0.14	0.25	0.25	0.06	0.33	0.33	0.13	0.39	0.39
Sat Flow, veh/h	1619	1458	290	1619	3420	1525	1619	3420	1525	1619	3420	1524
Grp Volume(v), veh/h	161	0	392	197	514	92	78	1014	123	183	1198	101
Grp Sat Flow(s),veh/h/ln	1619	0	1748	1619	1710	1525	1619	1710	1525	1619	1710	1524
Q Serve(g_s), s	11.6	0.0	26.5	14.2	15.7	5.7	5.6	33.8	7.0	13.2	38.8	4.1
Cycle Q Clear(g_c), s	11.6	0.0	26.5	14.2	15.7	5.7	5.6	33.8	7.0	13.2	38.8	4.1
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	185	0	401	221	859	383	96	1112	496	207	1346	775
V/C Ratio(X)	0.87	0.00	0.98	0.89	0.60	0.24	0.81	0.91	0.25	0.88	0.89	0.13
Avail Cap(c_a), veh/h	218	0	401	237	859	383	109	1112	496	224	1346	775
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	45.5	50.4	39.2	35.4	55.1	38.4	29.4	50.9	33.6	15.4
Incr Delay (d2), s/veh	23.7	0.0	39.2	28.8	1.1	0.3	28.3	12.7	1.2	28.4	9.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	0.0	15.4	7.4	6.5	2.1	3.0	15.1	2.7	6.9	17.1	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.4	0.0	84.7	79.2	40.3	35.7	83.4	51.1	30.6	79.3	42.7	15.7
LnGrp LOS	E	A	F	E	D	D	F	D	C	E	D	B
Approach Vol, veh/h		553			803			1215			1482	
Approach Delay, s/veh		82.0			49.3			51.1			45.4	
Approach LOS		F			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.8	45.1	20.8	33.0	11.7	53.2	18.2	35.6
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	16.4	* 39	17.4	27.2	8.0	45.9	16.0	28.6
Max Q Clear Time (g_c+I1), s	15.2	35.8	16.2	28.5	7.6	40.8	13.6	17.7
Green Ext Time (p_c), s	0.0	1.7	0.0	0.0	0.0	3.3	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	52.9
HCM 6th LOS	D

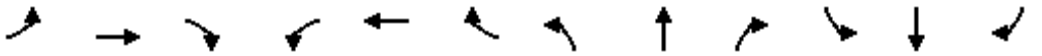
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	104	165	46	71	151	49	1033	129	56	1233	92
Future Volume (vph)	104	165	46	71	151	49	1033	129	56	1233	92
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	44.0	44.0	44.0	44.0	44.0	15.0	60.0	60.0	16.0	61.0	61.0
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	12.5%	50.0%	50.0%	13.3%	50.8%	50.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 102.4
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	165	46	71	151	51	49	1033	129	56	1233	92
Future Volume (veh/h)	104	165	46	71	151	51	49	1033	129	56	1233	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	111	176	33	76	161	42	52	1099	113	60	1312	67
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	224	438	371	113	205	48	64	1857	828	75	1879	821
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.04	0.54	0.54	0.05	0.55	0.55
Sat Flow, veh/h	1131	1800	1524	278	841	198	1619	3420	1525	1619	3420	1494
Grp Volume(v), veh/h	111	176	33	279	0	0	52	1099	113	60	1312	67
Grp Sat Flow(s),veh/h/ln	1131	1800	1524	1317	0	0	1619	1710	1525	1619	1710	1494
Q Serve(g_s), s	0.0	8.3	1.7	13.0	0.0	0.0	3.2	21.8	3.7	3.7	28.3	2.1
Cycle Q Clear(g_c), s	19.4	8.3	1.7	21.2	0.0	0.0	3.2	21.8	3.7	3.7	28.3	2.1
Prop In Lane	1.00		1.00	0.27		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	224	438	371	366	0	0	64	1857	828	75	1879	821
V/C Ratio(X)	0.50	0.40	0.09	0.76	0.00	0.00	0.81	0.59	0.14	0.80	0.70	0.08
Avail Cap(c_a), veh/h	377	681	577	574	0	0	167	1857	828	183	1879	821
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.2	32.0	29.5	37.6	0.0	0.0	48.1	15.5	11.4	47.7	16.6	10.7
Incr Delay (d2), s/veh	1.7	0.6	0.1	3.3	0.0	0.0	8.6	1.4	0.3	7.3	2.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	3.5	0.6	6.7	0.0	0.0	1.4	7.5	1.2	1.6	9.7	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.9	32.6	29.6	40.9	0.0	0.0	56.7	16.9	11.7	54.9	18.8	10.9
LnGrp LOS	D	C	C	D	A	A	E	B	B	D	B	B
Approach Vol, veh/h		320			279			1264			1439	
Approach Delay, s/veh		34.1			40.9			18.1			20.0	
Approach LOS		C			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.3	61.3		30.4	8.6	61.9		30.4				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	11.4	* 55		38.2	10.4	54.5		38.2				
Max Q Clear Time (g_c+I1), s	5.7	23.8		21.4	5.2	30.3		23.2				
Green Ext Time (p_c), s	0.0	8.4		1.2	0.0	9.6		1.3				

Intersection Summary			
HCM 6th Ctrl Delay		22.4	
HCM 6th LOS		C	

Notes

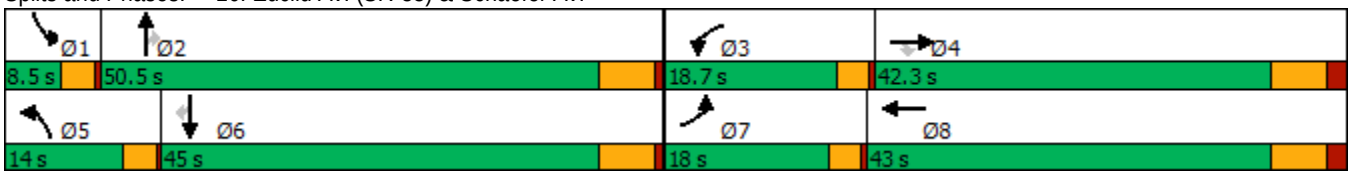
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

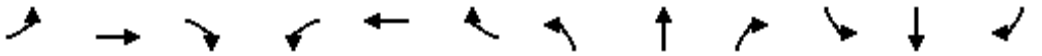
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	153	82	58	140	180	102	998	35	29	1149	122
Future Volume (vph)	153	82	58	140	180	102	998	35	29	1149	122
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	18.0	42.3	42.3	18.7	43.0	14.0	50.5	50.5	8.5	45.0	45.0
Total Split (%)	15.0%	35.3%	35.3%	15.6%	35.8%	11.7%	42.1%	42.1%	7.1%	37.5%	37.5%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 101.1
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	82	58	140	180	11	102	998	35	29	1149	122
Future Volume (veh/h)	153	82	58	140	180	11	102	998	35	29	1149	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	165	88	43	151	194	10	110	1073	28	31	1235	97
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	196	289	245	183	257	13	136	1590	709	49	1407	626
Arrive On Green	0.12	0.16	0.16	0.11	0.15	0.15	0.08	0.46	0.46	0.03	0.41	0.41
Sat Flow, veh/h	1619	1800	1525	1619	1696	87	1619	3420	1525	1619	3420	1522
Grp Volume(v), veh/h	165	88	43	151	0	204	110	1073	28	31	1235	97
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1784	1619	1710	1525	1619	1710	1522
Q Serve(g_s), s	8.6	3.7	2.1	7.9	0.0	9.5	5.8	21.1	0.9	1.6	28.7	3.5
Cycle Q Clear(g_c), s	8.6	3.7	2.1	7.9	0.0	9.5	5.8	21.1	0.9	1.6	28.7	3.5
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	196	289	245	183	0	271	136	1590	709	49	1407	626
V/C Ratio(X)	0.84	0.30	0.18	0.83	0.00	0.75	0.81	0.67	0.04	0.63	0.88	0.15
Avail Cap(c_a), veh/h	272	736	624	285	0	744	197	1763	787	94	1545	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	32.0	31.3	37.5	0.0	35.1	38.9	18.0	12.6	41.4	23.4	16.0
Incr Delay (d2), s/veh	11.5	0.4	0.3	5.9	0.0	3.2	9.6	0.9	0.0	4.9	5.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	1.6	0.7	3.2	0.0	4.1	2.5	7.1	0.3	0.7	10.9	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.6	32.4	31.6	43.4	0.0	38.2	48.4	18.9	12.6	46.2	29.1	16.1
LnGrp LOS	D	C	C	D	A	D	D	B	B	D	C	B
Approach Vol, veh/h		296			355			1211			1363	
Approach Delay, s/veh		41.3			40.4			21.5			28.6	
Approach LOS		D			D			C			C	

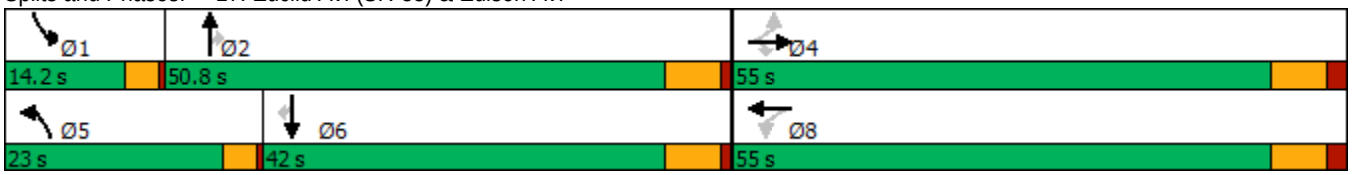
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.1	46.1	13.2	20.8	10.7	41.5	14.0	20.1
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	44.5	15.2	35.3	10.5	39.0	14.5	36.0
Max Q Clear Time (g_c+I1), s	3.6	23.1	9.9	5.7	7.8	30.7	10.6	11.5
Green Ext Time (p_c), s	0.0	6.9	0.1	0.4	0.0	4.8	0.1	0.8

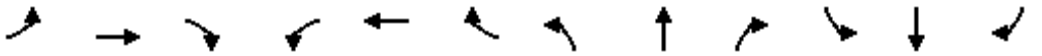
Intersection Summary	
HCM 6th Ctrl Delay	28.4
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	156	351	97	33	447	208	913	37	139	958	167
Future Volume (vph)	156	351	97	33	447	208	913	37	139	958	167
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	55.0	55.0	55.0	55.0	55.0	23.0	50.8	50.8	14.2	42.0	42.0
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	19.2%	42.3%	42.3%	11.8%	35.0%	35.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 118.6
Natural Cycle: 110
Control Type: Actuated-Uncoordinated

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	351	97	33	447	83	208	913	37	139	958	167
Future Volume (veh/h)	156	351	97	33	447	83	208	913	37	139	958	167
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	162	366	46	34	466	81	217	951	31	145	998	123
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	174	732	620	299	607	106	241	1241	554	147	1041	453
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.15	0.36	0.36	0.09	0.30	0.30
Sat Flow, veh/h	825	1800	1524	934	1493	260	1619	3420	1525	1619	3420	1489
Grp Volume(v), veh/h	162	366	46	34	0	547	217	951	31	145	998	123
Grp Sat Flow(s),veh/h/ln	825	1800	1524	934	0	1753	1619	1710	1525	1619	1710	1489
Q Serve(g_s), s	16.2	17.9	2.2	3.3	0.0	31.8	15.5	29.0	1.6	10.6	33.8	7.4
Cycle Q Clear(g_c), s	48.0	17.9	2.2	21.2	0.0	31.8	15.5	29.0	1.6	10.6	33.8	7.4
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	174	732	620	299	0	713	241	1241	554	147	1041	453
V/C Ratio(X)	0.93	0.50	0.07	0.11	0.00	0.77	0.90	0.77	0.06	0.99	0.96	0.27
Avail Cap(c_a), veh/h	174	732	620	299	0	713	267	1298	579	147	1043	454
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.3	26.1	21.4	34.0	0.0	30.2	49.4	33.2	24.5	53.6	40.3	31.1
Incr Delay (d2), s/veh	47.8	0.5	0.1	0.2	0.0	5.0	27.2	2.7	0.0	70.3	18.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	7.4	0.8	0.7	0.0	13.6	7.8	11.6	0.5	7.0	15.9	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	101.2	26.6	21.5	34.1	0.0	35.2	76.5	35.9	24.5	123.9	58.9	31.4
LnGrp LOS	F	C	C	C	A	D	E	D	C	F	E	C
Approach Vol, veh/h		574			581			1199			1266	
Approach Delay, s/veh		47.2			35.2			42.9			63.7	
Approach LOS		D			D			D			E	

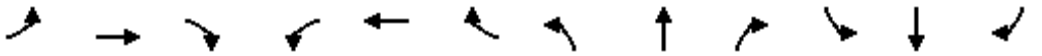
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.2	48.8		55.0	21.1	41.9		55.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	10.7	44.8		48.0	19.5	36.0		48.0				
Max Q Clear Time (g_c+I1), s	12.6	31.0		50.0	17.5	35.8		33.8				
Green Ext Time (p_c), s	0.0	5.0		0.0	0.1	0.1		2.9				

Intersection Summary												
HCM 6th Ctrl Delay			49.6									
HCM 6th LOS			D									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	67	34	150	32	154	169	1096	12	50	1085	40
Future Volume (vph)	67	34	150	32	154	169	1096	12	50	1085	40
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	46.8	46.8	46.8	46.8	46.8	24.0	63.5	63.5	9.7	49.2	49.2
Total Split (%)	39.0%	39.0%	39.0%	39.0%	39.0%	20.0%	52.9%	52.9%	8.1%	41.0%	41.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 80
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	34	150	32	154	45	169	1096	12	50	1085	40
Future Volume (veh/h)	67	34	150	32	154	45	169	1096	12	50	1085	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	68	35	67	33	157	38	172	1118	11	51	1107	30
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	233	359	304	348	279	68	214	1773	791	77	1483	661
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.13	0.52	0.52	0.05	0.43	0.43
Sat Flow, veh/h	1140	1800	1525	1240	1400	339	1619	3420	1525	1619	3420	1524
Grp Volume(v), veh/h	68	35	67	33	0	195	172	1118	11	51	1107	30
Grp Sat Flow(s),veh/h/ln	1140	1800	1525	1240	0	1739	1619	1710	1525	1619	1710	1524
Q Serve(g_s), s	3.4	0.9	2.2	1.3	0.0	6.0	6.2	14.0	0.2	1.8	16.2	0.7
Cycle Q Clear(g_c), s	9.5	0.9	2.2	2.3	0.0	6.0	6.2	14.0	0.2	1.8	16.2	0.7
Prop In Lane	1.00		1.00	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	233	359	304	348	0	347	214	1773	791	77	1483	661
V/C Ratio(X)	0.29	0.10	0.22	0.09	0.00	0.56	0.80	0.63	0.01	0.66	0.75	0.05
Avail Cap(c_a), veh/h	807	1266	1073	973	0	1223	556	3311	1477	168	2492	1110
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.8	19.5	20.0	20.4	0.0	21.5	25.1	10.3	7.0	27.9	14.2	9.8
Incr Delay (d2), s/veh	0.5	0.1	0.3	0.1	0.0	1.1	5.2	0.4	0.0	6.9	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.4	0.7	0.3	0.0	2.2	2.3	3.4	0.0	0.8	4.6	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.3	19.6	20.3	20.5	0.0	22.6	30.3	10.7	7.0	34.8	14.9	9.8
LnGrp LOS	C	B	C	C	A	C	C	B	A	C	B	A
Approach Vol, veh/h		170			228			1301			1188	
Approach Delay, s/veh		22.6			22.3			13.2			15.6	
Approach LOS		C			C			B			B	

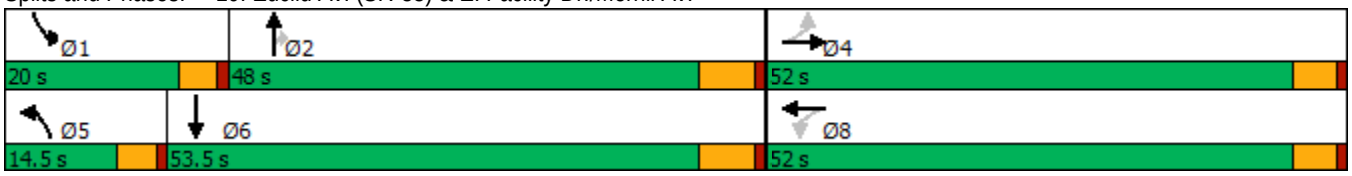
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	36.6		16.7	11.4	31.6		16.7				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	6.2	57.8		42.0	20.5	43.5		42.0				
Max Q Clear Time (g_c+I1), s	3.8	16.0		11.5	8.2	18.2		8.0				
Green Ext Time (p_c), s	0.0	8.6		0.5	0.2	7.7		0.9				

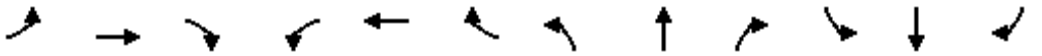
Intersection Summary			
HCM 6th Ctrl Delay		15.5	
HCM 6th LOS		B	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	4	8	272	48	10	1013	313	251	981
Future Volume (vph)	4	8	272	48	10	1013	313	251	981
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	52.0	52.0	52.0	52.0	14.5	48.0	48.0	20.0	53.5
Total Split (%)	43.3%	43.3%	43.3%	43.3%	12.1%	40.0%	40.0%	16.7%	44.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 118.4
Natural Cycle: 110
Control Type: Actuated-Uncoordinated

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	8	17	272	48	264	10	1013	313	251	981	39
Future Volume (veh/h)	4	8	17	272	48	264	10	1013	313	251	981	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	4	8	17	280	49	245	10	1044	280	259	1011	26
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	98	197	368	334	51	253	38	1156	516	215	1522	39
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.02	0.34	0.34	0.13	0.45	0.45
Sat Flow, veh/h	160	496	929	728	127	637	1619	3420	1525	1619	3404	88
Grp Volume(v), veh/h	29	0	0	574	0	0	10	1044	280	259	508	529
Grp Sat Flow(s),veh/h/ln	1585	0	0	1492	0	0	1619	1710	1525	1619	1710	1782
Q Serve(g_s), s	0.0	0.0	0.0	42.8	0.0	0.0	0.7	34.0	17.4	15.5	27.3	27.3
Cycle Q Clear(g_c), s	1.3	0.0	0.0	44.1	0.0	0.0	0.7	34.0	17.4	15.5	27.3	27.3
Prop In Lane	0.14		0.59	0.49		0.43	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	663	0	0	637	0	0	38	1156	516	215	764	797
V/C Ratio(X)	0.04	0.00	0.00	0.90	0.00	0.00	0.26	0.90	0.54	1.21	0.66	0.66
Avail Cap(c_a), veh/h	672	0	0	646	0	0	139	1229	548	215	764	797
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	0.0	0.0	34.5	0.0	0.0	56.0	36.8	31.3	50.7	25.4	25.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	15.2	0.0	0.0	1.3	9.1	1.0	128.1	2.2	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	17.4	0.0	0.0	0.3	14.6	6.1	13.6	10.5	11.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.7	0.0	0.0	49.6	0.0	0.0	57.3	46.0	32.3	178.8	27.6	27.5
LnGrp LOS	C	A	A	D	A	A	E	D	C	F	C	C
Approach Vol, veh/h		29			574			1334			1296	
Approach Delay, s/veh		21.7			49.6			43.2			57.8	
Approach LOS		C			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.0	45.5		51.3	7.3	58.2		51.3				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	15.5	42.0		47.0	10.0	47.5		47.0				
Max Q Clear Time (g_c+I1), s	17.5	36.0		3.3	2.7	29.3		46.1				
Green Ext Time (p_c), s	0.0	3.5		0.1	0.0	5.5		0.3				

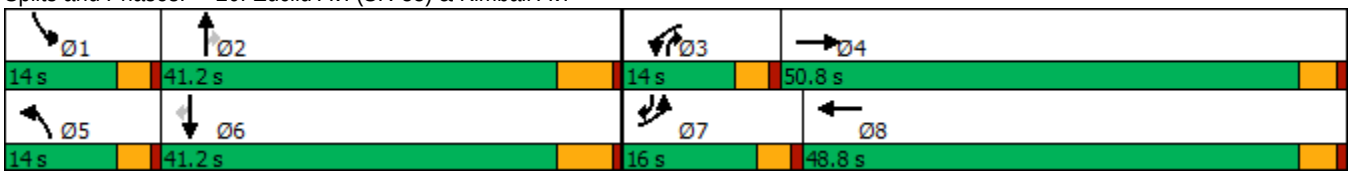
Intersection Summary												
HCM 6th Ctrl Delay			50.0									
HCM 6th LOS			D									

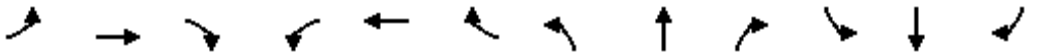
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	133	223	44	721	84	867	28	190	630	380
Future Volume (vph)	133	223	44	721	84	867	28	190	630	380
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	16.0	50.8	14.0	48.8	14.0	41.2	14.0	14.0	41.2	16.0
Total Split (%)	13.3%	42.3%	11.7%	40.7%	11.7%	34.3%	11.7%	11.7%	34.3%	13.3%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 108.9
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	133	223	32	44	721	295	84	867	28	190	630	380
Future Volume (veh/h)	133	223	32	44	721	295	84	867	28	190	630	380
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	136	228	24	45	736	265	86	885	17	194	643	259
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	287	1132	118	115	828	298	146	1022	564	249	1001	589
Arrive On Green	0.10	0.36	0.36	0.07	0.34	0.34	0.09	0.30	0.30	0.08	0.29	0.29
Sat Flow, veh/h	2956	3126	326	1619	2463	887	1619	3420	1525	2956	3420	1506
Grp Volume(v), veh/h	136	124	128	45	511	490	86	885	17	194	643	259
Grp Sat Flow(s),veh/h/ln	1478	1710	1741	1619	1710	1640	1619	1710	1525	1478	1710	1506
Q Serve(g_s), s	4.4	5.0	5.1	2.7	28.5	28.5	5.1	24.7	0.7	6.5	16.5	12.8
Cycle Q Clear(g_c), s	4.4	5.0	5.1	2.7	28.5	28.5	5.1	24.7	0.7	6.5	16.5	12.8
Prop In Lane	1.00		0.19	1.00		0.54	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	287	619	631	115	575	551	146	1022	564	249	1001	589
V/C Ratio(X)	0.47	0.20	0.20	0.39	0.89	0.89	0.59	0.87	0.03	0.78	0.64	0.44
Avail Cap(c_a), veh/h	352	786	801	161	752	722	161	1196	642	294	1196	675
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	22.1	22.1	44.7	31.6	31.6	44.0	33.4	20.2	45.2	31.0	22.6
Incr Delay (d2), s/veh	0.5	0.2	0.2	0.8	8.7	9.1	2.5	6.1	0.0	8.8	0.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.9	2.0	1.1	12.3	11.9	2.0	10.2	0.2	2.5	6.4	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.5	22.2	22.3	45.5	40.4	40.7	46.5	39.5	20.2	54.0	31.9	23.2
LnGrp LOS	D	C	C	D	D	D	D	D	C	D	C	C
Approach Vol, veh/h		388			1046			988			1096	
Approach Delay, s/veh		29.7			40.8			39.8			33.7	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	36.1	11.2	41.0	13.1	35.5	13.8	38.3
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	10.0	35.2	10.0	46.3	10.0	35.2	12.0	44.3
Max Q Clear Time (g_c+I1), s	8.5	26.7	4.7	7.1	7.1	18.5	6.4	30.5
Green Ext Time (p_c), s	0.1	3.4	0.0	1.3	0.0	4.3	0.1	3.4

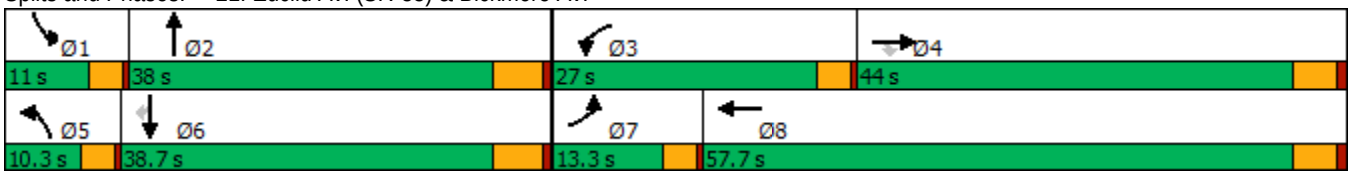
Intersection Summary	
HCM 6th Ctrl Delay	37.1
HCM 6th LOS	D

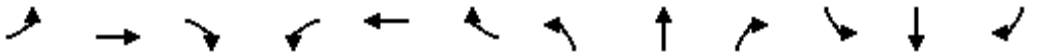
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	47	8	23	166	195	27	709	34	619	142
Future Volume (vph)	47	8	23	166	195	27	709	34	619	142
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	13.3	44.0	44.0	27.0	57.7	10.3	38.0	11.0	38.7	38.7
Total Split (%)	11.1%	36.7%	36.7%	22.5%	48.1%	8.6%	31.7%	9.2%	32.3%	32.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 71.5
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	8	23	166	195	131	27	709	20	34	619	142
Future Volume (veh/h)	47	8	23	166	195	131	27	709	20	34	619	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	52	9	22	184	217	107	30	788	15	38	688	110
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	84	277	235	231	278	137	56	1031	20	67	1051	469
Arrive On Green	0.05	0.15	0.15	0.14	0.24	0.24	0.03	0.30	0.30	0.04	0.31	0.31
Sat Flow, veh/h	1619	1800	1525	1619	1138	561	1619	3433	65	1619	3420	1525
Grp Volume(v), veh/h	52	9	22	184	0	324	30	392	411	38	688	110
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1699	1619	1710	1788	1619	1710	1525
Q Serve(g_s), s	1.5	0.2	0.6	5.3	0.0	8.6	0.9	10.1	10.1	1.1	8.4	2.6
Cycle Q Clear(g_c), s	1.5	0.2	0.6	5.3	0.0	8.6	0.9	10.1	10.1	1.1	8.4	2.6
Prop In Lane	1.00		1.00	1.00		0.33	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	84	277	235	231	0	415	56	514	537	67	1051	469
V/C Ratio(X)	0.62	0.03	0.09	0.80	0.00	0.78	0.54	0.76	0.76	0.57	0.65	0.23
Avail Cap(c_a), veh/h	328	1452	1230	787	0	1851	228	1149	1202	251	2348	1047
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.5	17.4	17.6	20.1	0.0	17.1	23.0	15.4	15.4	22.8	14.5	12.5
Incr Delay (d2), s/veh	2.7	0.0	0.1	2.4	0.0	1.2	3.0	0.9	0.9	2.8	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.1	0.2	1.8	0.0	2.9	0.3	2.9	3.0	0.4	2.3	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.2	17.4	17.6	22.5	0.0	18.3	26.0	16.3	16.2	25.6	14.8	12.6
LnGrp LOS	C	B	B	C	A	B	C	B	B	C	B	B
Approach Vol, veh/h		83			508			833			836	
Approach Delay, s/veh		22.3			19.8			16.6			15.0	
Approach LOS		C			B			B			B	

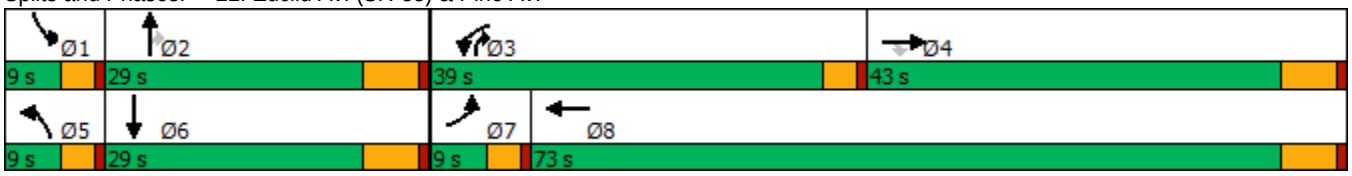
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.5	20.0	10.4	12.5	5.2	20.4	6.0	16.8
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	7.5	32.5	23.5	39.0	6.8	33.2	9.8	52.7
Max Q Clear Time (g_c+I1), s	3.1	12.1	7.3	2.6	2.9	10.4	3.5	10.6
Green Ext Time (p_c), s	0.0	2.4	0.2	0.0	0.0	2.7	0.0	1.2

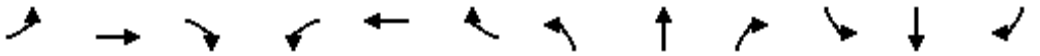
Intersection Summary	
HCM 6th Ctrl Delay	16.9
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	8	173	47	981	306	51	775	650	34	661
Future Volume (vph)	8	173	47	981	306	51	775	650	34	661
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	39.0	73.0	9.0	29.0	39.0	9.0	29.0
Total Split (%)	7.5%	35.8%	35.8%	32.5%	60.8%	7.5%	24.2%	32.5%	7.5%	24.2%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 100.2
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	173	47	981	306	25	51	775	650	34	661	16
Future Volume (veh/h)	8	173	47	981	306	25	51	775	650	34	661	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	8	178	0	1011	315	24	53	799	414	35	681	12
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	16	236		1073	799	61	66	863	930	52	839	15
Arrive On Green	0.01	0.13	0.00	0.36	0.48	0.48	0.04	0.25	0.25	0.03	0.24	0.24
Sat Flow, veh/h	1619	1800	1525	2956	1652	126	1619	3420	1493	1619	3439	61
Grp Volume(v), veh/h	8	178	0	1011	0	339	53	799	414	35	339	354
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1777	1619	1710	1493	1619	1710	1789
Q Serve(g_s), s	0.4	8.6	0.0	29.9	0.0	11.0	2.9	20.6	13.4	1.9	16.9	16.9
Cycle Q Clear(g_c), s	0.4	8.6	0.0	29.9	0.0	11.0	2.9	20.6	13.4	1.9	16.9	16.9
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	16	236		1073	0	860	66	863	930	52	417	437
V/C Ratio(X)	0.49	0.75		0.94	0.00	0.39	0.80	0.93	0.45	0.67	0.81	0.81
Avail Cap(c_a), veh/h	90	737		1145	0	1317	90	870	933	90	435	455
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	37.9	0.0	27.9	0.0	14.9	43.0	33.0	9.3	43.3	32.2	32.2
Incr Delay (d2), s/veh	8.2	6.8	0.0	14.0	0.0	0.4	22.3	15.2	0.1	5.4	9.9	9.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.0	0.0	11.5	0.0	3.9	1.5	9.5	3.4	0.8	7.5	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.8	44.6	0.0	41.9	0.0	15.3	65.3	48.2	9.4	48.6	42.1	41.7
LnGrp LOS	D	D		D	A	B	E	D	A	D	D	D
Approach Vol, veh/h		186	A		1350			1266			728	
Approach Delay, s/veh		45.0			35.2			36.2			42.2	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	28.8	36.8	17.9	7.7	28.1	4.9	49.8
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.0	23.0	35.0	37.0	5.0	23.0	5.0	67.0
Max Q Clear Time (g_c+I1), s	3.9	22.6	31.9	10.6	4.9	18.9	2.4	13.0
Green Ext Time (p_c), s	0.0	0.2	0.9	1.2	0.0	1.0	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	37.5
HCM 6th LOS	D

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	52.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	401	14	19	546	16	17	76	13	18	105	44
Future Vol, veh/h	48	401	14	19	546	16	17	76	13	18	105	44
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	53	441	15	21	600	18	19	84	14	20	115	48
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	37.3	83.3	13.6	15
HCM LOS	E	F	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	10%	3%	11%
Vol Thru, %	72%	87%	94%	63%
Vol Right, %	12%	3%	3%	26%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	106	463	581	167
LT Vol	17	48	19	18
Through Vol	76	401	546	105
RT Vol	13	14	16	44
Lane Flow Rate	116	509	638	184
Geometry Grp	1	1	1	1
Degree of Util (X)	0.248	0.866	1.077	0.371
Departure Headway (Hd)	7.976	6.335	6.071	7.561
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	453	575	600	479
Service Time	5.976	4.335	4.071	5.561
HCM Lane V/C Ratio	0.256	0.885	1.063	0.384
HCM Control Delay	13.6	37.3	83.3	15
HCM Lane LOS	B	E	F	B
HCM 95th-tile Q	1	9.6	18.6	1.7

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	79	3	1	182	19	17	58	3	29	64	47
Future Vol, veh/h	18	79	3	1	182	19	17	58	3	29	64	47
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	19	85	3	1	196	20	18	62	3	31	69	51
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.6	9.3	8.5	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	18%	0%	21%
Vol Thru, %	74%	79%	90%	46%
Vol Right, %	4%	3%	9%	34%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	78	100	202	140
LT Vol	17	18	1	29
Through Vol	58	79	182	64
RT Vol	3	3	19	47
Lane Flow Rate	84	108	217	151
Geometry Grp	1	1	1	1
Degree of Util (X)	0.113	0.141	0.273	0.192
Departure Headway (Hd)	4.863	4.729	4.53	4.602
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	735	756	791	778
Service Time	2.907	2.77	2.566	2.642
HCM Lane V/C Ratio	0.114	0.143	0.274	0.194
HCM Control Delay	8.5	8.6	9.3	8.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.5	1.1	0.7

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	550	621	49	28	36
Future Vol, veh/h	20	550	621	49	28	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	21	585	661	52	30	38

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	713	0	-	0	1314	687
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	627	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	896	-	-	-	254	525
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	536	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	896	-	-	-	245	525
Mov Cap-2 Maneuver	-	-	-	-	245	-
Stage 1	-	-	-	-	485	-
Stage 2	-	-	-	-	536	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	17.8
HCM LOS			C

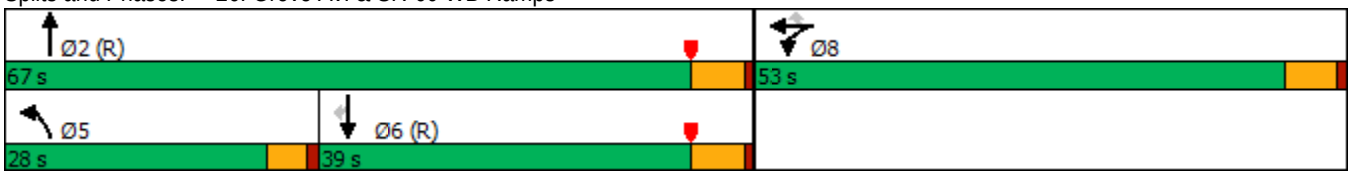
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	896	-	-	-	350
HCM Lane V/C Ratio	0.024	-	-	-	0.195
HCM Control Delay (s)	9.1	0	-	-	17.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7

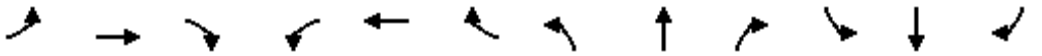
Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	544	262	1044	693	554
Future Volume (vph)	0	544	262	1044	693	554
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	53.0	53.0	28.0	67.0	39.0	39.0
Total Split (%)	44.2%	44.2%	23.3%	55.8%	32.5%	32.5%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	252	0	544	262	1044	0	0	693	554
Future Volume (veh/h)	0	0	0	252	0	544	262	1044	0	0	693	554
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				274	0	462	285	1135	0	0	753	491
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				569	0	506	307	2126	0	0	1375	611
Arrive On Green				0.31	0.00	0.31	0.34	1.00	0.00	0.00	0.38	0.38
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1604
Grp Volume(v), veh/h				274	0	462	285	1135	0	0	753	491
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1604
Q Serve(g_s), s				14.7	0.0	33.1	18.2	0.0	0.0	0.0	19.6	32.8
Cycle Q Clear(g_c), s				14.7	0.0	33.1	18.2	0.0	0.0	0.0	19.6	32.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				569	0	506	307	2126	0	0	1375	611
V/C Ratio(X)				0.48	0.00	0.91	0.93	0.53	0.00	0.00	0.55	0.80
Avail Cap(c_a), veh/h				712	0	633	353	2126	0	0	1375	611
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.10	0.10	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.2	0.0	39.6	38.9	0.0	0.0	0.0	29.1	33.1
Incr Delay (d2), s/veh				0.6	0.0	15.4	4.3	0.1	0.0	0.0	1.6	10.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.3	0.0	14.7	6.6	0.0	0.0	0.0	8.4	13.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				33.9	0.0	55.0	43.2	0.1	0.0	0.0	30.6	43.9
LnGrp LOS				C	A	D	D	A	A	A	C	D
Approach Vol, veh/h					736			1420			1244	
Approach Delay, s/veh					47.1			8.8			35.9	
Approach LOS					D			A			D	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	76.5		25.0	51.5		43.5						
Change Period (Y+Rc), s	5.8		4.6	5.8		5.8						
Max Green Setting (Gmax), s	61.2		23.4	33.2		47.2						
Max Q Clear Time (g_c+I1), s	2.0		20.2	34.8		35.1						
Green Ext Time (p_c), s	9.9		0.1	0.0		2.6						

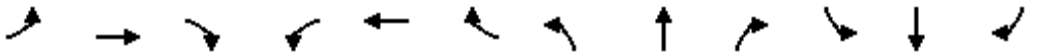
Intersection Summary		
HCM 6th Ctrl Delay	27.0	
HCM 6th LOS	C	

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	1	212	687	346	599
Future Volume (vph)	1	212	687	346	599
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	48.0	48.0	44.0	28.0	72.0
Total Split (%)	40.0%	40.0%	36.7%	23.3%	60.0%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	617	1	212	0	0	0	0	687	351	346	599	0
Future Volume (veh/h)	617	1	212	0	0	0	0	687	351	346	599	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	671	1	155				0	747	273	376	651	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	635	1	565				0	823	301	353	1992	0
Arrive On Green	0.35	0.35	0.35				0.00	0.32	0.32	0.39	1.00	0.00
Sat Flow, veh/h	1807	3	1607				0	2681	945	1810	3705	0
Grp Volume(v), veh/h	672	0	155				0	521	499	376	651	0
Grp Sat Flow(s),veh/h/ln	1810	0	1607				0	1805	1726	1810	1805	0
Q Serve(g_s), s	42.2	0.0	8.3				0.0	33.2	33.2	23.4	0.0	0.0
Cycle Q Clear(g_c), s	42.2	0.0	8.3				0.0	33.2	33.2	23.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.55	1.00		0.00
Lane Grp Cap(c), veh/h	636	0	565				0	575	550	353	1992	0
V/C Ratio(X)	1.06	0.00	0.27				0.00	0.91	0.91	1.07	0.33	0.00
Avail Cap(c_a), veh/h	636	0	565				0	575	550	353	1992	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.74	0.74	0.71	0.71	0.00
Uniform Delay (d), s/veh	38.9	0.0	27.9				0.0	39.2	39.2	36.6	0.0	0.0
Incr Delay (d2), s/veh	51.4	0.0	0.3				0.0	16.3	16.9	59.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.8	0.0	3.1				0.0	16.6	16.0	13.4	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	90.3	0.0	28.2				0.0	55.5	56.1	95.6	0.3	0.0
LnGrp LOS	F	A	C				A	E	E	F	A	A
Approach Vol, veh/h		827						1020			1027	
Approach Delay, s/veh		78.6						55.8			35.2	
Approach LOS		E						E			D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	28.0	44.0		48.0		72.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	23.4	38.2		42.2		66.2
Max Q Clear Time (g_c+I1), s	25.4	35.2		44.2		2.0
Green Ext Time (p_c), s	0.0	1.7		0.0		4.6

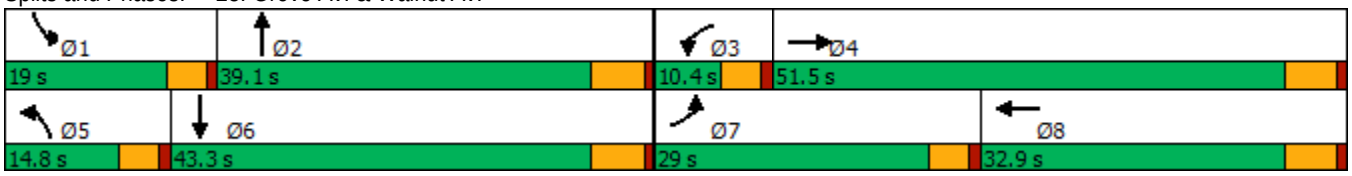
Intersection Summary	
HCM 6th Ctrl Delay	55.0
HCM 6th LOS	D

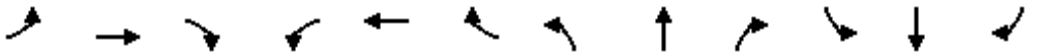
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	177	188	13	187	48	596	89	577
Future Volume (vph)	177	188	13	187	48	596	89	577
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	29.0	51.5	10.4	32.9	14.8	39.1	19.0	43.3
Total Split (%)	24.2%	42.9%	8.7%	27.4%	12.3%	32.6%	15.8%	36.1%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 98
Natural Cycle: 85
Control Type: Actuated-Uncoordinated

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	177	188	54	13	187	179	48	596	12	89	577	103
Future Volume (veh/h)	177	188	54	13	187	179	48	596	12	89	577	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	208	221	49	15	220	140	56	701	13	105	679	85
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	241	818	178	28	330	201	69	1298	24	130	1271	159
Arrive On Green	0.15	0.29	0.29	0.02	0.16	0.16	0.04	0.38	0.38	0.08	0.42	0.42
Sat Flow, veh/h	1619	2785	604	1619	2035	1238	1619	3435	64	1619	3058	382
Grp Volume(v), veh/h	208	134	136	15	183	177	56	349	365	105	379	385
Grp Sat Flow(s),veh/h/ln	1619	1710	1679	1619	1710	1563	1619	1710	1788	1619	1710	1731
Q Serve(g_s), s	11.3	5.4	5.6	0.8	9.1	9.6	3.1	14.4	14.4	5.8	15.0	15.1
Cycle Q Clear(g_c), s	11.3	5.4	5.6	0.8	9.1	9.6	3.1	14.4	14.4	5.8	15.0	15.1
Prop In Lane	1.00		0.36	1.00		0.79	1.00		0.04	1.00		0.22
Lane Grp Cap(c), veh/h	241	502	493	28	277	254	69	646	676	130	711	719
V/C Ratio(X)	0.86	0.27	0.28	0.53	0.66	0.70	0.81	0.54	0.54	0.81	0.53	0.53
Avail Cap(c_a), veh/h	438	866	850	104	514	470	183	646	676	258	711	719
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	24.4	24.5	44.0	35.5	35.7	42.8	21.9	21.9	40.8	19.8	19.8
Incr Delay (d2), s/veh	3.5	0.3	0.3	5.7	2.7	3.4	8.1	3.2	3.1	4.4	2.9	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	2.1	2.1	0.4	3.8	3.7	1.3	5.9	6.1	2.3	6.0	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	24.7	24.8	49.7	38.2	39.1	50.9	25.2	25.0	45.2	22.7	22.7
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		478			375			770			869	
Approach Delay, s/veh		31.8			39.1			27.0			25.4	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.8	39.9	6.2	32.3	8.5	43.3	18.0	20.4
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	33.3	5.8	45.7	10.2	37.5	24.4	27.1
Max Q Clear Time (g_c+I1), s	7.8	16.4	2.8	7.6	5.1	17.1	13.3	11.6
Green Ext Time (p_c), s	0.1	3.6	0.0	1.5	0.0	4.3	0.2	1.7

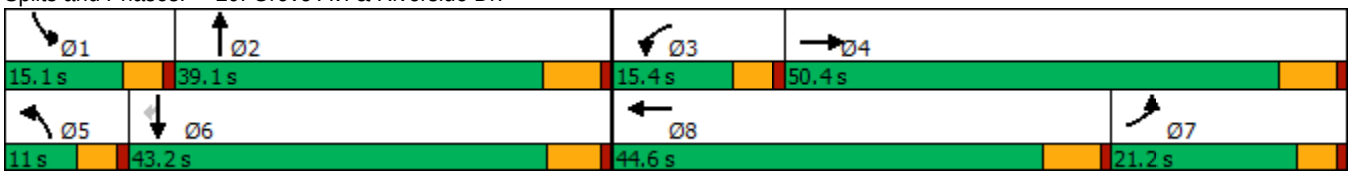
Intersection Summary	
HCM 6th Ctrl Delay	29.2
HCM 6th LOS	C

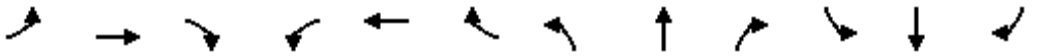
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	144	371	64	737	24	332	82	362	163
Future Volume (vph)	144	371	64	737	24	332	82	362	163
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	21.2	50.4	15.4	44.6	11.0	39.1	15.1	43.2	43.2
Total Split (%)	17.7%	42.0%	12.8%	37.2%	9.2%	32.6%	12.6%	36.0%	36.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 114.1
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	371	37	64	737	115	24	332	50	82	362	163
Future Volume (veh/h)	144	371	37	64	737	115	24	332	50	82	362	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	160	412	34	71	819	102	27	369	34	91	402	95
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	186	621	51	89	928	116	41	486	45	112	619	525
Arrive On Green	0.12	0.38	0.38	0.05	0.30	0.30	0.03	0.30	0.30	0.07	0.34	0.34
Sat Flow, veh/h	1619	1640	135	1619	3054	380	1619	1620	149	1619	1800	1525
Grp Volume(v), veh/h	160	0	446	71	459	462	27	0	403	91	402	95
Grp Sat Flow(s),veh/h/ln	1619	0	1776	1619	1710	1725	1619	0	1769	1619	1800	1525
Q Serve(g_s), s	10.6	0.0	22.8	4.8	28.0	28.0	1.8	0.0	22.6	6.1	20.7	3.1
Cycle Q Clear(g_c), s	10.6	0.0	22.8	4.8	28.0	28.0	1.8	0.0	22.6	6.1	20.7	3.1
Prop In Lane	1.00		0.08	1.00		0.22	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	186	0	672	89	519	524	41	0	531	112	619	525
V/C Ratio(X)	0.86	0.00	0.66	0.80	0.88	0.88	0.65	0.00	0.76	0.81	0.65	0.18
Avail Cap(c_a), veh/h	245	0	716	160	599	604	95	0	531	155	619	525
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.6	0.0	28.2	51.2	36.3	36.3	52.9	0.0	34.7	50.3	30.4	10.7
Incr Delay (d2), s/veh	16.8	0.0	2.1	6.2	13.2	13.1	6.3	0.0	9.8	14.2	5.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	9.4	2.0	12.8	12.9	0.8	0.0	10.6	2.8	9.4	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.4	0.0	30.4	57.4	49.5	49.4	59.2	0.0	44.5	64.5	35.6	11.5
LnGrp LOS	E	A	C	E	D	D	E	A	D	E	D	B
Approach Vol, veh/h		606			992			430			588	
Approach Delay, s/veh		39.4			50.0			45.4			36.2	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	39.1	10.6	47.7	7.4	43.9	18.8	39.5
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	10.5	32.9	10.8	44.2	6.4	* 37	16.6	* 38
Max Q Clear Time (g_c+I1), s	8.1	24.6	6.8	24.8	3.8	22.7	12.6	30.0
Green Ext Time (p_c), s	0.0	1.3	0.0	2.3	0.0	2.2	0.1	3.3

Intersection Summary	
HCM 6th Ctrl Delay	43.7
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	25.7
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	61	86	27	10	78	29	35	322	13	45	409	30
Future Vol, veh/h	61	86	27	10	78	29	35	322	13	45	409	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	68	96	30	11	87	32	39	358	14	50	454	33
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	14.3	12.7	21.7	36.1
HCM LOS	B	B	C	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	35%	9%	9%
Vol Thru, %	87%	49%	67%	85%
Vol Right, %	4%	16%	25%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	370	174	117	484
LT Vol	35	61	10	45
Through Vol	322	86	78	409
RT Vol	13	27	29	30
Lane Flow Rate	411	193	130	538
Geometry Grp	1	1	1	1
Degree of Util (X)	0.692	0.376	0.257	0.872
Departure Headway (Hd)	6.062	6.994	7.12	5.835
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	596	512	502	618
Service Time	4.12	5.063	5.2	3.887
HCM Lane V/C Ratio	0.69	0.377	0.259	0.871
HCM Control Delay	21.7	14.3	12.7	36.1
HCM Lane LOS	C	B	B	E
HCM 95th-tile Q	5.4	1.7	1	10.1

Intersection	
Intersection Delay, s/veh	17
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	42	45	31	34	97	38	37	268	10	40	333	41
Future Vol, veh/h	42	45	31	34	97	38	37	268	10	40	333	41
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	47	50	34	38	108	42	41	298	11	44	370	46
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.7	12.6	16	21.1
HCM LOS	B	B	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	36%	20%	10%
Vol Thru, %	85%	38%	57%	80%
Vol Right, %	3%	26%	22%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	315	118	169	414
LT Vol	37	42	34	40
Through Vol	268	45	97	333
RT Vol	10	31	38	41
Lane Flow Rate	350	131	188	460
Geometry Grp	1	1	1	1
Degree of Util (X)	0.562	0.239	0.334	0.711
Departure Headway (Hd)	5.782	6.568	6.398	5.567
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	626	545	561	653
Service Time	3.797	4.622	4.446	3.579
HCM Lane V/C Ratio	0.559	0.24	0.335	0.704
HCM Control Delay	16	11.7	12.6	21.1
HCM Lane LOS	C	B	B	C
HCM 95th-tile Q	3.5	0.9	1.5	5.9

Intersection	
Intersection Delay, s/veh	189.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	201	196	64	495	31	69	217	24	58	288	28
Future Vol, veh/h	33	201	196	64	495	31	69	217	24	58	288	28
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	36	221	215	70	544	34	76	238	26	64	316	31
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	144.3	339.5	68.6	104.3
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	8%	11%	16%
Vol Thru, %	70%	47%	84%	77%
Vol Right, %	8%	46%	5%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	310	430	590	374
LT Vol	69	33	64	58
Through Vol	217	201	495	288
RT Vol	24	196	31	28
Lane Flow Rate	341	473	648	411
Geometry Grp	1	1	1	1
Degree of Util (X)	0.908	1.187	1.673	1.06
Departure Headway (Hd)	12.35	11.19	10.183	11.733
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	296	331	363	312
Service Time	10.35	9.19	8.183	9.733
HCM Lane V/C Ratio	1.152	1.429	1.785	1.317
HCM Control Delay	68.6	144.3	339.5	104.3
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	8.4	16.3	35.9	12.3

Intersection	
Int Delay, s/veh	90

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	24	71	13	12	92	73	60	247	11	243	275	47
Future Vol, veh/h	24	71	13	12	92	73	60	247	11	243	275	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	26	78	14	13	101	80	66	271	12	267	302	52

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1362	1277	328	1317	1297	277	354	0	0	283	0	0
Stage 1	862	862	-	409	409	-	-	-	-	-	-	-
Stage 2	500	415	-	908	888	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	126	168	718	136	163	767	1216	-	-	1291	-	-
Stage 1	353	375	-	623	600	-	-	-	-	-	-	-
Stage 2	557	596	-	332	365	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 21	116	718	48	113	767	1216	-	-	1291	-	-
Mov Cap-2 Maneuver	~ 21	116	-	48	113	-	-	-	-	-	-	-
Stage 1	330	278	-	583	561	-	-	-	-	-	-	-
Stage 2	382	557	-	173	270	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 588.1	220.7	1.5	3.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1216	-	-	61	153	1291	-	-
HCM Lane V/C Ratio	0.054	-	-	1.946	1.271	0.207	-	-
HCM Control Delay (s)	8.1	0	-	$ 588.1	220.7	8.5	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	11.2	11.5	0.8	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	45	300	66	234
Future Volume (vph)	45	300	66	234
Turn Type	Prot	NA	Prot	NA
Protected Phases	8	2	1	6
Permitted Phases				
Detector Phase	8	2	1	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	5.0	10.0
Minimum Split (s)	26.6	23.2	9.6	16.2
Total Split (s)	26.6	28.7	9.7	38.4
Total Split (%)	40.9%	44.2%	14.9%	59.1%
Yellow Time (s)	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2
Lead/Lag		Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	
Recall Mode	None	Min	None	Min

Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 46.4
Natural Cycle: 65
Control Type: Actuated-Uncoordinated

Splits and Phases: 34: Grove Av. & Street A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	45	18	300	166	66	234
Future Volume (veh/h)	45	18	300	166	66	234
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	49	20	326	180	72	254
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	160	66	411	227	114	1029
Arrive On Green	0.14	0.14	0.38	0.38	0.07	0.57
Sat Flow, veh/h	1160	473	1090	602	1619	1800
Grp Volume(v), veh/h	70	0	0	506	72	254
Grp Sat Flow(s),veh/h/ln	1657	0	0	1692	1619	1800
Q Serve(g_s), s	1.4	0.0	0.0	9.9	1.6	2.6
Cycle Q Clear(g_c), s	1.4	0.0	0.0	9.9	1.6	2.6
Prop In Lane	0.70	0.29		0.36	1.00	
Lane Grp Cap(c), veh/h	229	0	0	638	114	1029
V/C Ratio(X)	0.31	0.00	0.00	0.79	0.63	0.25
Avail Cap(c_a), veh/h	979	0	0	1023	222	1557
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.4	0.0	0.0	10.3	16.8	4.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	2.3	2.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	2.3	0.5	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.2	0.0	0.0	12.6	19.0	4.1
LnGrp LOS	B	A	A	B	B	A
Approach Vol, veh/h	70		506			326
Approach Delay, s/veh	15.2		12.6			7.4
Approach LOS	B		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	7.2	20.2			27.5	9.8
Change Period (Y+Rc), s	4.6	6.2			6.2	4.6
Max Green Setting (Gmax), s	5.1	22.5			32.2	22.0
Max Q Clear Time (g_c+I1), s	3.6	11.9			4.6	3.4
Green Ext Time (p_c), s	0.0	2.2			1.3	0.1

Intersection Summary	
HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B

Intersection	
Intersection Delay, s/veh	122.8
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	167	439	533	299	163	116
Future Vol, veh/h	167	439	533	299	163	116
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	172	453	549	308	168	120
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	74.6	192.7	19.2
HCM LOS	F	F	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	0%	58%
Vol Thru, %	72%	64%	0%
Vol Right, %	0%	36%	42%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	606	832	279
LT Vol	167	0	163
Through Vol	439	533	0
RT Vol	0	299	116
Lane Flow Rate	625	858	288
Geometry Grp	1	1	1
Degree of Util (X)	1.041	1.365	0.548
Departure Headway (Hd)	6.493	5.87	7.49
Convergence, Y/N	Yes	Yes	Yes
Cap	562	626	486
Service Time	4.493	3.87	5.49
HCM Lane V/C Ratio	1.112	1.371	0.593
HCM Control Delay	74.6	192.7	19.2
HCM Lane LOS	F	F	C
HCM 95th-tile Q	16.2	36.6	3.2

Intersection	
Int Delay, s/veh	16.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	17	230	9	405	392	139	4	18	87	25	17	12
Future Vol, veh/h	17	230	9	405	392	139	4	18	87	25	17	12
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	17	235	9	413	400	142	4	18	89	26	17	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	542	0	0	245	0	0	1587	1643	241	1624	1576	471
Stage 1	-	-	-	-	-	-	275	275	-	1297	1297	-
Stage 2	-	-	-	-	-	-	1312	1368	-	327	279	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1037	-	-	1333	-	-	88	101	803	83	111	597
Stage 1	-	-	-	-	-	-	736	686	-	201	234	-
Stage 2	-	-	-	-	-	-	197	217	-	690	683	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1037	-	-	1332	-	-	43	54	802	36	59	597
Mov Cap-2 Maneuver	-	-	-	-	-	-	43	54	-	36	59	-
Stage 1	-	-	-	-	-	-	721	672	-	197	128	-
Stage 2	-	-	-	-	-	-	91	118	-	586	669	-

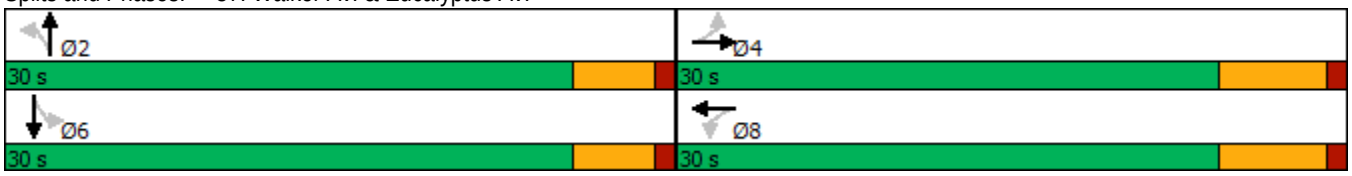
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	3.9	42	251.3
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	204	1037	-	-	1332	-	-	54
HCM Lane V/C Ratio	0.545	0.017	-	-	0.31	-	-	1.02
HCM Control Delay (s)	42	8.5	0	-	8.9	0	-	251.3
HCM Lane LOS	E	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	2.9	0.1	-	-	1.3	-	-	4.6

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	10	236	128	21	48	236	180
Future Volume (vph)	10	236	128	21	48	236	180
Turn Type	Perm	NA	NA	Perm	NA	Perm	NA
Protected Phases		4	8		2		6
Permitted Phases	4			2		6	
Detector Phase	4	4	8	2	2	6	6
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	22.8	22.8	22.8	21.6	21.6	21.6	21.6
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.8	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0
Total Lost Time (s)		5.8	5.8		4.6		4.6
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	None	None	None	None
Act Effct Green (s)		16.1	16.1		23.4		23.4
Actuated g/C Ratio		0.32	0.32		0.47		0.47
v/c Ratio		0.69	0.38		0.12		0.84
Control Delay		20.7	12.7		9.5		27.5
Queue Delay		0.0	0.0		0.0		0.0
Total Delay		20.7	12.7		9.5		27.5
LOS		C	B		A		C
Approach Delay		20.7	12.7		9.5		27.5
Approach LOS		C	B		A		C

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 50.2	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 21.5	Intersection LOS: C
Intersection Capacity Utilization 68.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 37: Walker Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	236	76	0	128	54	21	48	0	236	180	37
Future Volume (veh/h)	10	236	76	0	128	54	21	48	0	236	180	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	12	288	93	0	156	66	26	59	0	288	220	45
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	100	391	123	0	363	154	271	544	0	466	288	55
Arrive On Green	0.30	0.30	0.30	0.00	0.30	0.30	0.44	0.44	0.00	0.44	0.44	0.44
Sat Flow, veh/h	20	1290	406	0	1201	508	351	1250	0	753	662	125
Grp Volume(v), veh/h	393	0	0	0	0	222	85	0	0	553	0	0
Grp Sat Flow(s),veh/h/ln	1716	0	0	0	0	1709	1601	0	0	1541	0	0
Q Serve(g_s), s	0.7	0.0	0.0	0.0	0.0	4.1	0.0	0.0	0.0	11.4	0.0	0.0
Cycle Q Clear(g_c), s	8.2	0.0	0.0	0.0	0.0	4.1	1.1	0.0	0.0	12.5	0.0	0.0
Prop In Lane	0.03		0.24	0.00		0.30	0.31		0.00	0.52		0.08
Lane Grp Cap(c), veh/h	613	0	0	0	0	517	815	0	0	808	0	0
V/C Ratio(X)	0.64	0.00	0.00	0.00	0.00	0.43	0.10	0.00	0.00	0.68	0.00	0.00
Avail Cap(c_a), veh/h	1136	0	0	0	0	1043	1128	0	0	1121	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.5	0.0	0.0	0.0	0.0	11.1	6.6	0.0	0.0	9.8	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.0	0.0	0.6	0.1	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.0	0.0	0.0	1.1	0.3	0.0	0.0	3.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.6	0.0	0.0	0.0	0.0	11.6	6.7	0.0	0.0	10.8	0.0	0.0
LnGrp LOS	B	A	A	A	A	B	A	A	A	B	A	A
Approach Vol, veh/h		393			222			85			553	
Approach Delay, s/veh		13.6			11.6			6.7			10.8	
Approach LOS		B			B			A			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		21.9		17.8		21.9		17.8				
Change Period (Y+Rc), s		4.6		5.8		4.6		5.8				
Max Green Setting (Gmax), s		25.4		24.2		25.4		24.2				
Max Q Clear Time (g_c+I1), s		3.1		10.2		14.5		6.1				
Green Ext Time (p_c), s		0.4		1.9		2.8		1.0				

Intersection Summary												
HCM 6th Ctrl Delay			11.6									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	62.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	103	402	96	112	634	82	170	19	95	22	5	28
Future Vol, veh/h	103	402	96	112	634	82	170	19	95	22	5	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	106	414	99	115	654	85	175	20	98	23	5	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	739	0	0	513	0	0	1570	1595	414	1662	1652	697
Stage 1	-	-	-	-	-	-	626	626	-	927	927	-
Stage 2	-	-	-	-	-	-	944	969	-	735	725	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	876	-	-	1063	-	-	~ 91	108	643	78	100	444
Stage 1	-	-	-	-	-	-	475	480	-	324	350	-
Stage 2	-	-	-	-	-	-	317	334	-	414	433	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	876	-	-	1063	-	-	~ 69	85	643	50	78	444
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 125	152	-	122	166	-
Stage 1	-	-	-	-	-	-	418	422	-	285	312	-
Stage 2	-	-	-	-	-	-	260	298	-	294	381	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.7	1.2	$ 377.4	29.8
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	174	876	-	-	1063	-	-	201
HCM Lane V/C Ratio	1.683	0.121	-	-	0.109	-	-	0.282
HCM Control Delay (s)	$ 377.4	9.7	-	-	8.8	-	-	29.8
HCM Lane LOS	F	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	20.3	0.4	-	-	0.4	-	-	1.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	348	123	0	149	33	0
Future Vol, veh/h	348	123	0	149	33	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	378	134	0	162	36	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	512	0	607	445
Stage 1	-	-	-	-	445	-
Stage 2	-	-	-	-	162	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1064	-	463	617
Stage 1	-	-	-	-	650	-
Stage 2	-	-	-	-	872	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1064	-	463	617
Mov Cap-2 Maneuver	-	-	-	-	463	-
Stage 1	-	-	-	-	650	-
Stage 2	-	-	-	-	872	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	463	-	-	1064	-
HCM Lane V/C Ratio	0.077	-	-	-	-
HCM Control Delay (s)	13.4	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	430	27	25	800	72	10	0	31	20	0	17
Future Vol, veh/h	62	430	27	25	800	72	10	0	31	20	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	68	473	30	27	879	79	11	0	34	22	0	19

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	958	0	0	503	0	0	1606	1636	252	1346	1612	919
Stage 1	-	-	-	-	-	-	624	624	-	973	973	-
Stage 2	-	-	-	-	-	-	982	1012	-	373	639	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	726	-	-	1072	-	-	78	102	754	120	105	332
Stage 1	-	-	-	-	-	-	445	481	-	306	333	-
Stage 2	-	-	-	-	-	-	302	319	-	625	474	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	726	-	-	1072	-	-	67	90	754	104	93	332
Mov Cap-2 Maneuver	-	-	-	-	-	-	153	179	-	206	206	-
Stage 1	-	-	-	-	-	-	403	436	-	277	325	-
Stage 2	-	-	-	-	-	-	278	311	-	541	429	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.2	15.6	22.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	385	726	-	-	1072	-	-	250
HCM Lane V/C Ratio	0.117	0.094	-	-	0.026	-	-	0.163
HCM Control Delay (s)	15.6	10.5	-	-	8.4	-	-	22.2
HCM Lane LOS	C	B	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0.3	-	-	0.1	-	-	0.6

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	205	143	0	110	0	38	0	0	0	0	0
Future Vol, veh/h	0	205	143	0	110	0	38	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	223	155	0	120	0	41	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	378	0	0	421	421	301
Stage 1	-	-	-	-	-	-	301	301	-
Stage 2	-	-	-	-	-	-	120	120	-
Critical Hdwy	-	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	1192	-	0	593	527	743
Stage 1	0	-	-	-	-	0	755	669	-
Stage 2	0	-	-	-	-	0	910	800	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1192	-	-	593	0	743
Mov Cap-2 Maneuver	-	-	-	-	-	-	593	0	-
Stage 1	-	-	-	-	-	-	755	0	-
Stage 2	-	-	-	-	-	-	910	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	593	-	-	1192	-
HCM Lane V/C Ratio	0.07	-	-	-	-
HCM Control Delay (s)	11.5	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	449	0	2	889	103	0	19	6	28	5	9
Future Vol, veh/h	32	449	0	2	889	103	0	19	6	28	5	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	200	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	34	483	0	2	956	111	0	20	6	30	5	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1067	0	0	483	0	0	1574	1622	242	1336	1567	1012
Stage 1	-	-	-	-	-	-	551	551	-	1016	1016	-
Stage 2	-	-	-	-	-	-	1023	1071	-	320	551	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	661	-	-	1090	-	-	83	104	765	122	112	293
Stage 1	-	-	-	-	-	-	491	519	-	289	318	-
Stage 2	-	-	-	-	-	-	287	300	-	672	519	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	661	-	-	1090	-	-	76	98	765	107	106	293
Mov Cap-2 Maneuver	-	-	-	-	-	-	174	197	-	212	221	-
Stage 1	-	-	-	-	-	-	466	493	-	274	317	-
Stage 2	-	-	-	-	-	-	272	299	-	606	493	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	21.9	23.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	240	661	-	-	1090	-	-	212	262
HCM Lane V/C Ratio	-	0.112	0.052	-	-	0.002	-	-	0.142	0.057
HCM Control Delay (s)	0	21.9	10.7	-	-	8.3	-	-	24.8	19.6
HCM Lane LOS	A	C	B	-	-	A	-	-	C	C
HCM 95th %tile Q(veh)	-	0.4	0.2	-	-	0	-	-	0.5	0.2

Intersection	
Intersection Delay, s/veh	211.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	0	288	0	0	0	880	68	0	0	33	13
Future Vol, veh/h	18	0	288	0	0	0	880	68	0	0	33	13
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	19	0	303	0	0	0	926	72	0	0	35	14
Number of Lanes	1	0	1	0	0	0	1	2	0	0	2	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	3
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	3	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	3	0	2
HCM Control Delay	16.6	284.1	10.4
HCM LOS	C	F	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	100%	100%	0%	0%	100%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	880	34	34	18	288	17	17	13
LT Vol	880	0	0	18	0	0	0	0
Through Vol	0	34	34	0	0	17	17	0
RT Vol	0	0	0	0	288	0	0	13
Lane Flow Rate	926	36	36	19	303	17	17	14
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	1.624	0.057	0.04	0.038	0.507	0.034	0.034	0.018
Departure Headway (Hd)	6.313	5.706	3.985	8.32	7.133	8.191	8.191	5.722
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	584	621	882	433	509	440	440	629
Service Time	4.013	3.506	1.784	6.02	4.833	5.891	5.891	3.422
HCM Lane V/C Ratio	1.586	0.058	0.041	0.044	0.595	0.039	0.039	0.022
HCM Control Delay	305.4	8.9	7	11.3	16.9	11.2	11.2	8.5
HCM Lane LOS	F	A	A	B	C	B	B	A
HCM 95th-tile Q	51.3	0.2	0.1	0.1	2.8	0.1	0.1	0.1

Intersection	
Intersection Delay, s/veh	324.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	417	26	175	956	100	19	0	106	130	0	19
Future Vol, veh/h	41	417	26	175	956	100	19	0	106	130	0	19
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	44	444	28	186	1017	106	20	0	113	138	0	20
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	37.4	505.5	15.7	18.4
HCM LOS	E	F	C	C

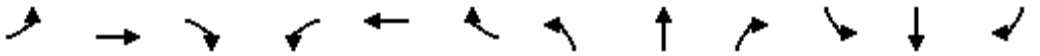
Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	15%	100%	0%	0%	100%	0%	87%
Vol Thru, %	0%	0%	100%	0%	0%	91%	0%
Vol Right, %	85%	0%	0%	100%	0%	9%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	125	41	417	26	175	1056	149
LT Vol	19	41	0	0	175	0	130
Through Vol	0	0	417	0	0	956	0
RT Vol	106	0	0	26	0	100	19
Lane Flow Rate	133	44	444	28	186	1123	159
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.285	0.089	0.846	0.047	0.403	2.253	0.37
Departure Headway (Hd)	9.293	8.626	8.109	7.385	7.801	7.22	9.987
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	390	418	452	488	460	506	363
Service Time	6.993	6.326	5.809	5.085	5.571	4.989	7.687
HCM Lane V/C Ratio	0.341	0.105	0.982	0.057	0.404	2.219	0.438
HCM Control Delay	15.7	12.2	41.6	10.4	15.8	586.7	18.4
HCM Lane LOS	C	B	E	B	C	F	C
HCM 95th-tile Q	1.2	0.3	8.3	0.1	1.9	82.4	1.7

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	4	471	630	1007	388
Future Volume (vph)	4	471	630	1007	388
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	30.0	30.0	29.0	60.0	31.0
Total Split (%)	33.3%	33.3%	32.2%	66.7%	34.4%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	550	4	471	630	1007	0	0	388	188
Future Volume (veh/h)	0	0	0	550	4	471	630	1007	0	0	388	188
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				611	4	336	700	1119	0	0	431	199
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				480	3	429	659	3124	0	0	850	279
Arrive On Green				0.27	0.27	0.27	0.73	1.00	0.00	0.00	0.17	0.17
Sat Flow, veh/h				1798	12	1610	1810	5358	0	0	5168	1606
Grp Volume(v), veh/h				615	0	336	700	1119	0	0	431	199
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1729	0	0	1634	1606
Q Serve(g_s), s				24.0	0.0	17.4	32.8	0.0	0.0	0.0	7.2	10.5
Cycle Q Clear(g_c), s				24.0	0.0	17.4	32.8	0.0	0.0	0.0	7.2	10.5
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				483	0	429	659	3124	0	0	850	279
V/C Ratio(X)				1.27	0.00	0.78	1.06	0.36	0.00	0.00	0.51	0.71
Avail Cap(c_a), veh/h				483	0	429	659	3124	0	0	1373	450
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.51	0.51	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.0	0.0	30.6	12.2	0.0	0.0	0.0	33.7	35.1
Incr Delay (d2), s/veh				138.8	0.0	10.4	43.2	0.2	0.0	0.0	2.2	14.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				28.3	0.0	15.8	12.0	0.0	0.0	0.0	2.9	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				171.8	0.0	41.0	55.4	0.2	0.0	0.0	35.9	49.6
LnGrp LOS				F	A	D	F	A	A	A	D	D
Approach Vol, veh/h					951			1819			630	
Approach Delay, s/veh					125.6			21.4			40.2	
Approach LOS					F			C			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	60.0	30.0	38.6	21.4
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	54.2	24.0	25.0	* 25
Max Q Clear Time (g_c+I1), s	2.0	26.0	34.8	12.5
Green Ext Time (p_c), s	9.3	0.0	0.0	3.1

Intersection Summary	
HCM 6th Ctrl Delay	54.0
HCM 6th LOS	D

Notes

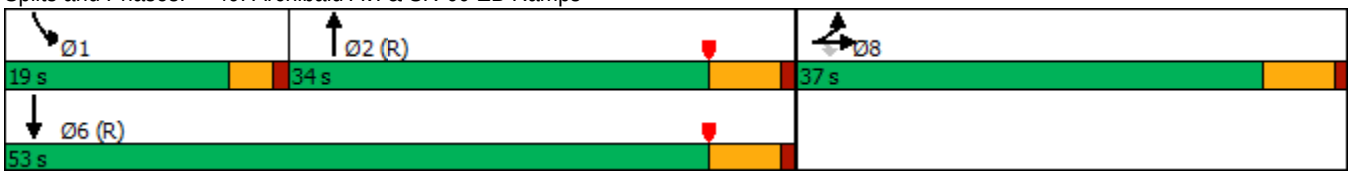
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

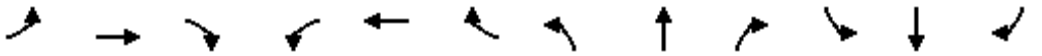
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	3	470	1281	152	785
Future Volume (vph)	3	470	1281	152	785
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (%)	41.1%	41.1%	37.8%	21.1%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	355	3	470	0	0	0	0	1281	618	152	785	0
Future Volume (veh/h)	355	3	470	0	0	0	0	1281	618	152	785	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	378	3	283				0	1363	426	162	835	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	448	4	401				0	2309	721	199	3225	0
Arrive On Green	0.25	0.25	0.25				0.00	0.47	0.47	0.04	0.21	0.00
Sat Flow, veh/h	1796	14	1610				0	5207	1543	1810	5358	0
Grp Volume(v), veh/h	381	0	283				0	1352	437	162	835	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1582	1810	1729	0
Q Serve(g_s), s	18.0	0.0	14.4				0.0	18.3	18.3	8.0	12.2	0.0
Cycle Q Clear(g_c), s	18.0	0.0	14.4				0.0	18.3	18.3	8.0	12.2	0.0
Prop In Lane	0.99		1.00				0.00		0.98	1.00		0.00
Lane Grp Cap(c), veh/h	451	0	401				0	2290	739	199	3225	0
V/C Ratio(X)	0.84	0.00	0.70				0.00	0.59	0.59	0.81	0.26	0.00
Avail Cap(c_a), veh/h	628	0	558				0	2290	739	302	3225	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.51	0.51	0.81	0.81	0.00
Uniform Delay (d), s/veh	32.1	0.0	30.8				0.0	17.6	17.6	42.4	18.4	0.0
Incr Delay (d2), s/veh	7.5	0.0	2.4				0.0	0.6	1.8	4.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	0.0	5.5				0.0	6.1	6.1	3.8	5.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.6	0.0	33.2				0.0	18.2	19.4	46.9	18.5	0.0
LnGrp LOS	D	A	C				A	B	B	D	B	A
Approach Vol, veh/h		664						1789			997	
Approach Delay, s/veh		36.9						18.5			23.1	
Approach LOS		D						B			C	

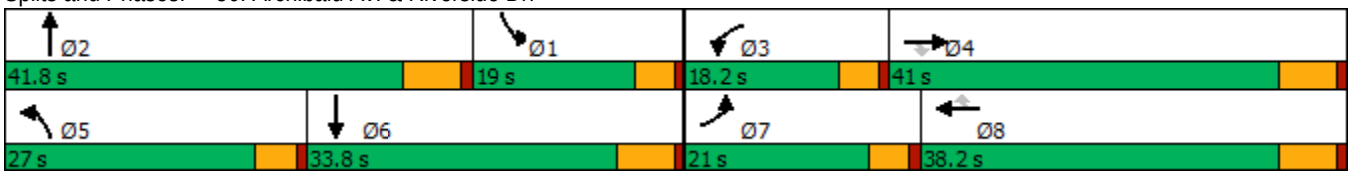
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	13.9	47.9				61.8		28.2				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	15.0	28.2				47.2		31.2				
Max Q Clear Time (g_c+I1), s	10.0	20.3				14.2		20.0				
Green Ext Time (p_c), s	0.1	5.8				5.7		2.4				

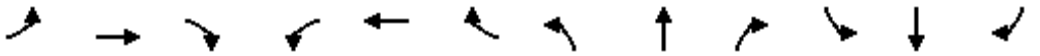
Intersection Summary												
HCM 6th Ctrl Delay			23.4									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	227	293	249	101	452	166	321	1079	128	646
Future Volume (vph)	227	293	249	101	452	166	321	1079	128	646
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.0	41.0	41.0	18.2	38.2	38.2	27.0	41.8	19.0	33.8
Total Split (%)	17.5%	34.2%	34.2%	15.2%	31.8%	31.8%	22.5%	34.8%	15.8%	28.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 107.3
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	293	249	101	452	166	321	1079	49	128	646	233
Future Volume (veh/h)	227	293	249	101	452	166	321	1079	49	128	646	233
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	241	312	131	107	481	95	341	1148	49	136	687	170
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	257	936	410	131	670	293	351	1403	60	211	865	211
Arrive On Green	0.16	0.27	0.27	0.08	0.20	0.20	0.22	0.29	0.29	0.13	0.22	0.22
Sat Flow, veh/h	1619	3420	1498	1619	3420	1494	1619	4832	206	1619	3940	962
Grp Volume(v), veh/h	241	312	131	107	481	95	341	778	419	136	570	287
Grp Sat Flow(s),veh/h/ln	1619	1710	1498	1619	1710	1494	1619	1638	1762	1619	1638	1625
Q Serve(g_s), s	15.2	7.5	7.2	6.7	13.6	3.9	21.6	22.8	22.9	8.2	17.0	17.3
Cycle Q Clear(g_c), s	15.2	7.5	7.2	6.7	13.6	3.9	21.6	22.8	22.9	8.2	17.0	17.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		0.59
Lane Grp Cap(c), veh/h	257	936	410	131	670	293	351	951	512	211	719	357
V/C Ratio(X)	0.94	0.33	0.32	0.82	0.72	0.32	0.97	0.82	0.82	0.64	0.79	0.81
Avail Cap(c_a), veh/h	257	1152	505	213	1059	463	351	1129	607	226	875	434
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	30.0	29.9	46.7	38.9	16.9	40.1	34.1	34.1	42.6	38.1	38.2
Incr Delay (d2), s/veh	39.0	0.2	0.4	4.9	1.5	0.6	40.1	4.2	7.5	4.0	4.1	8.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	3.0	2.5	2.8	5.5	2.0	12.0	9.0	10.2	3.4	6.8	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.0	30.2	30.3	51.6	40.3	17.5	80.2	38.3	41.6	46.7	42.2	47.2
LnGrp LOS	F	C	C	D	D	B	F	D	D	D	D	D
Approach Vol, veh/h		684			683			1538			993	
Approach Delay, s/veh		48.4			38.9			48.5			44.3	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.7	36.2	13.0	34.5	27.0	28.9	21.0	26.4
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	14.4	* 36	13.6	34.8	22.4	27.6	16.4	32.0
Max Q Clear Time (g_c+I1), s	10.2	24.9	8.7	9.5	23.6	19.3	17.2	15.6
Green Ext Time (p_c), s	0.1	5.1	0.0	2.2	0.0	3.2	0.0	2.8

Intersection Summary	
HCM 6th Ctrl Delay	45.7
HCM 6th LOS	D

Notes

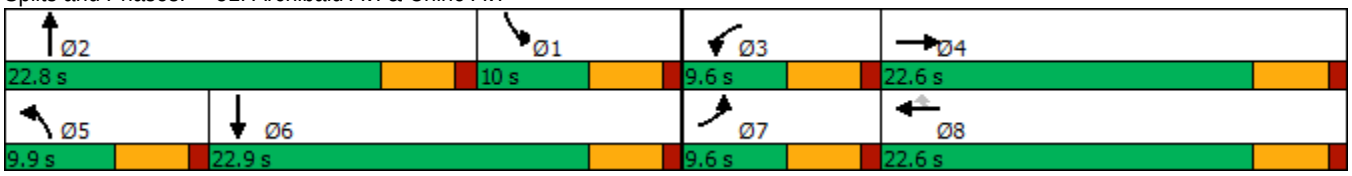
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

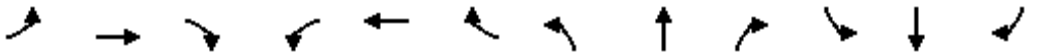
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	91	3	75	4	235	102	1067	111	855
Future Volume (vph)	91	3	75	4	235	102	1067	111	855
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	9.6	22.6	9.6	22.6	22.6	9.9	22.8	10.0	22.9
Total Split (%)	14.8%	34.8%	14.8%	34.8%	34.8%	15.2%	35.1%	15.4%	35.2%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 53.6
Natural Cycle: 75
Control Type: Actuated-Uncoordinated

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	3	25	75	4	235	102	1067	37	111	855	24
Future Volume (veh/h)	91	3	25	75	4	235	102	1067	37	111	855	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	100	3	9	82	4	121	112	1173	39	122	940	24
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	126	44	133	113	188	159	138	1607	53	157	1161	30
Arrive On Green	0.08	0.11	0.11	0.07	0.10	0.10	0.08	0.33	0.33	0.10	0.34	0.34
Sat Flow, veh/h	1619	395	1184	1619	1800	1525	1619	4884	162	1619	3407	87
Grp Volume(v), veh/h	100	0	12	82	4	121	112	787	425	122	472	492
Grp Sat Flow(s),veh/h/ln	1619	0	1579	1619	1800	1525	1619	1638	1770	1619	1710	1784
Q Serve(g_s), s	2.8	0.0	0.3	2.3	0.1	2.4	3.2	9.9	9.9	3.5	11.8	11.8
Cycle Q Clear(g_c), s	2.8	0.0	0.3	2.3	0.1	2.4	3.2	9.9	9.9	3.5	11.8	11.8
Prop In Lane	1.00		0.75	1.00		1.00	1.00		0.09	1.00		0.05
Lane Grp Cap(c), veh/h	126	0	177	113	188	159	138	1078	582	157	583	608
V/C Ratio(X)	0.80	0.00	0.07	0.72	0.02	0.76	0.81	0.73	0.73	0.78	0.81	0.81
Avail Cap(c_a), veh/h	173	0	606	173	691	586	183	1272	687	186	668	697
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.3	0.0	18.6	21.4	18.9	9.3	21.1	13.9	13.9	20.7	14.1	14.1
Incr Delay (d2), s/veh	16.1	0.0	0.2	8.4	0.0	7.3	18.4	1.8	3.3	16.0	6.6	6.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.1	1.0	0.0	1.4	1.7	2.7	3.2	1.7	4.2	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.4	0.0	18.8	29.8	18.9	16.5	39.5	15.7	17.2	36.7	20.7	20.4
LnGrp LOS	D	A	B	C	B	B	D	B	B	D	C	C
Approach Vol, veh/h		112			207			1324			1086	
Approach Delay, s/veh		35.4			21.8			18.2			22.4	
Approach LOS		D			C			B			C	

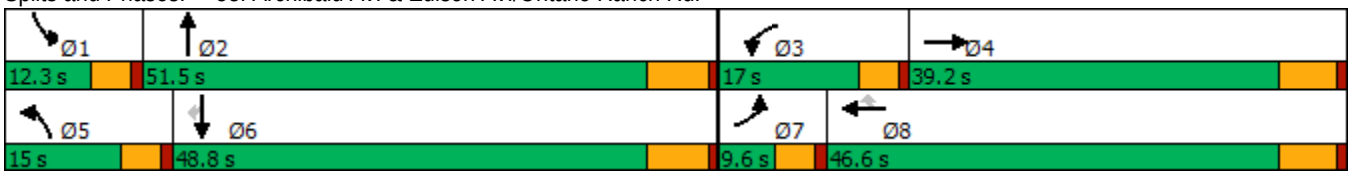
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	20.0	7.9	9.8	8.6	20.6	8.2	9.5
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	5.4	18.2	5.0	18.0	5.3	18.3	5.0	18.0
Max Q Clear Time (g_c+I1), s	5.5	11.9	4.3	2.3	5.2	13.8	4.8	4.4
Green Ext Time (p_c), s	0.0	3.5	0.0	0.0	0.0	2.2	0.0	0.3

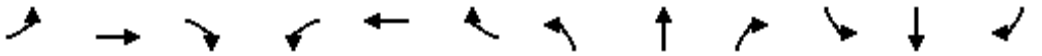
Intersection Summary	
HCM 6th Ctrl Delay	20.8
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	244	40	431	649	133	157	980	390	63	471	183
Future Volume (vph)	48	244	40	431	649	133	157	980	390	63	471	183
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	9.6	39.2		17.0	46.6	46.6	15.0	51.5		12.3	48.8	48.8
Total Split (%)	8.0%	32.7%		14.2%	38.8%	38.8%	12.5%	42.9%		10.3%	40.7%	40.7%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 109.6
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	244	40	431	649	133	157	980	390	63	471	183
Future Volume (veh/h)	48	244	40	431	649	133	157	980	390	63	471	183
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	49	252	0	444	669	83	162	1010	0	65	486	156
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	105	1003		337	669	567	155	1166		81	1010	450
Arrive On Green	0.04	0.29	0.00	0.11	0.37	0.37	0.10	0.34	0.00	0.05	0.30	0.30
Sat Flow, veh/h	2956	3420	1525	2956	1800	1525	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	49	252	0	444	669	83	162	1010	0	65	486	156
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1800	1525	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	1.8	6.1	0.0	12.4	40.4	3.9	10.4	30.0	0.0	4.3	12.7	8.7
Cycle Q Clear(g_c), s	1.8	6.1	0.0	12.4	40.4	3.9	10.4	30.0	0.0	4.3	12.7	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	105	1003		337	669	567	155	1166		81	1010	450
V/C Ratio(X)	0.47	0.25		1.32	1.00	0.15	1.05	0.87		0.80	0.48	0.35
Avail Cap(c_a), veh/h	136	1039		337	669	567	155	1417		115	1332	594
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	29.3	0.0	48.1	34.1	22.7	49.1	33.5	0.0	51.1	31.4	30.0
Incr Delay (d2), s/veh	1.2	0.1	0.0	161.7	34.6	0.1	84.8	5.1	0.0	15.6	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.4	0.0	11.9	22.6	1.3	7.6	12.2	0.0	2.0	4.9	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.6	29.4	0.0	209.8	68.8	22.8	133.9	38.5	0.0	66.7	31.8	30.5
LnGrp LOS	D	C		F	E	C	F	D		E	C	C
Approach Vol, veh/h		301	A		1196			1172	A		707	
Approach Delay, s/veh		33.2			117.9			51.7			34.7	
Approach LOS		C			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	43.5	17.0	38.1	15.0	38.6	8.5	46.6
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	7.7	45.0	12.4	33.0	10.4	42.3	5.0	40.4
Max Q Clear Time (g_c+I1), s	6.3	32.0	14.4	8.1	12.4	14.7	3.8	42.4
Green Ext Time (p_c), s	0.0	5.0	0.0	1.4	0.0	3.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	70.0
HCM 6th LOS	E

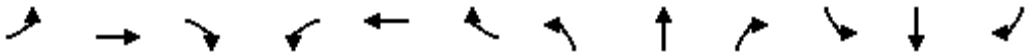
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	15	1512	8	23	919
Future Volume (vph)	11	15	1512	8	23	919
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.5	9.5	32.5	32.5	9.6	16.5
Total Split (s)	9.5	9.5	41.4	41.4	9.6	51.0
Total Split (%)	13.6%	13.6%	59.1%	59.1%	13.7%	72.9%
Yellow Time (s)	3.5	3.5	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	6.5	6.5	4.6	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 61.2
Natural Cycle: 75
Control Type: Actuated-Uncoordinated

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	11	0	15	0	1512	8	23	919	0
Future Volume (veh/h)	0	0	0	11	0	15	0	1512	8	23	919	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1700	0	1800	0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h				12	0	5	0	1626	6	25	988	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				65	0	56	0	2310	1030	46	2685	0
Arrive On Green				0.02	0.00	0.02	0.00	0.68	0.68	0.03	0.79	0.00
Sat Flow, veh/h				3141	0	2685	0	3510	1525	1619	3510	0
Grp Volume(v), veh/h				12	0	5	0	1626	6	25	988	0
Grp Sat Flow(s),veh/h/ln				1570	0	1342	0	1710	1525	1619	1710	0
Q Serve(g_s), s				0.2	0.0	0.1	0.0	16.7	0.1	0.9	4.9	0.0
Cycle Q Clear(g_c), s				0.2	0.0	0.1	0.0	16.7	0.1	0.9	4.9	0.0
Prop In Lane				1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				65	0	56	0	2310	1030	46	2685	0
V/C Ratio(X)				0.18	0.00	0.09	0.00	0.70	0.01	0.54	0.37	0.00
Avail Cap(c_a), veh/h				277	0	237	0	2310	1030	143	2685	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				27.3	0.0	27.2	0.0	5.7	3.0	27.2	1.8	0.0
Incr Delay (d2), s/veh				1.3	0.0	0.7	0.0	1.8	0.0	3.6	0.4	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.1	0.0	0.0	0.0	2.3	0.0	0.3	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.6	0.0	27.9	0.0	7.5	3.0	30.7	2.2	0.0
LnGrp LOS				C	A	C	A	A	A	C	A	A
Approach Vol, veh/h					17			1632			1013	
Approach Delay, s/veh					28.4			7.5			2.9	
Approach LOS					C			A			A	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	6.2	44.8				51.0		5.7				
Change Period (Y+Rc), s	4.6	6.5				6.5		4.5				
Max Green Setting (Gmax), s	5.0	34.9				44.5		5.0				
Max Q Clear Time (g_c+I1), s	2.9	18.7				6.9		2.2				
Green Ext Time (p_c), s	0.0	9.7				7.1		0.0				

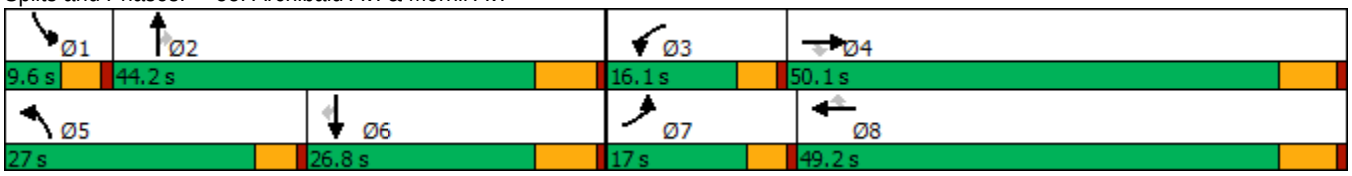
Intersection Summary		
HCM 6th Ctrl Delay		5.9
HCM 6th LOS		A

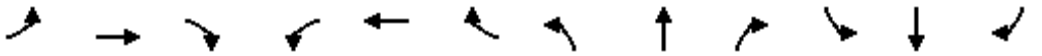
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	254	22	142	72	51	125	577	1141	36	38	487	405
Future Volume (vph)	254	22	142	72	51	125	577	1141	36	38	487	405
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	17.0	50.1	50.1	16.1	49.2	49.2	27.0	44.2	44.2	9.6	26.8	26.8
Total Split (%)	14.2%	41.8%	41.8%	13.4%	41.0%	41.0%	22.5%	36.8%	36.8%	8.0%	22.3%	22.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 92
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	254	22	142	72	51	125	577	1141	36	38	487	405
Future Volume (veh/h)	254	22	142	72	51	125	577	1141	36	38	487	405
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	262	23	91	74	53	34	595	1176	18	39	502	352
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	231	361	306	92	207	175	417	1559	695	104	798	356
Arrive On Green	0.14	0.20	0.20	0.06	0.11	0.11	0.26	0.46	0.46	0.04	0.23	0.23
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	1619	3420	1525	2956	3420	1525
Grp Volume(v), veh/h	262	23	91	74	53	34	595	1176	18	39	502	352
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1710	1525	1478	1710	1525
Q Serve(g_s), s	12.4	0.9	4.4	3.9	2.3	1.8	22.4	24.8	0.6	1.1	11.5	20.0
Cycle Q Clear(g_c), s	12.4	0.9	4.4	3.9	2.3	1.8	22.4	24.8	0.6	1.1	11.5	20.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	231	361	306	92	207	175	417	1559	695	104	798	356
V/C Ratio(X)	1.14	0.06	0.30	0.80	0.26	0.19	1.43	0.75	0.03	0.38	0.63	0.99
Avail Cap(c_a), veh/h	231	908	770	214	890	754	417	1559	695	170	798	356
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.3	28.2	29.6	40.5	35.1	34.9	32.3	19.6	13.0	41.0	30.0	33.2
Incr Delay (d2), s/veh	100.5	0.1	0.5	5.9	0.6	0.5	205.7	2.1	0.0	0.8	1.6	44.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.0	0.4	1.6	1.7	1.0	0.7	31.6	8.6	0.2	0.4	4.4	11.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	137.8	28.2	30.1	46.4	35.8	35.4	238.0	21.8	13.0	41.9	31.5	77.8
LnGrp LOS	F	C	C	D	D	D	F	C	B	D	C	E
Approach Vol, veh/h		376			161			1789			893	
Approach Delay, s/veh		105.0			40.6			93.6			50.2	
Approach LOS		F			D			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	46.1	9.6	23.6	27.0	26.8	17.0	16.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	37.7	11.5	43.9	22.4	20.3	12.4	43.0
Max Q Clear Time (g_c+I1), s	3.1	26.8	5.9	6.4	24.4	22.0	14.4	4.3
Green Ext Time (p_c), s	0.0	5.4	0.0	0.4	0.0	0.0	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	80.2
HCM 6th LOS	F

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	268	886	826	279	223	478
Future Volume (vph)	268	886	826	279	223	478
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	27.0	56.7	36.3	27.0	83.7
Total Split (%)	30.3%	22.5%	47.3%	30.3%	22.5%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 110.3
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	268	886	826	279	223	478
Future Volume (veh/h)	268	886	826	279	223	478
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	279	867	860	244	232	498
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	489	670	851	1157	263	1211
Arrive On Green	0.27	0.27	0.45	0.45	0.15	0.64
Sat Flow, veh/h	1810	1610	1900	1610	1810	1900
Grp Volume(v), veh/h	279	867	860	244	232	498
Grp Sat Flow(s),veh/h/ln	1810	1610	1900	1610	1810	1900
Q Serve(g_s), s	15.3	31.0	51.4	5.8	14.4	14.8
Cycle Q Clear(g_c), s	15.3	31.0	51.4	5.8	14.4	14.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	489	670	851	1157	263	1211
V/C Ratio(X)	0.57	1.29	1.01	0.21	0.88	0.41
Avail Cap(c_a), veh/h	489	670	851	1157	347	1304
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.1	33.5	31.6	5.4	48.0	10.2
Incr Delay (d2), s/veh	1.0	143.6	33.3	0.1	18.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	43.7	29.2	4.0	7.5	5.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.1	177.1	65.0	5.5	66.2	10.3
LnGrp LOS	D	F	F	A	E	B
Approach Vol, veh/h	1146		1104			730
Approach Delay, s/veh	143.0		51.8			28.1
Approach LOS	F		D			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	21.7	56.7			78.4	36.3
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	22.0	51.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	16.4	53.4			16.8	33.0
Green Ext Time (p_c), s	0.3	0.0			1.6	0.0

Intersection Summary	
HCM 6th Ctrl Delay	81.1
HCM 6th LOS	F

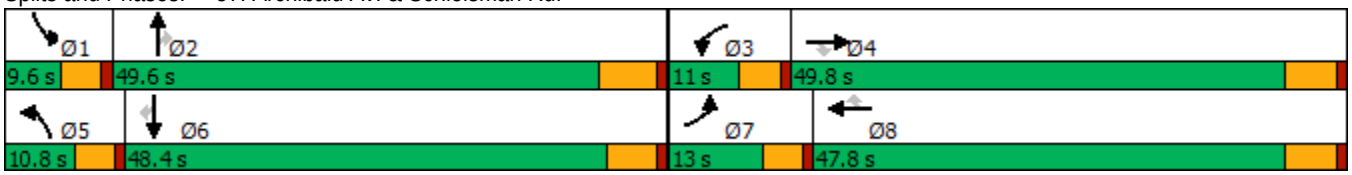
Notes

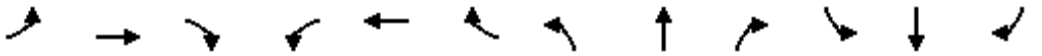
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	383	375	113	248	701	146	241	804	215	106	448	420
Future Volume (vph)	383	375	113	248	701	146	241	804	215	106	448	420
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	49.8	49.8	11.0	47.8	47.8	10.8	49.6	49.6	9.6	48.4	48.4
Total Split (%)	10.8%	41.5%	41.5%	9.2%	39.8%	39.8%	9.0%	41.3%	41.3%	8.0%	40.3%	40.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 106.8
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	383	375	113	248	701	146	241	804	215	106	448	420
Future Volume (veh/h)	383	375	113	248	701	146	241	804	215	106	448	420
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	426	417	62	276	779	85	268	893	166	118	498	345
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	279	2160	660	213	2062	632	206	1427	443	166	1368	419
Arrive On Green	0.08	0.42	0.42	0.06	0.40	0.40	0.06	0.28	0.28	0.05	0.26	0.26
Sat Flow, veh/h	3510	5187	1585	3510	5187	1590	3510	5187	1610	3510	5187	1588
Grp Volume(v), veh/h	426	417	62	276	779	85	268	893	166	118	498	345
Grp Sat Flow(s),veh/h/ln	1755	1729	1585	1755	1729	1590	1755	1729	1610	1755	1729	1588
Q Serve(g_s), s	8.4	5.4	2.5	6.4	11.2	3.6	6.2	15.9	8.8	3.5	8.3	21.6
Cycle Q Clear(g_c), s	8.4	5.4	2.5	6.4	11.2	3.6	6.2	15.9	8.8	3.5	8.3	21.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	279	2160	660	213	2062	632	206	1427	443	166	1368	419
V/C Ratio(X)	1.53	0.19	0.09	1.30	0.38	0.13	1.30	0.63	0.37	0.71	0.36	0.82
Avail Cap(c_a), veh/h	279	2160	660	213	2062	632	206	2131	661	166	2111	646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.6	19.6	18.7	49.6	22.6	20.3	49.7	33.5	31.0	49.6	31.7	36.6
Incr Delay (d2), s/veh	254.3	0.2	0.3	164.2	0.5	0.4	166.2	0.5	0.5	11.4	0.2	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.4	2.1	0.9	7.6	4.4	1.3	7.4	6.4	3.3	1.7	3.3	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	302.9	19.8	19.0	213.8	23.1	20.7	216.0	34.0	31.5	61.0	31.8	41.7
LnGrp LOS	F	B	B	F	C	C	F	C	C	E	C	D
Approach Vol, veh/h		905			1140			1327			961	
Approach Delay, s/veh		153.0			69.1			70.4			39.0	
Approach LOS		F			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	35.3	11.0	49.8	10.8	34.1	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.0	43.4	6.4	44.0	6.2	* 43	8.4	42.0
Max Q Clear Time (g_c+I1), s	5.5	17.9	8.4	7.4	8.2	23.6	10.4	13.2
Green Ext Time (p_c), s	0.0	6.5	0.0	2.9	0.0	4.0	0.0	5.7

Intersection Summary	
HCM 6th Ctrl Delay	80.3
HCM 6th LOS	F

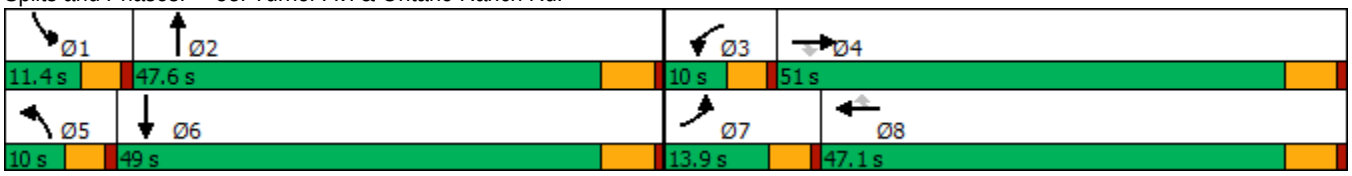
Notes

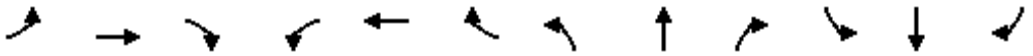
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	52	1314	38	31	671	13	25	7	27	7
Future Volume (vph)	52	1314	38	31	671	13	25	7	27	7
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	13.9	51.0	51.0	10.0	47.1	47.1	10.0	47.6	11.4	49.0
Total Split (%)	11.6%	42.5%	42.5%	8.3%	39.3%	39.3%	8.3%	39.7%	9.5%	40.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	7.2	57.4	57.4	5.5	55.9	55.9	5.5	14.8	6.1	15.2
Actuated g/C Ratio	0.09	0.70	0.70	0.07	0.68	0.68	0.07	0.18	0.07	0.18
v/c Ratio	0.40	0.61	0.04	0.32	0.32	0.01	0.25	0.16	0.25	0.11
Control Delay	50.5	17.9	0.1	52.8	14.9	0.0	51.2	13.0	49.4	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.5	17.9	0.1	52.8	14.9	0.0	51.2	13.0	49.4	14.5
LOS	D	B	A	D	B	A	D	B	D	B
Approach Delay		18.6			16.3			26.4		30.6
Approach LOS		B			B			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 82.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 18.4	Intersection LOS: B
Intersection Capacity Utilization 67.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	603	33	42	1256	18	56	24	36	33	15	65
Future Volume (veh/h)	29	603	33	42	1256	18	56	24	36	33	15	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	32	670	26	47	1396	11	62	27	27	37	17	49
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	51	1869	833	64	1897	846	76	107	107	56	48	138
Arrive On Green	0.03	0.55	0.55	0.04	0.55	0.55	0.05	0.13	0.13	0.03	0.12	0.12
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	826	826	1619	409	1179
Grp Volume(v), veh/h	32	670	26	47	1396	11	62	0	54	37	0	66
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	0	1651	1619	0	1588
Q Serve(g_s), s	1.6	9.2	0.7	2.4	25.6	0.3	3.2	0.0	2.5	1.9	0.0	3.2
Cycle Q Clear(g_c), s	1.6	9.2	0.7	2.4	25.6	0.3	3.2	0.0	2.5	1.9	0.0	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.50	1.00		0.74
Lane Grp Cap(c), veh/h	51	1869	833	64	1897	846	76	0	214	56	0	186
V/C Ratio(X)	0.63	0.36	0.03	0.73	0.74	0.01	0.81	0.00	0.25	0.66	0.00	0.36
Avail Cap(c_a), veh/h	97	1869	833	185	1897	846	99	0	851	99	0	818
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.9	10.7	8.7	39.5	13.9	8.3	39.3	0.0	32.6	39.7	0.0	33.9
Incr Delay (d2), s/veh	4.7	0.5	0.1	5.8	2.6	0.0	24.5	0.0	0.6	4.9	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.0	0.2	1.0	8.6	0.1	1.7	0.0	1.0	0.8	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.5	11.2	8.8	45.3	16.5	8.3	63.8	0.0	33.2	44.6	0.0	35.0
LnGrp LOS	D	B	A	D	B	A	E	A	C	D	A	D
Approach Vol, veh/h		728			1454			116			103	
Approach Delay, s/veh		12.6			17.4			49.6			38.5	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	16.6	7.9	51.3	8.5	15.5	7.2	52.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	5.1	42.9	9.5	41.7	5.1	42.9	5.0	46.2
Max Q Clear Time (g_c+I1), s	3.9	4.5	4.4	11.2	5.2	5.2	3.6	27.6
Green Ext Time (p_c), s	0.0	0.2	0.0	4.6	0.0	0.3	0.0	9.4

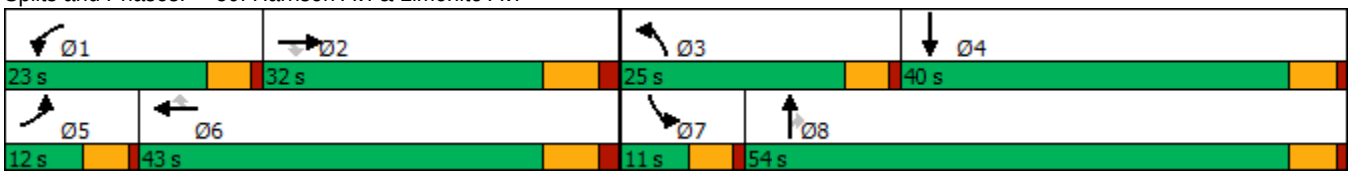
Intersection Summary	
HCM 6th Ctrl Delay	18.4
HCM 6th LOS	B

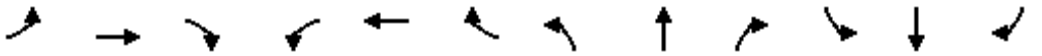
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	41	442	19	137	936	21	144	103	204	26	109
Future Volume (vph)	41	442	19	137	936	21	144	103	204	26	109
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	12.0	32.0	32.0	23.0	43.0	43.0	25.0	54.0	54.0	11.0	40.0
Total Split (%)	10.0%	26.7%	26.7%	19.2%	35.8%	35.8%	20.8%	45.0%	45.0%	9.2%	33.3%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 77.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 59: Harrison Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	442	19	137	936	21	144	103	204	26	109	75
Future Volume (veh/h)	41	442	19	137	936	21	144	103	204	26	109	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	43	460	13	143	975	20	150	107	94	27	114	49
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	79	1326	399	184	1629	493	193	415	350	55	179	77
Arrive On Green	0.04	0.26	0.26	0.10	0.31	0.31	0.11	0.22	0.22	0.03	0.14	0.14
Sat Flow, veh/h	1810	5187	1559	1810	5187	1571	1810	1900	1606	1810	1261	542
Grp Volume(v), veh/h	43	460	13	143	975	20	150	107	94	27	0	163
Grp Sat Flow(s),veh/h/ln	1810	1729	1559	1810	1729	1571	1810	1900	1606	1810	0	1802
Q Serve(g_s), s	1.3	4.1	0.4	4.4	9.0	0.5	4.6	2.6	2.8	0.8	0.0	4.8
Cycle Q Clear(g_c), s	1.3	4.1	0.4	4.4	9.0	0.5	4.6	2.6	2.8	0.8	0.0	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	79	1326	399	184	1629	493	193	415	350	55	0	257
V/C Ratio(X)	0.55	0.35	0.03	0.78	0.60	0.04	0.78	0.26	0.27	0.49	0.00	0.64
Avail Cap(c_a), veh/h	224	2290	688	575	3297	999	639	1634	1381	192	0	1104
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.5	17.2	15.8	24.8	16.4	13.5	24.6	18.3	18.4	27.0	0.0	22.9
Incr Delay (d2), s/veh	2.2	0.2	0.0	2.7	0.4	0.0	2.6	0.3	0.4	2.5	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.3	0.1	1.7	2.9	0.2	1.8	1.0	0.9	0.4	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.7	17.4	15.9	27.5	16.8	13.5	27.2	18.7	18.8	29.5	0.0	25.5
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	A	C
Approach Vol, veh/h		516			1138			351			190	
Approach Delay, s/veh		18.3			18.1			22.3			26.1	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	21.5	11.0	13.4	7.5	24.8	6.7	17.7
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	18.0	25.0	20.0	34.7	7.0	36.0	6.0	48.7
Max Q Clear Time (g_c+I1), s	6.4	6.1	6.6	6.8	3.3	11.0	2.8	4.8
Green Ext Time (p_c), s	0.1	2.6	0.1	0.8	0.0	6.6	0.0	0.8

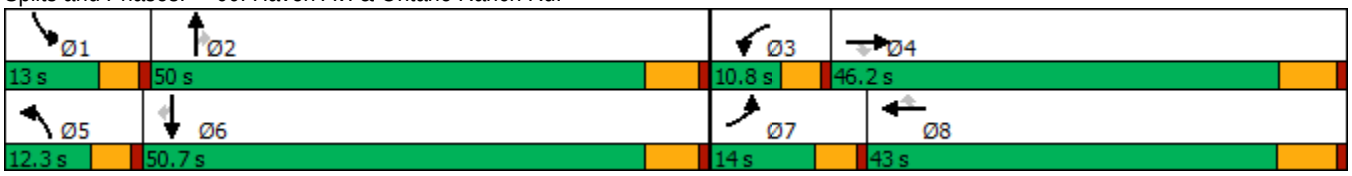
Intersection Summary	
HCM 6th Ctrl Delay	19.5
HCM 6th LOS	B

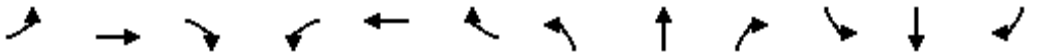
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	632	28	21	1080	79	61	184	76	115	56	75
Future Volume (vph)	132	632	28	21	1080	79	61	184	76	115	56	75
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	14.0	46.2	46.2	10.8	43.0	43.0	12.3	50.0	50.0	13.0	50.7	50.7
Total Split (%)	11.7%	38.5%	38.5%	9.0%	35.8%	35.8%	10.3%	41.7%	41.7%	10.8%	42.3%	42.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 95.2
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	632	28	21	1080	79	61	184	76	115	56	75
Future Volume (veh/h)	132	632	28	21	1080	79	61	184	76	115	56	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	140	672	17	22	1149	39	65	196	31	122	60	47
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	169	2447	760	38	1428	637	81	253	214	149	329	279
Arrive On Green	0.10	0.50	0.50	0.02	0.42	0.42	0.05	0.14	0.14	0.09	0.18	0.18
Sat Flow, veh/h	1619	4914	1525	1619	3420	1525	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	140	672	17	22	1149	39	65	196	31	122	60	47
Grp Sat Flow(s),veh/h/ln	1619	1638	1525	1619	1710	1525	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	7.4	7.0	0.5	1.2	25.8	1.3	3.5	9.2	1.6	6.5	2.5	2.3
Cycle Q Clear(g_c), s	7.4	7.0	0.5	1.2	25.8	1.3	3.5	9.2	1.6	6.5	2.5	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	169	2447	760	38	1428	637	81	253	214	149	329	279
V/C Ratio(X)	0.83	0.27	0.02	0.57	0.80	0.06	0.81	0.77	0.14	0.82	0.18	0.17
Avail Cap(c_a), veh/h	174	2447	760	115	1428	637	143	910	771	156	925	784
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.4	12.8	11.1	42.2	22.3	15.2	41.1	36.2	33.0	39.0	30.2	30.1
Incr Delay (d2), s/veh	25.2	0.3	0.1	4.9	4.9	0.2	6.9	5.0	0.3	25.3	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	2.2	0.2	0.5	9.8	0.4	1.5	4.2	0.6	3.5	1.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.6	13.0	11.2	47.2	27.2	15.4	48.0	41.3	33.3	64.3	30.5	30.4
LnGrp LOS	E	B	B	D	C	B	D	D	C	E	C	C
Approach Vol, veh/h		829			1210			292			229	
Approach Delay, s/veh		21.5			27.2			41.9			48.5	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	18.1	6.7	50.0	9.0	21.8	13.7	43.0
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	8.4	44.2	6.2	* 40	7.7	44.9	9.4	36.5
Max Q Clear Time (g_c+I1), s	8.5	11.2	3.2	9.0	5.5	4.5	9.4	27.8
Green Ext Time (p_c), s	0.0	1.1	0.0	4.4	0.0	0.4	0.0	4.6

Intersection Summary	
HCM 6th Ctrl Delay	29.0
HCM 6th LOS	C

Notes

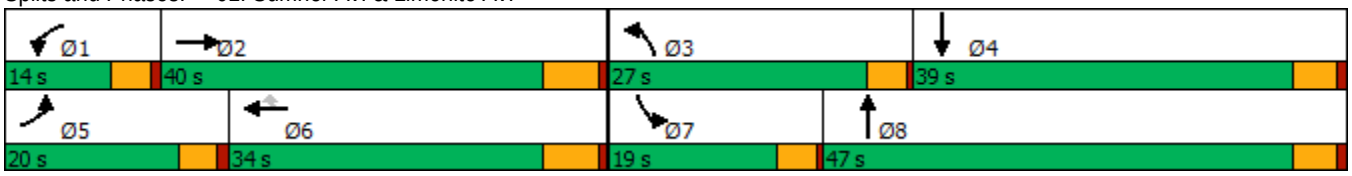
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

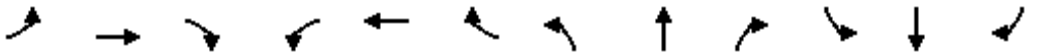
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	232	479	105	752	31	180	367	93	184
Future Volume (vph)	232	479	105	752	31	180	367	93	184
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	20.0	40.0	14.0	34.0	34.0	27.0	47.0	19.0	39.0
Total Split (%)	16.7%	33.3%	11.7%	28.3%	28.3%	22.5%	39.2%	15.8%	32.5%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 76.1
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 61: Sumner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	232	479	30	105	752	31	180	367	107	93	184	151
Future Volume (veh/h)	232	479	30	105	752	31	180	367	107	93	184	151
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	239	494	25	108	775	28	186	378	36	96	190	59
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	366	1530	77	214	1344	412	237	638	60	124	353	106
Arrive On Green	0.10	0.30	0.30	0.06	0.26	0.26	0.13	0.19	0.19	0.07	0.13	0.13
Sat Flow, veh/h	3510	5058	254	3510	5187	1589	1810	3332	316	1810	2732	824
Grp Volume(v), veh/h	239	337	182	108	775	28	186	204	210	96	124	125
Grp Sat Flow(s),veh/h/ln	1755	1729	1854	1755	1729	1589	1810	1805	1843	1810	1805	1752
Q Serve(g_s), s	3.4	3.9	3.9	1.5	6.7	0.7	5.2	5.3	5.4	2.7	3.3	3.5
Cycle Q Clear(g_c), s	3.4	3.9	3.9	1.5	6.7	0.7	5.2	5.3	5.4	2.7	3.3	3.5
Prop In Lane	1.00		0.14	1.00		1.00	1.00		0.17	1.00		0.47
Lane Grp Cap(c), veh/h	366	1046	561	214	1344	412	237	346	353	124	233	226
V/C Ratio(X)	0.65	0.32	0.33	0.51	0.58	0.07	0.79	0.59	0.60	0.77	0.53	0.55
Avail Cap(c_a), veh/h	1051	2271	1218	644	2805	860	804	1464	1495	524	1185	1150
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.3	14.0	14.0	23.6	16.7	14.5	21.8	19.1	19.1	23.7	21.1	21.1
Incr Delay (d2), s/veh	0.7	0.2	0.3	0.7	0.4	0.1	2.2	1.2	1.2	3.8	1.4	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.2	1.3	0.6	2.1	0.2	2.0	2.0	2.0	1.1	1.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	14.1	14.3	24.2	17.1	14.5	24.0	20.3	20.3	27.5	22.5	22.7
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		758			911			600			345	
Approach Delay, s/veh		17.0			17.9			21.4			24.0	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	21.7	10.8	11.7	9.9	19.4	7.5	14.9
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	9.5	34.0	23.0	34.0	15.5	28.0	15.0	42.0
Max Q Clear Time (g_c+I1), s	3.5	5.9	7.2	5.5	5.4	8.7	4.7	7.4
Green Ext Time (p_c), s	0.0	2.9	0.1	1.0	0.2	4.7	0.0	1.8

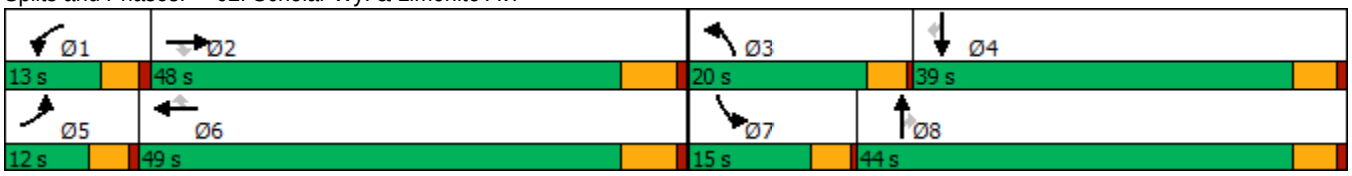
Intersection Summary	
HCM 6th Ctrl Delay	19.2
HCM 6th LOS	B

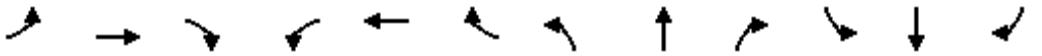
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	694	62	40	707	25	94	169	96	49	185	27
Future Volume (vph)	30	694	62	40	707	25	94	169	96	49	185	27
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	12.0	48.0	48.0	13.0	49.0	49.0	20.0	44.0	44.0	15.0	39.0	39.0
Total Split (%)	10.0%	40.0%	40.0%	10.8%	40.8%	40.8%	16.7%	36.7%	36.7%	12.5%	32.5%	32.5%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 64.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	694	62	40	707	25	94	169	96	49	185	27
Future Volume (veh/h)	30	694	62	40	707	25	94	169	96	49	185	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	33	754	33	43	768	16	102	184	62	53	201	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	53	1174	523	65	1197	534	132	377	319	76	605	257
Arrive On Green	0.03	0.33	0.33	0.04	0.33	0.33	0.07	0.20	0.20	0.04	0.17	0.17
Sat Flow, veh/h	1810	3610	1609	1810	3610	1610	1810	1900	1608	1810	3610	1535
Grp Volume(v), veh/h	33	754	33	43	768	16	102	184	62	53	201	27
Grp Sat Flow(s),veh/h/ln	1810	1805	1609	1810	1805	1610	1810	1900	1608	1810	1805	1535
Q Serve(g_s), s	0.9	8.7	0.7	1.1	8.8	0.3	2.7	4.2	1.6	1.4	2.4	0.7
Cycle Q Clear(g_c), s	0.9	8.7	0.7	1.1	8.8	0.3	2.7	4.2	1.6	1.4	2.4	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	53	1174	523	65	1197	534	132	377	319	76	605	257
V/C Ratio(X)	0.62	0.64	0.06	0.66	0.64	0.03	0.77	0.49	0.19	0.70	0.33	0.10
Avail Cap(c_a), veh/h	277	3096	1380	314	3170	1414	591	1513	1280	406	2506	1066
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	14.1	11.4	23.3	13.9	11.0	22.3	17.4	16.4	23.2	18.0	17.3
Incr Delay (d2), s/veh	4.2	0.6	0.1	4.1	0.6	0.0	3.6	0.7	0.2	4.3	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.7	0.2	0.5	2.7	0.1	1.2	1.7	0.5	0.6	0.9	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.7	14.7	11.4	27.4	14.5	11.1	25.9	18.1	16.6	27.4	18.2	17.4
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		820			827			348			281	
Approach Delay, s/veh		15.1			15.1			20.1			19.9	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	21.9	7.6	13.2	5.9	22.2	6.1	14.7
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	8.5	42.0	16.0	34.0	7.5	43.0	11.0	39.0
Max Q Clear Time (g_c+I1), s	3.1	10.7	4.7	4.4	2.9	10.8	3.4	6.2
Green Ext Time (p_c), s	0.0	5.1	0.0	1.1	0.0	5.2	0.0	1.0

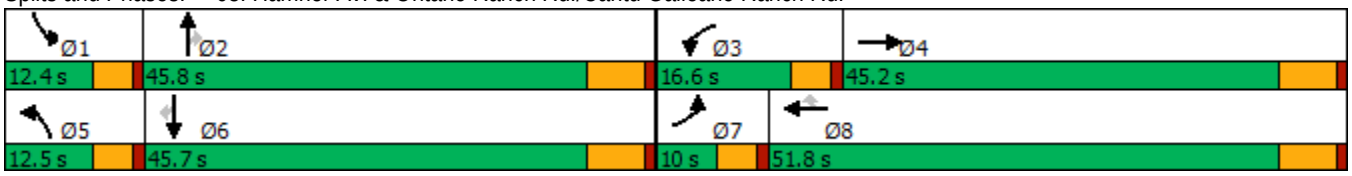
Intersection Summary	
HCM 6th Ctrl Delay	16.4
HCM 6th LOS	B

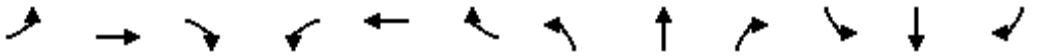
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	96	591	264	1017	195	165	674	484	148	200	88
Future Volume (vph)	96	591	264	1017	195	165	674	484	148	200	88
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	10.0	45.2	16.6	51.8	51.8	12.5	45.8	45.8	12.4	45.7	45.7
Total Split (%)	8.3%	37.7%	13.8%	43.2%	43.2%	10.4%	38.2%	38.2%	10.3%	38.1%	38.1%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 112.2
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	591	79	264	1017	195	165	674	484	148	200	88
Future Volume (veh/h)	96	591	79	264	1017	195	165	674	484	148	200	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	109	672	90	300	1156	222	188	766	543	168	227	100
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	135	1749	229	301	1263	563	198	1650	512	195	1145	510
Arrive On Green	0.05	0.31	0.31	0.10	0.37	0.37	0.07	0.34	0.34	0.07	0.33	0.33
Sat Flow, veh/h	2956	5582	731	2956	3420	1525	2956	4914	1525	2956	3420	1524
Grp Volume(v), veh/h	109	557	205	300	1156	222	188	766	543	168	227	100
Grp Sat Flow(s),veh/h/ln	1478	1548	1668	1478	1710	1525	1478	1638	1525	1478	1710	1524
Q Serve(g_s), s	4.3	11.0	11.4	12.0	38.0	12.7	7.5	14.5	39.6	6.6	5.6	5.5
Cycle Q Clear(g_c), s	4.3	11.0	11.4	12.0	38.0	12.7	7.5	14.5	39.6	6.6	5.6	5.5
Prop In Lane	1.00		0.44	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	135	1455	523	301	1263	563	198	1650	512	195	1145	510
V/C Ratio(X)	0.81	0.38	0.39	1.00	0.92	0.39	0.95	0.46	1.06	0.86	0.20	0.20
Avail Cap(c_a), veh/h	135	1536	552	301	1322	590	198	1650	512	195	1145	510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.8	31.6	31.7	53.0	35.4	27.5	54.8	30.8	39.2	54.5	27.9	27.9
Incr Delay (d2), s/veh	27.0	0.2	0.5	51.1	9.8	0.4	49.1	0.2	56.7	28.7	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	3.9	4.4	6.4	16.4	4.5	4.0	5.5	21.9	3.2	2.2	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.8	31.8	32.2	104.1	45.3	27.9	103.9	31.0	95.9	83.2	28.0	28.1
LnGrp LOS	F	C	C	F	D	C	F	C	F	F	C	C
Approach Vol, veh/h		871			1678			1497			495	
Approach Delay, s/veh		38.2			53.5			63.7			46.8	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	45.8	16.6	43.1	12.5	45.7	10.0	49.7
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	7.8	39.6	12.0	39.0	7.9	39.5	5.4	45.6
Max Q Clear Time (g_c+I1), s	8.6	41.6	14.0	13.4	9.5	7.6	6.3	40.0
Green Ext Time (p_c), s	0.0	0.0	0.0	4.5	0.0	1.6	0.0	3.6

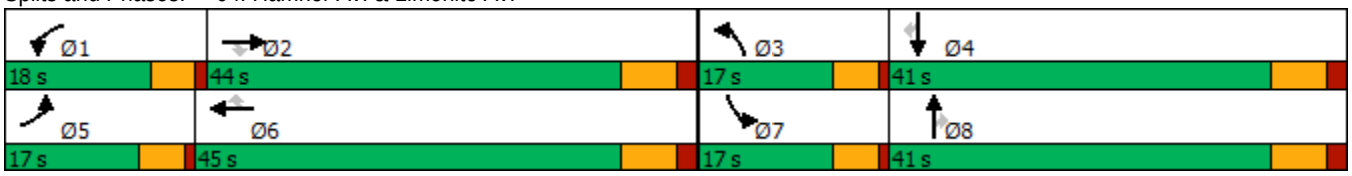
Intersection Summary	
HCM 6th Ctrl Delay	53.2
HCM 6th LOS	D

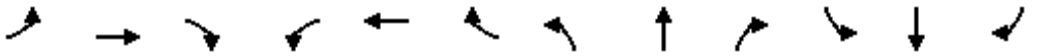
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	516	43	169	493	82	161	668	244	152	359	109
Future Volume (vph)	164	516	43	169	493	82	161	668	244	152	359	109
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	17.0	44.0	44.0	18.0	45.0	45.0	17.0	41.0	41.0	17.0	41.0	41.0
Total Split (%)	14.2%	36.7%	36.7%	15.0%	37.5%	37.5%	14.2%	34.2%	34.2%	14.2%	34.2%	34.2%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 89.7
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 64: Hamner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	516	43	169	493	82	161	668	244	152	359	109
Future Volume (veh/h)	164	516	43	169	493	82	161	668	244	152	359	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	174	549	33	180	524	61	171	711	162	162	382	76
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	262	1283	398	270	900	402	259	1431	444	249	1415	439
Arrive On Green	0.07	0.25	0.25	0.08	0.25	0.25	0.07	0.28	0.28	0.07	0.27	0.27
Sat Flow, veh/h	3510	5187	1608	3510	3610	1610	3510	5187	1608	3510	5187	1610
Grp Volume(v), veh/h	174	549	33	180	524	61	171	711	162	162	382	76
Grp Sat Flow(s),veh/h/ln	1755	1729	1608	1755	1805	1610	1755	1729	1608	1755	1729	1610
Q Serve(g_s), s	3.5	6.5	1.1	3.6	9.3	2.2	3.5	8.4	5.9	3.3	4.2	2.6
Cycle Q Clear(g_c), s	3.5	6.5	1.1	3.6	9.3	2.2	3.5	8.4	5.9	3.3	4.2	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	262	1283	398	270	900	402	259	1431	444	249	1415	439
V/C Ratio(X)	0.66	0.43	0.08	0.67	0.58	0.15	0.66	0.50	0.37	0.65	0.27	0.17
Avail Cap(c_a), veh/h	578	2632	816	626	1882	839	578	2419	750	578	2419	751
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.8	23.1	21.1	32.7	24.0	21.3	32.9	22.2	21.3	33.0	20.8	20.2
Incr Delay (d2), s/veh	1.1	0.5	0.2	1.1	1.3	0.4	1.1	0.6	1.1	1.1	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.4	0.4	1.5	3.7	0.8	1.4	3.1	2.1	1.3	1.6	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.9	23.6	21.3	33.8	25.3	21.7	33.9	22.7	22.3	34.1	21.0	20.6
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		756			765			1044			620	
Approach Delay, s/veh		25.9			27.0			24.5			24.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	25.0	10.4	26.9	10.5	25.2	10.2	27.1
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	13.0	37.0	12.0	34.0	12.0	38.0	12.0	34.0
Max Q Clear Time (g_c+I1), s	5.6	8.5	5.5	6.2	5.5	11.3	5.3	10.4
Green Ext Time (p_c), s	0.1	7.0	0.1	5.1	0.1	6.8	0.1	9.6

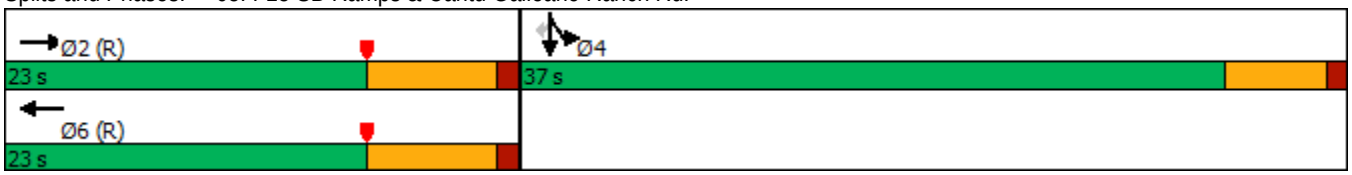
Intersection Summary	
HCM 6th Ctrl Delay	25.4
HCM 6th LOS	C

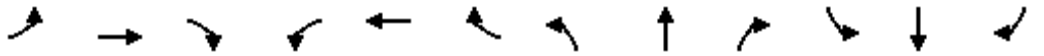
Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1011	318	520	175	310	0	1299
Future Volume (vph)	1011	318	520	175	310	0	1299
Turn Type	NA	Free	NA	Free	Split	NA	Perm
Protected Phases	2		6		4	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		4	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		10.5	10.5	10.5
Total Split (s)	23.0		23.0		37.0	37.0	37.0
Total Split (%)	38.3%		38.3%		61.7%	61.7%	61.7%
Yellow Time (s)	5.8		5.8		4.5	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8		6.8		5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Max		Min	Min	Min

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 39 (65%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	✣	↱
Traffic Volume (veh/h)	0	1011	318	0	520	175	0	0	0	310	0	1299
Future Volume (veh/h)	0	1011	318	0	520	175	0	0	0	310	0	1299
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1123	0	0	578	0				229	0	1268
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1755		0	1221					826	0	1471
Arrive On Green	0.00	0.34	0.00	0.00	0.34	0.00				0.46	0.00	0.46
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1123	0	0	578	0				229	0	1268
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	11.0	0.0	0.0	7.6	0.0				4.7	0.0	21.2
Cycle Q Clear(g_c), s	0.0	11.0	0.0	0.0	7.6	0.0				4.7	0.0	21.2
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1755		0	1221					826	0	1471
V/C Ratio(X)	0.00	0.64		0.00	0.47					0.28	0.00	0.86
Avail Cap(c_a), veh/h	0	1755		0	1221					950	0	1691
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.74	0.00	0.00	0.94	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	16.8	0.0	0.0	15.6	0.0				10.1	0.0	14.6
Incr Delay (d2), s/veh	0.0	1.3	0.0	0.0	1.2	0.0				0.2	0.0	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.7	0.0	0.0	2.7	0.0				1.5	0.0	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	18.1	0.0	0.0	16.9	0.0				10.3	0.0	19.0
LnGrp LOS	A	B		A	B					B	A	B
Approach Vol, veh/h		1123	A		578	A					1497	
Approach Delay, s/veh		18.1			16.9						17.6	
Approach LOS		B			B						B	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		27.1		32.9		27.1						
Change Period (Y+Rc), s		6.8		5.5		6.8						
Max Green Setting (Gmax), s		16.2		31.5		16.2						
Max Q Clear Time (g_c+I1), s		13.0		23.2		9.6						
Green Ext Time (p_c), s		2.0		4.2		1.9						

Intersection Summary												
HCM 6th Ctrl Delay			17.7									
HCM 6th LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.

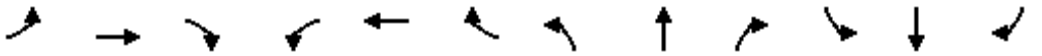
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1040	536	634	731	143	0	392
Future Volume (vph)	1040	536	634	731	143	0	392
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	10.0	36.5	23.5	23.5	23.5
Total Split (s)	55.4	55.4	22.6	78.0	32.0	32.0	32.0
Total Split (%)	50.4%	50.4%	20.5%	70.9%	29.1%	29.1%	29.1%
Yellow Time (s)	4.5	4.5	4.0	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	0.5	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.5	5.5	5.5	5.5	5.5
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	Min	Min	Min

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1040	536	634	731	0	0	0	0	143	0	392
Future Volume (veh/h)	0	1040	536	634	731	0	0	0	0	143	0	392
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1106	448	674	778	0				189	0	79
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2244	1000	578	2985	0				264	0	116
Arrive On Green	0.00	0.62	0.62	0.05	0.27	0.00				0.07	0.00	0.07
Sat Flow, veh/h	0	3705	1609	3510	3705	0				3619	0	1586
Grp Volume(v), veh/h	0	1106	448	674	778	0				189	0	79
Grp Sat Flow(s),veh/h/ln	0	1805	1609	1755	1805	0				1810	0	1586
Q Serve(g_s), s	0.0	18.4	16.1	18.1	18.6	0.0				5.6	0.0	5.3
Cycle Q Clear(g_c), s	0.0	18.4	16.1	18.1	18.6	0.0				5.6	0.0	5.3
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2244	1000	578	2985	0				264	0	116
V/C Ratio(X)	0.00	0.49	0.45	1.17	0.26	0.00				0.72	0.00	0.68
Avail Cap(c_a), veh/h	0	2244	1000	578	2985	0				872	0	382
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.90	0.90	0.57	0.57	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	11.4	10.9	52.0	13.7	0.0				49.9	0.0	49.7
Incr Delay (d2), s/veh	0.0	0.7	1.3	85.9	0.1	0.0				1.4	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.6	5.3	15.3	8.9	0.0				2.5	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.1	12.2	137.9	13.8	0.0				51.2	0.0	52.4
LnGrp LOS	A	B	B	F	B	A				D	A	D
Approach Vol, veh/h		1554			1452						268	
Approach Delay, s/veh		12.1			71.4						51.6	
Approach LOS		B			E						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	22.6	73.9		13.5		96.5
Change Period (Y+Rc), s	4.5	5.5		5.5		5.5
Max Green Setting (Gmax), s	18.1	49.9		26.5		72.5
Max Q Clear Time (g_c+I1), s	20.1	20.4		7.6		20.6
Green Ext Time (p_c), s	0.0	6.3		0.4		3.4

Intersection Summary		
HCM 6th Ctrl Delay		41.6
HCM 6th LOS		D

Notes

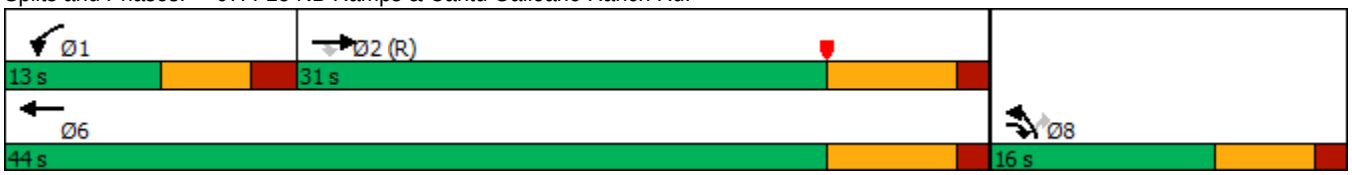
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	482	839	352	452	243	289
Future Volume (vph)	482	839	352	452	243	289
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	31.0	16.0	13.0	44.0	16.0	16.0
Total Split (%)	51.7%	26.7%	21.7%	73.3%	26.7%	26.7%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.0	6.0	7.3	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	482	839	352	452	243	289
Future Volume (veh/h)	482	839	352	452	243	289
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	530	588	387	497	290	146
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2049	904	410	3173	603	268
Arrive On Green	0.66	0.66	0.12	0.61	0.17	0.17
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	530	588	387	497	290	146
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	2.5	13.8	6.6	2.5	4.4	5.0
Cycle Q Clear(g_c), s	2.5	13.8	6.6	2.5	4.4	5.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2049	904	410	3173	603	268
V/C Ratio(X)	0.26	0.65	0.94	0.16	0.48	0.54
Avail Cap(c_a), veh/h	2049	904	410	3173	603	268
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.6	5.0	26.3	5.0	22.6	22.9
Incr Delay (d2), s/veh	0.2	2.4	32.6	0.0	2.7	7.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.2	4.2	0.5	1.9	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.8	7.4	58.9	5.0	25.4	30.6
LnGrp LOS	A	A	E	A	C	C
Approach Vol, veh/h	1118			884	436	
Approach Delay, s/veh	7.1			28.6	27.1	
Approach LOS	A			C	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.0	31.0				44.0	16.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	7.0	23.7				36.7	10.0
Max Q Clear Time (g_c+I1), s	8.6	15.8				4.5	7.0
Green Ext Time (p_c), s	0.0	3.4				3.1	0.5

Intersection Summary			
HCM 6th Ctrl Delay		18.5	
HCM 6th LOS		B	

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	687	496	1085	378	279	0	308
Future Volume (vph)	687	496	1085	378	279	0	308
Turn Type	Prot	NA	NA	Perm	Split	NA	Perm
Protected Phases	5	2	6		8	8	
Permitted Phases				6			8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	26.0	72.0	46.0	46.0	38.0	38.0	38.0
Total Split (%)	23.6%	65.5%	41.8%	41.8%	34.5%	34.5%	34.5%
Yellow Time (s)	4.0	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	687	496	0	0	1085	378	279	0	308	0	0	0
Future Volume (veh/h)	687	496	0	0	1085	378	279	0	308	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	716	517	0	0	1130	274	324	0	72			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	686	2828	0	0	1975	881	422	0	185			
Arrive On Green	0.33	1.00	0.00	0.00	0.55	0.55	0.12	0.00	0.12			
Sat Flow, veh/h	3510	3705	0	0	3705	1610	3619	0	1585			
Grp Volume(v), veh/h	716	517	0	0	1130	274	324	0	72			
Grp Sat Flow(s),veh/h/ln	1755	1805	0	0	1805	1610	1810	0	1585			
Q Serve(g_s), s	21.5	0.0	0.0	0.0	22.7	10.2	9.6	0.0	4.6			
Cycle Q Clear(g_c), s	21.5	0.0	0.0	0.0	22.7	10.2	9.6	0.0	4.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	686	2828	0	0	1975	881	422	0	185			
V/C Ratio(X)	1.04	0.18	0.00	0.00	0.57	0.31	0.77	0.00	0.39			
Avail Cap(c_a), veh/h	686	2828	0	0	1975	881	1069	0	468			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.70	0.70	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	37.0	0.0	0.0	0.0	16.4	13.6	47.1	0.0	45.0			
Incr Delay (d2), s/veh	40.7	0.1	0.0	0.0	1.2	0.9	3.0	0.0	1.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	11.3	0.0	0.0	0.0	8.8	3.6	4.3	0.0	1.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.8	0.1	0.0	0.0	17.6	14.5	50.1	0.0	46.3			
LnGrp LOS	F	A	A	A	B	B	D	A	D			
Approach Vol, veh/h		1233			1404			396				
Approach Delay, s/veh		45.2			17.0			49.4				
Approach LOS		D			B			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		91.7			26.0	65.7		18.3				
Change Period (Y+Rc), s		5.5			4.5	5.5		5.5				
Max Green Setting (Gmax), s		66.5			21.5	40.5		32.5				
Max Q Clear Time (g_c+I1), s		2.0			23.5	24.7		11.6				
Green Ext Time (p_c), s		2.1			0.0	5.1		1.3				
Intersection Summary												
HCM 6th Ctrl Delay			32.7									
HCM 6th LOS			C									

Notes

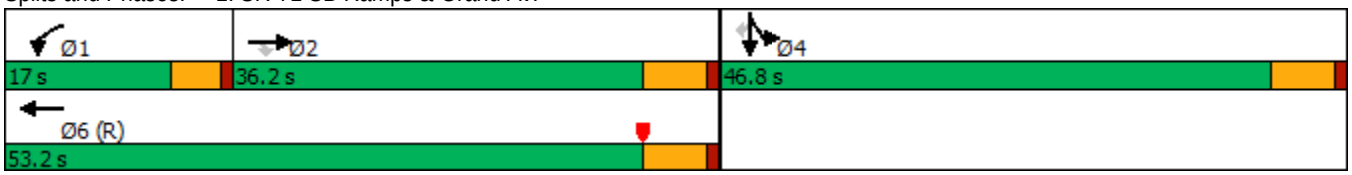
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1319	523	280	1276	850	1	440
Future Volume (vph)	1319	523	280	1276	850	1	440
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	36.2	36.2	17.0	53.2	46.8	46.8	46.8
Total Split (%)	36.2%	36.2%	17.0%	53.2%	46.8%	46.8%	46.8%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1319	523	280	1276	0	0	0	0	850	1	440
Future Volume (veh/h)	0	1319	523	280	1276	0	0	0	0	850	1	440
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1552	526	329	1501	0				1001	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85				0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1732	538	415	2552	0				1189	0	
Arrive On Green	0.00	0.33	0.33	0.12	0.49	0.00				0.33	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	1552	526	329	1501	0				1001	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	28.4	32.3	9.1	20.7	0.0				25.7	0.0	0.0
Cycle Q Clear(g_c), s	0.0	28.4	32.3	9.1	20.7	0.0				25.7	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1732	538	415	2552	0				1189	0	
V/C Ratio(X)	0.00	0.90	0.98	0.79	0.59	0.00				0.84	0.00	
Avail Cap(c_a), veh/h	0	1732	538	456	2552	0				1549	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.28	0.28	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	31.7	33.0	42.9	18.2	0.0				31.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	7.7	33.9	2.2	0.3	0.0				3.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.3	16.7	3.9	7.5	0.0				11.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	39.4	66.8	45.1	18.4	0.0				34.6	0.0	0.0
LnGrp LOS	A	D	E	D	B	A				C	A	
Approach Vol, veh/h		2078			1830						1001	A
Approach Delay, s/veh		46.3			23.2						34.6	
Approach LOS		D			C						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	15.8	37.4		36.8		53.2
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	12.4	30.4		41.0		47.4
Max Q Clear Time (g_c+I1), s	11.1	34.3		27.7		22.7
Green Ext Time (p_c), s	0.1	0.0		3.4		11.4

Intersection Summary		
HCM 6th Ctrl Delay		35.3
HCM 6th LOS		D

Notes

User approved volume balancing among the lanes for turning movement.

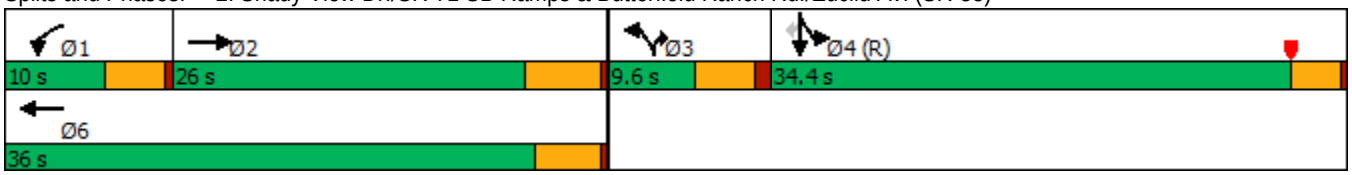
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

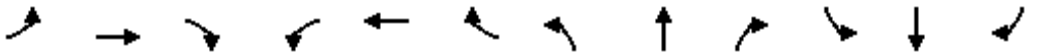
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	845	121	264	17	147	629	66	67
Future Volume (vph)	845	121	264	17	147	629	66	67
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	26.0	10.0	36.0	9.6	9.6	34.4	34.4	34.4
Total Split (%)	32.5%	12.5%	45.0%	12.0%	12.0%	43.0%	43.0%	43.0%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	845	58	121	264	0	17	0	147	629	66	67
Future Volume (veh/h)	0	845	58	121	264	0	17	0	147	629	66	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	880	48	126	275	0	18	0	94	704	0	43
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	914	50	136	1399		0	0	0	1832	0	815
Arrive On Green	0.00	0.26	0.26	0.02	0.13	0.00	0.00	0.00	0.00	0.51	0.00	0.51
Sat Flow, veh/h	0	3576	190	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	456	472	126	275	0		0.0		704	0	43
Grp Sat Flow(s),veh/h/ln	0	1805	1866	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	20.0	20.0	5.6	5.5	0.0				9.5	0.0	1.1
Cycle Q Clear(g_c), s	0.0	20.0	20.0	5.6	5.5	0.0				9.5	0.0	1.1
Prop In Lane	0.00		0.10	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	474	490	136	1399					1832	0	815
V/C Ratio(X)	0.00	0.96	0.96	0.93	0.20					0.38	0.00	0.05
Avail Cap(c_a), veh/h	0	474	490	136	1421					1832	0	815
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.77	0.77	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.1	29.1	38.8	23.7	0.0				12.1	0.0	10.0
Incr Delay (d2), s/veh	0.0	31.7	31.1	47.5	0.0	0.0				0.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.0	12.3	4.2	2.2	0.0				3.4	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	60.8	60.2	86.3	23.8	0.0				12.7	0.0	10.1
LnGrp LOS	A	E	E	F	C					B	A	B
Approach Vol, veh/h		928			401	A					747	
Approach Delay, s/veh		60.5			43.4						12.6	
Approach LOS		E			D						B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	10.0	26.0		44.0		36.0						
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5						
Max Green Setting (Gmax), s	6.0	21.0		30.9		* 32						
Max Q Clear Time (g_c+I1), s	7.6	22.0		11.5		7.5						
Green Ext Time (p_c), s	0.0	0.0		2.6		1.2						

Intersection Summary			
HCM 6th Ctrl Delay		40.0	
HCM 6th LOS		D	

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

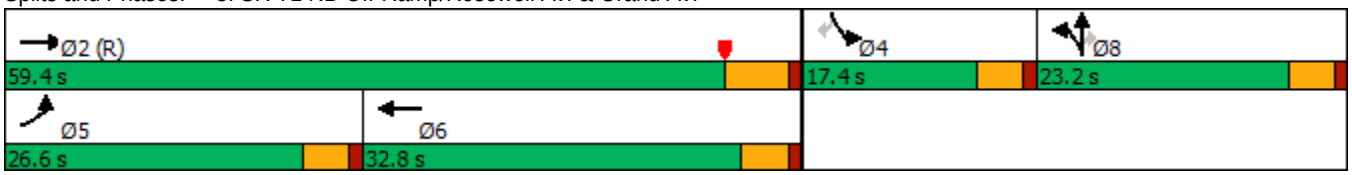
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

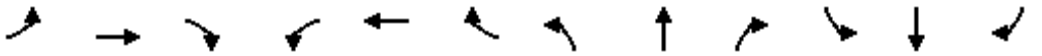
Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	346	1525	298	1521	357	130	202	153	753
Future Volume (vph)	346	1525	298	1521	357	130	202	153	753
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	34.8		14.7	21.5	21.5	21.5	9.5	9.5
Total Split (s)	26.6	59.4		32.8	23.2	23.2	23.2	17.4	17.4
Total Split (%)	26.6%	59.4%		32.8%	23.2%	23.2%	23.2%	17.4%	17.4%
Yellow Time (s)	3.5	4.8		3.7	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.8		4.7	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	None	None	None	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	346	1525	298	0	1521	162	357	130	202	153	0	753
Future Volume (veh/h)	346	1525	298	0	1521	162	357	130	202	153	0	753
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	376	1658	0	0	1653	176	264	314	79	166	0	500
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	400	3704		0	2707	288	331	348	295	0	0	0
Arrive On Green	0.22	0.71	0.00	0.00	0.45	0.45	0.18	0.18	0.18	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6309	643	1810	1900	1610		0	
Grp Volume(v), veh/h	376	1658	0	0	1341	488	264	314	79		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1784	1810	1900	1610			
Q Serve(g_s), s	20.4	13.4	0.0	0.0	20.8	20.8	14.0	16.2	4.2			
Cycle Q Clear(g_c), s	20.4	13.4	0.0	0.0	20.8	20.8	14.0	16.2	4.2			
Prop In Lane	1.00		1.00	0.00		0.36	1.00		1.00			
Lane Grp Cap(c), veh/h	400	3704		0	2196	799	331	348	295			
V/C Ratio(X)	0.94	0.45		0.00	0.61	0.61	0.80	0.90	0.27			
Avail Cap(c_a), veh/h	400	3704		0	2196	799	338	355	301			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.50	0.50	0.00	0.00	0.72	0.72	1.00	1.00	1.00			
Uniform Delay (d), s/veh	38.3	6.0	0.0	0.0	21.0	21.0	39.1	40.0	35.1			
Incr Delay (d2), s/veh	18.6	0.2	0.0	0.0	0.4	1.0	11.3	24.4	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	10.6	3.6	0.0	0.0	7.6	8.4	7.0	9.6	1.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.9	6.2	0.0	0.0	21.3	22.0	50.4	64.3	35.3			
LnGrp LOS	E	A		A	C	C	D	E	D			
Approach Vol, veh/h		2034	A		1829			657				
Approach Delay, s/veh		15.6			21.5			55.2				
Approach LOS		B			C			E				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		77.2			26.6	50.6		22.8				
Change Period (Y+Rc), s		5.8			4.5	* 5.8		4.5				
Max Green Setting (Gmax), s		53.6			22.1	* 28		18.7				
Max Q Clear Time (g_c+I1), s		15.4			22.4	22.8		18.2				
Green Ext Time (p_c), s		15.7			0.0	4.3		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	23.7
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

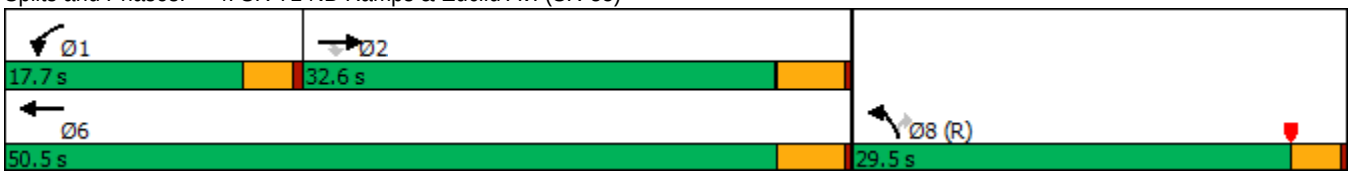
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	810	150	355	1111	127	962
Future Volume (vph)	810	150	355	1111	127	962
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	32.6	32.6	17.7	50.5	29.5	29.5
Total Split (%)	40.8%	40.8%	22.1%	63.1%	36.9%	36.9%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	810	150	355	1111	127	962
Future Volume (veh/h)	810	150	355	1111	127	962
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	942	0	413	1292	148	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1085		321	1884	1328	
Arrive On Green	0.40	0.00	0.18	0.52	0.38	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	942	0	413	1292	148	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	19.2	0.0	14.2	21.3	2.2	0.0
Cycle Q Clear(g_c), s	19.2	0.0	14.2	21.3	2.2	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1085		321	1884	1328	
V/C Ratio(X)	0.87		1.29	0.69	0.11	
Avail Cap(c_a), veh/h	1268		321	2076	1328	
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.46	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.6	0.0	32.9	14.2	16.1	0.0
Incr Delay (d2), s/veh	2.7	0.0	150.2	0.8	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	19.0	6.9	0.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.3	0.0	183.1	15.1	16.3	0.0
LnGrp LOS	C		F	B	B	
Approach Vol, veh/h	942	A		1705	148	A
Approach Delay, s/veh	25.3			55.8	16.3	
Approach LOS	C			E	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	17.7	28.5				46.2	33.8
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	14.2	28.1				46.0	26.0
Max Q Clear Time (g_c+I1), s	16.2	21.2				23.3	4.2
Green Ext Time (p_c), s	0.0	2.8				8.9	0.2

Intersection Summary	
HCM 6th Ctrl Delay	43.4
HCM 6th LOS	D

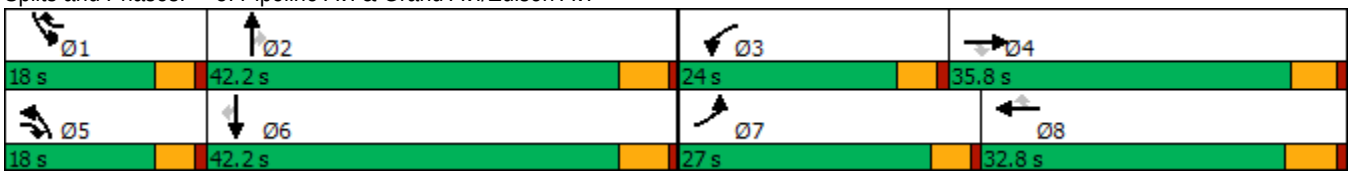
Notes

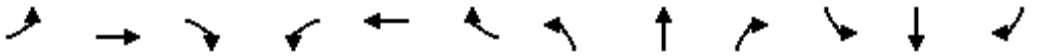
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	249	1018	225	220	931	77	268	412	161	123	518	148
Future Volume (vph)	249	1018	225	220	931	77	268	412	161	123	518	148
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	27.0	35.8	18.0	24.0	32.8	18.0	18.0	42.2	42.2	18.0	42.2	42.2
Total Split (%)	22.5%	29.8%	15.0%	20.0%	27.3%	15.0%	15.0%	35.2%	35.2%	15.0%	35.2%	35.2%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 99.6
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	249	1018	225	220	931	77	268	412	161	123	518	148
Future Volume (veh/h)	249	1018	225	220	931	77	268	412	161	123	518	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	274	1119	181	242	1023	47	295	453	90	135	569	87
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	367	1687	707	332	1670	661	374	903	403	173	835	363
Arrive On Green	0.12	0.34	0.34	0.11	0.34	0.33	0.13	0.26	0.26	0.11	0.24	0.24
Sat Flow, veh/h	3141	4914	1523	3141	4914	1524	2956	3420	1525	1619	3420	1486
Grp Volume(v), veh/h	274	1119	181	242	1023	47	295	453	90	135	569	87
Grp Sat Flow(s),veh/h/ln	1570	1638	1523	1570	1638	1524	1478	1710	1525	1619	1710	1486
Q Serve(g_s), s	7.8	17.9	6.7	6.9	16.1	1.7	9.0	10.4	4.3	7.5	14.0	4.4
Cycle Q Clear(g_c), s	7.8	17.9	6.7	6.9	16.1	1.7	9.0	10.4	4.3	7.5	14.0	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	367	1687	707	332	1670	661	374	903	403	173	835	363
V/C Ratio(X)	0.75	0.66	0.26	0.73	0.61	0.07	0.79	0.50	0.22	0.78	0.68	0.24
Avail Cap(c_a), veh/h	780	1687	707	678	1670	661	447	1410	629	245	1410	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	25.9	15.1	40.1	25.5	15.3	39.3	28.9	26.7	40.3	31.7	28.1
Incr Delay (d2), s/veh	1.2	2.1	0.9	1.2	1.7	0.2	6.3	0.4	0.3	6.1	1.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	7.0	2.3	2.6	6.0	0.6	3.5	4.1	1.5	3.2	5.6	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.7	27.9	16.0	41.3	27.2	15.5	45.6	29.4	26.9	46.5	32.7	28.4
LnGrp LOS	D	C	B	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1574			1312			838			791	
Approach Delay, s/veh		28.8			29.4			34.8			34.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	28.4	13.8	36.5	15.7	26.6	14.8	35.5
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	13.4	36.8	19.4	* 31	13.4	36.8	22.4	27.0
Max Q Clear Time (g_c+I1), s	9.5	12.4	8.9	19.9	11.0	16.0	9.8	18.1
Green Ext Time (p_c), s	0.1	3.1	0.3	5.9	0.1	3.8	0.4	4.3

Intersection Summary	
HCM 6th Ctrl Delay	31.1
HCM 6th LOS	C

Notes

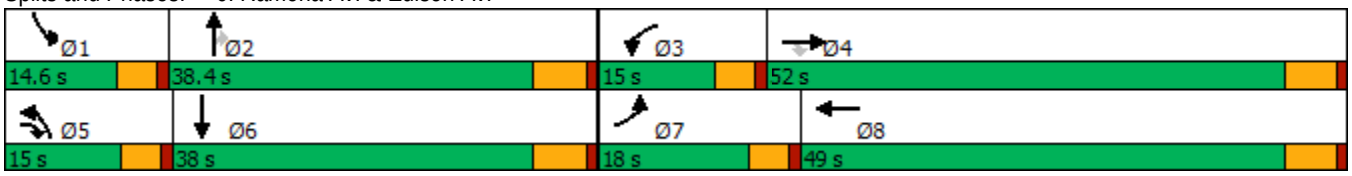
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

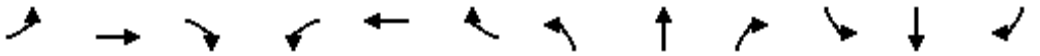
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	107	1094	107	82	950	87	407	69	55	377
Future Volume (vph)	107	1094	107	82	950	87	407	69	55	377
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	18.0	52.0	15.0	15.0	49.0	15.0	38.4	38.4	14.6	38.0
Total Split (%)	15.0%	43.3%	12.5%	12.5%	40.8%	12.5%	32.0%	32.0%	12.2%	31.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 107.9
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	1094	107	82	950	53	87	407	69	55	377	96
Future Volume (veh/h)	107	1094	107	82	950	53	87	407	69	55	377	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1700	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	120	1229	96	92	1067	58	98	457	56	62	424	87
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	155	1640	1389	123	1517	82	130	790	353	87	578	118
Arrive On Green	0.10	0.48	0.47	0.08	0.46	0.44	0.08	0.23	0.23	0.05	0.20	0.19
Sat Flow, veh/h	1619	3420	2536	1619	3298	179	1619	3420	1525	1619	2830	576
Grp Volume(v), veh/h	120	1229	96	92	553	572	98	457	56	62	255	256
Grp Sat Flow(s),veh/h/ln	1619	1710	1268	1619	1710	1768	1619	1710	1525	1619	1710	1696
Q Serve(g_s), s	7.2	29.2	1.8	5.6	25.8	25.9	5.9	11.9	2.9	3.8	13.9	14.2
Cycle Q Clear(g_c), s	7.2	29.2	1.8	5.6	25.8	25.9	5.9	11.9	2.9	3.8	13.9	14.2
Prop In Lane	1.00		1.00	1.00		0.10	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	155	1640	1389	123	787	813	130	790	353	87	349	347
V/C Ratio(X)	0.78	0.75	0.07	0.75	0.70	0.70	0.75	0.58	0.16	0.72	0.73	0.74
Avail Cap(c_a), veh/h	226	1640	1389	178	787	813	178	1175	524	171	581	576
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.2	21.2	10.6	45.3	21.6	21.7	45.1	34.2	30.7	46.6	37.2	37.6
Incr Delay (d2), s/veh	5.2	3.2	0.1	4.7	5.2	5.1	7.0	0.7	0.2	4.1	2.9	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	11.2	0.5	2.3	10.5	10.9	2.5	4.8	1.1	1.6	5.8	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.4	24.4	10.7	50.0	26.8	26.7	52.0	34.8	30.9	50.7	40.2	40.7
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		1445			1217			611			573	
Approach Delay, s/veh		25.5			28.5			37.2			41.5	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	27.1	11.6	52.0	12.0	24.5	13.6	50.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.0	32.6	10.4	46.2	10.4	32.2	13.4	43.2
Max Q Clear Time (g_c+I1), s	5.8	13.9	7.6	31.2	7.9	16.2	9.2	27.9
Green Ext Time (p_c), s	0.0	2.7	0.0	7.5	0.0	2.5	0.0	6.0

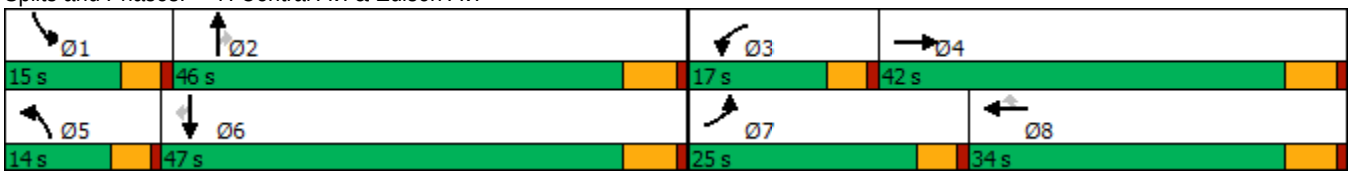
Intersection Summary	
HCM 6th Ctrl Delay	30.7
HCM 6th LOS	C

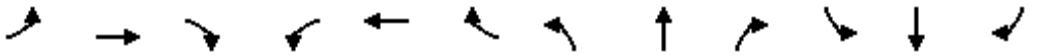
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	207	852	242	672	89	77	934	391	105	746	129
Future Volume (vph)	207	852	242	672	89	77	934	391	105	746	129
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	25.0	42.0	17.0	34.0	34.0	14.0	46.0	46.0	15.0	47.0	47.0
Total Split (%)	20.8%	35.0%	14.2%	28.3%	28.3%	11.7%	38.3%	38.3%	12.5%	39.2%	39.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 116.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	852	78	242	672	89	77	934	391	105	746	129
Future Volume (veh/h)	207	852	78	242	672	89	77	934	391	105	746	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	213	878	76	249	693	81	79	963	322	108	769	99
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	246	1070	93	318	975	435	106	1147	502	139	1216	542
Arrive On Green	0.15	0.34	0.32	0.10	0.29	0.29	0.07	0.34	0.34	0.09	0.36	0.36
Sat Flow, veh/h	1619	3181	275	3141	3420	1525	1619	3420	1498	1619	3420	1524
Grp Volume(v), veh/h	213	472	482	249	693	81	79	963	322	108	769	99
Grp Sat Flow(s),veh/h/ln	1619	1710	1746	1570	1710	1525	1619	1710	1498	1619	1710	1524
Q Serve(g_s), s	14.5	28.6	28.6	8.7	20.5	4.5	5.4	29.4	20.6	7.4	21.1	5.1
Cycle Q Clear(g_c), s	14.5	28.6	28.6	8.7	20.5	4.5	5.4	29.4	20.6	7.4	21.1	5.1
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	246	575	587	318	975	435	106	1147	502	139	1216	542
V/C Ratio(X)	0.86	0.82	0.82	0.78	0.71	0.19	0.74	0.84	0.64	0.78	0.63	0.18
Avail Cap(c_a), veh/h	301	575	587	361	975	435	143	1271	557	158	1302	580
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.8	34.4	34.5	49.6	36.2	30.5	51.9	34.7	31.8	50.6	30.3	25.1
Incr Delay (d2), s/veh	16.9	12.4	12.2	8.1	4.4	0.9	8.1	4.8	2.1	16.5	0.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	13.2	13.5	3.7	8.8	1.7	2.4	12.4	7.4	3.5	8.4	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.6	46.8	46.7	57.7	40.6	31.4	59.9	39.5	33.9	67.1	31.2	25.3
LnGrp LOS	E	D	D	E	D	C	E	D	C	E	C	C
Approach Vol, veh/h		1167			1023			1364			976	
Approach Delay, s/veh		49.8			44.0			39.4			34.6	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	41.9	15.4	42.0	11.4	44.2	21.2	36.2
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.4	40.2	12.4	36.2	9.4	41.2	20.4	28.2
Max Q Clear Time (g_c+I1), s	9.4	31.4	10.7	30.6	7.4	23.1	16.5	22.5
Green Ext Time (p_c), s	0.0	4.7	0.1	2.6	0.0	4.9	0.1	2.2

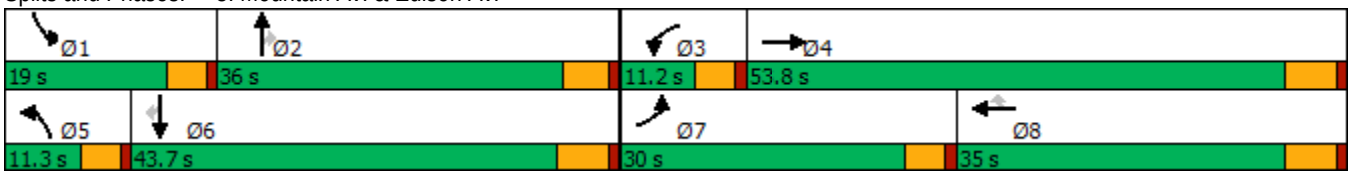
Intersection Summary	
HCM 6th Ctrl Delay	42.1
HCM 6th LOS	D

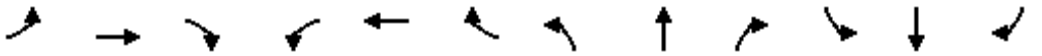
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	196	1095	34	721	88	36	88	27	105	162	204
Future Volume (vph)	196	1095	34	721	88	36	88	27	105	162	204
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	30.0	53.8	11.2	35.0	35.0	11.3	36.0	36.0	19.0	43.7	43.7
Total Split (%)	25.0%	44.8%	9.3%	29.2%	29.2%	9.4%	30.0%	30.0%	15.8%	36.4%	36.4%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 92.9
Natural Cycle: 85
Control Type: Actuated-Uncoordinated

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	1095	77	34	721	88	36	88	27	105	162	204
Future Volume (veh/h)	196	1095	77	34	721	88	36	88	27	105	162	204
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	200	1117	77	35	736	78	37	90	13	107	165	143
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	243	2600	179	63	1519	678	65	237	196	143	337	286
Arrive On Green	0.15	0.56	0.53	0.04	0.44	0.44	0.04	0.13	0.13	0.09	0.19	0.19
Sat Flow, veh/h	1619	4685	323	1619	3420	1525	1619	1800	1492	1619	1800	1525
Grp Volume(v), veh/h	200	781	413	35	736	78	37	90	13	107	165	143
Grp Sat Flow(s),veh/h/ln	1619	1638	1731	1619	1710	1525	1619	1800	1492	1619	1800	1525
Q Serve(g_s), s	10.7	12.5	12.6	1.9	13.7	2.7	2.0	4.1	0.7	5.8	7.4	7.5
Cycle Q Clear(g_c), s	10.7	12.5	12.6	1.9	13.7	2.7	2.0	4.1	0.7	5.8	7.4	7.5
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	243	1818	961	63	1519	678	65	237	196	143	337	286
V/C Ratio(X)	0.82	0.43	0.43	0.55	0.48	0.12	0.57	0.38	0.07	0.75	0.49	0.50
Avail Cap(c_a), veh/h	469	1818	961	130	1519	678	132	642	532	271	796	675
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.0	11.7	11.8	42.3	17.7	14.6	42.3	35.6	34.1	39.9	32.6	32.7
Incr Delay (d2), s/veh	2.7	0.7	1.4	2.8	1.1	0.3	2.9	1.0	0.1	3.0	1.1	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	4.0	4.5	0.8	5.0	0.9	0.8	1.8	0.2	2.3	3.1	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.7	12.4	13.2	45.1	18.8	15.0	45.2	36.6	34.3	42.9	33.7	34.1
LnGrp LOS	D	B	B	D	B	B	D	D	C	D	C	C
Approach Vol, veh/h		1394			849			140			415	
Approach Delay, s/veh		16.5			19.5			38.7			36.2	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	16.5	7.5	53.8	7.6	20.8	17.5	43.8
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	* 31	6.6	48.0	6.7	37.9	25.4	29.2
Max Q Clear Time (g_c+I1), s	7.8	6.1	3.9	14.6	4.0	9.5	12.7	15.7
Green Ext Time (p_c), s	0.1	0.4	0.0	8.8	0.0	1.3	0.2	4.1

Intersection Summary	
HCM 6th Ctrl Delay	21.5
HCM 6th LOS	C

Notes

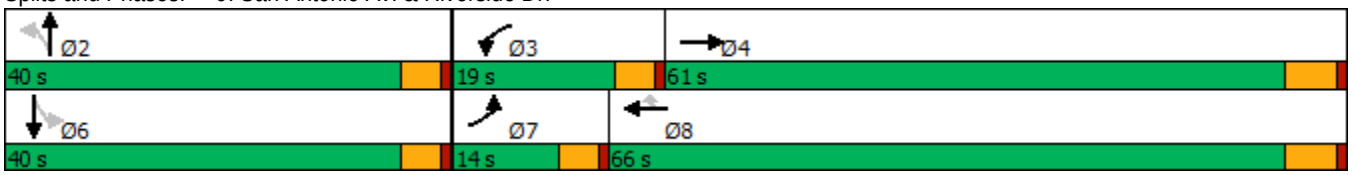
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

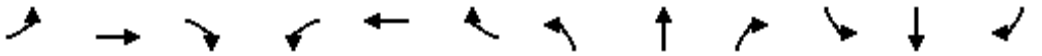
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	29	756	56	702	41	85	14	17	7
Future Volume (vph)	29	756	56	702	41	85	14	17	7
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	14.0	61.0	19.0	66.0	66.0	40.0	40.0	40.0	40.0
Total Split (%)	11.7%	50.8%	15.8%	55.0%	55.0%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 93.9
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	756	109	56	702	41	85	14	39	17	7	29
Future Volume (veh/h)	29	756	109	56	702	41	85	14	39	17	7	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	30	788	108	58	731	43	89	15	17	18	7	7
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	59	2078	285	83	2409	1074	237	94	107	220	101	101
Arrive On Green	0.04	0.69	0.67	0.05	0.70	0.70	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1619	3012	413	1619	3420	1524	1343	768	870	1316	826	826
Grp Volume(v), veh/h	30	447	449	58	731	43	89	0	32	18	0	14
Grp Sat Flow(s),veh/h/ln	1619	1710	1715	1619	1710	1524	1343	0	1638	1316	0	1651
Q Serve(g_s), s	1.6	9.7	9.8	3.1	7.1	0.8	5.5	0.0	1.5	1.1	0.0	0.7
Cycle Q Clear(g_c), s	1.6	9.7	9.8	3.1	7.1	0.8	6.2	0.0	1.5	2.6	0.0	0.7
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.53	1.00		0.50
Lane Grp Cap(c), veh/h	59	1180	1183	83	2409	1074	237	0	201	220	0	203
V/C Ratio(X)	0.51	0.38	0.38	0.70	0.30	0.04	0.38	0.00	0.16	0.08	0.00	0.07
Avail Cap(c_a), veh/h	184	1180	1183	276	2409	1074	621	0	670	597	0	675
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.6	5.7	5.8	41.1	4.9	4.0	36.9	0.0	34.7	35.7	0.0	34.3
Incr Delay (d2), s/veh	2.5	0.9	0.9	4.0	0.3	0.1	1.0	0.0	0.4	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.7	2.8	1.3	1.8	0.2	1.9	0.0	0.6	0.4	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.2	6.7	6.8	45.1	5.2	4.0	37.9	0.0	35.0	35.9	0.0	34.4
LnGrp LOS	D	A	A	D	A	A	D	A	D	D	A	C
Approach Vol, veh/h		926			832			121			32	
Approach Delay, s/veh		7.9			7.9			37.1			35.2	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.8	8.5	64.7		14.8	7.2	66.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		35.4	14.4	55.2		35.4	9.4	60.2				
Max Q Clear Time (g_c+I1), s		8.2	5.1	11.8		4.6	3.6	9.1				
Green Ext Time (p_c), s		0.4	0.0	6.0		0.1	0.0	5.4				

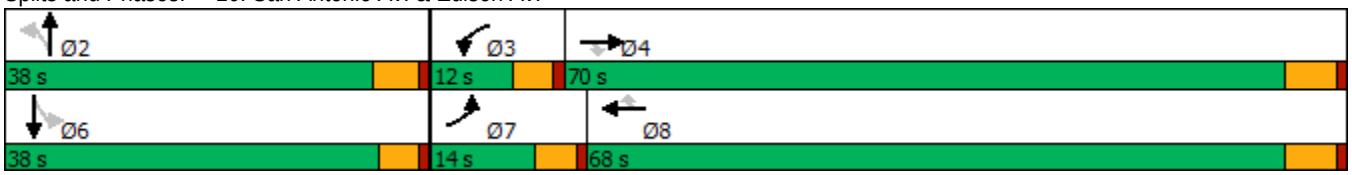
Intersection Summary												
HCM 6th Ctrl Delay			10.2									
HCM 6th LOS			B									

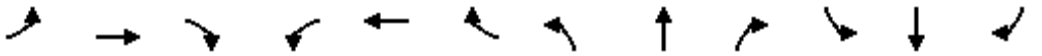
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	80	1051	37	7	772	13	21	29	10	40
Future Volume (vph)	80	1051	37	7	772	13	21	29	10	40
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	14.0	70.0	70.0	12.0	68.0	68.0	38.0	38.0	38.0	38.0
Total Split (%)	11.7%	58.3%	58.3%	10.0%	56.7%	56.7%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 102.9
Natural Cycle: 75
Control Type: Actuated-Uncoordinated

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	1051	37	7	772	13	21	29	10	10	40	48
Future Volume (veh/h)	80	1051	37	7	772	13	21	29	10	10	40	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1000	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	85	1118	38	7	821	11	22	31	7	11	43	21
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	116	2533	1130	15	2342	1044	100	120	22	59	118	52
Arrive On Green	0.07	0.74	0.74	0.02	0.68	0.68	0.12	0.12	0.10	0.11	0.11	0.10
Sat Flow, veh/h	1619	3420	1525	952	3420	1525	414	1039	192	135	1072	469
Grp Volume(v), veh/h	85	1118	38	7	821	11	60	0	0	75	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	952	1710	1525	1644	0	0	1676	0	0
Q Serve(g_s), s	4.8	11.8	0.6	0.7	9.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.8	11.8	0.6	0.7	9.3	0.2	2.9	0.0	0.0	3.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.37		0.12	0.15		0.28
Lane Grp Cap(c), veh/h	116	2533	1130	15	2342	1044	243	0	0	229	0	0
V/C Ratio(X)	0.74	0.44	0.03	0.48	0.35	0.01	0.25	0.00	0.00	0.33	0.00	0.00
Avail Cap(c_a), veh/h	173	2533	1130	82	2342	1044	634	0	0	646	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.5	4.7	3.2	45.7	6.1	4.7	37.9	0.0	0.0	38.8	0.0	0.0
Incr Delay (d2), s/veh	3.4	0.6	0.1	8.8	0.4	0.0	0.5	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	2.8	0.1	0.2	2.6	0.1	1.3	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.9	5.2	3.3	54.5	6.5	4.7	38.4	0.0	0.0	39.6	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1241			839			60			75	
Approach Delay, s/veh		8.0			6.9			38.4			39.6	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.8	5.4	73.2		14.8	10.7	68.0				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		32.9	7.4	64.2		* 33	9.4	62.2				
Max Q Clear Time (g_c+I1), s		4.9	2.7	13.8		5.8	6.8	11.3				
Green Ext Time (p_c), s		0.3	0.0	9.7		0.4	0.0	6.1				

Intersection Summary	
HCM 6th Ctrl Delay	9.5
HCM 6th LOS	A

Notes

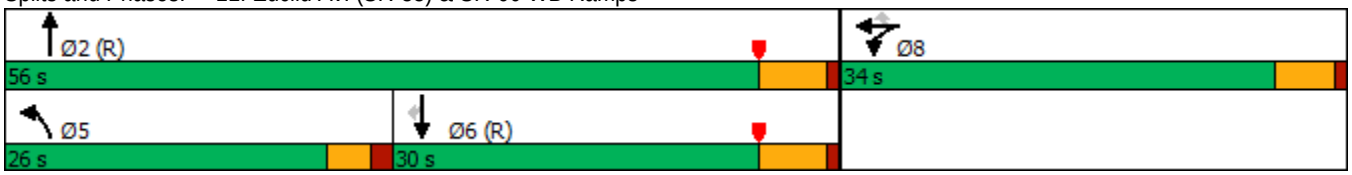
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

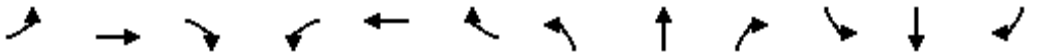
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	580	6	392	426	1045	971	473
Future Volume (vph)	580	6	392	426	1045	971	473
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	34.0	34.0	34.0	26.0	56.0	30.0	30.0
Total Split (%)	37.8%	37.8%	37.8%	28.9%	62.2%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	580	6	392	426	1045	0	0	971	473
Future Volume (veh/h)	0	0	0	580	6	392	426	1045	0	0	971	473
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				677	0	153	444	1089	0	0	1011	288
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				786	0	349	432	2405	0	0	1362	608
Arrive On Green				0.22	0.00	0.22	0.48	1.00	0.00	0.00	0.38	0.38
Sat Flow, veh/h				3619	0	1608	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				677	0	153	444	1089	0	0	1011	288
Grp Sat Flow(s),veh/h/ln				1810	0	1608	1810	1805	0	0	1805	1610
Q Serve(g_s), s				16.2	0.0	7.4	21.5	0.0	0.0	0.0	21.8	12.2
Cycle Q Clear(g_c), s				16.2	0.0	7.4	21.5	0.0	0.0	0.0	21.8	12.2
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				786	0	349	432	2405	0	0	1362	608
V/C Ratio(X)				0.86	0.00	0.44	1.03	0.45	0.00	0.00	0.74	0.47
Avail Cap(c_a), veh/h				1166	0	518	432	2405	0	0	1362	608
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.40	0.40	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.9	0.0	30.5	23.5	0.0	0.0	0.0	24.2	21.2
Incr Delay (d2), s/veh				3.1	0.0	0.3	34.5	0.2	0.0	0.0	3.7	2.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.0	0.0	2.7	9.7	0.1	0.0	0.0	9.3	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				37.0	0.0	30.8	58.0	0.2	0.0	0.0	27.9	23.9
LnGrp LOS				D	A	C	F	A	A	A	C	C
Approach Vol, veh/h					830			1533			1299	
Approach Delay, s/veh					35.9			17.0			27.0	
Approach LOS					D			B			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		65.5			26.0	39.5		24.5				
Change Period (Y+Rc), s		5.5			4.5	5.5		5.0				
Max Green Setting (Gmax), s		50.5			21.5	24.5		29.0				
Max Q Clear Time (g_c+I1), s		2.0			23.5	23.8		18.2				
Green Ext Time (p_c), s		14.4			0.0	0.6		1.3				

Intersection Summary												
HCM 6th Ctrl Delay			24.8									
HCM 6th LOS			C									

Notes

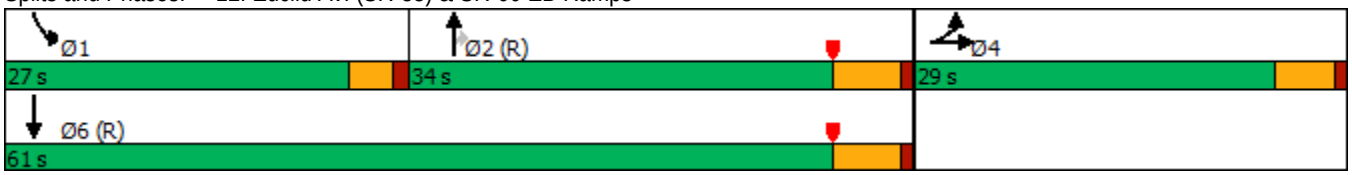
User approved volume balancing among the lanes for turning movement.

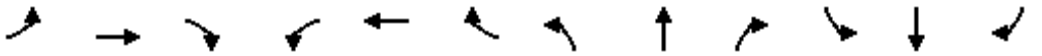
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	400	3	1072	551	361	1191
Future Volume (vph)	400	3	1072	551	361	1191
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	29.0	29.0	34.0	34.0	27.0	61.0
Total Split (%)	32.2%	32.2%	37.8%	37.8%	30.0%	67.8%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	400	3	371	0	0	0	0	1072	551	361	1191	0
Future Volume (veh/h)	400	3	371	0	0	0	0	1072	551	361	1191	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	361	68	312				0	1094	368	368	1215	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	454	74	341				0	1335	581	395	2283	0
Arrive On Green	0.25	0.25	0.25				0.00	0.37	0.37	0.44	1.00	0.00
Sat Flow, veh/h	1810	296	1359				0	3705	1572	1810	3705	0
Grp Volume(v), veh/h	361	0	380				0	1094	368	368	1215	0
Grp Sat Flow(s),veh/h/ln	1810	0	1655				0	1805	1572	1810	1805	0
Q Serve(g_s), s	16.8	0.0	20.1				0.0	24.7	17.3	17.4	0.0	0.0
Cycle Q Clear(g_c), s	16.8	0.0	20.1				0.0	24.7	17.3	17.4	0.0	0.0
Prop In Lane	1.00		0.82				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	454	0	416				0	1335	581	395	2283	0
V/C Ratio(X)	0.79	0.00	0.91				0.00	0.82	0.63	0.93	0.53	0.00
Avail Cap(c_a), veh/h	483	0	441				0	1335	581	462	2283	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.57	0.57	0.27	0.27	0.00
Uniform Delay (d), s/veh	31.5	0.0	32.8				0.0	25.6	23.3	24.8	0.0	0.0
Incr Delay (d2), s/veh	7.6	0.0	21.9				0.0	3.3	3.0	8.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	10.0				0.0	10.4	6.5	6.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.1	0.0	54.7				0.0	29.0	26.3	33.1	0.2	0.0
LnGrp LOS	D	A	D				A	C	C	C	A	A
Approach Vol, veh/h		741						1462			1583	
Approach Delay, s/veh		47.1						28.3			7.9	
Approach LOS		D						C			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.6	38.8		27.6		62.4
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	23.0	28.5		24.0		55.5
Max Q Clear Time (g_c+I1), s	19.4	26.7		22.1		2.0
Green Ext Time (p_c), s	0.2	1.5		0.5		17.5

Intersection Summary	
HCM 6th Ctrl Delay	23.5
HCM 6th LOS	C

Notes

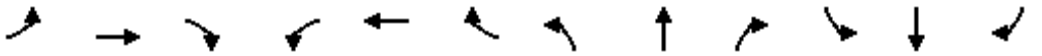
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	103	356	67	356	178	1362	70	253	1130	141
Future Volume (vph)	103	356	67	356	178	1362	70	253	1130	141
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	20.0	35.1	15.9	31.0	27.0	47.0	47.0	22.0	42.0	42.0
Total Split (%)	16.7%	29.3%	13.3%	25.8%	22.5%	39.2%	39.2%	18.3%	35.0%	35.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 108.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	356	133	67	356	135	178	1362	70	253	1130	141
Future Volume (veh/h)	103	356	133	67	356	135	178	1362	70	253	1130	141
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	110	379	118	71	379	118	189	1449	47	269	1202	96
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	135	553	170	89	479	147	219	2038	632	330	1922	596
Arrive On Green	0.08	0.22	0.22	0.05	0.19	0.19	0.14	0.41	0.41	0.11	0.39	0.39
Sat Flow, veh/h	1619	2567	788	1619	2561	786	1619	4914	1523	2956	4914	1524
Grp Volume(v), veh/h	110	251	246	71	251	246	189	1449	47	269	1202	96
Grp Sat Flow(s),veh/h/ln	1619	1710	1645	1619	1710	1637	1619	1638	1523	1478	1638	1524
Q Serve(g_s), s	6.7	13.5	13.9	4.3	14.0	14.4	11.5	24.5	1.9	8.9	19.8	4.1
Cycle Q Clear(g_c), s	6.7	13.5	13.9	4.3	14.0	14.4	11.5	24.5	1.9	8.9	19.8	4.1
Prop In Lane	1.00		0.48	1.00		0.48	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	135	368	354	89	320	306	219	2038	632	330	1922	596
V/C Ratio(X)	0.82	0.68	0.69	0.80	0.79	0.80	0.86	0.71	0.07	0.82	0.63	0.16
Avail Cap(c_a), veh/h	249	500	480	182	430	411	362	2038	632	513	1922	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.2	36.2	36.3	46.9	38.9	39.0	42.5	24.4	17.7	43.5	24.6	19.8
Incr Delay (d2), s/veh	4.5	2.2	2.7	6.1	6.7	8.1	5.8	2.1	0.2	2.9	1.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	5.6	5.6	1.8	6.2	6.2	4.8	9.3	0.7	3.3	7.5	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.7	38.4	39.0	53.0	45.6	47.1	48.3	26.5	17.9	46.5	26.1	20.4
LnGrp LOS	D	D	D	D	D	D	D	C	B	D	C	C
Approach Vol, veh/h		607			568			1685			1567	
Approach Delay, s/veh		40.7			47.2			28.7			29.3	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.8	47.0	10.1	27.4	18.2	44.6	13.0	24.5
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	17.4	41.6	11.3	29.3	22.4	36.6	15.4	25.2
Max Q Clear Time (g_c+I1), s	10.9	26.5	6.3	15.9	13.5	21.8	8.7	16.4
Green Ext Time (p_c), s	0.3	8.6	0.0	2.2	0.2	7.3	0.1	1.8

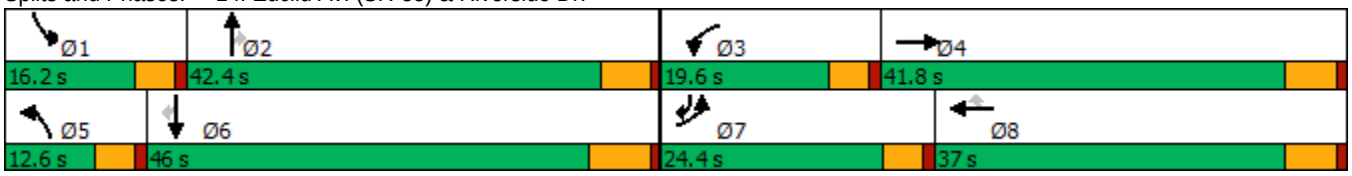
Intersection Summary	
HCM 6th Ctrl Delay	32.9
HCM 6th LOS	C

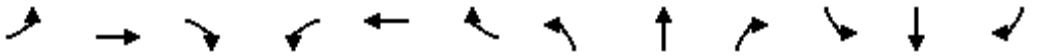
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	145	440	178	393	62	96	1179	230	134	949	185
Future Volume (vph)	145	440	178	393	62	96	1179	230	134	949	185
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	24.4	41.8	19.6	37.0	37.0	12.6	42.4	42.4	16.2	46.0	24.4
Total Split (%)	20.3%	34.8%	16.3%	30.8%	30.8%	10.5%	35.3%	35.3%	13.5%	38.3%	20.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 119.8
Natural Cycle: 110
Control Type: Actuated-Uncoordinated

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	440	82	178	393	62	96	1179	230	134	949	185
Future Volume (veh/h)	145	440	82	178	393	62	96	1179	230	134	949	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	151	458	60	185	409	49	100	1228	186	140	989	102
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	175	463	61	201	1070	477	107	1045	466	155	1147	670
Arrive On Green	0.11	0.30	0.30	0.12	0.31	0.31	0.07	0.31	0.31	0.10	0.34	0.34
Sat Flow, veh/h	1619	1559	204	1619	3420	1524	1619	3420	1525	1619	3420	1506
Grp Volume(v), veh/h	151	0	518	185	409	49	100	1228	186	140	989	102
Grp Sat Flow(s),veh/h/ln	1619	0	1763	1619	1710	1524	1619	1710	1525	1619	1710	1506
Q Serve(g_s), s	11.1	0.0	35.4	13.7	11.3	2.8	7.4	37.0	11.7	10.4	32.7	4.9
Cycle Q Clear(g_c), s	11.1	0.0	35.4	13.7	11.3	2.8	7.4	37.0	11.7	10.4	32.7	4.9
Prop In Lane	1.00		0.12	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	0	524	201	1070	477	107	1045	466	155	1147	670
V/C Ratio(X)	0.86	0.00	0.99	0.92	0.38	0.10	0.93	1.18	0.40	0.90	0.86	0.15
Avail Cap(c_a), veh/h	265	0	524	201	1070	477	107	1045	466	155	1147	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.1	0.0	42.3	52.5	32.5	29.5	56.3	42.0	33.3	54.2	37.6	20.1
Incr Delay (d2), s/veh	11.3	0.0	36.2	41.7	0.2	0.1	65.7	89.1	2.5	44.1	8.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	0.0	20.0	7.7	4.6	1.0	4.9	27.5	4.5	6.1	14.6	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.4	0.0	78.5	94.2	32.7	29.6	122.0	131.1	35.8	98.3	46.3	20.6
LnGrp LOS	E	A	E	F	C	C	F	F	D	F	D	C
Approach Vol, veh/h		669			643			1514			1231	
Approach Delay, s/veh		75.3			50.2			118.8			50.1	
Approach LOS		E			D			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	43.5	19.6	41.8	12.6	47.1	17.7	43.7
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	11.6	* 37	15.0	36.0	8.0	39.5	19.8	31.2
Max Q Clear Time (g_c+I1), s	12.4	39.0	15.7	37.4	9.4	34.7	13.1	13.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.7	0.1	2.4

Intersection Summary	
HCM 6th Ctrl Delay	79.9
HCM 6th LOS	E

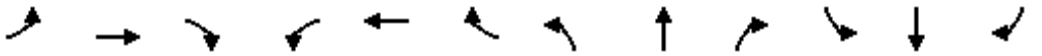
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	93	273	51	75	108	50	1400	219	24	1079	69
Future Volume (vph)	93	273	51	75	108	50	1400	219	24	1079	69
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	44.0	44.0	44.0	44.0	44.0	12.4	65.0	65.0	11.0	63.6	63.6
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	10.3%	54.2%	54.2%	9.2%	53.0%	53.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 105.1
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	273	51	75	108	9	50	1400	219	24	1079	69
Future Volume (veh/h)	93	273	51	75	108	9	50	1400	219	24	1079	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	100	294	32	81	116	6	54	1505	164	26	1160	41
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	268	490	415	119	153	7	67	1874	819	40	1818	794
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.04	0.55	0.55	0.02	0.53	0.53
Sat Flow, veh/h	1218	1800	1525	269	561	25	1619	3420	1494	1619	3420	1494
Grp Volume(v), veh/h	100	294	32	203	0	0	54	1505	164	26	1160	41
Grp Sat Flow(s),veh/h/ln	1218	1800	1525	855	0	0	1619	1710	1494	1619	1710	1494
Q Serve(g_s), s	0.0	15.5	1.7	11.5	0.0	0.0	3.6	38.8	6.1	1.7	26.2	1.4
Cycle Q Clear(g_c), s	13.4	15.5	1.7	27.0	0.0	0.0	3.6	38.8	6.1	1.7	26.2	1.4
Prop In Lane	1.00		1.00	0.40		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	268	490	415	279	0	0	67	1874	819	40	1818	794
V/C Ratio(X)	0.37	0.60	0.08	0.73	0.00	0.00	0.80	0.80	0.20	0.64	0.64	0.05
Avail Cap(c_a), veh/h	363	630	534	389	0	0	116	1874	819	95	1818	794
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	34.5	29.5	41.5	0.0	0.0	51.9	19.9	12.5	52.7	18.1	12.3
Incr Delay (d2), s/veh	0.9	1.2	0.1	4.2	0.0	0.0	8.1	3.8	0.5	6.2	1.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	6.7	0.6	5.5	0.0	0.0	1.6	14.0	1.9	0.7	9.4	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.6	35.7	29.6	45.7	0.0	0.0	60.0	23.7	13.1	58.9	19.8	12.4
LnGrp LOS	C	D	C	D	A	A	E	C	B	E	B	B
Approach Vol, veh/h		426			203			1723			1227	
Approach Delay, s/veh		35.0			45.7			23.8			20.4	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	66.3		35.5	9.1	64.5		35.5				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	6.4	* 60		38.2	7.8	57.1		38.2				
Max Q Clear Time (g_c+I1), s	3.7	40.8		17.5	5.6	28.2		29.0				
Green Ext Time (p_c), s	0.0	10.4		1.9	0.0	8.5		0.7				

Intersection Summary		
HCM 6th Ctrl Delay		25.2
HCM 6th LOS		C

Notes

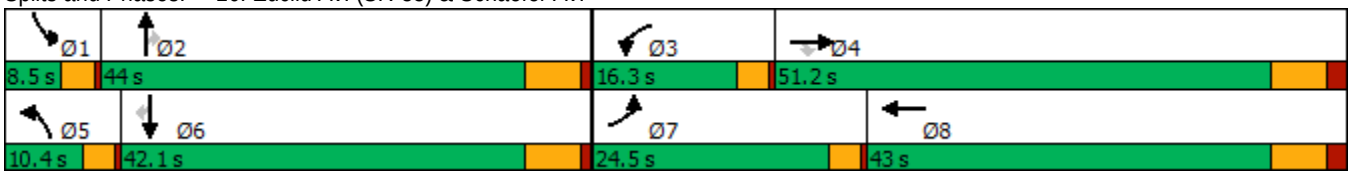
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

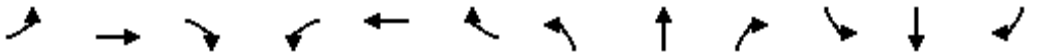
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	280	280	178	76	75	82	1338	80	28	1100	111
Future Volume (vph)	280	280	178	76	75	82	1338	80	28	1100	111
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	24.5	51.2	51.2	16.3	43.0	10.4	44.0	44.0	8.5	42.1	42.1
Total Split (%)	20.4%	42.7%	42.7%	13.6%	35.8%	8.7%	36.7%	36.7%	7.1%	35.1%	35.1%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 98.2
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	280	178	76	75	25	82	1338	80	28	1100	111
Future Volume (veh/h)	280	280	178	76	75	25	82	1338	80	28	1100	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	283	283	139	77	76	20	83	1352	63	28	1111	82
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	318	347	294	162	133	35	103	1494	666	46	1374	613
Arrive On Green	0.20	0.19	0.19	0.10	0.10	0.10	0.06	0.44	0.44	0.03	0.40	0.40
Sat Flow, veh/h	1619	1800	1525	1619	1373	361	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	283	283	139	77	0	96	83	1352	63	28	1111	82
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1735	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	14.1	12.5	6.7	3.7	0.0	4.4	4.2	30.5	2.0	1.4	23.8	2.8
Cycle Q Clear(g_c), s	14.1	12.5	6.7	3.7	0.0	4.4	4.2	30.5	2.0	1.4	23.8	2.8
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	318	347	294	162	0	168	103	1494	666	46	1374	613
V/C Ratio(X)	0.89	0.81	0.47	0.47	0.00	0.57	0.80	0.91	0.09	0.60	0.81	0.13
Avail Cap(c_a), veh/h	410	960	814	250	0	754	135	1569	700	98	1490	665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.4	32.0	29.7	35.2	0.0	35.8	38.3	21.7	13.7	39.8	22.0	15.7
Incr Delay (d2), s/veh	15.1	3.5	0.9	0.8	0.0	2.3	17.5	7.6	0.1	4.6	3.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	5.4	2.4	1.4	0.0	1.9	2.0	11.6	0.6	0.6	8.6	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.5	35.5	30.6	36.0	0.0	38.0	55.8	29.4	13.8	44.4	25.2	15.8
LnGrp LOS	D	D	C	D	A	D	E	C	B	D	C	B
Approach Vol, veh/h		705			173			1498			1221	
Approach Delay, s/veh		39.4			37.1			30.2			25.0	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	42.2	11.8	23.0	8.8	39.3	19.8	15.0
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	38.0	12.8	44.2	6.9	36.1	21.0	36.0
Max Q Clear Time (g_c+I1), s	3.4	32.5	5.7	14.5	6.2	25.8	16.1	6.4
Green Ext Time (p_c), s	0.0	3.7	0.0	1.5	0.0	5.0	0.2	0.3

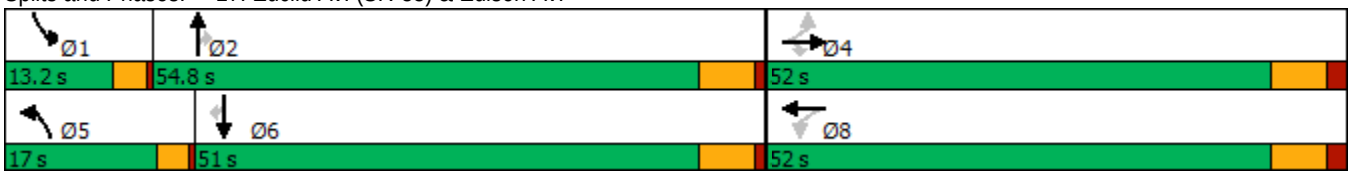
Intersection Summary	
HCM 6th Ctrl Delay	30.5
HCM 6th LOS	C

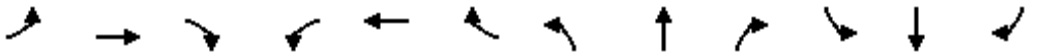
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	265	508	279	39	384	139	1202	68	112	1146	175
Future Volume (vph)	265	508	279	39	384	139	1202	68	112	1146	175
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	17.0	54.8	54.8	13.2	51.0	51.0
Total Split (%)	43.3%	43.3%	43.3%	43.3%	43.3%	14.2%	45.7%	45.7%	11.0%	42.5%	42.5%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 118.5
Natural Cycle: 110
Control Type: Actuated-Uncoordinated

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	508	279	39	384	122	139	1202	68	112	1146	175
Future Volume (veh/h)	265	508	279	39	384	122	139	1202	68	112	1146	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	279	535	212	41	404	122	146	1265	64	118	1206	152
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	152	685	581	142	503	152	170	1360	605	133	1282	572
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.10	0.40	0.40	0.08	0.37	0.37
Sat Flow, veh/h	841	1800	1525	685	1323	399	1619	3420	1522	1619	3420	1525
Grp Volume(v), veh/h	279	535	212	41	0	526	146	1265	64	118	1206	152
Grp Sat Flow(s),veh/h/ln	841	1800	1525	685	0	1722	1619	1710	1522	1619	1710	1525
Q Serve(g_s), s	12.8	31.0	11.8	6.6	0.0	32.2	10.5	41.8	3.1	8.5	40.3	8.2
Cycle Q Clear(g_c), s	45.0	31.0	11.8	37.6	0.0	32.2	10.5	41.8	3.1	8.5	40.3	8.2
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	685	581	142	0	655	170	1360	605	133	1282	572
V/C Ratio(X)	1.84	0.78	0.37	0.29	0.00	0.80	0.86	0.93	0.11	0.89	0.94	0.27
Avail Cap(c_a), veh/h	152	685	581	142	0	655	185	1412	628	133	1302	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.3	32.3	26.3	48.8	0.0	32.7	52.1	34.0	22.4	53.7	35.7	25.7
Incr Delay (d2), s/veh	400.7	5.8	0.4	1.1	0.0	7.1	27.7	10.9	0.1	45.1	13.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.4	13.9	4.2	1.1	0.0	14.0	5.4	17.9	1.1	5.0	17.7	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	456.0	38.1	26.7	49.9	0.0	39.8	79.7	44.9	22.5	98.9	48.8	25.9
LnGrp LOS	F	D	C	D	A	D	E	D	C	F	D	C
Approach Vol, veh/h		1026			567			1475			1476	
Approach Delay, s/veh		149.4			40.5			47.4			50.5	
Approach LOS		F			D			D			D	

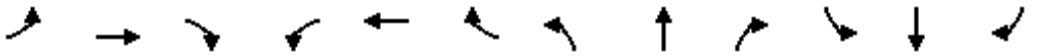
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.2	53.0		52.0	15.9	50.3		52.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	9.7	48.8		45.0	13.5	45.0		45.0				
Max Q Clear Time (g_c+I1), s	10.5	43.8		47.0	12.5	42.3		39.6				
Green Ext Time (p_c), s	0.0	3.2		0.0	0.0	1.9		1.6				

Intersection Summary		
HCM 6th Ctrl Delay		70.6
HCM 6th LOS		E

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	37	161	202	8	32	102	1203	17	55	1282	62
Future Volume (vph)	37	161	202	8	32	102	1203	17	55	1282	62
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	46.8	46.8	46.8	46.8	46.8	14.0	63.2	63.2	10.0	59.2	59.2
Total Split (%)	39.0%	39.0%	39.0%	39.0%	39.0%	11.7%	52.7%	52.7%	8.3%	49.3%	49.3%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 87.1
Natural Cycle: 105
Control Type: Actuated-Uncoordinated

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	161	202	8	32	42	102	1203	17	55	1282	62
Future Volume (veh/h)	37	161	202	8	32	42	102	1203	17	55	1282	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	42	181	111	9	36	44	115	1352	18	62	1440	58
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	240	260	221	164	107	130	144	1995	890	85	1871	817
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.09	0.58	0.58	0.05	0.55	0.55
Sat Flow, veh/h	1265	1800	1525	1043	737	901	1619	3420	1525	1619	3420	1494
Grp Volume(v), veh/h	42	181	111	9	0	80	115	1352	18	62	1440	58
Grp Sat Flow(s),veh/h/ln	1265	1800	1525	1043	0	1638	1619	1710	1525	1619	1710	1494
Q Serve(g_s), s	2.0	6.1	4.3	0.5	0.0	2.8	4.4	17.4	0.3	2.4	21.0	1.2
Cycle Q Clear(g_c), s	4.8	6.1	4.3	6.6	0.0	2.8	4.4	17.4	0.3	2.4	21.0	1.2
Prop In Lane	1.00		1.00	1.00		0.55	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	240	260	221	164	0	237	144	1995	890	85	1871	817
V/C Ratio(X)	0.17	0.70	0.50	0.05	0.00	0.34	0.80	0.68	0.02	0.73	0.77	0.07
Avail Cap(c_a), veh/h	891	1186	1005	701	0	1079	267	3086	1376	165	2871	1254
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	25.9	25.1	29.1	0.0	24.5	28.5	9.1	5.6	29.8	11.3	6.8
Incr Delay (d2), s/veh	0.3	2.5	1.3	0.1	0.0	0.6	7.5	0.4	0.0	8.7	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.6	1.5	0.1	0.0	1.0	1.8	3.9	0.1	1.0	5.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.9	28.4	26.5	29.2	0.0	25.1	36.0	9.6	5.6	38.5	12.0	6.8
LnGrp LOS	C	C	C	C	A	C	D	A	A	D	B	A
Approach Vol, veh/h		334			89			1485			1560	
Approach Delay, s/veh		27.6			25.5			11.6			12.9	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.8	42.9		14.0	9.2	40.6		14.0				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	6.5	57.5		42.0	10.5	53.5		42.0				
Max Q Clear Time (g_c+I1), s	4.4	19.4		8.1	6.4	23.0		8.6				
Green Ext Time (p_c), s	0.0	11.3		1.1	0.1	11.9		0.3				

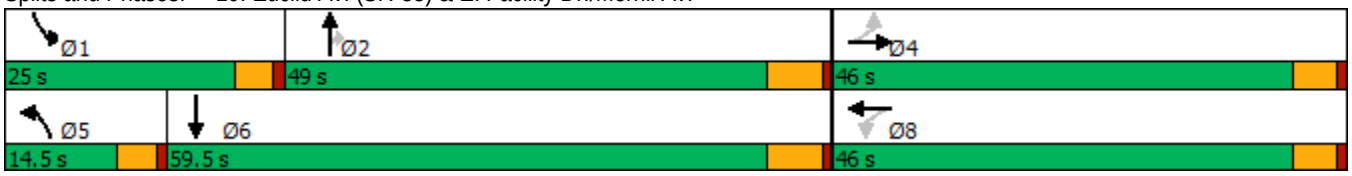
Intersection Summary			
HCM 6th Ctrl Delay		14.0	
HCM 6th LOS		B	

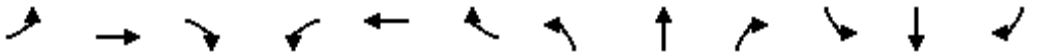
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	11	29	367	2	4	1136	286	294	1155
Future Volume (vph)	11	29	367	2	4	1136	286	294	1155
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	14.5	49.0	49.0	25.0	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	12.1%	40.8%	40.8%	20.8%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	29	12	367	2	263	4	1136	286	294	1155	1
Future Volume (veh/h)	11	29	12	367	2	263	4	1136	286	294	1155	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	12	32	12	403	2	279	4	1248	249	323	1269	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	131	334	117	341	1	203	17	1226	547	277	1774	0
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.01	0.36	0.36	0.17	0.52	0.00
Sat Flow, veh/h	276	978	342	860	4	595	1619	3420	1525	1619	3510	0
Grp Volume(v), veh/h	56	0	0	684	0	0	4	1248	249	323	1269	0
Grp Sat Flow(s),veh/h/ln	1596	0	0	1459	0	0	1619	1710	1525	1619	1710	0
Q Serve(g_s), s	0.0	0.0	0.0	38.4	0.0	0.0	0.3	43.0	15.0	20.5	34.1	0.0
Cycle Q Clear(g_c), s	2.6	0.0	0.0	41.0	0.0	0.0	0.3	43.0	15.0	20.5	34.1	0.0
Prop In Lane	0.21		0.21	0.59		0.41	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	582	0	0	546	0	0	17	1226	547	277	1774	0
V/C Ratio(X)	0.10	0.00	0.00	1.25	0.00	0.00	0.24	1.02	0.46	1.17	0.72	0.00
Avail Cap(c_a), veh/h	582	0	0	546	0	0	135	1226	547	277	1774	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.9	0.0	0.0	41.1	0.0	0.0	58.9	38.5	29.5	49.7	22.1	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	128.0	0.0	0.0	2.7	30.4	0.6	107.4	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	35.2	0.0	0.0	0.1	21.8	5.3	16.1	12.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.9	0.0	0.0	169.0	0.0	0.0	61.6	68.9	30.1	157.1	23.5	0.0
LnGrp LOS	C	A	A	F	A	A	E	F	C	F	C	A
Approach Vol, veh/h		56			684			1501			1592	
Approach Delay, s/veh		26.9			169.0			62.4			50.6	
Approach LOS		C			F			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.0	49.0		46.0	5.7	68.3		46.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	20.5	43.0		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	22.5	45.0		4.6	2.3	36.1		43.0				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	7.6		0.0				

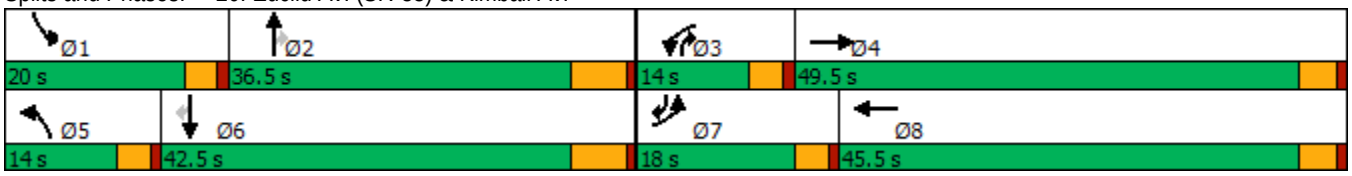
Intersection Summary			
HCM 6th Ctrl Delay		76.0	
HCM 6th LOS		E	

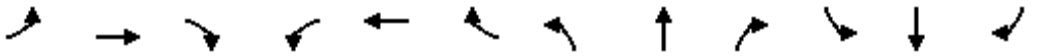
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	348	743	58	305	60	861	36	412	898	239
Future Volume (vph)	348	743	58	305	60	861	36	412	898	239
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	18.0	49.5	14.0	45.5	14.0	36.5	14.0	20.0	42.5	18.0
Total Split (%)	15.0%	41.3%	11.7%	37.9%	11.7%	30.4%	11.7%	16.7%	35.4%	15.0%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 105.9
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	348	743	45	58	305	165	60	861	36	412	898	239
Future Volume (veh/h)	348	743	45	58	305	165	60	861	36	412	898	239
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	359	766	43	60	314	132	62	888	22	425	926	148
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	411	939	53	132	537	221	133	984	563	474	1251	770
Arrive On Green	0.14	0.29	0.29	0.08	0.23	0.23	0.08	0.29	0.29	0.16	0.37	0.37
Sat Flow, veh/h	2956	3292	185	1619	2362	973	1619	3420	1525	2956	3420	1524
Grp Volume(v), veh/h	359	398	411	60	225	221	62	888	22	425	926	148
Grp Sat Flow(s),veh/h/ln	1478	1710	1767	1619	1710	1625	1619	1710	1525	1478	1710	1524
Q Serve(g_s), s	11.9	21.6	21.6	3.5	11.7	12.1	3.6	24.9	0.9	14.1	23.5	5.3
Cycle Q Clear(g_c), s	11.9	21.6	21.6	3.5	11.7	12.1	3.6	24.9	0.9	14.1	23.5	5.3
Prop In Lane	1.00		0.10	1.00		0.60	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	411	488	504	132	389	369	133	984	563	474	1251	770
V/C Ratio(X)	0.87	0.82	0.82	0.46	0.58	0.60	0.47	0.90	0.04	0.90	0.74	0.19
Avail Cap(c_a), veh/h	415	771	797	162	703	668	162	1045	590	474	1251	770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.1	33.2	33.2	43.7	34.3	34.5	43.7	34.2	20.2	41.1	27.5	13.5
Incr Delay (d2), s/veh	17.3	3.8	3.7	0.9	0.5	0.6	0.9	10.4	0.0	18.9	2.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	8.9	9.2	1.4	4.7	4.6	1.4	10.8	0.3	6.0	9.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.4	37.0	36.9	44.7	34.8	35.0	44.6	44.6	20.2	60.0	29.9	13.7
LnGrp LOS	E	D	D	D	C	D	D	D	C	E	C	B
Approach Vol, veh/h		1168			506			972			1499	
Approach Delay, s/veh		43.8			36.1			44.1			36.8	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	34.7	12.1	33.0	12.2	42.5	17.9	27.2
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	16.0	30.5	10.0	45.0	10.0	36.5	14.0	41.0
Max Q Clear Time (g_c+I1), s	16.1	26.9	5.5	23.6	5.6	25.5	13.9	14.1
Green Ext Time (p_c), s	0.0	1.8	0.0	4.6	0.0	4.5	0.0	1.5

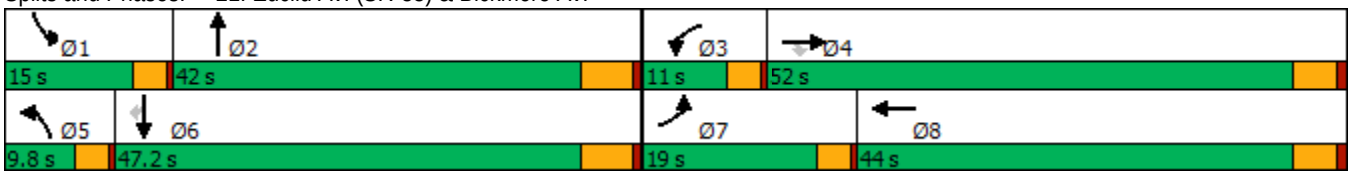
Intersection Summary	
HCM 6th Ctrl Delay	40.4
HCM 6th LOS	D

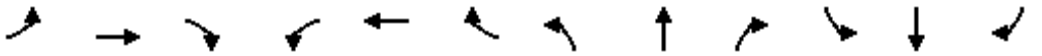
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	115	96	55	35	21	22	676	75	804	134
Future Volume (vph)	115	96	55	35	21	22	676	75	804	134
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	19.0	52.0	52.0	11.0	44.0	9.8	42.0	15.0	47.2	47.2
Total Split (%)	15.8%	43.3%	43.3%	9.2%	36.7%	8.2%	35.0%	12.5%	39.3%	39.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 67.6
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	96	55	35	21	49	22	676	73	75	804	134
Future Volume (veh/h)	115	96	55	35	21	49	22	676	73	75	804	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	125	104	45	38	23	25	24	735	56	82	874	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	156	295	250	69	87	94	47	1000	76	118	1212	540
Arrive On Green	0.10	0.16	0.16	0.04	0.11	0.11	0.03	0.31	0.31	0.07	0.35	0.35
Sat Flow, veh/h	1619	1800	1525	1619	789	857	1619	3221	245	1619	3420	1525
Grp Volume(v), veh/h	125	104	45	38	0	48	24	390	401	82	874	114
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1646	1619	1710	1756	1619	1710	1525
Q Serve(g_s), s	3.2	2.2	1.1	1.0	0.0	1.1	0.6	8.7	8.7	2.1	9.5	2.2
Cycle Q Clear(g_c), s	3.2	2.2	1.1	1.0	0.0	1.1	0.6	8.7	8.7	2.1	9.5	2.2
Prop In Lane	1.00		1.00	1.00		0.52	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	156	295	250	69	0	181	47	531	545	118	1212	540
V/C Ratio(X)	0.80	0.35	0.18	0.55	0.00	0.27	0.51	0.73	0.74	0.70	0.72	0.21
Avail Cap(c_a), veh/h	588	1984	1681	285	0	1505	239	1463	1503	437	3344	1491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	15.8	15.4	20.0	0.0	17.4	20.4	13.1	13.1	19.3	11.9	9.6
Incr Delay (d2), s/veh	3.6	0.3	0.1	2.6	0.0	0.3	3.2	0.7	0.7	2.7	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.7	0.3	0.4	0.0	0.4	0.2	2.2	2.3	0.7	2.2	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	16.1	15.5	22.6	0.0	17.7	23.6	13.9	13.9	22.0	12.3	9.7
LnGrp LOS	C	B	B	C	A	B	C	B	B	C	B	A
Approach Vol, veh/h		274			86			815			1070	
Approach Delay, s/veh		18.9			19.8			14.2			12.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	18.7	5.3	12.0	4.7	20.6	7.6	9.7
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	11.5	36.5	7.5	47.0	6.3	41.7	15.5	39.0
Max Q Clear Time (g_c+I1), s	4.1	10.7	3.0	4.2	2.6	11.5	5.2	3.1
Green Ext Time (p_c), s	0.0	2.5	0.0	0.4	0.0	3.7	0.1	0.1

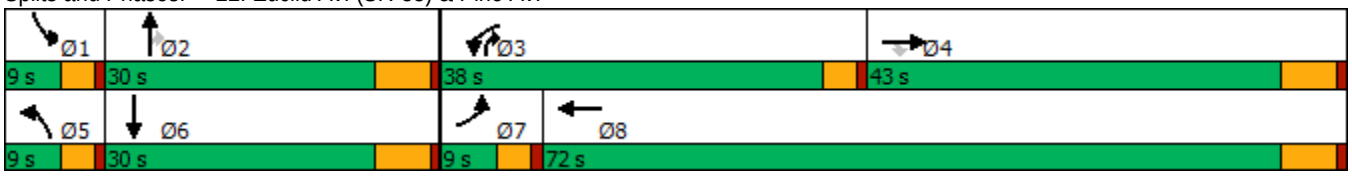
Intersection Summary	
HCM 6th Ctrl Delay	14.3
HCM 6th LOS	B

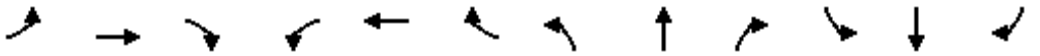
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	5	424	90	517	64	54	720	1061	50	862
Future Volume (vph)	5	424	90	517	64	54	720	1061	50	862
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	38.0	72.0	9.0	30.0	38.0	9.0	30.0
Total Split (%)	7.5%	35.8%	35.8%	31.7%	60.0%	7.5%	25.0%	31.7%	7.5%	25.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 115.3
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	424	90	517	64	22	54	720	1061	50	862	4
Future Volume (veh/h)	5	424	90	517	64	22	54	720	1061	50	862	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	5	433	0	528	65	20	55	735	666	51	880	4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	11	504		603	630	194	68	893	710	64	903	4
Arrive On Green	0.01	0.28	0.00	0.20	0.48	0.48	0.04	0.26	0.26	0.04	0.26	0.26
Sat Flow, veh/h	1619	1800	1525	2956	1321	406	1619	3420	1525	1619	3491	16
Grp Volume(v), veh/h	5	433	0	528	0	85	55	735	666	51	431	453
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1727	1619	1710	1525	1619	1710	1797
Q Serve(g_s), s	0.3	21.2	0.0	16.1	0.0	2.5	3.1	18.8	24.2	2.9	23.2	23.2
Cycle Q Clear(g_c), s	0.3	21.2	0.0	16.1	0.0	2.5	3.1	18.8	24.2	2.9	23.2	23.2
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	11	504		603	0	824	68	893	710	64	442	465
V/C Ratio(X)	0.47	0.86		0.88	0.00	0.10	0.81	0.82	0.94	0.80	0.97	0.97
Avail Cap(c_a), veh/h	87	718		1083	0	1228	87	893	710	87	442	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.9	31.7	0.0	35.8	0.0	13.3	44.1	32.3	23.6	44.2	34.1	34.1
Incr Delay (d2), s/veh	11.8	8.7	0.0	1.6	0.0	0.1	27.6	5.9	20.0	21.4	35.9	34.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	9.8	0.0	5.5	0.0	0.9	1.7	7.8	15.8	1.5	13.1	13.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.7	40.3	0.0	37.4	0.0	13.4	71.7	38.2	43.5	65.6	70.0	69.0
LnGrp LOS	E	D		D	A	B	E	D	D	E	E	E
Approach Vol, veh/h		438	A		613			1456			935	
Approach Delay, s/veh		40.5			34.1			41.9			69.3	
Approach LOS		D			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	30.2	22.9	32.0	7.9	30.0	4.6	50.3
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.0	24.0	34.0	37.0	5.0	24.0	5.0	66.0
Max Q Clear Time (g_c+I1), s	4.9	26.2	18.1	23.2	5.1	25.2	2.3	4.5
Green Ext Time (p_c), s	0.0	0.0	0.9	2.8	0.0	0.0	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	47.8
HCM 6th LOS	D

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	60.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	546	22	6	501	6	13	97	10	17	82	46
Future Vol, veh/h	68	546	22	6	501	6	13	97	10	17	82	46
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	72	575	23	6	527	6	14	102	11	18	86	48
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	95.9	41.2	13.8	14.1
HCM LOS	F	E	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	11%	1%	12%
Vol Thru, %	81%	86%	98%	57%
Vol Right, %	8%	3%	1%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	120	636	513	145
LT Vol	13	68	6	17
Through Vol	97	546	501	82
RT Vol	10	22	6	46
Lane Flow Rate	126	669	540	153
Geometry Grp	1	1	1	1
Degree of Util (X)	0.263	1.116	0.896	0.308
Departure Headway (Hd)	7.946	6.003	6.253	7.682
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	455	609	583	472
Service Time	5.946	4.003	4.253	5.682
HCM Lane V/C Ratio	0.277	1.099	0.926	0.324
HCM Control Delay	13.8	95.9	41.2	14.1
HCM Lane LOS	B	F	E	B
HCM 95th-tile Q	1	20.8	10.7	1.3

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	221	4	2	98	9	5	90	7	20	66	13
Future Vol, veh/h	15	221	4	2	98	9	5	90	7	20	66	13
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	17	254	5	2	113	10	6	103	8	23	76	15
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.2	8.8	9	9
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	6%	2%	20%
Vol Thru, %	88%	92%	90%	67%
Vol Right, %	7%	2%	8%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	102	240	109	99
LT Vol	5	15	2	20
Through Vol	90	221	98	66
RT Vol	7	4	9	13
Lane Flow Rate	117	276	125	114
Geometry Grp	1	1	1	1
Degree of Util (X)	0.162	0.354	0.165	0.157
Departure Headway (Hd)	4.96	4.625	4.754	4.957
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	719	775	749	719
Service Time	3.02	2.675	2.814	3.019
HCM Lane V/C Ratio	0.163	0.356	0.167	0.159
HCM Control Delay	9	10.2	8.8	9
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.6	1.6	0.6	0.6

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	76	694	633	38	39	30
Future Vol, veh/h	76	694	633	38	39	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	81	738	673	40	41	32

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	713	0	-	0	1593	693
Stage 1	-	-	-	-	693	-
Stage 2	-	-	-	-	900	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	896	-	-	-	185	521
Stage 1	-	-	-	-	500	-
Stage 2	-	-	-	-	400	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	896	-	-	-	157	521
Mov Cap-2 Maneuver	-	-	-	-	157	-
Stage 1	-	-	-	-	424	-
Stage 2	-	-	-	-	400	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	28.6
HCM LOS			D

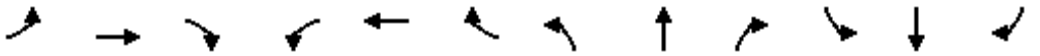
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	896	-	-	-	225
HCM Lane V/C Ratio	0.09	-	-	-	0.326
HCM Control Delay (s)	9.4	0	-	-	28.6
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.3	-	-	-	1.4

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	328	231	864	960	636
Future Volume (vph)	0	328	231	864	960	636
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	38.0	38.0	28.0	82.0	54.0	54.0
Total Split (%)	31.7%	31.7%	23.3%	68.3%	45.0%	45.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	285	0	328	231	864	0	0	960	636
Future Volume (veh/h)	0	0	0	285	0	328	231	864	0	0	960	636
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				297	0	162	241	900	0	0	1000	487
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				343	0	305	265	2577	0	0	1910	834
Arrive On Green				0.19	0.00	0.19	0.29	1.00	0.00	0.00	0.53	0.53
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1575
Grp Volume(v), veh/h				297	0	162	241	900	0	0	1000	487
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1575
Q Serve(g_s), s				19.1	0.0	10.9	15.4	0.0	0.0	0.0	21.6	25.3
Cycle Q Clear(g_c), s				19.1	0.0	10.9	15.4	0.0	0.0	0.0	21.6	25.3
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				343	0	305	265	2577	0	0	1910	834
V/C Ratio(X)				0.87	0.00	0.53	0.91	0.35	0.00	0.00	0.52	0.58
Avail Cap(c_a), veh/h				486	0	432	353	2577	0	0	1910	834
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.31	0.31	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				47.2	0.0	43.8	41.7	0.0	0.0	0.0	18.4	19.3
Incr Delay (d2), s/veh				11.2	0.0	1.4	7.5	0.1	0.0	0.0	1.0	3.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				9.4	0.0	4.3	6.1	0.0	0.0	0.0	8.7	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				58.4	0.0	45.3	49.1	0.1	0.0	0.0	19.4	22.2
LnGrp LOS				E	A	D	D	A	A	A	B	C
Approach Vol, veh/h					459			1141			1487	
Approach Delay, s/veh					53.8			10.5			20.4	
Approach LOS					D			B			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		91.5			22.2	69.3		28.5				
Change Period (Y+Rc), s		5.8			4.6	5.8		5.8				
Max Green Setting (Gmax), s		76.2			23.4	48.2		32.2				
Max Q Clear Time (g_c+I1), s		2.0			17.4	27.3		21.1				
Green Ext Time (p_c), s		7.0			0.2	8.8		1.6				

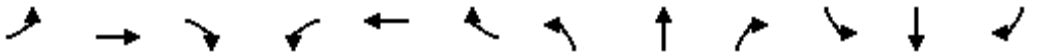
Intersection Summary												
HCM 6th Ctrl Delay			21.7									
HCM 6th LOS			C									

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	332	689	418	828
Future Volume (vph)	0	332	689	418	828
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	38.0	38.0	44.0	38.0	82.0
Total Split (%)	31.7%	31.7%	36.7%	31.7%	68.3%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	406	0	332	0	0	0	0	689	317	418	828	0
Future Volume (veh/h)	406	0	332	0	0	0	0	689	317	418	828	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	437	0	270				0	741	258	449	890	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	468	0	416				0	909	316	466	2327	0
Arrive On Green	0.26	0.00	0.26				0.00	0.35	0.35	0.52	1.00	0.00
Sat Flow, veh/h	1810	0	1610				0	2700	907	1810	3705	0
Grp Volume(v), veh/h	437	0	270				0	513	486	449	890	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1707	1810	1805	0
Q Serve(g_s), s	28.3	0.0	17.9				0.0	31.1	31.1	28.7	0.0	0.0
Cycle Q Clear(g_c), s	28.3	0.0	17.9				0.0	31.1	31.1	28.7	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.53	1.00		0.00
Lane Grp Cap(c), veh/h	468	0	416				0	630	595	466	2327	0
V/C Ratio(X)	0.93	0.00	0.65				0.00	0.82	0.82	0.96	0.38	0.00
Avail Cap(c_a), veh/h	486	0	432				0	630	595	504	2327	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.78	0.78	0.81	0.81	0.00
Uniform Delay (d), s/veh	43.5	0.0	39.6				0.0	35.6	35.6	28.6	0.0	0.0
Incr Delay (d2), s/veh	24.9	0.0	3.2				0.0	8.9	9.4	25.8	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.4	0.0	7.2				0.0	14.6	13.9	11.4	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.4	0.0	42.8				0.0	44.5	44.9	54.3	0.4	0.0
LnGrp LOS	E	A	D				A	D	D	D	A	A
Approach Vol, veh/h		707						999			1339	
Approach Delay, s/veh		58.6						44.7			18.5	
Approach LOS		E						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	35.5	47.7		36.8		83.2
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	33.4	38.2		32.2		76.2
Max Q Clear Time (g_c+I1), s	30.7	33.1		30.3		2.0
Green Ext Time (p_c), s	0.2	2.6		0.7		6.9

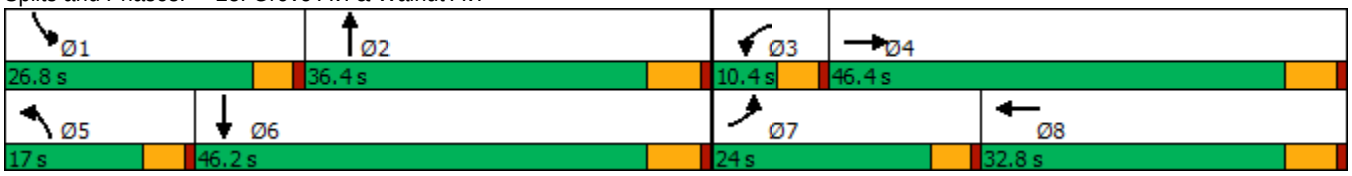
Intersection Summary	
HCM 6th Ctrl Delay	36.4
HCM 6th LOS	D

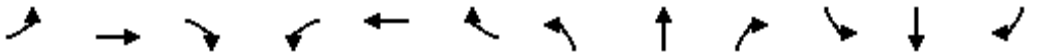
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	146	283	16	153	79	636	168	695
Future Volume (vph)	146	283	16	153	79	636	168	695
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	24.0	46.4	10.4	32.8	17.0	36.4	26.8	46.2
Total Split (%)	20.0%	38.7%	8.7%	27.3%	14.2%	30.3%	22.3%	38.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 96.3
Natural Cycle: 85
Control Type: Actuated-Uncoordinated

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	283	77	16	153	121	79	636	20	168	695	165
Future Volume (veh/h)	146	283	77	16	153	121	79	636	20	168	695	165
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	152	295	65	17	159	91	82	662	11	175	724	104
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	183	591	128	31	251	135	102	1379	23	208	1398	201
Arrive On Green	0.11	0.21	0.21	0.02	0.12	0.12	0.06	0.40	0.40	0.13	0.47	0.47
Sat Flow, veh/h	1619	2794	607	1619	2129	1149	1619	3442	57	1619	3002	431
Grp Volume(v), veh/h	152	179	181	17	126	124	82	329	344	175	412	416
Grp Sat Flow(s),veh/h/ln	1619	1710	1691	1619	1710	1568	1619	1710	1790	1619	1710	1722
Q Serve(g_s), s	8.0	8.0	8.2	0.9	6.1	6.6	4.3	12.4	12.4	9.2	14.7	14.7
Cycle Q Clear(g_c), s	8.0	8.0	8.2	0.9	6.1	6.6	4.3	12.4	12.4	9.2	14.7	14.7
Prop In Lane	1.00		0.36	1.00		0.73	1.00		0.03	1.00		0.25
Lane Grp Cap(c), veh/h	183	362	358	31	201	185	102	685	717	208	797	802
V/C Ratio(X)	0.83	0.49	0.51	0.54	0.63	0.67	0.80	0.48	0.48	0.84	0.52	0.52
Avail Cap(c_a), veh/h	362	801	792	108	532	488	232	685	717	414	797	802
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	30.1	30.2	42.1	36.4	36.7	40.1	19.3	19.3	36.9	16.3	16.3
Incr Delay (d2), s/veh	3.6	1.0	1.1	5.3	3.2	4.2	5.3	2.4	2.3	3.5	2.4	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	3.2	3.2	0.4	2.6	2.6	1.8	4.9	5.1	3.6	5.6	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	31.1	31.3	47.5	39.6	40.9	45.4	21.7	21.6	40.4	18.7	18.7
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	B	B
Approach Vol, veh/h		512			267			755			1003	
Approach Delay, s/veh		34.2			40.7			24.2			22.5	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	40.5	6.3	24.2	10.1	46.2	14.4	16.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	22.2	30.6	5.8	40.6	12.4	40.4	19.4	27.0
Max Q Clear Time (g_c+I1), s	11.2	14.4	2.9	10.2	6.3	16.7	10.0	8.6
Green Ext Time (p_c), s	0.2	3.3	0.0	1.9	0.0	4.9	0.1	1.2

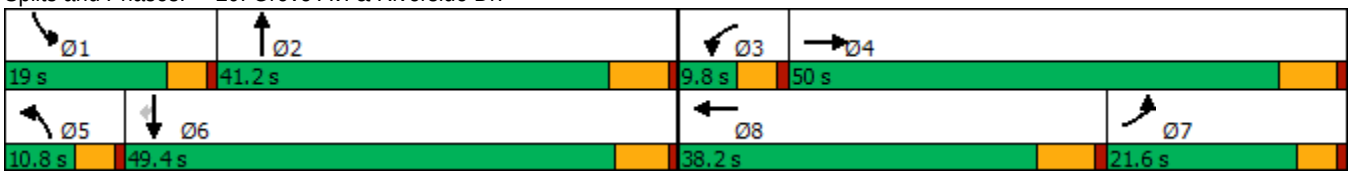
Intersection Summary	
HCM 6th Ctrl Delay	27.3
HCM 6th LOS	C

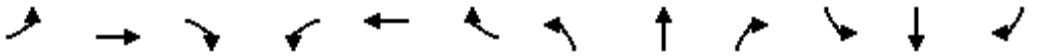
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	160	565	40	531	31	447	150	362	168
Future Volume (vph)	160	565	40	531	31	447	150	362	168
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	21.6	50.0	9.8	38.2	10.8	41.2	19.0	49.4	49.4
Total Split (%)	18.0%	41.7%	8.2%	31.8%	9.0%	34.3%	15.8%	41.2%	41.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 114.9
Natural Cycle: 110
Control Type: Actuated-Uncoordinated

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	565	22	40	531	103	31	447	75	150	362	168
Future Volume (veh/h)	160	565	22	40	531	103	31	447	75	150	362	168
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	167	589	22	42	553	61	32	466	61	156	377	118
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	273	622	23	52	653	72	45	477	63	181	702	595
Arrive On Green	0.17	0.36	0.36	0.03	0.21	0.21	0.03	0.31	0.31	0.11	0.39	0.39
Sat Flow, veh/h	1619	1722	64	1619	3106	342	1619	1559	204	1619	1800	1525
Grp Volume(v), veh/h	167	0	611	42	304	310	32	0	527	156	377	118
Grp Sat Flow(s),veh/h/ln	1619	0	1787	1619	1710	1738	1619	0	1763	1619	1800	1525
Q Serve(g_s), s	10.9	0.0	38.0	2.9	19.5	19.6	2.2	0.0	33.8	10.8	18.5	3.2
Cycle Q Clear(g_c), s	10.9	0.0	38.0	2.9	19.5	19.6	2.2	0.0	33.8	10.8	18.5	3.2
Prop In Lane	1.00		0.04	1.00		0.20	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	273	0	645	52	360	365	45	0	540	181	702	595
V/C Ratio(X)	0.61	0.00	0.95	0.81	0.85	0.85	0.71	0.00	0.98	0.86	0.54	0.20
Avail Cap(c_a), veh/h	273	0	685	74	479	487	88	0	540	204	702	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.0	0.0	35.5	54.9	43.3	43.4	55.1	0.0	39.2	49.9	26.9	6.9
Incr Delay (d2), s/veh	2.9	0.0	21.8	23.5	10.2	10.4	7.3	0.0	33.2	25.2	2.9	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	19.2	1.5	8.9	9.1	1.0	0.0	18.7	5.5	8.1	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.9	0.0	57.3	78.5	53.5	53.8	62.4	0.0	72.5	75.1	29.8	7.6
LnGrp LOS	D	A	E	E	D	D	E	A	E	E	C	A
Approach Vol, veh/h		778			656			559			651	
Approach Delay, s/veh		55.1			55.2			71.9			36.6	
Approach LOS		E			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	41.2	8.3	47.4	7.8	50.8	25.5	30.2
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	14.4	35.0	5.2	43.8	6.2	* 44	17.0	* 32
Max Q Clear Time (g_c+I1), s	12.8	35.8	4.9	40.0	4.2	20.5	12.9	21.6
Green Ext Time (p_c), s	0.0	0.0	0.0	1.3	0.0	2.4	0.1	2.4

Intersection Summary	
HCM 6th Ctrl Delay	54.1
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	34.2
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	74	176	25	9	38	38	35	472	19	35	364	21
Future Vol, veh/h	74	176	25	9	38	38	35	472	19	35	364	21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	77	183	26	9	40	40	36	492	20	36	379	22
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	19.2	12.7	49.9	28.6
HCM LOS	C	B	E	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	27%	11%	8%
Vol Thru, %	90%	64%	45%	87%
Vol Right, %	4%	9%	45%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	526	275	85	420
LT Vol	35	74	9	35
Through Vol	472	176	38	364
RT Vol	19	25	38	21
Lane Flow Rate	548	286	89	438
Geometry Grp	1	1	1	1
Degree of Util (X)	0.944	0.566	0.192	0.778
Departure Headway (Hd)	6.201	7.108	7.806	6.399
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	581	504	462	560
Service Time	4.288	5.207	5.806	4.494
HCM Lane V/C Ratio	0.943	0.567	0.193	0.782
HCM Control Delay	49.9	19.2	12.7	28.6
HCM Lane LOS	E	C	B	D
HCM 95th-tile Q	12.4	3.5	0.7	7.2

Intersection	
Intersection Delay, s/veh	30.8
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	96	138	89	2	45	36	30	411	30	52	277	53
Future Vol, veh/h	96	138	89	2	45	36	30	411	30	52	277	53
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	103	148	96	2	48	39	32	442	32	56	298	57
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	23.1	12.8	42	27.3
HCM LOS	C	B	E	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	30%	2%	14%
Vol Thru, %	87%	43%	54%	73%
Vol Right, %	6%	28%	43%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	471	323	83	382
LT Vol	30	96	2	52
Through Vol	411	138	45	277
RT Vol	30	89	36	53
Lane Flow Rate	506	347	89	411
Geometry Grp	1	1	1	1
Degree of Util (X)	0.894	0.672	0.194	0.755
Departure Headway (Hd)	6.49	6.965	7.83	6.62
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	562	521	459	546
Service Time	4.49	4.984	5.878	4.644
HCM Lane V/C Ratio	0.9	0.666	0.194	0.753
HCM Control Delay	42	23.1	12.8	27.3
HCM Lane LOS	E	C	B	D
HCM 95th-tile Q	10.4	5	0.7	6.6

Intersection	
Intersection Delay, s/veh	325.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	430	83	61	266	50	233	379	131	128	228	22
Future Vol, veh/h	43	430	83	61	266	50	233	379	131	128	228	22
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	46	462	89	66	286	54	251	408	141	138	245	24
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	309.9	123.8	540.3	127.8
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	8%	16%	34%
Vol Thru, %	51%	77%	71%	60%
Vol Right, %	18%	15%	13%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	743	556	377	378
LT Vol	233	43	61	128
Through Vol	379	430	266	228
RT Vol	131	83	50	22
Lane Flow Rate	799	598	405	406
Geometry Grp	1	1	1	1
Degree of Util (X)	2.12	1.581	1.075	1.087
Departure Headway (Hd)	11.818	13.283	15.554	15.633
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	320	281	239	236
Service Time	9.818	11.283	13.554	13.633
HCM Lane V/C Ratio	2.497	2.128	1.695	1.72
HCM Control Delay	540.3	309.9	123.8	127.8
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	47.7	25.9	10.8	11

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	89	98	68	5	61	277	14	401	4	103	238	29
Future Vol, veh/h	89	98	68	5	61	277	14	401	4	103	238	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	25	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	99	109	76	6	68	308	16	1604	4	114	264	32

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2334	2148	280	2239	2162	1606	296	0	0	1608	0	0
Stage 1	508	508	-	1638	1638	-	-	-	-	-	-	-
Stage 2	1826	1640	-	601	524	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 26	~ 49	764	31	~ 48	~ 131	1277	-	-	412	-	-
Stage 1	551	542	-	128	160	-	-	-	-	-	-	-
Stage 2	100	160	-	491	533	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 29	764	-	~ 28	~ 131	1277	-	-	412	-	-
Mov Cap-2 Maneuver	-	~ 29	-	-	~ 28	-	-	-	-	-	-	-
Stage 1	486	362	-	113	141	-	-	-	-	-	-	-
Stage 2	-	141	-	206	356	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			0.1	4.8
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1277	-	-	-	-	412	-	-
HCM Lane V/C Ratio	0.012	-	-	-	-	0.278	-	-
HCM Control Delay (s)	7.9	0	-	-	-	17.1	0	-
HCM Lane LOS	A	A	-	-	-	C	A	-
HCM 95th %tile Q(veh)	0	-	-	-	-	1.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	172	342	26	284
Future Volume (vph)	172	342	26	284
Turn Type	Prot	NA	Prot	NA
Protected Phases	8	2	1	6
Permitted Phases				
Detector Phase	8	2	1	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	5.0	10.0
Minimum Split (s)	26.6	23.2	9.6	16.2
Total Split (s)	26.7	38.7	9.6	48.3
Total Split (%)	35.6%	51.6%	12.8%	64.4%
Yellow Time (s)	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2
Lead/Lag		Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	
Recall Mode	None	Min	None	Min

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 47
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 34: Grove Av. & Street A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	172	76	342	58	26	284
Future Volume (veh/h)	172	76	342	58	26	284
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	187	83	372	63	28	309
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	276	122	497	84	54	868
Arrive On Green	0.24	0.24	0.33	0.33	0.03	0.48
Sat Flow, veh/h	1140	506	1500	254	1619	1800
Grp Volume(v), veh/h	271	0	0	435	28	309
Grp Sat Flow(s),veh/h/ln	1652	0	0	1754	1619	1800
Q Serve(g_s), s	5.8	0.0	0.0	8.6	0.7	4.2
Cycle Q Clear(g_c), s	5.8	0.0	0.0	8.6	0.7	4.2
Prop In Lane	0.69	0.31		0.14	1.00	
Lane Grp Cap(c), veh/h	400	0	0	581	54	868
V/C Ratio(X)	0.68	0.00	0.00	0.75	0.52	0.36
Avail Cap(c_a), veh/h	933	0	0	1456	207	1936
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.5	0.0	0.0	11.6	18.6	6.3
Incr Delay (d2), s/veh	2.0	0.0	0.0	2.0	2.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	2.3	0.2	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.5	0.0	0.0	13.6	21.4	6.6
LnGrp LOS	B	A	A	B	C	A
Approach Vol, veh/h	271		435			337
Approach Delay, s/veh	15.5		13.6			7.8
Approach LOS	B		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.9	19.2			25.1	14.1
Change Period (Y+Rc), s	4.6	6.2			6.2	4.6
Max Green Setting (Gmax), s	5.0	32.5			42.1	22.1
Max Q Clear Time (g_c+I1), s	2.7	10.6			6.2	7.8
Green Ext Time (p_c), s	0.0	2.3			1.6	0.7

Intersection Summary	
HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B

Intersection	
Intersection Delay, s/veh	171.5
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	206	535	489	195	277	178
Future Vol, veh/h	206	535	489	195	277	178
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	215	557	509	203	289	185
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	241.9	175.8	50.3
HCM LOS	F	F	F

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	0%	61%
Vol Thru, %	72%	71%	0%
Vol Right, %	0%	29%	39%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	741	684	455
LT Vol	206	0	277
Through Vol	535	489	0
RT Vol	0	195	178
Lane Flow Rate	772	712	474
Geometry Grp	1	1	1
Degree of Util (X)	1.468	1.31	0.906
Departure Headway (Hd)	7.342	7.299	7.893
Convergence, Y/N	Yes	Yes	Yes
Cap	502	506	464
Service Time	5.342	5.299	5.893
HCM Lane V/C Ratio	1.538	1.407	1.022
HCM Control Delay	241.9	175.8	50.3
HCM Lane LOS	F	F	F
HCM 95th-tile Q	36.2	27.8	10.1

Intersection	
Int Delay, s/veh	364.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	20	654	1	132	352	30	3	20	390	64	13	10
Future Vol, veh/h	20	654	1	132	352	30	3	20	390	64	13	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	21	688	1	139	371	32	3	21	411	67	14	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	403	0	0	689	0	0	1409	1412	689	1612	1396	387
Stage 1	-	-	-	-	-	-	731	731	-	665	665	-
Stage 2	-	-	-	-	-	-	678	681	-	947	731	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1167	-	-	915	-	-	117	139	449	85	142	665
Stage 1	-	-	-	-	-	-	416	430	-	453	461	-
Stage 2	-	-	-	-	-	-	445	453	-	316	430	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1167	-	-	915	-	-	87	109	449	~ 5	111	665
Mov Cap-2 Maneuver	-	-	-	-	-	-	87	109	-	~ 5	111	-
Stage 1	-	-	-	-	-	-	404	418	-	440	371	-
Stage 2	-	-	-	-	-	-	339	364	-	~ 25	418	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	2.5	123.9	$ 6465.7
HCM LOS			F	F

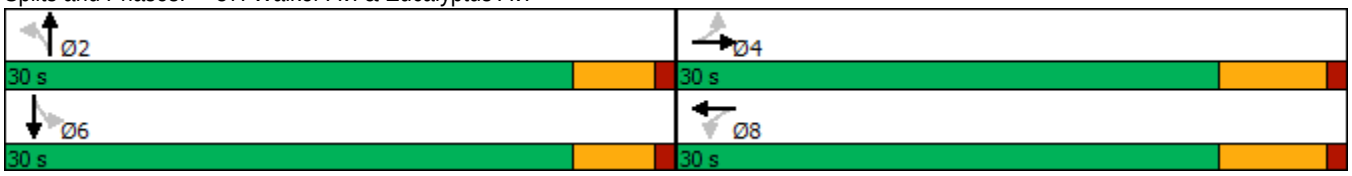
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	380	1167	-	-	915	-	-	7
HCM Lane V/C Ratio	1.144	0.018	-	-	0.152	-	-	13.083
HCM Control Delay (s)	123.9	8.1	0	-	9.6	0	-	$ 6465.7
HCM Lane LOS	F	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	16.6	0.1	-	-	0.5	-	-	13.2

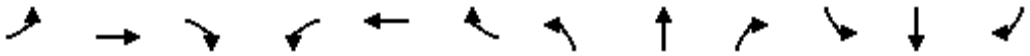
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	40	137	252	88	208	67	71
Future Volume (vph)	40	137	252	88	208	67	71
Turn Type	Perm	NA	NA	Perm	NA	Perm	NA
Protected Phases		4	8		2		6
Permitted Phases	4			2		6	
Detector Phase	4	4	8	2	2	6	6
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	22.8	22.8	22.8	21.6	21.6	21.6	21.6
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.8	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)		5.8	5.8	4.6	4.6		4.6
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	None	None	None	None
Act Effct Green (s)		17.8	17.8	13.2	13.2		13.2
Actuated g/C Ratio		0.52	0.52	0.38	0.38		0.38
v/c Ratio		0.28	0.49	0.16	0.37		0.30
Control Delay		8.6	9.8	11.4	12.8		12.9
Queue Delay		0.0	0.0	0.0	0.0		0.0
Total Delay		8.6	9.8	11.4	12.8		12.9
LOS		A	A	B	B		B
Approach Delay		8.6	9.8		12.4		12.9
Approach LOS		A	A		B		B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 34.3	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 10.7	Intersection LOS: B
Intersection Capacity Utilization 73.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 37: Walker Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	137	30	0	252	164	88	208	0	67	71	3
Future Volume (veh/h)	40	137	30	0	252	164	88	208	0	67	71	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	43	149	33	0	274	178	96	226	0	73	77	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	172	382	72	0	373	243	677	555	0	309	266	8
Arrive On Green	0.37	0.37	0.37	0.00	0.37	0.37	0.31	0.31	0.00	0.31	0.31	0.31
Sat Flow, veh/h	105	1043	197	0	1019	662	1339	1800	0	463	863	27
Grp Volume(v), veh/h	225	0	0	0	0	452	96	226	0	153	0	0
Grp Sat Flow(s),veh/h/ln	1345	0	0	0	0	1681	1339	1800	0	1352	0	0
Q Serve(g_s), s	0.4	0.0	0.0	0.0	0.0	7.4	0.0	3.2	0.0	0.1	0.0	0.0
Cycle Q Clear(g_c), s	7.8	0.0	0.0	0.0	0.0	7.4	1.3	3.2	0.0	3.3	0.0	0.0
Prop In Lane	0.19		0.15	0.00		0.39	1.00		0.00	0.48		0.02
Lane Grp Cap(c), veh/h	627	0	0	0	0	616	677	555	0	583	0	0
V/C Ratio(X)	0.36	0.00	0.00	0.00	0.00	0.73	0.14	0.41	0.00	0.26	0.00	0.00
Avail Cap(c_a), veh/h	1215	0	0	0	0	1273	1328	1430	0	1279	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.4	0.0	0.0	0.0	0.0	8.8	8.1	8.7	0.0	8.4	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.0	0.0	1.7	0.1	0.5	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	0.0	0.0	1.6	0.4	1.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.8	0.0	0.0	0.0	0.0	10.5	8.2	9.2	0.0	8.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	B	A	A	A	A	A	A
Approach Vol, veh/h		225			452			322			153	
Approach Delay, s/veh		7.8			10.5			8.9			8.6	
Approach LOS		A			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.5		17.5		14.5		17.5				
Change Period (Y+Rc), s		4.6		5.8		4.6		5.8				
Max Green Setting (Gmax), s		25.4		24.2		25.4		24.2				
Max Q Clear Time (g_c+I1), s		5.2		9.8		5.3		9.4				
Green Ext Time (p_c), s		1.6		1.0		0.8		2.3				

Intersection Summary												
HCM 6th Ctrl Delay			9.3									
HCM 6th LOS			A									

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	47.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	667	110	83	475	29	102	8	119	86	22	107
Future Vol, veh/h	36	667	110	83	475	29	102	8	119	86	22	107
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	25	91	91	91	91	91	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	40	733	121	91	522	116	112	9	131	95	24	110

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	638	0	0	854	0	0	1642	1633	733	1706	1696	580
Stage 1	-	-	-	-	-	-	813	813	-	762	762	-
Stage 2	-	-	-	-	-	-	829	820	-	944	934	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	956	-	-	794	-	-	~ 81	102	424	~ 73	94	518
Stage 1	-	-	-	-	-	-	375	395	-	400	416	-
Stage 2	-	-	-	-	-	-	368	392	-	317	347	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	956	-	-	794	-	-	~ 50	86	424	~ 43	80	518
Mov Cap-2 Maneuver	-	-	-	-	-	-	138	193	-	~ 93	167	-
Stage 1	-	-	-	-	-	-	359	378	-	383	368	-
Stage 2	-	-	-	-	-	-	240	347	-	205	332	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1.3	159.4	252.5
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	216	956	-	-	794	-	-	167
HCM Lane V/C Ratio	1.165	0.041	-	-	0.115	-	-	1.371
HCM Control Delay (s)	159.4	8.9	-	-	10.1	-	-	252.5
HCM Lane LOS	F	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	12.2	0.1	-	-	0.4	-	-	13.9

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	155	49	0	273	143	0
Future Vol, veh/h	155	49	0	273	143	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	168	53	0	297	155	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	221	0	492	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	297	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1360	-	540	851
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	758	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1360	-	540	851
Mov Cap-2 Maneuver	-	-	-	-	540	-
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	758	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	540	-	-	1360	-
HCM Lane V/C Ratio	0.288	-	-	-	-
HCM Control Delay (s)	14.3	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.2	-	-	0	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	845	5	10	510	26	12	0	18	75	0	64
Future Vol, veh/h	22	845	5	10	510	26	12	0	18	75	0	64
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	25	960	6	11	580	30	14	0	20	85	0	73

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	610	0	0	967	0	0	1668	1646	484	1147	1634	595
Stage 1	-	-	-	-	-	-	1014	1014	-	617	617	-
Stage 2	-	-	-	-	-	-	654	632	-	530	1017	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	979	-	-	720	-	-	71	100	534	167	102	508
Stage 1	-	-	-	-	-	-	259	319	-	481	484	-
Stage 2	-	-	-	-	-	-	459	477	-	506	318	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	979	-	-	719	-	-	59	96	533	156	98	508
Mov Cap-2 Maneuver	-	-	-	-	-	-	161	209	-	284	209	-
Stage 1	-	-	-	-	-	-	252	310	-	468	477	-
Stage 2	-	-	-	-	-	-	387	470	-	474	309	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	19.8	22.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	277	979	-	-	719	-	-	356
HCM Lane V/C Ratio	0.123	0.026	-	-	0.016	-	-	0.444
HCM Control Delay (s)	19.8	8.8	-	-	10.1	-	-	22.9
HCM Lane LOS	C	A	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	2.2

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	98	57	0	107	0	166	0	0	0	0	0
Future Vol, veh/h	0	98	57	0	107	0	166	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	107	62	0	116	0	180	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	169	0	0	254	254	138
Stage 1	-	-	-	-	-	-	138	138	-
Stage 2	-	-	-	-	-	-	116	116	-
Critical Hdwy	-	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	1421	-	0	739	653	916
Stage 1	0	-	-	-	-	0	894	786	-
Stage 2	0	-	-	-	-	0	914	803	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1421	-	-	739	0	916
Mov Cap-2 Maneuver	-	-	-	-	-	-	739	0	-
Stage 1	-	-	-	-	-	-	894	0	-
Stage 2	-	-	-	-	-	-	914	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	739	-	-	1421	-
HCM Lane V/C Ratio	0.244	-	-	-	-
HCM Control Delay (s)	11.4	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1	-	-	0	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	928	0	20	513	36	0	8	20	107	22	33
Future Vol, veh/h	11	928	0	20	513	36	0	8	20	107	22	33
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	200	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	12	1031	0	22	570	40	0	9	22	119	24	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	610	0	0	1032	0	0	1721	1710	517	1178	1690	590
Stage 1	-	-	-	-	-	-	1056	1056	-	634	634	-
Stage 2	-	-	-	-	-	-	665	654	-	544	1056	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	979	-	-	681	-	-	65	92	509	159	94	511
Stage 1	-	-	-	-	-	-	244	305	-	471	476	-
Stage 2	-	-	-	-	-	-	453	466	-	496	305	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	979	-	-	680	-	-	53	88	509	142	90	511
Mov Cap-2 Maneuver	-	-	-	-	-	-	156	201	-	269	196	-
Stage 1	-	-	-	-	-	-	241	301	-	465	461	-
Stage 2	-	-	-	-	-	-	385	451	-	455	301	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.4	16.1	25.5
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	354	979	-	-	680	-	-	269	311
HCM Lane V/C Ratio	-	0.088	0.012	-	-	0.033	-	-	0.442	0.196
HCM Control Delay (s)	0	16.1	8.7	-	-	10.5	-	-	28.6	19.4
HCM Lane LOS	A	C	A	-	-	B	-	-	D	C
HCM 95th %tile Q(veh)	-	0.3	0	-	-	0.1	-	-	2.1	0.7

Intersection	
Intersection Delay, s/veh	82.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	0	733	0	0	0	288	27	0	0	67	91
Future Vol, veh/h	14	0	733	0	0	0	288	27	0	0	67	91
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	15	0	772	0	0	0	303	28	0	0	71	96
Number of Lanes	1	0	1	0	0	0	1	2	0	0	2	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	3
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	3	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	3	0	2
HCM Control Delay	122.3	22.9	10.3
HCM LOS	F	C	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	100%	100%	0%	0%	100%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	288	14	14	14	733	34	34	91
LT Vol	288	0	0	14	0	0	0	0
Through Vol	0	14	14	0	0	34	34	0
RT Vol	0	0	0	0	733	0	0	91
Lane Flow Rate	303	14	14	15	772	35	35	96
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.639	0.028	0.021	0.028	1.2	0.075	0.075	0.138
Departure Headway (Hd)	8.12	7.603	5.844	6.796	5.599	8.241	8.241	5.736
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	449	474	616	530	656	437	437	629
Service Time	5.82	5.303	3.544	4.496	3.299	5.941	5.941	3.436
HCM Lane V/C Ratio	0.675	0.03	0.023	0.028	1.177	0.08	0.08	0.153
HCM Control Delay	24.1	10.5	8.7	9.7	124.4	11.6	11.6	9.4
HCM Lane LOS	C	B	A	A	F	B	B	A
HCM 95th-tile Q	4.4	0.1	0.1	0.1	26.9	0.2	0.2	0.5

Intersection	
Intersection Delay, s/veh	342.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	1019	21	25	499	29	36	4	99	117	5	34
Future Vol, veh/h	15	1019	21	25	499	29	36	4	99	117	5	34
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	17	1132	23	28	554	32	40	4	110	130	6	38
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	533.8	148.7	18.3	20.6
HCM LOS	F	F	C	C

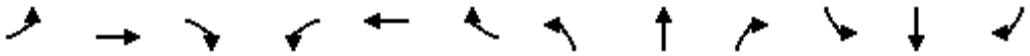
Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	26%	100%	0%	0%	100%	0%	75%
Vol Thru, %	3%	0%	100%	0%	0%	95%	3%
Vol Right, %	71%	0%	0%	100%	0%	5%	22%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	139	15	1019	21	25	528	156
LT Vol	36	15	0	0	25	0	117
Through Vol	4	0	1019	0	0	499	5
RT Vol	99	0	0	21	0	29	34
Lane Flow Rate	154	17	1132	23	28	587	173
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.342	0.034	2.176	0.04	0.063	1.235	0.406
Departure Headway (Hd)	10.34	7.803	7.288	6.567	10.096	9.533	10.756
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	351	462	509	549	357	387	338
Service Time	8.04	5.503	4.988	4.267	7.796	7.233	8.456
HCM Lane V/C Ratio	0.439	0.037	2.224	0.042	0.078	1.517	0.512
HCM Control Delay	18.3	10.8	552.3	9.5	13.5	155.1	20.6
HCM Lane LOS	C	B	F	A	B	F	C
HCM 95th-tile Q	1.5	0.1	77.8	0.1	0.2	19.9	1.9

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	5	253	379	482	1048
Future Volume (vph)	5	253	379	482	1048
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (%)	32.2%	32.2%	31.1%	67.8%	36.7%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	431	5	253	379	482	0	0	1048	435
Future Volume (veh/h)	0	0	0	431	5	253	379	482	0	0	1048	435
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				449	5	119	395	502	0	0	1092	318
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				458	5	411	495	3181	0	0	1389	400
Arrive On Green				0.26	0.26	0.26	0.55	1.00	0.00	0.00	0.28	0.28
Sat Flow, veh/h				1791	20	1610	1810	5358	0	0	5316	1453
Grp Volume(v), veh/h				454	0	119	395	502	0	0	1060	350
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1729	0	0	1634	1601
Q Serve(g_s), s				22.4	0.0	5.3	15.8	0.0	0.0	0.0	18.0	18.3
Cycle Q Clear(g_c), s				22.4	0.0	5.3	15.8	0.0	0.0	0.0	18.0	18.3
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.91
Lane Grp Cap(c), veh/h				463	0	411	495	3181	0	0	1349	440
V/C Ratio(X)				0.98	0.00	0.29	0.80	0.16	0.00	0.00	0.79	0.80
Avail Cap(c_a), veh/h				463	0	411	495	3181	0	0	1481	484
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.63	0.63	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.3	0.0	26.9	18.4	0.0	0.0	0.0	30.2	30.3
Incr Delay (d2), s/veh				37.0	0.0	0.8	5.3	0.1	0.0	0.0	4.7	13.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				13.9	0.0	5.3	4.9	0.0	0.0	0.0	7.1	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				70.3	0.0	27.8	23.7	0.1	0.0	0.0	34.8	44.1
LnGrp LOS				E	A	C	C	A	A	A	C	D
Approach Vol, veh/h					573			897			1410	
Approach Delay, s/veh					61.5			10.5			37.1	
Approach LOS					E			B			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	61.0	29.0	30.4	30.6
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	55.2	23.0	24.0	* 27
Max Q Clear Time (g_c+I1), s	2.0	24.4	17.8	20.3
Green Ext Time (p_c), s	3.4	0.0	0.3	4.5

Intersection Summary	
HCM 6th Ctrl Delay	33.7
HCM 6th LOS	C

Notes

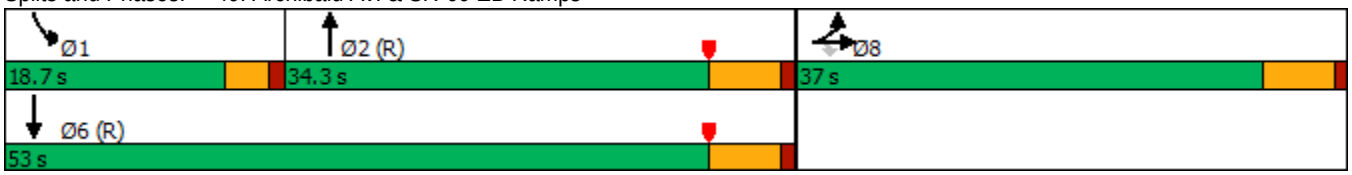
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

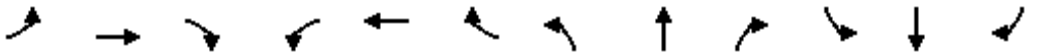
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	534	760	369	1110
Future Volume (vph)	0	534	760	369	1110
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	10.8	10.8	25.8	9.0	25.8
Total Split (s)	37.0	37.0	34.3	18.7	53.0
Total Split (%)	41.1%	41.1%	38.1%	20.8%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	0	534	0	0	0	0	760	673	369	1110	0
Future Volume (veh/h)	101	0	534	0	0	0	0	760	673	369	1110	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	105	0	306				0	792	526	384	1156	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	397	0	353				0	2176	713	296	3380	0
Arrive On Green	0.22	0.00	0.22				0.00	0.44	0.44	0.05	0.22	0.00
Sat Flow, veh/h	1810	0	1610				0	5168	1607	1810	5358	0
Grp Volume(v), veh/h	105	0	306				0	792	526	384	1156	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1607	1810	1729	0
Q Serve(g_s), s	4.3	0.0	16.5				0.0	9.6	24.4	14.7	17.0	0.0
Cycle Q Clear(g_c), s	4.3	0.0	16.5				0.0	9.6	24.4	14.7	17.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	397	0	353				0	2176	713	296	3380	0
V/C Ratio(X)	0.26	0.00	0.87				0.00	0.36	0.74	1.30	0.34	0.00
Avail Cap(c_a), veh/h	627	0	558				0	2176	713	296	3380	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.53	0.53	0.53	0.53	0.00
Uniform Delay (d), s/veh	29.1	0.0	33.8				0.0	16.6	20.7	42.6	19.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	8.4				0.0	0.3	3.6	147.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	6.8				0.0	3.2	8.6	19.1	7.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.5	0.0	42.3				0.0	16.9	24.3	190.0	19.1	0.0
LnGrp LOS	C	A	D				A	B	C	F	B	A
Approach Vol, veh/h		411						1318			1540	
Approach Delay, s/veh		39.0						19.8			61.7	
Approach LOS		D						B			E	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	18.7	45.7				64.4		25.6				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	14.7	28.5				47.2		31.2				
Max Q Clear Time (g_c+I1), s	16.7	26.4				19.0		18.5				
Green Ext Time (p_c), s	0.0	1.5				8.3		1.3				

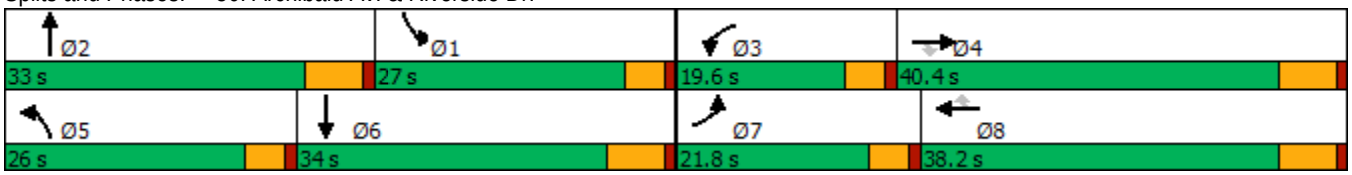
Intersection Summary			
HCM 6th Ctrl Delay			42.0
HCM 6th LOS			D

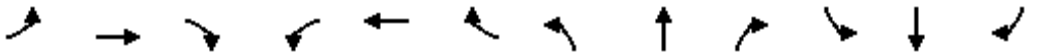
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	214	598	335	147	426	111	282	748	273	899
Future Volume (vph)	214	598	335	147	426	111	282	748	273	899
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.8	40.4	40.4	19.6	38.2	38.2	26.0	33.0	27.0	34.0
Total Split (%)	18.2%	33.7%	33.7%	16.3%	31.8%	31.8%	21.7%	27.5%	22.5%	28.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 112.7
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	598	335	147	426	111	282	748	69	273	899	235
Future Volume (veh/h)	214	598	335	147	426	111	282	748	69	273	899	235
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	228	636	199	156	453	59	300	796	64	290	956	186
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	254	811	353	182	660	293	320	989	79	360	1042	202
Arrive On Green	0.16	0.24	0.24	0.11	0.19	0.19	0.20	0.21	0.21	0.22	0.25	0.25
Sat Flow, veh/h	1619	3420	1490	1619	3420	1518	1619	4631	371	1619	4123	800
Grp Volume(v), veh/h	228	636	199	156	453	59	300	562	298	290	759	383
Grp Sat Flow(s),veh/h/ln	1619	1710	1490	1619	1710	1518	1619	1638	1726	1619	1638	1647
Q Serve(g_s), s	15.0	18.9	12.7	10.2	13.3	2.1	19.7	17.6	17.8	18.4	24.4	24.5
Cycle Q Clear(g_c), s	15.0	18.9	12.7	10.2	13.3	2.1	19.7	17.6	17.8	18.4	24.4	24.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		0.49
Lane Grp Cap(c), veh/h	254	811	353	182	660	293	320	700	368	360	828	416
V/C Ratio(X)	0.90	0.78	0.56	0.86	0.69	0.20	0.94	0.80	0.81	0.81	0.92	0.92
Avail Cap(c_a), veh/h	257	1081	471	225	1012	449	320	812	428	360	842	423
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.8	38.7	36.3	47.1	40.6	12.4	42.7	40.4	40.4	39.8	39.3	39.3
Incr Delay (d2), s/veh	30.0	2.8	1.4	19.8	1.3	0.3	33.6	5.1	9.8	11.7	14.5	25.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	7.8	4.5	4.9	5.5	1.3	10.5	7.2	8.1	8.1	10.9	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.8	41.4	37.7	66.9	41.9	12.8	76.3	45.5	50.2	51.6	53.8	64.3
LnGrp LOS	E	D	D	E	D	B	E	D	D	D	D	E
Approach Vol, veh/h		1063			668			1160			1432	
Approach Delay, s/veh		47.9			45.2			54.7			56.2	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.3	29.3	16.8	31.8	26.0	33.5	21.5	27.1
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	22.4	* 27	15.0	34.2	21.4	27.8	17.2	32.0
Max Q Clear Time (g_c+I1), s	20.4	19.8	12.2	20.9	21.7	26.5	17.0	15.3
Green Ext Time (p_c), s	0.1	2.8	0.0	3.7	0.0	0.9	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	52.0
HCM 6th LOS	D

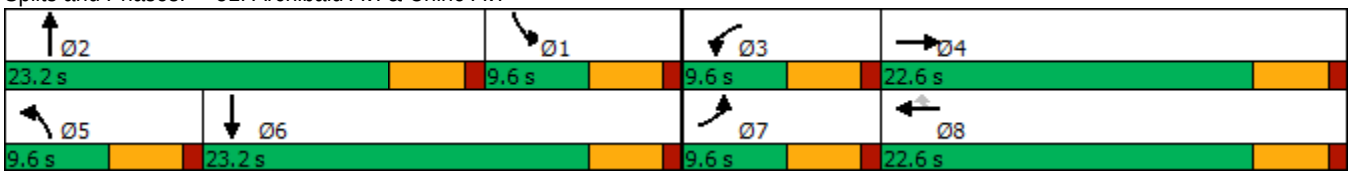
Notes

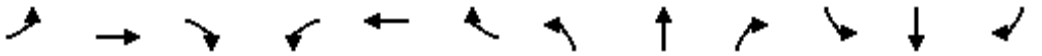
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	20	1	23	107	19	923	137	1104
Future Volume (vph)	20	1	23	107	19	923	137	1104
Turn Type	Prot	NA	Prot	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3		5	2	1	6
Permitted Phases				8				
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	9.6	22.6	9.6	22.6	9.6	23.2	9.6	23.2
Total Split (%)	14.8%	34.8%	14.8%	34.8%	14.8%	35.7%	14.8%	35.7%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None

Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 42
Natural Cycle: 75
Control Type: Actuated-Uncoordinated

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	1	6	23	0	107	19	923	46	137	1104	12
Future Volume (veh/h)	20	1	6	23	0	107	19	923	46	137	1104	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	22	1	5	26	0	35	21	1026	42	152	1227	12
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	44	16	82	51	121	102	42	1607	66	192	1473	14
Arrive On Green	0.03	0.06	0.06	0.03	0.00	0.07	0.03	0.33	0.33	0.12	0.42	0.42
Sat Flow, veh/h	1619	261	1304	1619	1800	1525	1619	4842	198	1619	3470	34
Grp Volume(v), veh/h	22	0	6	26	0	35	21	694	374	152	605	634
Grp Sat Flow(s),veh/h/ln	1619	0	1565	1619	1800	1525	1619	1638	1764	1619	1710	1794
Q Serve(g_s), s	0.5	0.0	0.1	0.6	0.0	0.6	0.5	7.3	7.3	3.7	12.7	12.7
Cycle Q Clear(g_c), s	0.5	0.0	0.1	0.6	0.0	0.6	0.5	7.3	7.3	3.7	12.7	12.7
Prop In Lane	1.00		0.83	1.00		1.00	1.00		0.11	1.00		0.02
Lane Grp Cap(c), veh/h	44	0	98	51	121	102	42	1087	585	192	726	761
V/C Ratio(X)	0.50	0.00	0.06	0.51	0.00	0.34	0.50	0.64	0.64	0.79	0.83	0.83
Avail Cap(c_a), veh/h	200	0	697	200	802	680	200	1508	812	200	787	826
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.4	0.0	17.8	19.3	0.0	7.1	19.4	11.4	11.4	17.3	10.3	10.4
Incr Delay (d2), s/veh	8.6	0.0	0.3	7.8	0.0	2.0	8.9	0.6	1.2	18.5	7.2	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.1	0.3	0.0	0.3	0.3	1.6	1.8	2.0	4.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.0	0.0	18.1	27.1	0.0	9.1	28.3	12.1	12.6	35.8	17.5	17.2
LnGrp LOS	C	A	B	C	A	A	C	B	B	D	B	B
Approach Vol, veh/h		28			61			1089			1391	
Approach Delay, s/veh		25.9			16.7			12.6			19.4	
Approach LOS		C			B			B			B	

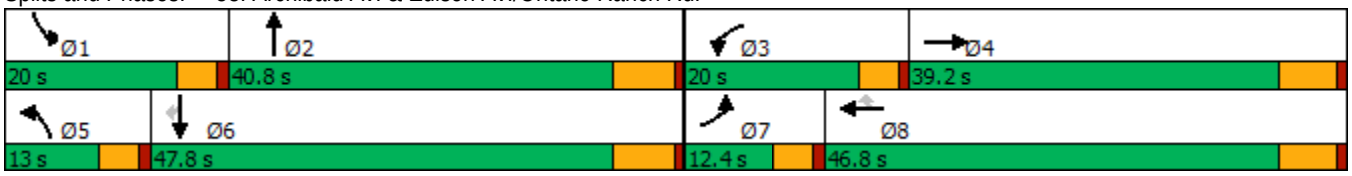
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	18.0	5.9	7.1	5.6	21.7	5.7	7.3
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	5.0	18.6	5.0	18.0	5.0	18.6	5.0	18.0
Max Q Clear Time (g_c+I1), s	5.7	9.3	2.6	2.1	2.5	14.7	2.5	2.6
Green Ext Time (p_c), s	0.0	4.1	0.0	0.0	0.0	2.4	0.0	0.0

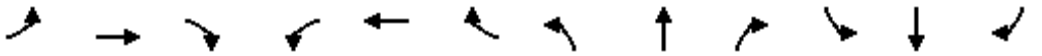
Intersection Summary	
HCM 6th Ctrl Delay	16.5
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	764	120	303	279	71	68	638	366	131	801	107
Future Volume (vph)	193	764	120	303	279	71	68	638	366	131	801	107
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	12.4	39.2		20.0	46.8	46.8	13.0	40.8		20.0	47.8	47.8
Total Split (%)	10.3%	32.7%		16.7%	39.0%	39.0%	10.8%	34.0%		16.7%	39.8%	39.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 105
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	764	120	303	279	71	68	638	366	131	801	107
Future Volume (veh/h)	193	764	120	303	279	71	68	638	366	131	801	107
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	199	788	0	312	288	39	70	658	0	135	826	88
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	251	949		376	575	488	87	877		163	1038	453
Arrive On Green	0.08	0.28	0.00	0.13	0.32	0.32	0.05	0.26	0.00	0.10	0.30	0.30
Sat Flow, veh/h	2956	3420	1525	2956	1800	1525	1619	3420	1525	1619	3420	1491
Grp Volume(v), veh/h	199	788	0	312	288	39	70	658	0	135	826	88
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1800	1525	1619	1710	1525	1619	1710	1491
Q Serve(g_s), s	6.1	19.9	0.0	9.5	11.9	1.6	3.9	16.3	0.0	7.5	20.4	4.0
Cycle Q Clear(g_c), s	6.1	19.9	0.0	9.5	11.9	1.6	3.9	16.3	0.0	7.5	20.4	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	251	949		376	575	488	87	877		163	1038	453
V/C Ratio(X)	0.79	0.83		0.83	0.50	0.08	0.80	0.75		0.83	0.80	0.19
Avail Cap(c_a), veh/h	251	1227		495	794	673	148	1275		271	1536	669
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.3	31.2	0.0	39.2	25.3	21.8	43.0	31.5	0.0	40.6	29.4	23.7
Incr Delay (d2), s/veh	14.8	3.9	0.0	6.9	0.7	0.1	6.3	1.5	0.0	4.0	1.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	8.0	0.0	3.6	4.8	0.6	1.6	6.3	0.0	3.0	7.8	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.1	35.1	0.0	46.0	26.0	21.9	49.4	33.0	0.0	44.5	31.2	23.9
LnGrp LOS	E	D		D	C	C	D	C		D	C	C
Approach Vol, veh/h		987	A		639			728	A		1049	
Approach Delay, s/veh		39.3			35.5			34.5			32.3	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	30.1	16.3	31.7	9.6	34.4	12.4	35.6
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	15.4	34.3	15.4	33.0	8.4	41.3	7.8	40.6
Max Q Clear Time (g_c+I1), s	9.5	18.3	11.5	21.9	5.9	22.4	8.1	13.9
Green Ext Time (p_c), s	0.1	3.4	0.2	3.6	0.0	5.0	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	35.4
HCM 6th LOS	D

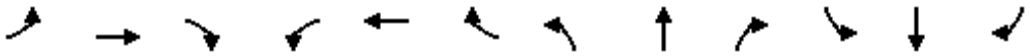
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	10	1061	1	9	1215
Future Volume (vph)	2	10	1061	1	9	1215
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.5	9.5	32.5	32.5	9.6	16.5
Total Split (s)	10.0	10.0	40.0	40.0	10.0	50.0
Total Split (%)	14.3%	14.3%	57.1%	57.1%	14.3%	71.4%
Yellow Time (s)	3.5	3.5	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	6.5	6.5	4.6	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 63.8
Natural Cycle: 65
Control Type: Actuated-Uncoordinated

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	2	0	10	0	1061	1	9	1215	0
Future Volume (veh/h)	0	0	0	2	0	10	0	1061	1	9	1215	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1700	0	1800	0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h				2	0	2	0	1129	1	10	1293	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				17	0	14	0	2384	1063	21	2715	0
Arrive On Green				0.01	0.00	0.01	0.00	0.70	0.70	0.01	0.79	0.00
Sat Flow, veh/h				3141	0	2685	0	3510	1524	1619	3510	0
Grp Volume(v), veh/h				2	0	2	0	1129	1	10	1293	0
Grp Sat Flow(s),veh/h/ln				1570	0	1342	0	1710	1524	1619	1710	0
Q Serve(g_s), s				0.0	0.0	0.0	0.0	8.2	0.0	0.3	6.9	0.0
Cycle Q Clear(g_c), s				0.0	0.0	0.0	0.0	8.2	0.0	0.3	6.9	0.0
Prop In Lane				1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				17	0	14	0	2384	1063	21	2715	0
V/C Ratio(X)				0.12	0.00	0.14	0.00	0.47	0.00	0.48	0.48	0.00
Avail Cap(c_a), veh/h				315	0	269	0	2384	1063	160	2715	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				27.1	0.0	27.1	0.0	3.8	2.5	26.9	1.9	0.0
Incr Delay (d2), s/veh				3.1	0.0	4.3	0.0	0.7	0.0	6.2	0.6	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.0	0.0	0.0	0.0	0.8	0.0	0.1	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				30.2	0.0	31.4	0.0	4.4	2.5	33.1	2.5	0.0
LnGrp LOS				C	A	C	A	A	A	C	A	A
Approach Vol, veh/h					4			1130			1303	
Approach Delay, s/veh					30.8			4.4			2.7	
Approach LOS					C			A			A	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	5.3	44.7				50.0		4.8				
Change Period (Y+Rc), s	4.6	6.5				6.5		4.5				
Max Green Setting (Gmax), s	5.4	33.5				43.5		5.5				
Max Q Clear Time (g_c+I1), s	2.3	10.2				8.9		2.0				
Green Ext Time (p_c), s	0.0	7.5				10.3		0.0				

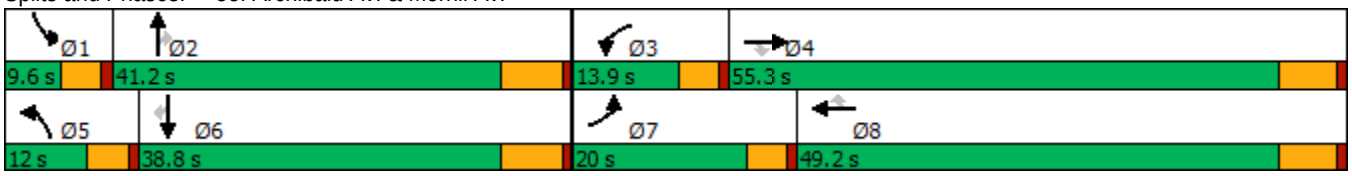
Intersection Summary		
HCM 6th Ctrl Delay		3.6
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	432	78	613	44	26	53	184	577	38	70	920	228
Future Volume (vph)	432	78	613	44	26	53	184	577	38	70	920	228
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	20.0	55.3	55.3	13.9	49.2	49.2	12.0	41.2	41.2	9.6	38.8	38.8
Total Split (%)	16.7%	46.1%	46.1%	11.6%	41.0%	41.0%	10.0%	34.3%	34.3%	8.0%	32.3%	32.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 103
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 55: Archibald Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	432	78	613	44	26	53	184	577	38	70	920	228
Future Volume (veh/h)	432	78	613	44	26	53	184	577	38	70	920	228
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	445	80	447	45	27	16	190	595	25	72	948	177
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	273	581	493	60	345	292	131	1211	533	136	1091	487
Arrive On Green	0.17	0.32	0.32	0.04	0.19	0.19	0.08	0.35	0.35	0.05	0.32	0.32
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	1619	3420	1506	2956	3420	1525
Grp Volume(v), veh/h	445	80	447	45	27	16	190	595	25	72	948	177
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1710	1506	1478	1710	1525
Q Serve(g_s), s	15.4	2.9	25.6	2.5	1.1	0.8	7.4	12.4	1.0	2.2	23.9	8.2
Cycle Q Clear(g_c), s	15.4	2.9	25.6	2.5	1.1	0.8	7.4	12.4	1.0	2.2	23.9	8.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	273	581	493	60	345	292	131	1211	533	136	1091	487
V/C Ratio(X)	1.63	0.14	0.91	0.75	0.08	0.05	1.45	0.49	0.05	0.53	0.87	0.36
Avail Cap(c_a), veh/h	273	967	820	165	847	718	131	1299	572	162	1209	539
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	21.9	29.6	43.5	30.3	30.2	42.0	23.1	19.4	42.6	29.3	24.0
Incr Delay (d2), s/veh	299.8	0.1	8.5	6.6	0.1	0.1	239.3	0.3	0.0	1.2	6.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	28.4	1.1	10.0	1.1	0.5	0.3	11.5	4.5	0.3	0.8	9.7	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	337.8	22.0	38.1	50.2	30.4	30.2	281.3	23.4	19.4	43.8	35.8	24.4
LnGrp LOS	F	C	D	D	C	C	F	C	B	D	D	C
Approach Vol, veh/h		972			88			810			1197	
Approach Delay, s/veh		174.0			40.5			83.8			34.6	
Approach LOS		F			D			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	38.8	8.0	35.7	12.0	35.6	20.0	23.7
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	34.7	9.3	49.1	7.4	32.3	15.4	43.0
Max Q Clear Time (g_c+I1), s	4.2	14.4	4.5	27.6	9.4	25.9	17.4	3.1
Green Ext Time (p_c), s	0.0	3.4	0.0	1.9	0.0	3.3	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	91.9
HCM 6th LOS	F

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	333	286	531	328	693	884
Future Volume (vph)	333	286	531	328	693	884
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	37.0	46.7	36.3	37.0	83.7
Total Split (%)	30.3%	30.8%	38.9%	30.3%	30.8%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 106.5
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	333	286	531	328	693	884
Future Volume (veh/h)	333	286	531	328	693	884
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	340	242	542	314	707	902
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	375	837	622	850	566	1309
Arrive On Green	0.21	0.21	0.33	0.33	0.31	0.69
Sat Flow, veh/h	1810	1610	1900	1576	1810	1900
Grp Volume(v), veh/h	340	242	542	314	707	902
Grp Sat Flow(s),veh/h/ln	1810	1610	1900	1576	1810	1900
Q Serve(g_s), s	18.8	8.7	27.5	11.8	32.0	28.7
Cycle Q Clear(g_c), s	18.8	8.7	27.5	11.8	32.0	28.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	375	837	622	850	566	1309
V/C Ratio(X)	0.91	0.29	0.87	0.37	1.25	0.69
Avail Cap(c_a), veh/h	549	992	769	972	566	1462
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	13.9	32.4	13.8	35.1	9.4
Incr Delay (d2), s/veh	11.1	0.1	9.5	0.3	126.1	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	2.8	13.2	6.1	32.6	8.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	50.7	13.9	41.9	14.2	161.2	10.3
LnGrp LOS	D	B	D	B	F	B
Approach Vol, veh/h	582		856			1609
Approach Delay, s/veh	35.4		31.7			76.6
Approach LOS	D		C			E

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	37.0	38.8			75.8	26.5
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	32.0	41.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	34.0	29.5			30.7	20.8
Green Ext Time (p_c), s	0.0	4.0			3.8	0.4

Intersection Summary	
HCM 6th Ctrl Delay	56.1
HCM 6th LOS	E

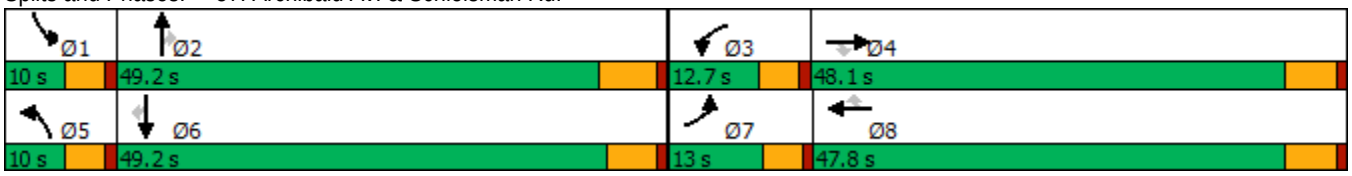
Notes

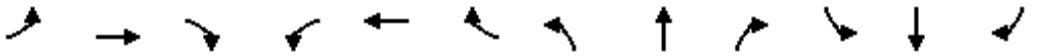
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	993	172	108	308	59	178	604	109	171	674	300
Future Volume (vph)	372	993	172	108	308	59	178	604	109	171	674	300
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	48.1	48.1	12.7	47.8	47.8	10.0	49.2	49.2	10.0	49.2	49.2
Total Split (%)	10.8%	40.1%	40.1%	10.6%	39.8%	39.8%	8.3%	41.0%	41.0%	8.3%	41.0%	41.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 100
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	372	993	172	108	308	59	178	604	109	171	674	300
Future Volume (veh/h)	372	993	172	108	308	59	178	604	109	171	674	300
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	380	1013	94	110	314	34	182	616	74	174	688	192
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	304	2443	758	172	2248	697	196	1065	331	196	1065	329
Arrive On Green	0.09	0.47	0.47	0.05	0.43	0.43	0.06	0.21	0.21	0.06	0.21	0.21
Sat Flow, veh/h	3510	5187	1610	3510	5187	1608	3510	5187	1610	3510	5187	1603
Grp Volume(v), veh/h	380	1013	94	110	314	34	182	616	74	174	688	192
Grp Sat Flow(s),veh/h/ln	1755	1729	1610	1755	1729	1608	1755	1729	1610	1755	1729	1603
Q Serve(g_s), s	8.4	12.4	3.2	3.0	3.5	1.2	5.0	10.4	3.7	4.8	11.8	10.5
Cycle Q Clear(g_c), s	8.4	12.4	3.2	3.0	3.5	1.2	5.0	10.4	3.7	4.8	11.8	10.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	304	2443	758	172	2248	697	196	1065	331	196	1065	329
V/C Ratio(X)	1.25	0.41	0.12	0.64	0.14	0.05	0.93	0.58	0.22	0.89	0.65	0.58
Avail Cap(c_a), veh/h	304	2443	758	293	2248	697	196	2302	715	196	2345	725
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.3	16.9	14.4	45.2	16.6	15.9	45.6	34.7	32.1	45.5	35.3	34.8
Incr Delay (d2), s/veh	136.3	0.5	0.3	1.5	0.1	0.1	44.4	0.5	0.3	34.7	0.7	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	4.6	1.1	1.3	1.3	0.4	3.3	4.1	1.4	2.9	4.7	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	180.6	17.4	14.7	46.7	16.7	16.0	89.9	35.2	32.4	80.2	35.9	36.4
LnGrp LOS	F	B	B	D	B	B	F	D	C	F	D	D
Approach Vol, veh/h		1487			458			872			1054	
Approach Delay, s/veh		58.9			23.8			46.4			43.3	
Approach LOS		E			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	26.1	9.4	51.4	10.0	26.1	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.4	43.0	8.1	42.3	5.4	* 44	8.4	42.0
Max Q Clear Time (g_c+I1), s	6.8	12.4	5.0	14.4	7.0	13.8	10.4	5.5
Green Ext Time (p_c), s	0.0	4.2	0.0	7.7	0.0	5.2	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	47.7
HCM 6th LOS	D

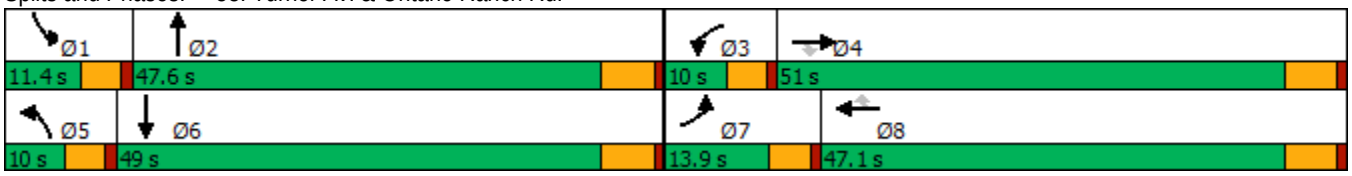
Notes

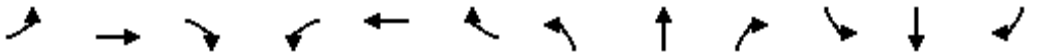
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	52	1314	38	31	671	13	25	7	27	7
Future Volume (vph)	52	1314	38	31	671	13	25	7	27	7
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	13.9	51.0	51.0	10.0	47.1	47.1	10.0	47.6	11.4	49.0
Total Split (%)	11.6%	42.5%	42.5%	8.3%	39.3%	39.3%	8.3%	39.7%	9.5%	40.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	7.2	57.4	57.4	5.5	55.9	55.9	5.5	14.8	6.1	15.2
Actuated g/C Ratio	0.09	0.70	0.70	0.07	0.68	0.68	0.07	0.18	0.07	0.18
v/c Ratio	0.40	0.61	0.04	0.32	0.32	0.01	0.25	0.16	0.25	0.11
Control Delay	50.5	17.9	0.1	52.8	14.9	0.0	51.2	13.0	49.4	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.5	17.9	0.1	52.8	14.9	0.0	51.2	13.0	49.4	14.5
LOS	D	B	A	D	B	A	D	B	D	B
Approach Delay		18.6			16.3			26.4		30.6
Approach LOS		B			B			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 82.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 18.4	Intersection LOS: B
Intersection Capacity Utilization 67.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	1314	38	31	671	13	25	7	38	27	7	25
Future Volume (veh/h)	52	1314	38	31	671	13	25	7	38	27	7	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	57	1444	30	34	737	11	27	8	23	30	8	13
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	72	1912	853	53	1872	835	46	49	141	49	76	123
Arrive On Green	0.04	0.56	0.56	0.03	0.55	0.55	0.03	0.12	0.12	0.03	0.12	0.12
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	407	1169	1619	617	1003
Grp Volume(v), veh/h	57	1444	30	34	737	11	27	0	31	30	0	21
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	0	1576	1619	0	1620
Q Serve(g_s), s	2.8	26.1	0.7	1.7	10.1	0.3	1.3	0.0	1.4	1.5	0.0	0.9
Cycle Q Clear(g_c), s	2.8	26.1	0.7	1.7	10.1	0.3	1.3	0.0	1.4	1.5	0.0	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.74	1.00		0.62
Lane Grp Cap(c), veh/h	72	1912	853	53	1872	835	46	0	190	49	0	199
V/C Ratio(X)	0.79	0.76	0.04	0.64	0.39	0.01	0.59	0.00	0.16	0.61	0.00	0.11
Avail Cap(c_a), veh/h	186	1912	853	108	1872	835	108	0	815	136	0	865
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.2	13.6	8.0	38.6	10.6	8.3	38.8	0.0	31.9	38.7	0.0	31.5
Incr Delay (d2), s/veh	6.9	2.8	0.1	4.6	0.6	0.0	4.5	0.0	0.4	4.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	8.7	0.2	0.7	3.3	0.1	0.6	0.0	0.5	0.6	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	16.4	8.1	43.2	11.2	8.4	43.4	0.0	32.3	43.2	0.0	31.8
LnGrp LOS	D	B	A	D	B	A	D	A	C	D	A	C
Approach Vol, veh/h		1531			782			58			51	
Approach Delay, s/veh		17.4			12.5			37.4			38.5	
Approach LOS		B			B			D			D	

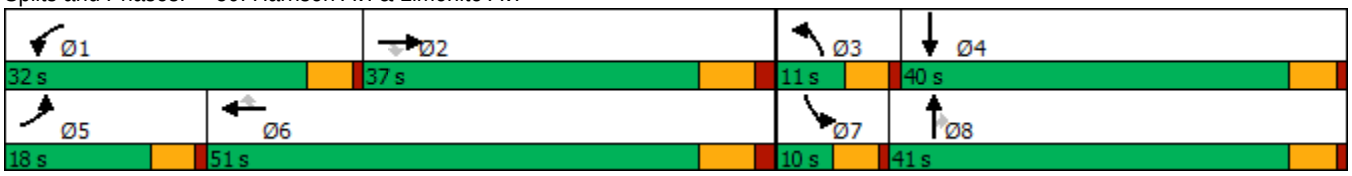
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	15.5	7.3	51.0	6.9	15.7	8.2	50.1
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	6.8	41.8	5.4	45.2	5.4	43.2	9.3	41.3
Max Q Clear Time (g_c+I1), s	3.5	3.4	3.7	28.1	3.3	2.9	4.8	12.1
Green Ext Time (p_c), s	0.0	0.1	0.0	9.4	0.0	0.1	0.0	5.0

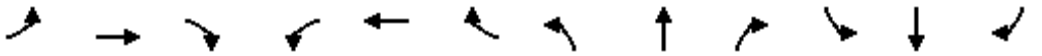
Intersection Summary	
HCM 6th Ctrl Delay	16.7
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	76	893	52	202	555	5	33	43	151	16	45
Future Volume (vph)	76	893	52	202	555	5	33	43	151	16	45
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	18.0	37.0	37.0	32.0	51.0	51.0	11.0	41.0	41.0	10.0	40.0
Total Split (%)	15.0%	30.8%	30.8%	26.7%	42.5%	42.5%	9.2%	34.2%	34.2%	8.3%	33.3%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 69.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 59: Harrison Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	893	52	202	555	5	33	43	151	16	45	31
Future Volume (veh/h)	76	893	52	202	555	5	33	43	151	16	45	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	78	911	48	206	566	3	34	44	69	16	46	23
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	116	1525	474	259	1935	601	67	245	205	36	133	67
Arrive On Green	0.06	0.29	0.29	0.14	0.37	0.37	0.04	0.13	0.13	0.02	0.11	0.11
Sat Flow, veh/h	1810	5187	1610	1810	5187	1610	1810	1900	1588	1810	1195	597
Grp Volume(v), veh/h	78	911	48	206	566	3	34	44	69	16	0	69
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1610	1810	1900	1588	1810	0	1792
Q Serve(g_s), s	2.3	8.1	1.2	5.9	4.1	0.1	1.0	1.1	2.1	0.5	0.0	1.9
Cycle Q Clear(g_c), s	2.3	8.1	1.2	5.9	4.1	0.1	1.0	1.1	2.1	0.5	0.0	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	116	1525	474	259	1935	601	67	245	205	36	0	200
V/C Ratio(X)	0.67	0.60	0.10	0.80	0.29	0.00	0.51	0.18	0.34	0.45	0.00	0.35
Avail Cap(c_a), veh/h	437	2892	898	908	4242	1317	202	1261	1054	168	0	1156
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.6	16.3	13.8	22.3	11.9	10.6	25.4	20.9	21.3	26.1	0.0	22.1
Incr Delay (d2), s/veh	2.5	0.4	0.1	2.1	0.1	0.0	2.2	0.3	1.0	3.2	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.5	0.4	2.2	1.2	0.0	0.4	0.4	0.7	0.2	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.2	16.6	13.9	24.4	12.0	10.6	27.6	21.3	22.3	29.3	0.0	23.1
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	A	C
Approach Vol, veh/h		1037			775			147			85	
Approach Delay, s/veh		17.3			15.3			23.2			24.3	
Approach LOS		B			B			C			C	

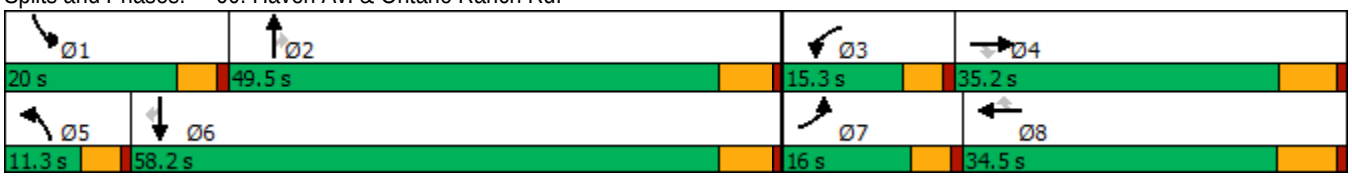
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	22.8	7.0	11.3	8.4	27.1	6.1	12.2
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	27.0	30.0	6.0	34.7	13.0	44.0	5.0	35.7
Max Q Clear Time (g_c+I1), s	7.9	10.1	3.0	3.9	4.3	6.1	2.5	4.1
Green Ext Time (p_c), s	0.1	5.7	0.0	0.3	0.0	3.7	0.0	0.4

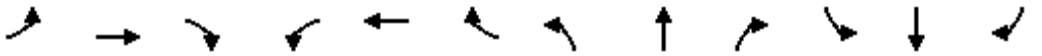
Intersection Summary	
HCM 6th Ctrl Delay	17.2
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	1110	65	60	593	126	28	86	23	162	253	110
Future Volume (vph)	125	1110	65	60	593	126	28	86	23	162	253	110
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	16.0	35.2	35.2	15.3	34.5	34.5	11.3	49.5	49.5	20.0	58.2	58.2
Total Split (%)	13.3%	29.3%	29.3%	12.8%	28.8%	28.8%	9.4%	41.3%	41.3%	16.7%	48.5%	48.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	10.9	35.3	35.3	7.7	29.1	29.1	6.0	15.4	15.4	14.2	26.1	26.1
Actuated g/C Ratio	0.12	0.40	0.40	0.09	0.33	0.33	0.07	0.18	0.18	0.16	0.30	0.30
v/c Ratio	0.65	0.58	0.10	0.45	0.54	0.22	0.26	0.28	0.06	0.65	0.49	0.21
Control Delay	56.9	26.9	0.3	53.0	29.6	4.9	51.1	34.2	0.3	50.8	28.3	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.9	26.9	0.3	53.0	29.6	4.9	51.1	34.2	0.3	50.8	28.3	5.5
LOS	E	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		28.5			27.4			31.9			30.5	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 87.6	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 28.7	Intersection LOS: C
Intersection Capacity Utilization 62.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	1110	65	60	593	126	28	86	23	162	253	110
Future Volume (veh/h)	125	1110	65	60	593	126	28	86	23	162	253	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	130	1156	37	62	618	57	29	90	10	169	264	42
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	160	2044	634	77	1248	557	49	235	199	204	407	345
Arrive On Green	0.10	0.42	0.42	0.05	0.36	0.36	0.03	0.13	0.13	0.13	0.23	0.23
Sat Flow, veh/h	1619	4914	1525	1619	3420	1525	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	130	1156	37	62	618	57	29	90	10	169	264	42
Grp Sat Flow(s),veh/h/ln	1619	1638	1525	1619	1710	1525	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	6.0	13.8	1.1	2.9	10.7	1.9	1.4	3.5	0.4	7.8	10.2	1.7
Cycle Q Clear(g_c), s	6.0	13.8	1.1	2.9	10.7	1.9	1.4	3.5	0.4	7.8	10.2	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	160	2044	634	77	1248	557	49	235	199	204	407	345
V/C Ratio(X)	0.81	0.57	0.06	0.80	0.50	0.10	0.60	0.38	0.05	0.83	0.65	0.12
Avail Cap(c_a), veh/h	241	2044	634	226	1248	557	141	1025	869	325	1229	1042
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	17.1	13.4	36.2	18.9	16.1	36.7	30.5	29.2	32.7	26.9	23.6
Incr Delay (d2), s/veh	7.0	1.1	0.2	7.0	1.4	0.4	4.3	1.0	0.1	4.8	1.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	4.6	0.3	1.2	3.8	0.6	0.6	1.5	0.2	3.1	4.2	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.9	18.3	13.6	43.2	20.3	16.4	41.0	31.6	29.3	37.5	28.7	23.8
LnGrp LOS	D	B	B	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1323			737			129			475	
Approach Delay, s/veh		20.3			21.9			33.5			31.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	15.8	8.3	38.4	6.9	23.1	12.2	34.5
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	15.4	43.7	10.7	* 29	6.7	52.4	11.4	28.0
Max Q Clear Time (g_c+I1), s	9.8	5.5	4.9	15.8	3.4	12.2	8.0	12.7
Green Ext Time (p_c), s	0.1	0.5	0.0	6.0	0.0	1.6	0.0	3.3

Intersection Summary	
HCM 6th Ctrl Delay	23.4
HCM 6th LOS	C

Notes

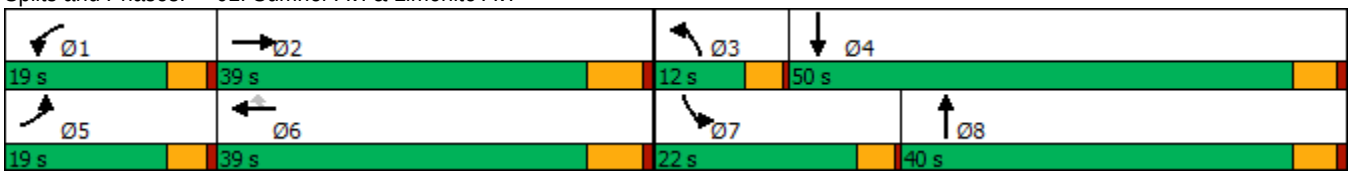
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

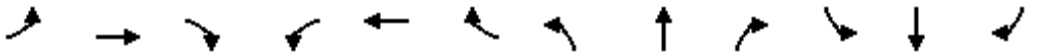
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	208	722	207	542	44	45	208	113	428
Future Volume (vph)	208	722	207	542	44	45	208	113	428
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	19.0	39.0	19.0	39.0	39.0	12.0	40.0	22.0	50.0
Total Split (%)	15.8%	32.5%	15.8%	32.5%	32.5%	10.0%	33.3%	18.3%	41.7%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 73.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 61: Sumner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	208	722	88	207	542	44	45	208	135	113	428	189
Future Volume (veh/h)	208	722	88	207	542	44	45	208	135	113	428	189
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	214	744	79	213	559	37	46	214	68	116	441	97
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	335	1279	135	333	1391	432	67	497	153	151	677	148
Arrive On Green	0.10	0.27	0.27	0.09	0.27	0.27	0.04	0.18	0.18	0.08	0.23	0.23
Sat Flow, veh/h	3510	4764	503	3510	5187	1610	1810	2703	833	1810	2946	643
Grp Volume(v), veh/h	214	539	284	213	559	37	46	141	141	116	269	269
Grp Sat Flow(s),veh/h/ln	1755	1729	1809	1755	1729	1610	1810	1805	1731	1810	1805	1784
Q Serve(g_s), s	3.1	7.1	7.2	3.1	4.7	0.9	1.3	3.6	3.8	3.3	7.1	7.2
Cycle Q Clear(g_c), s	3.1	7.1	7.2	3.1	4.7	0.9	1.3	3.6	3.8	3.3	7.1	7.2
Prop In Lane	1.00		0.28	1.00		1.00	1.00		0.48	1.00		0.36
Lane Grp Cap(c), veh/h	335	929	486	333	1391	432	67	332	318	151	415	410
V/C Ratio(X)	0.64	0.58	0.59	0.64	0.40	0.09	0.68	0.42	0.44	0.77	0.65	0.66
Avail Cap(c_a), veh/h	964	2162	1131	964	3242	1007	274	1197	1147	617	1539	1521
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.0	16.7	16.8	23.0	15.8	14.5	25.1	19.1	19.1	23.7	18.4	18.4
Incr Delay (d2), s/veh	0.8	0.6	1.1	0.8	0.2	0.1	4.5	0.6	0.7	3.1	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.3	2.5	1.1	1.5	0.3	0.6	1.3	1.4	1.4	2.6	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	17.3	17.9	23.8	16.0	14.6	29.6	19.7	19.9	26.8	19.7	19.8
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		1037			809			328			654	
Approach Delay, s/veh		18.8			18.0			21.2			21.0	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	20.2	6.0	17.1	9.5	20.2	8.4	14.7
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	14.5	33.0	8.0	45.0	14.5	33.0	18.0	35.0
Max Q Clear Time (g_c+I1), s	5.1	9.2	3.3	9.2	5.1	6.7	5.3	5.8
Green Ext Time (p_c), s	0.2	4.9	0.0	2.4	0.2	3.6	0.1	1.2

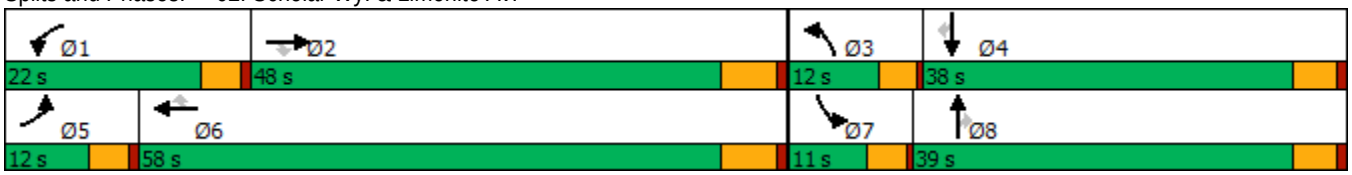
Intersection Summary	
HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

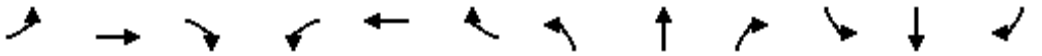
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	898	41	119	729	54	41	91	122	28	128	29
Future Volume (vph)	38	898	41	119	729	54	41	91	122	28	128	29
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	12.0	48.0	48.0	22.0	58.0	58.0	12.0	39.0	39.0	11.0	38.0	38.0
Total Split (%)	10.0%	40.0%	40.0%	18.3%	48.3%	48.3%	10.0%	32.5%	32.5%	9.2%	31.7%	31.7%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 70.5
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	898	41	119	729	54	41	91	122	28	128	29
Future Volume (veh/h)	38	898	41	119	729	54	41	91	122	28	128	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	40	955	30	127	776	33	44	97	50	30	136	24
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	61	1400	625	165	1607	717	65	229	194	49	402	175
Arrive On Green	0.03	0.39	0.39	0.09	0.45	0.45	0.04	0.12	0.12	0.03	0.11	0.11
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	1900	1610	1810	3610	1571
Grp Volume(v), veh/h	40	955	30	127	776	33	44	97	50	30	136	24
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1900	1610	1810	1805	1571
Q Serve(g_s), s	1.1	11.5	0.6	3.6	7.9	0.6	1.3	2.5	1.5	0.9	1.8	0.7
Cycle Q Clear(g_c), s	1.1	11.5	0.6	3.6	7.9	0.6	1.3	2.5	1.5	0.9	1.8	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	61	1400	625	165	1607	717	65	229	194	49	402	175
V/C Ratio(X)	0.66	0.68	0.05	0.77	0.48	0.05	0.67	0.42	0.26	0.61	0.34	0.14
Avail Cap(c_a), veh/h	260	2904	1295	607	3596	1604	277	1237	1049	243	2282	993
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.9	13.3	10.0	23.2	10.2	8.2	24.9	21.3	20.8	25.1	21.4	20.9
Incr Delay (d2), s/veh	4.4	0.6	0.0	2.9	0.2	0.0	4.4	0.9	0.5	4.6	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.4	0.2	1.4	2.2	0.2	0.6	1.0	0.5	0.4	0.7	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.3	13.9	10.0	26.1	10.5	8.2	29.2	22.2	21.4	29.7	21.8	21.2
LnGrp LOS	C	B	A	C	B	A	C	C	C	C	C	C
Approach Vol, veh/h		1025			936			191			190	
Approach Delay, s/veh		14.4			12.5			23.6			23.0	
Approach LOS		B			B			C			C	

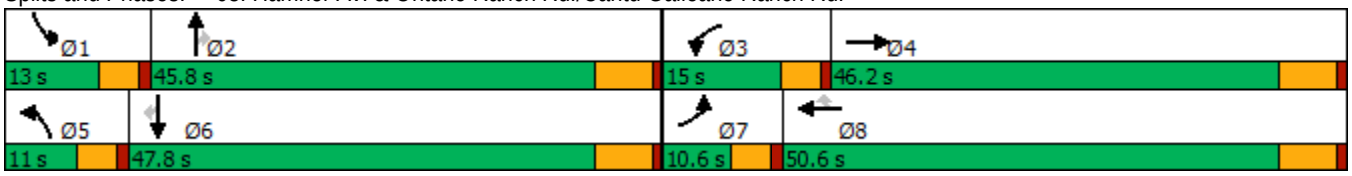
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	26.3	5.9	10.8	6.3	29.2	5.4	11.3
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	17.5	42.0	8.0	33.0	7.5	52.0	7.0	34.0
Max Q Clear Time (g_c+I1), s	5.6	13.5	3.3	3.8	3.1	9.9	2.9	4.5
Green Ext Time (p_c), s	0.1	6.8	0.0	0.7	0.0	5.5	0.0	0.5

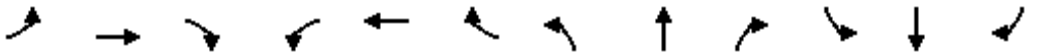
Intersection Summary	
HCM 6th Ctrl Delay	15.1
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	98	1018	580	518	107	195	372	233	451	790	111
Future Volume (vph)	98	1018	580	518	107	195	372	233	451	790	111
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	10.6	46.2	15.0	50.6	50.6	11.0	45.8	45.8	13.0	47.8	47.8
Total Split (%)	8.8%	38.5%	12.5%	42.2%	42.2%	9.2%	38.2%	38.2%	10.8%	39.8%	39.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.0	30.6	10.6	35.2	35.2	6.5	29.0	29.0	8.5	31.0	31.0
Actuated g/C Ratio	0.06	0.30	0.11	0.35	0.35	0.06	0.29	0.29	0.08	0.31	0.31
v/c Ratio	0.58	0.72	1.95	0.45	0.18	1.07	0.27	0.46	1.88	0.78	0.21
Control Delay	63.7	32.4	466.6	27.2	5.3	131.7	28.4	16.1	439.2	38.0	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.7	32.4	466.6	27.2	5.3	131.7	28.4	16.1	439.2	38.0	6.4
LOS	E	C	F	C	A	F	C	B	F	D	A
Approach Delay		34.6		236.7			50.0			169.2	
Approach LOS		C		F			D			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 100.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.95	
Intersection Signal Delay: 127.1	Intersection LOS: F
Intersection Capacity Utilization 87.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	1018	263	580	518	107	195	372	233	451	790	111
Future Volume (veh/h)	98	1018	263	580	518	107	195	372	233	451	790	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	102	1060	217	604	540	77	203	388	164	470	823	61
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	152	1504	304	329	1193	532	202	1371	425	265	1027	458
Arrive On Green	0.05	0.29	0.29	0.11	0.35	0.35	0.07	0.28	0.28	0.09	0.30	0.30
Sat Flow, veh/h	2956	5201	1053	2956	3420	1525	2956	4914	1524	2956	3420	1524
Grp Volume(v), veh/h	102	945	332	604	540	77	203	388	164	470	823	61
Grp Sat Flow(s),veh/h/ln	1478	1548	1610	1478	1710	1525	1478	1638	1524	1478	1710	1524
Q Serve(g_s), s	3.2	17.0	17.3	10.4	11.4	3.2	6.4	5.8	8.1	8.4	20.7	2.7
Cycle Q Clear(g_c), s	3.2	17.0	17.3	10.4	11.4	3.2	6.4	5.8	8.1	8.4	20.7	2.7
Prop In Lane	1.00		0.65	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	1343	466	329	1193	532	202	1371	425	265	1027	458
V/C Ratio(X)	0.67	0.70	0.71	1.84	0.45	0.14	1.00	0.28	0.39	1.77	0.80	0.13
Avail Cap(c_a), veh/h	190	1985	689	329	1623	724	202	2080	645	265	1521	678
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	29.7	29.8	41.6	23.6	20.9	43.6	26.4	27.2	42.6	30.1	23.8
Incr Delay (d2), s/veh	3.5	0.7	2.0	388.8	0.3	0.1	64.3	0.1	0.6	361.8	1.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	5.8	6.3	21.3	4.3	1.1	4.0	2.1	2.8	16.2	8.1	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.1	30.4	31.8	430.4	23.8	21.0	107.9	26.5	27.8	404.4	32.1	24.0
LnGrp LOS	D	C	C	F	C	C	F	C	C	F	C	C
Approach Vol, veh/h		1379			1221			755			1354	
Approach Delay, s/veh		32.0			224.7			48.7			161.0	
Approach LOS		C			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	32.3	15.0	33.3	11.0	34.3	9.4	38.8
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	8.4	39.6	10.4	40.0	6.4	41.6	6.0	44.4
Max Q Clear Time (g_c+I1), s	10.4	10.1	12.4	19.3	8.4	22.7	5.2	13.4
Green Ext Time (p_c), s	0.0	2.9	0.0	7.8	0.0	5.1	0.0	3.6

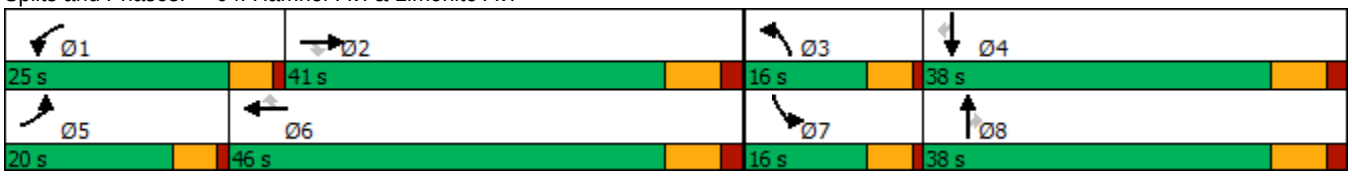
Intersection Summary	
HCM 6th Ctrl Delay	121.7
HCM 6th LOS	F

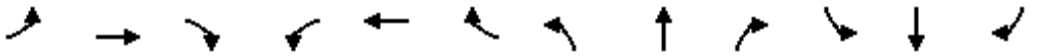
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	275	632	77	356	440	144	190	560	173	182	605	209
Future Volume (vph)	275	632	77	356	440	144	190	560	173	182	605	209
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	20.0	41.0	41.0	25.0	46.0	46.0	16.0	38.0	38.0	16.0	38.0	38.0
Total Split (%)	16.7%	34.2%	34.2%	20.8%	38.3%	38.3%	13.3%	31.7%	31.7%	13.3%	31.7%	31.7%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 93.6
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 64: Hamner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	275	632	77	356	440	144	190	560	173	182	605	209
Future Volume (veh/h)	275	632	77	356	440	144	190	560	173	182	605	209
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	284	652	58	367	454	103	196	577	94	188	624	152
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	373	1252	388	459	960	422	280	1283	390	272	1271	387
Arrive On Green	0.11	0.24	0.24	0.13	0.27	0.27	0.08	0.25	0.25	0.08	0.24	0.24
Sat Flow, veh/h	3510	5187	1606	3510	3610	1586	3510	5187	1577	3510	5187	1580
Grp Volume(v), veh/h	284	652	58	367	454	103	196	577	94	188	624	152
Grp Sat Flow(s),veh/h/ln	1755	1729	1606	1755	1805	1586	1755	1729	1577	1755	1729	1580
Q Serve(g_s), s	6.2	8.6	2.3	8.0	8.4	4.0	4.3	7.5	3.8	4.1	8.2	6.4
Cycle Q Clear(g_c), s	6.2	8.6	2.3	8.0	8.4	4.0	4.3	7.5	3.8	4.1	8.2	6.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	373	1252	388	459	960	422	280	1283	390	272	1271	387
V/C Ratio(X)	0.76	0.52	0.15	0.80	0.47	0.24	0.70	0.45	0.24	0.69	0.49	0.39
Avail Cap(c_a), veh/h	665	2226	689	886	1777	781	487	2030	617	487	2030	618
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.4	26.1	23.6	33.4	24.4	22.8	35.5	25.2	23.9	35.6	25.7	25.0
Incr Delay (d2), s/veh	1.2	0.7	0.4	1.2	0.8	0.6	1.2	0.5	0.7	1.2	0.6	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	3.3	0.8	3.3	3.4	1.5	1.8	2.9	1.4	1.7	3.2	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.6	26.8	24.0	34.6	25.2	23.5	36.7	25.8	24.5	36.8	26.3	26.4
LnGrp LOS	D	C	C	C	C	C	D	C	C	D	C	C
Approach Vol, veh/h		994			924			867			964	
Approach Delay, s/veh		29.2			28.7			28.1			28.4	
Approach LOS		C			C			C			C	

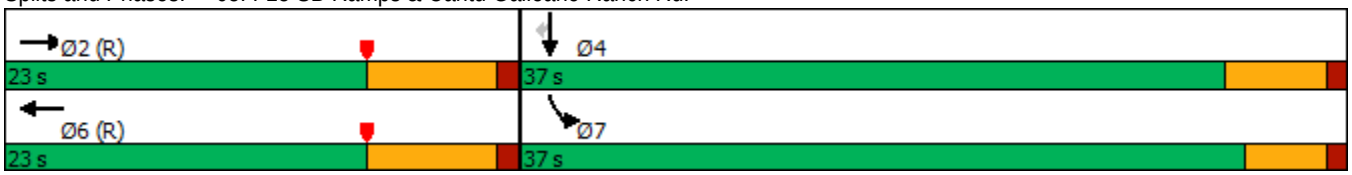
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.4	26.1	11.3	26.4	13.4	28.1	11.1	26.6
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	20.0	34.0	11.0	31.0	15.0	39.0	11.0	31.0
Max Q Clear Time (g_c+I1), s	10.0	10.6	6.3	10.2	8.2	10.4	6.1	9.5
Green Ext Time (p_c), s	0.3	8.0	0.1	8.0	0.2	6.3	0.1	7.1

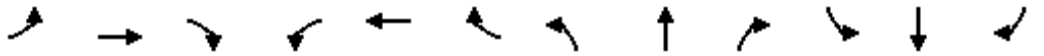
Intersection Summary	
HCM 6th Ctrl Delay	28.6
HCM 6th LOS	C

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1303	491	447	418	290	0	1032
Future Volume (vph)	1303	491	447	418	290	0	1032
Turn Type	NA	Free	NA	Free	Prot	NA	Perm
Protected Phases	2		6		7	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		7	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		9.6	10.5	10.5
Total Split (s)	23.0		23.0		37.0	37.0	37.0
Total Split (%)	38.3%		38.3%		61.7%	61.7%	61.7%
Yellow Time (s)	5.8		5.8		3.6	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8		6.8		4.6	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Min		None	Min	Min
Act Effct Green (s)	16.2	60.0	16.2	60.0	32.4	31.5	31.5
Actuated g/C Ratio	0.27	1.00	0.27	1.00	0.54	0.52	0.52
v/c Ratio	0.96	0.31	0.47	0.27	0.29	0.66	0.63
Control Delay	39.7	0.5	16.2	0.9	8.6	12.8	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.7	0.5	16.2	0.9	8.6	12.8	11.9
LOS	D	A	B	A	A	B	B
Approach Delay	29.0		8.8			11.6	
Approach LOS	C		A			B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 53 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 18.8	Intersection LOS: B
Intersection Capacity Utilization 65.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	✣	↱
Traffic Volume (veh/h)	0	1303	491	0	447	418	0	0	0	290	0	1032
Future Volume (veh/h)	0	1303	491	0	447	418	0	0	0	290	0	1032
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1343	0	0	461	0				199	0	839
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2474		0	1722					603	0	1073
Arrive On Green	0.00	0.48	0.00	0.00	0.48	0.00				0.33	0.00	0.33
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1343	0	0	461	0				199	0	839
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	11.0	0.0	0.0	4.6	0.0				4.9	0.0	14.1
Cycle Q Clear(g_c), s	0.0	11.0	0.0	0.0	4.6	0.0				4.9	0.0	14.1
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2474		0	1722					603	0	1073
V/C Ratio(X)	0.00	0.54		0.00	0.27					0.33	0.00	0.78
Avail Cap(c_a), veh/h	0	2474		0	1722					977	0	1739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.20	0.00	0.00	0.96	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	11.1	0.0	0.0	9.4	0.0				15.0	0.0	18.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.4	0.0				0.3	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.0	0.0	0.0	1.4	0.0				1.7	0.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	11.2	0.0	0.0	9.8	0.0				15.3	0.0	19.3
LnGrp LOS	A	B		A	A					B	A	B
Approach Vol, veh/h		1343	A		461	A					1038	
Approach Delay, s/veh		11.2			9.8						18.6	
Approach LOS		B			A						B	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		35.4		24.6		35.4						
Change Period (Y+Rc), s		6.8		4.6		6.8						
Max Green Setting (Gmax), s		16.2		32.4		16.2						
Max Q Clear Time (g_c+I1), s		13.0		16.1		6.6						
Green Ext Time (p_c), s		2.3		3.9		1.8						

Intersection Summary		
HCM 6th Ctrl Delay		13.7
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

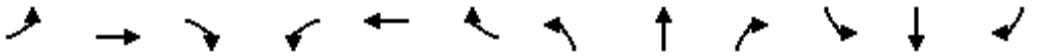
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1129	618	513	981	129	1	400
Future Volume (vph)	1129	618	513	981	129	1	400
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	10.0	36.5	23.5	23.5	23.5
Total Split (s)	55.7	55.7	22.3	78.0	32.0	32.0	32.0
Total Split (%)	50.6%	50.6%	20.3%	70.9%	29.1%	29.1%	29.1%
Yellow Time (s)	4.5	4.5	4.0	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	0.5	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.5	5.5	5.5	5.5	5.5
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	Min	Min	Min

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1129	618	513	981	0	0	0	0	129	1	400
Future Volume (veh/h)	0	1129	618	513	981	0	0	0	0	129	1	400
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1152	485	523	1001	0				193	0	109
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2198	980	568	2929	0				320	0	143
Arrive On Green	0.00	0.61	0.61	0.11	0.54	0.00				0.09	0.00	0.09
Sat Flow, veh/h	0	3705	1610	3510	3705	0				3619	0	1610
Grp Volume(v), veh/h	0	1152	485	523	1001	0				193	0	109
Grp Sat Flow(s),veh/h/ln	0	1805	1610	1755	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	20.2	18.6	16.2	17.1	0.0				5.6	0.0	7.3
Cycle Q Clear(g_c), s	0.0	20.2	18.6	16.2	17.1	0.0				5.6	0.0	7.3
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2198	980	568	2929	0				320	0	143
V/C Ratio(X)	0.00	0.52	0.49	0.92	0.34	0.00				0.60	0.00	0.76
Avail Cap(c_a), veh/h	0	2198	980	568	2929	0				872	0	388
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.86	0.86	0.59	0.59	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.4	12.0	48.3	8.6	0.0				48.3	0.0	49.0
Incr Delay (d2), s/veh	0.0	0.8	1.5	13.5	0.2	0.0				0.7	0.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.3	6.3	8.3	7.2	0.0				2.5	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.1	13.6	61.8	8.8	0.0				48.9	0.0	52.2
LnGrp LOS	A	B	B	E	A	A				D	A	D
Approach Vol, veh/h		1637			1524						302	
Approach Delay, s/veh		13.3			27.0						50.1	
Approach LOS		B			C						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	22.3	72.5		15.2		94.8
Change Period (Y+Rc), s	4.5	5.5		5.5		5.5
Max Green Setting (Gmax), s	17.8	50.2		26.5		72.5
Max Q Clear Time (g_c+I1), s	18.2	22.2		9.3		19.1
Green Ext Time (p_c), s	0.0	6.6		0.5		4.7

Intersection Summary	
HCM 6th Ctrl Delay	22.5
HCM 6th LOS	C

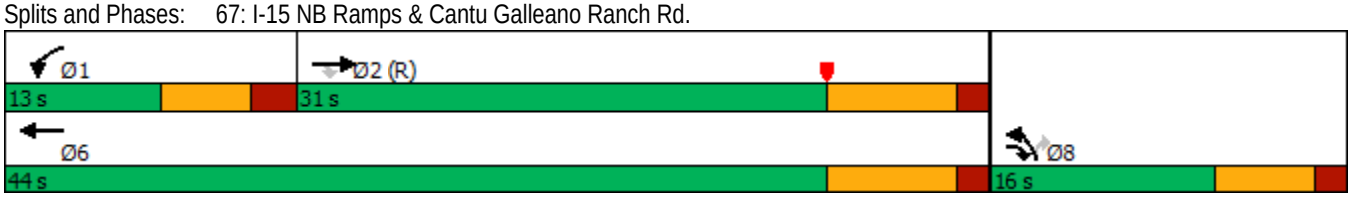
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	646	978	292	677	192	229
Future Volume (vph)	646	978	292	677	192	229
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	31.0	16.0	13.0	44.0	16.0	16.0
Total Split (%)	51.7%	26.7%	21.7%	73.3%	26.7%	26.7%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.0	6.0	7.3	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max
Act Effct Green (s)	23.7	41.0	7.0	36.7	10.0	10.0
Actuated g/C Ratio	0.40	0.68	0.12	0.61	0.17	0.17
v/c Ratio	0.33	0.92	0.75	0.22	0.47	0.39
Control Delay	10.6	21.6	39.5	5.5	17.5	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.6	21.6	39.5	5.5	17.5	8.4
LOS	B	C	D	A	B	A
Approach Delay	17.2			15.7	14.7	
Approach LOS	B			B	B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 16.4	Intersection LOS: B
Intersection Capacity Utilization 78.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	646	978	292	677	192	229
Future Volume (veh/h)	646	978	292	677	192	229
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	680	813	307	713	225	113
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2049	904	410	3173	603	268
Arrive On Green	0.66	0.66	0.12	0.61	0.17	0.17
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	680	813	307	713	225	113
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	3.4	23.7	5.1	3.7	3.3	3.8
Cycle Q Clear(g_c), s	3.4	23.7	5.1	3.7	3.3	3.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2049	904	410	3173	603	268
V/C Ratio(X)	0.33	0.90	0.75	0.22	0.37	0.42
Avail Cap(c_a), veh/h	2049	904	410	3173	603	268
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.42	0.42	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.8	6.2	25.7	5.2	22.2	22.4
Incr Delay (d2), s/veh	0.2	6.5	11.9	0.0	1.8	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.6	2.5	0.7	1.4	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.9	12.7	37.6	5.3	24.0	27.2
LnGrp LOS	A	B	D	A	C	C
Approach Vol, veh/h	1493			1020	338	
Approach Delay, s/veh	10.1			15.0	25.1	
Approach LOS	B			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.0	31.0				44.0	16.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	7.0	23.7				36.7	10.0
Max Q Clear Time (g_c+I1), s	7.1	25.7				5.7	5.8
Green Ext Time (p_c), s	0.0	0.0				4.7	0.5

Intersection Summary			
HCM 6th Ctrl Delay		13.6	
HCM 6th LOS		B	

Notes

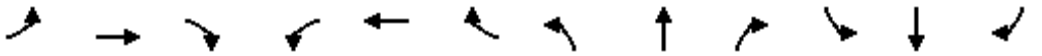
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	450	808	1100	186	393	2	757
Future Volume (vph)	450	808	1100	186	393	2	757
Turn Type	Prot	NA	NA	Perm	Split	NA	Perm
Protected Phases	5	2	6		8	8	
Permitted Phases				6			8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	26.0	72.0	46.0	46.0	38.0	38.0	38.0
Total Split (%)	23.6%	65.5%	41.8%	41.8%	34.5%	34.5%	34.5%
Yellow Time (s)	4.0	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	450	808	0	0	1100	186	393	2	757	0	0	0
Future Volume (veh/h)	450	808	0	0	1100	186	393	2	757	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	455	816	0	0	1111	97	556	0	303			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	523	2443	0	0	1758	783	808	0	354			
Arrive On Green	0.30	1.00	0.00	0.00	0.49	0.49	0.22	0.00	0.22			
Sat Flow, veh/h	3510	3705	0	0	3705	1608	3619	0	1588			
Grp Volume(v), veh/h	455	816	0	0	1111	97	556	0	303			
Grp Sat Flow(s),veh/h/ln	1755	1805	0	0	1805	1608	1810	0	1588			
Q Serve(g_s), s	13.5	0.0	0.0	0.0	25.1	3.6	15.5	0.0	20.2			
Cycle Q Clear(g_c), s	13.5	0.0	0.0	0.0	25.1	3.6	15.5	0.0	20.2			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	523	2443	0	0	1758	783	808	0	354			
V/C Ratio(X)	0.87	0.33	0.00	0.00	0.63	0.12	0.69	0.00	0.85			
Avail Cap(c_a), veh/h	686	2443	0	0	1758	783	1069	0	469			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.79	0.79	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	37.6	0.0	0.0	0.0	20.9	15.4	39.2	0.0	41.0			
Incr Delay (d2), s/veh	7.6	0.3	0.0	0.0	1.7	0.3	1.2	0.0	11.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.3	0.1	0.0	0.0	10.1	1.3	6.8	0.0	8.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	0.3	0.0	0.0	22.7	15.7	40.4	0.0	52.4			
LnGrp LOS	D	A	A	A	C	B	D	A	D			
Approach Vol, veh/h		1271			1208			859				
Approach Delay, s/veh		16.4			22.1			44.6				
Approach LOS		B			C			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		79.9			20.9	59.1		30.1				
Change Period (Y+Rc), s		5.5			4.5	5.5		5.5				
Max Green Setting (Gmax), s		66.5			21.5	40.5		32.5				
Max Q Clear Time (g_c+I1), s		2.0			15.5	27.1		22.2				
Green Ext Time (p_c), s		3.6			0.9	4.3		2.4				

Intersection Summary	
HCM 6th Ctrl Delay	25.7
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

APPENDIX 5.4:

E+P (PHASE A) CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

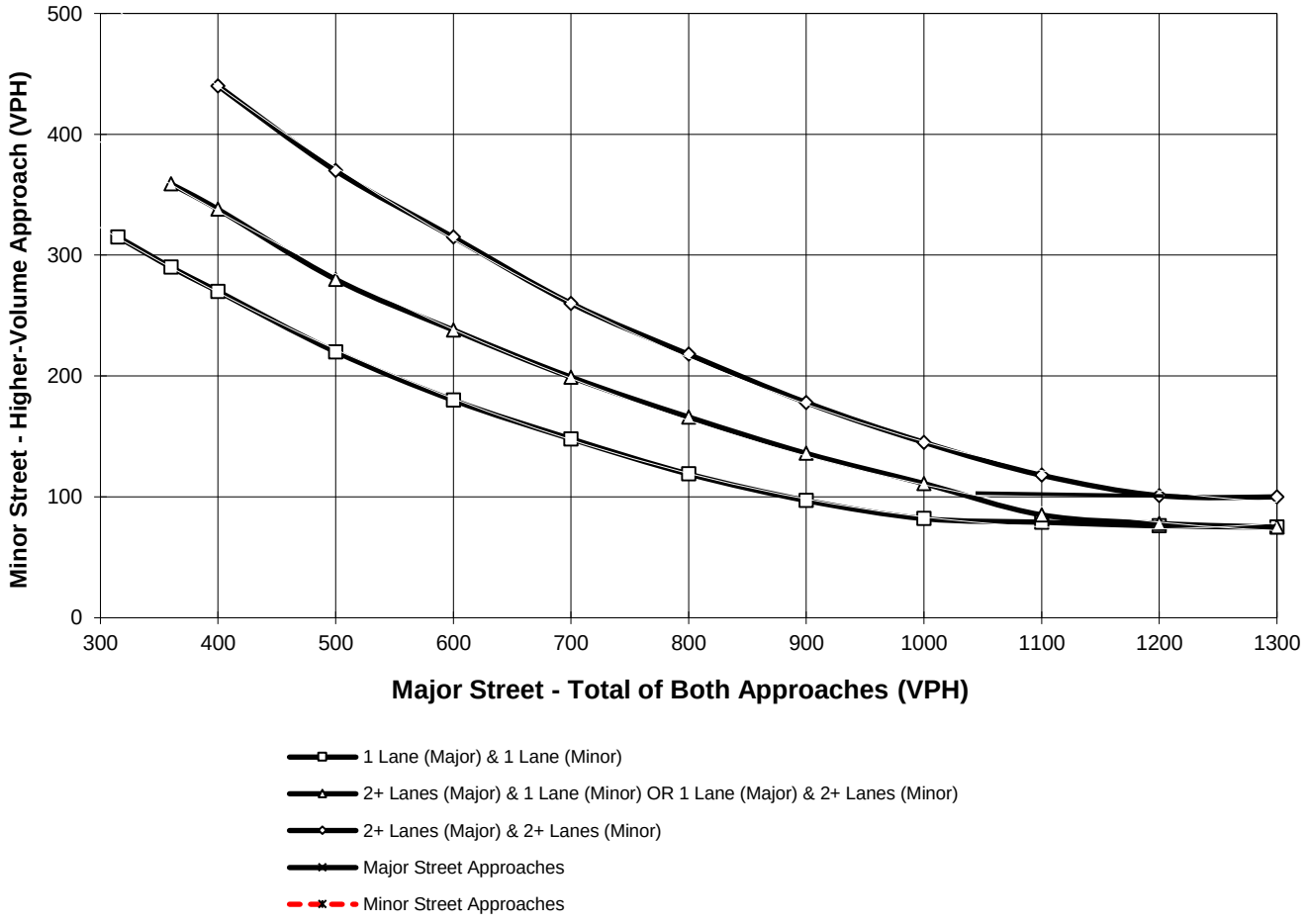
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **E+P (Phase A) Conditions - Weekday AM Peak Hour**

Major Street Name = **Eucalyptus Av.** Total of Both Approaches (VPH) = **254**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Bon View Av.** High Volume Approach (VPH) = **133**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

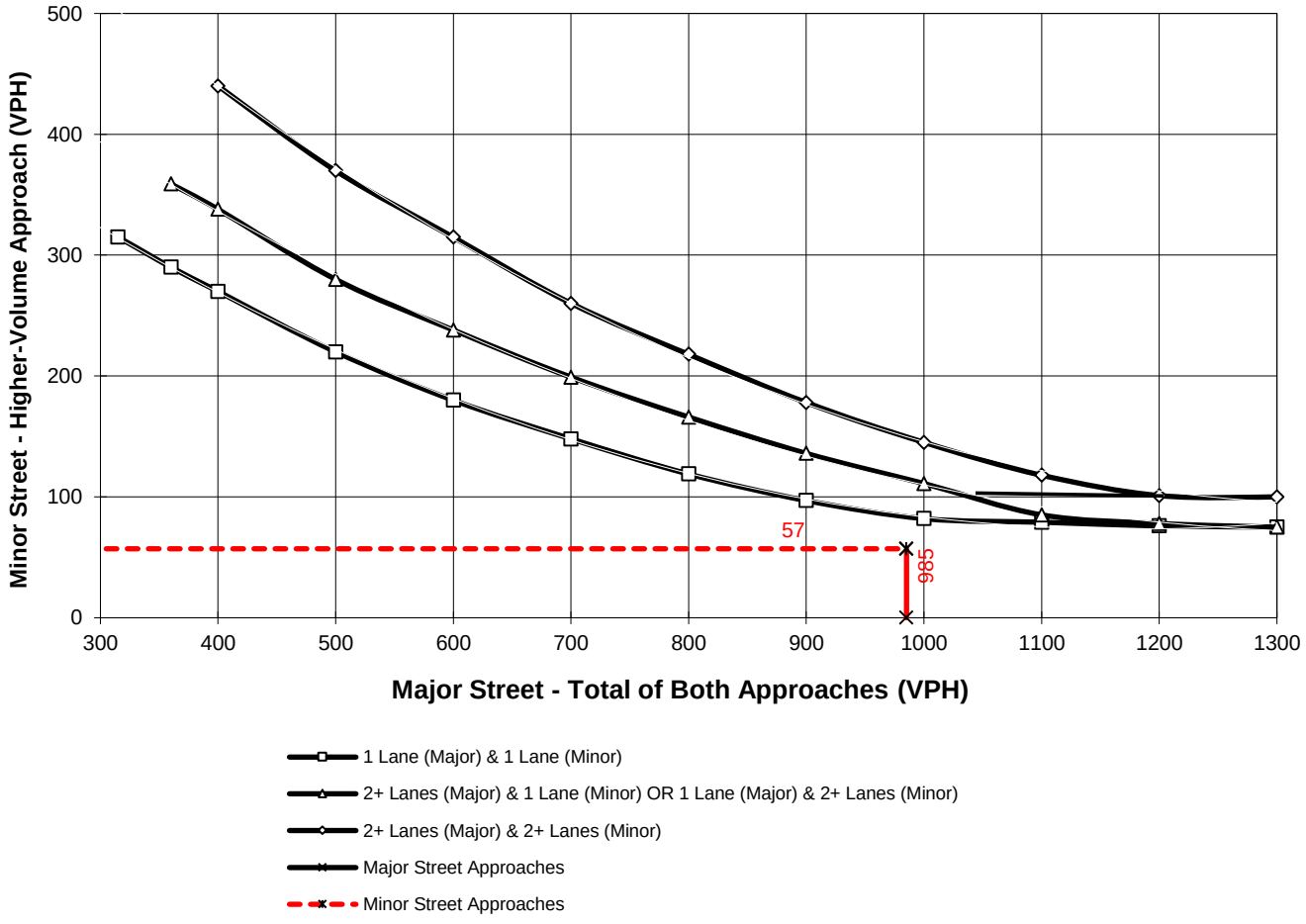
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **E+P (Phase A) Conditions - Weekday PM Peak Hour**

Major Street Name = **Merrill Av.** Total of Both Approaches (VPH) = **985**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Bon View Av.** High Volume Approach (VPH) = **57**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

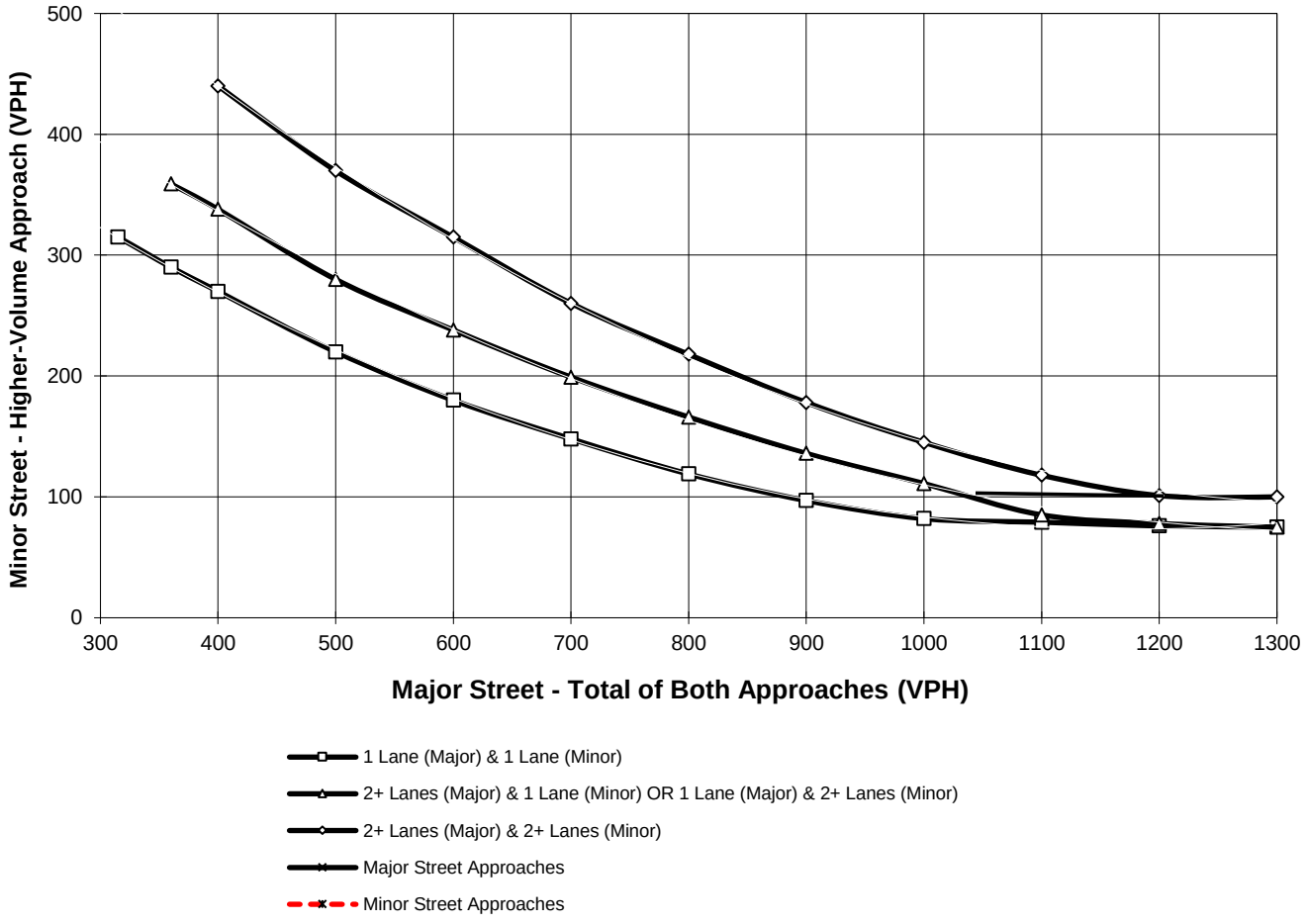
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **E+P (Phase A) Conditions - Weekday AM Peak Hour**

Major Street Name = **Walker Av.** Total of Both Approaches (VPH) = **158**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Eucalyptus Av.** High Volume Approach (VPH) = **100**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

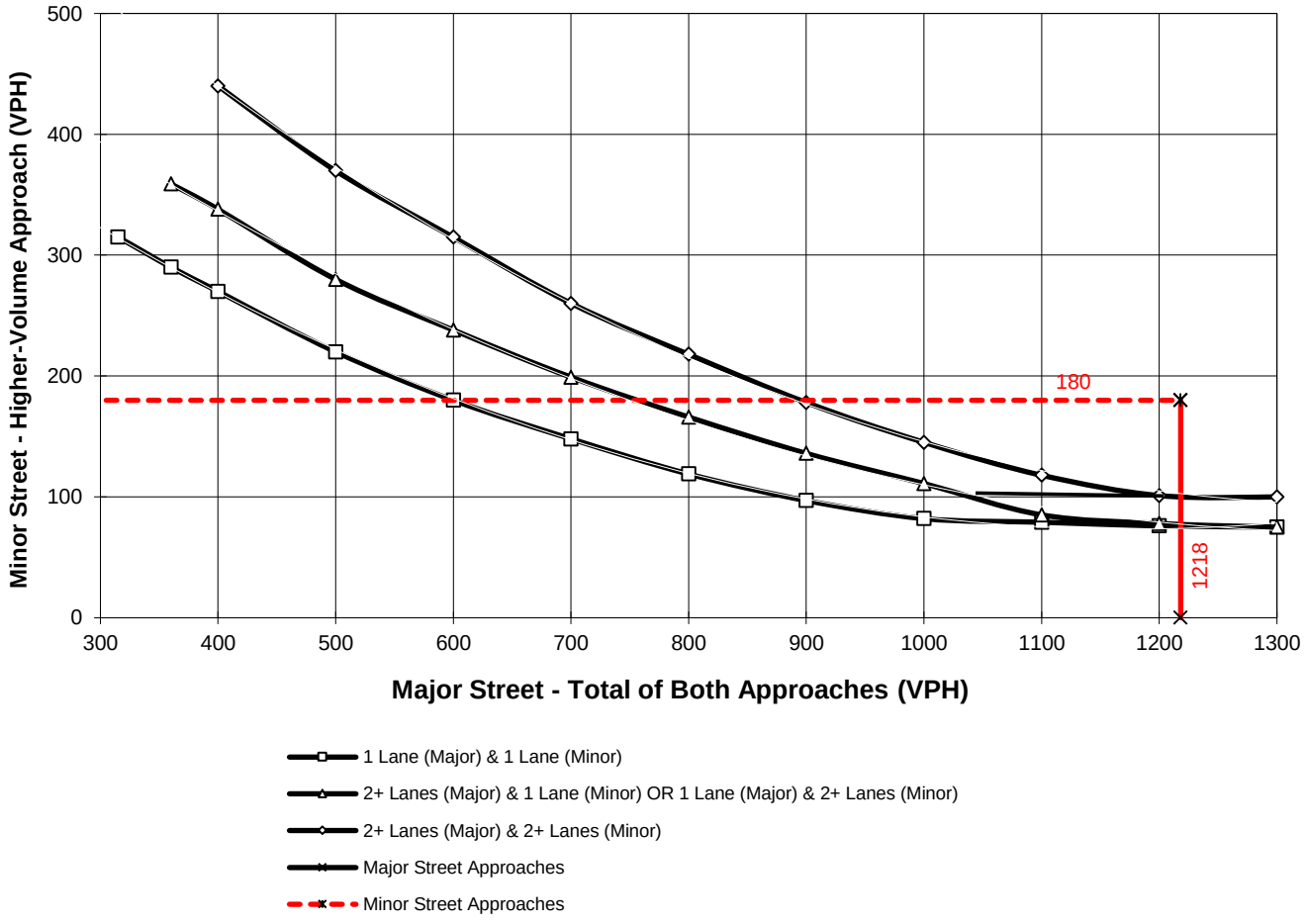
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **E+P (Phase A) Conditions - Weekday PM Peak Hour**

Major Street Name = **Merrill Av.**
Total of Both Approaches (VPH) = **1218**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Baker Av.**
High Volume Approach (VPH) = **180**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

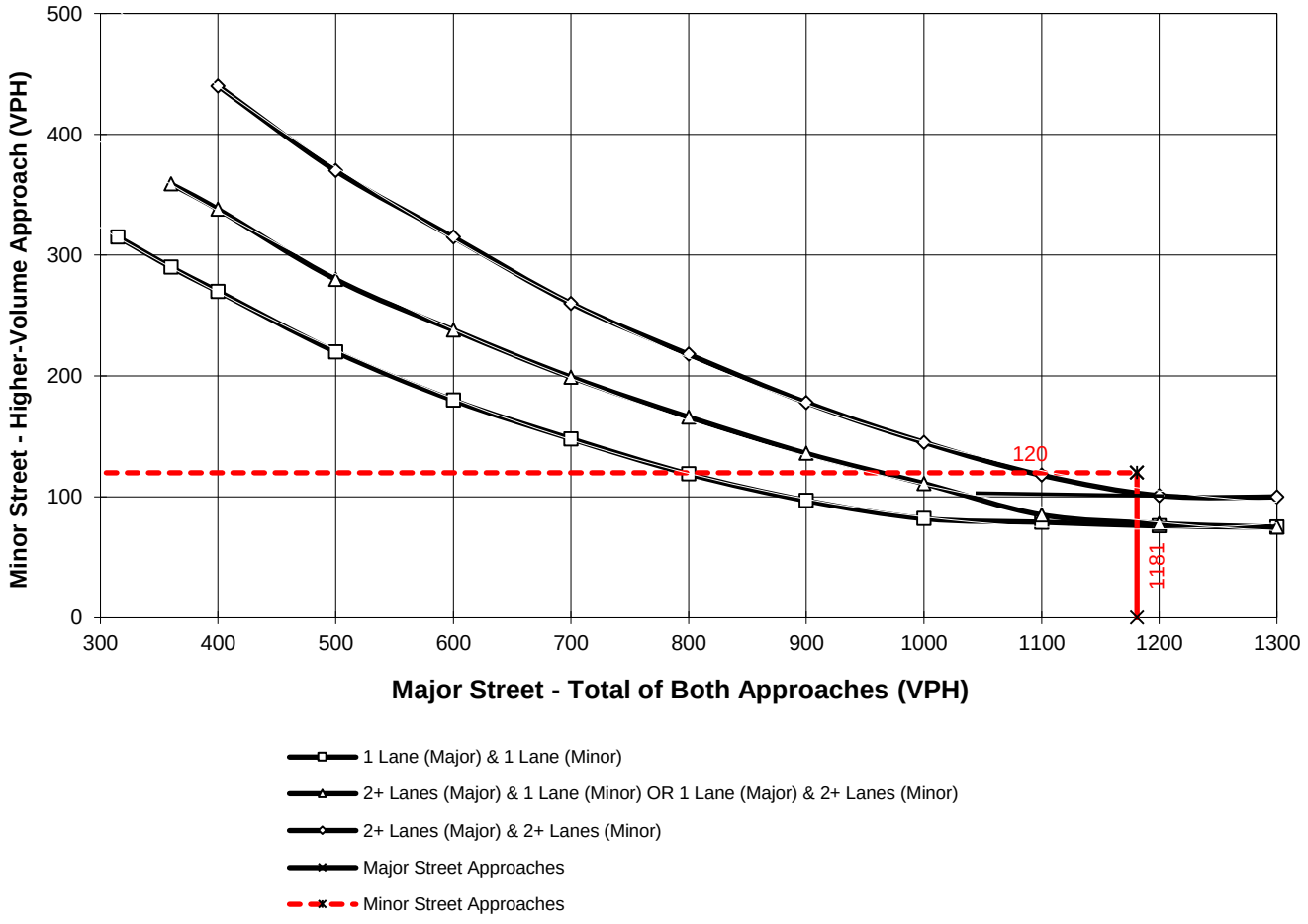
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **E+P (Phase A) Conditions - Weekday PM Peak Hour**

Major Street Name = **Merrill Av.**
Total of Both Approaches (VPH) = **1181**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Hellman Av.**
High Volume Approach (VPH) = **120**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

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APPENDIX 5.5:

E+P (PHASE B) CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

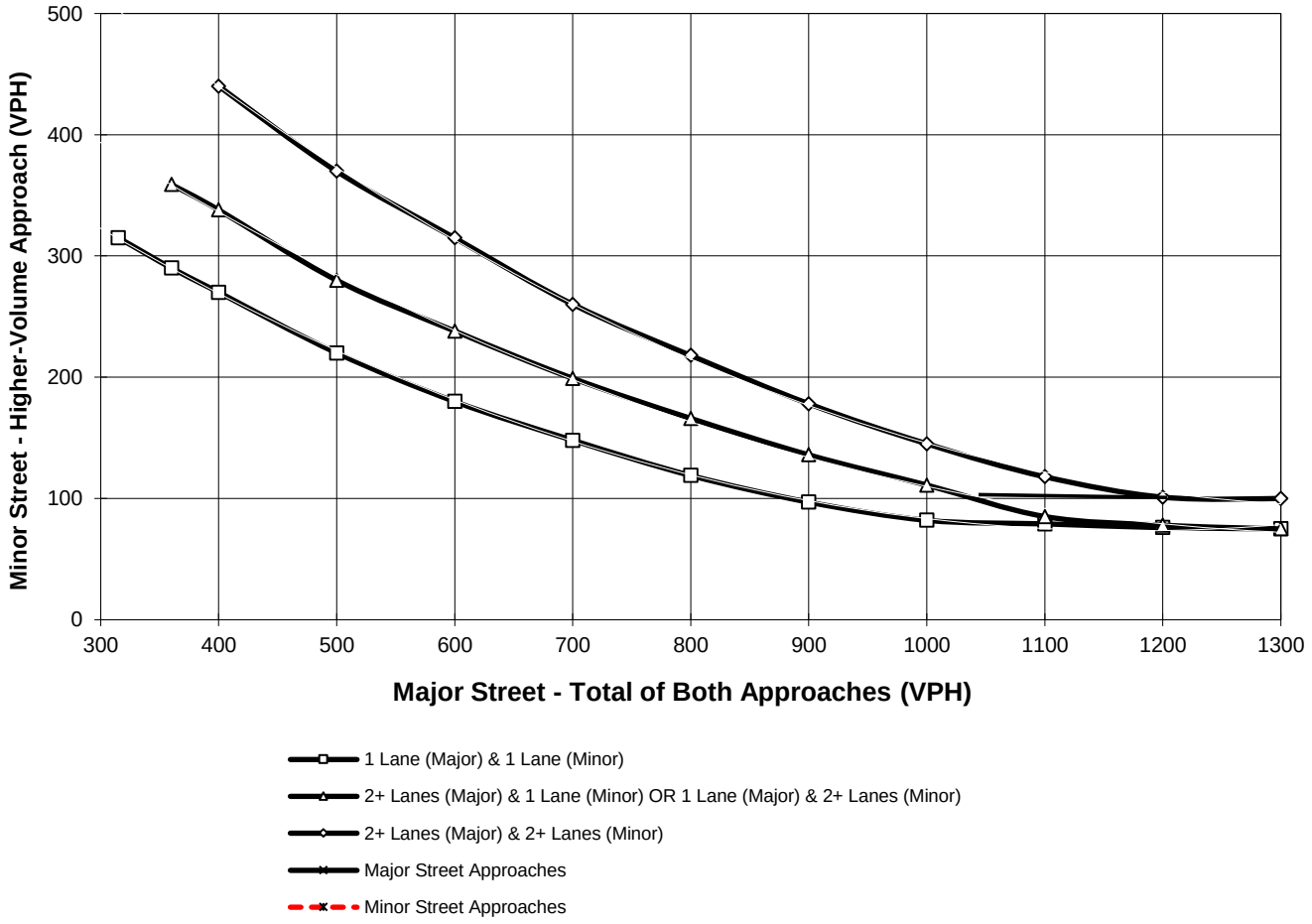
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **E+P (Phase B) Conditions - Weekday AM Peak Hour**

Major Street Name = **Eucalyptus Av.** Total of Both Approaches (VPH) = **244**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Bon View Av.** High Volume Approach (VPH) = **136**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

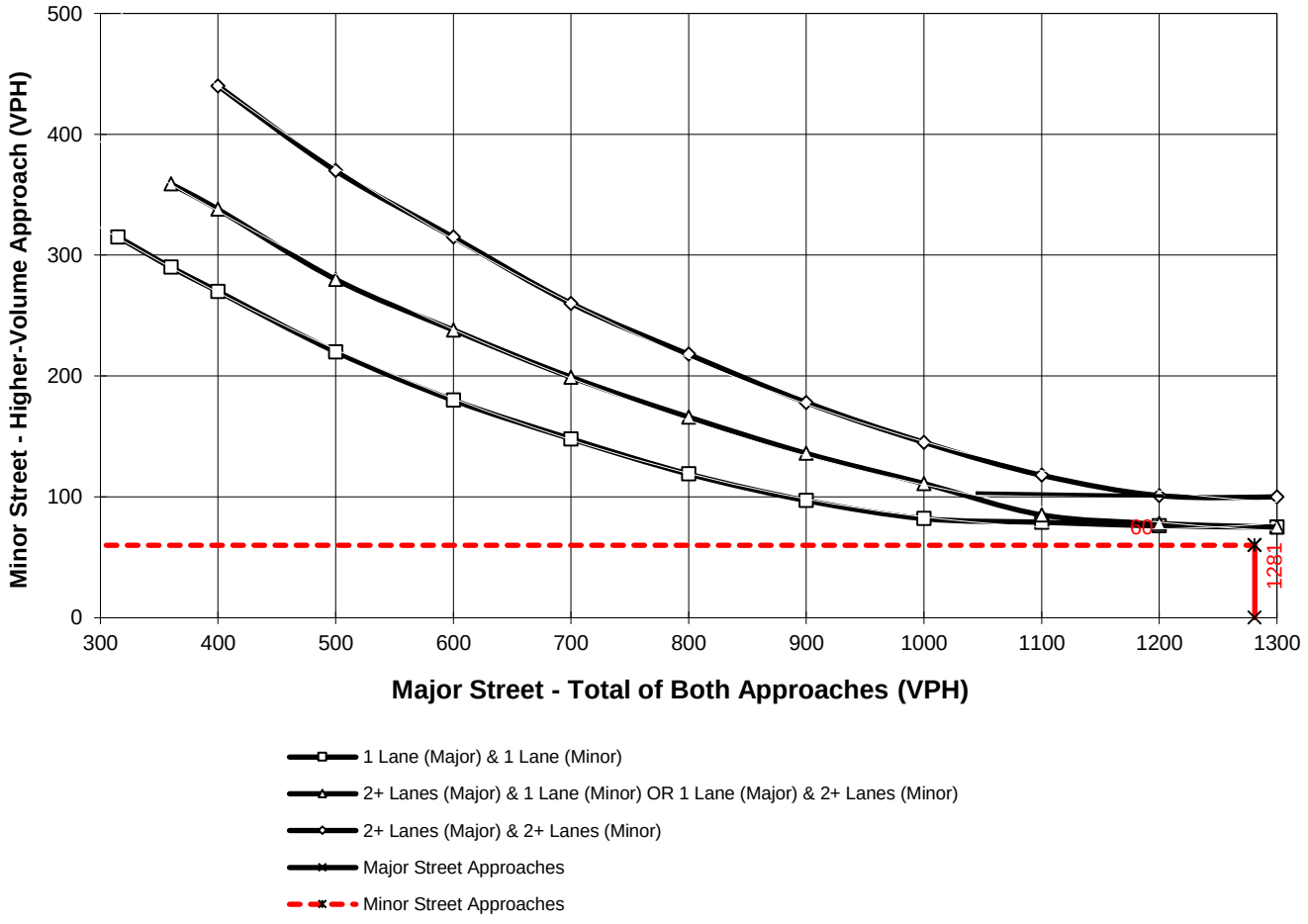
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **E+P (Phase B) Conditions - Weekday AM Peak Hour**

Major Street Name = **Merrill Av.**
Total of Both Approaches (VPH) = **1281**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Bon View Av.**
High Volume Approach (VPH) = **60**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM		TRAFFIC CONDITIONS		E+P (Phase B)
				CALC	CP	DATE	12/16/19
Jurisdiction:	City of Ontario			CHK	CP	DATE	12/16/19
Major Street:	Grove Av.				Critical Approach Speed (Major)		45 mph
Minor Street:	Street A				Critical Approach Speed (Minor)		25 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes = **1** lane

Major Street Future ADT = **11,796** vpd Minor Street Future ADT = **1,695** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. √

or **RURAL (R)**

In built up area of isolated community of < 10,000 population ……..

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL	Minimum Requirements EADT			
	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
CONDITION A - Minimum Vehicular Volume	Urban	Rural	Urban	Rural
Satisfied: XX / Not Satisfied: RURAL XX				
Number of lanes for moving traffic on each approach				
Major Street: 1 **11,796** / Minor Street: 1 **1,695**	8,000	5,600 *	2,400	1,680 *
2 + / 1	9,600	6,720	2,400	1,680
2 + / 2 +	9,600	6,720	3,200	2,240
1 / 2 +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	Urban	Rural	Urban	Rural
Satisfied: XX / Not Satisfied				
Number of lanes for moving traffic on each approach				
Major Street: 1 **11,796** / Minor Street: 1 **1,695**	12,000	8,400 *	1,200	850 *
2 + / 1	14,400	10,080	1,200	850
2 + / 2 +	14,400	10,080	1,600	1,120
1 / 2 +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B				
Satisfied: XX / Not Satisfied				
No one condition satisfied, but following conditions fulfilled 80% of more ….. A: 100% B: 100%	2 CONDITIONS 80%		2 CONDITIONS 80%	

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

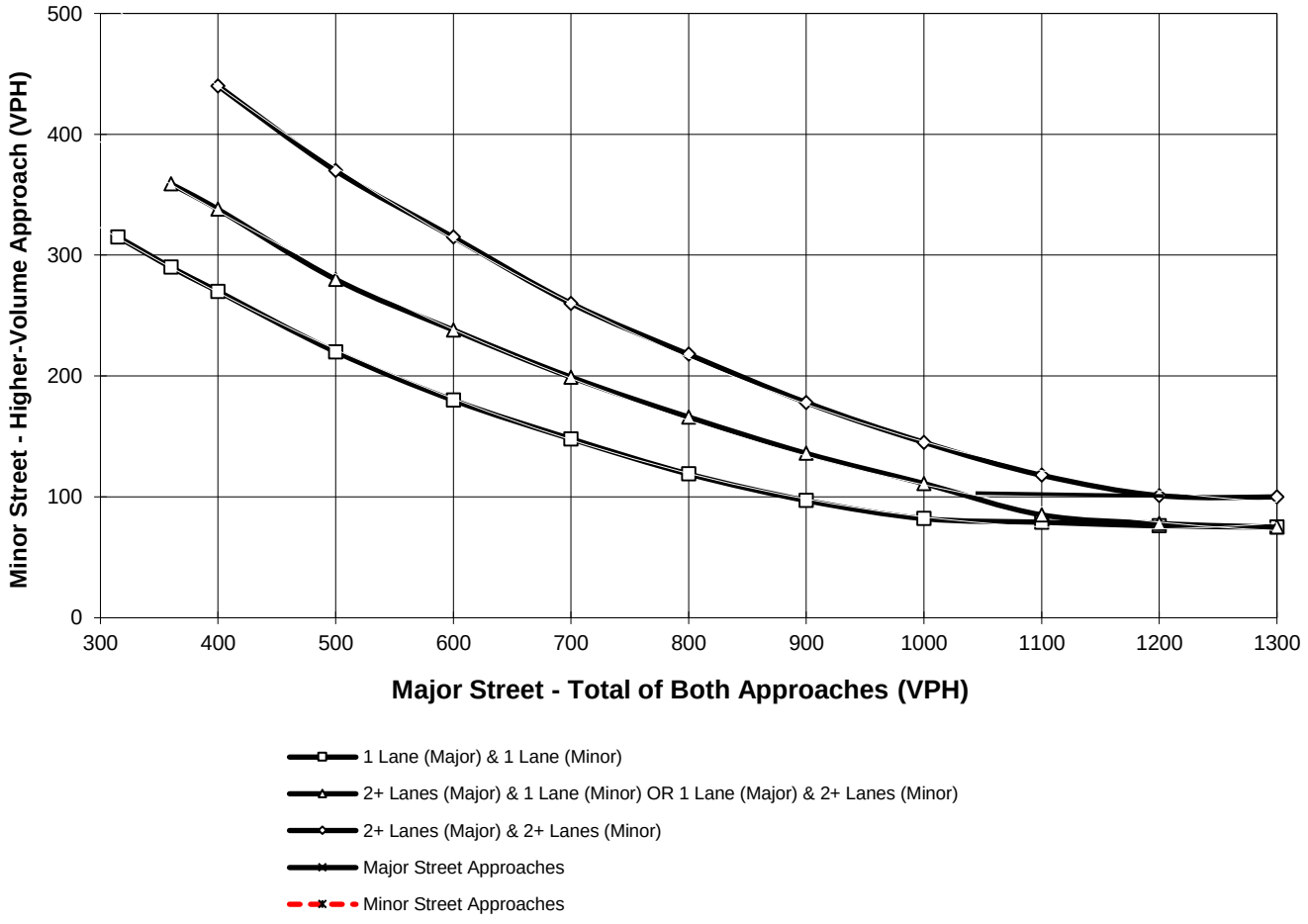
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **E+P (Phase B) Conditions - Weekday AM Peak Hour**

Major Street Name = **Walker Av.**
Total of Both Approaches (VPH) = **158**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Eucalyptus Av.**
High Volume Approach (VPH) = **100**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

APPENDIX 5.6:

E+P (PHASE C) CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

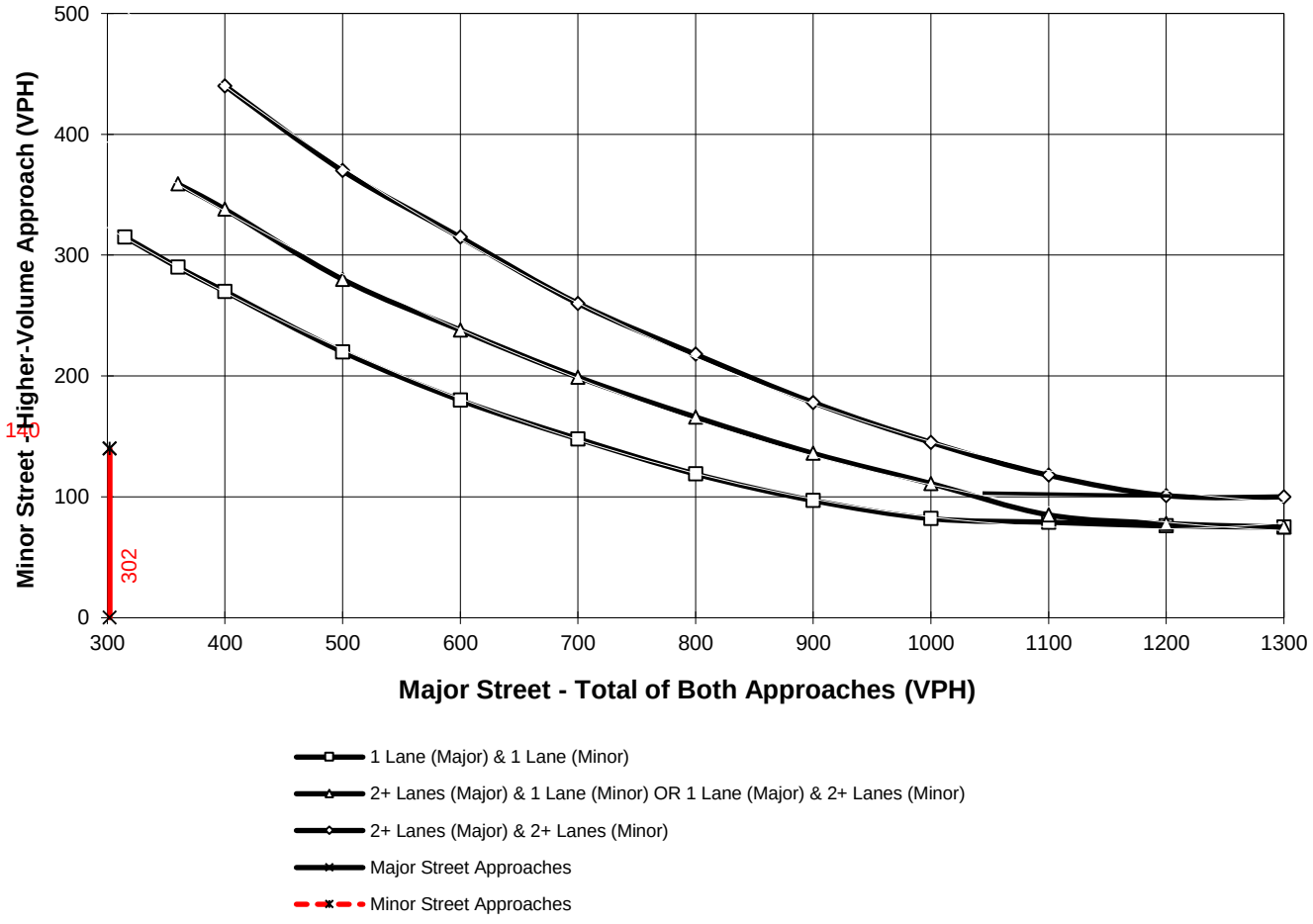
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **E+P (Phase C) Conditions - Weekday AM Peak Hour**

Major Street Name = **Eucalyptus Av.** Total of Both Approaches (VPH) = **302**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Bon View Av.** High Volume Approach (VPH) = **140**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

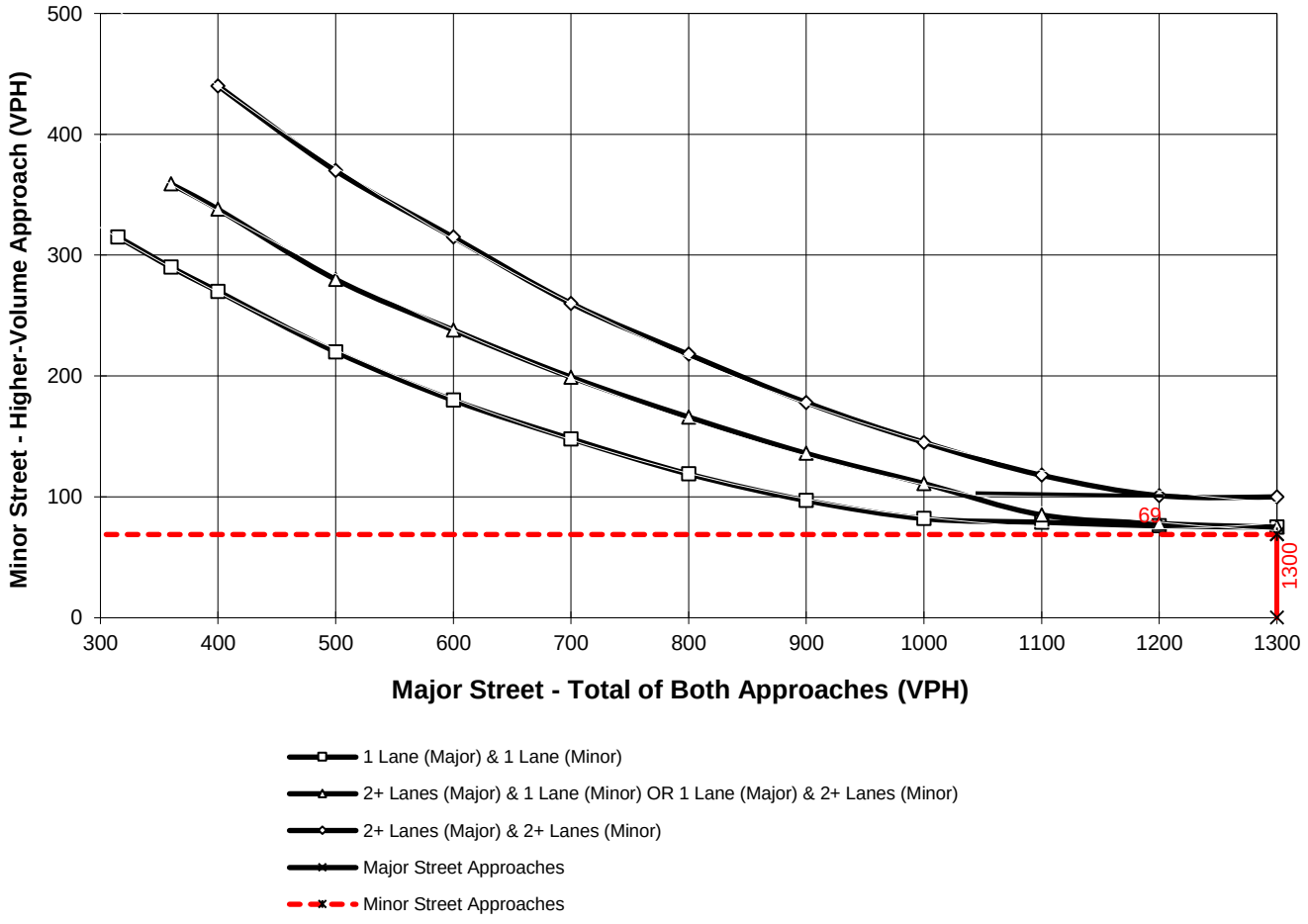
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **E+P (Phase C) Conditions - Weekday PM Peak Hour**

Major Street Name = **Merrill Av.**
Total of Both Approaches (VPH) = **1441**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Bon View Av.**
High Volume Approach (VPH) = **69**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

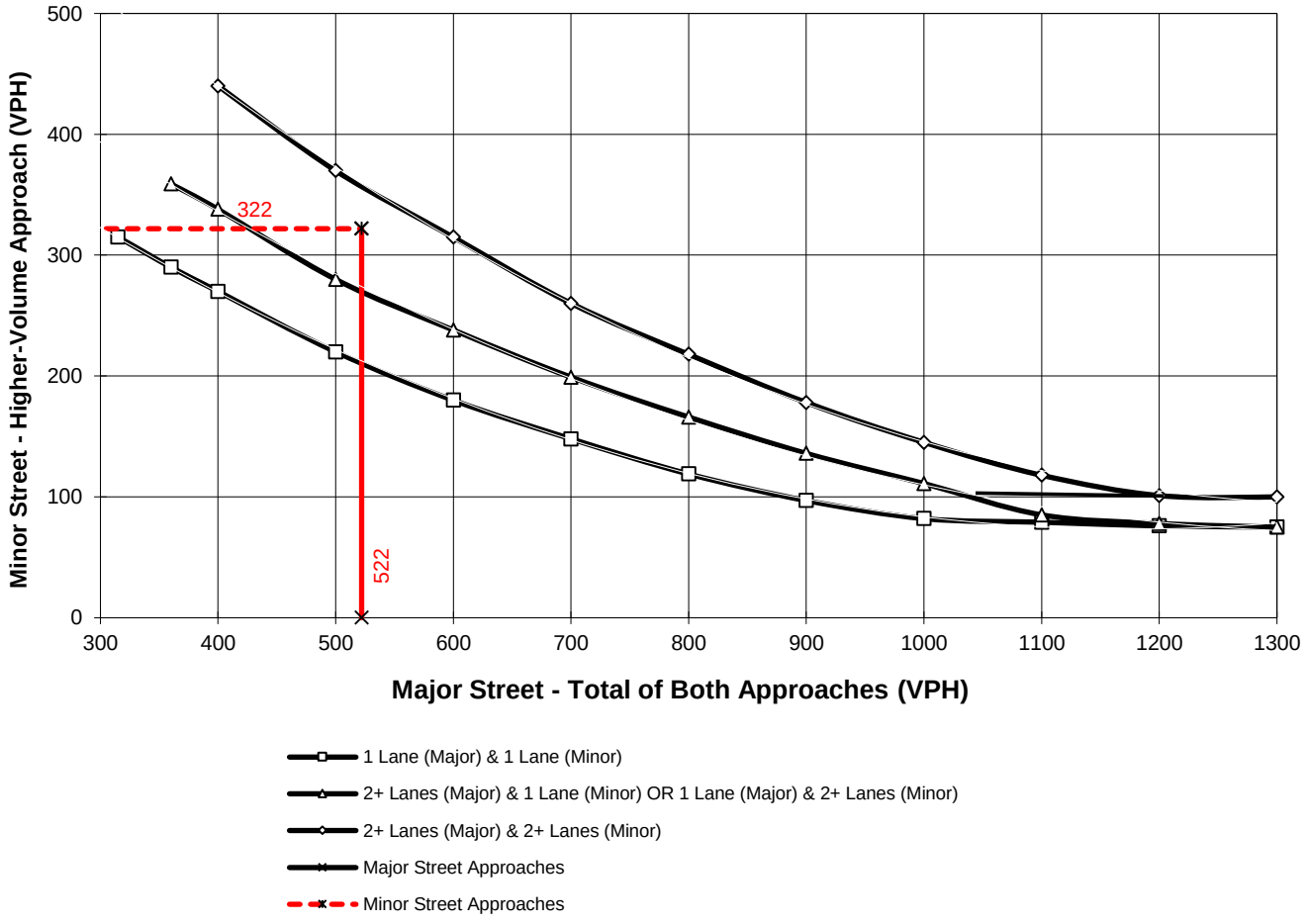
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **E+P (Phase C) Conditions - Weekday AM Peak Hour**

Major Street Name = **Walker Av.**
Total of Both Approaches (VPH) = **522**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Eucalyptus Av.**
High Volume Approach (VPH) = **322**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	E+P (Phase C)
				CALC CP	DATE 12/16/19
Jurisdiction: **City of Ontario**				CHK CP	DATE 12/16/19
Major Street: **Eucalyptus Av.**				Critical Approach Speed (Major)	45 mph
Minor Street: **Baker Av.**				Critical Approach Speed (Minor)	25 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes = **1** lane

Major Street Future ADT = **5,984** vpd Minor Street Future ADT = **1,108** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. √

or **RURAL (R)**

In built up area of isolated community of < 10,000 population ……..

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
	XX				
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **5,984**	*1* **1,108**	8,000	5,600 *	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **5,984**	*1* **1,108**	12,000	8,400	1,200	850 *
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 66% **B** 71%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	E+P (Phase C)
				CALC CP	DATE 12/16/19
Jurisdiction: City of Ontario				CHK CP	DATE 12/16/19
Major Street: Eucalyptus Av.				Critical Approach Speed (Major)	45 mph
Minor Street: Vineyard Av.				Critical Approach Speed (Minor)	25 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes = **1** lane

Major Street Future ADT = **3,699** vpd Minor Street Future ADT = **1,127** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. √

or **RURAL (R)**

In built up area of isolated community of < 10,000 population ……..

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL	Minimum Requirements EADT: Vehicles Per Day on Major Street (Total of Both Approaches)		Minimum Requirements EADT: Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	Urban	Rural	Urban	Rural
CONDITION A - Minimum Vehicular Volume				
Satisfied / Not Satisfied (XX)				
Number of lanes for moving traffic on each approach				
Major Street / Minor Street				
1 **3,699** / 1 **1,127**	8,000	5,600	2,400	1,680
2 + / 1	9,600	6,720	2,400	1,680
2 + / 2 +	9,600	6,720	3,200	2,240
1 / 2 +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied / Not Satisfied (XX)				
Number of lanes for moving traffic on each approach				
Major Street / Minor Street	Urban	Rural	Urban	Rural
1 **3,699** / 1 **1,127**	12,000	8,400	1,200	850 *
2 + / 1	14,400	10,080	1,200	850
2 + / 2 +	14,400	10,080	1,600	1,120
1 / 2 +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B				
Satisfied / Not Satisfied (XX)	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more ….. A **66%** B **44%**				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

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APPENDIX 5.7:

E+P (PHASE A) CONDITIONS OFF-RAMP QUEUING ANALYSIS WORKSHEETS

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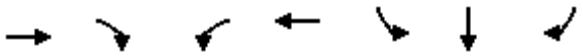


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	866	235	74	1558	476	482	361
v/c Ratio	0.38	0.28	0.32	0.56	0.72	0.72	0.53
Control Delay	21.1	4.0	43.2	25.3	31.6	31.9	19.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	4.0	43.2	25.3	31.6	31.9	19.9
Queue Length 50th (ft)	140	0	25	277	260	264	131
Queue Length 95th (ft)	182	40	m32	325	306	311	173
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	2309	849	234	2759	806	808	801
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.28	0.32	0.56	0.59	0.60	0.45

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	733	199	290	19	294	333	335	41
v/c Ratio	0.89	0.62	0.17	0.12	0.87	0.66	0.66	0.07
Control Delay	43.9	42.2	18.0	36.4	38.0	31.2	31.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.9	42.2	18.0	36.4	38.0	31.2	31.1	0.2
Queue Length 50th (ft)	183	91	47	9	37	157	158	0
Queue Length 95th (ft)	#278	#247	82	29	#178	215	215	0
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	855	320	1667	155	339	640	645	693
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.62	0.17	0.12	0.87	0.52	0.52	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	347	1145	188	1173	290	295	71	45	729
v/c Ratio	0.93	0.48	0.12	0.84	0.50	0.50	0.11	0.31	0.87
Control Delay	75.0	19.1	0.1	44.2	30.5	30.4	0.8	48.2	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.0	19.1	0.1	44.2	30.5	30.4	0.8	48.2	18.0
Queue Length 50th (ft)	226	171	0	209	154	157	0	27	22
Queue Length 95th (ft)	#401	196	0	252	246	250	4	62	#98
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	379	2386	1615	1396	581	589	633	180	880
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.48	0.12	0.84	0.50	0.50	0.11	0.25	0.83

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	701	307	787	985	46	698
v/c Ratio	0.70	0.50	0.99	0.36	0.10	0.90
Control Delay	26.1	8.7	53.0	3.3	33.7	22.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.1	8.7	53.0	3.3	33.7	22.5
Queue Length 50th (ft)	163	43	374	65	10	25
Queue Length 95th (ft)	m180	m69	#621	46	27	#241
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1268	713	798	3023	477	774
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.43	0.99	0.33	0.10	0.90

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	371	364	334	366	960	1010	500
v/c Ratio	0.83	0.84	0.68	0.87	0.43	0.83	0.57
Control Delay	47.9	47.3	25.4	39.2	17.6	36.8	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.9	0.0	0.0
Total Delay	47.9	47.3	25.4	39.2	18.6	36.8	5.5
Queue Length 50th (ft)	203	196	107	174	259	294	0
Queue Length 95th (ft)	306	#316	202	m#305	335	#450	77
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)	400		400	285			
Base Capacity (vph)	514	496	547	471	2251	1224	878
Starvation Cap Reductn	0	0	0	0	942	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.73	0.61	0.78	0.73	0.83	0.57

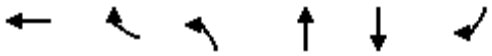
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	382	387	888	691	382	1239
v/c Ratio	0.88	0.87	0.70	0.72	0.89	0.54
Control Delay	54.9	46.6	30.3	8.4	52.0	4.5
Queue Delay	0.2	0.2	0.0	0.0	0.0	0.4
Total Delay	55.0	46.7	30.3	8.4	52.0	4.9
Queue Length 50th (ft)	211	176	243	22	157	48
Queue Length 95th (ft)	#363	#333	317	146	m#290	91
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	476	483	1260	960	461	2276
Starvation Cap Reductn	0	0	0	0	0	507
Spillback Cap Reductn	3	3	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.81	0.70	0.72	0.83	0.70

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	257	591	277	1127	728	602
v/c Ratio	0.39	0.93	0.87	0.58	0.63	0.66
Control Delay	29.2	54.3	58.6	22.4	39.1	6.7
Queue Delay	0.0	0.0	0.0	0.7	0.0	0.0
Total Delay	29.2	54.3	58.6	23.1	39.1	6.7
Queue Length 50th (ft)	139	379	230	296	268	0
Queue Length 95th (ft)	209	#598	m223	m287	340	101
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	709	675	351	1933	1156	910
Starvation Cap Reductn	0	0	0	442	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.88	0.79	0.76	0.63	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	672	205	1111	376	609
v/c Ratio	1.06	0.30	1.00	1.02	0.31
Control Delay	89.7	5.9	66.5	115.2	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	89.7	5.9	66.5	115.2	12.0
Queue Length 50th (ft)	~570	7	~430	~322	78
Queue Length 95th (ft)	#801	58	#586	#521	121
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	636	683	1107	367	1991
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.06	0.30	1.00	1.02	0.31

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	477	523	700	1116	632
v/c Ratio	1.03	1.07	0.96	0.35	0.55
Control Delay	85.4	87.9	53.0	15.4	28.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	85.4	87.9	53.0	15.4	28.3
Queue Length 50th (ft)	~294	~285	291	145	74
Queue Length 95th (ft)	#481	#483	#620	240	100
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	462	490	727	3181	1962
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.03	1.07	0.96	0.35	0.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	381	500	1982	162	695
v/c Ratio	0.75	0.84	0.75	0.68	0.23
Control Delay	38.2	31.5	25.3	41.3	20.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	38.2	31.5	25.3	41.3	20.7
Queue Length 50th (ft)	193	167	262	100	128
Queue Length 95th (ft)	272	277	#397	m129	m145
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	627	685	2628	300	3054
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.61	0.73	0.75	0.54	0.23

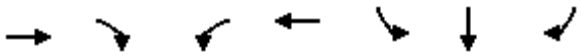
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1061	353	570	194	310	631	621
v/c Ratio	0.76	0.22	0.59	0.12	0.33	0.78	0.74
Control Delay	24.2	0.3	18.9	0.1	9.0	19.0	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.2	0.3	18.9	0.1	9.0	19.0	16.7
Queue Length 50th (ft)	128	0	102	0	60	162	148
Queue Length 95th (ft)	171	0	150	m0	105	#372	#285
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1400	1615	974	1615	926	809	838
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.22	0.59	0.12	0.33	0.78	0.74

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1099	545	674	657	137	215	217
v/c Ratio	0.66	0.53	0.70	0.23	0.66	0.61	0.58
Control Delay	25.3	3.6	30.0	0.2	60.5	15.3	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.3	3.6	30.0	0.2	60.5	15.3	12.2
Queue Length 50th (ft)	300	0	80	1	98	10	0
Queue Length 95th (ft)	389	60	#260	2	157	85	68
Internal Link Dist (ft)	2412			735		968	
Turn Bay Length (ft)			200		400		
Base Capacity (vph)	1671	1031	962	2811	413	504	529
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.53	0.70	0.23	0.33	0.43	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

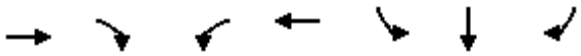
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	526	864	387	489	401	184
v/c Ratio	0.25	0.78	0.96	0.15	0.65	0.49
Control Delay	8.1	12.4	66.9	4.7	21.5	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.1	12.4	66.9	4.7	21.5	9.4
Queue Length 50th (ft)	20	147	73	22	47	0
Queue Length 95th (ft)	m45	m#213	#149	33	86	51
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2143	1109	402	3259	619	376
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.78	0.96	0.15	0.65	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	716	509	1106	394	178	171	170
v/c Ratio	0.74	0.19	0.72	0.43	0.66	0.48	0.45
Control Delay	25.4	7.1	30.5	4.3	54.7	13.0	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.4	7.1	30.5	4.3	54.7	13.0	9.5
Queue Length 50th (ft)	243	105	330	3	126	13	0
Queue Length 95th (ft)	323	167	458	66	189	75	57
Internal Link Dist (ft)		735	1069			1143	
Turn Bay Length (ft)	235				450		400
Base Capacity (vph)	970	2681	1533	907	506	541	567
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.19	0.72	0.43	0.35	0.32	0.30

Intersection Summary



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1548	615	329	1491	484	486	518
v/c Ratio	0.79	0.62	0.77	0.53	0.74	0.74	0.78
Control Delay	32.7	5.2	50.9	19.0	33.7	33.8	31.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.7	5.2	50.9	19.0	33.7	33.8	31.1
Queue Length 50th (ft)	341	0	114	219	261	262	232
Queue Length 95th (ft)	372	53	m131	250	342	343	317
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	1952	991	440	2798	734	735	737
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.62	0.75	0.53	0.66	0.66	0.70

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	937	126	299	18	153	360	364	70
v/c Ratio	0.91	0.57	0.18	0.16	0.62	0.66	0.66	0.12
Control Delay	43.1	44.2	23.5	38.8	19.1	29.9	29.8	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.1	44.2	23.5	38.8	19.1	29.9	29.8	0.4
Queue Length 50th (ft)	240	63	62	9	0	167	169	0
Queue Length 95th (ft)	#376	#172	98	29	#65	230	232	1
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	1027	221	1659	115	246	662	670	711
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.57	0.18	0.16	0.62	0.54	0.54	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	376	1625	324	1732	221	308	220	166	818
v/c Ratio	0.96	0.57	0.20	0.91	0.69	0.94	0.54	0.78	0.89
Control Delay	73.8	18.8	0.2	42.2	50.2	77.3	21.0	67.7	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.8	18.8	0.2	42.2	50.2	77.3	21.0	67.7	22.2
Queue Length 50th (ft)	261	262	0	312	140	205	51	103	53
Queue Length 95th (ft)	m#401	310	m0	#392	#240	#376	125	#197	#168
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	398	2834	1615	1913	324	332	410	232	940
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.57	0.20	0.91	0.68	0.93	0.54	0.72	0.87

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	938	174	413	1130	148	1069
v/c Ratio	0.81	0.29	1.27	0.57	0.12	1.30
Control Delay	26.1	7.4	176.5	13.1	18.7	163.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.1	7.4	176.5	13.1	18.7	163.0
Queue Length 50th (ft)	170	16	~265	172	26	~571
Queue Length 95th (ft)	m213	m23	#407	205	44	#750
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1268	646	324	2075	1238	822
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.27	1.27	0.54	0.12	1.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	350	350	318	282	1079	1008	493
v/c Ratio	0.78	0.81	0.70	0.80	0.48	0.74	0.54
Control Delay	43.2	44.0	29.4	38.3	20.2	31.3	5.1
Queue Delay	0.0	0.0	0.0	0.0	1.6	0.0	0.0
Total Delay	43.2	44.0	29.4	38.3	21.8	31.3	5.1
Queue Length 50th (ft)	190	190	123	140	316	266	0
Queue Length 95th (ft)	276	284	207	m207	417	#448	76
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)				285			400
Base Capacity (vph)	552	528	545	431	2247	1361	916
Starvation Cap Reductn	0	0	0	0	931	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.66	0.58	0.65	0.82	0.74	0.54

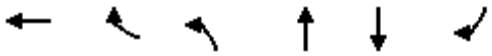
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	367	371	927	562	368	1212
v/c Ratio	0.88	0.85	0.71	0.61	0.88	0.52
Control Delay	56.0	43.6	29.5	5.3	50.5	4.2
Queue Delay	5.8	3.6	0.0	0.0	0.0	0.4
Total Delay	61.7	47.2	29.5	5.3	50.5	4.6
Queue Length 50th (ft)	205	163	253	0	125	41
Queue Length 95th (ft)	#352	#310	329	76	m#309	86
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	457	474	1310	928	461	2312
Starvation Cap Reductn	0	0	0	0	0	517
Spillback Cap Reductn	52	48	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.87	0.71	0.61	0.80	0.68

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	292	342	213	872	992	663
v/c Ratio	0.78	0.72	0.78	0.35	0.54	0.59
Control Delay	59.0	28.5	53.9	10.3	23.4	4.2
Queue Delay	1.3	0.0	0.0	0.4	0.0	0.0
Total Delay	60.3	28.5	53.9	10.7	23.4	4.2
Queue Length 50th (ft)	214	117	177	173	271	0
Queue Length 95th (ft)	293	210	m205	m228	404	78
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	484	565	351	2511	1827	1125
Starvation Cap Reductn	0	0	0	1001	0	0
Spillback Cap Reductn	69	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.61	0.61	0.58	0.54	0.59

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	437	347	1006	449	874
v/c Ratio	0.93	0.63	0.84	0.94	0.38
Control Delay	71.5	23.8	42.1	79.4	7.9
Queue Delay	0.0	0.0	0.0	1.8	0.1
Total Delay	71.5	23.8	42.1	81.2	8.0
Queue Length 50th (ft)	328	112	366	293	107
Queue Length 95th (ft)	#517	217	#487	#541	125
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	484	564	1202	502	2323
Starvation Cap Reductn	0	0	0	12	462
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.90	0.62	0.84	0.92	0.47

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	409	264	395	493	1542
v/c Ratio	0.88	0.43	0.89	0.16	0.74
Control Delay	54.4	6.1	67.7	20.3	28.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	54.4	6.1	67.7	20.3	28.0
Queue Length 50th (ft)	224	0	189	83	215
Queue Length 95th (ft)	#389	58	#329	117	259
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	472	616	481	3203	2080
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.87	0.43	0.82	0.15	0.74

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	105	556	1348	384	1108
v/c Ratio	0.18	0.94	0.86dr	1.19	0.40
Control Delay	21.6	50.9	24.0	130.3	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.6	50.9	24.0	130.3	20.3
Queue Length 50th (ft)	41	260	161	~293	228
Queue Length 95th (ft)	78	#465	200	m#435	m272
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	625	613	2051	324	2795
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.17	0.91	0.66	1.19	0.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

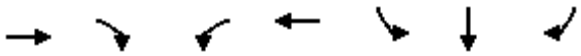
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1110	506	458	431	269	515	505
v/c Ratio	0.79	0.31	0.47	0.27	0.29	0.62	0.59
Control Delay	25.5	0.5	16.2	0.9	8.6	11.5	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.5	0.5	16.2	0.9	8.6	11.5	10.7
Queue Length 50th (ft)	135	0	44	0	50	96	88
Queue Length 95th (ft)	181	0	86	0	90	193	173
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1400	1615	974	1615	926	832	860
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.31	0.47	0.27	0.29	0.62	0.59

Intersection Summary



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1124	534	523	959	119	210	212
v/c Ratio	0.56	0.47	0.77	0.34	0.63	0.68	0.68
Control Delay	18.5	2.9	46.6	0.6	60.4	24.4	24.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.5	2.9	46.6	0.6	60.4	24.4	24.2
Queue Length 50th (ft)	257	0	124	1	86	35	35
Queue Length 95th (ft)	392	57	178	2	142	115	111
Internal Link Dist (ft)	2412			735		968	
Turn Bay Length (ft)			200		400		
Base Capacity (vph)	2001	1133	689	2848	413	479	491
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.47	0.76	0.34	0.29	0.44	0.43

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	671	801	307	709	303	140
v/c Ratio	0.33	0.72	0.75	0.22	0.47	0.39
Control Delay	9.1	9.3	39.5	5.5	17.5	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.1	9.3	39.5	5.5	17.5	8.4
Queue Length 50th (ft)	28	123	56	36	34	0
Queue Length 95th (ft)	m55	m150	#109	50	65	45
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2048	1113	408	3172	649	361
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.72	0.75	0.22	0.47	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	455	789	1103	188	328	406	398
v/c Ratio	0.76	0.34	0.70	0.24	0.76	0.79	0.75
Control Delay	40.0	21.1	29.8	4.5	49.6	30.1	27.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	21.1	29.8	4.5	49.6	30.1	27.6
Queue Length 50th (ft)	160	264	337	2	221	151	136
Queue Length 95th (ft)	218	342	457	48	316	276	250
Internal Link Dist (ft)		735	1069			1143	
Turn Bay Length (ft)	235				450		400
Base Capacity (vph)	684	2341	1574	797	506	573	586
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.34	0.70	0.24	0.65	0.71	0.68

Intersection Summary

APPENDIX 5.8:

E+P (PHASE B) CONDITIONS OFF-RAMP QUEUING ANALYSIS WORKSHEETS

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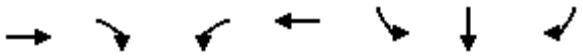


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	869	235	74	1560	496	502	361
v/c Ratio	0.38	0.28	0.32	0.57	0.73	0.74	0.52
Control Delay	21.6	4.0	43.5	25.6	31.8	32.1	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.6	4.0	43.5	25.6	31.8	32.1	19.3
Queue Length 50th (ft)	143	0	24	278	270	274	128
Queue Length 95th (ft)	182	40	m32	325	324	328	173
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	2270	839	232	2718	806	808	801
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.28	0.32	0.57	0.62	0.62	0.45

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	736	199	283	19	294	333	335	41
v/c Ratio	0.89	0.62	0.17	0.12	0.87	0.66	0.66	0.07
Control Delay	43.9	42.2	18.3	36.4	38.0	31.3	31.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.9	42.2	18.3	36.4	38.0	31.3	31.2	0.2
Queue Length 50th (ft)	184	91	47	9	37	157	158	0
Queue Length 95th (ft)	#280	#247	81	29	#178	215	215	0
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	855	320	1676	155	339	640	645	693
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.62	0.17	0.12	0.87	0.52	0.52	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	347	1185	188	1185	290	295	71	45	729
v/c Ratio	0.94	0.50	0.12	0.84	0.51	0.51	0.11	0.29	0.87
Control Delay	76.9	19.2	0.1	44.2	31.2	31.1	0.8	46.6	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.9	19.2	0.1	44.2	31.2	31.1	0.8	46.6	18.0
Queue Length 50th (ft)	235	180	0	211	154	157	0	27	26
Queue Length 95th (ft)	#403	206	0	254	250	254	4	61	93
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	373	2386	1615	1403	573	581	626	202	899
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.50	0.12	0.84	0.51	0.51	0.11	0.22	0.81

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	704	307	787	1007	46	767
v/c Ratio	0.70	0.50	0.99	0.36	0.10	0.99
Control Delay	26.0	8.7	53.0	3.3	33.7	39.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	8.7	53.0	3.3	33.7	39.9
Queue Length 50th (ft)	163	43	374	66	10	59
Queue Length 95th (ft)	m181	m67	#621	47	27	#322
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1268	713	798	3023	474	773
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.43	0.99	0.33	0.10	0.99

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	371	364	334	391	962	1013	500
v/c Ratio	0.83	0.84	0.68	0.89	0.43	0.85	0.58
Control Delay	47.9	47.3	25.6	38.8	19.0	39.0	5.6
Queue Delay	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Total Delay	47.9	47.3	25.6	38.8	19.9	39.0	5.6
Queue Length 50th (ft)	203	196	108	191	260	~307	0
Queue Length 95th (ft)	306	#316	203	m#306	m336	#452	77
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)	400		400	285			
Base Capacity (vph)	514	496	546	475	2251	1187	866
Starvation Cap Reductn	0	0	0	0	942	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.73	0.61	0.82	0.73	0.85	0.58

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

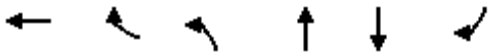
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	382	471	915	691	382	1242
v/c Ratio	0.80	0.97	0.79	0.74	0.89	0.57
Control Delay	44.6	64.3	34.0	9.0	52.0	4.9
Queue Delay	0.2	1.2	0.0	0.0	0.0	0.6
Total Delay	44.7	65.5	34.0	9.0	52.0	5.5
Queue Length 50th (ft)	211	243	253	22	166	48
Queue Length 95th (ft)	#363	#455	#331	146	m#227	91
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	478	484	1165	935	461	2186
Starvation Cap Reductn	0	0	0	0	0	506
Spillback Cap Reductn	3	3	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.98	0.79	0.74	0.83	0.74

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	265	591	282	1132	740	602
v/c Ratio	0.40	0.93	0.88	0.59	0.64	0.66
Control Delay	29.5	54.3	59.2	22.1	39.5	6.8
Queue Delay	0.0	0.0	0.0	0.7	0.0	0.0
Total Delay	29.5	54.3	59.2	22.9	39.5	6.8
Queue Length 50th (ft)	144	379	234	294	274	0
Queue Length 95th (ft)	217	#598	m230	m289	347	101
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	709	675	351	1933	1151	909
Starvation Cap Reductn	0	0	0	442	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.88	0.80	0.76	0.64	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	672	217	1120	376	629
v/c Ratio	1.06	0.31	0.99	1.06	0.32
Control Delay	89.7	5.8	63.9	122.8	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	89.7	5.8	63.9	122.8	12.3
Queue Length 50th (ft)	~570	7	429	~330	81
Queue Length 95th (ft)	#801	60	#586	#530	129
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	636	691	1126	356	1991
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.06	0.31	0.99	1.06	0.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	548	523	700	1118	636
v/c Ratio	1.19	1.07	0.96	0.35	0.56
Control Delay	136.1	87.9	53.8	15.9	28.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	136.1	87.9	53.8	15.9	28.4
Queue Length 50th (ft)	~378	~285	312	160	75
Queue Length 95th (ft)	#576	#483	#622	240	101
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	462	490	726	3181	1963
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.19	1.07	0.96	0.35	0.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	381	500	2005	162	768
v/c Ratio	0.73	0.87	0.86dr	0.68	0.25
Control Delay	36.8	35.8	26.2	40.2	21.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	36.8	35.8	26.2	40.2	21.9
Queue Length 50th (ft)	188	182	276	100	142
Queue Length 95th (ft)	272	300	#404	m120	m147
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	627	663	2590	300	3022
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.61	0.75	0.77	0.54	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

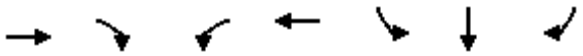
m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1097	353	573	194	310	686	679
v/c Ratio	0.78	0.22	0.59	0.12	0.33	0.85	0.81
Control Delay	25.1	0.3	19.0	0.1	9.0	23.8	20.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.1	0.3	19.0	0.1	9.0	23.8	20.7
Queue Length 50th (ft)	133	0	102	0	60	192	174
Queue Length 95th (ft)	178	0	150	m0	105	#427	#390
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1400	1615	974	1615	926	809	838
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.22	0.59	0.12	0.33	0.85	0.81

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1103	560	674	717	137	215	217
v/c Ratio	0.66	0.54	0.70	0.26	0.66	0.61	0.58
Control Delay	25.4	3.7	31.9	0.3	60.5	15.3	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.4	3.7	31.9	0.3	60.5	15.3	12.2
Queue Length 50th (ft)	302	0	95	2	98	10	0
Queue Length 95th (ft)	391	60	#269	3	157	85	68
Internal Link Dist (ft)	2412			735		968	
Turn Bay Length (ft)			200		400		
Base Capacity (vph)	1668	1038	965	2811	413	504	529
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.54	0.70	0.26	0.33	0.43	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

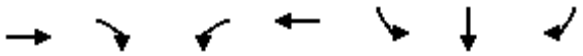
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	529	897	387	492	401	184
v/c Ratio	0.25	0.81	0.96	0.15	0.65	0.49
Control Delay	8.4	14.0	66.9	4.7	21.5	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.4	14.0	66.9	4.7	21.5	9.4
Queue Length 50th (ft)	21	154	73	22	47	0
Queue Length 95th (ft)	m44	m#266	#149	33	86	51
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2143	1109	402	3259	619	376
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.81	0.96	0.15	0.65	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	716	514	1118	394	196	187	183
v/c Ratio	0.74	0.19	0.75	0.44	0.68	0.52	0.45
Control Delay	26.3	8.1	32.0	4.6	54.0	18.2	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.3	8.1	32.0	4.6	54.0	18.2	8.9
Queue Length 50th (ft)	243	124	346	5	137	37	0
Queue Length 95th (ft)	329	183	466	69	203	104	58
Internal Link Dist (ft)		735	1069			1143	
Turn Bay Length (ft)	235				450		400
Base Capacity (vph)	964	2639	1497	893	506	536	576
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.19	0.75	0.44	0.39	0.35	0.32

Intersection Summary



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1551	615	329	1496	494	495	518
v/c Ratio	0.80	0.62	0.77	0.54	0.75	0.75	0.78
Control Delay	33.0	5.3	50.7	19.3	34.2	34.2	30.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.0	5.3	50.7	19.3	34.2	34.2	30.8
Queue Length 50th (ft)	342	0	114	225	267	268	231
Queue Length 95th (ft)	373	53	m128	251	350	352	317
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	1942	989	438	2785	734	735	737
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.62	0.75	0.54	0.67	0.67	0.70

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	939	126	271	18	153	360	364	70
v/c Ratio	0.91	0.57	0.16	0.16	0.62	0.67	0.67	0.12
Control Delay	43.1	43.7	24.4	38.8	19.1	30.0	29.9	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.1	43.7	24.4	38.8	19.1	30.0	29.9	0.4
Queue Length 50th (ft)	241	63	59	9	0	167	169	0
Queue Length 95th (ft)	#377	m#162	102	29	#65	230	232	1
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	1029	221	1678	115	246	662	670	711
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.57	0.16	0.16	0.62	0.54	0.54	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	376	1646	324	1786	221	308	220	166	818
v/c Ratio	0.96	0.58	0.20	0.93	0.69	0.94	0.54	0.78	0.89
Control Delay	73.3	18.9	0.2	45.0	50.2	77.3	21.0	67.7	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.3	18.9	0.2	45.0	50.2	77.3	21.0	67.7	22.2
Queue Length 50th (ft)	261	267	0	325	140	205	51	103	53
Queue Length 95th (ft)	m#398	315	m0	#413	#240	#376	125	#197	#168
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	398	2834	1615	1911	324	332	410	232	940
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.58	0.20	0.93	0.68	0.93	0.54	0.72	0.87

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	941	174	413	1219	148	1100
v/c Ratio	0.81	0.29	1.28	0.62	0.12	1.34
Control Delay	26.0	7.3	179.8	13.8	18.7	179.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	7.3	179.8	13.8	18.7	179.9
Queue Length 50th (ft)	170	16	~266	193	26	~606
Queue Length 95th (ft)	m213	m23	#408	228	44	#785
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1272	648	322	2075	1240	822
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.27	1.28	0.59	0.12	1.34

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	350	350	318	371	1084	1010	493
v/c Ratio	0.78	0.81	0.70	0.87	0.48	0.83	0.57
Control Delay	43.2	44.0	29.4	40.7	20.5	36.4	5.3
Queue Delay	0.0	0.0	0.0	0.0	1.6	0.0	0.0
Total Delay	43.2	44.0	29.4	40.7	22.2	36.4	5.3
Queue Length 50th (ft)	190	190	123	181	322	294	0
Queue Length 95th (ft)	276	284	207	m#332	m420	#424	72
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)				285			400
Base Capacity (vph)	552	528	545	427	2247	1217	871
Starvation Cap Reductn	0	0	0	0	931	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.66	0.58	0.87	0.82	0.83	0.57

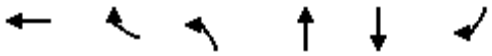
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	367	404	1018	562	368	1214
v/c Ratio	0.88	0.92	0.78	0.61	0.88	0.53
Control Delay	55.0	54.1	32.3	5.4	52.4	3.9
Queue Delay	6.9	10.7	0.0	0.0	0.0	0.4
Total Delay	61.9	64.8	32.3	5.4	52.4	4.3
Queue Length 50th (ft)	205	188	287	0	156	41
Queue Length 95th (ft)	#352	#361	#404	76	m#218	86
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	457	472	1303	926	461	2305
Starvation Cap Reductn	0	0	0	0	0	517
Spillback Cap Reductn	57	53	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.96	0.78	0.61	0.80	0.68

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	295	342	228	888	997	663
v/c Ratio	0.78	0.72	0.81	0.35	0.55	0.59
Control Delay	59.1	29.6	54.9	10.6	24.1	4.2
Queue Delay	1.4	0.0	0.0	0.4	0.0	0.0
Total Delay	60.5	29.6	54.9	11.0	24.1	4.2
Queue Length 50th (ft)	216	122	189	182	278	0
Queue Length 95th (ft)	297	215	m215	m226	407	78
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	484	560	351	2507	1802	1118
Starvation Cap Reductn	0	0	0	999	0	0
Spillback Cap Reductn	68	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.61	0.65	0.59	0.55	0.59

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	437	354	1047	449	885
v/c Ratio	0.93	0.64	0.87	0.94	0.38
Control Delay	71.5	25.2	44.6	80.8	8.0
Queue Delay	0.0	0.0	0.0	1.8	0.1
Total Delay	71.5	25.2	44.6	82.6	8.1
Queue Length 50th (ft)	328	121	390	303	108
Queue Length 95th (ft)	#517	228	#524	#542	128
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	484	561	1201	502	2323
Starvation Cap Reductn	0	0	0	12	459
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.90	0.63	0.87	0.92	0.47

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	437	264	395	498	1544
v/c Ratio	0.91	0.42	0.89	0.16	0.76
Control Delay	58.2	5.9	67.3	20.4	28.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	58.2	5.9	67.3	20.4	28.8
Queue Length 50th (ft)	244	0	191	84	215
Queue Length 95th (ft)	#427	58	#331	118	260
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	480	622	481	3181	2028
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.91	0.42	0.82	0.16	0.76

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	105	556	1428	384	1139
v/c Ratio	0.18	0.94	0.95dr	1.19	0.41
Control Delay	21.6	50.9	24.2	132.1	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.6	50.9	24.2	132.1	20.4
Queue Length 50th (ft)	41	260	171	~294	235
Queue Length 95th (ft)	78	#465	212	m#416	m274
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	625	613	2066	322	2795
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.17	0.91	0.69	1.19	0.41

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

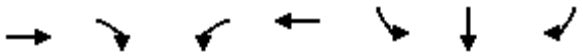
m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1238	506	460	431	269	539	529
v/c Ratio	0.88	0.31	0.47	0.27	0.29	0.65	0.62
Control Delay	30.6	0.5	16.2	0.9	8.6	12.4	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.6	0.5	16.2	0.9	8.6	12.4	11.4
Queue Length 50th (ft)	156	0	44	0	50	106	96
Queue Length 95th (ft)	#232	0	87	0	90	212	189
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1400	1615	974	1615	926	830	859
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.31	0.47	0.27	0.29	0.65	0.62

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1140	587	523	986	119	210	212
v/c Ratio	0.58	0.51	0.75	0.35	0.62	0.70	0.69
Control Delay	19.1	3.1	45.7	0.5	59.7	26.9	26.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	3.1	45.7	0.5	59.7	26.9	26.6
Queue Length 50th (ft)	266	0	126	1	86	42	42
Queue Length 95th (ft)	403	60	181	2	141	121	118
Internal Link Dist (ft)	2412			735		968	
Turn Bay Length (ft)			200		400		
Base Capacity (vph)	1981	1151	693	2844	413	472	484
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.51	0.75	0.35	0.29	0.44	0.44

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	676	926	307	712	303	140
v/c Ratio	0.33	0.83	0.75	0.22	0.47	0.39
Control Delay	10.0	14.6	39.5	5.5	17.5	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	14.6	39.5	5.5	17.5	8.4
Queue Length 50th (ft)	35	151	56	36	34	0
Queue Length 95th (ft)	m50	m203	#109	51	65	45
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2048	1113	408	3172	649	361
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.83	0.75	0.22	0.47	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	455	804	1108	188	346	408	398
v/c Ratio	0.76	0.35	0.71	0.24	0.79	0.79	0.75
Control Delay	39.5	21.8	30.5	4.5	50.8	30.7	28.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.5	21.8	30.5	4.5	50.8	30.7	28.0
Queue Length 50th (ft)	160	275	346	2	233	157	140
Queue Length 95th (ft)	218	348	460	48	337	284	256
Internal Link Dist (ft)		735	1069			1143	
Turn Bay Length (ft)	235				450		400
Base Capacity (vph)	684	2320	1553	789	506	568	581
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.35	0.71	0.24	0.68	0.72	0.69

Intersection Summary

APPENDIX 5.9:

E+P (PHASE C) CONDITIONS OFF-RAMP QUEUING ANALYSIS WORKSHEETS

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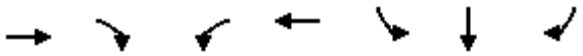


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	874	235	74	1561	517	523	361
v/c Ratio	0.39	0.28	0.34	0.59	0.74	0.75	0.51
Control Delay	22.1	4.1	44.2	26.8	31.4	31.7	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.1	4.1	44.2	26.8	31.4	31.7	18.5
Queue Length 50th (ft)	149	0	25	283	277	282	124
Queue Length 95th (ft)	183	40	m32	326	342	347	173
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	2225	827	222	2657	806	808	801
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.28	0.33	0.59	0.64	0.65	0.45

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	740	199	284	19	294	333	335	41
v/c Ratio	0.89	0.62	0.17	0.12	0.87	0.66	0.66	0.07
Control Delay	44.2	42.2	18.3	36.4	38.0	31.3	31.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.2	42.2	18.3	36.4	38.0	31.3	31.3	0.2
Queue Length 50th (ft)	186	91	47	9	37	157	158	0
Queue Length 95th (ft)	#282	#247	82	29	#178	215	215	0
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	856	320	1677	155	339	640	645	693
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.62	0.17	0.12	0.87	0.52	0.52	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	347	1229	188	1197	290	295	71	45	729
v/c Ratio	0.93	0.52	0.12	0.86	0.51	0.51	0.11	0.29	0.86
Control Delay	75.6	19.3	0.1	45.1	31.1	31.1	0.8	46.8	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.6	19.3	0.1	45.1	31.1	31.1	0.8	46.8	17.1
Queue Length 50th (ft)	241	189	0	214	153	156	0	27	22
Queue Length 95th (ft)	#403	217	m0	#261	250	254	4	61	88
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	379	2386	1615	1394	574	582	627	202	907
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.52	0.12	0.86	0.51	0.51	0.11	0.22	0.80

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	709	307	787	1022	46	831
v/c Ratio	0.70	0.50	0.99	0.37	0.10	1.08
Control Delay	26.0	8.6	53.6	3.3	33.7	66.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	8.6	53.6	3.3	33.7	66.5
Queue Length 50th (ft)	165	43	375	68	10	~164
Queue Length 95th (ft)	m182	m66	#622	48	27	#398
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1272	714	796	3023	474	772
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.43	0.99	0.34	0.10	1.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	371	364	334	409	963	1017	500
v/c Ratio	0.83	0.84	0.68	0.90	0.43	0.88	0.58
Control Delay	47.9	47.3	25.6	39.5	19.0	41.1	5.7
Queue Delay	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Total Delay	47.9	47.3	25.6	39.5	19.9	41.1	5.7
Queue Length 50th (ft)	203	196	108	204	262	~330	0
Queue Length 95th (ft)	306	#316	203	m#325	m336	#454	77
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)	400		400	285			
Base Capacity (vph)	514	496	546	477	2251	1162	859
Starvation Cap Reductn	0	0	0	0	942	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.73	0.61	0.86	0.74	0.88	0.58

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

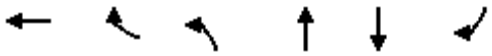
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	382	546	933	691	382	1246
v/c Ratio	0.80	1.14	0.80	0.74	0.89	0.57
Control Delay	44.9	112.3	34.6	9.0	52.0	4.8
Queue Delay	0.2	0.1	0.0	0.0	0.0	0.6
Total Delay	45.1	112.4	34.6	9.0	52.0	5.4
Queue Length 50th (ft)	211	~352	259	22	167	48
Queue Length 95th (ft)	#363	#564	#348	146	m#212	m90
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	476	481	1169	936	461	2186
Starvation Cap Reductn	0	0	0	0	0	506
Spillback Cap Reductn	4	4	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.81	1.14	0.80	0.74	0.83	0.74

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	274	591	285	1135	753	602
v/c Ratio	0.41	0.93	0.89	0.59	0.66	0.66
Control Delay	29.8	54.3	59.6	22.0	39.9	6.8
Queue Delay	0.0	0.0	0.0	0.7	0.0	0.0
Total Delay	29.8	54.3	59.6	22.8	39.9	6.8
Queue Length 50th (ft)	150	379	237	294	281	0
Queue Length 95th (ft)	224	#598	m232	m288	354	101
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	709	675	351	1933	1149	908
Starvation Cap Reductn	0	0	0	442	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.88	0.81	0.76	0.66	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	672	230	1129	376	651
v/c Ratio	1.06	0.33	1.00	1.07	0.33
Control Delay	89.7	5.9	63.9	126.5	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	89.7	5.9	63.9	126.5	12.6
Queue Length 50th (ft)	~570	8	433	~334	85
Queue Length 95th (ft)	#801	62	#590	#534	138
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	636	698	1134	351	1991
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.06	0.33	1.00	1.07	0.33

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	615	523	700	1119	640
v/c Ratio	1.28	1.03	0.99	0.36	0.56
Control Delay	170.3	77.0	60.3	16.6	28.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	170.3	77.0	60.3	16.6	28.8
Queue Length 50th (ft)	~446	~275	316	171	77
Queue Length 95th (ft)	#651	#473	#634	237	102
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	482	506	705	3123	1825
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.28	1.03	0.99	0.36	0.35

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	381	500	2020	162	835
v/c Ratio	0.71	0.87	0.89dr	0.68	0.28
Control Delay	35.5	38.5	27.0	37.4	23.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	38.5	27.0	37.4	23.3
Queue Length 50th (ft)	184	194	286	100	161
Queue Length 95th (ft)	272	#331	#409	m115	m157
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	627	647	2545	300	2984
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.61	0.77	0.79	0.54	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

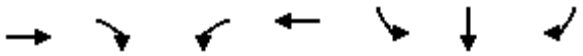
m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1123	353	578	194	310	741	736
v/c Ratio	0.78	0.22	0.57	0.12	0.35	0.93	0.89
Control Delay	24.8	0.3	16.8	0.1	9.8	33.8	27.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.8	0.3	16.8	0.1	9.8	33.8	27.9
Queue Length 50th (ft)	138	0	77	0	62	225	205
Queue Length 95th (ft)	183	0	106	m0	110	#481	#444
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1447	1615	1007	1615	900	809	838
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.22	0.57	0.12	0.34	0.92	0.88

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1106	570	674	778	137	215	217
v/c Ratio	0.66	0.55	0.70	0.28	0.66	0.61	0.58
Control Delay	25.5	3.7	33.6	0.3	60.5	15.3	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.5	3.7	33.6	0.3	60.5	15.3	12.2
Queue Length 50th (ft)	304	0	107	2	98	10	0
Queue Length 95th (ft)	390	60	#283	3	157	85	68
Internal Link Dist (ft)	2412			735		968	
Turn Bay Length (ft)			200		400		
Base Capacity (vph)	1666	1043	966	2811	413	504	529
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.55	0.70	0.28	0.33	0.43	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	530	922	387	497	401	184
v/c Ratio	0.26	0.83	0.95	0.16	0.59	0.46
Control Delay	5.6	15.8	63.5	5.2	19.4	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.6	15.8	63.5	5.2	19.4	8.5
Queue Length 50th (ft)	15	322	73	24	45	0
Queue Length 95th (ft)	m21	m#508	#148	35	84	50
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2048	1107	408	3172	675	398
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.83	0.95	0.16	0.59	0.46

Intersection Summary

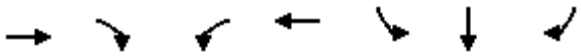
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	716	517	1130	394	212	204	196
v/c Ratio	0.75	0.20	0.77	0.45	0.69	0.61	0.45
Control Delay	27.7	9.1	33.2	4.8	53.2	33.3	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.7	9.1	33.2	4.8	53.2	33.3	8.4
Queue Length 50th (ft)	243	133	358	7	149	93	0
Queue Length 95th (ft)	#357	205	472	72	213	162	58
Internal Link Dist (ft)		735	1069			1143	
Turn Bay Length (ft)	235				450		400
Base Capacity (vph)	949	2601	1475	882	506	502	585
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.20	0.77	0.45	0.42	0.41	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1552	615	329	1501	500	501	518
v/c Ratio	0.82	0.63	0.74	0.54	0.76	0.76	0.77
Control Delay	34.2	5.4	49.4	19.6	34.1	34.2	30.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.2	5.4	49.4	19.6	34.1	34.2	30.3
Queue Length 50th (ft)	348	0	114	229	271	271	230
Queue Length 95th (ft)	380	54	m126	m248	356	357	317
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	1903	982	464	2770	734	735	737
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.63	0.71	0.54	0.68	0.68	0.70

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	940	126	275	18	153	360	364	70
v/c Ratio	0.91	0.57	0.16	0.16	0.62	0.67	0.67	0.12
Control Delay	43.2	43.3	24.5	38.8	19.1	30.0	29.9	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.2	43.3	24.5	38.8	19.1	30.0	29.9	0.4
Queue Length 50th (ft)	241	64	61	9	0	167	169	0
Queue Length 95th (ft)	#377	m#151	104	29	#65	230	232	1
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	1029	221	1679	115	246	662	670	711
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.57	0.16	0.16	0.62	0.54	0.54	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	376	1658	324	1829	221	308	220	166	818
v/c Ratio	0.96	0.59	0.20	0.96	0.69	0.94	0.54	0.78	0.89
Control Delay	72.3	19.5	0.2	47.8	50.2	77.3	21.0	67.7	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.3	19.5	0.2	47.8	50.2	77.3	21.0	67.7	22.2
Queue Length 50th (ft)	261	278	0	~334	140	205	51	103	53
Queue Length 95th (ft)	m#392	322	m0	#429	#240	#376	125	#197	#168
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	398	2834	1615	1911	324	332	410	232	940
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.59	0.20	0.96	0.68	0.93	0.54	0.72	0.87

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	942	174	413	1292	148	1119
v/c Ratio	0.81	0.29	1.29	0.66	0.12	1.36
Control Delay	25.9	7.3	183.1	14.5	18.7	190.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.9	7.3	183.1	14.5	18.7	190.6
Queue Length 50th (ft)	168	16	~267	211	26	~628
Queue Length 95th (ft)	m212	m23	#410	249	44	#808
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1277	650	320	2075	1243	821
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.27	1.29	0.62	0.12	1.36

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	350	350	318	444	1089	1011	493
v/c Ratio	0.78	0.81	0.70	0.87	0.48	0.97	0.60
Control Delay	43.2	44.0	29.4	35.8	21.0	54.8	6.1
Queue Delay	0.0	0.0	0.0	0.0	1.7	0.0	0.0
Total Delay	43.2	44.0	29.4	35.8	22.7	54.8	6.1
Queue Length 50th (ft)	190	190	123	235	326	~326	0
Queue Length 95th (ft)	276	284	207	m#376	m416	#450	76
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)				285			400
Base Capacity (vph)	552	528	545	511	2247	1044	817
Starvation Cap Reductn	0	0	0	0	931	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.66	0.58	0.87	0.83	0.97	0.60

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

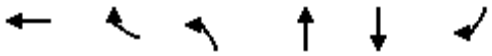
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	367	423	1094	562	368	1215
v/c Ratio	0.85	0.94	0.86	0.61	0.88	0.53
Control Delay	51.1	57.3	36.7	5.5	54.9	3.8
Queue Delay	8.2	20.8	0.0	0.0	0.0	0.4
Total Delay	59.3	78.1	36.7	5.5	54.9	4.3
Queue Length 50th (ft)	205	203	318	0	166	41
Queue Length 95th (ft)	#352	#388	#454	76	m193	m80
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	457	472	1275	918	461	2277
Starvation Cap Reductn	0	0	0	0	0	517
Spillback Cap Reductn	62	57	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.93	1.02	0.86	0.61	0.80	0.69

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	297	342	241	900	1000	663
v/c Ratio	0.79	0.72	0.83	0.36	0.56	0.60
Control Delay	59.3	30.2	55.6	10.7	24.7	4.3
Queue Delay	1.4	0.0	0.0	0.4	0.0	0.0
Total Delay	60.7	30.2	55.6	11.1	24.7	4.3
Queue Length 50th (ft)	218	125	200	190	284	0
Queue Length 95th (ft)	299	219	m223	m221	409	78
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	484	557	351	2504	1780	1113
Starvation Cap Reductn	0	0	0	998	0	0
Spillback Cap Reductn	68	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.61	0.69	0.60	0.56	0.60

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	437	357	1082	449	890
v/c Ratio	0.93	0.65	0.90	0.94	0.38
Control Delay	71.5	25.8	47.2	82.2	8.0
Queue Delay	0.0	0.0	0.0	1.8	0.1
Total Delay	71.5	25.8	47.2	84.0	8.1
Queue Length 50th (ft)	328	125	410	311	110
Queue Length 95th (ft)	#517	232	#554	#541	128
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	484	559	1202	502	2323
Starvation Cap Reductn	0	0	0	12	457
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.90	0.64	0.90	0.92	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	454	264	395	502	1545
v/c Ratio	0.92	0.42	0.89	0.16	0.78
Control Delay	59.3	5.8	66.9	20.7	29.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	59.3	5.8	66.9	20.7	29.5
Queue Length 50th (ft)	257	0	192	85	215
Queue Length 95th (ft)	#450	58	#334	119	260
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	493	632	481	3181	1982
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.92	0.42	0.82	0.16	0.78

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	105	556	1493	384	1156
v/c Ratio	0.18	0.94	1.01dr	1.20	0.41
Control Delay	21.6	50.9	24.5	134.3	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.6	50.9	24.5	134.3	20.3
Queue Length 50th (ft)	41	260	179	~295	239
Queue Length 95th (ft)	78	#465	221	m#404	m276
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	625	613	2080	320	2795
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.17	0.91	0.72	1.20	0.41

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

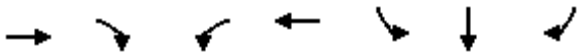
m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1343	506	461	431	269	551	543
v/c Ratio	0.96	0.31	0.47	0.27	0.29	0.66	0.63
Control Delay	39.7	0.5	16.2	0.9	8.6	12.8	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.7	0.5	16.2	0.9	8.6	12.8	11.9
Queue Length 50th (ft)	174	0	44	0	50	112	101
Queue Length 95th (ft)	#264	0	89	0	90	220	198
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1400	1615	974	1615	926	830	859
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.31	0.47	0.27	0.29	0.66	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1152	631	523	1001	119	210	212
v/c Ratio	0.58	0.54	0.76	0.35	0.62	0.70	0.70
Control Delay	19.1	3.3	46.6	0.5	59.4	28.1	27.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	3.3	46.6	0.5	59.4	28.1	27.7
Queue Length 50th (ft)	268	0	130	1	86	45	45
Queue Length 95th (ft)	411	61	182	2	141	125	121
Internal Link Dist (ft)	2412			735		968	
Turn Bay Length (ft)			200		400		
Base Capacity (vph)	1986	1172	691	2842	413	469	481
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.54	0.76	0.35	0.29	0.45	0.44

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	680	1029	307	713	303	140
v/c Ratio	0.33	0.92	0.75	0.22	0.47	0.39
Control Delay	10.6	21.6	39.5	5.5	17.5	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.6	21.6	39.5	5.5	17.5	8.4
Queue Length 50th (ft)	39	213	56	36	34	0
Queue Length 95th (ft)	m46	m#247	#109	51	65	45
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2048	1113	408	3172	649	361
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.92	0.75	0.22	0.47	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	455	816	1111	188	357	409	398
v/c Ratio	0.76	0.35	0.72	0.24	0.80	0.79	0.75
Control Delay	39.4	22.0	30.9	4.6	51.8	31.3	28.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.4	22.0	30.9	4.6	51.8	31.3	28.4
Queue Length 50th (ft)	160	282	351	2	241	160	143
Queue Length 95th (ft)	218	354	462	48	350	291	261
Internal Link Dist (ft)		735	1069			1143	
Turn Bay Length (ft)	235				450		400
Base Capacity (vph)	684	2309	1542	784	506	565	578
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.35	0.72	0.24	0.71	0.72	0.69

Intersection Summary

APPENDIX 5.10:

E+P (PHASE A) CONDITIONS FREEWAY FACILITY ANALYSIS WORKSHEETS

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2516	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	738
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.31
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	10.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2517	965
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	8.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.926	0.893
Flow Rate (vi),pc/h	2955	1175
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.31	0.28

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	4.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.404
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	659
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	58.7
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	1638	Ramp Junction Speed (S), mi/h	65.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	11.3
Level of Service (LOS)	A		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	389	433
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	13.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.885
Flow Rate (vi),pc/h	448	532
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.20	0.28

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	9.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.306
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	448	Ramp Junction Speed (S), mi/h	61.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	980	Average Density (D), pc/mi/ln	8.0
Level of Service (LOS)	A		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1445	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	856
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.36
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	12.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4096	Heavy Vehicle Adjustment Factor (f_{HV})	0.787
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1414
Total Trucks, %	27.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.59
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3452	644
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	29.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.775	0.855
Flow Rate (vi),pc/h	4842	819
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.79	0.39

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	25.6
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.364
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1840
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	59.8
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	65.2
Flow in Lanes 1 and 2 (v12), pc/h	3002	Ramp Junction Speed (S), mi/h	61.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	3821	Average Density (D), pc/mi/ln	30.7
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1338	615
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	31.00	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.763	0.901
Flow Rate (vi),pc/h	1906	742
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.26	0.18

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	14.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.365
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	640
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.8
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	1266	Ramp Junction Speed (S), mi/h	64.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	9.8
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1338	Heavy Vehicle Adjustment Factor (f_{HV})	0.763
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	635
Total Trucks, %	31.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.26
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	9.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7226	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2062
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.86
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.6
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6532	694
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	18.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.847
Flow Rate (vi),pc/h	7312	891
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.85	0.42

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	28.3
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.403
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2194
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	58.7
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.106	Outer Lanes Freeway Speed (SO), mi/h	63.9
Flow in Lanes 1 and 2 (v12), pc/h	2925	Ramp Junction Speed (S), mi/h	61.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	3816	Average Density (D), pc/mi/ln	33.4
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.952	8329	9548	0.87	60.3	34.5	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.952	0.833	8329	842	9600	2100	0.87	0.40	65.5	59.5	31.8	35.2	E

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	7514	9548	0.79	63.9	29.4	D

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.826	8372	858	9600	2100	0.87	0.41	61.2	58.5	34.2	28.5	D

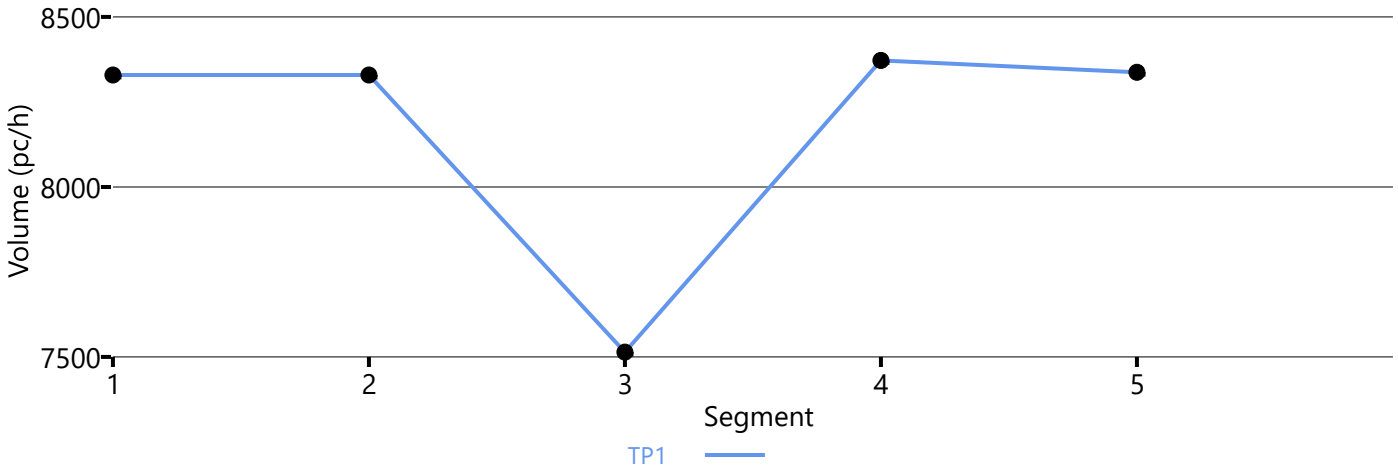
Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.952	8337	9548	0.87	60.3	34.6	D

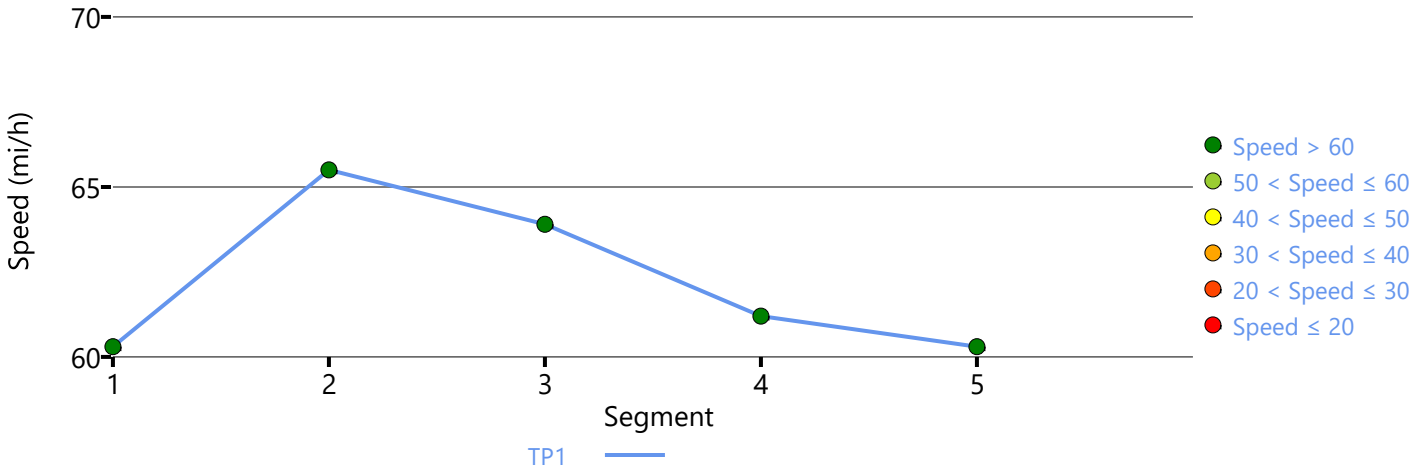
Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	61.9	33.0	31.6	1.8	D

Facility Overall Results			
Space Mean Speed, mi/h	61.9	Density, veh/mi/ln	31.6
Average Travel Time, min	1.8	Density, pc/mi/ln	33.0

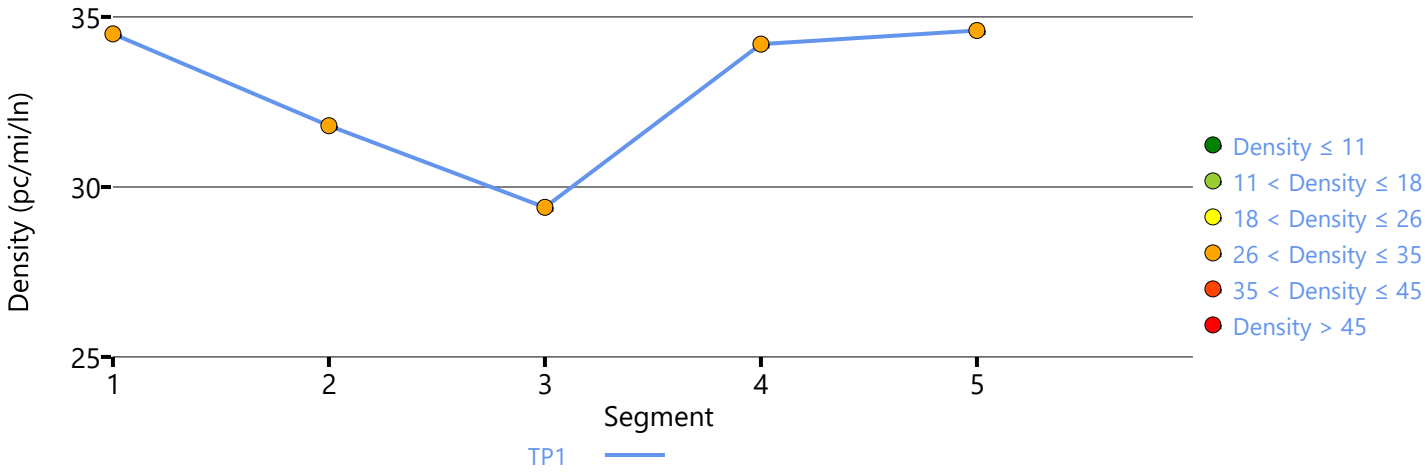
Volume Distribution



Speed Distribution



Density Distribution



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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	5273	746
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	7.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.862
Flow Rate (vi),pc/h	6130	941
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.51	0.45

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	28.4
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.383
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1204
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.3
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.0
Flow in Lanes 1 and 2 (v12), pc/h	2803	Ramp Junction Speed (S), mi/h	66.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	18.6
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5273	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1226
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.51
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7074	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1962
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7074	605
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	18.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.847
Flow Rate (vi),pc/h	7846	776
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.65	0.37

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	27.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.368
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1551
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.7
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	74.6
Flow in Lanes 1 and 2 (v12), pc/h	3174	Ramp Junction Speed (S), mi/h	66.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	23.7
Level of Service (LOS)	C		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.980	8101	9548	0.85	61.4	33.0	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.980	0.885	8101	856	9600	2100	0.84	0.41	65.5	59.5	30.9	34.0	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.990	7254	9548	0.76	64.9	28.0	D

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.990	0.806	7990	736	9600	2100	0.83	0.35	62.0	59.8	32.2	26.4	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	8007	9548	0.84	61.9	32.3	D

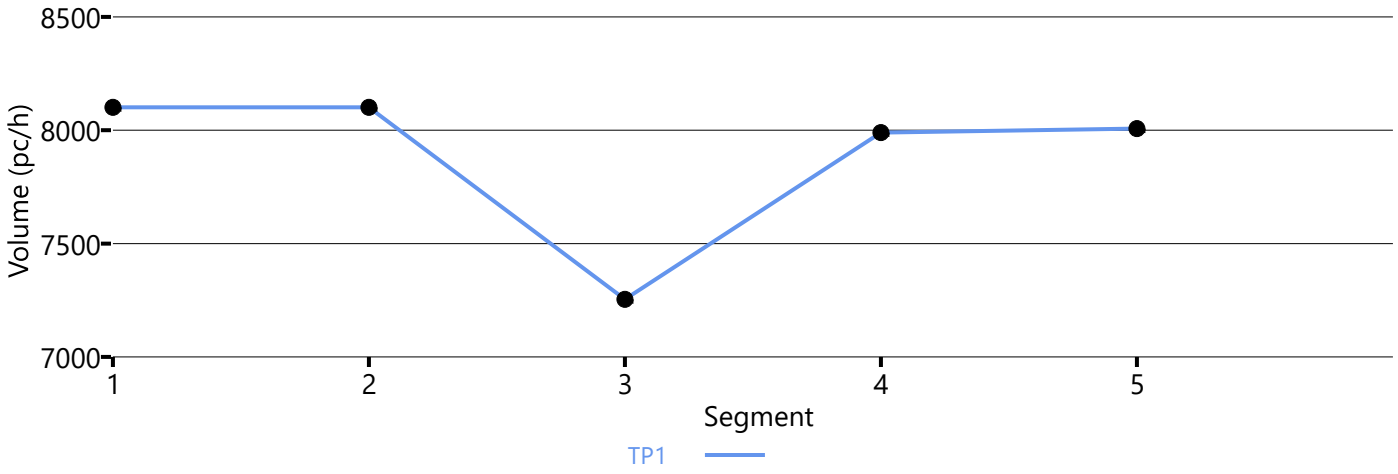
Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	63.0	31.2	30.6	1.7	D

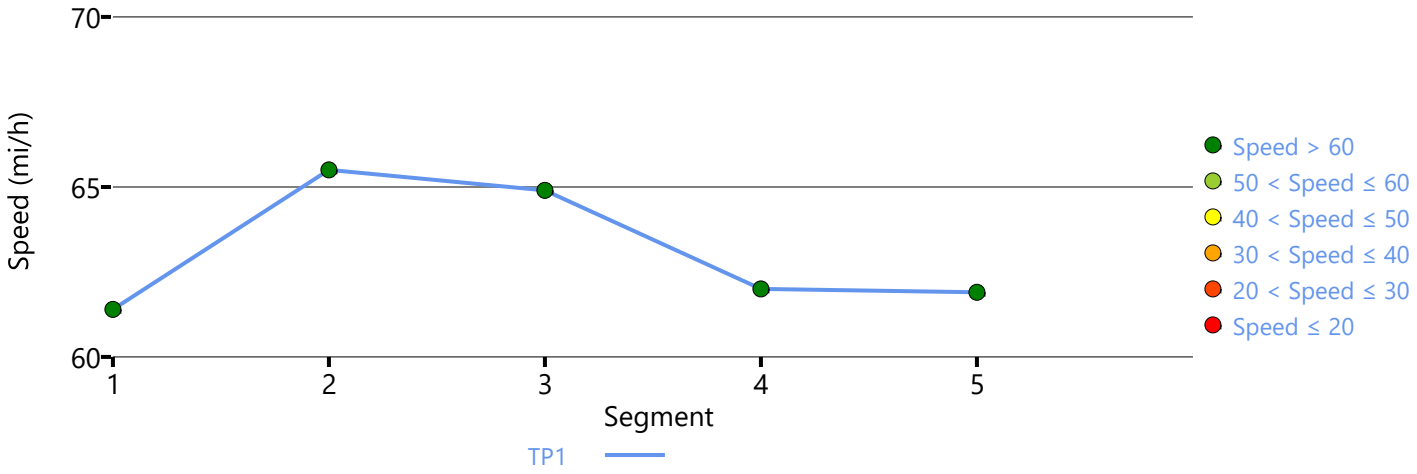
Facility Overall Results

Space Mean Speed, mi/h	63.0	Density, veh/mi/ln	30.6
Average Travel Time, min	1.7	Density, pc/mi/ln	31.2

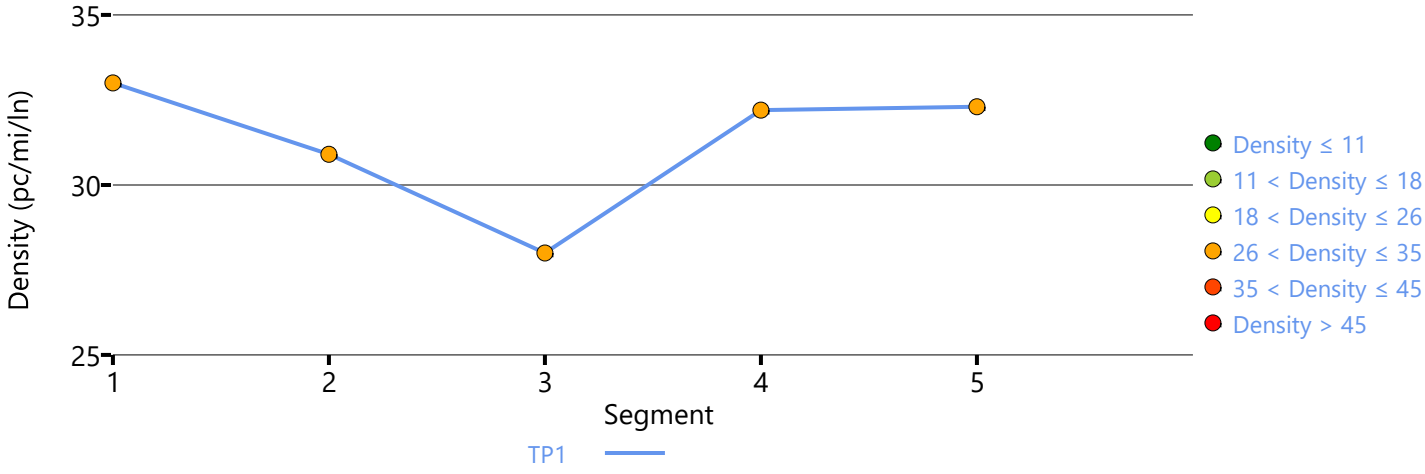
Volume Distribution



Speed Distribution



Density Distribution



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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4344	612
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.855
Flow Rate (vi),pc/h	4769	778
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.58	0.37

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	19.5
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.283
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1431
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	62.1
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.121	Outer Lanes Freeway Speed (SO), mi/h	66.7
Flow in Lanes 1 and 2 (v12), pc/h	1908	Ramp Junction Speed (S), mi/h	64.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	2686	Average Density (D), pc/mi/ln	21.5
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4956	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1387
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4569	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1304
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.54
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4569	1166
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.862
Flow Rate (vi),pc/h	5217	1470
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.54	0.70

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	27.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.430
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1057
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.6
Flow in Lanes 1 and 2 (v12), pc/h	3104	Ramp Junction Speed (S), mi/h	64.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	20.3
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3272	1096
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.952
Flow Rate (vi),pc/h	3663	1251
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.68	0.60

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	1473.6	Density in Ramp Influence Area (DR), pc/mi/ln	25.4
Distance to Upstream Ramp (LUP), ft	1930	Speed Index (M)	0.351
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1440
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	60.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	66.6
Flow in Lanes 1 and 2 (v12), pc/h	2223	Ramp Junction Speed (S), mi/h	61.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	3474	Average Density (D), pc/mi/ln	26.5
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4368	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1630
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.68
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Existing (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5117	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1135
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.47
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 NB, On-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4105	1012
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	0.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	1.000	0.909
Flow Rate (vi),pc/h	4462	1210
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.79	0.64

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	118.8	Density in Ramp Influence Area (DR), pc/mi/ln	34.5
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.493
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1883
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	56.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	65.0
Flow in Lanes 1 and 2 (v12), pc/h	2579	Ramp Junction Speed (S), mi/h	58.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	3789	Average Density (D), pc/mi/ln	32.2
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4004	479
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	4.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.962
Flow Rate (vi),pc/h	4396	541
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.61	0.26

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	25.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.347
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1446
Distance to Downstream Ramp (LDOWN), ft	2000	Off-Ramp Influenece Area Speed (SR), mi/h	60.3
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.625	Outer Lanes Freeway Speed (SO), mi/h	75.1
Flow in Lanes 1 and 2 (v12), pc/h	2950	Ramp Junction Speed (S), mi/h	64.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	22.7
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4004	Heavy Vehicle Adjustment Factor (f_{HV})	0.990
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1465
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.61
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4093	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1168
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.49
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4093	1140
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.926
Flow Rate (vi),pc/h	4673	1338
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.49	0.32

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	9.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.418
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1234
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	58.3
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	75.9
Flow in Lanes 1 and 2 (v12), pc/h	2205	Ramp Junction Speed (S), mi/h	66.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	17.6
Level of Service (LOS)	A		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	277	665
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	11.00	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.901	0.935
Flow Rate (vi),pc/h	334	773
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.23	0.41

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	10.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.307
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	334	Ramp Junction Speed (S), mi/h	61.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	1107	Average Density (D), pc/mi/ln	9.0
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1592	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	918
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.38
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3599	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1037
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.43
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2591	1008
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	2987	1162
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.58	0.55

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	19.1
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.265
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1135
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	62.6
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	67.7
Flow in Lanes 1 and 2 (v12), pc/h	1852	Ramp Junction Speed (S), mi/h	63.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	3014	Average Density (D), pc/mi/ln	21.6
Level of Service (LOS)	B		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2656	979
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	14.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.877	0.943
Flow Rate (vi),pc/h	3292	1128
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.46	0.27

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	21.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.400
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1190
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.8
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	76.0
Flow in Lanes 1 and 2 (v12), pc/h	2102	Ramp Junction Speed (S), mi/h	64.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	17.1
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2656	Heavy Vehicle Adjustment Factor (f_{HV})	0.877
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1097
Total Trucks, %	14.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.46
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7059	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1994
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6400	659
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	13.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.885
Flow Rate (vi),pc/h	7164	809
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.83	0.39

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	27.2
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.379
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2149
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	59.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.117	Outer Lanes Freeway Speed (SO), mi/h	64.1
Flow in Lanes 1 and 2 (v12), pc/h	2866	Ramp Junction Speed (S), mi/h	61.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	3675	Average Density (D), pc/mi/ln	32.3
Level of Service (LOS)	C		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	7883	9548	0.83	62.4	31.6	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.855	7883	642	9600	2100	0.82	0.31	66.0	60.0	29.9	32.6	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	7245	9548	0.76	64.9	27.9	D

Segment 4: Merge

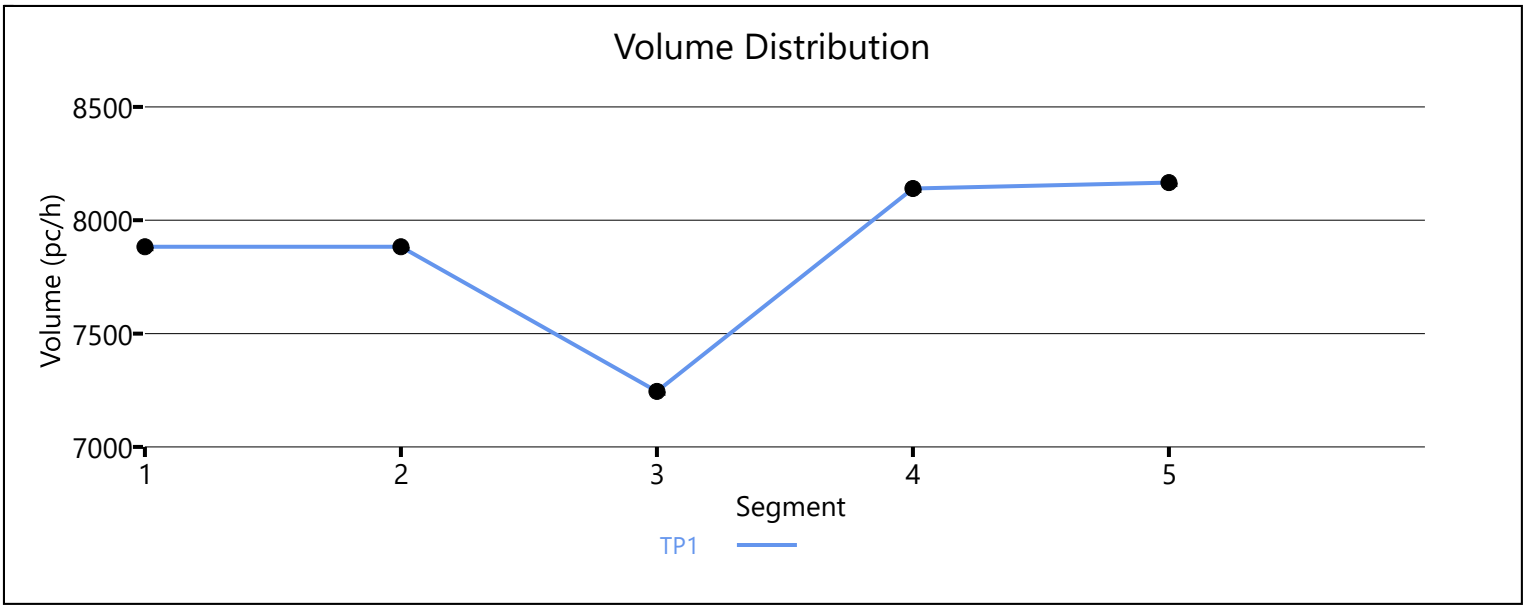
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.971	0.917	8140	895	9600	2100	0.85	0.43	61.5	58.9	33.1	27.9	C

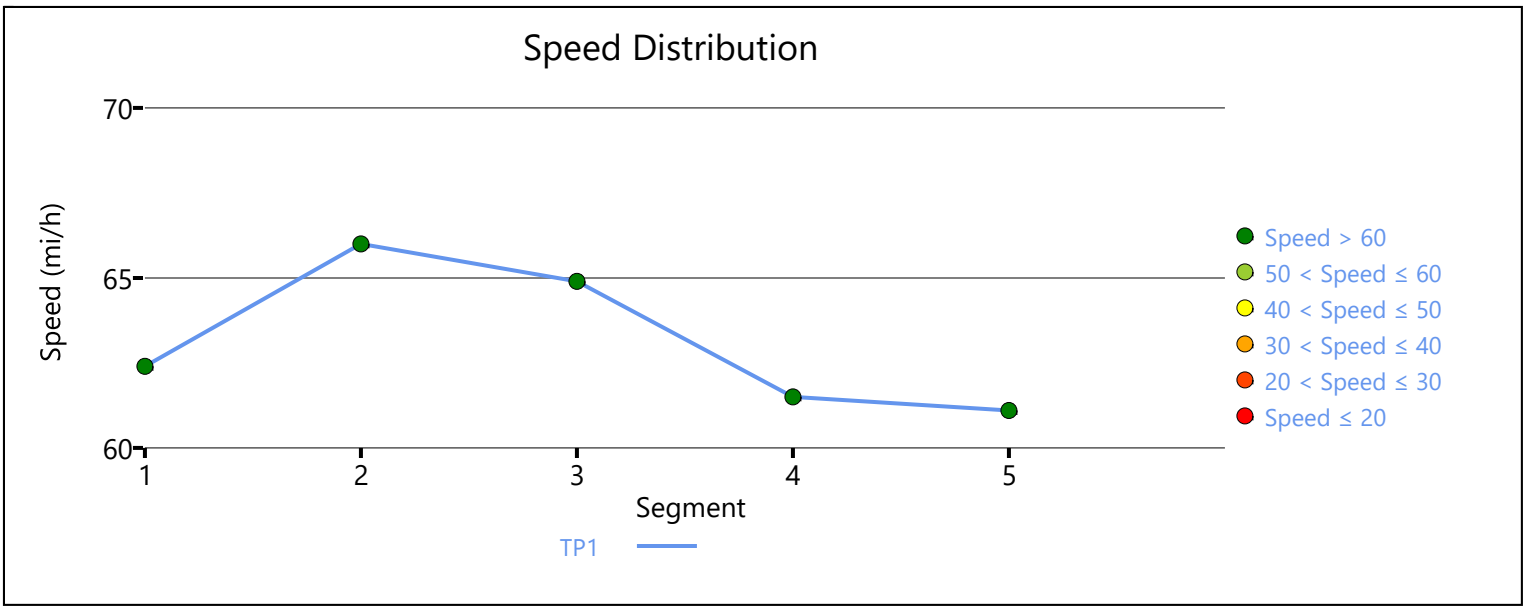
Segment 5: Basic

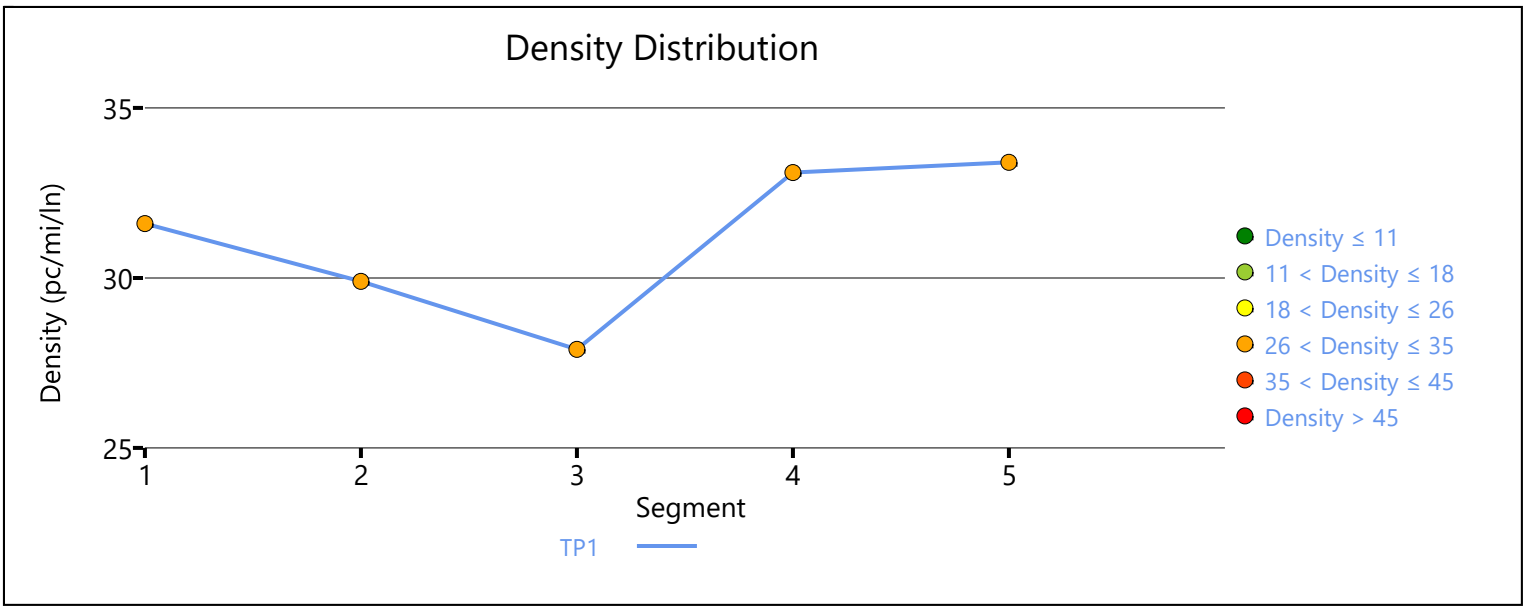
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	8166	9548	0.86	61.1	33.4	D

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	62.8	31.4	30.3	1.8	D

Facility Overall Results			
Space Mean Speed, mi/h	62.8	Density, veh/mi/ln	30.3
Average Travel Time, min	1.8	Density, pc/mi/ln	31.4







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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4383	564
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	7.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.893
Flow Rate (vi),pc/h	5095	686
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.42	0.33

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	24.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.360
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1100
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.9
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.4
Flow in Lanes 1 and 2 (v12), pc/h	2386	Ramp Junction Speed (S), mi/h	66.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	15.3
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4947	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1161
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.48
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.6
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6152	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1706
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.71
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6152	615
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.862
Flow Rate (vi),pc/h	6823	775
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.57	0.37

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	25.3
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.368
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1417
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.7
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	75.2
Flow in Lanes 1 and 2 (v12), pc/h	2966	Ramp Junction Speed (S), mi/h	66.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	20.6
Level of Service (LOS)	C		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.980	6963	9548	0.73	65.8	26.5	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.980	0.840	6963	766	9600	2100	0.73	0.36	66.1	59.7	26.3	29.3	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	1.000	6180	9548	0.65	67.7	22.8	C

Segment 4: Merge

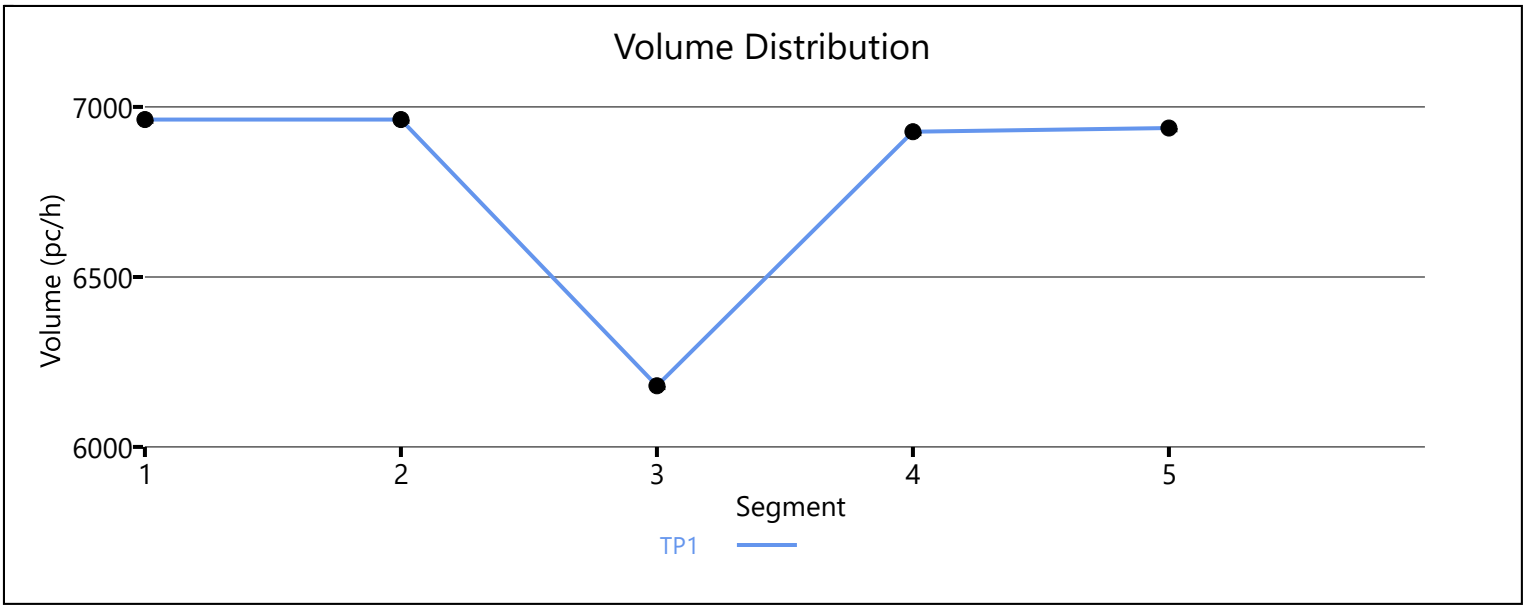
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.94	1.000	0.901	6927	747	9600	2100	0.72	0.36	63.2	61.2	27.4	23.1	C

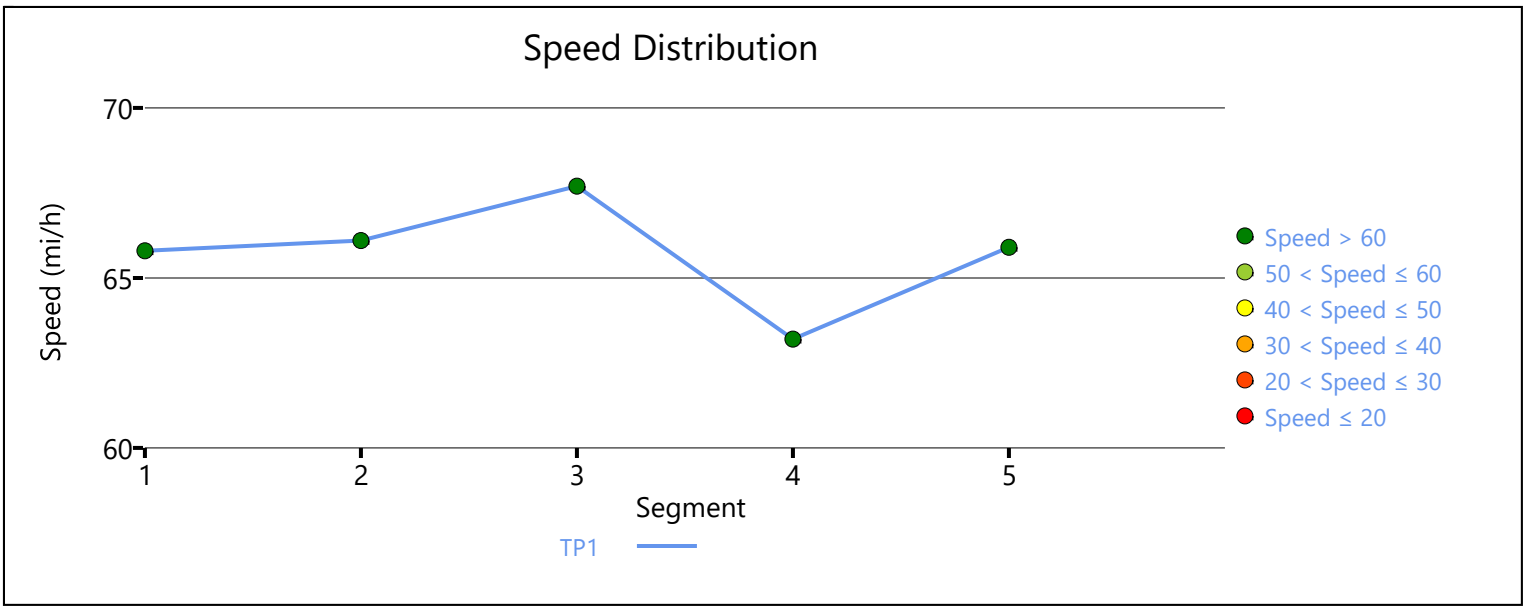
Segment 5: Basic

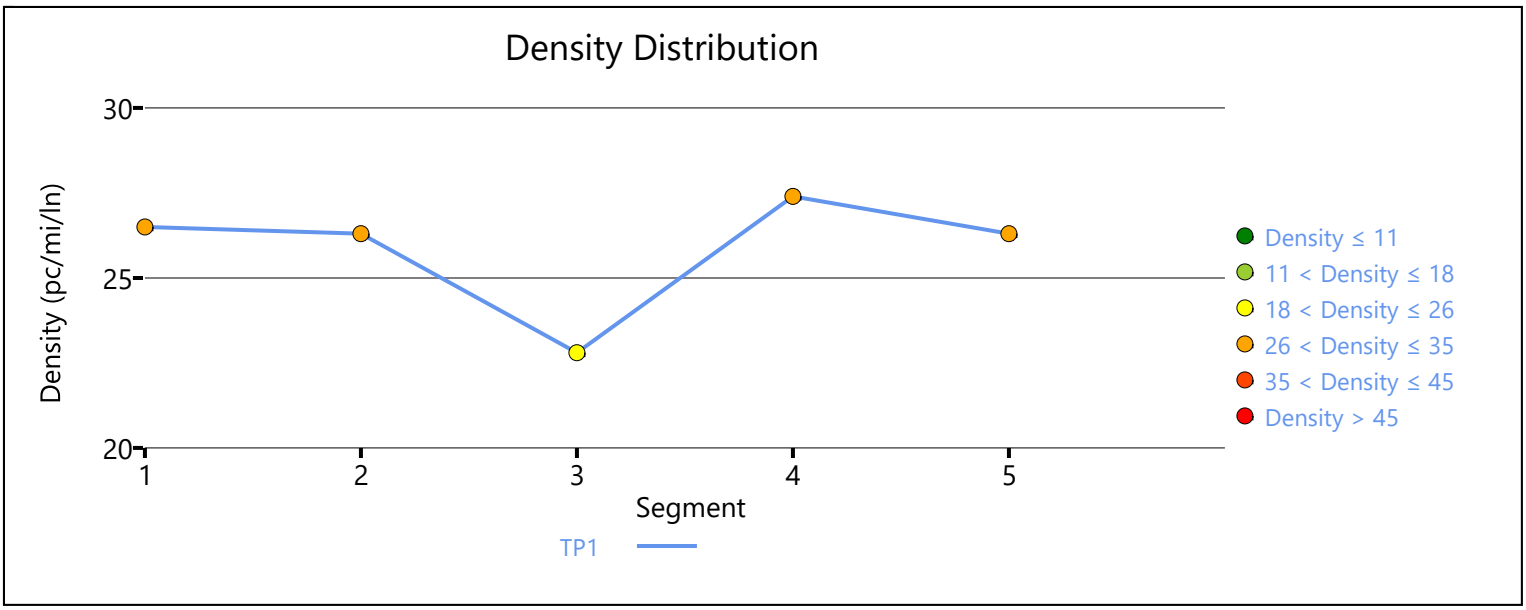
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.990	6938	9548	0.73	65.9	26.3	D

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	65.8	25.7	25.5	1.6	C

Facility Overall Results			
Space Mean Speed, mi/h	65.8	Density, veh/mi/ln	25.5
Average Travel Time, min	1.6	Density, pc/mi/ln	25.7







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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4126	827
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.926
Flow Rate (vi),pc/h	4576	971
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.58	0.46

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	20.3
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.290
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1373
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.9
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.096	Outer Lanes Freeway Speed (SO), mi/h	66.9
Flow in Lanes 1 and 2 (v12), pc/h	1830	Ramp Junction Speed (S), mi/h	64.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	2801	Average Density (D), pc/mi/ln	21.6
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4953	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1386
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3603	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1038
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.43
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3603	1120
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.909
Flow Rate (vi),pc/h	4153	1339
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.43	0.64

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	23.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.419
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	794
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.3
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	2566	Ramp Junction Speed (S), mi/h	64.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	16.2
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2814	1025
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.990
Flow Rate (vi),pc/h	3213	1125
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.60	0.54

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	1350.4	Density in Ramp Influence Area (DR), pc/mi/ln	22.4
Distance to Upstream Ramp (LUP), ft	1930	Speed Index (M)	0.310
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1263
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	67.3
Flow in Lanes 1 and 2 (v12), pc/h	1950	Ramp Junction Speed (S), mi/h	62.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	3075	Average Density (D), pc/mi/ln	23.0
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3839	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1446
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.60
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4449	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	996
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.42
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 NB, On-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3512	937
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.909
Flow Rate (vi),pc/h	3856	1120
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.69	0.59

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	0.0	Density in Ramp Influence Area (DR), pc/mi/ln	31.2
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.432
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1627
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	57.9
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	65.9
Flow in Lanes 1 and 2 (v12), pc/h	2229	Ramp Junction Speed (S), mi/h	60.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	3349	Average Density (D), pc/mi/ln	27.5
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4345	1088
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.971
Flow Rate (vi),pc/h	4864	1218
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.68	0.58

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	29.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.408
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1524
Distance to Downstream Ramp (LDOWN), ft	2000	Off-Ramp Influenece Area Speed (SR), mi/h	58.6
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.582	Outer Lanes Freeway Speed (SO), mi/h	74.7
Flow in Lanes 1 and 2 (v12), pc/h	3340	Ramp Junction Speed (S), mi/h	62.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	25.8
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/11/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4345	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1621
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.68
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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APPENDIX 5.11:

E+P (PHASE B) CONDITIONS FREEWAY FACILITY ANALYSIS WORKSHEETS

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2550	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	748
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.31
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	10.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2550	999
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	8.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.926	0.893
Flow Rate (vi),pc/h	2993	1216
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.31	0.29

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	5.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.407
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	658
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	58.6
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	1678	Ramp Junction Speed (S), mi/h	65.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	11.4
Level of Service (LOS)	A		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	389	446
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	14.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.877
Flow Rate (vi),pc/h	448	553
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.21	0.29

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	9.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.306
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	448	Ramp Junction Speed (S), mi/h	61.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	1001	Average Density (D), pc/mi/ln	8.2
Level of Service (LOS)	A		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1458	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	864
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.36
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	12.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4106	Heavy Vehicle Adjustment Factor (f_{HV})	0.787
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1418
Total Trucks, %	27.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.59
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3452	654
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	29.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.775	0.855
Flow Rate (vi),pc/h	4842	831
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.79	0.40

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	25.7
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.366
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1840
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	59.8
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	65.2
Flow in Lanes 1 and 2 (v12), pc/h	3002	Ramp Junction Speed (S), mi/h	61.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	3833	Average Density (D), pc/mi/ln	30.7
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1379	656
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	31.00	13.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.763	0.885
Flow Rate (vi),pc/h	1964	806
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.27	0.19

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	14.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.371
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	637
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.6
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	1327	Ramp Junction Speed (S), mi/h	64.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	10.2
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1379	Heavy Vehicle Adjustment Factor (f_{HV})	0.763
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	655
Total Trucks, %	31.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.27
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	9.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7243	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2068
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.86
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6536	707
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	18.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.847
Flow Rate (vi),pc/h	7317	907
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.86	0.43

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	28.4
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.406
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2195
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	58.6
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.104	Outer Lanes Freeway Speed (SO), mi/h	63.9
Flow in Lanes 1 and 2 (v12), pc/h	2927	Ramp Junction Speed (S), mi/h	61.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	3834	Average Density (D), pc/mi/ln	33.5
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.952	8338	9548	0.87	60.3	34.6	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.952	0.833	8338	852	9600	2100	0.87	0.41	65.4	59.5	31.9	35.3	E

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	7514	9548	0.79	63.9	29.4	D

Segment 4: Merge

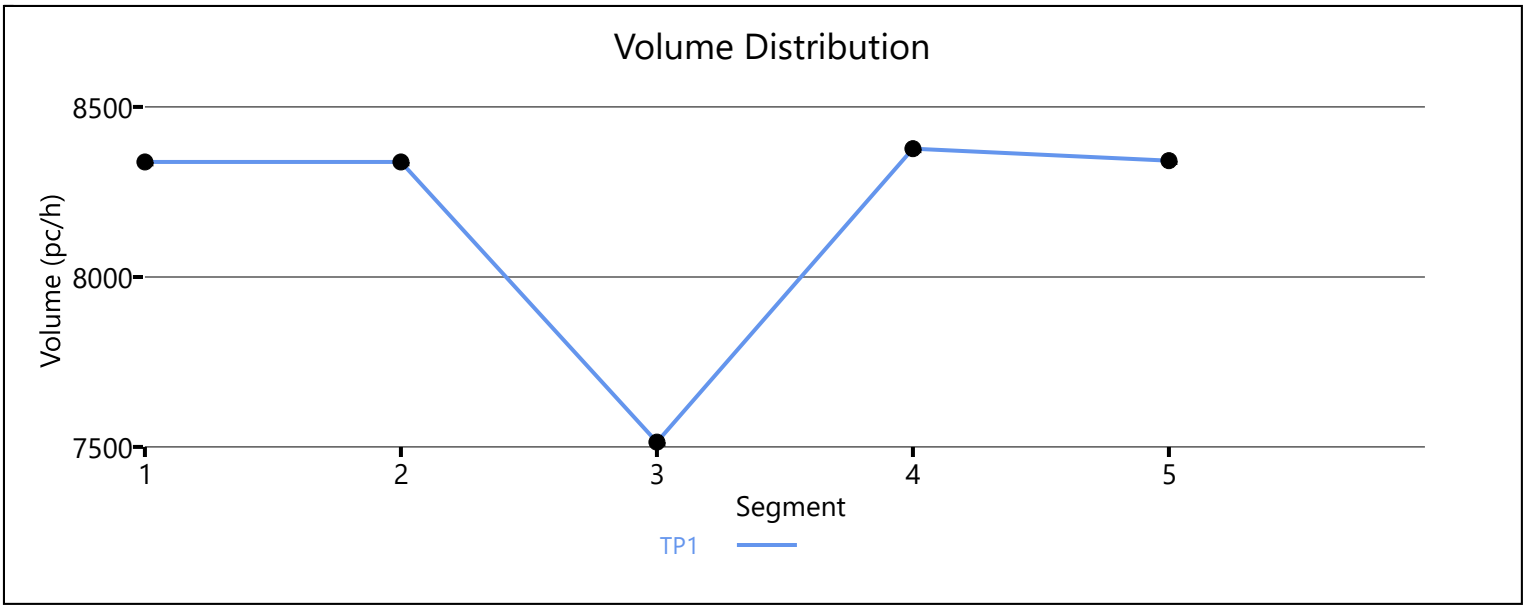
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.826	8377	863	9600	2100	0.87	0.41	61.2	58.5	34.2	28.5	D

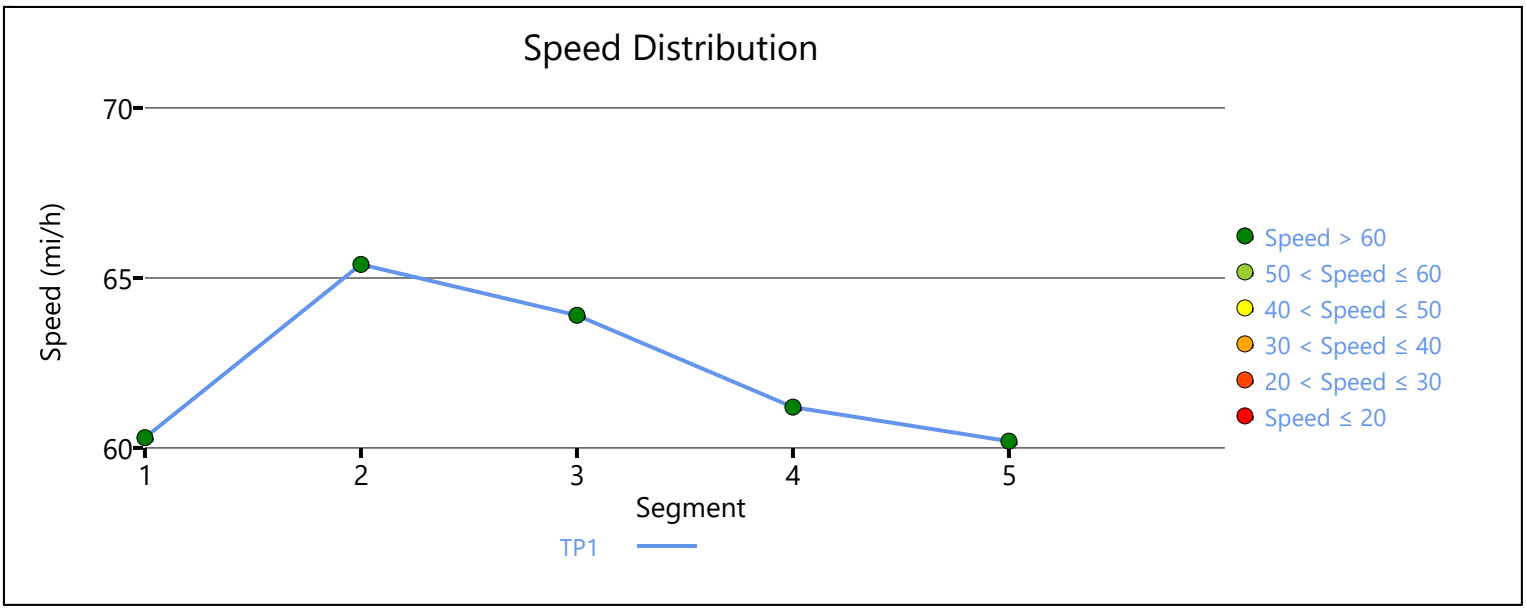
Segment 5: Basic

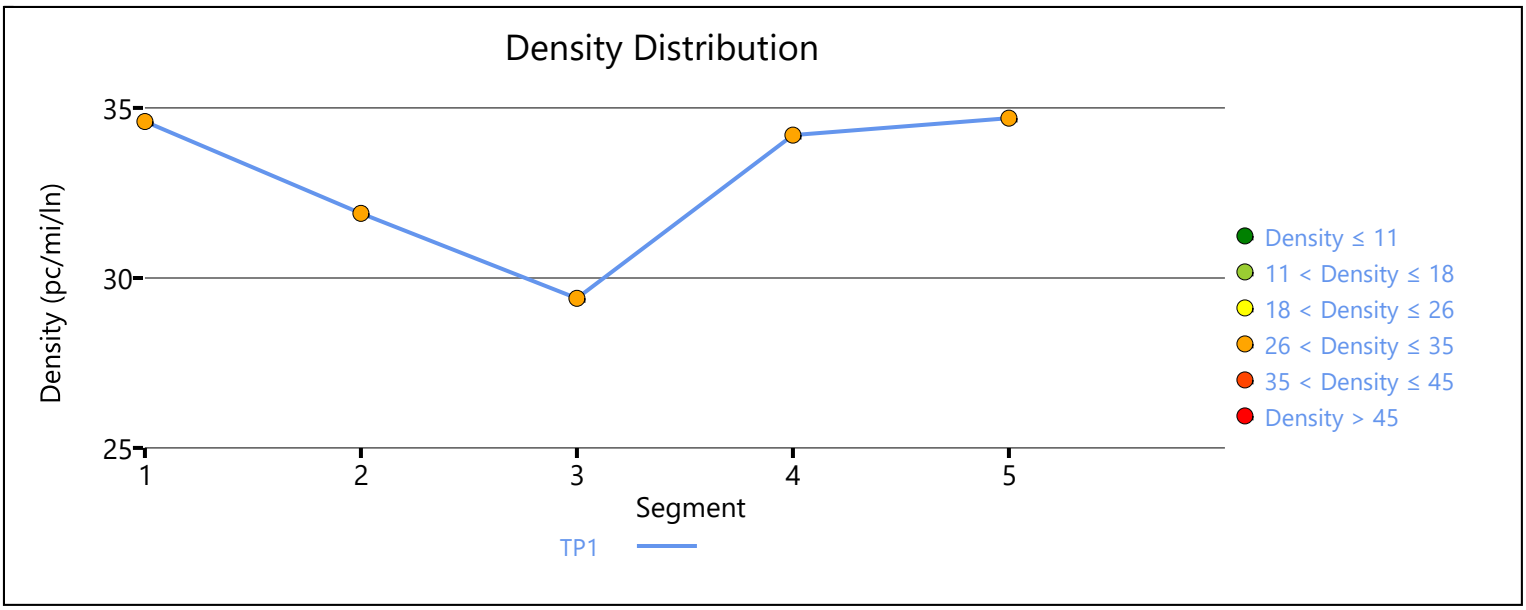
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.952	8342	9548	0.87	60.2	34.7	D

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	61.8	33.1	31.6	1.8	D

Facility Overall Results			
Space Mean Speed, mi/h	61.8	Density, veh/mi/ln	31.6
Average Travel Time, min	1.8	Density, pc/mi/ln	33.1







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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	5322	789
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	7.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.855
Flow Rate (vi),pc/h	6187	1003
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.52	0.48

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	28.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.388
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1200
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.0
Flow in Lanes 1 and 2 (v12), pc/h	2859	Ramp Junction Speed (S), mi/h	65.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	18.8
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5322	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1237
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.52
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7130	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1977
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7130	650
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	20.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.833
Flow Rate (vi),pc/h	7908	848
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.66	0.40

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	27.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.374
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1545
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	74.7
Flow in Lanes 1 and 2 (v12), pc/h	3237	Ramp Junction Speed (S), mi/h	66.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	23.9
Level of Service (LOS)	C		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.980	8113	9548	0.85	61.4	33.0	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.980	0.893	8113	862	9600	2100	0.85	0.41	65.5	59.5	31.0	34.1	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.990	7254	9548	0.76	64.9	28.0	D

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.990	0.806	7993	739	9600	2100	0.83	0.35	62.0	59.8	32.2	26.4	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	8009	9548	0.84	61.9	32.3	D

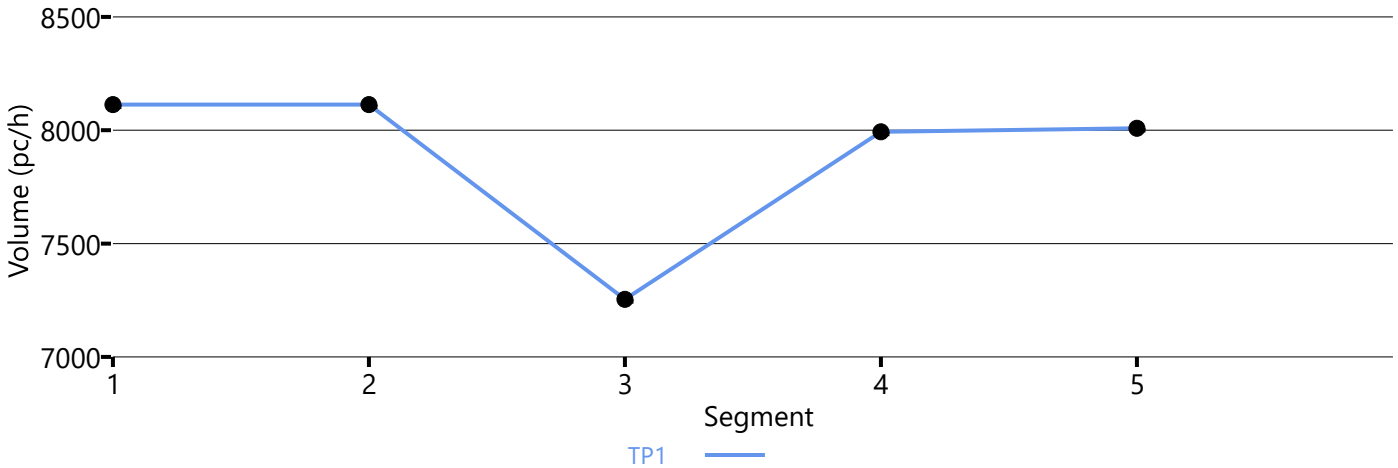
Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	63.0	31.2	30.6	1.7	D

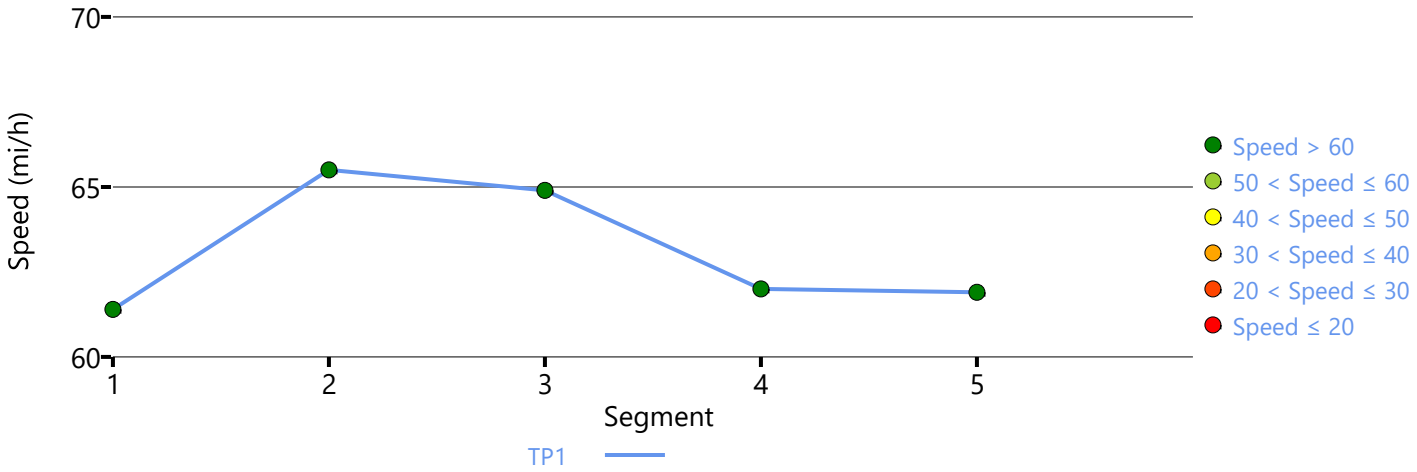
Facility Overall Results

Space Mean Speed, mi/h	63.0	Density, veh/mi/ln	30.6
Average Travel Time, min	1.7	Density, pc/mi/ln	31.2

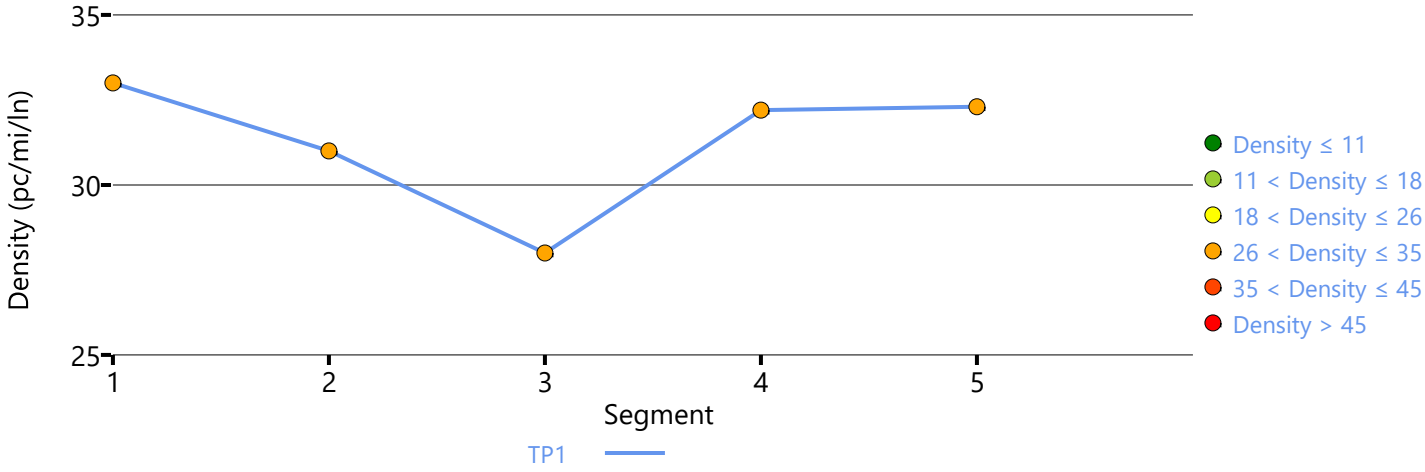
Volume Distribution



Speed Distribution



Density Distribution



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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4346	625
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.855
Flow Rate (vi),pc/h	4772	795
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.58	0.38

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	19.6
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.284
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1432
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	62.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.118	Outer Lanes Freeway Speed (SO), mi/h	66.6
Flow in Lanes 1 and 2 (v12), pc/h	1909	Ramp Junction Speed (S), mi/h	64.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	2704	Average Density (D), pc/mi/ln	21.6
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4971	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1391
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4648	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1340
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.56
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4648	1245
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.862
Flow Rate (vi),pc/h	5358	1570
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.56	0.75

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	28.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.439
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1068
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	57.7
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.5
Flow in Lanes 1 and 2 (v12), pc/h	3222	Ramp Junction Speed (S), mi/h	64.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	20.9
Level of Service (LOS)	D		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3272	1106
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.952
Flow Rate (vi),pc/h	3663	1263
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.68	0.60

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	1476.2	Density in Ramp Influence Area (DR), pc/mi/ln	25.5
Distance to Upstream Ramp (LUP), ft	1930	Speed Index (M)	0.353
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1440
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	60.1
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	66.6
Flow in Lanes 1 and 2 (v12), pc/h	2223	Ramp Junction Speed (S), mi/h	61.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	3486	Average Density (D), pc/mi/ln	26.5
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4378	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1634
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.68
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5141	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1140
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.48
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 NB, On-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4105	1036
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	0.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	1.000	0.909
Flow Rate (vi),pc/h	4462	1239
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.79	0.65

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	125.0	Density in Ramp Influence Area (DR), pc/mi/ln	34.8
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.499
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1883
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	56.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	65.0
Flow in Lanes 1 and 2 (v12), pc/h	2579	Ramp Junction Speed (S), mi/h	58.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	3818	Average Density (D), pc/mi/ln	32.4
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4038	513
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.952
Flow Rate (vi),pc/h	4479	586
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.62	0.28

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	26.3
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.351
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1475
Distance to Downstream Ramp (LDOWN), ft	2000	Off-Ramp Influenece Area Speed (SR), mi/h	60.2
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.621	Outer Lanes Freeway Speed (SO), mi/h	74.9
Flow in Lanes 1 and 2 (v12), pc/h	3004	Ramp Junction Speed (S), mi/h	64.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	23.2
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4038	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1493
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.62
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.6
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4109	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1173
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.49
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4109	1156
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.926
Flow Rate (vi),pc/h	4691	1357
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.49	0.32

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	9.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.420
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1234
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	58.2
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	75.9
Flow in Lanes 1 and 2 (v12), pc/h	2224	Ramp Junction Speed (S), mi/h	66.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	17.7
Level of Service (LOS)	A		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	277	714
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	11.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.901	0.926
Flow Rate (vi),pc/h	334	838
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.24	0.44

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	11.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.308
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	334	Ramp Junction Speed (S), mi/h	61.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	1172	Average Density (D), pc/mi/ln	9.5
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1641	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	954
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.40
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.6
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3643	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1050
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.44
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2591	1052
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	2987	1213
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.58	0.58

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	19.5
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.270
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1135
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	62.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	67.7
Flow in Lanes 1 and 2 (v12), pc/h	1852	Ramp Junction Speed (S), mi/h	63.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	3065	Average Density (D), pc/mi/ln	22.0
Level of Service (LOS)	B		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2675	998
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	15.00	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.870	0.935
Flow Rate (vi),pc/h	3342	1160
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.46	0.28

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	21.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.402
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1200
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.7
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	76.0
Flow in Lanes 1 and 2 (v12), pc/h	2142	Ramp Junction Speed (S), mi/h	63.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	17.4
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2675	Heavy Vehicle Adjustment Factor (f_{HV})	0.870
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1114
Total Trucks, %	15.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.46
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7125	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2012
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.84
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6415	710
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	15.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.870
Flow Rate (vi),pc/h	7181	887
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.84	0.42

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	27.8
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.393
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2155
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	59.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.107	Outer Lanes Freeway Speed (SO), mi/h	64.0
Flow in Lanes 1 and 2 (v12), pc/h	2872	Ramp Junction Speed (S), mi/h	61.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	3759	Average Density (D), pc/mi/ln	32.7
Level of Service (LOS)	C		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	7887	9548	0.83	62.4	31.6	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.855	7887	646	9600	2100	0.82	0.31	66.0	60.0	29.9	32.6	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	7245	9548	0.76	64.9	27.9	D

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.971	0.917	8158	913	9600	2100	0.85	0.43	61.5	58.8	33.2	28.0	C

Segment 5: Basic

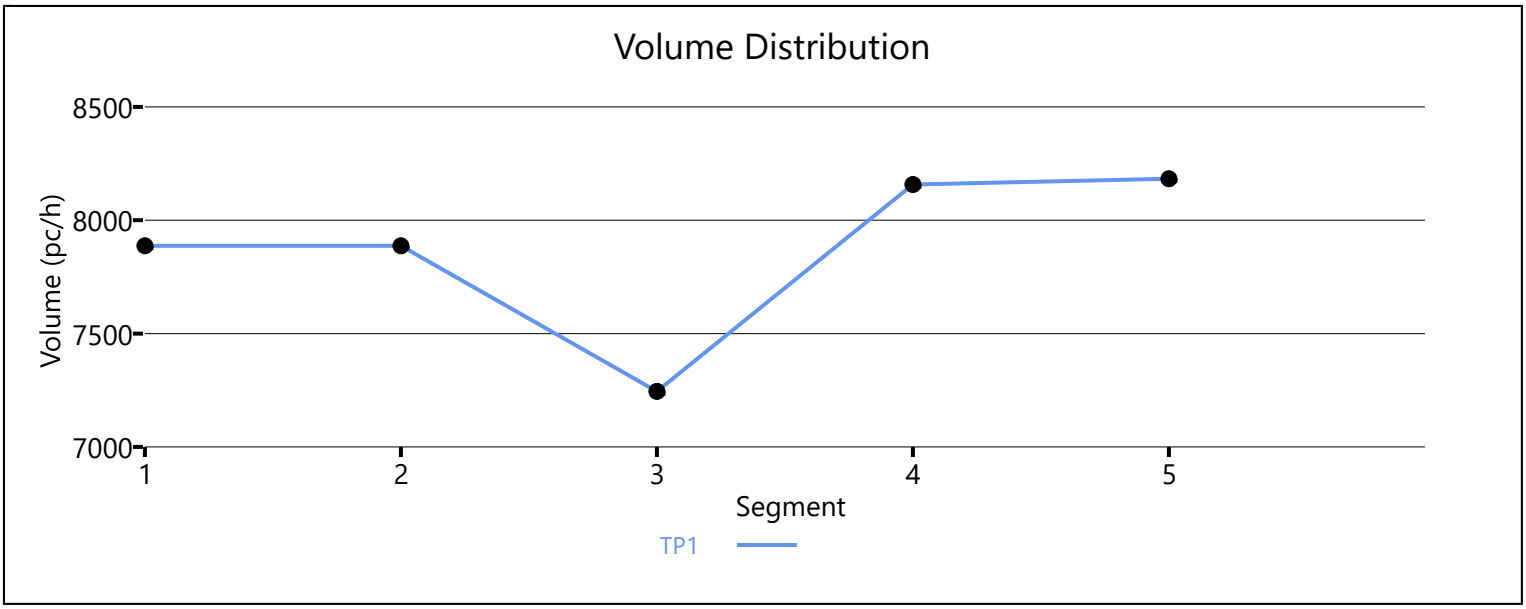
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	8183	9548	0.86	61.0	33.5	D

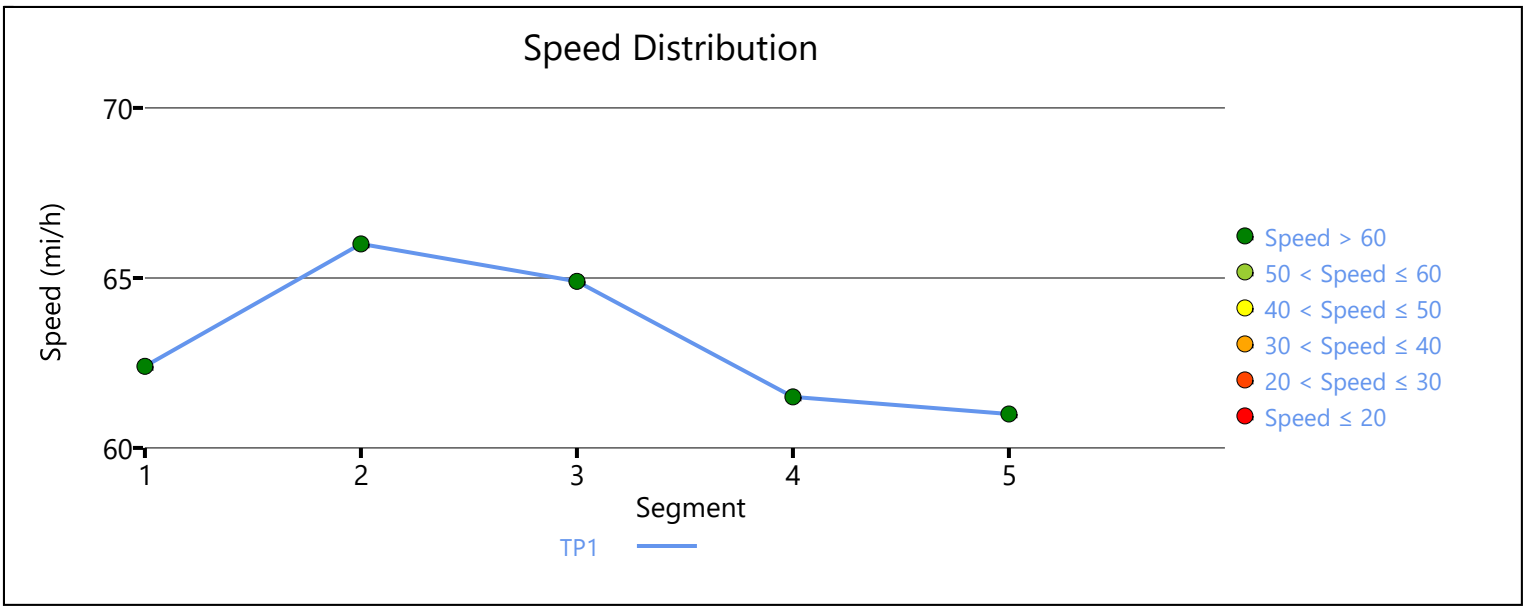
Facility Time Period Results

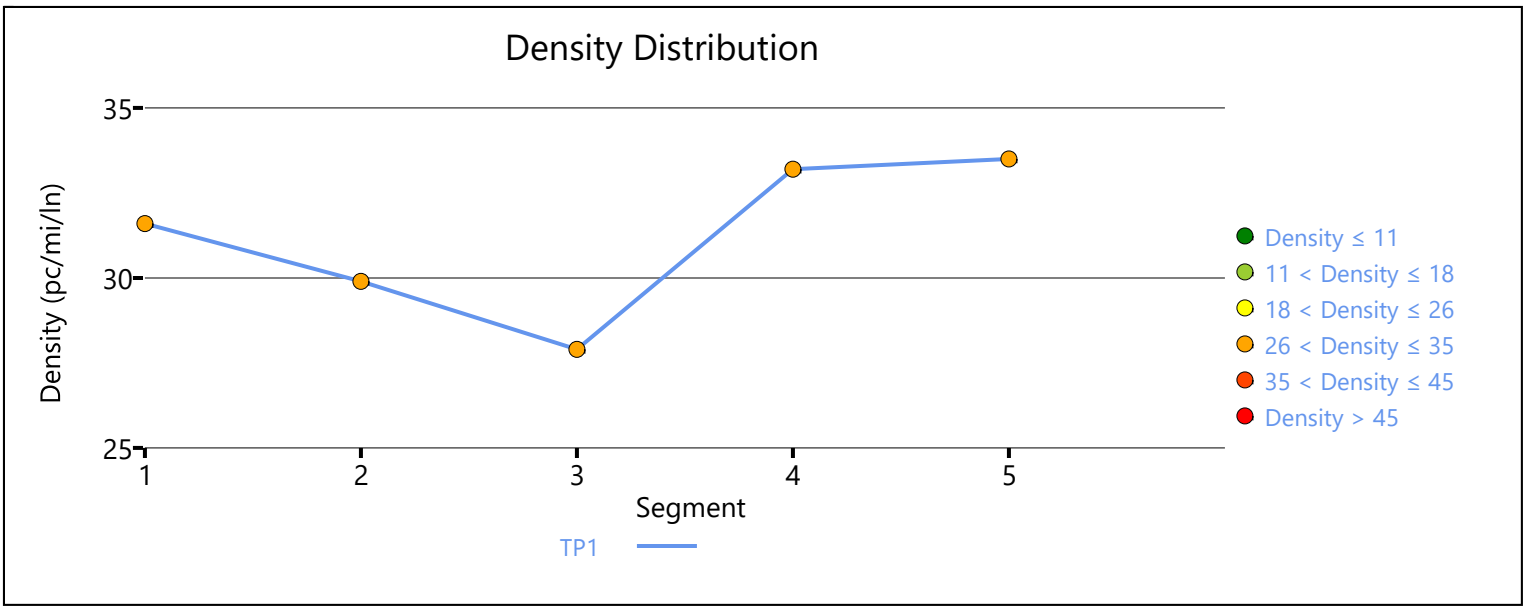
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	62.8	31.4	30.3	1.8	D

Facility Overall Results

Space Mean Speed, mi/h	62.8	Density, veh/mi/ln	30.3
Average Travel Time, min	1.8	Density, pc/mi/ln	31.4







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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4386	583
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	7.00	13.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.885
Flow Rate (vi),pc/h	5099	716
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.42	0.34

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	24.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.362
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1092
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.9
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.4
Flow in Lanes 1 and 2 (v12), pc/h	2405	Ramp Junction Speed (S), mi/h	66.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	15.3
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4969	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1167
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.49
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase A)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6178	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1713
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.71
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.6
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6178	635
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.855
Flow Rate (vi),pc/h	6852	807
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.57	0.38

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	25.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.371
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1415
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.6
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	75.2
Flow in Lanes 1 and 2 (v12), pc/h	2994	Ramp Junction Speed (S), mi/h	66.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	20.7
Level of Service (LOS)	C		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.980	6970	9548	0.73	65.8	26.5	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.980	0.840	6970	774	9600	2100	0.73	0.37	66.1	59.7	26.4	29.4	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	1.000	6180	9548	0.65	67.7	22.8	C

Segment 4: Merge

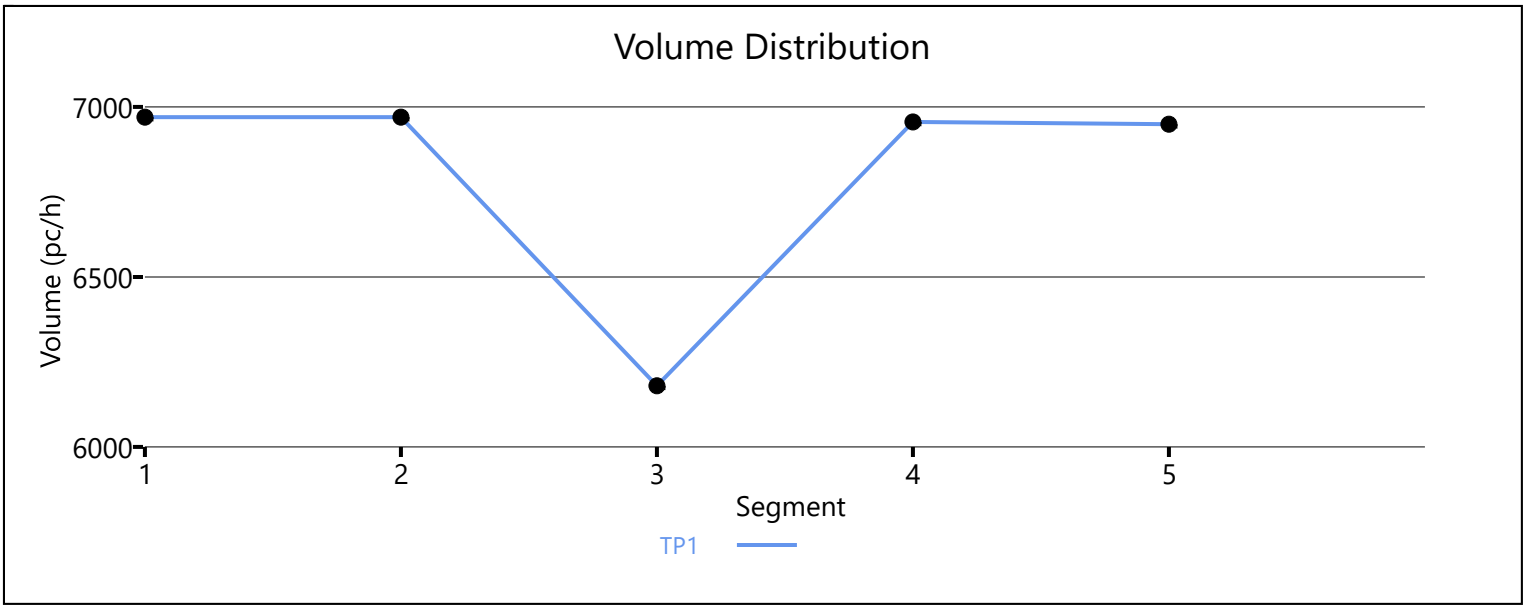
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	1.000	0.901	6956	776	9600	2100	0.72	0.37	63.2	61.1	27.5	23.3	C

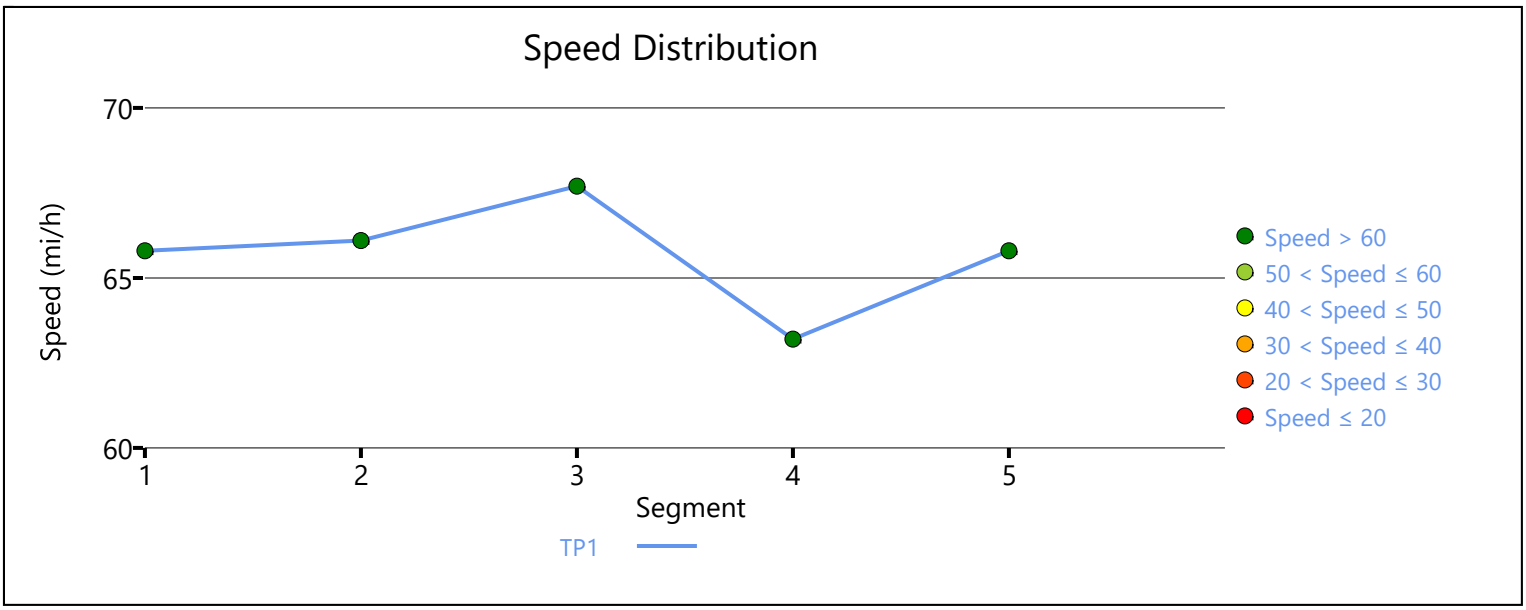
Segment 5: Basic

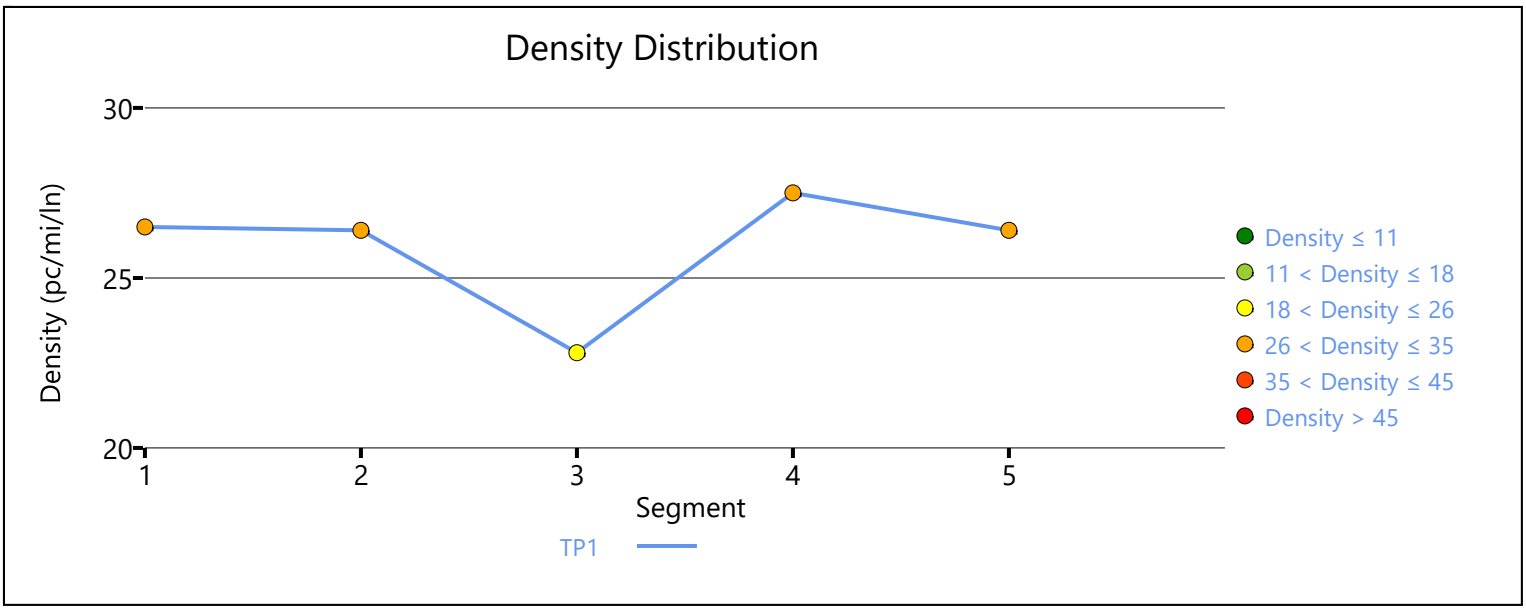
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.990	6949	9548	0.73	65.8	26.4	D

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	65.8	25.8	25.5	1.6	C

Facility Overall Results			
Space Mean Speed, mi/h	65.8	Density, veh/mi/ln	25.5
Average Travel Time, min	1.6	Density, pc/mi/ln	25.8







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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4136	876
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	9.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.917
Flow Rate (vi),pc/h	4587	1038
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.59	0.49

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	20.8
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.295
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1376
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.7
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.088	Outer Lanes Freeway Speed (SO), mi/h	66.8
Flow in Lanes 1 and 2 (v12), pc/h	1835	Ramp Junction Speed (S), mi/h	64.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	2873	Average Density (D), pc/mi/ln	21.9
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5012	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1403
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3641	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1049
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.44
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3641	1158
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.909
Flow Rate (vi),pc/h	4197	1385
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.44	0.66

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	23.4
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.423
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	793
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.2
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	2611	Ramp Junction Speed (S), mi/h	64.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	16.4
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2814	1066
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.980
Flow Rate (vi),pc/h	3213	1182
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.61	0.56

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	1362.6	Density in Ramp Influence Area (DR), pc/mi/ln	22.8
Distance to Upstream Ramp (LUP), ft	1930	Speed Index (M)	0.315
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1263
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	67.3
Flow in Lanes 1 and 2 (v12), pc/h	1950	Ramp Junction Speed (S), mi/h	62.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	3132	Average Density (D), pc/mi/ln	23.3
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3880	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1461
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.61
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4547	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1028
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.43
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 NB, On-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3512	1035
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.901
Flow Rate (vi),pc/h	3856	1249
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.71	0.66

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	0.0	Density in Ramp Influence Area (DR), pc/mi/ln	32.1
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.447
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1627
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	57.5
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	65.9
Flow in Lanes 1 and 2 (v12), pc/h	2229	Ramp Junction Speed (S), mi/h	59.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	3478	Average Density (D), pc/mi/ln	28.4
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4361	1104
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	4.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.962
Flow Rate (vi),pc/h	4882	1247
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.68	0.59

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	29.4
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.410
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1523
Distance to Downstream Ramp (LDOWN), ft	2000	Off-Ramp Influenece Area Speed (SR), mi/h	58.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.581	Outer Lanes Freeway Speed (SO), mi/h	74.8
Flow in Lanes 1 and 2 (v12), pc/h	3359	Ramp Junction Speed (S), mi/h	62.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	25.9
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4363	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1628
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.68
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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APPENDIX 5.12:

E+P (PHASE C) CONDITIONS FREEWAY FACILITY ANALYSIS WORKSHEETS

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2583	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	758
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.32
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	10.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2583	1032
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	8.00	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.926	0.901
Flow Rate (vi),pc/h	3032	1245
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.32	0.30

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	5.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.410
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	661
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	58.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	1710	Ramp Junction Speed (S), mi/h	65.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	11.6
Level of Service (LOS)	A		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	389	455
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	14.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.877
Flow Rate (vi),pc/h	448	564
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.21	0.30

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	10.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.306
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	448	Ramp Junction Speed (S), mi/h	61.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	1012	Average Density (D), pc/mi/ln	8.2
Level of Service (LOS)	A		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1467	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	870
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.36
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	12.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4115	Heavy Vehicle Adjustment Factor (f_{HV})	0.787
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1421
Total Trucks, %	27.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.59
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3452	663
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	29.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.775	0.862
Flow Rate (vi),pc/h	4842	836
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.79	0.40

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	25.7
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.367
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1840
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	59.7
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	65.2
Flow in Lanes 1 and 2 (v12), pc/h	3002	Ramp Junction Speed (S), mi/h	61.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	3838	Average Density (D), pc/mi/ln	30.8
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1420	697
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	31.00	14.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.763	0.877
Flow Rate (vi),pc/h	2023	864
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.28	0.21

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	15.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.376
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	637
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	1386	Ramp Junction Speed (S), mi/h	64.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	10.5
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1420	Heavy Vehicle Adjustment Factor (f_{HV})	0.763
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	674
Total Trucks, %	31.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.28
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	9.6
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7256	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2071
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.86
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6539	717
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	19.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.840
Flow Rate (vi),pc/h	7320	928
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.86	0.44

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	28.6
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.410
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2196
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	58.5
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.102	Outer Lanes Freeway Speed (SO), mi/h	63.9
Flow in Lanes 1 and 2 (v12), pc/h	2928	Ramp Junction Speed (S), mi/h	61.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	3856	Average Density (D), pc/mi/ln	33.6
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.952	8347	9548	0.87	60.2	34.7	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.952	0.840	8347	855	9600	2100	0.87	0.41	65.4	59.5	31.9	35.4	E

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	7514	9548	0.79	63.9	29.4	D

Segment 4: Merge

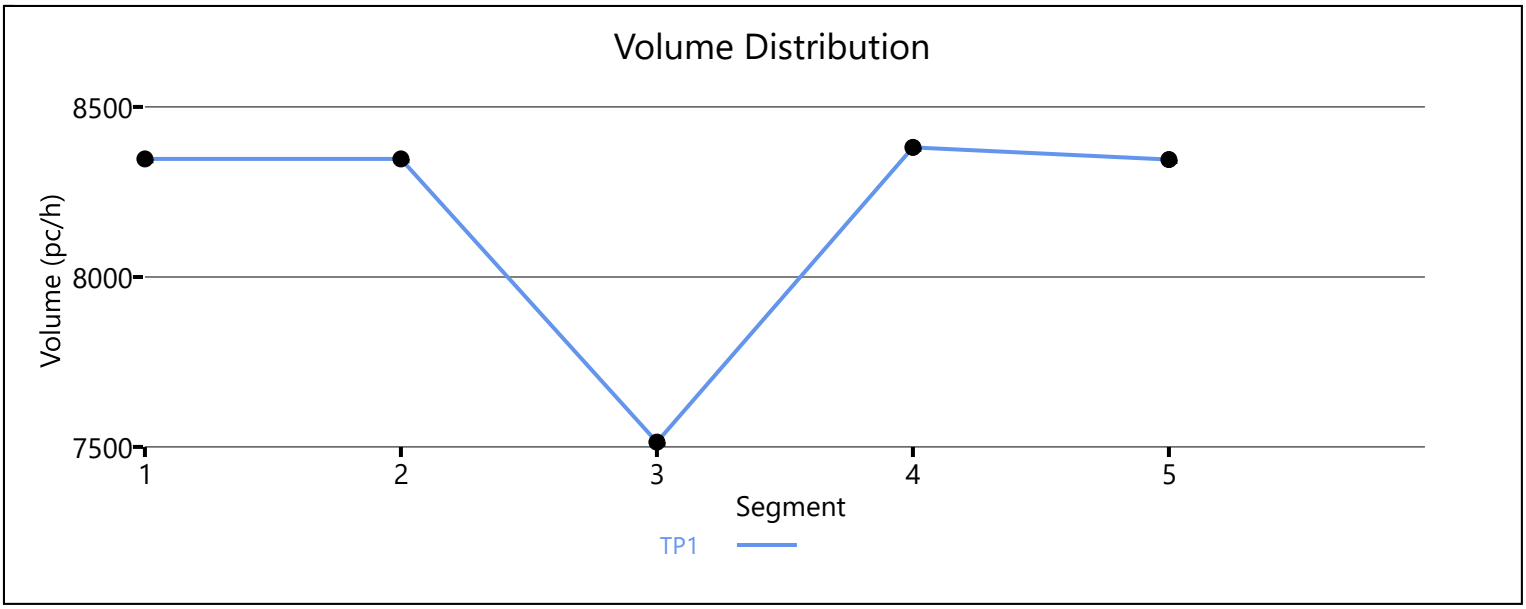
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.826	8381	867	9600	2100	0.87	0.41	61.2	58.5	34.2	28.5	D

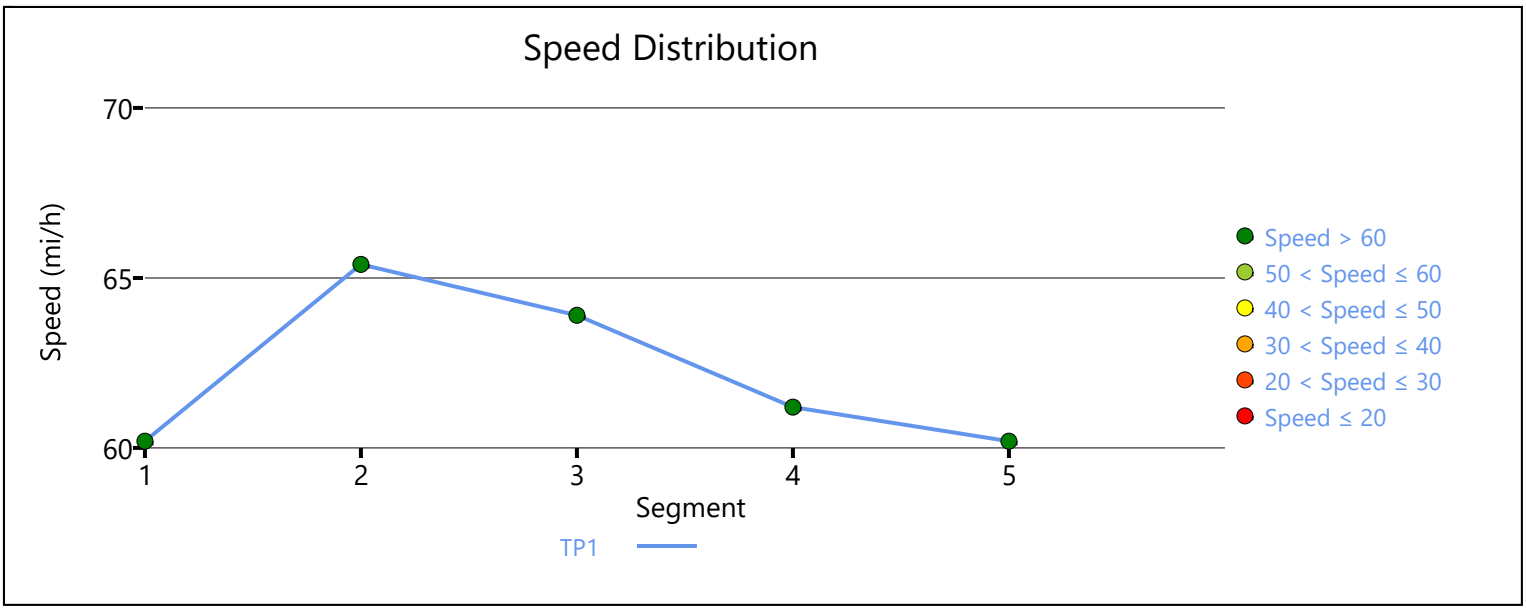
Segment 5: Basic

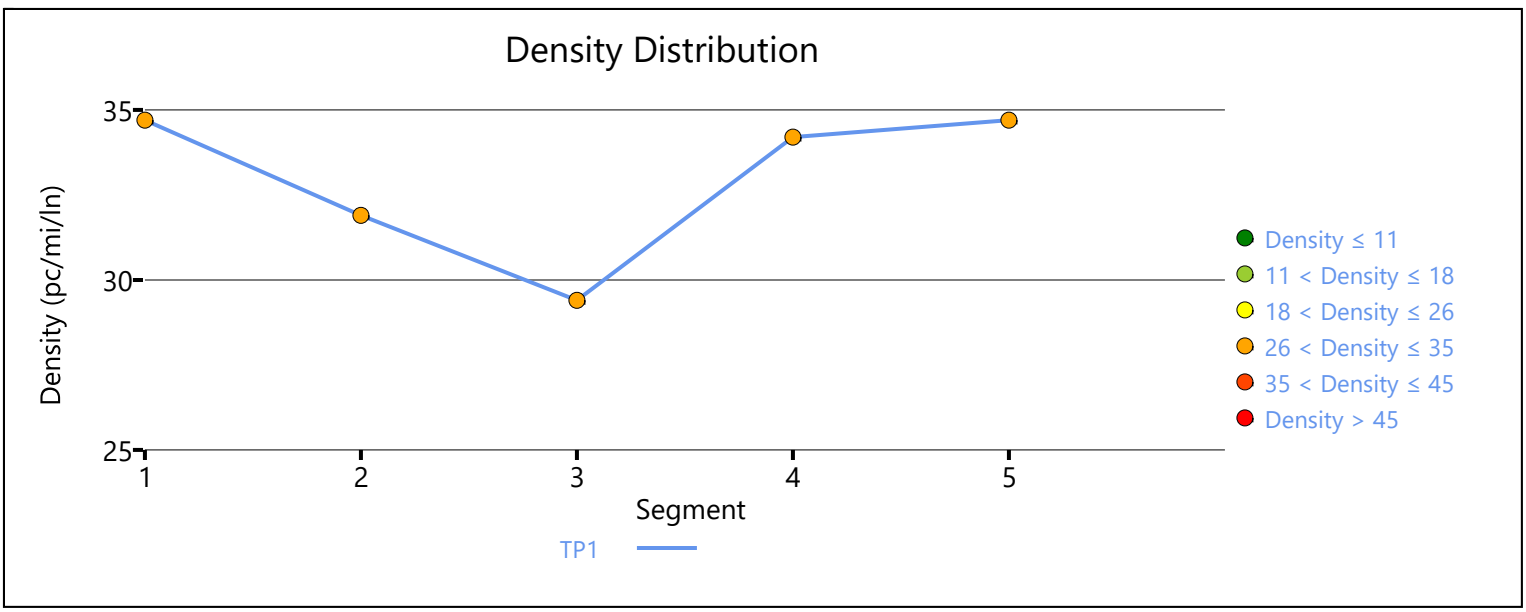
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.952	8345	9548	0.87	60.2	34.7	D

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	61.8	33.1	31.6	1.8	D

Facility Overall Results			
Space Mean Speed, mi/h	61.8	Density, veh/mi/ln	31.6
Average Travel Time, min	1.8	Density, pc/mi/ln	33.1







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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	5371	828
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	7.00	18.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.847
Flow Rate (vi),pc/h	6244	1063
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.52	0.51

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	29.3
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.394
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1197
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.0
Flow in Lanes 1 and 2 (v12), pc/h	2914	Ramp Junction Speed (S), mi/h	65.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	19.0
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5371	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1249
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.52
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7185	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1992
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7185	693
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	22.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.820
Flow Rate (vi),pc/h	7969	919
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.66	0.44

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	28.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.381
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1539
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.3
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	74.7
Flow in Lanes 1 and 2 (v12), pc/h	3298	Ramp Junction Speed (S), mi/h	65.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	24.2
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.980	8127	9548	0.85	61.3	33.1	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.980	0.893	8127	876	9600	2100	0.85	0.42	65.4	59.4	31.1	34.2	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.990	7254	9548	0.76	64.9	28.0	D

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.990	0.806	7996	742	9600	2100	0.83	0.35	62.0	59.7	32.2	26.4	C

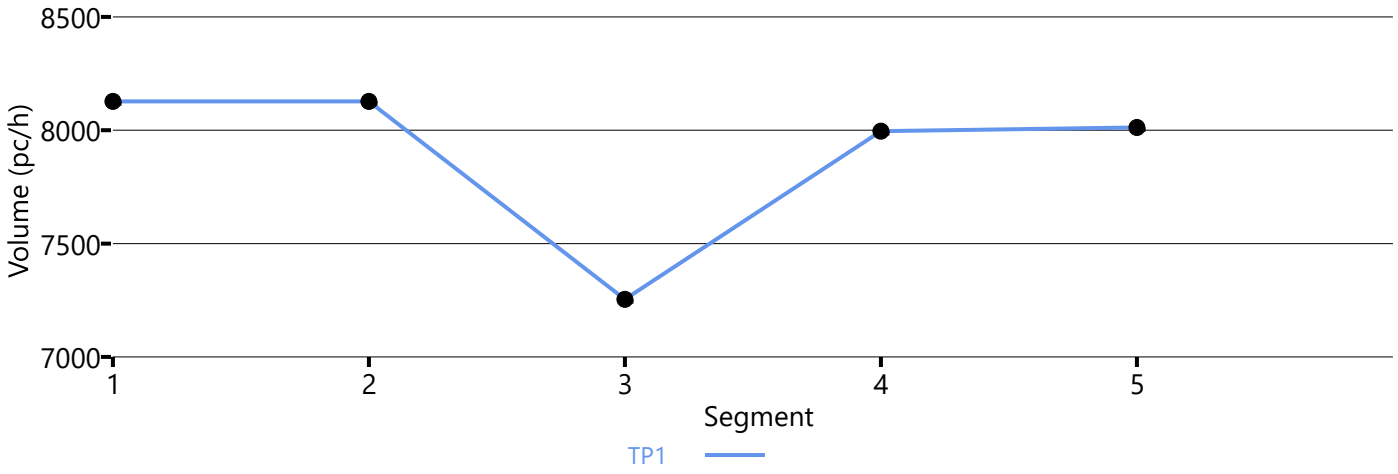
Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	8012	9548	0.84	61.8	32.4	D

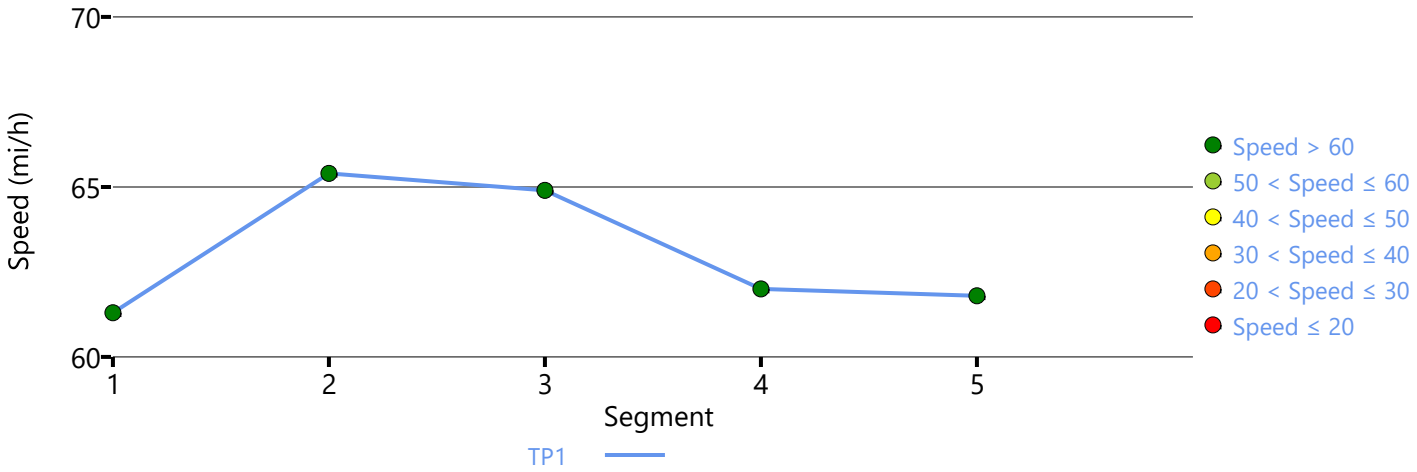
Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	62.9	31.3	30.7	1.7	D

Facility Overall Results			
Space Mean Speed, mi/h	62.9	Density, veh/mi/ln	30.7
Average Travel Time, min	1.7	Density, pc/mi/ln	31.3

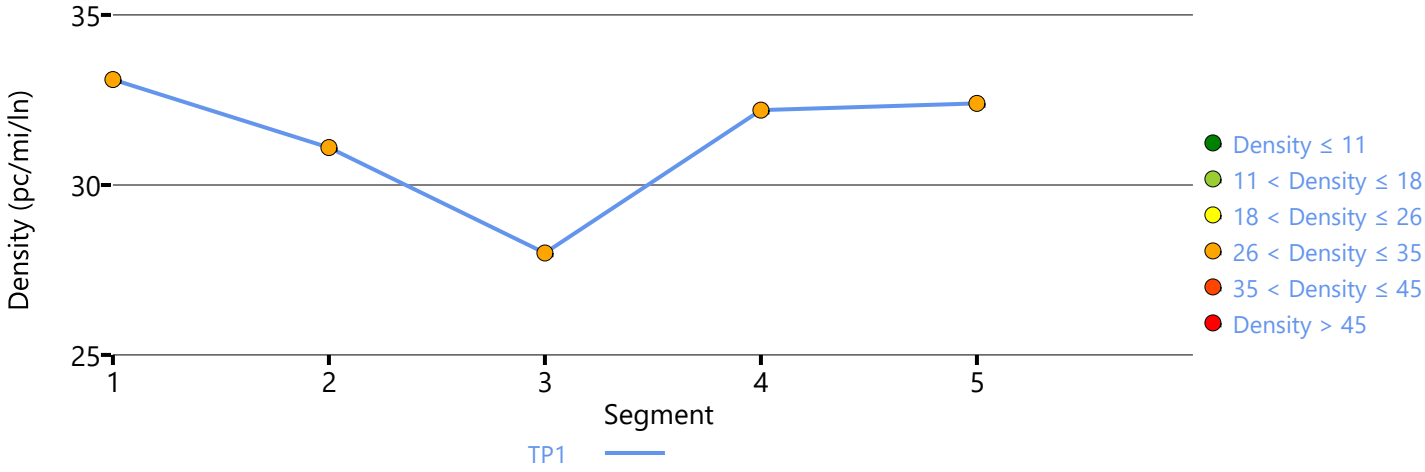
Volume Distribution



Speed Distribution



Density Distribution



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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4348	634
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	18.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.847
Flow Rate (vi),pc/h	4774	814
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.58	0.39

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	19.8
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.285
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1432
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	62.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.116	Outer Lanes Freeway Speed (SO), mi/h	66.6
Flow in Lanes 1 and 2 (v12), pc/h	1910	Ramp Junction Speed (S), mi/h	64.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	2724	Average Density (D), pc/mi/ln	21.7
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4982	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1394
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4730	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1363
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.57
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.6
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4730	1327
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.862
Flow Rate (vi),pc/h	5452	1673
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.57	0.80

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	29.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.449
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1066
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	57.4
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.5
Flow in Lanes 1 and 2 (v12), pc/h	3321	Ramp Junction Speed (S), mi/h	63.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	21.4
Level of Service (LOS)	D		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3272	1114
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.952
Flow Rate (vi),pc/h	3663	1272
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.69	0.61

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	1478.1	Density in Ramp Influence Area (DR), pc/mi/ln	25.6
Distance to Upstream Ramp (LUP), ft	1930	Speed Index (M)	0.354
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1440
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	60.1
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	66.6
Flow in Lanes 1 and 2 (v12), pc/h	2223	Ramp Junction Speed (S), mi/h	61.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	3495	Average Density (D), pc/mi/ln	26.6
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4386	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1637
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.68
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5159	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1144
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.48
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 NB, On-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4105	1054
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	0.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	1.000	0.909
Flow Rate (vi),pc/h	4462	1260
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.79	0.66

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	129.5	Density in Ramp Influence Area (DR), pc/mi/ln	34.9
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.502
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1883
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	55.9
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	65.0
Flow in Lanes 1 and 2 (v12), pc/h	2579	Ramp Junction Speed (S), mi/h	58.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	3839	Average Density (D), pc/mi/ln	32.5
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4073	548
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.943
Flow Rate (vi),pc/h	4518	632
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.63	0.30

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	26.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.355
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1484
Distance to Downstream Ramp (LDOWN), ft	2000	Off-Ramp Influenece Area Speed (SR), mi/h	60.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.618	Outer Lanes Freeway Speed (SO), mi/h	74.9
Flow in Lanes 1 and 2 (v12), pc/h	3034	Ramp Junction Speed (S), mi/h	64.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	23.4
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4073	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1506
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.63
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4119	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1176
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.49
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4119	1166
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.926
Flow Rate (vi),pc/h	4703	1369
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.49	0.33

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	10.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.421
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1234
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	58.2
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	75.9
Flow in Lanes 1 and 2 (v12), pc/h	2236	Ramp Junction Speed (S), mi/h	66.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	17.7
Level of Service (LOS)	A		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	277	754
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	11.00	9.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.901	0.917
Flow Rate (vi),pc/h	334	894
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.26	0.47

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	11.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.309
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	334	Ramp Junction Speed (S), mi/h	61.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	1228	Average Density (D), pc/mi/ln	10.0
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1681	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	977
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.41
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3679	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1060
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.44
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2591	1088
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	2987	1254
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.59	0.60

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	19.8
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.273
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1135
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	62.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	67.7
Flow in Lanes 1 and 2 (v12), pc/h	1852	Ramp Junction Speed (S), mi/h	63.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	3106	Average Density (D), pc/mi/ln	22.2
Level of Service (LOS)	B		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2686	1009
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	15.00	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.870	0.935
Flow Rate (vi),pc/h	3356	1173
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.47	0.28

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	21.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.404
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1201
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.7
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	76.0
Flow in Lanes 1 and 2 (v12), pc/h	2155	Ramp Junction Speed (S), mi/h	63.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	17.5
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2686	Heavy Vehicle Adjustment Factor (f_{HV})	0.870
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1119
Total Trucks, %	15.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.47
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7179	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2028
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.84
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6427	752
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.862
Flow Rate (vi),pc/h	7195	948
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.85	0.45

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	28.3
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.405
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2159
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	58.7
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.099	Outer Lanes Freeway Speed (SO), mi/h	64.0
Flow in Lanes 1 and 2 (v12), pc/h	2878	Ramp Junction Speed (S), mi/h	61.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	3826	Average Density (D), pc/mi/ln	33.2
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	7889	9548	0.83	62.4	31.6	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.855	7889	648	9600	2100	0.82	0.31	66.0	60.0	29.9	32.7	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	7245	9548	0.76	64.9	27.9	D

Segment 4: Merge

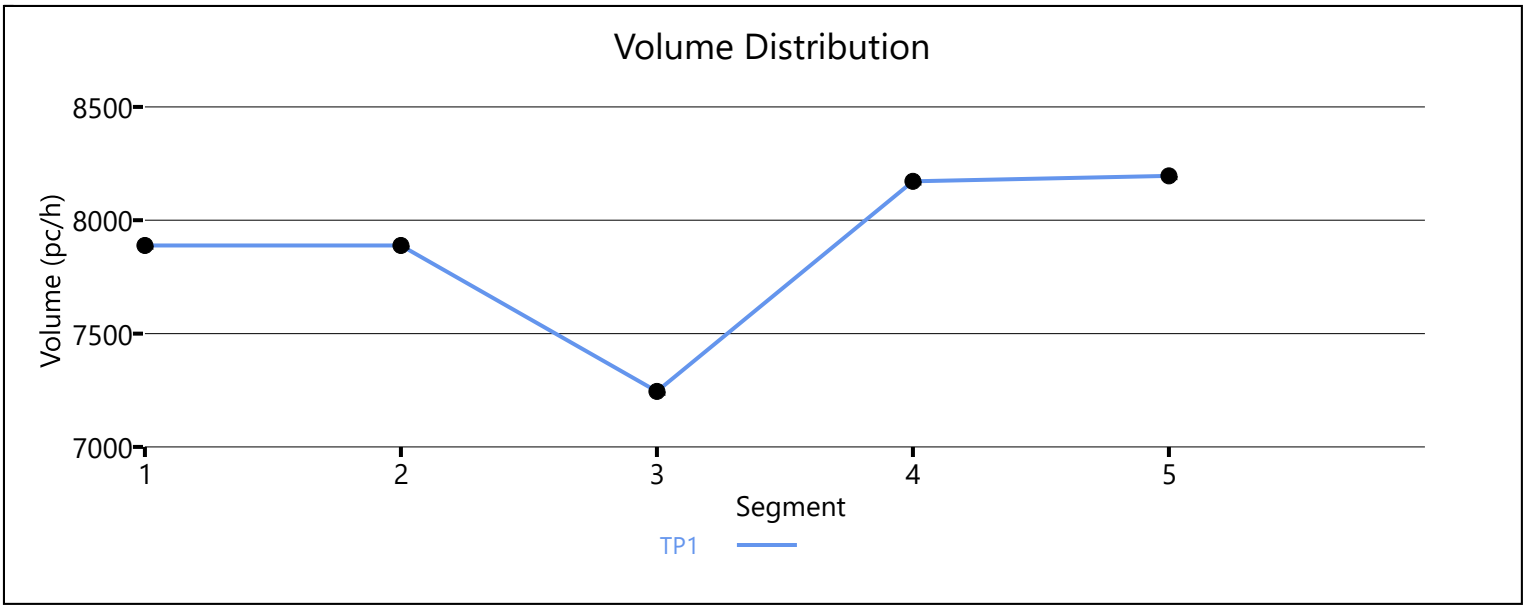
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.971	0.917	8172	927	9600	2100	0.85	0.44	61.4	58.7	33.3	28.1	D

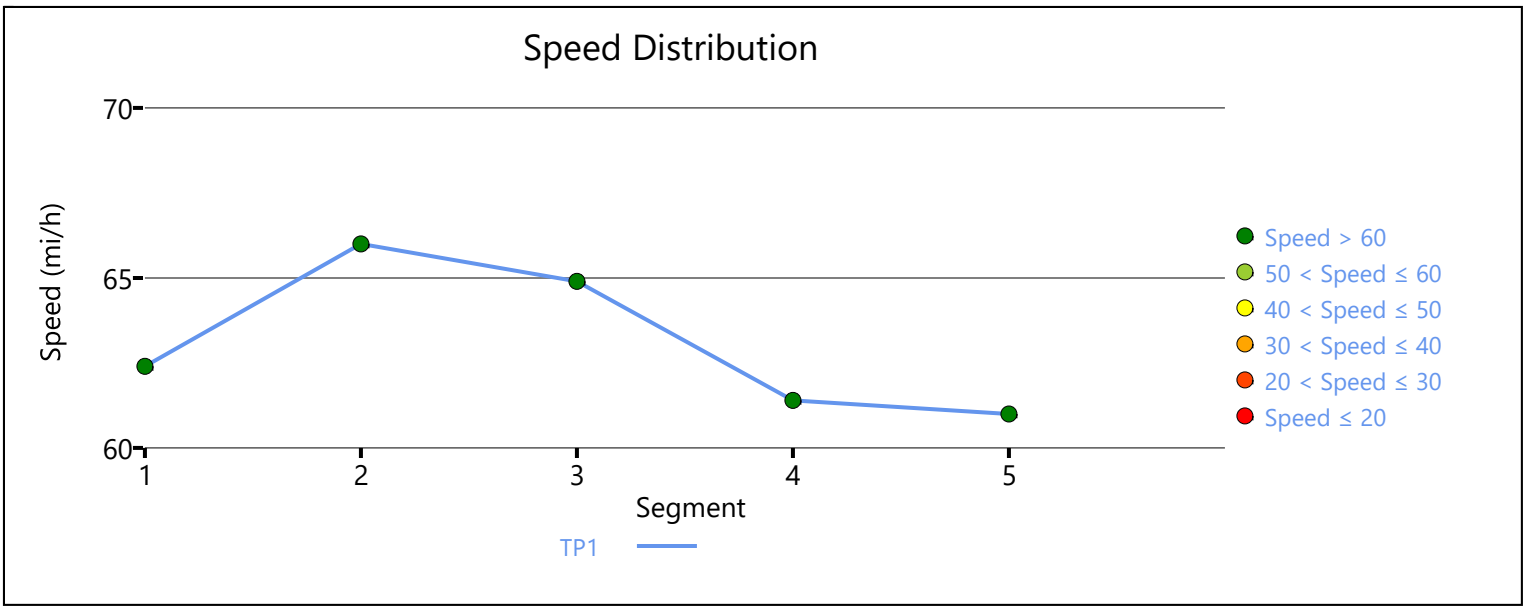
Segment 5: Basic

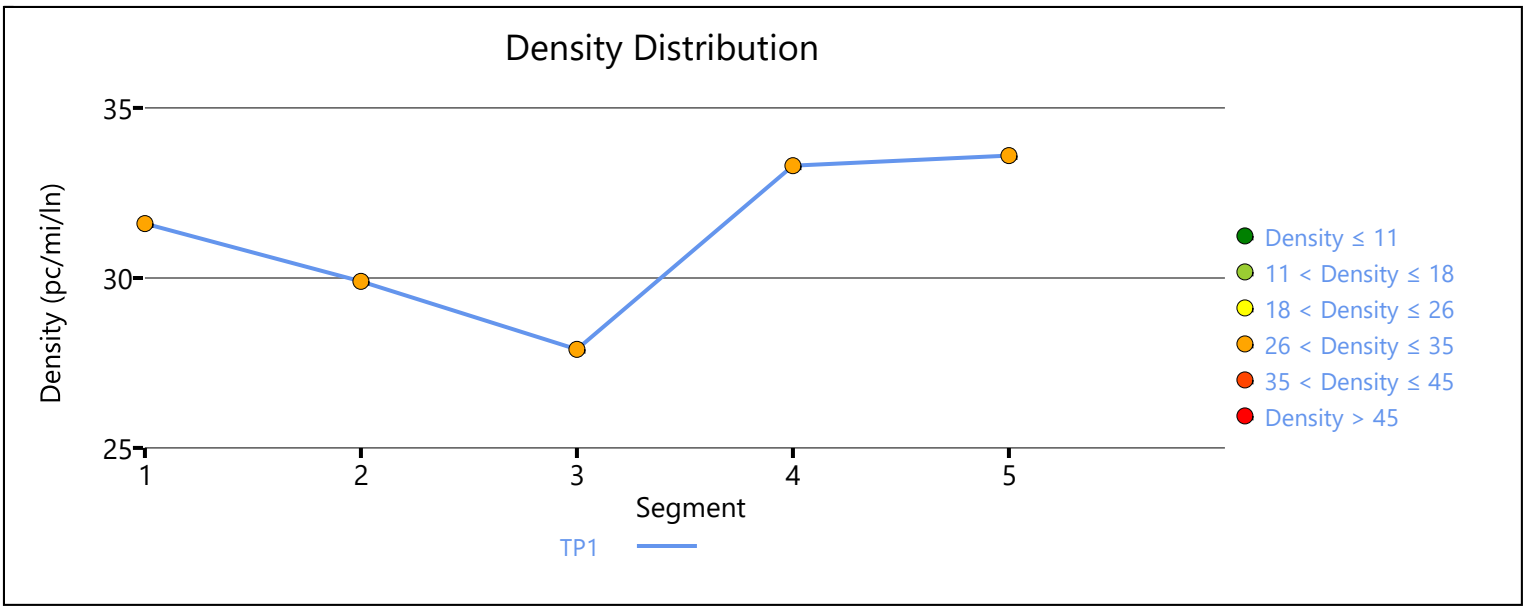
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	8196	9548	0.86	61.0	33.6	D

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	62.8	31.5	30.4	1.8	D

Facility Overall Results			
Space Mean Speed, mi/h	62.8	Density, veh/mi/ln	30.4
Average Travel Time, min	1.8	Density, pc/mi/ln	31.5







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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4388	594
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	7.00	13.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.885
Flow Rate (vi),pc/h	5101	730
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.43	0.35

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	25.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.364
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1089
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.8
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.4
Flow in Lanes 1 and 2 (v12), pc/h	2413	Ramp Junction Speed (S), mi/h	66.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	15.3
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4982	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1170
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.49
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6192	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1717
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.72
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6192	646
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	18.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.847
Flow Rate (vi),pc/h	6868	829
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.57	0.39

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	25.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.373
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1412
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.6
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	75.2
Flow in Lanes 1 and 2 (v12), pc/h	3013	Ramp Junction Speed (S), mi/h	66.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	20.7
Level of Service (LOS)	C		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.980	6973	9548	0.73	65.8	26.5	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.980	0.847	6973	771	9600	2100	0.73	0.37	66.1	59.7	26.4	29.4	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	1.000	6180	9548	0.65	67.7	22.8	C

Segment 4: Merge

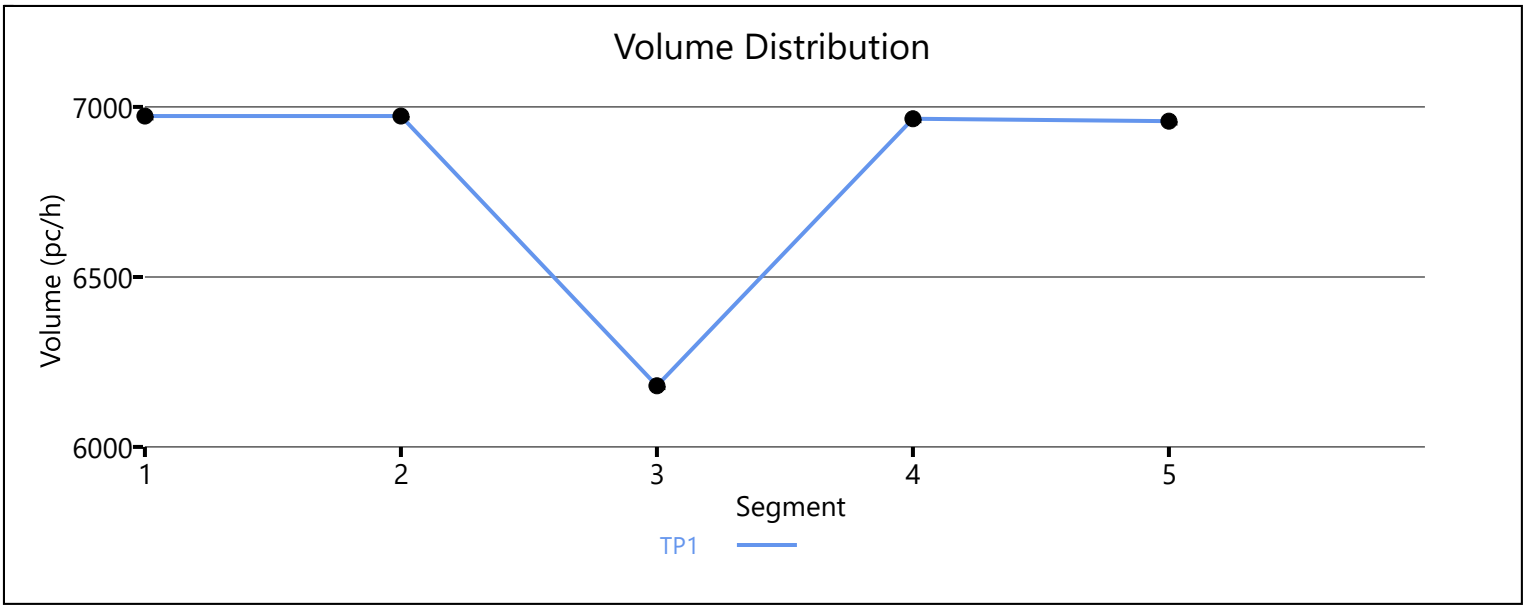
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	1.000	0.901	6965	785	9600	2100	0.73	0.37	63.2	61.1	27.6	23.4	C

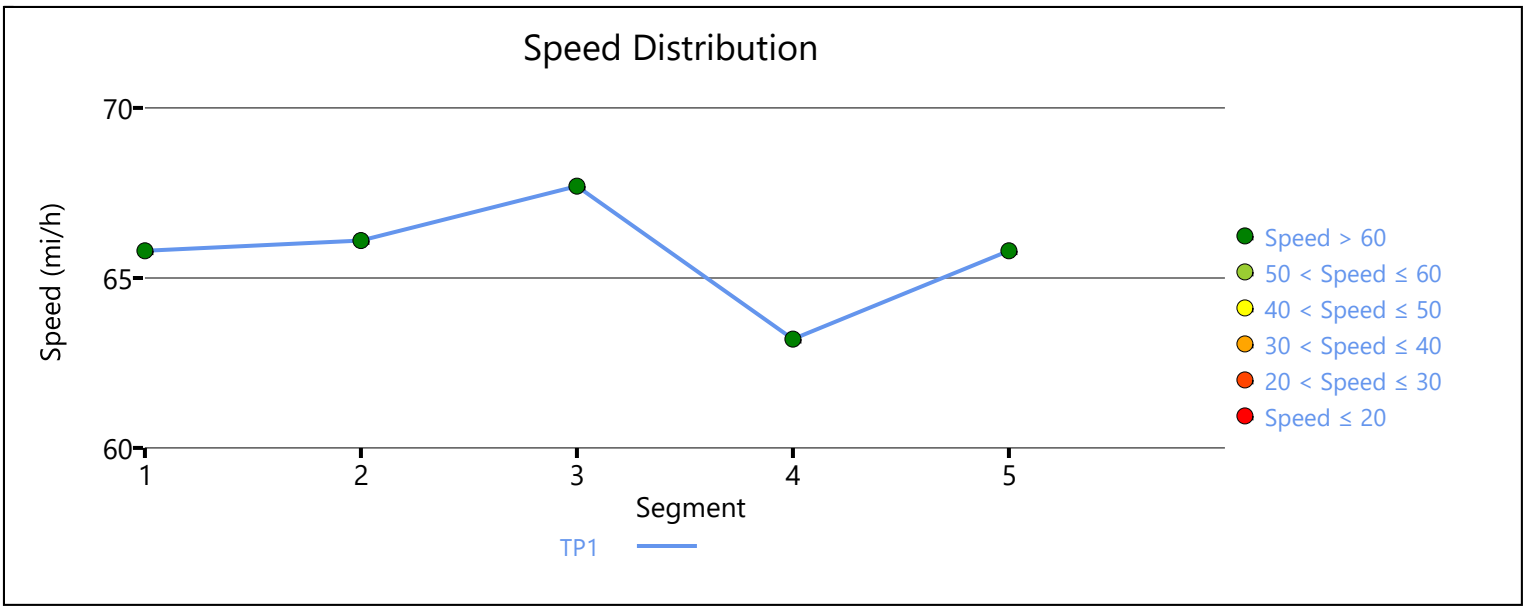
Segment 5: Basic

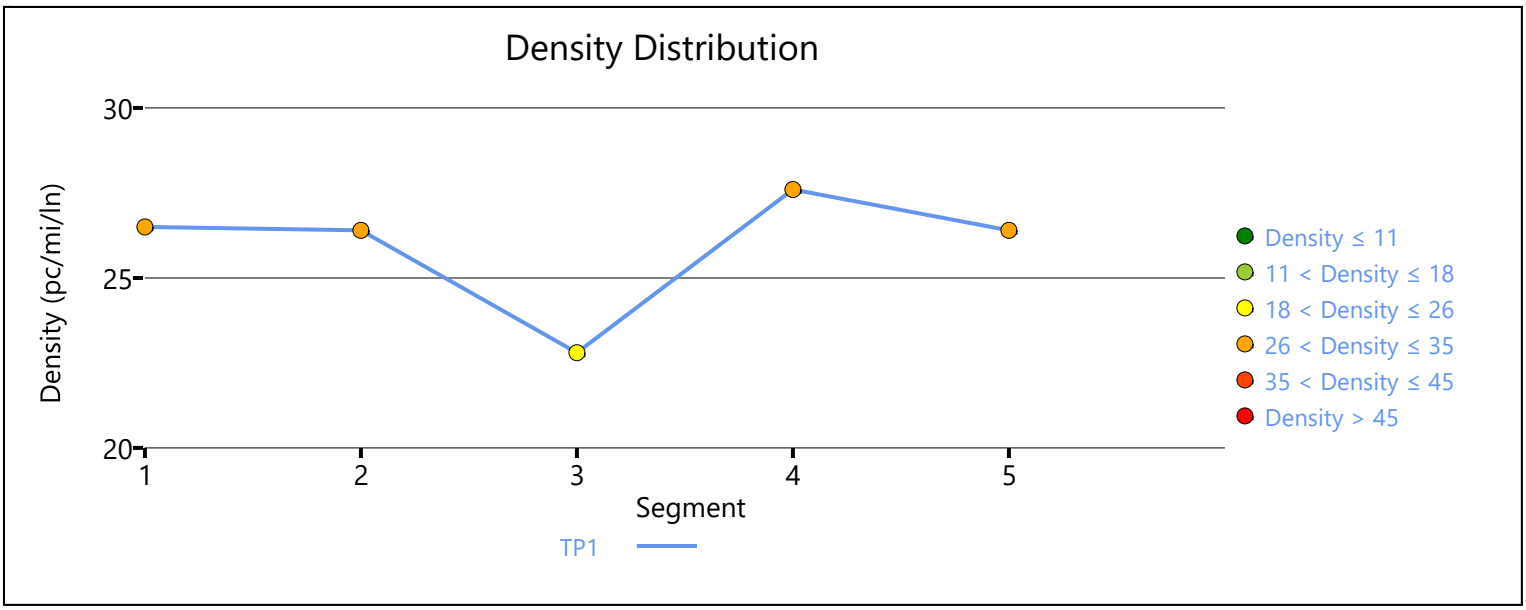
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.990	6958	9548	0.73	65.8	26.4	D

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	65.8	25.8	25.6	1.6	C

Facility Overall Results			
Space Mean Speed, mi/h	65.8	Density, veh/mi/ln	25.6
Average Travel Time, min	1.6	Density, pc/mi/ln	25.8







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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4144	916
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.909
Flow Rate (vi),pc/h	4596	1095
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.59	0.52

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	21.3
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.299
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1379
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.6
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.081	Outer Lanes Freeway Speed (SO), mi/h	66.8
Flow in Lanes 1 and 2 (v12), pc/h	1838	Ramp Junction Speed (S), mi/h	64.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	2933	Average Density (D), pc/mi/ln	22.2
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5060	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1416
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.59
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3661	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1055
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.44
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3661	1178
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.909
Flow Rate (vi),pc/h	4220	1409
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.44	0.67

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	23.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.425
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	793
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	2635	Ramp Junction Speed (S), mi/h	63.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	16.5
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2814	1100
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.980
Flow Rate (vi),pc/h	3213	1220
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.62	0.58

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	1370.7	Density in Ramp Influence Area (DR), pc/mi/ln	23.1
Distance to Upstream Ramp (LUP), ft	1930	Speed Index (M)	0.318
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1263
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.1
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	67.3
Flow in Lanes 1 and 2 (v12), pc/h	1950	Ramp Junction Speed (S), mi/h	62.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	3170	Average Density (D), pc/mi/ln	23.6
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3914	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1474
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.61
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4626	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1045
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.44
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 NB, On-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3512	1114
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.901
Flow Rate (vi),pc/h	3856	1344
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.72	0.71

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	17.8	Density in Ramp Influence Area (DR), pc/mi/ln	32.8
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.460
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1627
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	57.1
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	65.9
Flow in Lanes 1 and 2 (v12), pc/h	2229	Ramp Junction Speed (S), mi/h	59.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	3573	Average Density (D), pc/mi/ln	29.1
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4370	1113
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	4.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.962
Flow Rate (vi),pc/h	4892	1258
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.68	0.60

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	29.4
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.411
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1526
Distance to Downstream Ramp (LDOWN), ft	2000	Off-Ramp Influenece Area Speed (SR), mi/h	58.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.580	Outer Lanes Freeway Speed (SO), mi/h	74.7
Flow in Lanes 1 and 2 (v12), pc/h	3366	Ramp Junction Speed (S), mi/h	62.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	26.0
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase C)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4370	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1631
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.68
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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APPENDIX 5.13:

E+P (PHASE A) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

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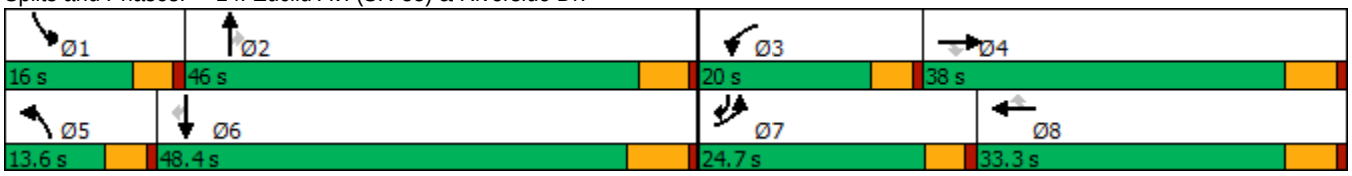
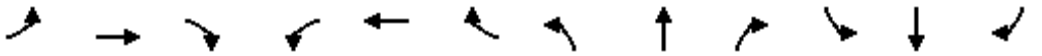
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	311	54	187	488	115	67	921	155	174	978	152
Future Volume (vph)	153	311	54	187	488	115	67	921	155	174	978	152
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	24.7	38.0	38.0	20.0	33.3	33.3	13.6	46.0	46.0	16.0	48.4	24.7
Total Split (%)	20.6%	31.7%	31.7%	16.7%	27.8%	27.8%	11.3%	38.3%	38.3%	13.3%	40.3%	20.6%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	None
Act Effct Green (s)	15.0	24.9	24.9	15.3	25.2	25.2	8.0	40.7	40.7	11.4	45.2	62.1
Actuated g/C Ratio	0.13	0.22	0.22	0.14	0.22	0.22	0.07	0.36	0.36	0.10	0.40	0.55
v/c Ratio	0.75	0.82	0.13	0.90	0.67	0.26	0.62	0.79	0.25	1.12	0.75	0.18
Control Delay	68.8	59.3	0.6	88.8	45.4	3.9	76.0	38.5	5.6	154.3	35.3	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.8	59.3	0.6	88.8	45.4	3.9	76.0	38.5	5.6	154.3	35.3	4.2
LOS	E	E	A	F	D	A	E	D	A	F	D	A
Approach Delay		56.0			49.7			36.3			47.5	
Approach LOS		E			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 45.7	Intersection LOS: D
Intersection Capacity Utilization 83.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	311	54	187	488	115	67	921	155	174	978	152
Future Volume (veh/h)	153	311	54	187	488	115	67	921	155	174	978	152
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	161	327	41	197	514	92	71	969	123	183	1029	101
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	187	371	314	222	778	347	88	1241	553	165	1403	802
Arrive On Green	0.12	0.21	0.21	0.14	0.23	0.23	0.05	0.36	0.36	0.10	0.41	0.41
Sat Flow, veh/h	1619	1800	1525	1619	3420	1525	1619	3420	1525	1619	3420	1524
Grp Volume(v), veh/h	161	327	41	197	514	92	71	969	123	183	1029	101
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	1525	1619	1710	1525	1619	1710	1524
Q Serve(g_s), s	10.9	19.7	2.5	13.4	15.3	5.5	4.9	28.2	6.3	11.4	28.4	3.8
Cycle Q Clear(g_c), s	10.9	19.7	2.5	13.4	15.3	5.5	4.9	28.2	6.3	11.4	28.4	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	187	371	314	222	778	347	88	1241	553	165	1403	802
V/C Ratio(X)	0.86	0.88	0.13	0.89	0.66	0.27	0.80	0.78	0.22	1.11	0.73	0.13
Avail Cap(c_a), veh/h	291	518	439	223	840	375	130	1241	553	165	1403	802
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.6	43.1	36.2	47.4	39.3	35.5	52.3	31.7	24.7	50.2	27.8	13.5
Incr Delay (d2), s/veh	9.2	12.4	0.2	31.1	1.7	0.4	12.0	4.9	0.9	102.4	3.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	9.7	0.9	7.1	6.4	2.0	2.2	11.5	2.3	9.2	11.7	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.8	55.5	36.4	78.6	41.0	35.9	64.3	36.6	25.6	152.7	31.3	13.8
LnGrp LOS	E	E	D	E	D	D	E	D	C	F	C	B
Approach Vol, veh/h		529			803			1163			1313	
Approach Delay, s/veh		54.7			49.7			37.1			46.9	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	47.1	19.9	28.9	10.7	52.4	17.5	31.2
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	11.4	* 41	15.4	32.2	9.0	41.9	20.1	27.5
Max Q Clear Time (g_c+I1), s	13.4	30.2	15.4	21.7	6.9	30.4	12.9	17.3
Green Ext Time (p_c), s	0.0	4.5	0.0	1.3	0.0	5.4	0.1	2.5

Intersection Summary	
HCM 6th Ctrl Delay	45.6
HCM 6th LOS	D

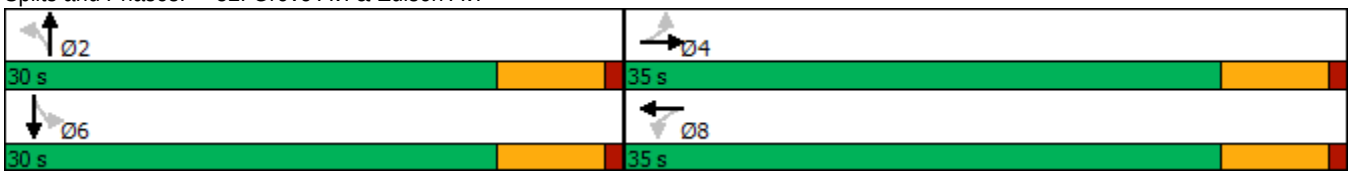
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	33	201	116	495	18	194	58	201
Future Volume (vph)	33	201	116	495	18	194	58	201
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Total Split (s)	35.0	35.0	35.0	35.0	30.0	30.0	30.0	30.0
Total Split (%)	53.8%	53.8%	53.8%	53.8%	46.2%	46.2%	46.2%	46.2%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		29.0		29.0		16.2		16.2
Actuated g/C Ratio		0.50		0.50		0.28		0.28
v/c Ratio		0.34		0.89		0.57		0.73
Control Delay		11.3		32.0		21.1		28.3
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		11.3		32.0		21.1		28.3
LOS		B		C		C		C
Approach Delay		11.3		32.0		21.1		28.3
Approach LOS		B		C		C		C

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 57.7	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 25.8	Intersection LOS: C
Intersection Capacity Utilization 95.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	201	6	116	495	31	18	194	39	58	201	28
Future Volume (veh/h)	33	201	6	116	495	31	18	194	39	58	201	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	36	221	7	127	544	34	20	213	43	64	221	31
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	147	797	24	204	722	43	86	329	63	137	299	39
Arrive On Green	0.54	0.54	0.54	0.54	0.54	0.54	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	133	1488	44	233	1348	80	62	1409	271	244	1279	166
Grp Volume(v), veh/h	264	0	0	705	0	0	276	0	0	316	0	0
Grp Sat Flow(s),veh/h/ln	1665	0	0	1661	0	0	1743	0	0	1689	0	0
Q Serve(g_s), s	0.0	0.0	0.0	12.1	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0
Cycle Q Clear(g_c), s	4.3	0.0	0.0	18.1	0.0	0.0	7.7	0.0	0.0	9.2	0.0	0.0
Prop In Lane	0.14		0.03	0.18		0.05	0.07		0.16	0.20		0.10
Lane Grp Cap(c), veh/h	968	0	0	969	0	0	479	0	0	475	0	0
V/C Ratio(X)	0.27	0.00	0.00	0.73	0.00	0.00	0.58	0.00	0.00	0.67	0.00	0.00
Avail Cap(c_a), veh/h	968	0	0	969	0	0	831	0	0	807	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.8	0.0	0.0	9.8	0.0	0.0	18.7	0.0	0.0	19.3	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	4.8	0.0	0.0	1.1	0.0	0.0	1.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	5.0	0.0	0.0	2.6	0.0	0.0	3.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.5	0.0	0.0	14.6	0.0	0.0	19.8	0.0	0.0	20.9	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	B	A	A	C	A	A
Approach Vol, veh/h		264			705			276			316	
Approach Delay, s/veh		7.5			14.6			19.8			20.9	
Approach LOS		A			B			B			C	

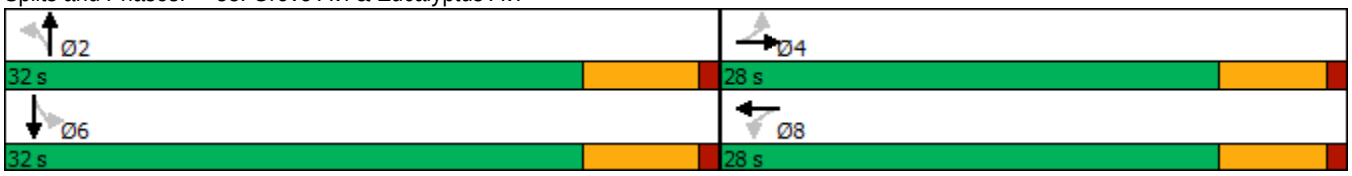
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		18.8		35.0		18.8		35.0				
Change Period (Y+Rc), s		6.2		6.2		6.2		6.2				
Max Green Setting (Gmax), s		23.8		28.8		23.8		28.8				
Max Q Clear Time (g_c+I1), s		9.7		6.3		11.2		20.1				
Green Ext Time (p_c), s		1.2		1.4		1.3		2.9				

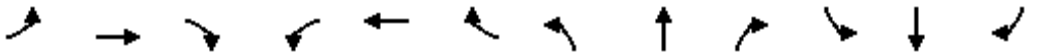
Intersection Summary												
HCM 6th Ctrl Delay			15.6									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	24	33	12	82	60	249	15	277
Future Volume (vph)	24	33	12	82	60	249	15	277
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	28.0	28.0	28.0	28.0	32.0	32.0	32.0	32.0
Total Split (%)	46.7%	46.7%	46.7%	46.7%	53.3%	53.3%	53.3%	53.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.8		5.8		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		11.4		11.4		31.9		31.9
Actuated g/C Ratio		0.23		0.23		0.63		0.63
v/c Ratio		0.22		0.30		0.36		0.34
Control Delay		14.8		16.7		8.5		7.9
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		14.8		16.7		8.5		7.9
LOS		B		B		A		A
Approach Delay		14.8		16.7		8.5		7.9
Approach LOS		B		B		A		A

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 50.6	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.36	
Intersection Signal Delay: 9.8	Intersection LOS: A
Intersection Capacity Utilization 59.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	24	33	13	12	82	12	60	249	11	15	277	47
Future Volume (veh/h)	24	33	13	12	82	12	60	249	11	15	277	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	26	36	14	13	90	13	66	274	12	16	304	52
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	169	192	58	103	284	38	202	760	31	94	808	134
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.71	0.71	0.71	0.71	0.71	0.71
Sat Flow, veh/h	341	980	298	89	1454	195	203	1383	56	26	1471	243
Grp Volume(v), veh/h	76	0	0	116	0	0	352	0	0	372	0	0
Grp Sat Flow(s),veh/h/ln	1619	0	0	1738	0	0	1642	0	0	1740	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.7	0.0	0.0	2.7	0.0	0.0	3.6	0.0	0.0	3.9	0.0	0.0
Prop In Lane	0.34		0.18	0.11		0.11	0.19		0.03	0.04		0.14
Lane Grp Cap(c), veh/h	419	0	0	425	0	0	993	0	0	1035	0	0
V/C Ratio(X)	0.18	0.00	0.00	0.27	0.00	0.00	0.35	0.00	0.00	0.36	0.00	0.00
Avail Cap(c_a), veh/h	849	0	0	898	0	0	993	0	0	1035	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.30	1.30	1.30	1.30	1.30	1.30
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.9	0.0	0.0	16.3	0.0	0.0	3.5	0.0	0.0	3.6	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.3	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	0.9	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	0.0	0.0	16.6	0.0	0.0	4.5	0.0	0.0	4.6	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		76			116			352			372	
Approach Delay, s/veh		16.1			16.6			4.5			4.6	
Approach LOS		B			B			A			A	

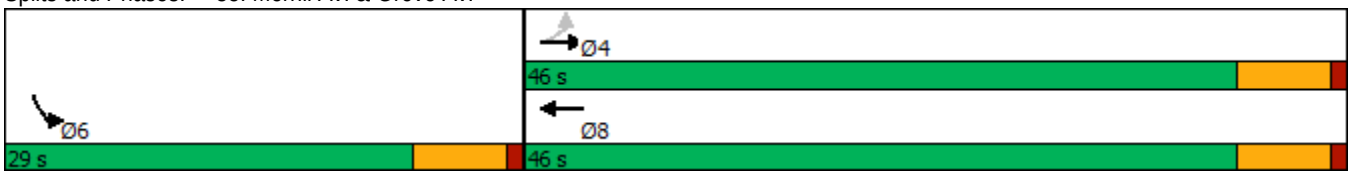
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.0		15.0		32.0		15.0				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		25.8		22.2		25.8		22.2				
Max Q Clear Time (g_c+I1), s		5.6		3.7		5.9		4.7				
Green Ext Time (p_c), s		1.9		0.3		1.9		0.4				

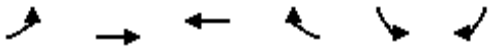
Intersection Summary												
HCM 6th Ctrl Delay			7.0									
HCM 6th LOS			A									

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	83	315	502	209
Future Volume (vph)	83	315	502	209
Turn Type	Perm	NA	NA	Prot
Protected Phases		4	8	6
Permitted Phases	4			
Detector Phase	4	4	8	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2
Total Split (s)	46.0	46.0	46.0	29.0
Total Split (%)	61.3%	61.3%	61.3%	38.7%
Yellow Time (s)	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0
Total Lost Time (s)		6.2	6.2	6.2
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	Max	Max	Max	None
Act Effct Green (s)		40.5	40.5	17.1
Actuated g/C Ratio		0.58	0.58	0.24
v/c Ratio		0.67	0.75	0.76
Control Delay		18.7	17.6	34.7
Queue Delay		0.0	0.0	0.0
Total Delay		18.7	17.6	34.7
LOS		B	B	C
Approach Delay		18.7	17.6	34.7
Approach LOS		B	B	C

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 70	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 21.5	Intersection LOS: C
Intersection Capacity Utilization 100.3%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	83	315	502	237	209	93
Future Volume (veh/h)	83	315	502	237	209	93
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	86	325	518	244	215	96
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	136	472	679	320	247	110
Arrive On Green	0.59	0.59	0.59	0.59	0.23	0.23
Sat Flow, veh/h	123	803	1157	545	1075	480
Grp Volume(v), veh/h	411	0	0	762	312	0
Grp Sat Flow(s),veh/h/ln	926	0	0	1702	1560	0
Q Serve(g_s), s	7.7	0.0	0.0	22.7	13.1	0.0
Cycle Q Clear(g_c), s	30.4	0.0	0.0	22.7	13.1	0.0
Prop In Lane	0.21			0.32	0.69	0.31
Lane Grp Cap(c), veh/h	608	0	0	999	359	0
V/C Ratio(X)	0.68	0.00	0.00	0.76	0.87	0.00
Avail Cap(c_a), veh/h	608	0	0	999	525	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.8	0.0	0.0	10.5	25.1	0.0
Incr Delay (d2), s/veh	5.9	0.0	0.0	5.5	10.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	0.0	7.0	5.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.7	0.0	0.0	16.0	35.5	0.0
LnGrp LOS	B	A	A	B	D	A
Approach Vol, veh/h		411	762		312	
Approach Delay, s/veh		16.7	16.0		35.5	
Approach LOS		B	B		D	

Timer - Assigned Phs			4		6	8
Phs Duration (G+Y+Rc), s			46.0		21.8	46.0
Change Period (Y+Rc), s			6.2		6.2	6.2
Max Green Setting (Gmax), s			39.8		22.8	39.8
Max Q Clear Time (g_c+I1), s			32.4		15.1	24.7
Green Ext Time (p_c), s			1.5		0.6	4.4

Intersection Summary		
HCM 6th Ctrl Delay		20.3
HCM 6th LOS		C

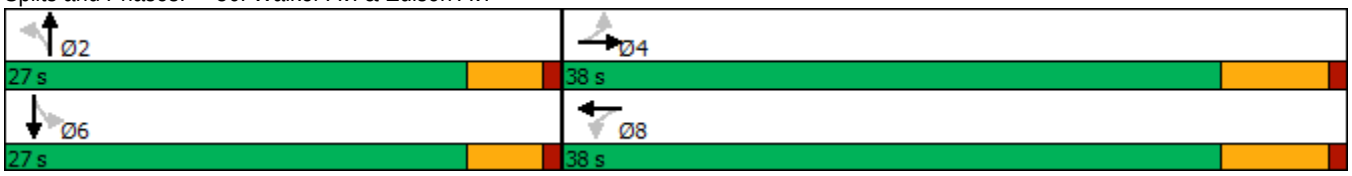
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	17	245	111	444	4	18	25	17
Future Volume (vph)	17	245	111	444	4	18	25	17
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	26.7	26.7	26.7	26.7
Total Split (s)	38.0	38.0	38.0	38.0	27.0	27.0	27.0	27.0
Total Split (%)	58.5%	58.5%	58.5%	58.5%	41.5%	41.5%	41.5%	41.5%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		4.7		4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		45.1		45.1		12.3		12.3
Actuated g/C Ratio		0.76		0.76		0.21		0.21
v/c Ratio		0.21		0.59		0.09		0.18
Control Delay		5.9		11.6		15.3		16.9
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		5.9		11.6		15.3		16.9
LOS		A		B		B		B
Approach Delay		5.9		11.6		15.3		16.9
Approach LOS		A		B		B		B

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 59.1	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 10.5	Intersection LOS: B
Intersection Capacity Utilization 81.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	245	9	111	444	139	4	18	8	25	17	12
Future Volume (veh/h)	17	245	9	111	444	139	4	18	8	25	17	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	17	250	9	113	453	142	4	18	8	26	17	12
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	103	1055	36	205	715	210	95	160	63	179	101	48
Arrive On Green	0.64	0.64	0.64	0.64	0.64	0.64	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	40	1646	57	189	1115	327	93	1148	451	517	728	348
Grp Volume(v), veh/h	276	0	0	708	0	0	30	0	0	55	0	0
Grp Sat Flow(s),veh/h/ln	1743	0	0	1631	0	0	1692	0	0	1593	0	0
Q Serve(g_s), s	0.0	0.0	0.0	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.2	0.0	0.0	12.9	0.0	0.0	0.8	0.0	0.0	1.4	0.0	0.0
Prop In Lane	0.06		0.03	0.16		0.20	0.13		0.27	0.47		0.22
Lane Grp Cap(c), veh/h	1195	0	0	1130	0	0	318	0	0	328	0	0
V/C Ratio(X)	0.23	0.00	0.00	0.63	0.00	0.00	0.09	0.00	0.00	0.17	0.00	0.00
Avail Cap(c_a), veh/h	1195	0	0	1130	0	0	832	0	0	806	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.8	0.0	0.0	5.4	0.0	0.0	18.7	0.0	0.0	19.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	2.6	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	2.2	0.0	0.0	0.3	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.2	0.0	0.0	8.1	0.0	0.0	18.8	0.0	0.0	19.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		276			708			30			55	
Approach Delay, s/veh		4.2			8.1			18.8			19.2	
Approach LOS		A			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		11.6		38.0		11.6		38.0				
Change Period (Y+Rc), s		* 4.7		6.2		* 4.7		6.2				
Max Green Setting (Gmax), s		* 22		31.8		* 22		31.8				
Max Q Clear Time (g_c+I1), s		2.8		5.2		3.4		14.9				
Green Ext Time (p_c), s		0.1		1.4		0.2		4.3				

Intersection Summary		
HCM 6th Ctrl Delay		7.9
HCM 6th LOS		A

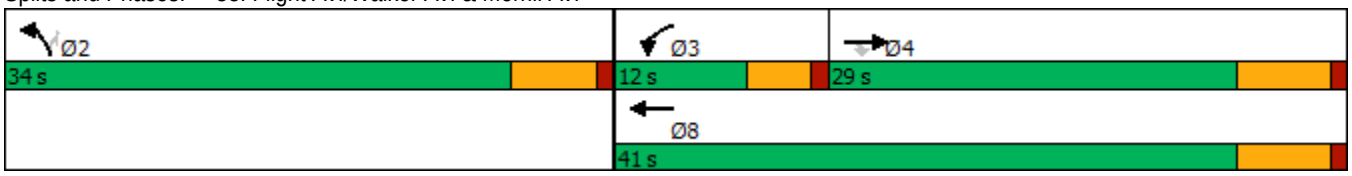
Notes

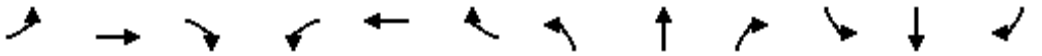
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	428	96	113	569	170	98
Future Volume (vph)	428	96	113	569	170	98
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Detector Phase	4	4	3	8	2	2
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	23.2	23.2	9.6	16.2	32.8	32.8
Total Split (s)	29.0	29.0	12.0	41.0	34.0	34.0
Total Split (%)	38.7%	38.7%	16.0%	54.7%	45.3%	45.3%
Yellow Time (s)	5.2	5.2	3.6	5.2	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	4.6	6.2	5.8	5.8
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	Min	Min
Act Effct Green (s)	18.6	18.6	7.4	27.6	14.0	14.0
Actuated g/C Ratio	0.34	0.34	0.14	0.51	0.26	0.26
v/c Ratio	0.72	0.17	0.53	0.64	0.42	0.21
Control Delay	26.0	4.5	38.3	14.3	22.0	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	4.5	38.3	14.3	22.0	4.6
LOS	C	A	D	B	C	A
Approach Delay	22.0			18.3		
Approach LOS	C			B		

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 54.4	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 19.1	Intersection LOS: B
Intersection Capacity Utilization 53.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 38: Flight Av./Walker Av. & Merrill Av.



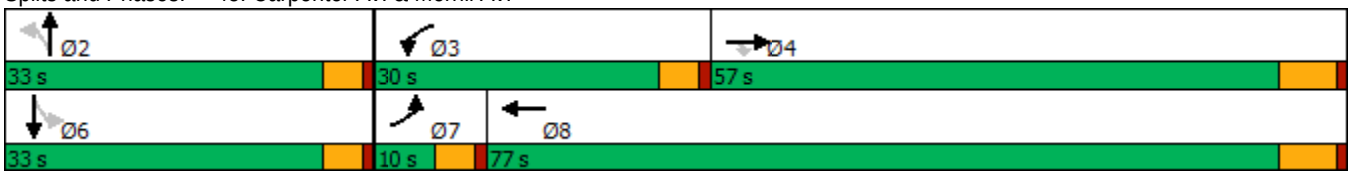


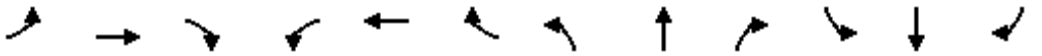
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	428	96	113	569	0	170	0	98	0	0	0
Future Volume (veh/h)	0	428	96	113	569	0	170	0	98	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1800	1800	1700	1800	0	1700	0	1800			
Adj Flow Rate, veh/h	0	441	99	116	587	0	175	0	101			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	0	564	478	143	909	0	364	0	343			
Arrive On Green	0.00	0.31	0.31	0.09	0.51	0.00	0.22	0.00	0.22			
Sat Flow, veh/h	0	1800	1525	1619	1800	0	1619	0	1525			
Grp Volume(v), veh/h	0	441	99	116	587	0	175	0	101			
Grp Sat Flow(s),veh/h/ln	0	1800	1525	1619	1800	0	1619	0	1525			
Q Serve(g_s), s	0.0	9.9	2.1	3.1	10.6	0.0	4.2	0.0	2.4			
Cycle Q Clear(g_c), s	0.0	9.9	2.1	3.1	10.6	0.0	4.2	0.0	2.4			
Prop In Lane	0.00		1.00	1.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	564	478	143	909	0	364	0	343			
V/C Ratio(X)	0.00	0.78	0.21	0.81	0.65	0.00	0.48	0.00	0.29			
Avail Cap(c_a), veh/h	0	923	782	269	1409	0	1027	0	968			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	13.9	11.2	19.9	8.1	0.0	15.0	0.0	14.3			
Incr Delay (d2), s/veh	0.0	2.4	0.2	4.2	0.8	0.0	1.0	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	3.1	0.5	1.1	2.2	0.0	1.3	0.0	0.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	16.3	11.4	24.1	8.9	0.0	16.0	0.0	14.8			
LnGrp LOS	A	B	B	C	A	A	B	A	B			
Approach Vol, veh/h		540			703			276				
Approach Delay, s/veh		15.4			11.4			15.5				
Approach LOS		B			B			B				
Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		15.8	8.5	20.1				28.7				
Change Period (Y+Rc), s		5.8	4.6	6.2				6.2				
Max Green Setting (Gmax), s		28.2	7.4	22.8				34.8				
Max Q Clear Time (g_c+I1), s		6.2	5.1	11.9				12.6				
Green Ext Time (p_c), s		0.8	0.0	2.0				3.4				
Intersection Summary												
HCM 6th Ctrl Delay			13.6									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	10	348	26	175	694	19	0	114	0
Future Volume (vph)	10	348	26	175	694	19	0	114	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	26.6	26.6
Total Split (s)	10.0	57.0	57.0	30.0	77.0	33.0	33.0	33.0	33.0
Total Split (%)	8.3%	47.5%	47.5%	25.0%	64.2%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2		4.6		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.2	54.0	54.0	14.7	71.6		12.3		12.3
Actuated g/C Ratio	0.05	0.56	0.56	0.15	0.74		0.13		0.13
v/c Ratio	0.12	0.37	0.03	0.72	0.59		0.45		0.63
Control Delay	50.0	14.8	0.1	54.7	9.5		15.8		24.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	50.0	14.8	0.1	54.7	9.5		15.8		24.9
LOS	D	B	A	D	A		B		C
Approach Delay		14.7			18.2		15.8		24.9
Approach LOS		B			B		B		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.4	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 17.7	Intersection LOS: B
Intersection Capacity Utilization 72.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 45: Carpenter Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	348	26	175	694	40	19	0	106	114	0	10
Future Volume (veh/h)	10	348	26	175	694	40	19	0	106	114	0	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	11	370	28	186	738	43	20	0	113	121	0	11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	22	1043	884	218	1168	68	62	14	199	213	3	13
Arrive On Green	0.01	0.58	0.58	0.13	0.69	0.69	0.14	0.00	0.14	0.14	0.00	0.14
Sat Flow, veh/h	1714	1800	1525	1714	1684	98	151	96	1395	1020	20	95
Grp Volume(v), veh/h	11	370	28	186	0	781	133	0	0	132	0	0
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	0	1782	1642	0	0	1135	0	0
Q Serve(g_s), s	0.7	11.1	0.8	10.9	0.0	24.4	0.0	0.0	0.0	4.1	0.0	0.0
Cycle Q Clear(g_c), s	0.7	11.1	0.8	10.9	0.0	24.4	7.9	0.0	0.0	12.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.06	0.15		0.85	0.92		0.08
Lane Grp Cap(c), veh/h	22	1043	884	218	0	1236	275	0	0	230	0	0
V/C Ratio(X)	0.49	0.35	0.03	0.85	0.00	0.63	0.48	0.00	0.00	0.58	0.00	0.00
Avail Cap(c_a), veh/h	91	1043	884	426	0	1236	479	0	0	408	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	50.0	11.4	9.2	43.7	0.0	8.5	41.0	0.0	0.0	43.0	0.0	0.0
Incr Delay (d2), s/veh	6.0	0.9	0.1	3.7	0.0	2.5	1.3	0.0	0.0	2.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.1	0.2	4.6	0.0	7.7	3.2	0.0	0.0	3.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.0	12.3	9.3	47.4	0.0	11.0	42.3	0.0	0.0	45.3	0.0	0.0
LnGrp LOS	E	B	A	D	A	B	D	A	A	D	A	A
Approach Vol, veh/h		409			967			133			132	
Approach Delay, s/veh		13.3			18.0			42.3			45.3	
Approach LOS		B			B			D			D	

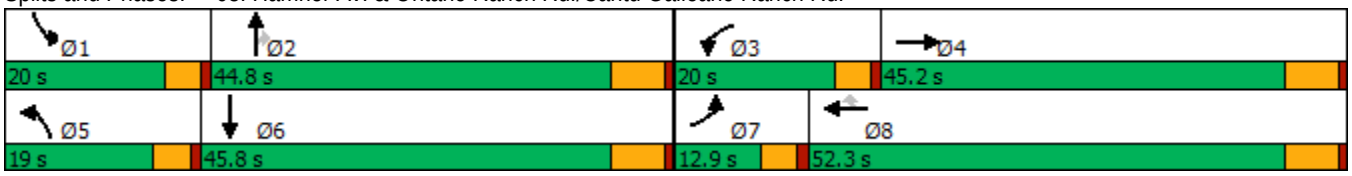
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		19.2	17.6	65.4		19.2	5.9	77.0				
Change Period (Y+Rc), s		4.6	4.6	6.2		4.6	4.6	6.2				
Max Green Setting (Gmax), s		28.4	25.4	50.8		28.4	5.4	70.8				
Max Q Clear Time (g_c+I1), s		9.9	12.9	13.1		14.0	2.7	26.4				
Green Ext Time (p_c), s		0.7	0.2	2.1		0.6	0.0	5.8				

Intersection Summary												
HCM 6th Ctrl Delay			21.0									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	93	535	264	807	195	165	674	484	148	200
Future Volume (vph)	93	535	264	807	195	165	674	484	148	200
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2
Total Split (s)	12.9	45.2	20.0	52.3	52.3	19.0	44.8	44.8	20.0	45.8
Total Split (%)	9.9%	34.8%	15.4%	40.2%	40.2%	14.6%	34.5%	34.5%	15.4%	35.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	7.6	30.1	14.4	36.8	36.8	11.3	31.6	31.6	10.9	31.2
Actuated g/C Ratio	0.07	0.27	0.13	0.34	0.34	0.10	0.29	0.29	0.10	0.28
v/c Ratio	0.52	0.41	0.78	0.80	0.34	0.62	0.54	0.87	0.57	0.23
Control Delay	64.1	32.5	63.6	39.7	5.6	59.7	35.1	35.6	58.5	23.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.1	32.5	63.6	39.7	5.6	59.7	35.1	35.6	58.5	23.3
LOS	E	C	E	D	A	E	D	D	E	C
Approach Delay		36.6		39.4			38.4			35.4
Approach LOS		D		D			D			D

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 109.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 38.1	Intersection LOS: D
Intersection Capacity Utilization 64.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	535	79	264	807	195	165	674	484	148	200	81
Future Volume (veh/h)	93	535	79	264	807	195	165	674	484	148	200	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	106	608	90	300	917	222	188	766	543	168	227	92
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	153	1402	202	352	1101	491	242	1737	539	222	1220	457
Arrive On Green	0.05	0.25	0.25	0.12	0.32	0.32	0.08	0.35	0.35	0.07	0.35	0.35
Sat Flow, veh/h	2956	5508	793	2956	3420	1525	2956	4914	1525	2956	3519	1319
Grp Volume(v), veh/h	106	510	188	300	917	222	188	766	543	168	210	109
Grp Sat Flow(s),veh/h/ln	1478	1548	1657	1478	1710	1525	1478	1638	1525	1478	1638	1561
Q Serve(g_s), s	3.9	10.0	10.4	10.9	27.1	12.6	6.8	13.0	38.6	6.1	4.9	5.3
Cycle Q Clear(g_c), s	3.9	10.0	10.4	10.9	27.1	12.6	6.8	13.0	38.6	6.1	4.9	5.3
Prop In Lane	1.00		0.48	1.00		1.00	1.00		1.00	1.00		0.84
Lane Grp Cap(c), veh/h	153	1182	422	352	1101	491	242	1737	539	222	1136	541
V/C Ratio(X)	0.69	0.43	0.45	0.85	0.83	0.45	0.78	0.44	1.01	0.76	0.18	0.20
Avail Cap(c_a), veh/h	225	1659	592	417	1444	644	390	1737	539	417	1188	566
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	34.1	34.2	47.1	34.3	29.4	49.2	27.0	35.3	49.5	24.9	25.0
Incr Delay (d2), s/veh	2.1	0.2	0.7	12.0	3.3	0.7	2.1	0.2	40.5	2.0	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.6	4.0	4.4	11.0	4.4	2.5	4.8	19.3	2.2	1.8	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.0	34.3	35.0	59.2	37.6	30.0	51.2	27.2	75.8	51.5	25.0	25.2
LnGrp LOS	D	C	C	E	D	C	D	C	F	D	C	C
Approach Vol, veh/h		804			1439			1497			487	
Approach Delay, s/veh		36.9			40.9			47.8			34.2	
Approach LOS		D			D			D			C	

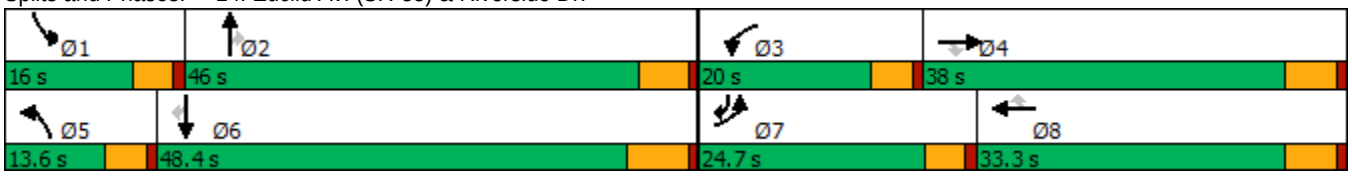
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.8	44.8	17.6	34.0	13.5	44.1	10.2	41.4
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	15.4	38.6	15.4	39.0	14.4	39.6	8.3	46.1
Max Q Clear Time (g_c+I1), s	8.1	40.6	12.9	12.4	8.8	7.3	5.9	29.1
Green Ext Time (p_c), s	0.1	0.0	0.2	4.1	0.1	1.8	0.0	6.0

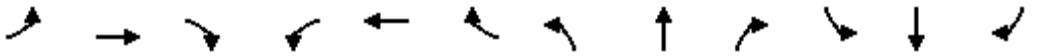
Intersection Summary	
HCM 6th Ctrl Delay	41.8
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	440	74	178	393	62	69	1015	230	134	895	185
Future Volume (vph)	145	440	74	178	393	62	69	1015	230	134	895	185
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	24.7	38.0	38.0	20.0	33.3	33.3	13.6	46.0	46.0	16.0	48.4	24.7
Total Split (%)	20.6%	31.7%	31.7%	16.7%	27.8%	27.8%	11.3%	38.3%	38.3%	13.3%	40.3%	20.6%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	None
Act Effct Green (s)	15.1	31.6	31.6	15.0	31.5	31.5	8.1	40.6	40.6	11.4	44.9	61.9
Actuated g/C Ratio	0.13	0.27	0.27	0.13	0.26	0.26	0.07	0.34	0.34	0.10	0.38	0.52
v/c Ratio	0.74	0.96	0.16	0.91	0.45	0.13	0.65	0.91	0.36	0.91	0.72	0.22
Control Delay	70.8	75.7	2.7	95.8	39.3	0.5	81.2	49.6	7.0	105.3	36.8	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.8	75.7	2.7	95.8	39.3	0.5	81.2	49.6	7.0	105.3	36.8	4.0
LOS	E	E	A	F	D	A	F	D	A	F	D	A
Approach Delay		66.4			51.3			43.8			39.4	
Approach LOS		E			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 47.5	Intersection LOS: D
Intersection Capacity Utilization 90.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	440	74	178	393	62	69	1015	230	134	895	185
Future Volume (veh/h)	145	440	74	178	393	62	69	1015	230	134	895	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	151	458	52	185	409	49	72	1057	186	140	932	102
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	175	479	406	206	974	434	89	1147	511	152	1280	729
Arrive On Green	0.11	0.27	0.27	0.13	0.28	0.28	0.06	0.34	0.34	0.09	0.37	0.37
Sat Flow, veh/h	1619	1800	1525	1619	3420	1524	1619	3420	1525	1619	3420	1506
Grp Volume(v), veh/h	151	458	52	185	409	49	72	1057	186	140	932	102
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	1524	1619	1710	1525	1619	1710	1506
Q Serve(g_s), s	11.1	30.3	3.1	13.6	11.8	2.9	5.3	36.0	11.2	10.4	28.4	4.6
Cycle Q Clear(g_c), s	11.1	30.3	3.1	13.6	11.8	2.9	5.3	36.0	11.2	10.4	28.4	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	479	406	206	974	434	89	1147	511	152	1280	729
V/C Ratio(X)	0.86	0.96	0.13	0.90	0.42	0.11	0.81	0.92	0.36	0.92	0.73	0.14
Avail Cap(c_a), veh/h	269	479	406	206	974	434	120	1147	511	152	1280	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.1	43.8	33.8	52.1	35.2	32.0	56.6	38.7	30.5	54.4	32.6	17.4
Incr Delay (d2), s/veh	10.5	30.4	0.1	35.4	0.3	0.1	18.1	13.4	2.0	48.7	3.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	17.0	1.2	7.4	4.8	1.1	2.5	16.2	4.3	6.2	12.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.6	74.1	33.9	87.5	35.5	32.1	74.7	52.1	32.5	103.0	36.3	17.8
LnGrp LOS	E	E	C	F	D	C	E	D	C	F	D	B
Approach Vol, veh/h		661			643			1315			1174	
Approach Delay, s/veh		68.6			50.2			50.6			42.6	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	47.1	20.0	38.0	11.3	51.8	17.7	40.3
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	11.4	* 41	15.4	32.2	9.0	41.9	20.1	27.5
Max Q Clear Time (g_c+I1), s	12.4	38.0	15.6	32.3	7.3	30.4	13.1	13.8
Green Ext Time (p_c), s	0.0	1.7	0.0	0.0	0.0	4.9	0.1	2.1

Intersection Summary	
HCM 6th Ctrl Delay	51.2
HCM 6th LOS	D

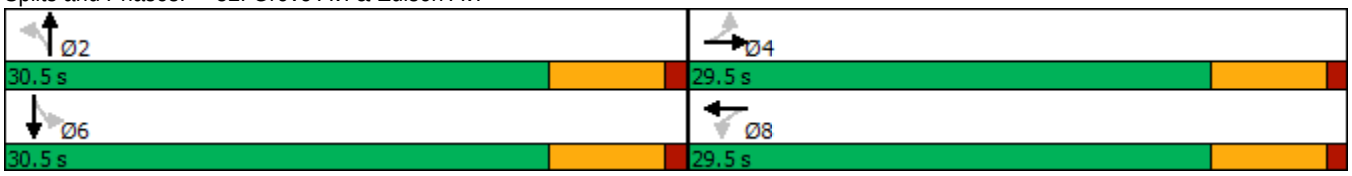
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	43	430	87	266	13	281	128	195
Future Volume (vph)	43	430	87	266	13	281	128	195
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Total Split (s)	29.5	29.5	29.5	29.5	30.5	30.5	30.5	30.5
Total Split (%)	49.2%	49.2%	49.2%	49.2%	50.8%	50.8%	50.8%	50.8%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		23.4		23.4		22.6		22.6
Actuated g/C Ratio		0.40		0.40		0.39		0.39
v/c Ratio		0.77		0.79		0.77		0.92
Control Delay		25.8		29.1		22.3		48.7
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		25.8		29.1		22.3		48.7
LOS		C		C		C		D
Approach Delay		25.8		29.1		22.3		48.7
Approach LOS		C		C		C		D

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 58.4	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 30.2	Intersection LOS: C
Intersection Capacity Utilization 107.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	430	7	87	266	50	13	281	198	128	195	22
Future Volume (veh/h)	43	430	7	87	266	50	13	281	198	128	195	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	46	462	8	94	286	54	14	302	213	138	210	24
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	107	672	11	177	459	79	72	367	252	207	274	27
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	90	1628	27	240	1112	192	17	999	685	325	746	74
Grp Volume(v), veh/h	516	0	0	434	0	0	529	0	0	372	0	0
Grp Sat Flow(s),veh/h/ln	1745	0	0	1544	0	0	1701	0	0	1144	0	0
Q Serve(g_s), s	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0
Cycle Q Clear(g_c), s	13.5	0.0	0.0	12.2	0.0	0.0	16.1	0.0	0.0	17.8	0.0	0.0
Prop In Lane	0.09		0.02	0.22		0.12	0.03		0.40	0.37		0.06
Lane Grp Cap(c), veh/h	790	0	0	715	0	0	690	0	0	508	0	0
V/C Ratio(X)	0.65	0.00	0.00	0.61	0.00	0.00	0.77	0.00	0.00	0.73	0.00	0.00
Avail Cap(c_a), veh/h	790	0	0	715	0	0	795	0	0	590	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.6	0.0	0.0	13.1	0.0	0.0	16.5	0.0	0.0	16.2	0.0	0.0
Incr Delay (d2), s/veh	4.2	0.0	0.0	3.8	0.0	0.0	3.9	0.0	0.0	3.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	0.0	3.9	0.0	0.0	5.5	0.0	0.0	3.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.8	0.0	0.0	16.9	0.0	0.0	20.4	0.0	0.0	20.2	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		516			434			529			372	
Approach Delay, s/veh		17.8			16.9			20.4			20.2	
Approach LOS		B			B			C			C	

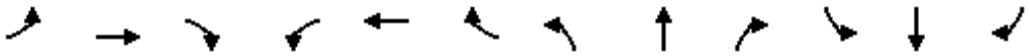
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.9		29.5		26.9		29.5				
Change Period (Y+Rc), s		6.2		6.2		6.2		6.2				
Max Green Setting (Gmax), s		24.3		23.3		24.3		23.3				
Max Q Clear Time (g_c+I1), s		18.1		15.5		19.8		14.2				
Green Ext Time (p_c), s		1.6		1.8		0.9		1.7				

Intersection Summary												
HCM 6th Ctrl Delay			18.8									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	89	83	5	17	14	414	12	246
Future Volume (vph)	89	83	5	17	14	414	12	246
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	22.8	22.8	22.8	22.8	23.2	23.2	23.2	23.2
Total Split (s)	23.0	23.0	23.0	23.0	97.0	97.0	97.0	97.0
Total Split (%)	19.2%	19.2%	19.2%	19.2%	80.8%	80.8%	80.8%	80.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.8		5.8		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		17.2		17.2		90.8		90.8
Actuated g/C Ratio		0.14		0.14		0.76		0.76
v/c Ratio		1.12		0.16		1.16		0.24
Control Delay		137.9		34.1		97.7		4.7
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		137.9		34.1		97.7		4.7
LOS		F		C		F		A
Approach Delay		137.9		34.1		97.7		4.7
Approach LOS		F		C		F		A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 88.4	Intersection LOS: F
Intersection Capacity Utilization 59.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	83	68	5	17	13	14	414	4	12	246	29
Future Volume (veh/h)	89	83	68	5	17	13	14	414	4	12	246	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1872	1872	1800	1872	1872	1800	1872	1872	1800	1872	1872
Adj Flow Rate, veh/h	99	92	76	6	19	14	16	1656	4	13	273	32
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.25	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	124	85	67	53	138	88	36	1402	3	53	1003	115
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.98	0.98	0.98	0.98	0.98	0.98
Sat Flow, veh/h	580	596	468	131	964	613	8	1853	4	29	1326	152
Grp Volume(v), veh/h	267	0	0	39	0	0	1676	0	0	318	0	0
Grp Sat Flow(s),veh/h/ln	1644	0	0	1708	0	0	1866	0	0	1506	0	0
Q Serve(g_s), s	14.9	0.0	0.0	0.0	0.0	0.0	41.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	17.2	0.0	0.0	2.3	0.0	0.0	90.8	0.0	0.0	0.4	0.0	0.0
Prop In Lane	0.37		0.28	0.15		0.36	0.01		0.00	0.04		0.10
Lane Grp Cap(c), veh/h	277	0	0	279	0	0	1442	0	0	1171	0	0
V/C Ratio(X)	0.96	0.00	0.00	0.14	0.00	0.00	1.16	0.00	0.00	0.27	0.00	0.00
Avail Cap(c_a), veh/h	277	0	0	279	0	0	1442	0	0	1171	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.30	1.30	1.30	1.30	1.30	1.30
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	52.3	0.0	0.0	45.0	0.0	0.0	1.9	0.0	0.0	0.2	0.0	0.0
Incr Delay (d2), s/veh	44.3	0.0	0.0	0.2	0.0	0.0	81.0	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	0.0	0.0	1.0	0.0	0.0	32.9	0.0	0.0	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	96.6	0.0	0.0	45.3	0.0	0.0	82.9	0.0	0.0	0.8	0.0	0.0
LnGrp LOS	F	A	A	D	A	A	F	A	A	A	A	A
Approach Vol, veh/h		267			39			1676			318	
Approach Delay, s/veh		96.6			45.3			82.9			0.8	
Approach LOS		F			D			F			A	

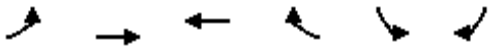
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		97.0		23.0		97.0		23.0				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		90.8		17.2		90.8		17.2				
Max Q Clear Time (g_c+I1), s		92.8		19.2		2.4		4.3				
Green Ext Time (p_c), s		0.0		0.0		2.1		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		72.5
HCM 6th LOS		E

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	177	501	373	225
Future Volume (vph)	177	501	373	225
Turn Type	Perm	NA	NA	Prot
Protected Phases		4	8	6
Permitted Phases	4			
Detector Phase	4	4	8	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2
Total Split (s)	81.2	81.2	81.2	28.8
Total Split (%)	73.8%	73.8%	73.8%	26.2%
Yellow Time (s)	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0
Total Lost Time (s)		6.2	6.2	6.2
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	Max	Max	Max	None
Act Effct Green (s)		75.0	75.0	22.6
Actuated g/C Ratio		0.68	0.68	0.21
v/c Ratio		1.01	0.55	0.98
Control Delay		57.1	10.0	87.1
Queue Delay		0.0	0.0	0.0
Total Delay		57.1	10.0	87.1
LOS		E	A	F
Approach Delay		57.1	10.0	87.1
Approach LOS		E	A	F

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 44.7	Intersection LOS: D
Intersection Capacity Utilization 111.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	177	501	373	255	225	93
Future Volume (veh/h)	177	501	373	255	225	93
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	184	522	389	266	234	97
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	209	541	679	464	226	94
Arrive On Green	0.68	0.68	0.68	0.68	0.21	0.21
Sat Flow, veh/h	247	793	996	681	1101	457
Grp Volume(v), veh/h	706	0	0	655	332	0
Grp Sat Flow(s),veh/h/ln	1039	0	0	1677	1563	0
Q Serve(g_s), s	52.1	0.0	0.0	22.4	22.6	0.0
Cycle Q Clear(g_c), s	74.5	0.0	0.0	22.4	22.6	0.0
Prop In Lane	0.26			0.41	0.70	0.29
Lane Grp Cap(c), veh/h	750	0	0	1144	321	0
V/C Ratio(X)	0.94	0.00	0.00	0.57	1.03	0.00
Avail Cap(c_a), veh/h	750	0	0	1144	321	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.4	0.0	0.0	9.1	43.7	0.0
Incr Delay (d2), s/veh	21.3	0.0	0.0	2.1	59.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.3	0.0	0.0	7.0	13.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	45.7	0.0	0.0	11.2	103.0	0.0
LnGrp LOS	D	A	A	B	F	A
Approach Vol, veh/h		706	655		332	
Approach Delay, s/veh		45.7	11.2		103.0	
Approach LOS		D	B		F	

Timer - Assigned Phs			4		6	8
Phs Duration (G+Y+Rc), s			81.2		28.8	81.2
Change Period (Y+Rc), s			6.2		6.2	6.2
Max Green Setting (Gmax), s			75.0		22.6	75.0
Max Q Clear Time (g_c+I1), s			76.5		24.6	24.4
Green Ext Time (p_c), s			0.0		0.0	4.7

Intersection Summary		
HCM 6th Ctrl Delay	43.6	
HCM 6th LOS	D	

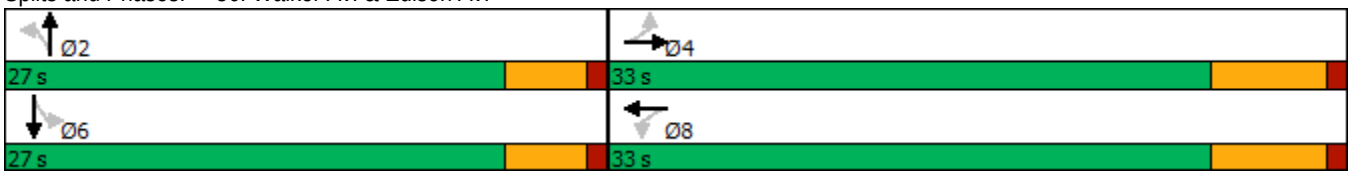
Notes

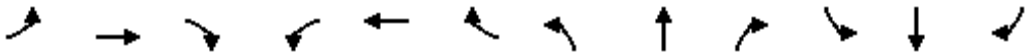
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	20	721	15	378	3	20	64	13
Future Volume (vph)	20	721	15	378	3	20	64	13
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	26.7	26.7	26.7	26.7
Total Split (s)	33.0	33.0	33.0	33.0	27.0	27.0	27.0	27.0
Total Split (%)	55.0%	55.0%	55.0%	55.0%	45.0%	45.0%	45.0%	45.0%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		4.7		4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		36.1		36.1		12.1		12.1
Actuated g/C Ratio		0.72		0.72		0.24		0.24
v/c Ratio		0.62		0.36		0.18		0.29
Control Delay		13.5		7.9		8.0		16.0
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		13.5		7.9		8.0		16.0
LOS		B		A		A		B
Approach Delay		13.5		7.9		8.0		16.0
Approach LOS		B		A		A		B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 50.4	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 11.6	Intersection LOS: B
Intersection Capacity Utilization 69.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (veh/h)	20	721	1	15	378	30	3	20	49	64	13	10
Future Volume (veh/h)	20	721	1	15	378	30	3	20	49	64	13	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	21	759	1	16	398	32	3	21	52	67	14	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	90	1015	1	92	921	72	84	92	208	320	64	34
Arrive On Green	0.58	0.58	0.58	0.58	0.58	0.58	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	18	1763	2	21	1599	125	21	484	1093	978	335	178
Grp Volume(v), veh/h	781	0	0	446	0	0	76	0	0	92	0	0
Grp Sat Flow(s),veh/h/ln	1784	0	0	1746	0	0	1597	0	0	1491	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Cycle Q Clear(g_c), s	15.2	0.0	0.0	6.6	0.0	0.0	1.9	0.0	0.0	2.1	0.0	0.0
Prop In Lane	0.03		0.00	0.04		0.07	0.04		0.68	0.73		0.12
Lane Grp Cap(c), veh/h	1106	0	0	1085	0	0	384	0	0	417	0	0
V/C Ratio(X)	0.71	0.00	0.00	0.41	0.00	0.00	0.20	0.00	0.00	0.22	0.00	0.00
Avail Cap(c_a), veh/h	1106	0	0	1085	0	0	842	0	0	828	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.4	0.0	0.0	5.6	0.0	0.0	16.0	0.0	0.0	16.1	0.0	0.0
Incr Delay (d2), s/veh	3.8	0.0	0.0	1.2	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	0.0	1.4	0.0	0.0	0.6	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.2	0.0	0.0	6.8	0.0	0.0	16.3	0.0	0.0	16.4	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		781			446			76			92	
Approach Delay, s/veh		11.2			6.8			16.3			16.4	
Approach LOS		B			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.6		33.0		13.6		33.0				
Change Period (Y+Rc), s		* 4.7		6.2		* 4.7		6.2				
Max Green Setting (Gmax), s		* 22		26.8		* 22		26.8				
Max Q Clear Time (g_c+I1), s		3.9		17.2		4.1		8.6				
Green Ext Time (p_c), s		0.3		3.4		0.4		2.3				

Intersection Summary		
HCM 6th Ctrl Delay		10.4
HCM 6th LOS		B

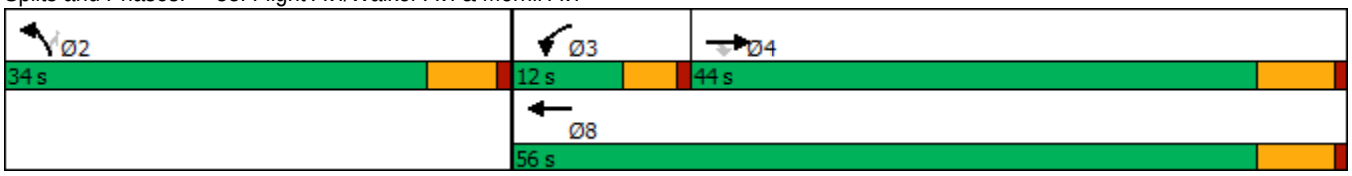
Notes

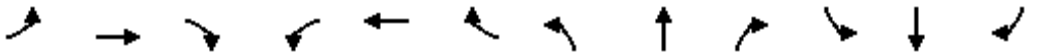
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	617	110	87	525	102	121
Future Volume (vph)	617	110	87	525	102	121
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Detector Phase	4	4	3	8	2	2
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	23.2	23.2	9.6	16.2	32.8	32.8
Total Split (s)	44.0	44.0	12.0	56.0	34.0	34.0
Total Split (%)	48.9%	48.9%	13.3%	62.2%	37.8%	37.8%
Yellow Time (s)	5.2	5.2	3.6	5.2	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	4.6	6.2	5.8	5.8
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	Min	Min
Act Effct Green (s)	31.8	31.8	7.3	40.7	13.5	13.5
Actuated g/C Ratio	0.47	0.47	0.11	0.61	0.20	0.20
v/c Ratio	0.79	0.16	0.55	0.53	0.34	0.32
Control Delay	25.4	5.4	47.1	10.2	28.6	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.4	5.4	47.1	10.2	28.6	7.3
LOS	C	A	D	B	C	A
Approach Delay	22.4			15.4		
Approach LOS	C			B		

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 67	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 18.9	Intersection LOS: B
Intersection Capacity Utilization 58.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 38: Flight Av./Walker Av. & Merrill Av.



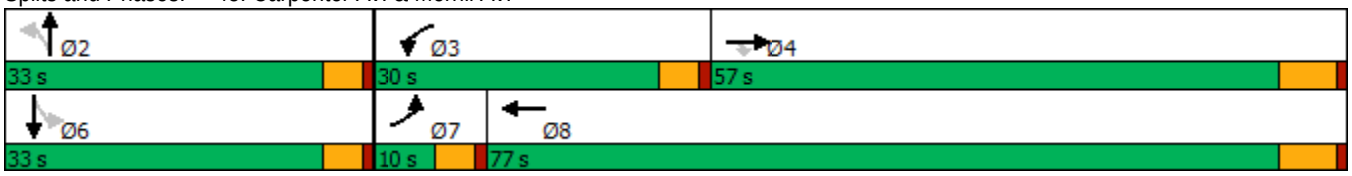


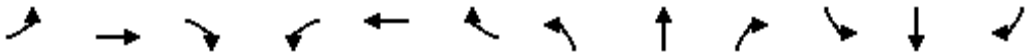
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	617	110	87	525	0	102	0	121	0	0	0
Future Volume (veh/h)	0	617	110	87	525	0	102	0	121	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1800	1800	1700	1800	0	1700	0	1800			
Adj Flow Rate, veh/h	0	678	121	96	577	0	112	0	133			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.25	0.91	0.91	0.91			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	0	803	680	119	1084	0	293	0	276			
Arrive On Green	0.00	0.45	0.45	0.07	0.60	0.00	0.18	0.00	0.18			
Sat Flow, veh/h	0	1800	1525	1619	1800	0	1619	0	1525			
Grp Volume(v), veh/h	0	678	121	96	577	0	112	0	133			
Grp Sat Flow(s),veh/h/ln	0	1800	1525	1619	1800	0	1619	0	1525			
Q Serve(g_s), s	0.0	18.5	2.6	3.2	10.4	0.0	3.4	0.0	4.3			
Cycle Q Clear(g_c), s	0.0	18.5	2.6	3.2	10.4	0.0	3.4	0.0	4.3			
Prop In Lane	0.00		1.00	1.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	803	680	119	1084	0	293	0	276			
V/C Ratio(X)	0.00	0.84	0.18	0.81	0.53	0.00	0.38	0.00	0.48			
Avail Cap(c_a), veh/h	0	1230	1042	217	1620	0	825	0	777			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	13.6	9.2	25.3	6.4	0.0	19.9	0.0	20.3			
Incr Delay (d2), s/veh	0.0	3.4	0.1	4.9	0.4	0.0	0.8	0.0	1.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	5.9	0.6	1.2	2.1	0.0	1.2	0.0	1.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.1	9.3	30.2	6.8	0.0	20.8	0.0	21.6			
LnGrp LOS	A	B	A	C	A	A	C	A	C			
Approach Vol, veh/h		799			673			245				
Approach Delay, s/veh		15.9			10.2			21.2				
Approach LOS		B			B			C				
Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		15.8	8.6	30.9				39.5				
Change Period (Y+Rc), s		5.8	4.6	6.2				6.2				
Max Green Setting (Gmax), s		28.2	7.4	37.8				49.8				
Max Q Clear Time (g_c+I1), s		6.3	5.2	20.5				12.4				
Green Ext Time (p_c), s		0.7	0.0	4.2				3.6				
Intersection Summary												
HCM 6th Ctrl Delay			14.4									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	4	747	21	25	410	36	4	52	5
Future Volume (vph)	4	747	21	25	410	36	4	52	5
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	26.6	26.6
Total Split (s)	10.0	57.0	57.0	30.0	77.0	33.0	33.0	33.0	33.0
Total Split (%)	8.3%	47.5%	47.5%	25.0%	64.2%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2		4.6		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.1	71.2	71.2	6.3	74.2		12.7		12.7
Actuated g/C Ratio	0.05	0.71	0.71	0.06	0.74		0.13		0.13
v/c Ratio	0.05	0.64	0.02	0.26	0.35		0.56		0.62
Control Delay	48.5	13.0	0.0	51.1	6.4		24.2		64.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	48.5	13.0	0.0	51.1	6.4		24.2		64.1
LOS	D	B	A	D	A		C		E
Approach Delay		12.8			8.9		24.2		64.1
Approach LOS		B			A		C		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 14.9	Intersection LOS: B
Intersection Capacity Utilization 60.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 45: Carpenter Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	747	21	25	410	7	36	4	99	52	5	2
Future Volume (veh/h)	4	747	21	25	410	7	36	4	99	52	5	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	4	830	23	28	456	8	40	4	110	58	6	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	9	1254	1063	47	1267	22	84	17	137	177	16	4
Arrive On Green	0.01	0.70	0.70	0.03	0.72	0.72	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1714	1800	1525	1714	1763	31	320	138	1146	902	134	32
Grp Volume(v), veh/h	4	830	23	28	0	464	154	0	0	66	0	0
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	0	1794	1604	0	0	1069	0	0
Q Serve(g_s), s	0.2	25.6	0.5	1.6	0.0	9.7	2.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	25.6	0.5	1.6	0.0	9.7	9.0	0.0	0.0	6.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.26		0.71	0.88		0.03
Lane Grp Cap(c), veh/h	9	1254	1063	47	0	1290	238	0	0	197	0	0
V/C Ratio(X)	0.44	0.66	0.02	0.60	0.00	0.36	0.65	0.00	0.00	0.34	0.00	0.00
Avail Cap(c_a), veh/h	94	1254	1063	442	0	1290	492	0	0	422	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	48.8	8.4	4.6	47.4	0.0	5.3	42.1	0.0	0.0	40.8	0.0	0.0
Incr Delay (d2), s/veh	12.2	2.8	0.0	4.6	0.0	0.8	2.9	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	7.9	0.1	0.7	0.0	2.7	3.8	0.0	0.0	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.0	11.2	4.6	51.9	0.0	6.0	45.0	0.0	0.0	41.8	0.0	0.0
LnGrp LOS	E	B	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		857			492			154			66	
Approach Delay, s/veh		11.2			8.6			45.0			41.8	
Approach LOS		B			A			D			D	

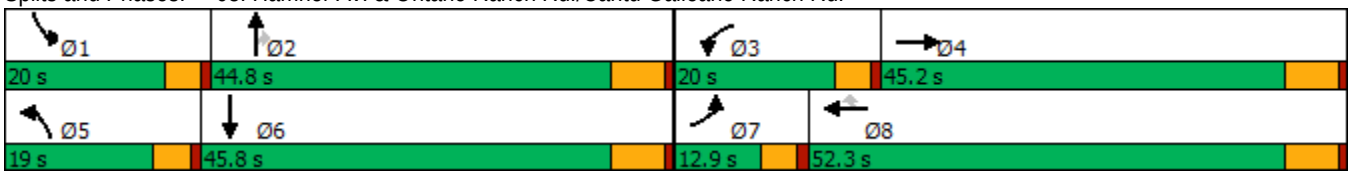
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.4	7.3	74.8		16.4	5.1	77.0				
Change Period (Y+Rc), s		4.6	4.6	6.2		4.6	4.6	6.2				
Max Green Setting (Gmax), s		28.4	25.4	50.8		28.4	5.4	70.8				
Max Q Clear Time (g_c+I1), s		11.0	3.6	27.6		8.1	2.2	11.7				
Green Ext Time (p_c), s		0.8	0.0	5.7		0.3	0.0	2.7				

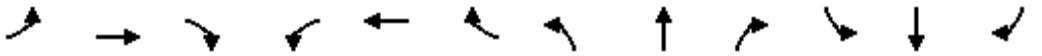
Intersection Summary												
HCM 6th Ctrl Delay			15.0									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	89	792	580	443	107	195	372	233	451	790
Future Volume (vph)	89	792	580	443	107	195	372	233	451	790
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2
Total Split (s)	12.9	45.2	20.0	52.3	52.3	19.0	44.8	44.8	20.0	45.8
Total Split (%)	9.9%	34.8%	15.4%	40.2%	40.2%	14.6%	34.5%	34.5%	15.4%	35.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	7.3	27.0	15.8	37.9	37.9	11.3	23.0	23.0	15.8	27.4
Actuated g/C Ratio	0.07	0.26	0.15	0.37	0.37	0.11	0.22	0.22	0.15	0.26
v/c Ratio	0.45	0.69	1.35	0.37	0.18	0.63	0.36	0.50	1.05	0.73
Control Delay	57.6	35.1	206.2	27.2	5.8	55.8	34.7	11.7	100.1	38.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.6	35.1	206.2	27.2	5.8	55.8	34.7	11.7	100.1	38.0
LOS	E	D	F	C	A	E	C	B	F	D
Approach Delay		36.9		117.1			33.1			58.7
Approach LOS		D		F			C			E

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 103.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.35	
Intersection Signal Delay: 63.3	Intersection LOS: E
Intersection Capacity Utilization 80.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	792	263	580	443	107	195	372	233	451	790	108
Future Volume (veh/h)	89	792	263	580	443	107	195	372	233	451	790	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	93	825	217	604	461	77	203	388	164	470	823	57
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	149	1233	316	509	1269	566	268	812	252	509	1157	80
Arrive On Green	0.05	0.25	0.25	0.17	0.37	0.37	0.09	0.17	0.17	0.17	0.25	0.25
Sat Flow, veh/h	2956	4948	1268	2956	3420	1525	2956	4914	1523	2956	4693	324
Grp Volume(v), veh/h	93	773	269	604	461	77	203	388	164	470	574	306
Grp Sat Flow(s),veh/h/ln	1478	1548	1572	1478	1710	1525	1478	1638	1523	1478	1638	1741
Q Serve(g_s), s	2.8	13.4	13.9	15.4	8.8	3.0	6.0	6.4	9.0	14.0	14.3	14.4
Cycle Q Clear(g_c), s	2.8	13.4	13.9	15.4	8.8	3.0	6.0	6.4	9.0	14.0	14.3	14.4
Prop In Lane	1.00		0.81	1.00		1.00	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	149	1157	392	509	1269	566	268	812	252	509	808	429
V/C Ratio(X)	0.62	0.67	0.69	1.19	0.36	0.14	0.76	0.48	0.65	0.92	0.71	0.71
Avail Cap(c_a), veh/h	274	2024	685	509	1762	786	476	2120	657	509	1450	771
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.7	30.3	30.4	37.0	20.5	18.6	39.7	33.8	34.9	36.5	30.8	30.8
Incr Delay (d2), s/veh	1.6	0.7	2.1	102.6	0.2	0.1	1.6	0.4	2.8	22.3	1.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	4.6	5.0	12.4	3.2	1.0	2.1	2.4	3.3	6.3	5.3	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.3	30.9	32.6	139.7	20.6	18.8	41.4	34.3	37.8	58.8	32.0	33.0
LnGrp LOS	D	C	C	F	C	B	D	C	D	E	C	C
Approach Vol, veh/h		1135			1142			755			1350	
Approach Delay, s/veh		32.3			83.5			36.9			41.5	
Approach LOS		C			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	21.0	20.0	28.5	12.7	28.3	9.1	39.4
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	15.4	38.6	15.4	39.0	14.4	39.6	8.3	46.1
Max Q Clear Time (g_c+I1), s	16.0	11.0	17.4	15.9	8.0	16.4	4.8	10.8
Green Ext Time (p_c), s	0.0	2.9	0.0	6.4	0.2	5.2	0.0	3.1

Intersection Summary	
HCM 6th Ctrl Delay	49.3
HCM 6th LOS	D

APPENDIX 5.14:

E+P (PHASE B) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

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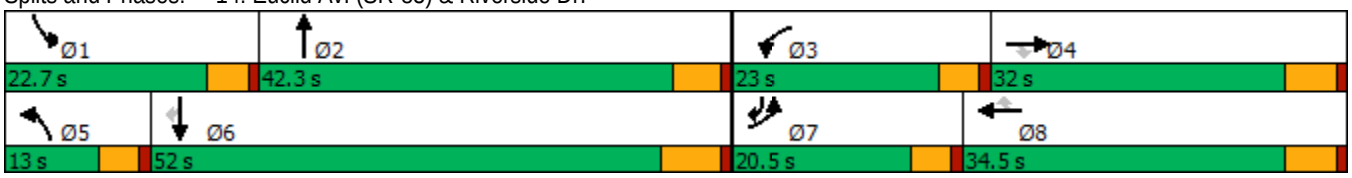
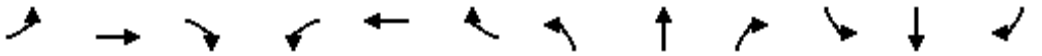
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	153	311	65	187	488	115	71	946	174	1062	152
Future Volume (vph)	153	311	65	187	488	115	71	946	174	1062	152
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2	1	6	7
Permitted Phases			4			8					6
Detector Phase	7	4	4	3	8	8	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	9.6	34.5	9.6
Total Split (s)	20.5	32.0	32.0	23.0	34.5	34.5	13.0	42.3	22.7	52.0	20.5
Total Split (%)	17.1%	26.7%	26.7%	19.2%	28.8%	28.8%	10.8%	35.3%	18.9%	43.3%	17.1%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	Max	None
Act Effct Green (s)	14.1	23.7	23.7	16.5	26.1	26.1	7.8	37.7	15.8	47.1	63.1
Actuated g/C Ratio	0.12	0.21	0.21	0.14	0.23	0.23	0.07	0.33	0.14	0.41	0.55
v/c Ratio	0.81	0.88	0.15	0.85	0.66	0.26	0.68	0.72	0.82	0.79	0.18
Control Delay	79.4	68.9	0.7	79.3	45.0	3.8	83.7	37.1	76.6	36.4	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.4	68.9	0.7	79.3	45.0	3.8	83.7	37.1	76.6	36.4	4.8
LOS	E	E	A	E	D	A	F	D	E	D	A
Approach Delay		63.6			47.1			39.9		38.0	
Approach LOS		E			D			D		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 43.9	Intersection LOS: D
Intersection Capacity Utilization 82.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	311	65	187	488	115	71	946	155	174	1062	152
Future Volume (veh/h)	153	311	65	187	488	115	71	946	155	174	1062	152
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	161	327	52	197	514	92	75	996	123	183	1118	101
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	187	364	308	223	768	342	93	1496	184	209	1400	800
Arrive On Green	0.12	0.20	0.20	0.14	0.22	0.22	0.06	0.34	0.34	0.13	0.41	0.41
Sat Flow, veh/h	1619	1800	1525	1619	3420	1525	1619	4432	546	1619	3420	1524
Grp Volume(v), veh/h	161	327	52	197	514	92	75	736	383	183	1118	101
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	1525	1619	1638	1702	1619	1710	1524
Q Serve(g_s), s	10.9	19.7	3.1	13.3	15.3	5.5	5.1	21.3	21.4	12.3	31.9	3.8
Cycle Q Clear(g_c), s	10.9	19.7	3.1	13.3	15.3	5.5	5.1	21.3	21.4	12.3	31.9	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	187	364	308	223	768	342	93	1106	574	209	1400	800
V/C Ratio(X)	0.86	0.90	0.17	0.88	0.67	0.27	0.81	0.67	0.67	0.87	0.80	0.13
Avail Cap(c_a), veh/h	232	424	359	268	883	394	122	1106	574	264	1400	800
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.3	43.3	36.6	47.1	39.3	35.6	51.8	31.5	31.5	47.5	28.8	13.5
Incr Delay (d2), s/veh	20.0	19.7	0.3	22.0	1.6	0.4	18.9	3.2	6.0	19.5	4.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	10.4	1.2	6.5	6.3	2.0	2.5	8.3	9.1	6.0	13.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.3	63.0	36.9	69.1	41.0	36.0	70.7	34.6	37.5	67.0	33.7	13.8
LnGrp LOS	E	E	D	E	D	D	E	C	D	E	C	B
Approach Vol, veh/h		540			803			1194			1402	
Approach Delay, s/veh		62.0			47.3			37.8			36.6	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	44.0	19.9	28.3	11.0	52.0	17.4	30.8
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	18.1	* 37	18.4	26.2	8.4	45.5	15.9	28.7
Max Q Clear Time (g_c+I1), s	14.3	23.4	15.3	21.7	7.1	33.9	12.9	17.3
Green Ext Time (p_c), s	0.1	5.4	0.1	0.8	0.0	5.9	0.1	2.6

Intersection Summary	
HCM 6th Ctrl Delay	42.6
HCM 6th LOS	D

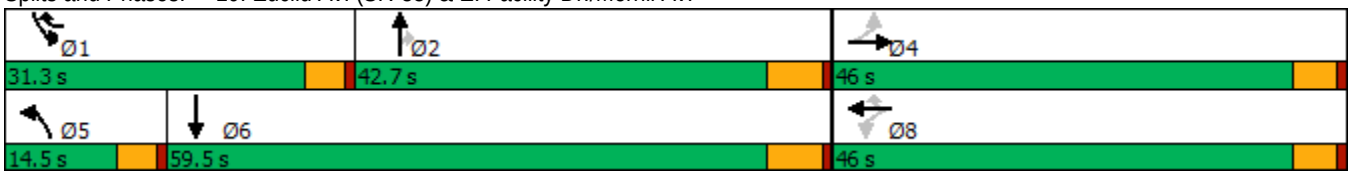
Notes

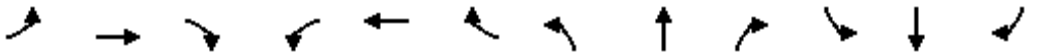
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	4	8	256	48	295	10	1013	245	345	981
Future Volume (vph)	4	8	256	48	295	10	1013	245	345	981
Turn Type	Perm	NA	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	1	5	2		1	6
Permitted Phases	4		8		8			2		
Detector Phase	4	4	8	8	1	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	31.3	14.5	42.7	42.7	31.3	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	26.1%	12.1%	35.6%	35.6%	26.1%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	4.5	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		20.9	20.9	20.9	52.7	10.1	37.0	37.0	26.8	65.9
Actuated g/C Ratio		0.21	0.21	0.21	0.53	0.10	0.37	0.37	0.27	0.66
v/c Ratio		0.09	0.63	0.57	0.37	0.06	0.83	0.40	0.83	0.47
Control Delay		17.4	47.2	43.3	13.7	46.6	36.9	17.6	53.3	12.3
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		17.4	47.2	43.3	13.7	46.6	36.9	17.6	53.3	12.3
LOS		B	D	D	B	D	D	B	D	B
Approach Delay		17.4		29.7			33.2			22.7
Approach LOS		B		C			C			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 100.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 28.0	Intersection LOS: C
Intersection Capacity Utilization 79.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	8	17	256	48	295	10	1013	245	345	981	39
Future Volume (veh/h)	4	8	17	256	48	295	10	1013	245	345	981	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	4	8	17	299	0	277	10	1044	210	356	1011	26
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	69	106	175	692	0	658	40	1276	569	393	2012	52
Arrive On Green	0.19	0.19	0.19	0.19	0.00	0.19	0.02	0.37	0.37	0.24	0.59	0.59
Sat Flow, veh/h	92	561	925	2659	0	1525	1619	3420	1525	1619	3404	88
Grp Volume(v), veh/h	29	0	0	299	0	277	10	1044	210	356	508	529
Grp Sat Flow(s),veh/h/ln	1578	0	0	1330	0	1525	1619	1710	1525	1619	1710	1782
Q Serve(g_s), s	0.0	0.0	0.0	6.7	0.0	10.0	0.5	21.9	7.9	16.9	13.7	13.7
Cycle Q Clear(g_c), s	1.2	0.0	0.0	7.9	0.0	10.0	0.5	21.9	7.9	16.9	13.7	13.7
Prop In Lane	0.14		0.59	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	350	0	0	692	0	658	40	1276	569	393	1011	1053
V/C Ratio(X)	0.08	0.00	0.00	0.43	0.00	0.42	0.25	0.82	0.37	0.91	0.50	0.50
Avail Cap(c_a), veh/h	845	0	0	1563	0	1158	204	1581	705	546	1152	1201
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	0.0	0.0	29.2	0.0	15.7	38.0	22.5	18.1	29.2	9.4	9.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.2	0.0	0.2	1.2	2.9	0.4	12.3	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	2.4	0.0	3.0	0.2	7.9	2.4	7.1	3.7	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.6	0.0	0.0	29.4	0.0	15.8	39.2	25.3	18.5	41.5	9.8	9.8
LnGrp LOS	C	A	A	C	A	B	D	C	B	D	A	A
Approach Vol, veh/h		29			576			1264			1393	
Approach Delay, s/veh		26.6			22.9			24.3			17.9	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.8	35.6		20.0	6.5	52.9		20.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	26.8	36.7		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	18.9	23.9		3.2	2.5	15.7		12.0				
Green Ext Time (p_c), s	0.3	5.8		0.1	0.0	6.6		1.0				

Intersection Summary			
HCM 6th Ctrl Delay		21.3	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	33	201	232	495	18	205	58	238
Future Volume (vph)	33	201	232	495	18	205	58	238
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Total Split (s)	59.0	59.0	59.0	59.0	31.0	31.0	31.0	31.0
Total Split (%)	65.6%	65.6%	65.6%	65.6%	34.4%	34.4%	34.4%	34.4%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		52.8		52.8		24.2		24.2
Actuated g/C Ratio		0.59		0.59		0.27		0.27
v/c Ratio		0.29		0.97		0.70		0.95
Control Delay		10.2		45.0		36.9		69.2
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		10.2		45.0		36.9		69.2
LOS		B		D		D		E
Approach Delay		10.2		45.0		36.9		69.2
Approach LOS		B		D		D		E

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 89.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 43.2	Intersection LOS: D
Intersection Capacity Utilization 108.0%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	201	6	232	495	31	18	205	74	58	238	28
Future Volume (veh/h)	33	201	6	232	495	31	18	205	74	58	238	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	36	221	7	255	544	34	20	225	81	64	262	31
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	138	808	25	331	622	38	57	313	108	100	307	34
Arrive On Green	0.60	0.60	0.60	0.60	0.60	0.60	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	152	1341	41	461	1032	64	53	1225	422	202	1203	134
Grp Volume(v), veh/h	264	0	0	833	0	0	326	0	0	357	0	0
Grp Sat Flow(s),veh/h/ln	1533	0	0	1556	0	0	1700	0	0	1539	0	0
Q Serve(g_s), s	0.0	0.0	0.0	33.7	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0
Cycle Q Clear(g_c), s	6.0	0.0	0.0	39.7	0.0	0.0	15.3	0.0	0.0	19.8	0.0	0.0
Prop In Lane	0.14		0.03	0.31		0.04	0.06		0.25	0.18		0.09
Lane Grp Cap(c), veh/h	971	0	0	992	0	0	478	0	0	441	0	0
V/C Ratio(X)	0.27	0.00	0.00	0.84	0.00	0.00	0.68	0.00	0.00	0.81	0.00	0.00
Avail Cap(c_a), veh/h	971	0	0	992	0	0	524	0	0	486	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.1	0.0	0.0	14.5	0.0	0.0	30.0	0.0	0.0	31.4	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	8.5	0.0	0.0	3.2	0.0	0.0	9.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	12.7	0.0	0.0	6.2	0.0	0.0	7.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.8	0.0	0.0	23.0	0.0	0.0	33.2	0.0	0.0	40.5	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	C	A	A	D	A	A
Approach Vol, veh/h		264			833			326			357	
Approach Delay, s/veh		8.8			23.0			33.2			40.5	
Approach LOS		A			C			C			D	

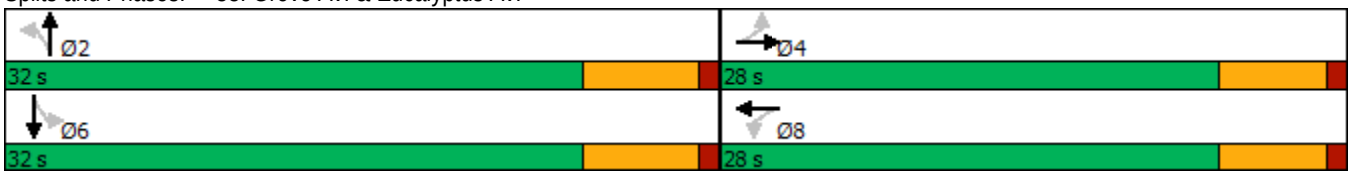
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		28.6		59.0		28.6		59.0				
Change Period (Y+Rc), s		6.2		6.2		6.2		6.2				
Max Green Setting (Gmax), s		24.8		52.8		24.8		52.8				
Max Q Clear Time (g_c+I1), s		17.3		8.0		21.8		41.7				
Green Ext Time (p_c), s		1.0		1.6		0.6		4.3				

Intersection Summary												
HCM 6th Ctrl Delay			26.3									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	24	33	12	82	60	295	15	431
Future Volume (vph)	24	33	12	82	60	295	15	431
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	28.0	28.0	28.0	28.0	32.0	32.0	32.0	32.0
Total Split (%)	46.7%	46.7%	46.7%	46.7%	53.3%	53.3%	53.3%	53.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.8		5.8		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		12.2		12.2		32.1		32.1
Actuated g/C Ratio		0.24		0.24		0.62		0.62
v/c Ratio		0.21		0.28		0.23		0.50
Control Delay		14.1		16.0		7.4		10.9
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		14.1		16.0		7.4		10.9
LOS		B		B		A		B
Approach Delay		14.1		16.0		7.4		10.9
Approach LOS		B		B		A		B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 51.6	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay: 10.4	Intersection LOS: B
Intersection Capacity Utilization 59.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	33	13	12	82	12	60	295	11	15	431	47
Future Volume (veh/h)	24	33	13	12	82	12	60	295	11	15	431	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	26	36	14	13	90	13	66	324	12	16	474	52
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	169	192	58	103	284	38	315	1427	53	89	862	93
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.55	0.55	0.55	0.55	0.55	0.55
Sat Flow, veh/h	341	980	298	89	1454	195	388	2599	97	18	1570	169
Grp Volume(v), veh/h	76	0	0	116	0	0	201	0	201	542	0	0
Grp Sat Flow(s),veh/h/ln	1619	0	0	1738	0	0	1463	0	1621	1757	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.7	0.0	0.0	2.7	0.0	0.0	2.7	0.0	3.0	9.4	0.0	0.0
Prop In Lane	0.34		0.18	0.11		0.11	0.33		0.06	0.03		0.10
Lane Grp Cap(c), veh/h	419	0	0	425	0	0	905	0	890	1044	0	0
V/C Ratio(X)	0.18	0.00	0.00	0.27	0.00	0.00	0.22	0.00	0.23	0.52	0.00	0.00
Avail Cap(c_a), veh/h	849	0	0	898	0	0	905	0	890	1044	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.9	0.0	0.0	16.3	0.0	0.0	5.4	0.0	5.5	6.9	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.3	0.0	0.0	0.6	0.0	0.6	1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	0.9	0.0	0.0	0.6	0.0	0.6	2.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	0.0	0.0	16.6	0.0	0.0	5.9	0.0	6.0	8.7	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		76			116			402			542	
Approach Delay, s/veh		16.1			16.6			6.0			8.7	
Approach LOS		B			B			A			A	

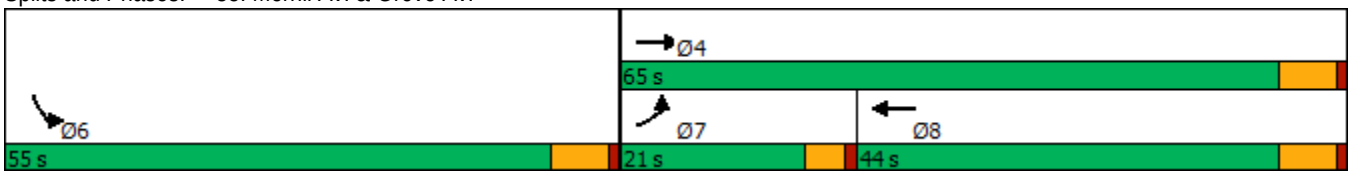
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.0		15.0		32.0		15.0				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		25.8		22.2		25.8		22.2				
Max Q Clear Time (g_c+I1), s		5.0		3.7		11.4		4.7				
Green Ext Time (p_c), s		2.1		0.3		2.7		0.4				

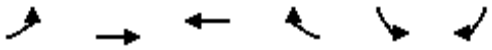
Intersection Summary												
HCM 6th Ctrl Delay			9.1									
HCM 6th LOS			A									

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	136	493	555	340
Future Volume (vph)	136	493	555	340
Turn Type	Prot	NA	NA	Prot
Protected Phases	7	4	8	6
Permitted Phases				
Detector Phase	7	4	8	6
Switch Phase				
Minimum Initial (s)	5.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	28.2
Total Split (s)	21.0	65.0	44.0	55.0
Total Split (%)	17.5%	54.2%	36.7%	45.8%
Yellow Time (s)	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	6.2
Lead/Lag	Lead		Lag	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	Max	Max	None
Act Effct Green (s)	12.8	59.2	41.8	34.8
Actuated g/C Ratio	0.12	0.56	0.39	0.33
v/c Ratio	0.73	0.51	0.68	0.88
Control Delay	67.7	18.7	29.0	50.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	67.7	18.7	29.0	50.7
LOS	E	B	C	D
Approach Delay		29.3	29.0	50.7
Approach LOS		C	C	D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 106.5	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 34.1	Intersection LOS: C
Intersection Capacity Utilization 78.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	136	493	555	321	340	109
Future Volume (veh/h)	136	493	555	321	340	109
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	140	508	572	331	351	112
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	167	1014	869	503	378	121
Arrive On Green	0.10	0.56	0.42	0.42	0.32	0.32
Sat Flow, veh/h	1619	1800	2176	1207	1189	380
Grp Volume(v), veh/h	140	508	469	434	464	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1710	1583	1572	0
Q Serve(g_s), s	8.9	17.9	23.0	23.0	29.8	0.0
Cycle Q Clear(g_c), s	8.9	17.9	23.0	23.0	29.8	0.0
Prop In Lane	1.00			0.76	0.76	0.24
Lane Grp Cap(c), veh/h	167	1014	712	659	499	0
V/C Ratio(X)	0.84	0.50	0.66	0.66	0.93	0.00
Avail Cap(c_a), veh/h	254	1014	712	659	735	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	46.0	13.8	24.5	24.5	34.5	0.0
Incr Delay (d2), s/veh	8.7	1.8	4.7	5.1	13.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	6.8	9.4	8.8	12.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	54.7	15.6	29.2	29.6	48.3	0.0
LnGrp LOS	D	B	C	C	D	A
Approach Vol, veh/h		648	903		464	
Approach Delay, s/veh		24.1	29.4		48.3	
Approach LOS		C	C		D	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			65.0		39.3	15.3	49.7
Change Period (Y+Rc), s			6.2		6.2	4.6	6.2
Max Green Setting (Gmax), s			58.8		48.8	16.4	37.8
Max Q Clear Time (g_c+I1), s			19.9		31.8	10.9	25.0
Green Ext Time (p_c), s			3.0		1.3	0.1	4.3

Intersection Summary		
HCM 6th Ctrl Delay		32.0
HCM 6th LOS		C

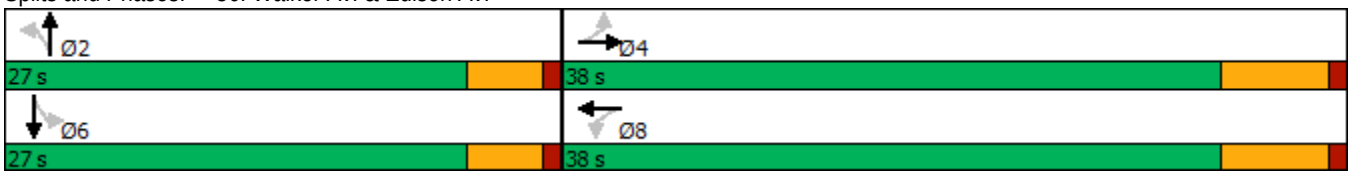
Notes

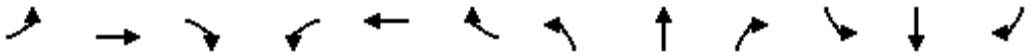
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	17	280	111	560	4	18	25	17
Future Volume (vph)	17	280	111	560	4	18	25	17
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	26.7	26.7	26.7	26.7
Total Split (s)	38.0	38.0	38.0	38.0	27.0	27.0	27.0	27.0
Total Split (%)	58.5%	58.5%	58.5%	58.5%	41.5%	41.5%	41.5%	41.5%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		4.7		4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		45.1		45.1		12.3		12.3
Actuated g/C Ratio		0.76		0.76		0.21		0.21
v/c Ratio		0.24		0.68		0.09		0.18
Control Delay		6.1		14.0		15.3		16.9
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		6.1		14.0		15.3		16.9
LOS		A		B		B		B
Approach Delay		6.1		14.0		15.3		16.9
Approach LOS		A		B		B		B

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 59.1	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 12.2	Intersection LOS: B
Intersection Capacity Utilization 87.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	280	9	111	560	139	4	18	8	25	17	12
Future Volume (veh/h)	17	280	9	111	560	139	4	18	8	25	17	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	17	286	9	113	571	142	4	18	8	26	17	12
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	97	1066	32	187	769	181	95	160	63	179	101	48
Arrive On Green	0.64	0.64	0.64	0.64	0.64	0.64	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	32	1663	50	163	1199	283	93	1148	451	517	728	348
Grp Volume(v), veh/h	312	0	0	826	0	0	30	0	0	55	0	0
Grp Sat Flow(s),veh/h/ln	1746	0	0	1645	0	0	1692	0	0	1593	0	0
Q Serve(g_s), s	0.0	0.0	0.0	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.8	0.0	0.0	17.3	0.0	0.0	0.8	0.0	0.0	1.4	0.0	0.0
Prop In Lane	0.05		0.03	0.14		0.17	0.13		0.27	0.47		0.22
Lane Grp Cap(c), veh/h	1196	0	0	1137	0	0	318	0	0	328	0	0
V/C Ratio(X)	0.26	0.00	0.00	0.73	0.00	0.00	0.09	0.00	0.00	0.17	0.00	0.00
Avail Cap(c_a), veh/h	1196	0	0	1137	0	0	832	0	0	806	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.9	0.0	0.0	6.2	0.0	0.0	18.7	0.0	0.0	19.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	4.1	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	3.1	0.0	0.0	0.3	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.4	0.0	0.0	10.2	0.0	0.0	18.8	0.0	0.0	19.2	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h		312			826			30			55	
Approach Delay, s/veh		4.4			10.2			18.8			19.2	
Approach LOS		A			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		11.6		38.0		11.6		38.0				
Change Period (Y+Rc), s		* 4.7		6.2		* 4.7		6.2				
Max Green Setting (Gmax), s		* 22		31.8		* 22		31.8				
Max Q Clear Time (g_c+I1), s		2.8		5.8		3.4		19.3				
Green Ext Time (p_c), s		0.1		1.7		0.2		4.5				

Intersection Summary		
HCM 6th Ctrl Delay		9.4
HCM 6th LOS		A

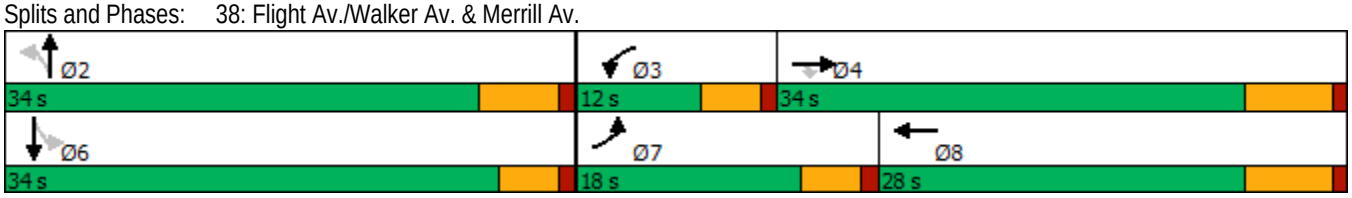
Notes

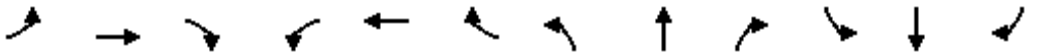
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	210	527	96	112	644	170	11	15	3
Future Volume (vph)	210	527	96	112	644	170	11	15	3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.2	23.2	9.6	23.2	32.8	32.8	31.6	31.6
Total Split (s)	18.0	34.0	34.0	12.0	28.0	34.0	34.0	34.0	34.0
Total Split (%)	22.5%	42.5%	42.5%	15.0%	35.0%	42.5%	42.5%	42.5%	42.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	4.8	4.8	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	5.8	5.8	4.6	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	12.1	23.7	23.7	7.3	19.0	15.7	15.7	17.0	17.0
Actuated g/C Ratio	0.19	0.37	0.37	0.11	0.30	0.25	0.25	0.27	0.27
v/c Ratio	0.71	0.81	0.16	0.62	0.71	0.59	0.24	0.05	0.15
Control Delay	41.6	30.8	4.6	48.4	25.2	30.5	7.1	18.2	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.6	30.8	4.6	48.4	25.2	30.5	7.1	18.2	6.5
LOS	D	C	A	D	C	C	A	B	A
Approach Delay		30.5			28.4		21.5		8.6
Approach LOS		C			C		C		A

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 63.8	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 27.5	Intersection LOS: C
Intersection Capacity Utilization 67.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 38: Flight Av./Walker Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	527	96	112	644	50	170	11	95	15	3	63
Future Volume (veh/h)	210	527	96	112	644	50	170	11	95	15	3	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	216	543	99	115	664	52	175	11	98	15	3	65
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	263	657	557	142	933	73	380	35	311	343	15	328
Arrive On Green	0.16	0.36	0.36	0.09	0.29	0.29	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1619	1800	1525	1619	3213	251	1279	156	1393	1232	68	1468
Grp Volume(v), veh/h	216	543	99	115	353	363	175	0	109	15	0	68
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	1755	1279	0	1549	1232	0	1536
Q Serve(g_s), s	6.6	14.1	2.3	3.6	9.5	9.5	6.6	0.0	3.0	0.5	0.0	1.8
Cycle Q Clear(g_c), s	6.6	14.1	2.3	3.6	9.5	9.5	8.5	0.0	3.0	3.5	0.0	1.8
Prop In Lane	1.00		1.00	1.00		0.14	1.00		0.90	1.00		0.96
Lane Grp Cap(c), veh/h	263	657	557	142	497	510	380	0	346	343	0	343
V/C Ratio(X)	0.82	0.83	0.18	0.81	0.71	0.71	0.46	0.00	0.31	0.04	0.00	0.20
Avail Cap(c_a), veh/h	423	975	827	234	727	746	797	0	852	774	0	880
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.8	14.8	11.1	23.0	16.3	16.3	19.6	0.0	16.6	18.1	0.0	16.2
Incr Delay (d2), s/veh	3.0	3.8	0.2	4.1	1.9	1.9	0.9	0.0	0.5	0.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	4.8	0.6	1.3	3.1	3.2	1.7	0.0	0.9	0.1	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	18.6	11.2	27.0	18.2	18.1	20.5	0.0	17.2	18.2	0.0	16.5
LnGrp LOS	C	B	B	C	B	B	C	A	B	B	A	B
Approach Vol, veh/h		858			831			284			83	
Approach Delay, s/veh		19.1			19.4			19.2			16.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		17.3	9.1	24.9		17.3	12.9	21.1				
Change Period (Y+Rc), s		5.8	4.6	6.2		* 5.8	4.6	6.2				
Max Green Setting (Gmax), s		28.2	7.4	27.8		* 29	13.4	21.8				
Max Q Clear Time (g_c+I1), s		10.5	5.6	16.1		5.5	8.6	11.5				
Green Ext Time (p_c), s		1.0	0.0	2.7		0.4	0.1	2.8				

Intersection Summary												
HCM 6th Ctrl Delay			19.1									
HCM 6th LOS			B									

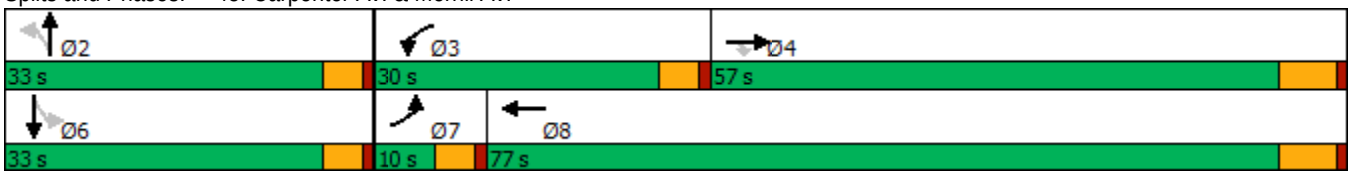
Notes

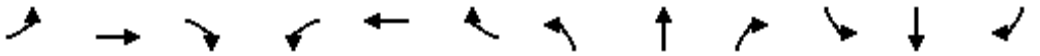
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	57	387	26	175	826	19	0	125	0
Future Volume (vph)	57	387	26	175	826	19	0	125	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	26.6	26.6
Total Split (s)	10.0	57.0	57.0	30.0	77.0	33.0	33.0	33.0	33.0
Total Split (%)	8.3%	47.5%	47.5%	25.0%	64.2%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2		4.6		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.4	60.8	60.8	15.6	70.9		13.1		13.1
Actuated g/C Ratio	0.05	0.58	0.58	0.15	0.68		0.12		0.12
v/c Ratio	0.69	0.40	0.03	0.74	0.80		0.46		0.76
Control Delay	88.4	15.3	0.1	59.7	19.4		16.1		38.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	88.4	15.3	0.1	59.7	19.4		16.1		38.3
LOS	F	B	A	E	B		B		D
Approach Delay		23.4			25.9		16.1		38.3
Approach LOS		C			C		B		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 104.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 25.6	Intersection LOS: C
Intersection Capacity Utilization 83.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 45: Carpenter Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	387	26	175	826	76	19	0	106	125	0	24
Future Volume (veh/h)	57	387	26	175	826	76	19	0	106	125	0	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	61	412	28	186	879	81	20	0	113	133	0	26
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	77	1028	871	216	1058	98	62	16	224	215	3	31
Arrive On Green	0.05	0.57	0.57	0.13	0.65	0.65	0.16	0.00	0.16	0.16	0.00	0.16
Sat Flow, veh/h	1714	1800	1525	1714	1623	150	147	99	1390	955	19	191
Grp Volume(v), veh/h	61	412	28	186	0	960	133	0	0	159	0	0
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	0	1773	1636	0	0	1165	0	0
Q Serve(g_s), s	3.8	13.8	0.9	11.6	0.0	44.6	0.0	0.0	0.0	6.5	0.0	0.0
Cycle Q Clear(g_c), s	3.8	13.8	0.9	11.6	0.0	44.6	8.3	0.0	0.0	14.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.08	0.15		0.85	0.84		0.16
Lane Grp Cap(c), veh/h	77	1028	871	216	0	1156	302	0	0	249	0	0
V/C Ratio(X)	0.79	0.40	0.03	0.86	0.00	0.83	0.44	0.00	0.00	0.64	0.00	0.00
Avail Cap(c_a), veh/h	85	1028	871	401	0	1156	453	0	0	382	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	51.3	13.0	10.2	46.5	0.0	14.3	41.8	0.0	0.0	44.9	0.0	0.0
Incr Delay (d2), s/veh	31.2	1.2	0.1	3.9	0.0	7.0	1.0	0.0	0.0	2.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	5.2	0.3	5.0	0.0	16.3	3.4	0.0	0.0	4.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.5	14.1	10.2	50.5	0.0	21.3	42.8	0.0	0.0	47.7	0.0	0.0
LnGrp LOS	F	B	B	D	A	C	D	A	A	D	A	A
Approach Vol, veh/h		501			1146			133			159	
Approach Delay, s/veh		22.2			26.1			42.8			47.7	
Approach LOS		C			C			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.1	18.3	68.2		22.1	9.5	77.0				
Change Period (Y+Rc), s		4.6	4.6	6.2		4.6	4.6	6.2				
Max Green Setting (Gmax), s		28.4	25.4	50.8		28.4	5.4	70.8				
Max Q Clear Time (g_c+I1), s		10.3	13.6	15.8		16.8	5.8	46.6				
Green Ext Time (p_c), s		0.7	0.2	2.4		0.7	0.0	7.3				

Intersection Summary												
HCM 6th Ctrl Delay			28.0									
HCM 6th LOS			C									

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	268	822	810	279	208	474
Future Volume (vph)	268	822	810	279	208	474
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	21.0	62.7	36.3	21.0	83.7
Total Split (%)	30.3%	17.5%	52.3%	30.3%	17.5%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 103.5
Natural Cycle: 105
Control Type: Actuated-Uncoordinated

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	268	822	810	279	208	474
Future Volume (veh/h)	268	822	810	279	208	474
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	279	800	844	244	217	494
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	468	1116	896	1176	245	1235
Arrive On Green	0.26	0.26	0.47	0.47	0.14	0.65
Sat Flow, veh/h	1810	2834	1900	1610	1810	1900
Grp Volume(v), veh/h	279	800	844	244	217	494
Grp Sat Flow(s),veh/h/ln	1810	1417	1900	1610	1810	1900
Q Serve(g_s), s	15.7	27.6	49.0	5.6	13.7	14.3
Cycle Q Clear(g_c), s	15.7	27.6	49.0	5.6	13.7	14.3
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	468	1116	896	1176	245	1235
V/C Ratio(X)	0.60	0.72	0.94	0.21	0.89	0.40
Avail Cap(c_a), veh/h	484	1141	941	1214	250	1290
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	29.7	29.1	5.0	49.3	9.6
Incr Delay (d2), s/veh	1.2	1.8	16.8	0.1	29.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	9.0	24.3	3.8	7.9	4.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	38.9	31.5	46.0	5.1	78.5	9.7
LnGrp LOS	D	C	D	A	E	A
Approach Vol, veh/h	1079		1088			711
Approach Delay, s/veh	33.4		36.8			30.7
Approach LOS	C		D			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	20.7	60.0			80.6	35.3
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	16.0	57.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	15.7	51.0			16.3	29.6
Green Ext Time (p_c), s	0.0	3.7			1.6	0.4

Intersection Summary	
HCM 6th Ctrl Delay	34.0
HCM 6th LOS	C

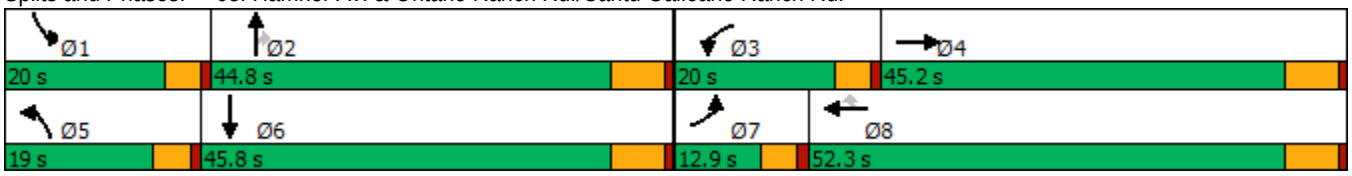
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	95	567	264	913	195	165	674	484	148	200
Future Volume (vph)	95	567	264	913	195	165	674	484	148	200
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2
Total Split (s)	12.9	45.2	20.0	52.3	52.3	19.0	44.8	44.8	20.0	45.8
Total Split (%)	9.9%	34.8%	15.4%	40.2%	40.2%	14.6%	34.5%	34.5%	15.4%	35.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	8.3	35.7	14.9	42.4	42.4	12.1	34.1	34.1	11.7	33.7
Actuated g/C Ratio	0.07	0.32	0.13	0.37	0.37	0.11	0.30	0.30	0.10	0.30
v/c Ratio	0.50	0.38	0.77	0.81	0.32	0.59	0.52	0.85	0.55	0.22
Control Delay	63.8	30.2	64.3	38.7	6.7	59.4	34.7	32.9	58.4	22.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.8	30.2	64.3	38.7	6.7	59.4	34.7	32.9	58.4	22.6
LOS	E	C	E	D	A	E	C	C	E	C
Approach Delay		34.5		39.1			37.1			34.8
Approach LOS		C		D			D			C

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 113.1	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 37.1	Intersection LOS: D
Intersection Capacity Utilization 62.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	567	79	264	913	195	165	674	484	148	200	84
Future Volume (veh/h)	95	567	79	264	913	195	165	674	484	148	200	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	108	644	90	300	1038	222	188	766	543	168	227	95
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	169	1659	226	364	1248	557	254	1761	547	234	1226	473
Arrive On Green	0.06	0.30	0.28	0.12	0.36	0.36	0.09	0.36	0.36	0.08	0.35	0.33
Sat Flow, veh/h	2956	5551	757	2956	3420	1525	2956	4914	1525	2956	3486	1346
Grp Volume(v), veh/h	108	536	198	300	1038	222	188	766	543	168	212	110
Grp Sat Flow(s),veh/h/ln	1478	1548	1664	1478	1710	1525	1478	1638	1525	1478	1638	1556
Q Serve(g_s), s	4.1	10.4	10.9	11.3	31.5	12.3	7.1	13.5	40.4	6.3	5.1	5.7
Cycle Q Clear(g_c), s	4.1	10.4	10.9	11.3	31.5	12.3	7.1	13.5	40.4	6.3	5.1	5.7
Prop In Lane	1.00		0.45	1.00		1.00	1.00		1.00	1.00		0.87
Lane Grp Cap(c), veh/h	169	1388	497	364	1248	557	254	1761	547	234	1152	547
V/C Ratio(X)	0.64	0.39	0.40	0.82	0.83	0.40	0.74	0.44	0.99	0.72	0.18	0.20
Avail Cap(c_a), veh/h	231	1680	602	415	1451	647	389	1761	547	415	1203	571
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.5	31.6	32.2	48.7	33.0	26.9	50.8	27.8	36.4	51.2	25.6	26.5
Incr Delay (d2), s/veh	1.5	0.2	0.5	10.1	3.8	0.5	1.6	0.2	36.7	1.5	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	3.7	4.2	4.5	12.8	4.3	2.6	5.0	19.5	2.3	1.9	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.0	31.8	32.7	58.8	36.7	27.3	52.4	27.9	73.1	52.7	25.7	26.6
LnGrp LOS	D	C	C	E	D	C	D	C	E	D	C	C
Approach Vol, veh/h		842			1560			1497			490	
Approach Delay, s/veh		34.9			39.7			47.4			35.2	
Approach LOS		C			D			D			D	

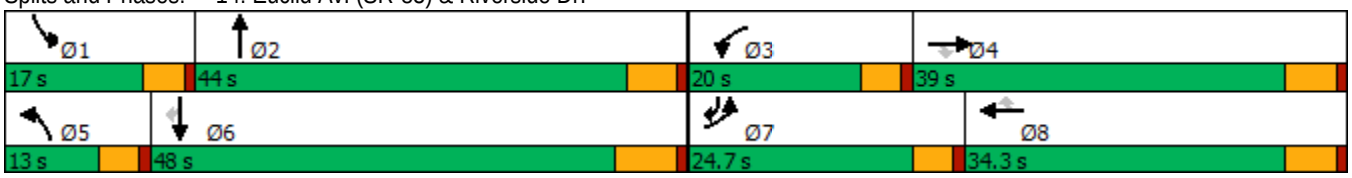
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	44.8	18.0	38.0	13.8	44.0	10.5	45.5
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	15.4	38.6	15.4	39.0	14.4	39.6	8.3	46.1
Max Q Clear Time (g_c+I1), s	8.3	42.4	13.3	12.9	9.1	7.7	6.1	33.5
Green Ext Time (p_c), s	0.1	0.0	0.1	4.3	0.1	1.8	0.0	5.8

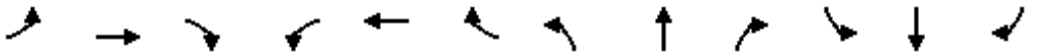
Intersection Summary	
HCM 6th Ctrl Delay	40.9
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	145	440	79	178	393	62	84	1105	134	930	185
Future Volume (vph)	145	440	79	178	393	62	84	1105	134	930	185
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2	1	6	7
Permitted Phases			4			8					6
Detector Phase	7	4	4	3	8	8	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	9.6	34.5	9.6
Total Split (s)	24.7	39.0	39.0	20.0	34.3	34.3	13.0	44.0	17.0	48.0	24.7
Total Split (%)	20.6%	32.5%	32.5%	16.7%	28.6%	28.6%	10.8%	36.7%	14.2%	40.0%	20.6%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	Max	None
Act Effct Green (s)	15.0	31.9	31.9	14.9	31.8	31.8	8.1	38.9	11.9	41.6	58.5
Actuated g/C Ratio	0.13	0.27	0.27	0.13	0.27	0.27	0.07	0.33	0.10	0.35	0.50
v/c Ratio	0.74	0.94	0.16	0.91	0.44	0.12	0.79	0.87	0.86	0.80	0.24
Control Delay	70.4	71.4	3.2	94.6	38.4	0.5	98.3	43.4	95.5	41.2	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.4	71.4	3.2	94.6	38.4	0.5	98.3	43.4	95.5	41.2	5.3
LOS	E	E	A	F	D	A	F	D	F	D	A
Approach Delay		63.1			50.5			46.7		41.7	
Approach LOS		E			D			D		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 48.5	Intersection LOS: D
Intersection Capacity Utilization 88.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	440	79	178	393	62	84	1105	230	134	930	185
Future Volume (veh/h)	145	440	79	178	393	62	84	1105	230	134	930	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	151	458	57	185	409	49	88	1151	186	140	969	102
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	176	485	411	208	989	441	108	1373	222	163	1218	702
Arrive On Green	0.11	0.27	0.27	0.13	0.29	0.29	0.07	0.32	0.32	0.10	0.36	0.36
Sat Flow, veh/h	1619	1800	1525	1619	3420	1524	1619	4263	689	1619	3420	1506
Grp Volume(v), veh/h	151	458	57	185	409	49	88	884	453	140	969	102
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	1524	1619	1638	1676	1619	1710	1506
Q Serve(g_s), s	11.0	29.9	3.4	13.5	11.6	2.8	6.4	30.1	30.1	10.2	30.5	4.7
Cycle Q Clear(g_c), s	11.0	29.9	3.4	13.5	11.6	2.8	6.4	30.1	30.1	10.2	30.5	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.41	1.00		1.00
Lane Grp Cap(c), veh/h	176	485	411	208	989	441	108	1055	540	163	1218	702
V/C Ratio(X)	0.86	0.94	0.14	0.89	0.41	0.11	0.82	0.84	0.84	0.86	0.80	0.15
Avail Cap(c_a), veh/h	271	499	422	208	989	441	113	1055	540	167	1218	702
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.5	42.9	33.2	51.4	34.4	31.3	55.2	37.7	37.7	53.0	34.7	18.4
Incr Delay (d2), s/veh	10.0	26.7	0.2	33.2	0.3	0.1	31.6	8.0	14.5	31.1	5.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	16.4	1.2	7.2	4.7	1.0	3.5	12.4	13.7	5.5	13.1	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.5	69.6	33.4	84.6	34.7	31.4	86.8	45.7	52.2	84.2	40.1	18.9
LnGrp LOS	E	E	C	F	C	C	F	D	D	F	D	B
Approach Vol, veh/h		666			643			1425			1211	
Approach Delay, s/veh		64.9			48.8			50.3			43.4	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	45.1	20.0	38.1	12.6	49.2	17.6	40.5
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	12.4	* 39	15.4	33.2	8.4	41.5	20.1	28.5
Max Q Clear Time (g_c+I1), s	12.2	32.1	15.5	31.9	8.4	32.5	13.0	13.6
Green Ext Time (p_c), s	0.0	3.9	0.0	0.4	0.0	4.4	0.1	2.2

Intersection Summary	
HCM 6th Ctrl Delay	50.4
HCM 6th LOS	D

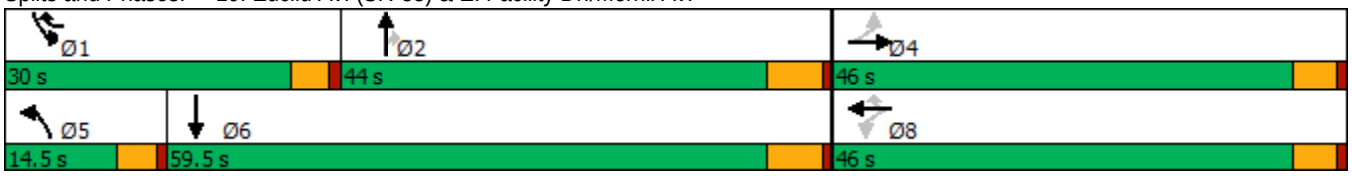
Notes

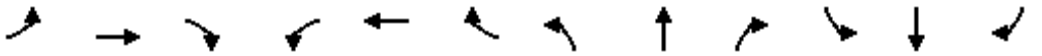
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	11	29	300	2	399	4	1136	269	352	1155
Future Volume (vph)	11	29	300	2	399	4	1136	269	352	1155
Turn Type	Perm	NA	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	1	5	2		1	6
Permitted Phases	4		8		8			2		
Detector Phase	4	4	8	8	1	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	30.0	14.5	44.0	44.0	30.0	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	25.0%	12.1%	36.7%	36.7%	25.0%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	4.5	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		21.1	21.1	21.1	51.9	10.1	38.3	38.3	25.7	66.2
Actuated g/C Ratio		0.21	0.21	0.21	0.51	0.10	0.38	0.38	0.25	0.66
v/c Ratio		0.16	0.62	0.62	0.55	0.02	0.96	0.46	0.94	0.57
Control Delay		26.0	46.2	46.0	17.9	46.5	48.9	19.3	70.4	14.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		26.0	46.2	46.0	17.9	46.5	48.9	19.3	70.4	14.0
LOS		C	D	D	B	D	D	B	E	B
Approach Delay		26.0		30.1			43.3			27.1
Approach LOS		C		C			D			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 100.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 33.9	Intersection LOS: C
Intersection Capacity Utilization 83.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	29	12	300	2	399	4	1136	269	352	1155	1
Future Volume (veh/h)	11	29	12	300	2	399	4	1136	269	352	1155	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	12	32	12	331	0	428	4	1248	231	387	1269	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	95	233	78	769	0	735	17	1259	562	400	2068	0
Arrive On Green	0.23	0.23	0.23	0.23	0.00	0.23	0.01	0.37	0.37	0.25	0.60	0.00
Sat Flow, veh/h	226	992	332	2614	0	1525	1619	3420	1525	1619	3510	0
Grp Volume(v), veh/h	56	0	0	331	0	428	4	1248	231	387	1269	0
Grp Sat Flow(s),veh/h/ln	1549	0	0	1307	0	1525	1619	1710	1525	1619	1710	0
Q Serve(g_s), s	0.0	0.0	0.0	8.1	0.0	20.9	0.3	37.5	11.6	24.4	24.1	0.0
Cycle Q Clear(g_c), s	2.6	0.0	0.0	10.7	0.0	20.9	0.3	37.5	11.6	24.4	24.1	0.0
Prop In Lane	0.21		0.21	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	406	0	0	769	0	735	17	1259	562	400	2068	0
V/C Ratio(X)	0.14	0.00	0.00	0.43	0.00	0.58	0.24	0.99	0.41	0.97	0.61	0.00
Avail Cap(c_a), veh/h	646	0	0	1194	0	983	157	1259	562	400	2068	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.2	0.0	0.0	34.1	0.0	19.3	50.7	32.4	24.3	38.4	12.8	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.1	0.0	0.3	2.6	23.1	0.5	36.2	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	3.4	0.0	6.6	0.1	17.9	3.9	13.0	7.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.3	0.0	0.0	34.3	0.0	19.5	53.2	55.6	24.8	74.7	13.4	0.0
LnGrp LOS	C	A	A	C	A	B	D	E	C	E	B	A
Approach Vol, veh/h		56			759			1483			1656	
Approach Delay, s/veh		31.3			26.0			50.8			27.7	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	30.0	44.0		29.2	5.6	68.4		29.2				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	25.5	38.0		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	26.4	39.5		4.6	2.3	26.1		22.9				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	9.3		1.3				

Intersection Summary			
HCM 6th Ctrl Delay		36.1	
HCM 6th LOS		D	

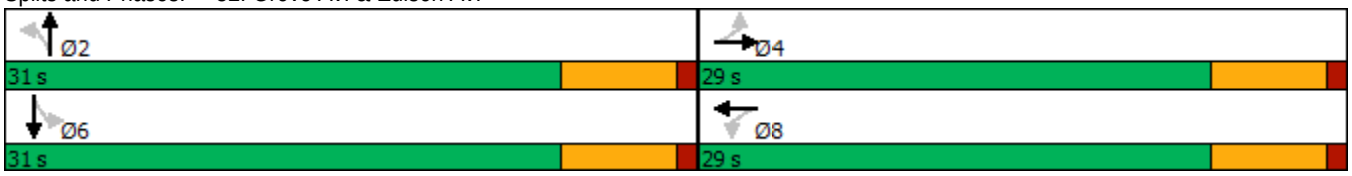
Notes

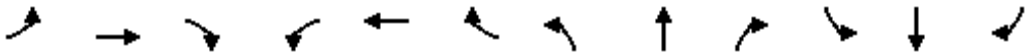
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	43	430	145	266	13	329	128	214
Future Volume (vph)	43	430	145	266	13	329	128	214
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Total Split (s)	29.0	29.0	29.0	29.0	31.0	31.0	31.0	31.0
Total Split (%)	48.3%	48.3%	48.3%	48.3%	51.7%	51.7%	51.7%	51.7%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		22.8		22.8		24.8		24.8
Actuated g/C Ratio		0.38		0.38		0.41		0.41
v/c Ratio		0.82		1.15		1.00		1.11
Control Delay		29.8		112.1		50.7		105.0
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		29.8		112.1		50.7		105.0
LOS		C		F		D		F
Approach Delay		29.8		112.1		50.7		105.0
Approach LOS		C		F		D		F

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.15	
Intersection Signal Delay: 69.8	Intersection LOS: E
Intersection Capacity Utilization 136.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (veh/h)	43	430	7	145	266	50	13	329	349	128	214	22
Future Volume (veh/h)	43	430	7	145	266	50	13	329	349	128	214	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	46	462	8	156	286	54	14	354	375	138	230	24
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	98	594	10	200	295	51	66	342	354	166	244	21
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	86	1563	26	320	776	134	12	827	855	206	590	52
Grp Volume(v), veh/h	516	0	0	496	0	0	743	0	0	392	0	0
Grp Sat Flow(s),veh/h/ln	1675	0	0	1230	0	0	1695	0	0	848	0	0
Q Serve(g_s), s	0.0	0.0	0.0	6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	16.1	0.0	0.0	22.8	0.0	0.0	24.8	0.0	0.0	24.8	0.0	0.0
Prop In Lane	0.09		0.02	0.31		0.11	0.02		0.50	0.35		0.06
Lane Grp Cap(c), veh/h	702	0	0	546	0	0	762	0	0	432	0	0
V/C Ratio(X)	0.74	0.00	0.00	0.91	0.00	0.00	0.98	0.00	0.00	0.91	0.00	0.00
Avail Cap(c_a), veh/h	702	0	0	546	0	0	762	0	0	432	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.3	0.0	0.0	19.2	0.0	0.0	18.5	0.0	0.0	17.1	0.0	0.0
Incr Delay (d2), s/veh	6.7	0.0	0.0	21.4	0.0	0.0	26.6	0.0	0.0	22.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	0.0	0.0	8.8	0.0	0.0	13.7	0.0	0.0	6.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.1	0.0	0.0	40.6	0.0	0.0	45.1	0.0	0.0	39.9	0.0	0.0
LnGrp LOS	C	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		516			496			743			392	
Approach Delay, s/veh		23.1			40.6			45.1			39.9	
Approach LOS		C			D			D			D	

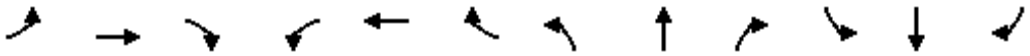
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		31.0		29.0		31.0		29.0				
Change Period (Y+Rc), s		6.2		6.2		6.2		6.2				
Max Green Setting (Gmax), s		24.8		22.8		24.8		22.8				
Max Q Clear Time (g_c+I1), s		26.8		18.1		26.8		24.8				
Green Ext Time (p_c), s		0.0		1.3		0.0		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			37.8									
HCM 6th LOS			D									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	89	83	5	17	14	613	12	324
Future Volume (vph)	89	83	5	17	14	613	12	324
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	27.8	27.8	27.8	27.8	92.2	92.2	92.2	92.2
Total Split (%)	23.2%	23.2%	23.2%	23.2%	76.8%	76.8%	76.8%	76.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.8		5.8		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		21.7		21.7		86.3		86.3
Actuated g/C Ratio		0.18		0.18		0.72		0.72
v/c Ratio		0.95		0.13		1.06		0.56
Control Delay		88.0		34.0		54.5		11.4
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		88.0		34.0		54.5		11.4
LOS		F		C		D		B
Approach Delay		88.0		34.0		54.5		11.4
Approach LOS		F		C		D		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 51.6	Intersection LOS: D
Intersection Capacity Utilization 61.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	83	68	5	17	13	14	613	4	12	324	29
Future Volume (veh/h)	89	83	68	5	17	13	14	613	4	12	324	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	99	92	76	6	19	14	16	2452	4	13	360	32
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.25	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	140	108	82	60	164	106	37	2398	4	31	619	53
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	538	587	448	139	896	580	9	3347	6	0	864	74
Grp Volume(v), veh/h	267	0	0	39	0	0	1294	0	1178	405	0	0
Grp Sat Flow(s),veh/h/ln	1573	0	0	1615	0	0	1724	0	1637	939	0	0
Q Serve(g_s), s	17.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	86.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	20.0	0.0	0.0	2.3	0.0	0.0	86.0	0.0	86.0	86.0	0.0	0.0
Prop In Lane	0.37		0.28	0.15		0.36	0.01		0.00	0.03		0.08
Lane Grp Cap(c), veh/h	329	0	0	331	0	0	1266	0	1173	704	0	0
V/C Ratio(X)	0.81	0.00	0.00	0.12	0.00	0.00	1.02	0.00	1.00	0.58	0.00	0.00
Avail Cap(c_a), veh/h	329	0	0	331	0	0	1266	0	1173	704	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	48.1	0.0	0.0	41.0	0.0	0.0	17.0	0.0	17.0	25.8	0.0	0.0
Incr Delay (d2), s/veh	14.1	0.0	0.0	0.2	0.0	0.0	31.1	0.0	27.2	3.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	0.0	0.0	1.0	0.0	0.0	35.3	0.0	32.3	8.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.2	0.0	0.0	41.1	0.0	0.0	48.1	0.0	44.2	29.2	0.0	0.0
LnGrp LOS	E	A	A	D	A	A	F	A	F	C	A	A
Approach Vol, veh/h		267			39			2472			405	
Approach Delay, s/veh		62.2			41.1			46.2			29.2	
Approach LOS		E			D			D			C	

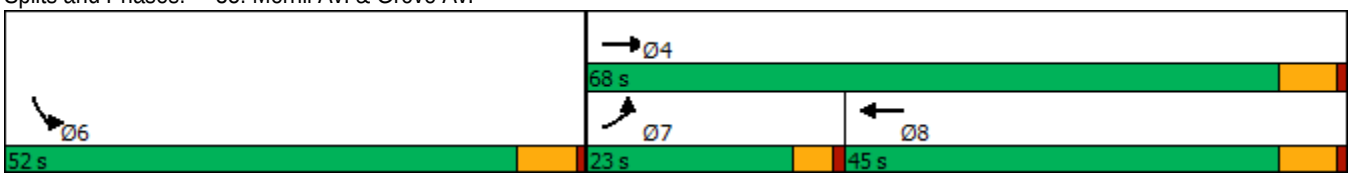
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		92.2		27.8		92.2		27.8				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		86.0		22.0		86.0		22.0				
Max Q Clear Time (g_c+I1), s		88.0		22.0		88.0		4.3				
Green Ext Time (p_c), s		0.0		0.0		0.0		0.1				

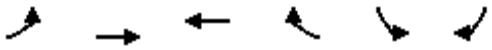
Intersection Summary												
HCM 6th Ctrl Delay			45.3									
HCM 6th LOS			D									

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	198	583	586	338
Future Volume (vph)	198	583	586	338
Turn Type	Prot	NA	NA	Prot
Protected Phases	7	4	8	6
Permitted Phases				
Detector Phase	7	4	8	6
Switch Phase				
Minimum Initial (s)	5.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	28.2
Total Split (s)	23.0	68.0	45.0	52.0
Total Split (%)	19.2%	56.7%	37.5%	43.3%
Yellow Time (s)	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	6.2
Lead/Lag	Lead		Lag	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	Max	Max	None
Act Effct Green (s)	16.8	62.0	40.6	38.7
Actuated g/C Ratio	0.15	0.55	0.36	0.34
v/c Ratio	0.86	0.62	0.84	0.91
Control Delay	79.9	22.2	36.8	56.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	79.9	22.2	36.8	56.4
LOS	E	C	D	E
Approach Delay		36.8	36.8	56.4
Approach LOS		D	D	E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113.2	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 41.0	Intersection LOS: D
Intersection Capacity Utilization 88.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	198	583	586	426	338	147
Future Volume (veh/h)	198	583	586	426	338	147
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	206	607	610	444	352	153
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	232	985	687	499	372	162
Arrive On Green	0.14	0.55	0.36	0.36	0.34	0.34
Sat Flow, veh/h	1619	1800	1979	1374	1086	472
Grp Volume(v), veh/h	206	607	552	502	506	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1710	1553	1561	0
Q Serve(g_s), s	14.1	26.0	34.3	34.3	35.6	0.0
Cycle Q Clear(g_c), s	14.1	26.0	34.3	34.3	35.6	0.0
Prop In Lane	1.00			0.88	0.70	0.30
Lane Grp Cap(c), veh/h	232	985	622	565	535	0
V/C Ratio(X)	0.89	0.62	0.89	0.89	0.95	0.00
Avail Cap(c_a), veh/h	264	985	622	565	633	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.5	17.5	33.8	33.8	36.1	0.0
Incr Delay (d2), s/veh	24.9	2.9	17.1	18.6	21.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	10.3	16.2	14.9	15.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	72.4	20.3	50.9	52.4	57.5	0.0
LnGrp LOS	E	C	D	D	E	A
Approach Vol, veh/h		813	1054		506	
Approach Delay, s/veh		33.5	51.6		57.5	
Approach LOS		C	D		E	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	68.0	44.9	20.7	47.3
Change Period (Y+Rc), s	6.2	6.2	4.6	6.2
Max Green Setting (Gmax), s	61.8	45.8	18.4	38.8
Max Q Clear Time (g_c+I1), s	28.0	37.6	16.1	36.3
Green Ext Time (p_c), s	3.8	1.1	0.1	1.5

Intersection Summary	
HCM 6th Ctrl Delay	46.7
HCM 6th LOS	D

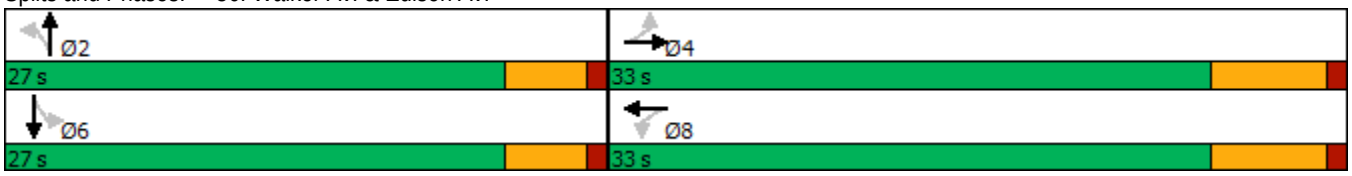
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	20	872	15	436	3	20	64	13
Future Volume (vph)	20	872	15	436	3	20	64	13
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	26.7	26.7	26.7	26.7
Total Split (s)	33.0	33.0	33.0	33.0	27.0	27.0	27.0	27.0
Total Split (%)	55.0%	55.0%	55.0%	55.0%	45.0%	45.0%	45.0%	45.0%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		4.7		4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		36.1		36.1		12.1		12.1
Actuated g/C Ratio		0.72		0.72		0.24		0.24
v/c Ratio		0.74		0.41		0.18		0.29
Control Delay		17.7		8.5		8.0		16.0
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		17.7		8.5		8.0		16.0
LOS		B		A		A		B
Approach Delay		17.7		8.5		8.0		16.0
Approach LOS		B		A		A		B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 50.4	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 14.3	Intersection LOS: B
Intersection Capacity Utilization 78.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	872	1	15	436	30	3	20	49	64	13	10
Future Volume (veh/h)	20	872	1	15	436	30	3	20	49	64	13	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	21	918	1	16	459	32	3	21	52	67	14	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	88	1017	1	91	940	64	84	92	208	320	64	34
Arrive On Green	0.58	0.58	0.58	0.58	0.58	0.58	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	15	1768	2	19	1632	111	21	484	1093	978	335	178
Grp Volume(v), veh/h	940	0	0	507	0	0	76	0	0	92	0	0
Grp Sat Flow(s),veh/h/ln	1785	0	0	1763	0	0	1597	0	0	1491	0	0
Q Serve(g_s), s	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Cycle Q Clear(g_c), s	21.8	0.0	0.0	7.9	0.0	0.0	1.9	0.0	0.0	2.1	0.0	0.0
Prop In Lane	0.02		0.00	0.03		0.06	0.04		0.68	0.73		0.12
Lane Grp Cap(c), veh/h	1106	0	0	1094	0	0	384	0	0	417	0	0
V/C Ratio(X)	0.85	0.00	0.00	0.46	0.00	0.00	0.20	0.00	0.00	0.22	0.00	0.00
Avail Cap(c_a), veh/h	1106	0	0	1094	0	0	842	0	0	828	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.8	0.0	0.0	5.9	0.0	0.0	16.0	0.0	0.0	16.1	0.0	0.0
Incr Delay (d2), s/veh	8.2	0.0	0.0	1.4	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	0.0	0.0	1.6	0.0	0.0	0.6	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.0	0.0	0.0	7.3	0.0	0.0	16.3	0.0	0.0	16.4	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		940			507			76			92	
Approach Delay, s/veh		17.0			7.3			16.3			16.4	
Approach LOS		B			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.6		33.0		13.6		33.0				
Change Period (Y+Rc), s		* 4.7		6.2		* 4.7		6.2				
Max Green Setting (Gmax), s		* 22		26.8		* 22		26.8				
Max Q Clear Time (g_c+I1), s		3.9		23.8		4.1		9.9				
Green Ext Time (p_c), s		0.3		1.7		0.4		2.7				

Intersection Summary		
HCM 6th Ctrl Delay		13.9
HCM 6th LOS		B

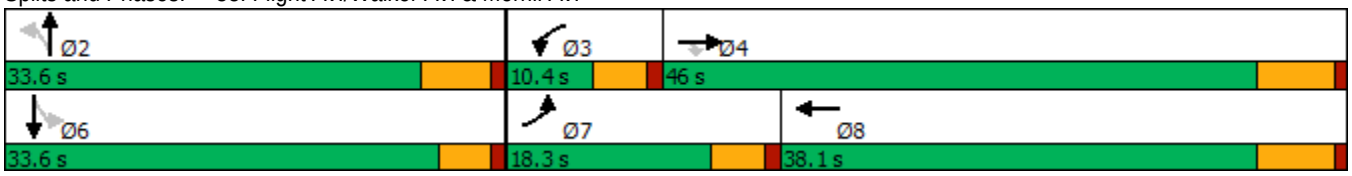
Notes

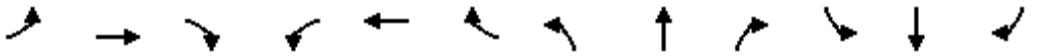
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	100	713	110	83	652	102	5	55	14
Future Volume (vph)	100	713	110	83	652	102	5	55	14
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.2	23.2	9.6	23.2	32.8	32.8	31.6	31.6
Total Split (s)	18.3	46.0	46.0	10.4	38.1	33.6	33.6	33.6	33.6
Total Split (%)	20.3%	51.1%	51.1%	11.6%	42.3%	37.3%	37.3%	37.3%	37.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	4.8	4.8	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	5.8	5.8	4.6	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	9.5	39.0	39.0	5.9	37.8	17.7	17.7	18.9	18.9
Actuated g/C Ratio	0.12	0.49	0.49	0.07	0.48	0.22	0.22	0.24	0.24
v/c Ratio	0.57	0.89	0.15	0.76	0.50	0.81	0.30	0.22	0.49
Control Delay	46.2	34.0	5.5	79.2	18.3	69.3	7.0	25.7	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.2	34.0	5.5	79.2	18.3	69.3	7.0	25.7	7.1
LOS	D	C	A	E	B	E	A	C	A
Approach Delay		31.9			24.5		35.1		10.3
Approach LOS		C			C		D		B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 79.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 26.6	Intersection LOS: C
Intersection Capacity Utilization 88.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 38: Flight Av./Walker Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	713	110	83	652	21	102	5	119	55	14	258
Future Volume (veh/h)	100	713	110	83	652	21	102	5	119	55	14	258
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	110	784	121	91	716	84	112	5	131	60	15	266
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.25	0.91	0.91	0.91	0.91	0.91	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	136	815	691	108	1343	157	220	16	427	348	24	421
Arrive On Green	0.08	0.45	0.45	0.07	0.44	0.44	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1619	1800	1525	1619	3083	362	1054	56	1478	1202	82	1456
Grp Volume(v), veh/h	110	784	121	91	397	403	112	0	136	60	0	281
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	1735	1054	0	1534	1202	0	1538
Q Serve(g_s), s	5.8	36.6	4.1	4.8	14.8	14.8	9.0	0.0	6.0	3.6	0.0	13.8
Cycle Q Clear(g_c), s	5.8	36.6	4.1	4.8	14.8	14.8	22.8	0.0	6.0	9.6	0.0	13.8
Prop In Lane	1.00		1.00	1.00		0.21	1.00		0.96	1.00		0.95
Lane Grp Cap(c), veh/h	136	815	691	108	745	755	220	0	444	348	0	445
V/C Ratio(X)	0.81	0.96	0.18	0.84	0.53	0.53	0.51	0.00	0.31	0.17	0.00	0.63
Avail Cap(c_a), veh/h	256	826	700	108	745	755	253	0	491	402	0	514
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.1	23.0	14.1	40.0	18.0	18.0	36.7	0.0	24.1	27.8	0.0	26.8
Incr Delay (d2), s/veh	4.3	22.4	0.1	39.9	0.7	0.7	1.8	0.0	0.4	0.2	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	18.1	1.3	3.0	5.2	5.3	2.3	0.0	2.1	1.0	0.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.3	45.4	14.2	79.9	18.7	18.7	38.5	0.0	24.4	28.0	0.0	28.8
LnGrp LOS	D	D	B	E	B	B	D	A	C	C	A	C
Approach Vol, veh/h		1015			891			248			341	
Approach Delay, s/veh		41.5			25.0			30.8			28.7	
Approach LOS		D			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.9	10.4	45.5		30.9	11.9	44.0				
Change Period (Y+Rc), s		5.8	4.6	6.2		* 5.8	4.6	6.2				
Max Green Setting (Gmax), s		27.8	5.8	39.8		* 29	13.7	31.9				
Max Q Clear Time (g_c+I1), s		24.8	6.8	38.6		15.8	7.8	16.8				
Green Ext Time (p_c), s		0.3	0.0	0.6		1.7	0.1	3.9				

Intersection Summary												
HCM 6th Ctrl Delay			32.8									
HCM 6th LOS			C									

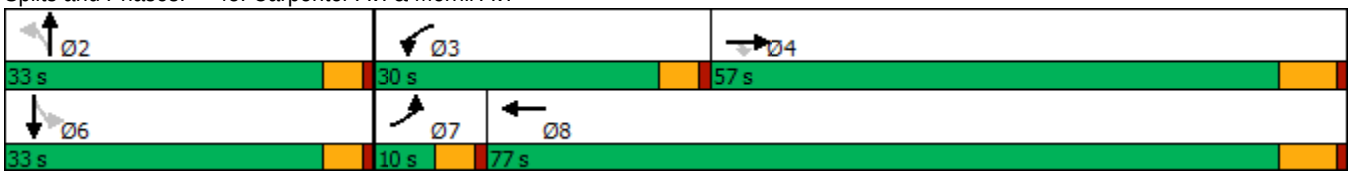
Notes

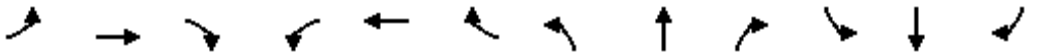
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	25	890	21	25	466	36	4	93	5
Future Volume (vph)	25	890	21	25	466	36	4	93	5
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	26.6	26.6
Total Split (s)	10.0	57.0	57.0	30.0	77.0	33.0	33.0	33.0	33.0
Total Split (%)	8.3%	47.5%	47.5%	25.0%	64.2%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2		4.6		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.3	70.9	70.9	6.5	72.1		19.2		19.2
Actuated g/C Ratio	0.05	0.66	0.66	0.06	0.67		0.18		0.18
v/c Ratio	0.33	0.84	0.02	0.27	0.46		0.46		0.83
Control Delay	64.5	25.6	0.0	58.2	12.0		20.3		67.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	64.5	25.6	0.0	58.2	12.0		20.3		67.7
LOS	E	C	A	E	B		C		E
Approach Delay		26.1			14.3		20.3		67.7
Approach LOS		C			B		C		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 25.9	Intersection LOS: C
Intersection Capacity Utilization 74.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 45: Carpenter Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	890	21	25	466	23	36	4	99	93	5	58
Future Volume (veh/h)	25	890	21	25	466	23	36	4	99	93	5	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	28	989	23	28	518	26	40	4	110	103	6	64
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	45	1203	1020	45	1136	57	90	24	179	167	17	76
Arrive On Green	0.03	0.67	0.67	0.03	0.67	0.67	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1714	1800	1525	1714	1699	85	297	152	1121	704	104	474
Grp Volume(v), veh/h	28	989	23	28	0	544	154	0	0	173	0	0
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	0	1785	1569	0	0	1282	0	0
Q Serve(g_s), s	1.7	42.8	0.5	1.7	0.0	15.4	0.0	0.0	0.0	4.6	0.0	0.0
Cycle Q Clear(g_c), s	1.7	42.8	0.5	1.7	0.0	15.4	9.6	0.0	0.0	14.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.05	0.26		0.71	0.60		0.37
Lane Grp Cap(c), veh/h	45	1203	1020	45	0	1193	293	0	0	259	0	0
V/C Ratio(X)	0.62	0.82	0.02	0.62	0.00	0.46	0.52	0.00	0.00	0.67	0.00	0.00
Avail Cap(c_a), veh/h	87	1203	1020	411	0	1193	454	0	0	410	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	51.0	12.9	5.9	51.0	0.0	8.4	41.4	0.0	0.0	43.4	0.0	0.0
Incr Delay (d2), s/veh	5.0	6.4	0.0	5.0	0.0	1.3	1.5	0.0	0.0	3.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	15.3	0.2	0.8	0.0	5.1	3.9	0.0	0.0	4.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.0	19.3	6.0	56.0	0.0	9.6	42.9	0.0	0.0	46.4	0.0	0.0
LnGrp LOS	E	B	A	E	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1040			572			154			173	
Approach Delay, s/veh		20.0			11.9			42.9			46.4	
Approach LOS		C			B			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		21.5	7.4	77.0		21.5	7.4	77.0				
Change Period (Y+Rc), s		4.6	4.6	6.2		4.6	4.6	6.2				
Max Green Setting (Gmax), s		28.4	25.4	50.8		28.4	5.4	70.8				
Max Q Clear Time (g_c+I1), s		11.6	3.7	44.8		16.1	3.7	17.4				
Green Ext Time (p_c), s		0.8	0.0	3.3		0.8	0.0	3.4				

Intersection Summary		
HCM 6th Ctrl Delay		21.8
HCM 6th LOS		C

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	333	270	527	328	630	868
Future Volume (vph)	333	270	527	328	630	868
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	37.0	46.7	36.3	37.0	83.7
Total Split (%)	30.3%	30.8%	38.9%	30.3%	30.8%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 106.3
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	333	270	527	328	630	868
Future Volume (veh/h)	333	270	527	328	630	868
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	340	226	538	314	643	886
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	376	1478	619	848	568	1308
Arrive On Green	0.21	0.21	0.33	0.33	0.31	0.69
Sat Flow, veh/h	1810	2834	1900	1576	1810	1900
Grp Volume(v), veh/h	340	226	538	314	643	886
Grp Sat Flow(s),veh/h/ln	1810	1417	1900	1576	1810	1900
Q Serve(g_s), s	18.7	4.2	27.2	11.8	32.0	27.8
Cycle Q Clear(g_c), s	18.7	4.2	27.2	11.8	32.0	27.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	376	1478	619	848	568	1308
V/C Ratio(X)	0.90	0.15	0.87	0.37	1.13	0.68
Avail Cap(c_a), veh/h	550	1750	771	974	568	1466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	12.7	32.4	13.9	35.0	9.3
Incr Delay (d2), s/veh	10.8	0.0	9.3	0.3	79.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	1.2	13.1	6.1	25.4	8.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	50.2	12.7	41.6	14.2	114.9	10.1
LnGrp LOS	D	B	D	B	F	B
Approach Vol, veh/h	566		852			1529
Approach Delay, s/veh	35.3		31.5			54.1
Approach LOS	D		C			D

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	37.0	38.5			75.5	26.5
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	32.0	41.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	34.0	29.2			29.8	20.7
Green Ext Time (p_c), s	0.0	4.0			3.6	0.5

Intersection Summary	
HCM 6th Ctrl Delay	44.0
HCM 6th LOS	D

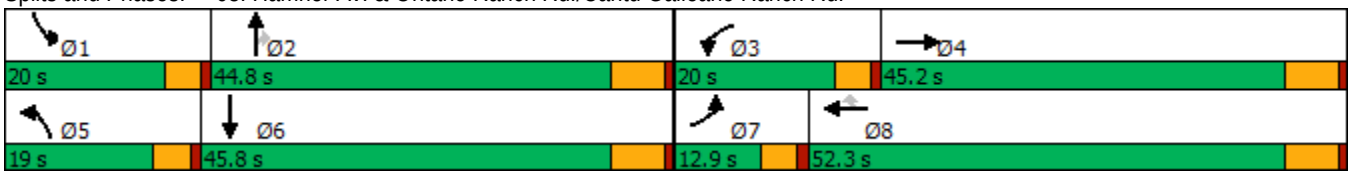
Notes

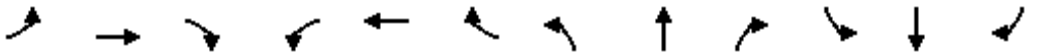
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	94	916	580	491	107	195	372	233	451	790
Future Volume (vph)	94	916	580	491	107	195	372	233	451	790
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2
Total Split (s)	12.9	45.2	20.0	52.3	52.3	19.0	44.8	44.8	20.0	45.8
Total Split (%)	9.9%	34.8%	15.4%	40.2%	40.2%	14.6%	34.5%	34.5%	15.4%	35.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	7.4	29.5	15.7	37.8	37.8	11.5	23.9	23.9	15.7	28.1
Actuated g/C Ratio	0.07	0.28	0.15	0.35	0.35	0.11	0.22	0.22	0.15	0.26
v/c Ratio	0.48	0.72	1.39	0.42	0.18	0.64	0.35	0.50	1.09	0.73
Control Delay	60.1	36.5	226.4	28.6	5.9	57.8	35.6	12.6	112.3	39.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.1	36.5	226.4	28.6	5.9	57.8	35.6	12.6	112.3	39.4
LOS	E	D	F	C	A	E	D	B	F	D
Approach Delay		38.3		124.0			34.3			63.7
Approach LOS		D		F			C			E

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 106.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.39	
Intersection Signal Delay: 67.0	Intersection LOS: E
Intersection Capacity Utilization 82.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	916	263	580	491	107	195	372	233	451	790	110
Future Volume (veh/h)	94	916	263	580	491	107	195	372	233	451	790	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	98	954	217	604	511	77	203	388	164	470	823	60
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	148	1372	307	488	1314	586	266	830	257	488	1141	83
Arrive On Green	0.05	0.27	0.27	0.17	0.38	0.38	0.09	0.17	0.17	0.17	0.24	0.24
Sat Flow, veh/h	2956	5098	1141	2956	3420	1525	2956	4914	1523	2956	4675	340
Grp Volume(v), veh/h	98	868	303	604	511	77	203	388	164	470	576	307
Grp Sat Flow(s),veh/h/ln	1478	1548	1595	1478	1710	1525	1478	1638	1523	1478	1638	1738
Q Serve(g_s), s	3.0	15.7	16.0	15.4	10.1	3.1	6.3	6.6	9.4	14.7	15.0	15.1
Cycle Q Clear(g_c), s	3.0	15.7	16.0	15.4	10.1	3.1	6.3	6.6	9.4	14.7	15.0	15.1
Prop In Lane	1.00		0.72	1.00		1.00	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	148	1250	429	488	1314	586	266	830	257	488	800	424
V/C Ratio(X)	0.66	0.69	0.71	1.24	0.39	0.13	0.76	0.47	0.64	0.96	0.72	0.72
Avail Cap(c_a), veh/h	263	1942	667	488	1691	754	456	2034	630	488	1391	738
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.5	30.6	30.8	38.9	20.8	18.6	41.5	35.0	36.1	38.6	32.3	32.4
Incr Delay (d2), s/veh	1.9	0.7	2.1	123.4	0.2	0.1	1.7	0.4	2.6	31.1	1.2	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	5.4	5.8	13.6	3.7	1.0	2.2	2.5	3.4	7.1	5.6	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	31.3	32.9	162.4	21.0	18.7	43.2	35.4	38.7	69.8	33.6	34.7
LnGrp LOS	D	C	C	F	C	B	D	D	D	E	C	C
Approach Vol, veh/h		1269			1192			755			1353	
Approach Delay, s/veh		32.8			92.5			38.2			46.4	
Approach LOS		C			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	22.0	20.0	31.3	13.0	29.0	9.3	42.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	15.4	38.6	15.4	39.0	14.4	39.6	8.3	46.1
Max Q Clear Time (g_c+I1), s	16.7	11.4	17.4	18.0	8.3	17.1	5.0	12.1
Green Ext Time (p_c), s	0.0	2.9	0.0	7.1	0.2	5.2	0.0	3.4

Intersection Summary	
HCM 6th Ctrl Delay	53.3
HCM 6th LOS	D

APPENDIX 5.15:

E+P (PHASE C) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

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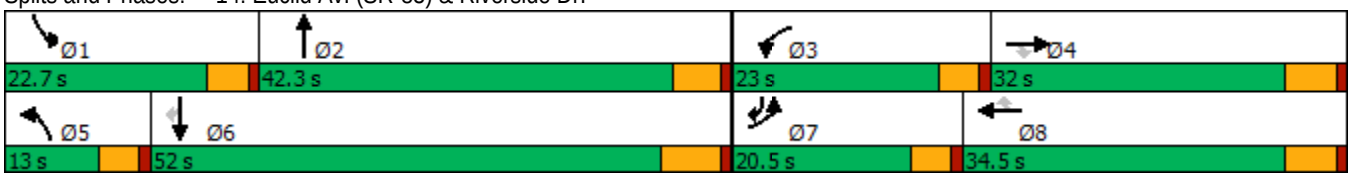
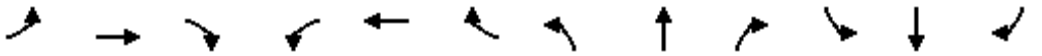
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	153	311	77	187	488	115	74	963	174	1138	152
Future Volume (vph)	153	311	77	187	488	115	74	963	174	1138	152
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2	1	6	7
Permitted Phases			4			8					6
Detector Phase	7	4	4	3	8	8	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	9.6	34.5	9.6
Total Split (s)	20.5	32.0	32.0	23.0	34.5	34.5	13.0	42.3	22.7	52.0	20.5
Total Split (%)	17.1%	26.7%	26.7%	19.2%	28.8%	28.8%	10.8%	35.3%	18.9%	43.3%	17.1%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	Max	None
Act Effct Green (s)	14.2	23.8	23.8	16.5	26.2	26.2	7.9	37.7	15.9	47.1	63.2
Actuated g/C Ratio	0.12	0.21	0.21	0.14	0.23	0.23	0.07	0.33	0.14	0.41	0.55
v/c Ratio	0.81	0.87	0.18	0.85	0.66	0.26	0.70	0.74	0.82	0.85	0.18
Control Delay	79.1	68.3	0.9	79.0	44.9	3.8	85.9	37.6	76.5	39.6	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.1	68.3	0.9	79.0	44.9	3.8	85.9	37.6	76.5	39.6	5.1
LOS	E	E	A	E	D	A	F	D	E	D	A
Approach Delay		61.8			47.0			40.6		40.4	
Approach LOS		E			D			D		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.5	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 44.7	Intersection LOS: D
Intersection Capacity Utilization 84.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	311	77	187	488	115	74	963	155	174	1138	152
Future Volume (veh/h)	153	311	77	187	488	115	74	963	155	174	1138	152
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	161	327	65	197	514	92	78	1014	123	183	1198	101
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	187	364	308	223	768	342	97	1502	182	209	1395	797
Arrive On Green	0.12	0.20	0.20	0.14	0.22	0.22	0.06	0.34	0.34	0.13	0.41	0.41
Sat Flow, veh/h	1619	1800	1525	1619	3420	1525	1619	4441	538	1619	3420	1524
Grp Volume(v), veh/h	161	327	65	197	514	92	78	747	390	183	1198	101
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	1525	1619	1638	1703	1619	1710	1524
Q Serve(g_s), s	10.9	19.8	4.0	13.3	15.3	5.6	5.3	21.8	21.9	12.4	35.6	3.8
Cycle Q Clear(g_c), s	10.9	19.8	4.0	13.3	15.3	5.6	5.3	21.8	21.9	12.4	35.6	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	187	364	308	223	768	342	97	1108	576	209	1395	797
V/C Ratio(X)	0.86	0.90	0.21	0.88	0.67	0.27	0.81	0.67	0.68	0.87	0.86	0.13
Avail Cap(c_a), veh/h	231	423	358	267	880	392	122	1108	576	263	1395	797
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.5	43.4	37.1	47.2	39.5	35.7	51.8	31.7	31.7	47.7	30.1	13.6
Incr Delay (d2), s/veh	20.2	19.8	0.3	22.2	1.6	0.4	21.1	3.3	6.3	19.7	7.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	10.5	1.5	6.6	6.4	2.0	2.6	8.5	9.3	6.0	15.2	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.7	63.2	37.4	69.4	41.1	36.1	72.9	34.9	37.9	67.4	37.2	13.9
LnGrp LOS	E	E	D	E	D	D	E	C	D	E	D	B
Approach Vol, veh/h		553			803			1215			1482	
Approach Delay, s/veh		61.8			47.5			38.3			39.3	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	44.2	20.0	28.4	11.3	52.0	17.5	30.9
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	18.1	* 37	18.4	26.2	8.4	45.5	15.9	28.7
Max Q Clear Time (g_c+I1), s	14.4	23.9	15.3	21.8	7.3	37.6	12.9	17.3
Green Ext Time (p_c), s	0.1	5.4	0.1	0.8	0.0	4.8	0.1	2.6

Intersection Summary	
HCM 6th Ctrl Delay	43.7
HCM 6th LOS	D

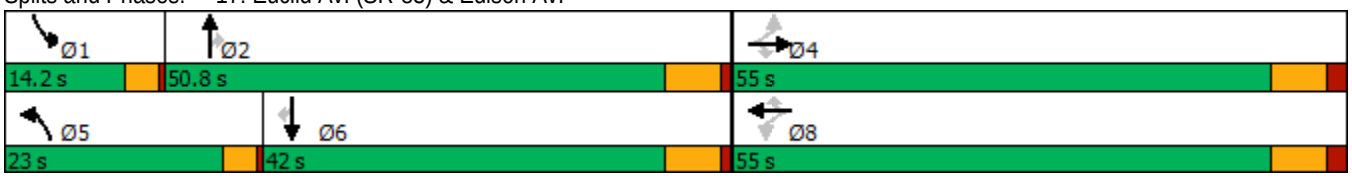
Notes

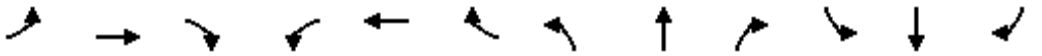
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	351	97	33	447	83	208	913	37	139	958	167
Future Volume (vph)	156	351	97	33	447	83	208	913	37	139	958	167
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	55.0	55.0	55.0	55.0	55.0	55.0	23.0	50.8	50.8	14.2	42.0	42.0
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	19.2%	42.3%	42.3%	11.8%	35.0%	35.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	37.7	37.7	37.7	37.7	37.7	37.7	17.3	41.3	41.3	11.0	35.0	35.0
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.35	0.35	0.16	0.39	0.39	0.10	0.33	0.33
v/c Ratio	1.01	0.58	0.17	0.15	0.74	0.15	0.83	0.72	0.06	0.87	0.89	0.30
Control Delay	108.6	31.9	5.2	25.2	37.7	5.0	72.1	32.9	2.0	94.8	47.6	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	108.6	31.9	5.2	25.2	37.7	5.0	72.1	32.9	2.0	94.8	47.6	11.6
LOS	F	C	A	C	D	A	E	C	A	F	D	B
Approach Delay		47.5			32.2			38.9			48.0	
Approach LOS		D			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 42.5	Intersection LOS: D
Intersection Capacity Utilization 95.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	351	97	33	447	83	208	913	37	139	958	167
Future Volume (veh/h)	156	351	97	33	447	83	208	913	37	139	958	167
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	162	366	46	34	466	81	217	951	31	145	998	123
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	225	732	620	299	732	620	241	1241	554	147	1041	453
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.15	0.36	0.36	0.09	0.30	0.30
Sat Flow, veh/h	825	1800	1524	934	1800	1524	1619	3420	1525	1619	3420	1489
Grp Volume(v), veh/h	162	366	46	34	466	81	217	951	31	145	998	123
Grp Sat Flow(s),veh/h/ln	825	1800	1524	934	1800	1524	1619	1710	1525	1619	1710	1489
Q Serve(g_s), s	23.1	17.9	2.2	3.3	24.5	3.9	15.5	29.0	1.6	10.6	33.8	7.4
Cycle Q Clear(g_c), s	47.6	17.9	2.2	21.2	24.5	3.9	15.5	29.0	1.6	10.6	33.8	7.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	225	732	620	299	732	620	241	1241	554	147	1041	453
V/C Ratio(X)	0.72	0.50	0.07	0.11	0.64	0.13	0.90	0.77	0.06	0.99	0.96	0.27
Avail Cap(c_a), veh/h	225	732	620	299	732	620	267	1298	579	147	1043	454
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	26.1	21.4	34.0	28.0	21.9	49.4	33.2	24.5	53.6	40.3	31.1
Incr Delay (d2), s/veh	10.5	0.5	0.1	0.2	1.8	0.1	27.2	2.7	0.0	70.3	18.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	7.4	0.8	0.7	10.4	1.4	7.8	11.6	0.5	7.0	15.9	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.6	26.6	21.5	34.1	29.9	22.0	76.5	35.9	24.5	123.9	58.9	31.4
LnGrp LOS	E	C	C	C	C	C	E	D	C	F	E	C
Approach Vol, veh/h		574			581			1199			1266	
Approach Delay, s/veh		34.9			29.0			42.9			63.7	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.2	48.8		55.0	21.1	41.9		55.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	10.7	44.8		48.0	19.5	36.0		48.0				
Max Q Clear Time (g_c+I1), s	12.6	31.0		49.6	17.5	35.8		26.5				
Green Ext Time (p_c), s	0.0	5.0		0.0	0.1	0.1		3.0				

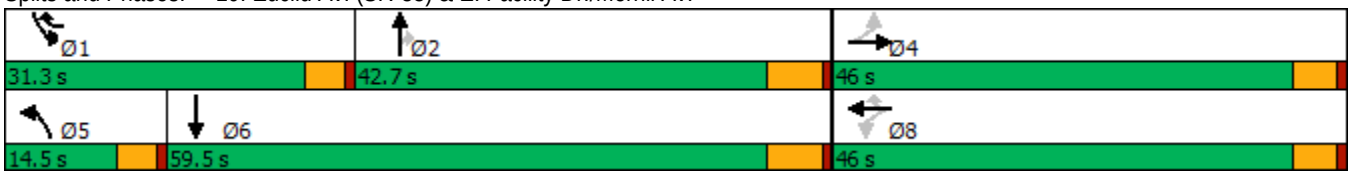
Intersection Summary												
HCM 6th Ctrl Delay			46.7									
HCM 6th LOS			D									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	4	8	272	48	264	10	1013	313	251	981
Future Volume (vph)	4	8	272	48	264	10	1013	313	251	981
Turn Type	Perm	NA	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	1	5	2		1	6
Permitted Phases	4		8		8			2		
Detector Phase	4	4	8	8	1	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	31.3	14.5	42.7	42.7	31.3	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	26.1%	12.1%	35.6%	35.6%	26.1%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	4.5	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		20.9	20.9	20.9	44.6	10.3	36.9	36.9	18.6	57.8
Actuated g/C Ratio		0.23	0.23	0.23	0.48	0.11	0.40	0.40	0.20	0.63
v/c Ratio		0.08	0.60	0.56	0.36	0.06	0.76	0.48	0.80	0.49
Control Delay		16.8	42.3	39.7	14.0	45.1	30.9	18.3	54.9	13.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		16.8	42.3	39.7	14.0	45.1	30.9	18.3	54.9	13.0
LOS		B	D	D	B	D	C	B	D	B
Approach Delay		16.8		28.7			28.0			21.3
Approach LOS		B		C			C			C

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 92.2
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 25.4 — Intersection LOS: C
Intersection Capacity Utilization 74.0% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	8	17	272	48	264	10	1013	313	251	981	39
Future Volume (veh/h)	4	8	17	272	48	264	10	1013	313	251	981	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	4	8	17	315	0	245	10	1044	280	259	1011	26
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	76	118	194	766	0	602	41	1330	593	301	1870	48
Arrive On Green	0.21	0.21	0.21	0.21	0.00	0.21	0.03	0.39	0.39	0.19	0.55	0.55
Sat Flow, veh/h	92	562	927	2659	0	1525	1619	3420	1525	1619	3404	88
Grp Volume(v), veh/h	29	0	0	315	0	245	10	1044	280	259	508	529
Grp Sat Flow(s),veh/h/ln	1581	0	0	1330	0	1525	1619	1710	1525	1619	1710	1782
Q Serve(g_s), s	0.0	0.0	0.0	6.3	0.0	8.3	0.4	19.3	9.8	11.1	13.6	13.6
Cycle Q Clear(g_c), s	1.0	0.0	0.0	7.4	0.0	8.3	0.4	19.3	9.8	11.1	13.6	13.6
Prop In Lane	0.14		0.59	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	388	0	0	766	0	602	41	1330	593	301	939	979
V/C Ratio(X)	0.07	0.00	0.00	0.41	0.00	0.41	0.25	0.79	0.47	0.86	0.54	0.54
Avail Cap(c_a), veh/h	940	0	0	1730	0	1156	226	1751	781	605	1276	1330
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.8	0.0	0.0	25.2	0.0	15.6	34.3	19.3	16.4	28.3	10.4	10.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	0.2	1.1	1.8	0.6	2.9	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	2.1	0.0	2.4	0.2	6.5	2.9	4.0	3.7	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.8	0.0	0.0	25.4	0.0	15.8	35.4	21.1	17.0	31.1	10.8	10.8
LnGrp LOS	C	A	A	C	A	B	D	C	B	C	B	B
Approach Vol, veh/h		29			560			1334			1296	
Approach Delay, s/veh		22.8			21.2			20.3			14.9	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.8	33.9		20.0	6.3	45.4		20.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	26.8	36.7		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	13.1	21.3		3.0	2.4	15.6		10.3				
Green Ext Time (p_c), s	0.3	6.6		0.1	0.0	6.6		1.0				

Intersection Summary			
HCM 6th Ctrl Delay		18.3	
HCM 6th LOS		B	

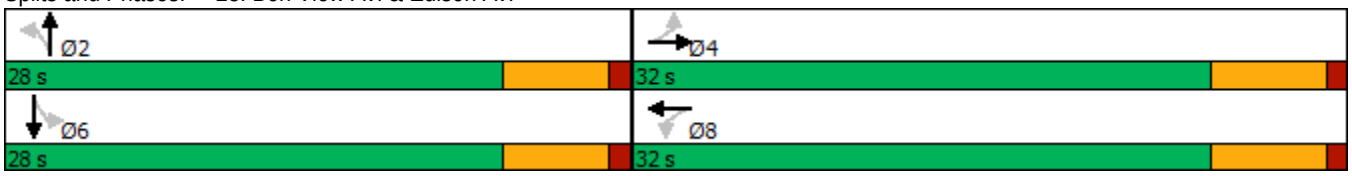
Notes

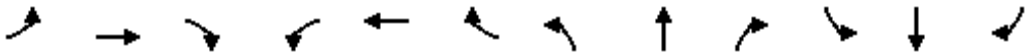
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	48	401	19	546	17	76	18	105
Future Volume (vph)	48	401	19	546	17	76	18	105
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	27.8	27.8	27.8	27.8
Total Split (s)	32.0	32.0	32.0	32.0	28.0	28.0	28.0	28.0
Total Split (%)	53.3%	53.3%	53.3%	53.3%	46.7%	46.7%	46.7%	46.7%
Yellow Time (s)	5.2	5.2	5.2	5.2	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		5.8		5.8
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)		21.3		21.3		12.4		12.4
Actuated g/C Ratio		0.46		0.46		0.27		0.27
v/c Ratio		0.68		0.79		0.26		0.39
Control Delay		16.3		20.6		14.5		14.7
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		16.3		20.6		14.5		14.7
LOS		B		C		B		B
Approach Delay		16.3		20.6		14.5		14.7
Approach LOS		B		C		B		B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 46	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 17.9	Intersection LOS: B
Intersection Capacity Utilization 67.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 23: Bon View Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	401	14	19	546	16	17	76	13	18	105	44
Future Volume (veh/h)	48	401	14	19	546	16	17	76	13	18	105	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	53	441	15	21	600	18	19	84	14	20	115	48
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	145	689	22	105	746	22	139	351	52	124	295	113
Arrive On Green	0.44	0.44	0.44	0.44	0.44	0.44	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	99	1568	51	23	1697	50	126	1376	204	87	1159	443
Grp Volume(v), veh/h	509	0	0	639	0	0	117	0	0	183	0	0
Grp Sat Flow(s),veh/h/ln	1718	0	0	1770	0	0	1706	0	0	1688	0	0
Q Serve(g_s), s	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.8	0.0	0.0	12.3	0.0	0.0	2.1	0.0	0.0	3.5	0.0	0.0
Prop In Lane	0.10		0.03	0.03		0.03	0.16		0.12	0.11		0.26
Lane Grp Cap(c), veh/h	856	0	0	873	0	0	541	0	0	532	0	0
V/C Ratio(X)	0.59	0.00	0.00	0.73	0.00	0.00	0.22	0.00	0.00	0.34	0.00	0.00
Avail Cap(c_a), veh/h	1203	0	0	1252	0	0	1053	0	0	1047	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.6	0.0	0.0	9.6	0.0	0.0	11.7	0.0	0.0	12.2	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	1.3	0.0	0.0	0.2	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.0	2.6	0.0	0.0	0.6	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.3	0.0	0.0	10.9	0.0	0.0	11.9	0.0	0.0	12.6	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h		509			639			117			183	
Approach Delay, s/veh		9.3			10.9			11.9			12.6	
Approach LOS		A			B			B			B	

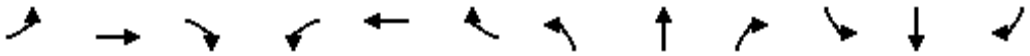
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.8		23.4		15.8		23.4				
Change Period (Y+Rc), s		5.8		6.2		5.8		6.2				
Max Green Setting (Gmax), s		22.2		25.8		22.2		25.8				
Max Q Clear Time (g_c+I1), s		4.1		10.8		5.5		14.3				
Green Ext Time (p_c), s		0.5		2.7		0.8		2.9				

Intersection Summary												
HCM 6th Ctrl Delay			10.6									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	33	201	64	495	69	217	58	288
Future Volume (vph)	33	201	64	495	69	217	58	288
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Total Split (s)	59.0	59.0	59.0	59.0	31.0	31.0	31.0	31.0
Total Split (%)	65.6%	65.6%	65.6%	65.6%	34.4%	34.4%	34.4%	34.4%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		52.8		52.8		24.8		24.8
Actuated g/C Ratio		0.59		0.59		0.28		0.28
v/c Ratio		0.50		0.68		1.01		1.00
Control Delay		10.9		17.4		87.4		80.1
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		10.9		17.4		87.4		80.1
LOS		B		B		F		F
Approach Delay		10.9		17.4		87.4		80.1
Approach LOS		B		B		F		F

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 42.2	Intersection LOS: D
Intersection Capacity Utilization 85.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	201	196	64	495	31	69	217	24	58	288	28
Future Volume (veh/h)	33	201	196	64	495	31	69	217	24	58	288	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	36	221	215	70	544	34	76	238	26	64	316	31
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	84	468	426	121	854	52	103	258	26	90	321	30
Arrive On Green	0.59	0.59	0.59	0.59	0.59	0.59	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	71	798	727	132	1456	88	196	935	94	158	1165	108
Grp Volume(v), veh/h	472	0	0	648	0	0	340	0	0	411	0	0
Grp Sat Flow(s),veh/h/ln	1595	0	0	1675	0	0	1224	0	0	1431	0	0
Q Serve(g_s), s	0.0	0.0	0.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.7	0.0	0.0	22.2	0.0	0.0	24.8	0.0	0.0	24.8	0.0	0.0
Prop In Lane	0.08		0.46	0.11		0.05	0.22		0.08	0.16		0.08
Lane Grp Cap(c), veh/h	979	0	0	1027	0	0	386	0	0	441	0	0
V/C Ratio(X)	0.48	0.00	0.00	0.63	0.00	0.00	0.88	0.00	0.00	0.93	0.00	0.00
Avail Cap(c_a), veh/h	979	0	0	1027	0	0	386	0	0	441	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.7	0.0	0.0	12.1	0.0	0.0	31.6	0.0	0.0	32.4	0.0	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.0	2.9	0.0	0.0	20.2	0.0	0.0	26.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	0.0	7.5	0.0	0.0	8.8	0.0	0.0	11.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.4	0.0	0.0	15.1	0.0	0.0	51.8	0.0	0.0	59.3	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	D	A	A	E	A	A
Approach Vol, veh/h		472			648			340			411	
Approach Delay, s/veh		12.4			15.1			51.8			59.3	
Approach LOS		B			B			D			E	

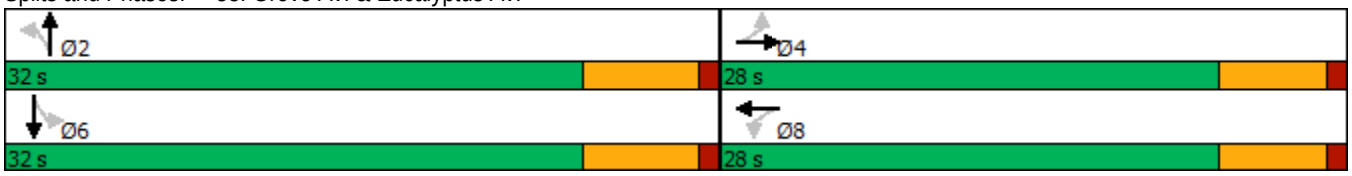
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		31.0		59.0		31.0		59.0				
Change Period (Y+Rc), s		6.2		6.2		6.2		6.2				
Max Green Setting (Gmax), s		24.8		52.8		24.8		52.8				
Max Q Clear Time (g_c+I1), s		26.8		16.7		26.8		24.2				
Green Ext Time (p_c), s		0.0		3.1		0.0		4.4				

Intersection Summary												
HCM 6th Ctrl Delay			30.8									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	24	71	12	92	60	247	243	275
Future Volume (vph)	24	71	12	92	60	247	243	275
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	28.0	28.0	28.0	28.0	32.0	32.0	32.0	32.0
Total Split (%)	46.7%	46.7%	46.7%	46.7%	53.3%	53.3%	53.3%	53.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.8		5.8		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		12.2		12.2		30.6		30.6
Actuated g/C Ratio		0.24		0.24		0.61		0.61
v/c Ratio		0.30		0.43		0.21		0.82
Control Delay		15.7		13.5		7.5		26.2
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		15.7		13.5		7.5		26.2
LOS		B		B		A		C
Approach Delay		15.7		13.5		7.5		26.2
Approach LOS		B		B		A		C

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 50.2	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 18.2	Intersection LOS: B
Intersection Capacity Utilization 70.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	71	13	12	92	73	60	247	11	243	275	47
Future Volume (veh/h)	24	71	13	12	92	73	60	247	11	243	275	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	26	78	14	13	101	80	66	271	12	267	302	52
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	133	265	41	91	191	141	343	1325	60	402	395	63
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.54	0.54	0.54	0.54	0.54	0.54
Sat Flow, veh/h	199	1283	200	49	925	684	441	2447	110	542	730	116
Grp Volume(v), veh/h	118	0	0	194	0	0	173	0	176	621	0	0
Grp Sat Flow(s),veh/h/ln	1682	0	0	1659	0	0	1380	0	1618	1388	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	15.2	0.0	0.0
Cycle Q Clear(g_c), s	2.7	0.0	0.0	4.9	0.0	0.0	2.3	0.0	2.7	17.9	0.0	0.0
Prop In Lane	0.22		0.12	0.07		0.41	0.38		0.07	0.43		0.08
Lane Grp Cap(c), veh/h	440	0	0	423	0	0	852	0	876	860	0	0
V/C Ratio(X)	0.27	0.00	0.00	0.46	0.00	0.00	0.20	0.00	0.20	0.72	0.00	0.00
Avail Cap(c_a), veh/h	855	0	0	849	0	0	852	0	876	860	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.1	0.0	0.0	17.0	0.0	0.0	5.5	0.0	5.6	9.2	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.8	0.0	0.0	0.5	0.0	0.5	5.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	1.6	0.0	0.0	0.6	0.0	0.6	3.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.4	0.0	0.0	17.7	0.0	0.0	6.1	0.0	6.1	14.4	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	B	A	A
Approach Vol, veh/h		118			194			349			621	
Approach Delay, s/veh		16.4			17.7			6.1			14.4	
Approach LOS		B			B			A			B	

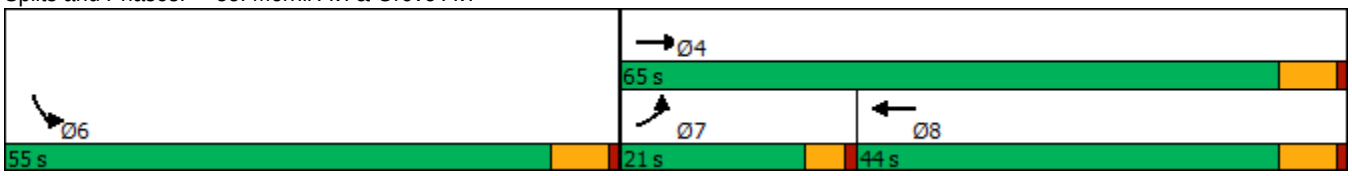
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.0		15.6		32.0		15.6				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		25.8		22.2		25.8		22.2				
Max Q Clear Time (g_c+I1), s		4.7		4.7		19.9		6.9				
Green Ext Time (p_c), s		1.8		0.5		2.0		0.8				

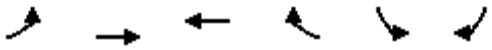
Intersection Summary												
HCM 6th Ctrl Delay			12.8									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	167	439	533	163
Future Volume (vph)	167	439	533	163
Turn Type	Prot	NA	NA	Prot
Protected Phases	7	4	8	6
Permitted Phases				
Detector Phase	7	4	8	6
Switch Phase				
Minimum Initial (s)	5.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	28.2
Total Split (s)	21.0	65.0	44.0	55.0
Total Split (%)	17.5%	54.2%	36.7%	45.8%
Yellow Time (s)	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	6.2
Lead/Lag	Lead		Lag	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	Max	Max	None
Act Effct Green (s)	13.7	59.0	40.7	20.2
Actuated g/C Ratio	0.15	0.64	0.44	0.22
v/c Ratio	0.72	0.39	0.58	0.78
Control Delay	54.9	9.9	20.1	43.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	54.9	9.9	20.1	43.9
LOS	D	A	C	D
Approach Delay		22.3	20.1	43.9
Approach LOS		C	C	D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 91.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 24.8	Intersection LOS: C
Intersection Capacity Utilization 68.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	167	439	533	299	163	116
Future Volume (veh/h)	167	439	533	299	163	116
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	172	453	549	308	168	120
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	203	1170	1001	561	191	136
Arrive On Green	0.13	0.65	0.47	0.47	0.21	0.21
Sat Flow, veh/h	1619	1800	2203	1184	895	639
Grp Volume(v), veh/h	172	453	444	413	289	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1710	1587	1540	0
Q Serve(g_s), s	9.4	10.7	16.7	16.8	16.4	0.0
Cycle Q Clear(g_c), s	9.4	10.7	16.7	16.8	16.4	0.0
Prop In Lane	1.00			0.75	0.58	0.42
Lane Grp Cap(c), veh/h	203	1170	810	752	328	0
V/C Ratio(X)	0.85	0.39	0.55	0.55	0.88	0.00
Avail Cap(c_a), veh/h	293	1170	810	752	831	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.7	7.4	16.9	16.9	34.5	0.0
Incr Delay (d2), s/veh	10.2	1.0	2.7	2.9	7.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	3.3	6.3	5.9	6.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	49.0	8.4	19.6	19.8	42.1	0.0
LnGrp LOS	D	A	B	B	D	A
Approach Vol, veh/h		625	857		289	
Approach Delay, s/veh		19.5	19.7		42.1	
Approach LOS		B	B		D	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	65.0	25.5	15.9	49.1
Change Period (Y+Rc), s	6.2	6.2	4.6	6.2
Max Green Setting (Gmax), s	58.8	48.8	16.4	37.8
Max Q Clear Time (g_c+I1), s	12.7	18.4	11.4	18.8
Green Ext Time (p_c), s	2.6	0.9	0.1	4.8

Intersection Summary	
HCM 6th Ctrl Delay	23.3
HCM 6th LOS	C

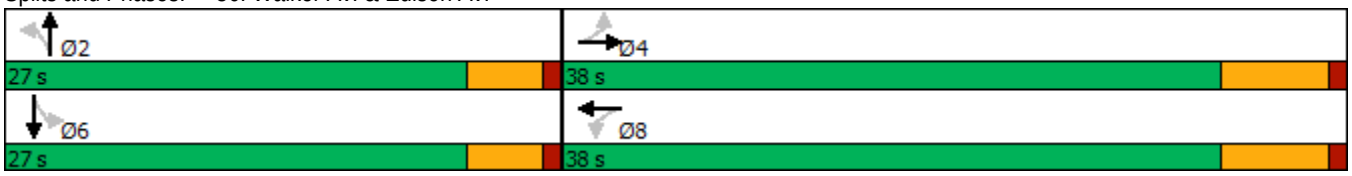
Notes

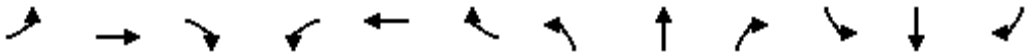
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	17	230	405	392	4	18	25	17
Future Volume (vph)	17	230	405	392	4	18	25	17
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	26.7	26.7	26.7	26.7
Total Split (s)	38.0	38.0	38.0	38.0	27.0	27.0	27.0	27.0
Total Split (%)	58.5%	58.5%	58.5%	58.5%	41.5%	41.5%	41.5%	41.5%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		4.7		4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		39.0		39.0		12.2		12.2
Actuated g/C Ratio		0.68		0.68		0.21		0.21
v/c Ratio		0.23		1.07		0.27		0.17
Control Delay		6.8		70.9		8.0		15.5
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		6.8		70.9		8.0		15.5
LOS		A		E		A		B
Approach Delay		6.8		70.9		8.0		15.5
Approach LOS		A		E		A		B

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 57.7	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 51.5	Intersection LOS: D
Intersection Capacity Utilization 96.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	230	9	405	392	139	4	18	87	25	17	12
Future Volume (veh/h)	17	230	9	405	392	139	4	18	87	25	17	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	17	235	9	413	400	142	4	18	89	26	17	12
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	102	1009	37	482	378	133	76	51	221	199	119	60
Arrive On Green	0.61	0.61	0.61	0.61	0.61	0.61	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	45	1643	60	623	616	216	20	291	1257	553	676	343
Grp Volume(v), veh/h	261	0	0	955	0	0	111	0	0	55	0	0
Grp Sat Flow(s),veh/h/ln	1748	0	0	1455	0	0	1568	0	0	1572	0	0
Q Serve(g_s), s	0.0	0.0	0.0	28.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.4	0.0	0.0	31.8	0.0	0.0	3.2	0.0	0.0	1.4	0.0	0.0
Prop In Lane	0.07		0.03	0.43		0.15	0.04		0.80	0.47		0.22
Lane Grp Cap(c), veh/h	1148	0	0	993	0	0	347	0	0	378	0	0
V/C Ratio(X)	0.23	0.00	0.00	0.96	0.00	0.00	0.32	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	1148	0	0	993	0	0	745	0	0	756	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.5	0.0	0.0	10.7	0.0	0.0	18.9	0.0	0.0	18.2	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	20.7	0.0	0.0	0.5	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	10.2	0.0	0.0	1.1	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.0	0.0	0.0	31.4	0.0	0.0	19.5	0.0	0.0	18.4	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	B	A	A	B	A	A
Approach Vol, veh/h		261			955			111			55	
Approach Delay, s/veh		5.0			31.4			19.5			18.4	
Approach LOS		A			C			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.8		38.0		13.8		38.0				
Change Period (Y+Rc), s		* 4.7		6.2		* 4.7		6.2				
Max Green Setting (Gmax), s		* 22		31.8		* 22		31.8				
Max Q Clear Time (g_c+I1), s		5.2		5.4		3.4		33.8				
Green Ext Time (p_c), s		0.5		1.4		0.2		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		24.9
HCM 6th LOS		C

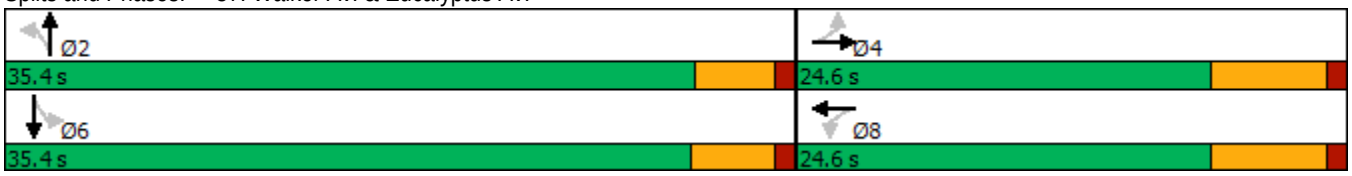
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	10	236	128	21	48	236	180
Future Volume (vph)	10	236	128	21	48	236	180
Turn Type	Perm	NA	NA	Perm	NA	Perm	NA
Protected Phases		4	8		2		6
Permitted Phases	4			2		6	
Detector Phase	4	4	8	2	2	6	6
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.2	23.2	23.2	21.6	21.6	21.8	21.8
Total Split (s)	24.6	24.6	24.6	35.4	35.4	35.4	35.4
Total Split (%)	41.0%	41.0%	41.0%	59.0%	59.0%	59.0%	59.0%
Yellow Time (s)	5.2	5.2	5.2	3.6	3.6	3.8	3.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0
Total Lost Time (s)		6.2	6.2		4.6		4.8
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	Min	Min	Min	Min
Act Effct Green (s)		15.3	15.3		24.0		23.8
Actuated g/C Ratio		0.30	0.30		0.47		0.47
v/c Ratio		0.73	0.41		0.12		0.83
Control Delay		25.8	15.6		8.1		24.4
Queue Delay		0.0	0.0		0.0		0.0
Total Delay		25.8	15.6		8.1		24.4
LOS		C	B		A		C
Approach Delay		25.8	15.6		8.1		24.4
Approach LOS		C	B		A		C

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 50.7	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 22.1	Intersection LOS: C
Intersection Capacity Utilization 68.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 37: Walker Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	236	76	0	128	54	21	48	0	236	180	37
Future Volume (veh/h)	10	236	76	0	128	54	21	48	0	236	180	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	12	288	93	0	156	66	26	59	0	288	220	45
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	96	375	118	0	349	148	271	548	0	466	292	55
Arrive On Green	0.29	0.29	0.29	0.00	0.29	0.29	0.44	0.44	0.00	0.44	0.44	0.44
Sat Flow, veh/h	20	1290	406	0	1201	508	355	1239	0	754	661	125
Grp Volume(v), veh/h	393	0	0	0	0	222	85	0	0	553	0	0
Grp Sat Flow(s),veh/h/ln	1716	0	0	0	0	1709	1594	0	0	1540	0	0
Q Serve(g_s), s	1.3	0.0	0.0	0.0	0.0	4.4	0.0	0.0	0.0	11.6	0.0	0.0
Cycle Q Clear(g_c), s	8.6	0.0	0.0	0.0	0.0	4.4	1.1	0.0	0.0	12.8	0.0	0.0
Prop In Lane	0.03		0.24	0.00		0.30	0.31		0.00	0.52		0.08
Lane Grp Cap(c), veh/h	589	0	0	0	0	496	819	0	0	814	0	0
V/C Ratio(X)	0.67	0.00	0.00	0.00	0.00	0.45	0.10	0.00	0.00	0.68	0.00	0.00
Avail Cap(c_a), veh/h	856	0	0	0	0	765	1288	0	0	1275	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.4	0.0	0.0	0.0	0.0	11.9	6.7	0.0	0.0	9.9	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.0	0.0	0.0	0.6	0.1	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	0.0	0.0	0.0	1.2	0.3	0.0	0.0	3.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.7	0.0	0.0	0.0	0.0	12.5	6.8	0.0	0.0	10.9	0.0	0.0
LnGrp LOS	B	A	A	A	A	B	A	A	A	B	A	A
Approach Vol, veh/h		393			222			85			553	
Approach Delay, s/veh		14.7			12.5			6.8			10.9	
Approach LOS		B			B			A			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		23.0		18.1		23.0		18.1				
Change Period (Y+Rc), s		* 4.8		6.2		* 4.8		6.2				
Max Green Setting (Gmax), s		* 31		18.4		* 31		18.4				
Max Q Clear Time (g_c+I1), s		3.1		10.6		14.8		6.4				
Green Ext Time (p_c), s		0.5		1.3		3.4		0.8				

Intersection Summary		
HCM 6th Ctrl Delay		12.1
HCM 6th LOS		B

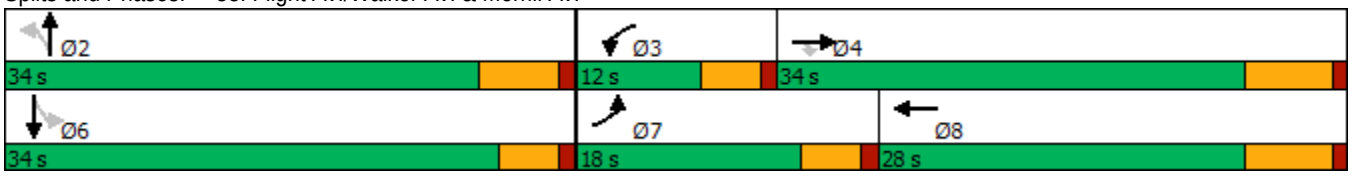
Notes

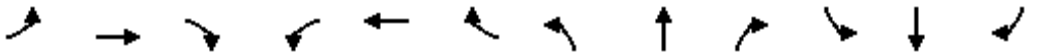
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	103	402	96	112	634	170	19	22	5
Future Volume (vph)	103	402	96	112	634	170	19	22	5
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.2	23.2	9.6	23.2	32.8	32.8	31.6	31.6
Total Split (s)	18.0	34.0	34.0	12.0	28.0	34.0	34.0	34.0	34.0
Total Split (%)	22.5%	42.5%	42.5%	15.0%	35.0%	42.5%	42.5%	42.5%	42.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	4.8	4.8	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	5.8	5.8	4.6	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	8.5	19.1	19.1	7.4	20.6	15.2	15.2	16.5	16.5
Actuated g/C Ratio	0.14	0.32	0.32	0.13	0.35	0.26	0.26	0.28	0.28
v/c Ratio	0.45	0.71	0.18	0.57	0.63	0.54	0.25	0.07	0.07
Control Delay	32.5	25.7	4.8	42.8	21.3	27.0	7.7	17.5	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.5	25.7	4.8	42.8	21.3	27.0	7.7	17.5	8.5
LOS	C	C	A	D	C	C	A	B	A
Approach Delay		23.5			24.2		19.2		12.2
Approach LOS		C			C		B		B

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 59	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 22.8	Intersection LOS: C
Intersection Capacity Utilization 60.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 38: Flight Av./Walker Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	402	96	112	634	82	170	19	95	22	5	28
Future Volume (veh/h)	103	402	96	112	634	82	170	19	95	22	5	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	106	414	99	115	654	85	175	20	98	23	5	29
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	134	549	466	141	943	122	443	61	297	367	52	304
Arrive On Green	0.08	0.31	0.31	0.09	0.31	0.31	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1619	1800	1525	1619	3044	395	1319	265	1301	1222	229	1331
Grp Volume(v), veh/h	106	414	99	115	367	372	175	0	118	23	0	34
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	1729	1319	0	1566	1222	0	1560
Q Serve(g_s), s	2.8	9.1	2.1	3.1	8.3	8.3	5.3	0.0	2.8	0.7	0.0	0.8
Cycle Q Clear(g_c), s	2.8	9.1	2.1	3.1	8.3	8.3	6.0	0.0	2.8	3.5	0.0	0.8
Prop In Lane	1.00		1.00	1.00		0.23	1.00		0.83	1.00		0.85
Lane Grp Cap(c), veh/h	134	549	466	141	530	536	443	0	358	367	0	356
V/C Ratio(X)	0.79	0.75	0.21	0.81	0.69	0.69	0.40	0.00	0.33	0.06	0.00	0.10
Avail Cap(c_a), veh/h	495	1143	968	274	851	861	991	0	1008	908	0	1048
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.7	13.7	11.3	19.6	13.3	13.3	15.7	0.0	14.1	15.5	0.0	13.3
Incr Delay (d2), s/veh	3.9	2.1	0.2	4.2	1.6	1.6	0.6	0.0	0.5	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.8	0.5	1.1	2.4	2.4	1.3	0.0	0.8	0.2	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	15.9	11.5	23.9	14.9	14.9	16.3	0.0	14.6	15.6	0.0	13.4
LnGrp LOS	C	B	B	C	B	B	B	A	B	B	A	B
Approach Vol, veh/h		619			854			293			57	
Approach Delay, s/veh		16.5			16.1			15.6			14.3	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.8	8.4	19.6		15.8	8.2	19.8				
Change Period (Y+Rc), s		5.8	4.6	6.2		* 5.8	4.6	6.2				
Max Green Setting (Gmax), s		28.2	7.4	27.8		* 29	13.4	21.8				
Max Q Clear Time (g_c+I1), s		8.0	5.1	11.1		5.5	4.8	10.3				
Green Ext Time (p_c), s		1.1	0.0	2.3		0.2	0.1	3.1				

Intersection Summary		
HCM 6th Ctrl Delay		16.1
HCM 6th LOS		B

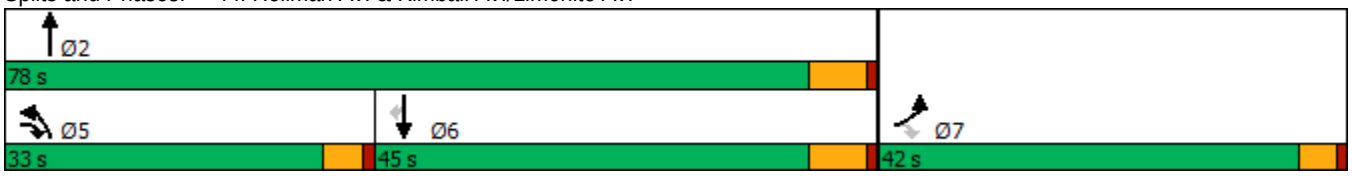
Notes

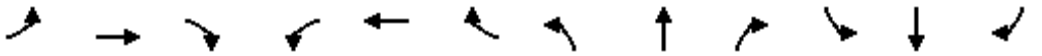
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	18	288	880	68	33	13
Future Volume (vph)	18	288	880	68	33	13
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	7	5	5	2	6	
Permitted Phases		7				6
Detector Phase	7	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	26.5	9.6	9.6	16.2	28.2	28.2
Total Split (s)	42.0	33.0	33.0	78.0	45.0	45.0
Total Split (%)	35.0%	27.5%	27.5%	65.0%	37.5%	37.5%
Yellow Time (s)	3.5	3.6	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.6	4.6	6.2	6.2	6.2
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	Max	Max	Max	None	None
Act Effct Green (s)	9.1	65.1	57.8	84.9	27.2	27.2
Actuated g/C Ratio	0.10	0.69	0.61	0.90	0.29	0.29
v/c Ratio	0.12	0.26	0.48	0.02	0.04	0.03
Control Delay	38.3	2.3	22.6	2.6	19.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.3	2.3	22.6	2.6	19.7	0.1
LOS	D	A	C	A	B	A
Approach Delay				21.2	14.1	
Approach LOS				C	B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 94.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.48	
Intersection Signal Delay: 17.0	Intersection LOS: B
Intersection Capacity Utilization 46.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	0	288	0	0	0	880	68	0	0	33	13
Future Volume (veh/h)	18	0	288	0	0	0	880	68	0	0	33	13
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1700	0	1800				1700	1800	0	0	1800	1800
Adj Flow Rate, veh/h	19	0	303				926	72	0	0	35	14
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	269	0	691				902	2482	0	0	1341	598
Arrive On Green	0.17	0.00	0.17				0.29	0.73	0.00	0.00	0.39	0.39
Sat Flow, veh/h	1619	0	1525				3141	3510	0	0	3510	1525
Grp Volume(v), veh/h	19	0	303				926	72	0	0	35	14
Grp Sat Flow(s),veh/h/ln	1619	0	1525				1570	1710	0	0	1710	1525
Q Serve(g_s), s	1.0	0.0	13.4				28.4	0.6	0.0	0.0	0.6	0.6
Cycle Q Clear(g_c), s	1.0	0.0	13.4				28.4	0.6	0.0	0.0	0.6	0.6
Prop In Lane	1.00		1.00				1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	269	0	691				902	2482	0	0	1341	598
V/C Ratio(X)	0.07	0.00	0.44				1.03	0.03	0.00	0.00	0.03	0.02
Avail Cap(c_a), veh/h	614	0	1016				902	2482	0	0	1341	598
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	34.8	0.0	18.5				35.3	3.8	0.0	0.0	18.5	18.4
Incr Delay (d2), s/veh	0.1	0.0	0.4				37.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.1				14.6	0.1	0.0	0.0	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.9	0.0	18.9				72.3	3.8	0.0	0.0	18.5	18.5
LnGrp LOS	C	A	B				F	A	A	A	B	B
Approach Vol, veh/h		322						998			49	
Approach Delay, s/veh		19.8						67.3			18.5	
Approach LOS		B						E			B	

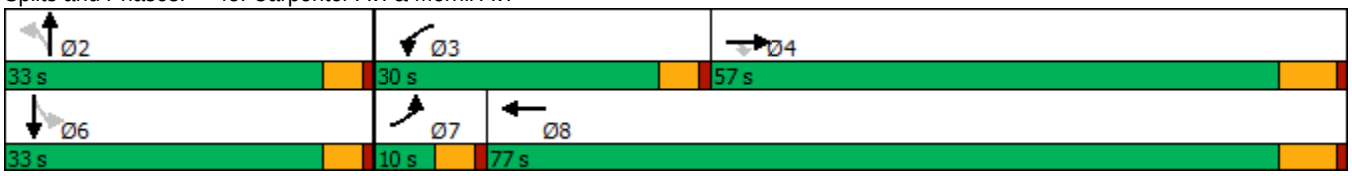
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		78.0		20.9	33.0	45.0						
Change Period (Y+Rc), s		6.2		4.5	4.6	6.2						
Max Green Setting (Gmax), s		71.8		37.5	28.4	38.8						
Max Q Clear Time (g_c+I1), s		2.6		15.4	30.4	2.6						
Green Ext Time (p_c), s		0.4		1.0	0.0	0.2						

Intersection Summary												
HCM 6th Ctrl Delay			54.4									
HCM 6th LOS			D									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	41	417	26	175	956	19	0	130	0
Future Volume (vph)	41	417	26	175	956	19	0	130	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	26.6	26.6
Total Split (s)	10.0	57.0	57.0	30.0	77.0	33.0	33.0	33.0	33.0
Total Split (%)	8.3%	47.5%	47.5%	25.0%	64.2%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2		4.6		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.3	59.0	59.0	15.4	71.1		13.1		13.1
Actuated g/C Ratio	0.05	0.57	0.57	0.15	0.69		0.13		0.13
v/c Ratio	0.50	0.43	0.03	0.73	0.91		0.45		0.75
Control Delay	69.6	15.9	0.1	59.0	28.2		16.0		37.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	69.6	15.9	0.1	59.0	28.2		16.0		37.2
LOS	E	B	A	E	C		B		D
Approach Delay		19.6			32.6		16.0		37.2
Approach LOS		B			C		B		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.9	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 28.7	Intersection LOS: C
Intersection Capacity Utilization 92.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 45: Carpenter Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	417	26	175	956	100	19	0	106	130	0	19
Future Volume (veh/h)	41	417	26	175	956	100	19	0	106	130	0	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	44	444	28	186	1017	106	20	0	113	138	0	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	58	1022	866	216	1058	110	63	16	226	224	2	24
Arrive On Green	0.03	0.57	0.57	0.13	0.66	0.66	0.16	0.00	0.16	0.16	0.00	0.16
Sat Flow, veh/h	1714	1800	1525	1714	1603	167	147	99	1393	992	13	146
Grp Volume(v), veh/h	44	444	28	186	0	1123	133	0	0	158	0	0
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	0	1770	1640	0	0	1151	0	0
Q Serve(g_s), s	2.7	15.2	0.9	11.4	0.0	63.3	0.0	0.0	0.0	6.5	0.0	0.0
Cycle Q Clear(g_c), s	2.7	15.2	0.9	11.4	0.0	63.3	8.2	0.0	0.0	14.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.09	0.15		0.85	0.87		0.13
Lane Grp Cap(c), veh/h	58	1022	866	216	0	1168	305	0	0	250	0	0
V/C Ratio(X)	0.75	0.43	0.03	0.86	0.00	0.96	0.44	0.00	0.00	0.63	0.00	0.00
Avail Cap(c_a), veh/h	86	1022	866	406	0	1168	459	0	0	385	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	51.4	13.3	10.2	45.9	0.0	17.0	41.1	0.0	0.0	44.4	0.0	0.0
Incr Delay (d2), s/veh	8.6	1.3	0.1	3.9	0.0	18.5	1.0	0.0	0.0	2.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	5.7	0.3	4.9	0.0	25.5	3.3	0.0	0.0	4.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.0	14.6	10.3	49.8	0.0	35.5	42.1	0.0	0.0	47.0	0.0	0.0
LnGrp LOS	E	B	B	D	A	D	D	A	A	D	A	A
Approach Vol, veh/h		516			1309			133			158	
Approach Delay, s/veh		18.3			37.5			42.1			47.0	
Approach LOS		B			D			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.0	18.1	67.1		22.0	8.3	77.0				
Change Period (Y+Rc), s		4.6	4.6	6.2		4.6	4.6	6.2				
Max Green Setting (Gmax), s		28.4	25.4	50.8		28.4	5.4	70.8				
Max Q Clear Time (g_c+I1), s		10.2	13.4	17.2		16.8	4.7	65.3				
Green Ext Time (p_c), s		0.7	0.2	2.6		0.7	0.0	3.5				

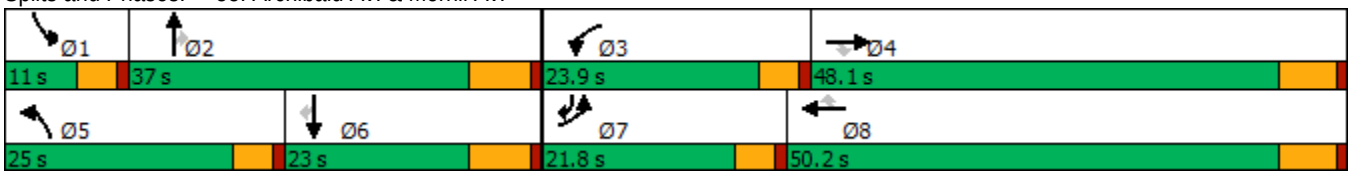
Intersection Summary												
HCM 6th Ctrl Delay			33.8									
HCM 6th LOS			C									

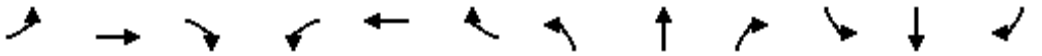
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	254	22	142	72	51	125	577	1141	36	38	487	405
Future Volume (vph)	254	22	142	72	51	125	577	1141	36	38	487	405
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	9.6
Total Split (s)	21.8	48.1	48.1	23.9	50.2	50.2	25.0	37.0	37.0	11.0	23.0	21.8
Total Split (%)	18.2%	40.1%	40.1%	19.9%	41.8%	41.8%	20.8%	30.8%	30.8%	9.2%	19.2%	18.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 92.6
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	254	22	142	72	51	125	577	1141	36	38	487	405
Future Volume (veh/h)	254	22	142	72	51	125	577	1141	36	38	487	405
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	262	23	91	74	53	34	595	1176	18	39	502	352
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	295	439	372	93	214	181	393	1379	615	105	671	577
Arrive On Green	0.18	0.24	0.24	0.06	0.12	0.12	0.24	0.40	0.40	0.04	0.20	0.20
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	1619	3420	1525	2956	3420	1525
Grp Volume(v), veh/h	262	23	91	74	53	34	595	1176	18	39	502	352
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1710	1525	1478	1710	1525
Q Serve(g_s), s	13.3	0.8	4.0	3.8	2.2	1.7	20.4	26.3	0.6	1.1	11.6	15.7
Cycle Q Clear(g_c), s	13.3	0.8	4.0	3.8	2.2	1.7	20.4	26.3	0.6	1.1	11.6	15.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	295	439	372	93	214	181	393	1379	615	105	671	577
V/C Ratio(X)	0.89	0.05	0.24	0.80	0.25	0.19	1.52	0.85	0.03	0.37	0.75	0.61
Avail Cap(c_a), veh/h	331	897	760	372	942	798	393	1379	615	225	671	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	24.4	25.6	39.2	33.7	33.4	31.9	22.8	15.2	39.6	31.8	21.1
Incr Delay (d2), s/veh	21.1	0.0	0.3	5.8	0.6	0.5	244.6	5.4	0.0	0.8	4.6	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	0.3	1.4	1.6	1.0	0.6	33.8	9.9	0.2	0.4	4.8	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.6	24.4	25.9	45.0	34.3	33.9	276.5	28.2	15.2	40.4	36.5	23.0
LnGrp LOS	D	C	C	D	C	C	F	C	B	D	D	C
Approach Vol, veh/h		376			161			1789			893	
Approach Delay, s/veh		45.8			39.1			110.6			31.3	
Approach LOS		D			D			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	40.4	9.4	26.7	25.0	23.0	19.9	16.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	6.4	30.5	19.3	41.9	20.4	16.5	17.2	44.0
Max Q Clear Time (g_c+I1), s	3.1	28.3	5.8	6.0	22.4	17.7	15.3	4.2
Green Ext Time (p_c), s	0.0	1.5	0.1	0.4	0.0	0.0	0.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	77.5
HCM 6th LOS	E

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	268	886	826	279	223	478
Future Volume (vph)	268	886	826	279	223	478
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	21.0	62.7	36.3	21.0	83.7
Total Split (%)	30.3%	17.5%	52.3%	30.3%	17.5%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 105.1
Natural Cycle: 105
Control Type: Actuated-Uncoordinated

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	268	886	826	279	223	478
Future Volume (veh/h)	268	886	826	279	223	478
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1976	1976
Adj Flow Rate, veh/h	279	867	860	244	232	498
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	473	1122	898	1181	254	1283
Arrive On Green	0.26	0.26	0.47	0.47	0.13	0.65
Sat Flow, veh/h	1810	2834	1900	1610	1882	1976
Grp Volume(v), veh/h	279	867	860	244	232	498
Grp Sat Flow(s),veh/h/ln	1810	1417	1900	1610	1882	1976
Q Serve(g_s), s	16.0	31.0	51.8	5.6	14.4	14.0
Cycle Q Clear(g_c), s	16.0	31.0	51.8	5.6	14.4	14.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	473	1122	898	1181	254	1283
V/C Ratio(X)	0.59	0.77	0.96	0.21	0.91	0.39
Avail Cap(c_a), veh/h	473	1122	919	1199	254	1310
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.3	31.2	30.2	5.0	50.7	9.7
Incr Delay (d2), s/veh	1.3	3.1	20.1	0.1	34.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	10.6	26.4	4.0	8.9	5.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	39.6	34.3	50.2	5.1	85.3	9.8
LnGrp LOS	D	C	D	A	F	A
Approach Vol, veh/h	1146		1104			730
Approach Delay, s/veh	35.6		40.2			33.8
Approach LOS	D		D			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	21.0	61.4			82.4	36.3
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	16.0	57.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	16.4	53.8			16.0	33.0
Green Ext Time (p_c), s	0.0	2.3			1.6	0.0

Intersection Summary	
HCM 6th Ctrl Delay	36.9
HCM 6th LOS	D

Notes

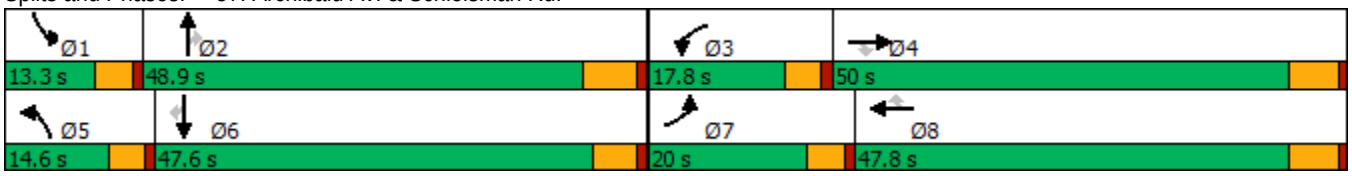
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

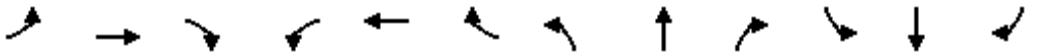
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	383	375	113	248	701	146	241	804	215	106	448	420
Future Volume (vph)	383	375	113	248	701	146	241	804	215	106	448	420
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	20.0	50.0	50.0	17.8	47.8	47.8	14.6	48.9	48.9	13.3	47.6	47.6
Total Split (%)	15.4%	38.5%	38.5%	13.7%	36.8%	36.8%	11.2%	37.6%	37.6%	10.2%	36.6%	36.6%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 116.1
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	383	375	113	248	701	146	241	804	215	106	448	420
Future Volume (veh/h)	383	375	113	248	701	146	241	804	215	106	448	420
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	426	417	62	276	779	85	268	893	166	118	498	345
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	454	2006	613	333	1828	560	295	1510	469	173	1330	407
Arrive On Green	0.13	0.39	0.39	0.09	0.35	0.35	0.08	0.29	0.29	0.05	0.26	0.26
Sat Flow, veh/h	3510	5187	1584	3510	5187	1590	3510	5187	1610	3510	5187	1588
Grp Volume(v), veh/h	426	417	62	276	779	85	268	893	166	118	498	345
Grp Sat Flow(s),veh/h/ln	1755	1729	1584	1755	1729	1590	1755	1729	1610	1755	1729	1588
Q Serve(g_s), s	14.3	6.4	3.0	9.2	13.6	4.4	9.0	17.6	9.7	3.9	9.4	24.6
Cycle Q Clear(g_c), s	14.3	6.4	3.0	9.2	13.6	4.4	9.0	17.6	9.7	3.9	9.4	24.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	454	2006	613	333	1828	560	295	1510	469	173	1330	407
V/C Ratio(X)	0.94	0.21	0.10	0.83	0.43	0.15	0.91	0.59	0.35	0.68	0.37	0.85
Avail Cap(c_a), veh/h	454	2006	613	389	1828	560	295	1859	577	256	1837	562
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	24.4	23.3	53.0	29.4	26.4	54.1	36.2	33.4	55.7	36.4	42.1
Incr Delay (d2), s/veh	27.2	0.2	0.3	10.7	0.7	0.6	29.7	0.4	0.5	1.8	0.2	8.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	2.6	1.1	4.4	5.6	1.7	5.1	7.1	3.7	1.7	3.8	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.6	24.6	23.6	63.6	30.1	27.0	83.8	36.5	33.8	57.5	36.6	50.7
LnGrp LOS	E	C	C	E	C	C	F	D	C	E	D	D
Approach Vol, veh/h		905			1140			1327			961	
Approach Delay, s/veh		50.0			38.0			45.7			44.2	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	40.9	15.9	51.9	14.6	36.8	20.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	8.7	42.7	13.2	44.2	10.0	* 42	15.4	42.0
Max Q Clear Time (g_c+I1), s	5.9	19.6	11.2	8.4	11.0	26.6	16.3	15.6
Green Ext Time (p_c), s	0.0	6.3	0.1	2.9	0.0	3.8	0.0	5.5

Intersection Summary	
HCM 6th Ctrl Delay	44.2
HCM 6th LOS	D

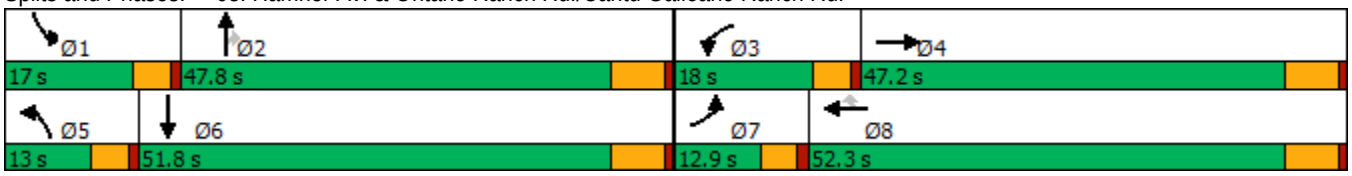
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	96	591	264	1017	195	165	674	484	148	200
Future Volume (vph)	96	591	264	1017	195	165	674	484	148	200
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2
Total Split (s)	12.9	47.2	18.0	52.3	52.3	13.0	47.8	47.8	17.0	51.8
Total Split (%)	9.9%	36.3%	13.8%	40.2%	40.2%	10.0%	36.8%	36.8%	13.1%	39.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	8.3	39.7	14.2	45.7	45.7	9.2	37.0	37.0	11.2	39.0
Actuated g/C Ratio	0.07	0.34	0.12	0.39	0.39	0.08	0.31	0.31	0.09	0.33
v/c Ratio	0.53	0.37	0.85	0.88	0.32	0.82	0.50	0.86	0.61	0.20
Control Delay	66.7	30.0	75.5	43.8	8.3	83.9	34.5	36.6	63.8	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.7	30.0	75.5	43.8	8.3	83.9	34.5	36.6	63.8	19.8
LOS	E	C	E	D	A	F	C	D	E	B
Approach Delay		34.6		44.8			41.5			34.7
Approach LOS		C		D			D			C

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 118.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 40.6	Intersection LOS: D
Intersection Capacity Utilization 65.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	591	79	264	1017	195	165	674	484	148	200	88
Future Volume (veh/h)	96	591	79	264	1017	195	165	674	484	148	200	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	109	672	90	300	1156	222	188	766	543	168	227	100
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	166	1791	234	338	1295	578	217	1755	545	228	1240	502
Arrive On Green	0.06	0.32	0.30	0.11	0.38	0.38	0.07	0.36	0.36	0.08	0.36	0.34
Sat Flow, veh/h	2956	5582	731	2956	3420	1525	2956	4914	1525	2956	3433	1391
Grp Volume(v), veh/h	109	557	205	300	1156	222	188	766	543	168	216	111
Grp Sat Flow(s),veh/h/ln	1478	1548	1668	1478	1710	1525	1478	1638	1525	1478	1638	1548
Q Serve(g_s), s	4.4	11.3	11.8	12.3	38.9	13.0	7.7	14.6	43.6	6.8	5.5	6.2
Cycle Q Clear(g_c), s	4.4	11.3	11.8	12.3	38.9	13.0	7.7	14.6	43.6	6.8	5.5	6.2
Prop In Lane	1.00		0.44	1.00		1.00	1.00		1.00	1.00		0.90
Lane Grp Cap(c), veh/h	166	1490	535	338	1295	578	217	1755	545	228	1183	559
V/C Ratio(X)	0.66	0.37	0.38	0.89	0.89	0.38	0.87	0.44	1.00	0.74	0.18	0.20
Avail Cap(c_a), veh/h	215	1636	588	338	1347	601	217	1755	545	313	1277	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.7	32.1	32.7	53.5	35.7	27.7	56.2	30.0	39.3	55.3	26.8	27.7
Incr Delay (d2), s/veh	1.9	0.2	0.5	23.2	7.7	0.4	27.8	0.2	37.6	3.1	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	4.0	4.6	5.5	16.5	4.6	3.6	5.5	21.0	2.6	2.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.6	32.3	33.1	76.7	43.5	28.1	84.0	30.2	76.9	58.5	26.9	27.9
LnGrp LOS	E	C	C	E	D	C	F	C	E	E	C	C
Approach Vol, veh/h		871			1678			1497			495	
Approach Delay, s/veh		35.8			47.4			53.9			37.8	
Approach LOS		D			D			D			D	

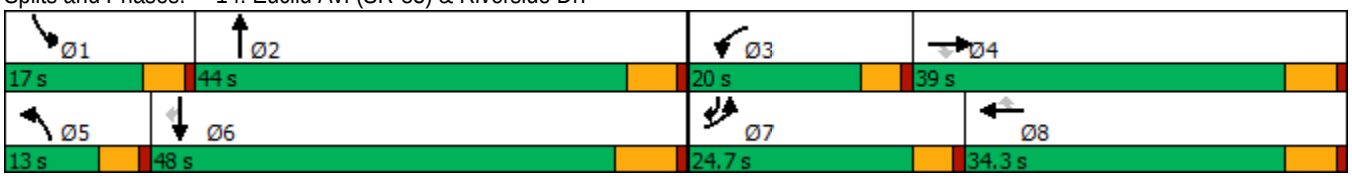
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	47.8	18.0	43.3	13.0	48.3	10.9	50.4
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	12.4	41.6	13.4	41.0	8.4	45.6	8.3	46.1
Max Q Clear Time (g_c+I1), s	8.8	45.6	14.3	13.8	9.7	8.2	6.4	40.9
Green Ext Time (p_c), s	0.1	0.0	0.0	4.6	0.0	1.9	0.0	3.3

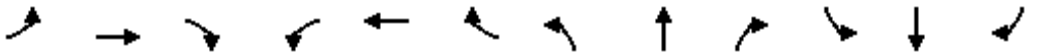
Intersection Summary	
HCM 6th Ctrl Delay	46.3
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	145	440	82	178	393	62	96	1179	134	949	185
Future Volume (vph)	145	440	82	178	393	62	96	1179	134	949	185
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2	1	6	7
Permitted Phases			4			8					6
Detector Phase	7	4	4	3	8	8	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	9.6	34.5	9.6
Total Split (s)	24.7	39.0	39.0	20.0	34.3	34.3	13.0	44.0	17.0	48.0	24.7
Total Split (%)	20.6%	32.5%	32.5%	16.7%	28.6%	28.6%	10.8%	36.7%	14.2%	40.0%	20.6%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	Max	None
Act Effct Green (s)	15.0	31.9	31.9	14.9	31.8	31.8	8.4	39.1	11.9	41.5	58.5
Actuated g/C Ratio	0.13	0.27	0.27	0.13	0.27	0.27	0.07	0.33	0.10	0.35	0.49
v/c Ratio	0.74	0.94	0.17	0.91	0.44	0.12	0.87	0.91	0.86	0.82	0.24
Control Delay	70.5	71.6	3.4	95.1	38.5	0.5	110.6	47.2	95.7	42.4	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.5	71.6	3.4	95.1	38.5	0.5	110.6	47.2	95.7	42.4	5.9
LOS	E	E	A	F	D	A	F	D	F	D	A
Approach Delay		63.0			50.6			51.2		42.7	
Approach LOS		E			D			D		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 50.4	Intersection LOS: D
Intersection Capacity Utilization 90.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	440	82	178	393	62	96	1179	230	134	949	185
Future Volume (veh/h)	145	440	82	178	393	62	96	1179	230	134	949	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	151	458	60	185	409	49	100	1228	186	140	989	102
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	176	485	411	208	989	441	113	1387	210	163	1207	697
Arrive On Green	0.11	0.27	0.27	0.13	0.29	0.29	0.07	0.32	0.32	0.10	0.35	0.35
Sat Flow, veh/h	1619	1800	1525	1619	3420	1524	1619	4306	652	1619	3420	1506
Grp Volume(v), veh/h	151	458	60	185	409	49	100	934	480	140	989	102
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	1524	1619	1638	1683	1619	1710	1506
Q Serve(g_s), s	11.0	29.9	3.6	13.5	11.6	2.8	7.3	32.4	32.4	10.2	31.6	4.7
Cycle Q Clear(g_c), s	11.0	29.9	3.6	13.5	11.6	2.8	7.3	32.4	32.4	10.2	31.6	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	176	485	411	208	989	441	113	1055	542	163	1207	697
V/C Ratio(X)	0.86	0.94	0.15	0.89	0.41	0.11	0.88	0.89	0.89	0.86	0.82	0.15
Avail Cap(c_a), veh/h	271	499	422	208	989	441	113	1055	542	167	1207	697
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.5	42.9	33.3	51.4	34.4	31.3	55.2	38.5	38.5	53.0	35.3	18.7
Incr Delay (d2), s/veh	10.0	26.7	0.2	33.2	0.3	0.1	48.4	10.9	18.8	31.1	6.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	16.4	1.3	7.2	4.7	1.0	4.4	13.7	15.3	5.5	13.7	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.5	69.6	33.5	84.6	34.7	31.4	103.6	49.4	57.4	84.2	41.6	19.1
LnGrp LOS	E	E	C	F	C	C	F	D	E	F	D	B
Approach Vol, veh/h		669			643			1514			1231	
Approach Delay, s/veh		64.8			48.8			55.5			44.6	
Approach LOS		E			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	45.1	20.0	38.1	13.0	48.8	17.6	40.5
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	12.4	* 39	15.4	33.2	8.4	41.5	20.1	28.5
Max Q Clear Time (g_c+I1), s	12.2	34.4	15.5	31.9	9.3	33.6	13.0	13.6
Green Ext Time (p_c), s	0.0	2.8	0.0	0.4	0.0	4.1	0.1	2.2

Intersection Summary	
HCM 6th Ctrl Delay	52.7
HCM 6th LOS	D

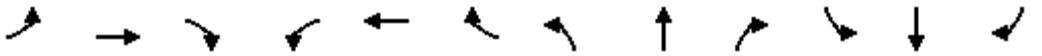
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	508	279	39	384	122	139	1202	68	112	1146	175
Future Volume (vph)	265	508	279	39	384	122	139	1202	68	112	1146	175
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	52.0	18.0	55.0	55.0	13.0	50.0	50.0
Total Split (%)	43.3%	43.3%	43.3%	43.3%	43.3%	43.3%	15.0%	45.8%	45.8%	10.8%	41.7%	41.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	45.0	45.0	45.0	45.0	45.0	45.0	13.2	47.5	47.5	9.5	43.9	43.9
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.11	0.40	0.40	0.08	0.37	0.37
v/c Ratio	1.21	0.78	0.41	0.29	0.59	0.20	0.82	0.92	0.11	0.91	0.95	0.29
Control Delay	161.7	42.4	8.6	33.7	34.1	9.6	84.0	45.9	6.2	114.9	53.3	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	161.7	42.4	8.6	33.7	34.1	9.6	84.0	45.9	6.2	114.9	53.3	10.7
LOS	F	D	A	C	C	A	F	D	A	F	D	B
Approach Delay		63.5			28.6			47.7			52.9	
Approach LOS		E			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.6	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.21	
Intersection Signal Delay: 50.8	Intersection LOS: D
Intersection Capacity Utilization 99.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	508	279	39	384	122	139	1202	68	112	1146	175
Future Volume (veh/h)	265	508	279	39	384	122	139	1202	68	112	1146	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	279	535	212	41	404	122	146	1265	64	118	1206	152
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	231	686	581	143	686	574	170	1364	607	130	1280	571
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.11	0.40	0.40	0.08	0.37	0.37
Sat Flow, veh/h	841	1800	1525	685	1800	1506	1619	3420	1522	1619	3420	1525
Grp Volume(v), veh/h	279	535	212	41	404	122	146	1265	64	118	1206	152
Grp Sat Flow(s),veh/h/ln	841	1800	1525	685	1800	1506	1619	1710	1522	1619	1710	1525
Q Serve(g_s), s	23.8	30.9	11.8	6.6	21.2	6.4	10.5	41.7	3.1	8.5	40.3	8.2
Cycle Q Clear(g_c), s	45.0	30.9	11.8	37.5	21.2	6.4	10.5	41.7	3.1	8.5	40.3	8.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	231	686	581	143	686	574	170	1364	607	130	1280	571
V/C Ratio(X)	1.21	0.78	0.36	0.29	0.59	0.21	0.86	0.93	0.11	0.91	0.94	0.27
Avail Cap(c_a), veh/h	231	686	581	143	686	574	199	1419	631	130	1280	571
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.3	32.2	26.3	48.7	29.2	24.6	52.0	33.9	22.3	53.8	35.7	25.7
Incr Delay (d2), s/veh	127.1	5.8	0.4	1.1	1.3	0.2	23.9	10.6	0.1	50.3	13.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.9	13.8	4.2	1.1	9.0	2.3	5.2	17.8	1.1	5.1	17.8	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	177.4	37.9	26.6	49.8	30.5	24.8	75.9	44.5	22.4	104.1	49.4	25.9
LnGrp LOS	F	D	C	D	C	C	E	D	C	F	D	C
Approach Vol, veh/h		1026			567			1475			1476	
Approach Delay, s/veh		73.5			30.7			46.6			51.4	
Approach LOS		E			C			D			D	

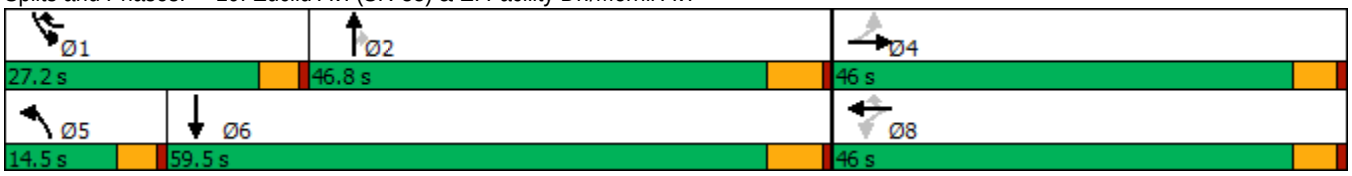
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.0	53.1		52.0	15.9	50.2		52.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	9.5	49.0		45.0	14.5	44.0		45.0				
Max Q Clear Time (g_c+I1), s	10.5	43.7		47.0	12.5	42.3		39.5				
Green Ext Time (p_c), s	0.0	3.4		0.0	0.0	1.2		1.4				

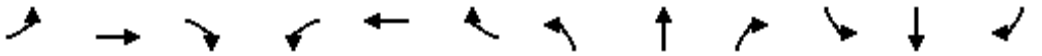
Intersection Summary												
HCM 6th Ctrl Delay			52.3									
HCM 6th LOS			D									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	11	29	367	2	263	4	1136	286	294	1155
Future Volume (vph)	11	29	367	2	263	4	1136	286	294	1155
Turn Type	Perm	NA	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	1	5	2		1	6
Permitted Phases	4		8		8			2		
Detector Phase	4	4	8	8	1	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	27.2	14.5	46.8	46.8	27.2	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	22.7%	12.1%	39.0%	39.0%	22.7%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	4.5	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		23.0	23.0	23.0	50.9	10.1	41.1	41.1	22.9	66.1
Actuated g/C Ratio		0.22	0.22	0.22	0.50	0.10	0.40	0.40	0.22	0.64
v/c Ratio		0.15	0.72	0.72	0.37	0.03	0.91	0.47	0.90	0.58
Control Delay		25.4	50.6	50.5	15.5	47.2	41.3	19.2	68.7	14.8
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		25.4	50.6	50.5	15.5	47.2	41.3	19.2	68.7	14.8
LOS		C	D	D	B	D	D	B	E	B
Approach Delay		25.4		35.9			36.8			25.7
Approach LOS		C		D			D			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.6	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 32.0	Intersection LOS: C
Intersection Capacity Utilization 82.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	29	12	367	2	263	4	1136	286	294	1155	1
Future Volume (veh/h)	11	29	12	367	2	263	4	1136	286	294	1155	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	12	32	12	404	0	279	4	1248	249	323	1269	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	86	193	62	652	0	609	17	1444	644	355	2159	0
Arrive On Green	0.18	0.18	0.18	0.18	0.00	0.18	0.01	0.42	0.42	0.22	0.63	0.00
Sat Flow, veh/h	198	1072	346	2614	0	1525	1619	3420	1525	1619	3510	0
Grp Volume(v), veh/h	56	0	0	404	0	279	4	1248	249	323	1269	0
Grp Sat Flow(s),veh/h/ln	1617	0	0	1307	0	1525	1619	1710	1525	1619	1710	0
Q Serve(g_s), s	0.0	0.0	0.0	10.0	0.0	11.7	0.2	28.8	9.8	16.9	18.9	0.0
Cycle Q Clear(g_c), s	2.4	0.0	0.0	12.4	0.0	11.7	0.2	28.8	9.8	16.9	18.9	0.0
Prop In Lane	0.21		0.21	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	341	0	0	652	0	609	17	1444	644	355	2159	0
V/C Ratio(X)	0.16	0.00	0.00	0.62	0.00	0.46	0.23	0.86	0.39	0.91	0.59	0.00
Avail Cap(c_a), veh/h	791	0	0	1417	0	1055	186	1607	717	423	2159	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.2	0.0	0.0	34.1	0.0	19.2	42.6	22.8	17.3	33.0	9.4	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.4	0.0	0.2	2.5	4.8	0.4	19.3	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.0	3.8	0.0	3.7	0.1	10.7	3.0	7.9	5.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.3	0.0	0.0	34.4	0.0	19.4	45.2	27.6	17.7	52.4	9.8	0.0
LnGrp LOS	C	A	A	C	A	B	D	C	B	D	A	A
Approach Vol, veh/h		56			683			1501			1592	
Approach Delay, s/veh		30.3			28.3			26.0			18.4	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.6	42.7		20.6	5.4	60.8		20.6				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	22.7	40.8		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	18.9	30.8		4.4	2.2	20.9		14.4				
Green Ext Time (p_c), s	0.2	5.8		0.2	0.0	9.8		1.2				

Intersection Summary			
HCM 6th Ctrl Delay		23.3	
HCM 6th LOS		C	

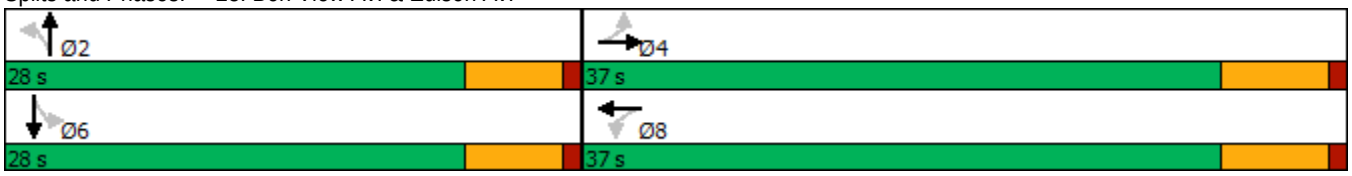
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	68	546	6	501	13	97	17	82
Future Volume (vph)	68	546	6	501	13	97	17	82
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	27.8	27.8	27.8	27.8
Total Split (s)	37.0	37.0	37.0	37.0	28.0	28.0	28.0	28.0
Total Split (%)	56.9%	56.9%	56.9%	56.9%	43.1%	43.1%	43.1%	43.1%
Yellow Time (s)	5.2	5.2	5.2	5.2	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		5.8		5.8
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)		25.8		25.8		12.2		12.2
Actuated g/C Ratio		0.51		0.51		0.24		0.24
v/c Ratio		0.82		0.59		0.30		0.36
Control Delay		21.6		12.4		18.0		15.7
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		21.6		12.4		18.0		15.7
LOS		C		B		B		B
Approach Delay		21.6		12.4		18.0		15.7
Approach LOS		C		B		B		B

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 50.4	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 17.4	Intersection LOS: B
Intersection Capacity Utilization 91.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 23: Bon View Av. & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	546	22	6	501	6	13	97	10	17	82	46
Future Volume (veh/h)	68	546	22	6	501	6	13	97	10	17	82	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	72	575	23	6	527	6	14	102	11	18	86	48
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	149	719	27	90	832	9	116	362	36	119	252	127
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.47	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	113	1526	58	5	1766	20	82	1506	151	92	1051	527
Grp Volume(v), veh/h	670	0	0	539	0	0	127	0	0	152	0	0
Grp Sat Flow(s),veh/h/ln	1697	0	0	1791	0	0	1739	0	0	1670	0	0
Q Serve(g_s), s	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.9	0.0	0.0	9.4	0.0	0.0	2.4	0.0	0.0	3.1	0.0	0.0
Prop In Lane	0.11		0.03	0.01		0.01	0.11		0.09	0.12		0.32
Lane Grp Cap(c), veh/h	896	0	0	932	0	0	514	0	0	498	0	0
V/C Ratio(X)	0.75	0.00	0.00	0.58	0.00	0.00	0.25	0.00	0.00	0.31	0.00	0.00
Avail Cap(c_a), veh/h	1328	0	0	1408	0	0	1011	0	0	977	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.3	0.0	0.0	8.3	0.0	0.0	12.9	0.0	0.0	13.2	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.0	0.6	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	0.0	1.9	0.0	0.0	0.7	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.7	0.0	0.0	8.9	0.0	0.0	13.2	0.0	0.0	13.5	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		670			539			127			152	
Approach Delay, s/veh		10.7			8.9			13.2			13.5	
Approach LOS		B			A			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	15.8	25.8	15.8	25.8
Change Period (Y+Rc), s	5.8	6.2	5.8	6.2
Max Green Setting (Gmax), s	22.2	30.8	22.2	30.8
Max Q Clear Time (g_c+I1), s	4.4	15.9	5.1	11.4
Green Ext Time (p_c), s	0.5	3.7	0.6	2.9

Intersection Summary	
HCM 6th Ctrl Delay	10.5
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	43	430	61	266	233	379	128	228
Future Volume (vph)	43	430	61	266	233	379	128	228
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Total Split (s)	29.0	29.0	29.0	29.0	41.0	41.0	41.0	41.0
Total Split (%)	41.4%	41.4%	41.4%	41.4%	58.6%	58.6%	58.6%	58.6%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		22.8		22.8		34.8		34.8
Actuated g/C Ratio		0.33		0.33		0.50		0.50
v/c Ratio		1.10		0.98		1.20		0.76
Control Delay		93.7		66.7		127.0		25.3
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		93.7		66.7		127.0		25.3
LOS		F		E		F		C
Approach Delay		93.7		66.7		127.0		25.3
Approach LOS		F		E		F		C

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 70	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay: 88.2	Intersection LOS: F
Intersection Capacity Utilization 102.1%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	43	430	83	61	266	50	233	379	131	128	228	22
Future Volume (veh/h)	43	430	83	61	266	50	233	379	131	128	228	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	46	462	89	66	286	54	251	408	141	138	245	24
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	81	436	81	106	339	59	270	358	120	227	375	33
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.50	0.50	0.50	0.50	0.50	0.50
Sat Flow, veh/h	80	1337	248	142	1040	181	408	720	241	319	754	67
Grp Volume(v), veh/h	597	0	0	406	0	0	800	0	0	407	0	0
Grp Sat Flow(s),veh/h/ln	1665	0	0	1364	0	0	1370	0	0	1140	0	0
Q Serve(g_s), s	3.3	0.0	0.0	0.0	0.0	0.0	17.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	22.8	0.0	0.0	19.5	0.0	0.0	34.8	0.0	0.0	17.6	0.0	0.0
Prop In Lane	0.08		0.15	0.16		0.13	0.31		0.18	0.34		0.06
Lane Grp Cap(c), veh/h	598	0	0	504	0	0	749	0	0	636	0	0
V/C Ratio(X)	1.00	0.00	0.00	0.81	0.00	0.00	1.07	0.00	0.00	0.64	0.00	0.00
Avail Cap(c_a), veh/h	598	0	0	504	0	0	749	0	0	636	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.5	0.0	0.0	21.7	0.0	0.0	19.7	0.0	0.0	12.6	0.0	0.0
Incr Delay (d2), s/veh	36.5	0.0	0.0	12.9	0.0	0.0	52.8	0.0	0.0	2.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.7	0.0	0.0	7.0	0.0	0.0	21.1	0.0	0.0	3.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.0	0.0	0.0	34.6	0.0	0.0	72.5	0.0	0.0	14.8	0.0	0.0
LnGrp LOS	E	A	A	C	A	A	F	A	A	B	A	A
Approach Vol, veh/h		597			406			800			407	
Approach Delay, s/veh		61.0			34.6			72.5			14.8	
Approach LOS		E			C			E			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	41.0	29.0	41.0	29.0
Change Period (Y+Rc), s	6.2	6.2	6.2	6.2
Max Green Setting (Gmax), s	34.8	22.8	34.8	22.8
Max Q Clear Time (g_c+I1), s	36.8	24.8	19.6	21.5
Green Ext Time (p_c), s	0.0	0.0	2.3	0.3

Intersection Summary	
HCM 6th Ctrl Delay	51.8
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	89	98	5	61	14	401	103	238
Future Volume (vph)	89	98	5	61	14	401	103	238
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	38.0	38.0	38.0	38.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	31.7%	31.7%	68.3%	68.3%	68.3%	68.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.8		5.8		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		32.2		32.2		75.8		75.8
Actuated g/C Ratio		0.27		0.27		0.63		0.63
v/c Ratio		1.26		0.84		0.79		1.41
Control Delay		184.3		55.6		20.0		228.7
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		184.3		55.6		20.0		228.7
LOS		F		E		B		F
Approach Delay		184.3		55.6		20.0		228.7
Approach LOS		F		E		B		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.41	
Intersection Signal Delay: 74.0	Intersection LOS: E
Intersection Capacity Utilization 90.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	98	68	5	61	277	14	401	4	103	238	29
Future Volume (veh/h)	89	98	68	5	61	277	14	401	4	103	238	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	99	109	76	6	68	308	16	1604	4	114	264	32
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.25	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	104	103	61	33	83	354	40	2133	5	103	221	24
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.63	0.63	0.63	0.63	0.63	0.63
Sat Flow, veh/h	236	385	227	9	308	1320	15	3377	8	103	350	38
Grp Volume(v), veh/h	284	0	0	382	0	0	846	0	778	410	0	0
Grp Sat Flow(s),veh/h/ln	849	0	0	1638	0	0	1764	0	1636	491	0	0
Q Serve(g_s), s	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.1	35.7	0.0	0.0
Cycle Q Clear(g_c), s	32.2	0.0	0.0	27.2	0.0	0.0	39.2	0.0	40.1	75.8	0.0	0.0
Prop In Lane	0.35		0.27	0.02		0.81	0.02		0.01	0.28		0.08
Lane Grp Cap(c), veh/h	268	0	0	470	0	0	1145	0	1034	348	0	0
V/C Ratio(X)	1.06	0.00	0.00	0.81	0.00	0.00	0.74	0.00	0.75	1.18	0.00	0.00
Avail Cap(c_a), veh/h	268	0	0	470	0	0	1145	0	1034	348	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	46.3	0.0	0.0	42.4	0.0	0.0	15.4	0.0	15.5	31.9	0.0	0.0
Incr Delay (d2), s/veh	71.2	0.0	0.0	10.5	0.0	0.0	4.3	0.0	5.1	105.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.3	0.0	0.0	11.8	0.0	0.0	14.9	0.0	14.1	20.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	117.6	0.0	0.0	52.8	0.0	0.0	19.7	0.0	20.6	137.3	0.0	0.0
LnGrp LOS	F	A	A	D	A	A	B	A	C	F	A	A
Approach Vol, veh/h		284			382			1624			410	
Approach Delay, s/veh		117.6			52.8			20.1			137.3	
Approach LOS		F			D			C			F	

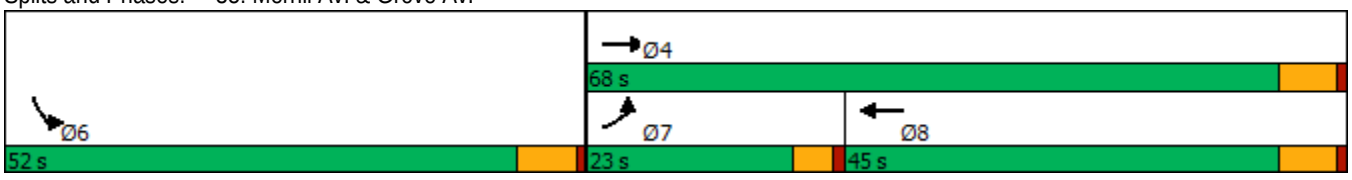
Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	82.0	38.0	82.0	38.0
Change Period (Y+Rc), s	6.2	5.8	6.2	5.8
Max Green Setting (Gmax), s	75.8	32.2	75.8	32.2
Max Q Clear Time (g_c+I1), s	42.1	34.2	77.8	29.2
Green Ext Time (p_c), s	13.8	0.0	0.0	0.6

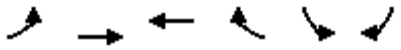
Intersection Summary	
HCM 6th Ctrl Delay	52.8
HCM 6th LOS	D

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	206	535	489	277
Future Volume (vph)	206	535	489	277
Turn Type	Prot	NA	NA	Prot
Protected Phases	7	4	8	6
Permitted Phases				
Detector Phase	7	4	8	6
Switch Phase				
Minimum Initial (s)	5.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	28.2
Total Split (s)	23.0	68.0	45.0	52.0
Total Split (%)	19.2%	56.7%	37.5%	43.3%
Yellow Time (s)	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	6.2
Lead/Lag	Lead		Lag	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	Max	Max	None
Act Effct Green (s)	17.1	62.2	40.5	35.9
Actuated g/C Ratio	0.15	0.56	0.37	0.32
v/c Ratio	0.86	0.55	0.58	0.90
Control Delay	77.7	19.4	29.9	53.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	77.7	19.4	29.9	53.9
LOS	E	B	C	D
Approach Delay		35.7	29.9	53.9
Approach LOS		D	C	D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.5	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 38.0	Intersection LOS: D
Intersection Capacity Utilization 77.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	206	535	489	195	277	178
Future Volume (veh/h)	206	535	489	195	277	178
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	215	557	509	203	289	185
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	241	1008	883	351	308	197
Arrive On Green	0.15	0.56	0.37	0.37	0.33	0.33
Sat Flow, veh/h	1619	1800	2480	949	940	602
Grp Volume(v), veh/h	215	557	363	349	475	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1710	1629	1545	0
Q Serve(g_s), s	14.4	21.8	18.8	18.9	32.9	0.0
Cycle Q Clear(g_c), s	14.4	21.8	18.8	18.9	32.9	0.0
Prop In Lane	1.00			0.58	0.61	0.39
Lane Grp Cap(c), veh/h	241	1008	632	602	506	0
V/C Ratio(X)	0.89	0.55	0.58	0.58	0.94	0.00
Avail Cap(c_a), veh/h	270	1008	632	602	641	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	46.1	15.5	27.8	27.9	36.0	0.0
Incr Delay (d2), s/veh	25.4	2.2	3.8	4.0	19.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	8.4	7.8	7.6	14.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	71.5	17.6	31.6	31.9	55.1	0.0
LnGrp LOS	E	B	C	C	E	A
Approach Vol, veh/h		772	712		475	
Approach Delay, s/veh		32.6	31.8		55.1	
Approach LOS		C	C		E	

Timer - Assigned Phs		4		6	7	8
Phs Duration (G+Y+Rc), s		68.0		42.3	21.0	47.0
Change Period (Y+Rc), s		6.2		6.2	4.6	6.2
Max Green Setting (Gmax), s		61.8		45.8	18.4	38.8
Max Q Clear Time (g_c+I1), s		23.8		34.9	16.4	20.9
Green Ext Time (p_c), s		3.4		1.2	0.1	3.7

Intersection Summary	
HCM 6th Ctrl Delay	37.8
HCM 6th LOS	D

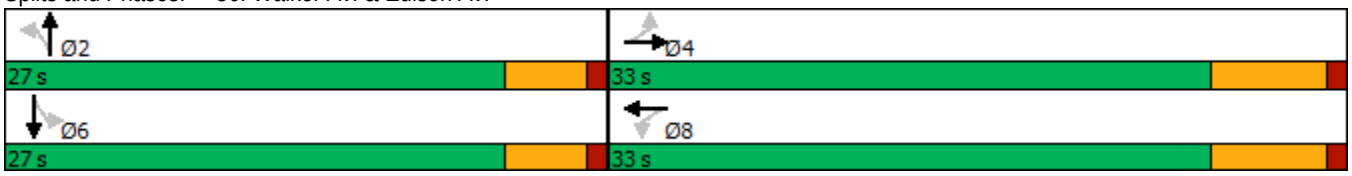
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	20	654	132	352	3	20	64	13
Future Volume (vph)	20	654	132	352	3	20	64	13
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	26.7	26.7	26.7	26.7
Total Split (s)	33.0	33.0	33.0	33.0	27.0	27.0	27.0	27.0
Total Split (%)	55.0%	55.0%	55.0%	55.0%	45.0%	45.0%	45.0%	45.0%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		4.7		4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		27.0		27.0		16.0		16.0
Actuated g/C Ratio		0.50		0.50		0.30		0.30
v/c Ratio		0.81		0.90		0.77		0.34
Control Delay		23.0		37.6		21.2		16.4
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		23.0		37.6		21.2		16.4
LOS		C		D		C		B
Approach Delay		23.0		37.6		21.2		16.4
Approach LOS		C		D		C		B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 54	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 26.7	Intersection LOS: C
Intersection Capacity Utilization 120.0%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	20	654	1	132	352	30	3	20	390	64	13	10
Future Volume (veh/h)	20	654	1	132	352	30	3	20	390	64	13	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	21	688	1	139	371	32	3	21	411	67	14	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	77	842	1	197	448	35	66	27	474	266	53	28
Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	22	1758	3	242	935	74	2	82	1453	475	163	87
Grp Volume(v), veh/h	710	0	0	542	0	0	435	0	0	92	0	0
Grp Sat Flow(s),veh/h/ln	1783	0	0	1250	0	0	1538	0	0	725	0	0
Q Serve(g_s), s	0.0	0.0	0.0	3.6	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	19.1	0.0	0.0	22.7	0.0	0.0	14.9	0.0	0.0	5.3	0.0	0.0
Prop In Lane	0.03		0.00	0.26		0.06	0.01		0.94	0.73		0.12
Lane Grp Cap(c), veh/h	920	0	0	680	0	0	566	0	0	347	0	0
V/C Ratio(X)	0.77	0.00	0.00	0.80	0.00	0.00	0.77	0.00	0.00	0.26	0.00	0.00
Avail Cap(c_a), veh/h	920	0	0	680	0	0	678	0	0	427	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.5	0.0	0.0	12.8	0.0	0.0	17.7	0.0	0.0	14.1	0.0	0.0
Incr Delay (d2), s/veh	6.2	0.0	0.0	9.4	0.0	0.0	4.4	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	0.0	5.6	0.0	0.0	5.3	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.8	0.0	0.0	22.2	0.0	0.0	22.1	0.0	0.0	14.5	0.0	0.0
LnGrp LOS	B	A	A	C	A	A	C	A	A	B	A	A
Approach Vol, veh/h		710			542			435			92	
Approach Delay, s/veh		18.8			22.2			22.1			14.5	
Approach LOS		B			C			C			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	22.9	33.0	22.9	33.0
Change Period (Y+Rc), s	* 4.7	6.2	* 4.7	6.2
Max Green Setting (Gmax), s	* 22	26.8	* 22	26.8
Max Q Clear Time (g_c+I1), s	16.9	21.1	7.3	24.7
Green Ext Time (p_c), s	1.4	2.1	0.4	0.8

Intersection Summary	
HCM 6th Ctrl Delay	20.4
HCM 6th LOS	C

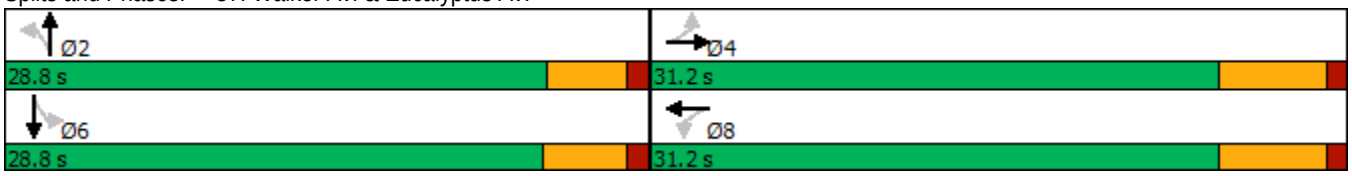
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	40	137	252	88	208	67	71
Future Volume (vph)	40	137	252	88	208	67	71
Turn Type	Perm	NA	NA	Perm	NA	Perm	NA
Protected Phases		4	8		2		6
Permitted Phases	4			2		6	
Detector Phase	4	4	8	2	2	6	6
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	22.8	22.8	22.8	21.6	21.6	21.8	21.8
Total Split (s)	31.2	31.2	31.2	28.8	28.8	28.8	28.8
Total Split (%)	52.0%	52.0%	52.0%	48.0%	48.0%	48.0%	48.0%
Yellow Time (s)	4.8	4.8	4.8	3.6	3.6	3.8	3.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0
Total Lost Time (s)		5.8	5.8		4.6		4.8
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	Min	Min	Min	Min
Act Effct Green (s)		15.4	15.4		14.7		14.5
Actuated g/C Ratio		0.37	0.37		0.36		0.35
v/c Ratio		0.39	0.66		0.58		0.31
Control Delay		11.6	14.9		16.5		12.5
Queue Delay		0.0	0.0		0.0		0.0
Total Delay		11.6	14.9		16.5		12.5
LOS		B	B		B		B
Approach Delay		11.6	14.9		16.5		12.5
Approach LOS		B	B		B		B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 41.2	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 14.4	Intersection LOS: B
Intersection Capacity Utilization 68.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 37: Walker Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	137	30	0	252	164	88	208	0	67	71	3
Future Volume (veh/h)	40	137	30	0	252	164	88	208	0	67	71	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	43	149	33	0	274	178	96	226	0	73	77	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	170	382	72	0	373	242	255	404	0	344	304	10
Arrive On Green	0.37	0.37	0.37	0.00	0.37	0.37	0.31	0.31	0.00	0.31	0.31	0.31
Sat Flow, veh/h	105	1042	197	0	1019	662	362	1313	0	587	990	32
Grp Volume(v), veh/h	225	0	0	0	0	452	322	0	0	153	0	0
Grp Sat Flow(s),veh/h/ln	1344	0	0	0	0	1681	1675	0	0	1608	0	0
Q Serve(g_s), s	0.4	0.0	0.0	0.0	0.0	7.6	2.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.0	0.0	0.0	0.0	0.0	7.6	5.2	0.0	0.0	2.1	0.0	0.0
Prop In Lane	0.19		0.15	0.00		0.39	0.30		0.00	0.48		0.02
Lane Grp Cap(c), veh/h	624	0	0	0	0	616	659	0	0	658	0	0
V/C Ratio(X)	0.36	0.00	0.00	0.00	0.00	0.73	0.49	0.00	0.00	0.23	0.00	0.00
Avail Cap(c_a), veh/h	1249	0	0	0	0	1313	1372	0	0	1274	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.6	0.0	0.0	0.0	0.0	8.9	9.5	0.0	0.0	8.5	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.0	0.0	1.7	0.6	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	0.0	0.0	1.6	1.5	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.9	0.0	0.0	0.0	0.0	10.6	10.1	0.0	0.0	8.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	B	B	A	A	A	A	A
Approach Vol, veh/h		225			452			322			153	
Approach Delay, s/veh		7.9			10.6			10.1			8.7	
Approach LOS		A			B			B			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	14.8	17.7	14.8	17.7
Change Period (Y+Rc), s	* 4.8	5.8	* 4.8	5.8
Max Green Setting (Gmax), s	* 24	25.4	* 24	25.4
Max Q Clear Time (g_c+I1), s	7.2	10.0	4.1	9.6
Green Ext Time (p_c), s	1.8	1.0	0.8	2.4

Intersection Summary	
HCM 6th Ctrl Delay	9.7
HCM 6th LOS	A

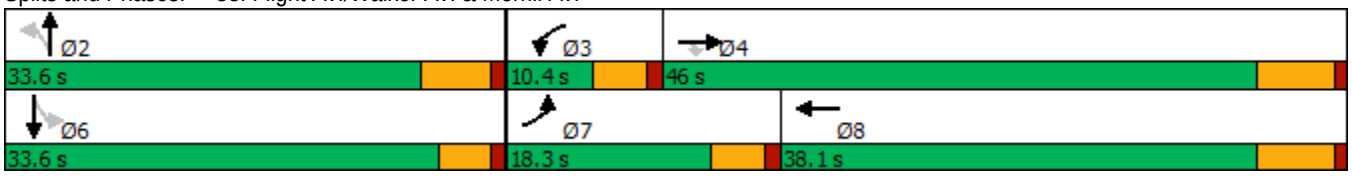
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	36	667	110	83	475	102	8	86	22
Future Volume (vph)	36	667	110	83	475	102	8	86	22
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.2	23.2	9.6	23.2	32.8	32.8	31.6	31.6
Total Split (s)	18.3	46.0	46.0	10.4	38.1	33.6	33.6	33.6	33.6
Total Split (%)	20.3%	51.1%	51.1%	11.6%	42.3%	37.3%	37.3%	37.3%	37.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	4.8	4.8	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	5.8	5.8	4.6	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	6.6	34.4	34.4	5.9	38.4	14.6	14.6	15.8	15.8
Actuated g/C Ratio	0.09	0.48	0.48	0.08	0.53	0.20	0.20	0.22	0.22
v/c Ratio	0.27	0.85	0.16	0.68	0.36	0.49	0.34	0.38	0.31
Control Delay	38.9	29.1	5.2	64.3	12.1	34.2	8.1	29.8	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	29.1	5.2	64.3	12.1	34.2	8.1	29.8	9.5
LOS	D	C	A	E	B	C	A	C	A
Approach Delay		26.3			18.6		19.7		17.9
Approach LOS		C			B		B		B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 71.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 21.9	Intersection LOS: C
Intersection Capacity Utilization 76.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 38: Flight Av./Walker Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	667	110	83	475	29	102	8	119	86	22	107
Future Volume (veh/h)	36	667	110	83	475	29	102	8	119	86	22	107
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	40	733	121	91	522	116	112	9	131	95	24	110
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.25	0.91	0.91	0.91	0.91	0.91	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	64	836	708	113	1375	304	274	21	301	267	59	268
Arrive On Green	0.04	0.46	0.46	0.07	0.49	0.49	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1619	1800	1525	1619	2783	616	1205	99	1441	1198	281	1287
Grp Volume(v), veh/h	40	733	121	91	320	318	112	0	140	95	0	134
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	1689	1205	0	1541	1198	0	1568
Q Serve(g_s), s	1.6	23.7	3.0	3.6	7.5	7.6	5.7	0.0	5.1	4.8	0.0	4.8
Cycle Q Clear(g_c), s	1.6	23.7	3.0	3.6	7.5	7.6	10.5	0.0	5.1	9.9	0.0	4.8
Prop In Lane	1.00		1.00	1.00		0.36	1.00		0.94	1.00		0.82
Lane Grp Cap(c), veh/h	64	836	708	113	845	835	274	0	321	267	0	327
V/C Ratio(X)	0.62	0.88	0.17	0.81	0.38	0.38	0.41	0.00	0.44	0.36	0.00	0.41
Avail Cap(c_a), veh/h	344	1112	942	146	847	836	542	0	665	556	0	706
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.5	15.6	10.0	29.6	10.1	10.2	26.6	0.0	22.2	26.5	0.0	22.1
Incr Delay (d2), s/veh	3.6	6.4	0.1	17.4	0.3	0.3	1.0	0.0	0.9	0.8	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	8.7	0.8	1.8	2.1	2.1	1.5	0.0	1.7	1.4	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.1	22.0	10.2	46.9	10.4	10.4	27.6	0.0	23.1	27.3	0.0	22.9
LnGrp LOS	C	C	B	D	B	B	C	A	C	C	A	C
Approach Vol, veh/h		894			729			252			229	
Approach Delay, s/veh		20.9			15.0			25.1			24.7	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	19.2	9.1	36.1	19.2	7.2	38.0
Change Period (Y+Rc), s	5.8	4.6	6.2	* 5.8	4.6	6.2
Max Green Setting (Gmax), s	27.8	5.8	39.8	* 29	13.7	31.9
Max Q Clear Time (g_c+I1), s	12.5	5.6	25.7	11.9	3.6	9.6
Green Ext Time (p_c), s	1.0	0.0	4.2	1.0	0.0	3.4

Intersection Summary	
HCM 6th Ctrl Delay	19.8
HCM 6th LOS	B

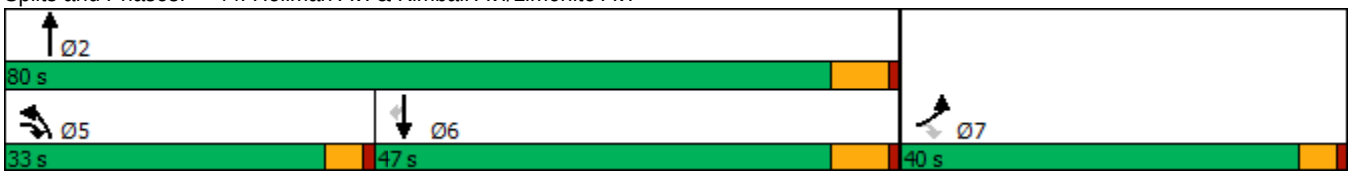
Notes

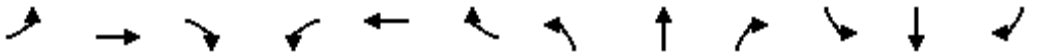
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	733	288	27	67	91
Future Volume (vph)	14	733	288	27	67	91
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	7	5	5	2	6	
Permitted Phases		7				6
Detector Phase	7	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	26.5	9.5	9.5	16.2	28.2	28.2
Total Split (s)	40.0	33.0	33.0	80.0	47.0	47.0
Total Split (%)	33.3%	27.5%	27.5%	66.7%	39.2%	39.2%
Yellow Time (s)	3.5	3.5	3.5	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	6.2	6.2	6.2
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	Max	Max	Max	None	None
Act Effct Green (s)	9.0	53.8	46.7	85.7	34.8	34.8
Actuated g/C Ratio	0.09	0.57	0.49	0.90	0.37	0.37
v/c Ratio	0.10	0.64	0.20	0.01	0.06	0.15
Control Delay	38.3	4.0	21.4	2.8	17.2	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.3	4.0	21.4	2.8	17.2	4.8
LOS	D	A	C	A	B	A
Approach Delay				19.9	10.1	
Approach LOS				B	B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 95.2	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 9.3	Intersection LOS: A
Intersection Capacity Utilization 65.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	0	733	0	0	0	288	27	0	0	67	91
Future Volume (veh/h)	14	0	733	0	0	0	288	27	0	0	67	91
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1700	0	1800				1700	1800	0	0	1800	1800
Adj Flow Rate, veh/h	15	0	772				303	28	0	0	71	96
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	479	0	814				746	2103	0	0	1163	519
Arrive On Green	0.30	0.00	0.30				0.24	0.62	0.00	0.00	0.34	0.34
Sat Flow, veh/h	1619	0	1525				3141	3510	0	0	3510	1525
Grp Volume(v), veh/h	15	0	772				303	28	0	0	71	96
Grp Sat Flow(s),veh/h/ln	1619	0	1525				1570	1710	0	0	1710	1525
Q Serve(g_s), s	0.8	0.0	35.5				9.8	0.4	0.0	0.0	1.7	5.3
Cycle Q Clear(g_c), s	0.8	0.0	35.5				9.8	0.4	0.0	0.0	1.7	5.3
Prop In Lane	1.00		1.00				1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	479	0	814				746	2103	0	0	1163	519
V/C Ratio(X)	0.03	0.00	0.95				0.41	0.01	0.00	0.00	0.06	0.19
Avail Cap(c_a), veh/h	479	0	814				746	2103	0	0	1163	519
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	30.0	0.0	26.5				38.6	9.0	0.0	0.0	26.7	27.9
Incr Delay (d2), s/veh	0.0	0.0	20.1				1.6	0.0	0.0	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	42.3				3.8	0.1	0.0	0.0	0.7	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	0.0	46.6				40.2	9.0	0.0	0.0	26.7	28.1
LnGrp LOS	C	A	D				D	A	A	A	C	C
Approach Vol, veh/h		787						331			167	
Approach Delay, s/veh		46.3						37.6			27.5	
Approach LOS		D						D			C	

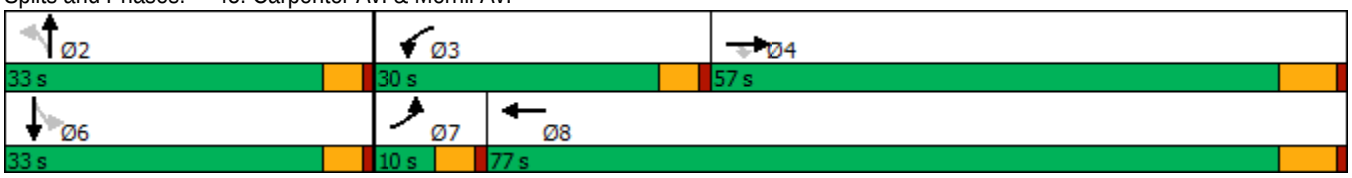
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		80.0		40.0	33.0	47.0						
Change Period (Y+Rc), s		6.2		4.5	4.5	6.2						
Max Green Setting (Gmax), s		73.8		35.5	28.5	40.8						
Max Q Clear Time (g_c+I1), s		2.4		37.5	11.8	7.3						
Green Ext Time (p_c), s		0.1		0.0	0.5	0.7						

Intersection Summary												
HCM 6th Ctrl Delay			41.6									
HCM 6th LOS			D									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	15	1019	21	25	499	36	4	117	5
Future Volume (vph)	15	1019	21	25	499	36	4	117	5
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	26.6	26.6
Total Split (s)	10.0	57.0	57.0	30.0	77.0	33.0	33.0	33.0	33.0
Total Split (%)	8.3%	47.5%	47.5%	25.0%	64.2%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2		4.6		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.3	68.8	68.8	6.5	72.0		20.8		20.8
Actuated g/C Ratio	0.05	0.64	0.64	0.06	0.67		0.19		0.19
v/c Ratio	0.20	0.98	0.02	0.27	0.49		0.43		0.84
Control Delay	59.1	45.0	0.0	57.9	12.3		18.9		72.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	59.1	45.0	0.0	57.9	12.3		18.9		72.0
LOS	E	D	A	E	B		B		E
Approach Delay		44.3			14.4		18.9		72.0
Approach LOS		D			B		B		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.3	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 36.0	Intersection LOS: D
Intersection Capacity Utilization 81.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 45: Carpenter Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1019	21	25	499	29	36	4	99	117	5	34
Future Volume (veh/h)	15	1019	21	25	499	29	36	4	99	117	5	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	17	1132	23	28	554	32	40	4	110	130	6	38
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	32	1186	1005	45	1124	65	95	26	196	207	12	45
Arrive On Green	0.02	0.66	0.66	0.03	0.67	0.67	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1714	1800	1525	1714	1685	97	307	156	1157	870	72	263
Grp Volume(v), veh/h	17	1132	23	28	0	586	154	0	0	174	0	0
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	0	1782	1619	0	0	1205	0	0
Q Serve(g_s), s	1.0	61.4	0.6	1.7	0.0	17.3	0.0	0.0	0.0	6.1	0.0	0.0
Cycle Q Clear(g_c), s	1.0	61.4	0.6	1.7	0.0	17.3	9.2	0.0	0.0	15.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.05	0.26		0.71	0.75		0.22
Lane Grp Cap(c), veh/h	32	1186	1005	45	0	1189	317	0	0	264	0	0
V/C Ratio(X)	0.53	0.95	0.02	0.62	0.00	0.49	0.49	0.00	0.00	0.66	0.00	0.00
Avail Cap(c_a), veh/h	87	1186	1005	410	0	1189	463	0	0	396	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	51.6	16.6	6.3	51.1	0.0	8.8	40.5	0.0	0.0	43.3	0.0	0.0
Incr Delay (d2), s/veh	5.1	17.2	0.0	5.0	0.0	1.5	1.2	0.0	0.0	2.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	24.9	0.2	0.8	0.0	5.7	3.8	0.0	0.0	4.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.7	33.9	6.3	56.1	0.0	10.2	41.6	0.0	0.0	46.1	0.0	0.0
LnGrp LOS	E	C	A	E	A	B	D	A	A	D	A	A
Approach Vol, veh/h		1172			614			154			174	
Approach Delay, s/veh		33.7			12.3			41.6			46.1	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	22.6	7.4	76.2	22.6	6.6	77.0
Change Period (Y+Rc), s	4.6	4.6	6.2	4.6	4.6	6.2
Max Green Setting (Gmax), s	28.4	25.4	50.8	28.4	5.4	70.8
Max Q Clear Time (g_c+I1), s	11.2	3.7	63.4	17.3	3.0	19.3
Green Ext Time (p_c), s	0.8	0.0	0.0	0.7	0.0	3.8

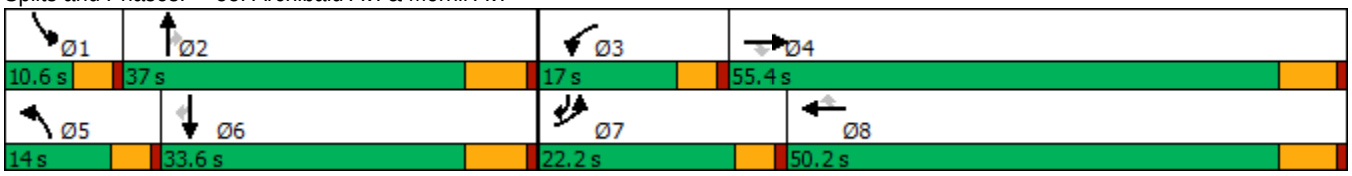
Intersection Summary	
HCM 6th Ctrl Delay	29.1
HCM 6th LOS	C

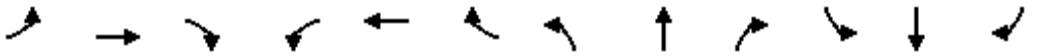
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	432	78	613	44	26	53	184	577	38	70	920	228
Future Volume (vph)	432	78	613	44	26	53	184	577	38	70	920	228
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	9.6
Total Split (s)	22.2	55.4	55.4	17.0	50.2	50.2	14.0	37.0	37.0	10.6	33.6	22.2
Total Split (%)	18.5%	46.2%	46.2%	14.2%	41.8%	41.8%	11.7%	30.8%	30.8%	8.8%	28.0%	18.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 95.7
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	432	78	613	44	26	53	184	577	38	70	920	228
Future Volume (veh/h)	432	78	613	44	26	53	184	577	38	70	920	228
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	445	80	447	45	27	16	190	595	25	72	948	177
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	313	582	493	60	301	255	167	1207	532	136	1011	746
Arrive On Green	0.19	0.32	0.32	0.04	0.17	0.17	0.10	0.35	0.35	0.05	0.30	0.30
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	1619	3420	1506	2956	3420	1525
Grp Volume(v), veh/h	445	80	447	45	27	16	190	595	25	72	948	177
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1710	1506	1478	1710	1525
Q Serve(g_s), s	17.6	2.9	25.5	2.5	1.2	0.8	9.4	12.4	1.0	2.2	24.6	6.1
Cycle Q Clear(g_c), s	17.6	2.9	25.5	2.5	1.2	0.8	9.4	12.4	1.0	2.2	24.6	6.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	313	582	493	60	301	255	167	1207	532	136	1011	746
V/C Ratio(X)	1.42	0.14	0.91	0.74	0.09	0.06	1.14	0.49	0.05	0.53	0.94	0.24
Avail Cap(c_a), veh/h	313	973	824	221	870	737	167	1207	532	195	1018	749
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	21.8	29.5	43.4	32.1	31.9	40.8	23.1	19.4	42.5	31.2	13.4
Incr Delay (d2), s/veh	207.5	0.1	8.4	6.6	0.1	0.1	111.0	0.3	0.0	1.2	15.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.5	1.1	10.0	1.1	0.5	0.3	8.6	4.5	0.3	0.8	11.2	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	244.2	21.9	37.9	50.0	32.2	32.0	151.9	23.4	19.4	43.6	46.6	13.6
LnGrp LOS	F	C	D	D	C	C	F	C	B	D	D	B
Approach Vol, veh/h		972			88			810			1197	
Approach Delay, s/veh		131.0			41.3			53.4			41.6	
Approach LOS		F			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	38.6	8.0	35.6	14.0	33.4	22.2	21.4
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	6.0	30.5	12.4	49.2	9.4	27.1	17.6	44.0
Max Q Clear Time (g_c+I1), s	4.2	14.4	4.5	27.5	11.4	26.6	19.6	3.2
Green Ext Time (p_c), s	0.0	3.1	0.0	1.9	0.0	0.3	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	73.0
HCM 6th LOS	E

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	333	286	531	328	693	884
Future Volume (vph)	333	286	531	328	693	884
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	37.0	46.7	36.3	37.0	83.7
Total Split (%)	30.3%	30.8%	38.9%	30.3%	30.8%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 106.5
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	333	286	531	328	693	884
Future Volume (veh/h)	333	286	531	328	693	884
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1976	1976
Adj Flow Rate, veh/h	340	242	542	314	707	902
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	376	1475	622	850	588	1361
Arrive On Green	0.21	0.21	0.33	0.33	0.31	0.69
Sat Flow, veh/h	1810	2834	1900	1576	1882	1976
Grp Volume(v), veh/h	340	242	542	314	707	902
Grp Sat Flow(s),veh/h/ln	1810	1417	1900	1576	1882	1976
Q Serve(g_s), s	18.8	4.6	27.5	11.8	32.0	26.8
Cycle Q Clear(g_c), s	18.8	4.6	27.5	11.8	32.0	26.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	376	1475	622	850	588	1361
V/C Ratio(X)	0.90	0.16	0.87	0.37	1.20	0.66
Avail Cap(c_a), veh/h	548	1744	768	972	588	1519
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	12.9	32.4	13.8	35.2	9.1
Incr Delay (d2), s/veh	10.9	0.0	9.5	0.3	106.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	1.3	13.3	6.1	30.7	8.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	50.5	12.9	41.9	14.1	141.5	9.8
LnGrp LOS	D	B	D	B	F	A
Approach Vol, veh/h	582		856			1609
Approach Delay, s/veh	34.8		31.7			67.7
Approach LOS	C		C			E

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	37.0	38.8			75.8	26.6
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	32.0	41.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	34.0	29.5			28.8	20.8
Green Ext Time (p_c), s	0.0	4.0			3.8	0.5

Intersection Summary	
HCM 6th Ctrl Delay	51.3
HCM 6th LOS	D

Notes

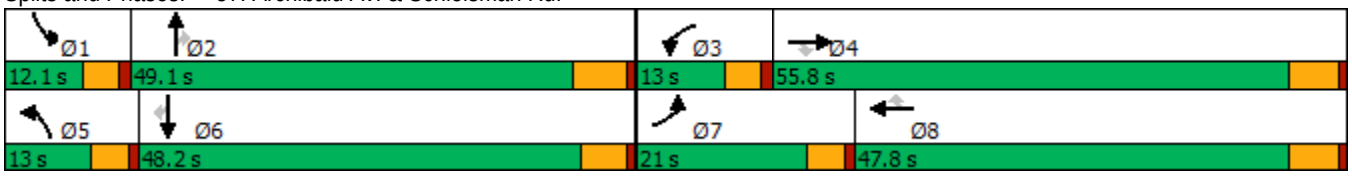
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

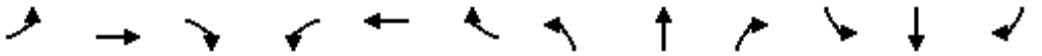
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	993	172	108	308	59	178	604	109	171	674	300
Future Volume (vph)	372	993	172	108	308	59	178	604	109	171	674	300
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	21.0	55.8	55.8	13.0	47.8	47.8	13.0	49.1	49.1	12.1	48.2	48.2
Total Split (%)	16.2%	42.9%	42.9%	10.0%	36.8%	36.8%	10.0%	37.8%	37.8%	9.3%	37.1%	37.1%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 111.1
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	372	993	172	108	308	59	178	604	109	171	674	300
Future Volume (veh/h)	372	993	172	108	308	59	178	604	109	171	674	300
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	380	1013	94	110	314	34	182	616	74	174	688	192
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	448	2490	773	169	2078	644	245	1048	325	237	1035	320
Arrive On Green	0.13	0.48	0.48	0.05	0.40	0.40	0.07	0.20	0.20	0.07	0.20	0.20
Sat Flow, veh/h	3510	5187	1610	3510	5187	1608	3510	5187	1610	3510	5187	1603
Grp Volume(v), veh/h	380	1013	94	110	314	34	182	616	74	174	688	192
Grp Sat Flow(s),veh/h/ln	1755	1729	1610	1755	1729	1608	1755	1729	1610	1755	1729	1603
Q Serve(g_s), s	11.1	13.2	3.4	3.2	4.0	1.4	5.3	11.3	4.0	5.1	12.8	11.4
Cycle Q Clear(g_c), s	11.1	13.2	3.4	3.2	4.0	1.4	5.3	11.3	4.0	5.1	12.8	11.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	448	2490	773	169	2078	644	245	1048	325	237	1035	320
V/C Ratio(X)	0.85	0.41	0.12	0.65	0.15	0.05	0.74	0.59	0.23	0.74	0.66	0.60
Avail Cap(c_a), veh/h	549	2490	773	281	2078	644	281	2123	659	251	2118	655
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.7	17.6	15.1	49.0	20.0	19.2	47.8	37.9	35.0	48.0	38.7	38.1
Incr Delay (d2), s/veh	8.7	0.5	0.3	1.6	0.2	0.2	7.0	0.5	0.4	8.6	0.7	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	5.0	1.2	1.4	1.6	0.5	2.5	4.6	1.6	2.4	5.2	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.4	18.1	15.4	50.6	20.2	19.4	54.8	38.4	35.3	56.5	39.4	39.9
LnGrp LOS	D	B	B	D	C	B	D	D	D	E	D	D
Approach Vol, veh/h		1487			458			872			1054	
Approach Delay, s/veh		27.0			27.4			41.5			42.4	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	27.4	9.7	56.1	11.9	27.1	18.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	7.5	42.9	8.4	50.0	8.4	* 43	16.4	42.0
Max Q Clear Time (g_c+I1), s	7.1	13.3	5.2	15.2	7.3	14.8	13.1	6.0
Green Ext Time (p_c), s	0.0	4.2	0.0	8.1	0.0	5.1	0.3	2.1

Intersection Summary	
HCM 6th Ctrl Delay	34.5
HCM 6th LOS	C

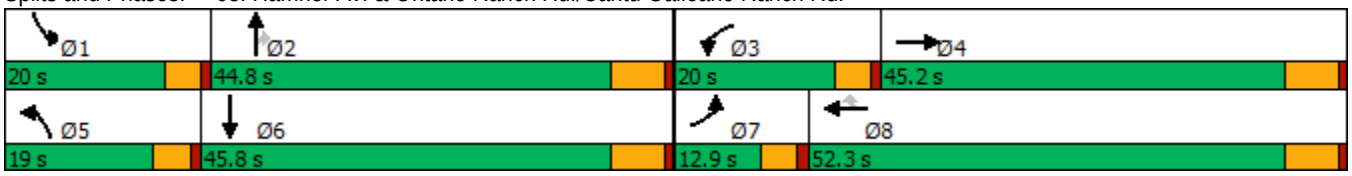
Notes

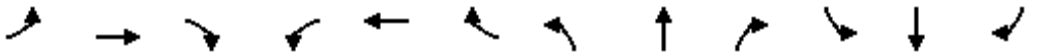
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	98	1018	580	518	107	195	372	233	451	790
Future Volume (vph)	98	1018	580	518	107	195	372	233	451	790
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2
Total Split (s)	12.9	45.2	20.0	52.3	52.3	19.0	44.8	44.8	20.0	45.8
Total Split (%)	9.9%	34.8%	15.4%	40.2%	40.2%	14.6%	34.5%	34.5%	15.4%	35.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	7.5	32.2	15.7	40.4	40.4	11.7	24.7	24.7	15.7	28.7
Actuated g/C Ratio	0.07	0.29	0.14	0.37	0.37	0.11	0.22	0.22	0.14	0.26
v/c Ratio	0.51	0.75	1.44	0.43	0.18	0.65	0.35	0.50	1.12	0.74
Control Delay	62.6	37.4	247.9	28.7	5.7	59.8	36.6	13.1	126.2	40.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	37.4	247.9	28.7	5.7	59.8	36.6	13.1	126.2	40.9
LOS	E	D	F	C	A	E	D	B	F	D
Approach Delay		39.2		132.2			35.4			69.3
Approach LOS		D		F			D			E

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 110.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.44	
Intersection Signal Delay: 70.8	Intersection LOS: E
Intersection Capacity Utilization 83.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	1018	263	580	518	107	195	372	233	451	790	111
Future Volume (veh/h)	98	1018	263	580	518	107	195	372	233	451	790	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	102	1060	165	604	540	77	203	388	164	470	823	61
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	153	1502	232	482	1323	590	265	836	259	482	1136	84
Arrive On Green	0.05	0.28	0.28	0.16	0.39	0.39	0.09	0.17	0.17	0.16	0.24	0.24
Sat Flow, veh/h	2956	5452	840	2956	3420	1525	2956	4914	1523	2956	4669	345
Grp Volume(v), veh/h	102	901	324	604	540	77	203	388	164	470	577	307
Grp Sat Flow(s),veh/h/ln	1478	1548	1649	1478	1710	1525	1478	1638	1523	1478	1638	1737
Q Serve(g_s), s	3.2	16.5	16.7	15.4	10.9	3.1	6.3	6.7	9.5	15.0	15.3	15.4
Cycle Q Clear(g_c), s	3.2	16.5	16.7	15.4	10.9	3.1	6.3	6.7	9.5	15.0	15.3	15.4
Prop In Lane	1.00		0.51	1.00		1.00	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	153	1280	454	482	1323	590	265	836	259	482	797	423
V/C Ratio(X)	0.67	0.70	0.71	1.25	0.41	0.13	0.77	0.46	0.63	0.98	0.72	0.73
Avail Cap(c_a), veh/h	260	1916	680	482	1668	744	450	2007	622	482	1372	728
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.0	30.8	30.9	39.6	21.1	18.7	42.1	35.3	36.5	39.4	32.8	32.9
Incr Delay (d2), s/veh	1.9	0.7	2.1	130.5	0.2	0.1	1.8	0.4	2.6	34.5	1.3	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	5.7	6.3	14.0	4.0	1.0	2.3	2.6	3.5	7.4	5.8	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.9	31.5	33.0	170.1	21.3	18.8	43.8	35.7	39.0	73.9	34.1	35.3
LnGrp LOS	D	C	C	F	C	B	D	D	D	E	C	D
Approach Vol, veh/h		1327			1221			755			1354	
Approach Delay, s/veh		33.0			94.7			38.6			48.2	
Approach LOS		C			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	22.3	20.0	32.2	13.1	29.2	9.5	42.8
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	15.4	38.6	15.4	39.0	14.4	39.6	8.3	46.1
Max Q Clear Time (g_c+I1), s	17.0	11.5	17.4	18.7	8.3	17.4	5.2	12.9
Green Ext Time (p_c), s	0.0	2.9	0.0	7.3	0.2	5.2	0.0	3.6

Intersection Summary	
HCM 6th Ctrl Delay	54.5
HCM 6th LOS	D

APPENDIX 6.1:

OPENING YEAR CUMULATIVE (2022) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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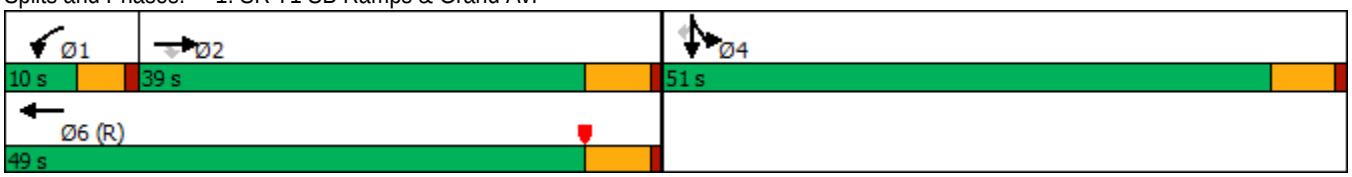
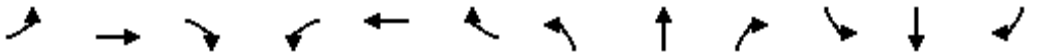
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	781	212	67	1406	854	5	326
Future Volume (vph)	781	212	67	1406	854	5	326
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	39.0	39.0	10.0	49.0	51.0	51.0	51.0
Total Split (%)	39.0%	39.0%	10.0%	49.0%	51.0%	51.0%	51.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None
Act Effct Green (s)	43.5	43.5	6.4	52.0	40.0	40.0	40.0
Actuated g/C Ratio	0.44	0.44	0.06	0.52	0.40	0.40	0.40
v/c Ratio	0.41	0.30	0.35	0.61	0.73	0.74	0.55
Control Delay	22.0	4.0	43.0	27.5	31.6	31.9	20.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.0	4.0	43.0	27.5	31.6	31.9	20.1
LOS	C	A	D	C	C	C	C
Approach Delay	18.2			28.2		28.5	
Approach LOS	B			C		C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 25.6	Intersection LOS: C
Intersection Capacity Utilization 57.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	781	212	67	1406	0	0	0	0	854	5	326
Future Volume (veh/h)	0	781	212	67	1406	0	0	0	0	854	5	326
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	919	160	79	1654	0				1009	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85				0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1865	579	177	2334	0				1206	0	
Arrive On Green	0.00	0.36	0.36	0.05	0.45	0.00				0.33	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	919	160	79	1654	0				1009	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	13.8	7.1	2.2	25.7	0.0				25.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	13.8	7.1	2.2	25.7	0.0				25.8	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1865	579	177	2334	0				1206	0	
V/C Ratio(X)	0.00	0.49	0.28	0.45	0.71	0.00				0.84	0.00	
Avail Cap(c_a), veh/h	0	1865	579	211	2334	0				1701	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.39	0.39	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	24.9	22.8	46.1	22.2	0.0				30.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.9	1.2	0.3	0.7	0.0				2.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.5	2.7	0.9	9.6	0.0				10.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	25.9	24.0	46.4	22.9	0.0				33.5	0.0	0.0
LnGrp LOS	A	C	C	D	C	A				C	A	
Approach Vol, veh/h		1079			1733						1009	A
Approach Delay, s/veh		25.6			24.0						33.5	
Approach LOS		C			C						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.0	40.0		37.3		49.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	5.4	33.2		45.2		43.2
Max Q Clear Time (g_c+I1), s	4.2	15.8		27.8		27.7
Green Ext Time (p_c), s	0.0	6.0		3.7		9.6

Intersection Summary		
HCM 6th Ctrl Delay		27.0
HCM 6th LOS		C

Notes

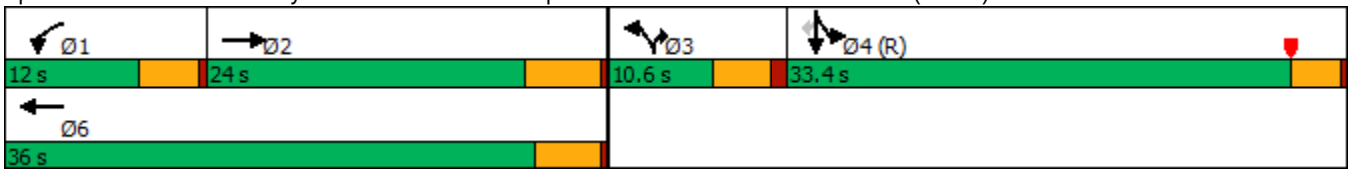
User approved volume balancing among the lanes for turning movement.

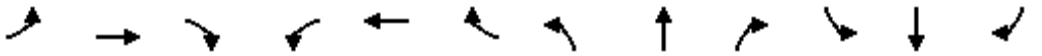
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	734	206	298	20	305	671	28	42
Future Volume (vph)	734	206	298	20	305	671	28	42
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	24.0	12.0	36.0	10.6	10.6	33.4	33.4	33.4
Total Split (%)	30.0%	15.0%	45.0%	13.3%	13.3%	41.8%	41.8%	41.8%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	18.8	14.4	37.6	7.1	7.1	22.8	22.8	22.8
Actuated g/C Ratio	0.24	0.18	0.47	0.09	0.09	0.28	0.28	0.28
v/c Ratio	0.93	0.65	0.18	0.12	0.93	0.73	0.73	0.08
Control Delay	48.5	43.7	18.1	36.5	51.0	34.3	34.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.5	43.7	18.1	36.5	51.0	34.3	34.2	0.3
LOS	D	D	B	D	D	C	C	A
Approach Delay	48.5		28.6				32.3	
Approach LOS	D		C				C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 39.3	Intersection LOS: D
Intersection Capacity Utilization 70.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	734	33	206	298	0	20	0	305	671	28	42
Future Volume (veh/h)	0	734	33	206	298	0	20	0	305	671	28	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	749	25	210	304	0	20	0	242	706	0	27
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	828	28	181	1380		0	0	0	1851	0	824
Arrive On Green	0.00	0.23	0.23	0.03	0.13	0.00	0.00	0.00	0.00	0.51	0.00	0.51
Sat Flow, veh/h	0	3660	119	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	379	395	210	304	0		0.0		706	0	27
Grp Sat Flow(s),veh/h/ln	0	1805	1879	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	16.3	16.3	8.0	6.1	0.0				9.5	0.0	0.7
Cycle Q Clear(g_c), s	0.0	16.3	16.3	8.0	6.1	0.0				9.5	0.0	0.7
Prop In Lane	0.00		0.06	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	419	436	181	1380					1851	0	824
V/C Ratio(X)	0.00	0.90	0.90	1.16	0.22					0.38	0.00	0.03
Avail Cap(c_a), veh/h	0	429	446	181	1421					1851	0	824
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.93	0.93	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.8	29.9	38.7	24.2	0.0				11.9	0.0	9.7
Incr Delay (d2), s/veh	0.0	21.4	20.8	114.4	0.1	0.0				0.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.0	9.3	9.3	2.5	0.0				3.4	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	51.2	50.7	153.1	24.3	0.0				12.5	0.0	9.8
LnGrp LOS	A	D	D	F	C					B	A	A
Approach Vol, veh/h		774			514	A					733	
Approach Delay, s/veh		50.9			76.9						12.4	
Approach LOS		D			E						B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	12.0	23.6		44.4		35.6
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5
Max Green Setting (Gmax), s	8.0	19.0		29.9		* 32
Max Q Clear Time (g_c+I1), s	10.0	18.3		11.5		8.1
Green Ext Time (p_c), s	0.0	0.2		2.5		1.4

Intersection Summary	
HCM 6th Ctrl Delay	43.6
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

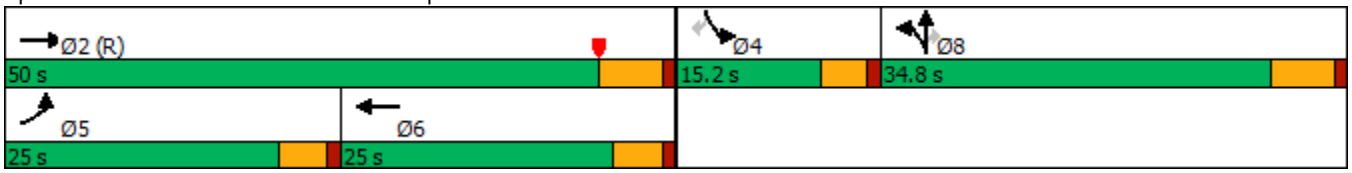
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	338	1113	184	1118	497	74	69	44	712
Future Volume (vph)	338	1113	184	1118	497	74	69	44	712
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.6	34.8		14.7	34.8	34.8	34.8	9.5	9.5
Total Split (s)	25.0	50.0		25.0	34.8	34.8	34.8	15.2	15.2
Total Split (%)	25.0%	50.0%		25.0%	34.8%	34.8%	34.8%	15.2%	15.2%
Yellow Time (s)	3.6	4.8		3.7	4.8	4.8	4.8	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8		-0.7	-1.8	-1.8	-1.8	-0.5	-0.5
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	Max	Max	Max	None	None
Act Effct Green (s)	21.0	46.0	100.0	21.0	32.6	32.6	32.6	9.4	9.4
Actuated g/C Ratio	0.21	0.46	1.00	0.21	0.33	0.33	0.33	0.09	0.09
v/c Ratio	0.97	0.51	0.12	0.91	0.55	0.55	0.12	0.28	0.90
Control Delay	82.4	18.9	0.1	49.2	32.9	32.8	1.2	45.5	22.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.4	18.9	0.1	49.2	32.9	32.8	1.2	45.5	22.9
LOS	F	B	A	D	C	C	A	D	C
Approach Delay		29.9		49.2		29.4			
Approach LOS		C		D		C			

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 34.1	Intersection LOS: C
Intersection Capacity Utilization 67.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	338	1113	184	0	1118	27	497	74	69	44	0	712
Future Volume (veh/h)	338	1113	184	0	1118	27	497	74	69	44	0	712
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	367	1210	0	0	1215	29	597	0	35	48	0	498
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	380	3174		0	2322	55	1115	0	496	0	0	0
Arrive On Green	0.21	0.61	0.00	0.00	0.35	0.34	0.31	0.00	0.31	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6882	158	3619	0	1610		0	
Grp Volume(v), veh/h	367	1210	0	0	900	344	597	0	35		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1872	1810	0	1610			
Q Serve(g_s), s	20.1	11.8	0.0	0.0	14.6	14.6	13.7	0.0	1.5			
Cycle Q Clear(g_c), s	20.1	11.8	0.0	0.0	14.6	14.6	13.7	0.0	1.5			
Prop In Lane	1.00		1.00	0.00		0.08	1.00		1.00			
Lane Grp Cap(c), veh/h	380	3174		0	1721	657	1115	0	496			
V/C Ratio(X)	0.97	0.38		0.00	0.52	0.52	0.54	0.00	0.07			
Avail Cap(c_a), veh/h	380	3174		0	1721	657	1115	0	496			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.84	0.84	0.00	0.00	0.90	0.90	1.00	0.00	1.00			
Uniform Delay (d), s/veh	39.1	9.8	0.0	0.0	25.8	25.8	28.7	0.0	24.5			
Incr Delay (d2), s/veh	33.3	0.3	0.0	0.0	0.3	0.7	1.8	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	12.0	3.9	0.0	0.0	5.5	6.4	5.9	0.0	0.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.4	10.1	0.0	0.0	26.1	26.5	30.5	0.0	24.8			
LnGrp LOS	E	B		A	C	C	C	A	C			
Approach Vol, veh/h		1577	A		1244			632				
Approach Delay, s/veh		24.6			26.2			30.2				
Approach LOS		C			C			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		65.2			25.0	40.2		34.8				
Change Period (Y+Rc), s		5.8			4.6	* 5.8		5.8				
Max Green Setting (Gmax), s		44.2			20.4	* 20		29.0				
Max Q Clear Time (g_c+I1), s		13.8			22.1	16.6		15.7				
Green Ext Time (p_c), s		9.4			0.0	2.4		1.9				

Intersection Summary	
HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

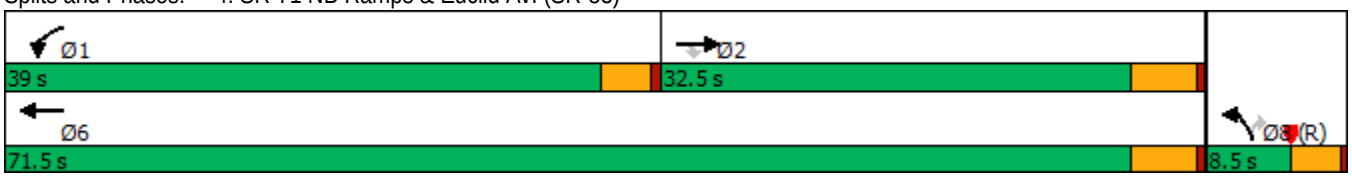
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	710	306	800	1027	45	734
Future Volume (vph)	710	306	800	1027	45	734
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	32.5	32.5	39.0	71.5	8.5	8.5
Total Split (%)	40.6%	40.6%	48.8%	89.4%	10.6%	10.6%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max
Act Effct Green (s)	23.3	23.3	35.5	62.3	9.7	9.7
Actuated g/C Ratio	0.29	0.29	0.44	0.78	0.12	0.12
v/c Ratio	0.72	0.53	1.06	0.39	0.11	1.03
Control Delay	27.1	9.6	74.6	3.1	34.7	52.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.1	9.6	74.6	3.1	34.7	52.4
LOS	C	A	E	A	C	D
Approach Delay	21.8			34.4	51.4	
Approach LOS	C			C	D	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 34.5	Intersection LOS: C
Intersection Capacity Utilization 78.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	710	306	800	1027	45	734
Future Volume (veh/h)	710	306	800	1027	45	734
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	755	0	851	1093	48	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	955		803	2715	519	
Arrive On Green	0.09	0.00	0.44	0.75	0.15	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	755	0	851	1093	48	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	16.4	0.0	35.5	8.6	0.9	0.0
Cycle Q Clear(g_c), s	16.4	0.0	35.5	8.6	0.9	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	955		803	2715	519	
V/C Ratio(X)	0.79		1.06	0.40	0.09	
Avail Cap(c_a), veh/h	1264		803	3023	519	
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.35	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.3	0.0	22.3	3.5	29.4	0.0
Incr Delay (d2), s/veh	0.8	0.0	48.8	0.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	22.9	1.2	0.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.1	0.0	71.1	3.6	29.8	0.0
LnGrp LOS	D		F	A	C	
Approach Vol, veh/h	755	A		1944	48	A
Approach Delay, s/veh	35.1			33.1	29.8	
Approach LOS	D			C	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	39.0	25.7				64.7	15.3
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	35.5	28.0				67.0	5.0
Max Q Clear Time (g_c+I1), s	37.5	18.4				10.6	2.9
Green Ext Time (p_c), s	0.0	2.8				8.5	0.0

Intersection Summary	
HCM 6th Ctrl Delay	33.6
HCM 6th LOS	C

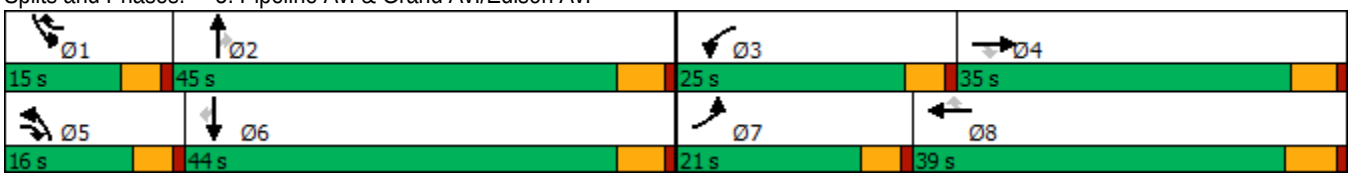
Notes

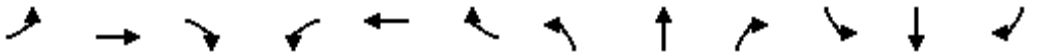
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	842	150	159	846	45	151	207	104	62	336	71
Future Volume (vph)	112	842	150	159	846	45	151	207	104	62	336	71
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	21.0	35.0	16.0	25.0	39.0	15.0	16.0	45.0	45.0	15.0	44.0	44.0
Total Split (%)	17.5%	29.2%	13.3%	20.8%	32.5%	12.5%	13.3%	37.5%	37.5%	12.5%	36.7%	36.7%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None
Act Effct Green (s)	8.4	34.3	43.7	9.7	35.6	44.0	9.4	21.5	21.5	8.3	18.2	18.2
Actuated g/C Ratio	0.10	0.39	0.50	0.11	0.41	0.50	0.11	0.24	0.24	0.09	0.21	0.21
v/c Ratio	0.39	0.45	0.19	0.47	0.44	0.06	0.49	0.25	0.24	0.42	0.49	0.18
Control Delay	43.6	22.9	3.3	43.3	21.7	2.7	44.8	28.3	6.7	49.4	32.8	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.6	22.9	3.3	43.3	21.7	2.7	44.8	28.3	6.7	49.4	32.8	2.9
LOS	D	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		22.4			24.2			28.9			30.5	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 87.9	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 25.2	Intersection LOS: C
Intersection Capacity Utilization 59.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	842	150	159	846	45	151	207	104	62	336	71
Future Volume (veh/h)	112	842	150	159	846	45	151	207	104	62	336	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	115	868	112	164	872	31	156	213	38	64	346	39
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	211	2106	763	266	2236	755	247	729	324	91	636	279
Arrive On Green	0.07	0.43	0.42	0.08	0.46	0.44	0.08	0.21	0.21	0.06	0.19	0.19
Sat Flow, veh/h	3141	4914	1505	3141	4914	1522	2956	3420	1519	1619	3420	1498
Grp Volume(v), veh/h	115	868	112	164	872	31	156	213	38	64	346	39
Grp Sat Flow(s),veh/h/ln	1570	1638	1505	1570	1638	1522	1478	1710	1519	1619	1710	1498
Q Serve(g_s), s	2.7	9.4	3.1	3.9	9.0	0.8	3.9	4.0	1.6	3.0	7.0	1.7
Cycle Q Clear(g_c), s	2.7	9.4	3.1	3.9	9.0	0.8	3.9	4.0	1.6	3.0	7.0	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	211	2106	763	266	2236	755	247	729	324	91	636	279
V/C Ratio(X)	0.54	0.41	0.15	0.62	0.39	0.04	0.63	0.29	0.12	0.70	0.54	0.14
Avail Cap(c_a), veh/h	694	2106	763	858	2236	755	461	1823	810	232	1779	779
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.7	15.2	10.2	34.0	13.9	10.0	34.1	25.4	24.4	35.7	28.3	26.2
Incr Delay (d2), s/veh	0.8	0.6	0.4	0.9	0.5	0.1	1.0	0.2	0.2	3.6	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	3.3	0.9	1.4	3.0	0.2	1.4	1.6	0.5	1.2	2.8	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.5	15.8	10.6	34.9	14.4	10.1	35.1	25.6	24.6	39.3	29.1	26.4
LnGrp LOS	D	B	B	C	B	B	D	C	C	D	C	C
Approach Vol, veh/h		1095			1067			407			449	
Approach Delay, s/veh		17.4			17.4			29.1			30.3	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	20.4	10.5	37.7	10.4	18.3	9.2	39.0
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	10.4	39.6	20.4	* 30	11.4	38.6	16.4	33.2
Max Q Clear Time (g_c+I1), s	5.0	6.0	5.9	11.4	5.9	9.0	4.7	11.0
Green Ext Time (p_c), s	0.0	1.4	0.2	6.1	0.1	2.3	0.1	5.8

Intersection Summary	
HCM 6th Ctrl Delay	20.9
HCM 6th LOS	C

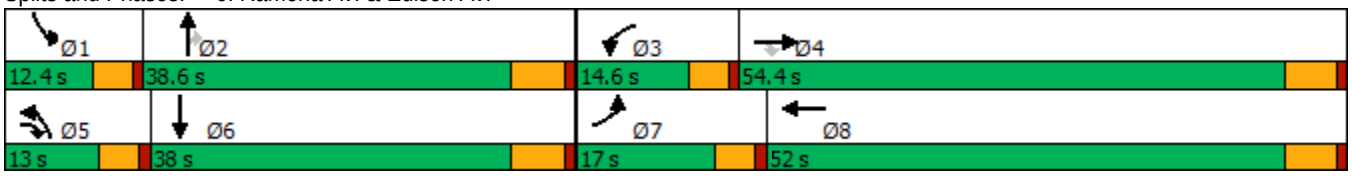
Notes

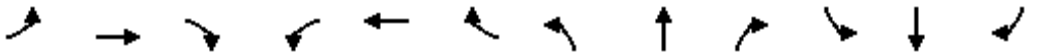
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	97	795	58	51	976	43	302	57	46	445
Future Volume (vph)	97	795	58	51	976	43	302	57	46	445
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	17.0	54.4	13.0	14.6	52.0	13.0	38.6	38.6	12.4	38.0
Total Split (%)	14.2%	45.3%	10.8%	12.2%	43.3%	10.8%	32.2%	32.2%	10.3%	31.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None
Act Effct Green (s)	11.0	53.7	61.4	8.5	48.8	7.7	26.1	26.1	7.5	25.9
Actuated g/C Ratio	0.10	0.50	0.57	0.08	0.46	0.07	0.24	0.24	0.07	0.24
v/c Ratio	0.65	0.52	0.04	0.45	0.75	0.42	0.40	0.14	0.45	0.73
Control Delay	67.7	22.6	3.2	61.7	30.3	62.4	35.9	1.6	64.6	42.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.7	22.6	3.2	61.7	30.3	62.4	35.9	1.6	64.6	42.1
LOS	E	C	A	E	C	E	D	A	E	D
Approach Delay		26.0			31.8		33.9			43.9
Approach LOS		C			C		C			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.2	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 32.6	Intersection LOS: C
Intersection Capacity Utilization 70.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	795	58	51	976	67	43	302	57	46	445	91
Future Volume (veh/h)	97	795	58	51	976	67	43	302	57	46	445	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1700	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	108	883	60	57	1084	70	48	336	32	51	494	89
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	141	1774	1366	80	1567	101	69	775	345	72	660	118
Arrive On Green	0.09	0.52	0.51	0.05	0.48	0.46	0.04	0.23	0.23	0.04	0.23	0.21
Sat Flow, veh/h	1619	3420	2481	1619	3259	210	1619	3420	1521	1619	2891	518
Grp Volume(v), veh/h	108	883	60	57	569	585	48	336	32	51	291	292
Grp Sat Flow(s),veh/h/ln	1619	1710	1240	1619	1710	1759	1619	1710	1521	1619	1710	1699
Q Serve(g_s), s	6.5	16.7	1.1	3.5	25.8	25.9	2.9	8.4	1.7	3.1	15.8	16.0
Cycle Q Clear(g_c), s	6.5	16.7	1.1	3.5	25.8	25.9	2.9	8.4	1.7	3.1	15.8	16.0
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	141	1774	1366	80	823	846	69	775	345	72	391	388
V/C Ratio(X)	0.76	0.50	0.04	0.71	0.69	0.69	0.69	0.43	0.09	0.70	0.75	0.75
Avail Cap(c_a), veh/h	211	1774	1366	172	823	846	146	1186	527	136	583	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	15.6	10.4	46.7	20.1	20.2	47.1	33.1	30.5	47.0	35.8	36.1
Incr Delay (d2), s/veh	4.1	1.0	0.1	4.3	4.7	4.6	4.5	0.4	0.1	4.6	2.8	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	6.1	0.3	1.4	10.3	10.6	1.2	3.4	0.6	1.3	6.6	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.6	16.6	10.4	51.0	24.9	24.9	51.6	33.5	30.6	51.6	38.6	39.2
LnGrp LOS	D	B	B	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		1051			1211			416			634	
Approach Delay, s/veh		19.5			26.1			35.4			39.9	
Approach LOS		B			C			D			D	

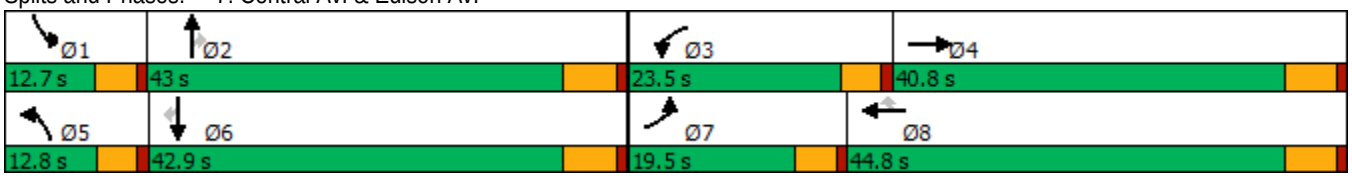
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	26.6	8.9	55.8	8.3	26.8	12.7	52.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	7.8	32.8	10.0	48.6	8.4	32.2	12.4	46.2
Max Q Clear Time (g_c+I1), s	5.1	10.4	5.5	18.7	4.9	18.0	8.5	27.9
Green Ext Time (p_c), s	0.0	2.0	0.0	6.6	0.0	2.7	0.0	6.8

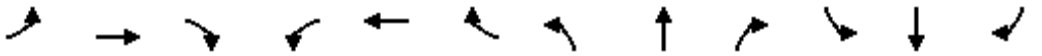
Intersection Summary	
HCM 6th Ctrl Delay	27.8
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	149	468	318	999	114	75	785	309	79	927	252
Future Volume (vph)	149	468	318	999	114	75	785	309	79	927	252
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	19.5	40.8	23.5	44.8	44.8	12.8	43.0	43.0	12.7	42.9	42.9
Total Split (%)	16.3%	34.0%	19.6%	37.3%	37.3%	10.7%	35.8%	35.8%	10.6%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	14.0	38.5	16.6	41.0	41.0	8.3	36.3	36.3	8.3	38.7	38.7
Actuated g/C Ratio	0.12	0.33	0.14	0.35	0.35	0.07	0.31	0.31	0.07	0.33	0.33
v/c Ratio	0.79	0.48	0.74	0.86	0.19	0.68	0.76	0.52	0.71	0.85	0.45
Control Delay	78.0	33.1	58.4	44.2	5.8	82.2	41.3	13.6	85.8	44.7	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.0	33.1	58.4	44.2	5.8	82.2	41.3	13.6	85.8	44.7	20.2
LOS	E	C	E	D	A	F	D	B	F	D	C
Approach Delay		43.0		44.3			36.6			42.4	
Approach LOS		D		D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 41.6	Intersection LOS: D
Intersection Capacity Utilization 83.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	468	55	318	999	114	75	785	309	79	927	252
Future Volume (veh/h)	149	468	55	318	999	114	75	785	309	79	927	252
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	155	488	51	331	1041	91	78	818	140	82	966	204
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	188	1076	112	402	1219	537	105	1095	481	109	1105	486
Arrive On Green	0.12	0.34	0.33	0.13	0.36	0.36	0.06	0.32	0.32	0.07	0.32	0.32
Sat Flow, veh/h	1619	3126	326	3141	3420	1505	1619	3420	1503	1619	3420	1504
Grp Volume(v), veh/h	155	266	273	331	1041	91	78	818	140	82	966	204
Grp Sat Flow(s),veh/h/ln	1619	1710	1741	1570	1710	1505	1619	1710	1503	1619	1710	1504
Q Serve(g_s), s	10.7	13.8	14.0	11.8	32.2	4.7	5.4	24.5	8.0	5.7	30.5	12.2
Cycle Q Clear(g_c), s	10.7	13.8	14.0	11.8	32.2	4.7	5.4	24.5	8.0	5.7	30.5	12.2
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	589	600	402	1219	537	105	1095	481	109	1105	486
V/C Ratio(X)	0.83	0.45	0.46	0.82	0.85	0.17	0.74	0.75	0.29	0.75	0.87	0.42
Avail Cap(c_a), veh/h	219	589	600	535	1219	537	125	1166	512	123	1163	511
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.5	29.1	29.3	48.6	34.1	25.2	52.6	34.7	29.2	52.4	36.5	30.3
Incr Delay (d2), s/veh	17.2	2.5	2.5	5.8	7.7	0.7	14.0	2.5	0.3	16.6	7.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	5.9	6.0	4.8	13.9	1.7	2.6	10.1	2.8	2.8	13.2	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.7	31.6	31.8	54.4	41.8	25.9	66.6	37.3	29.5	69.0	43.9	30.9
LnGrp LOS	E	C	C	D	D	C	E	D	C	E	D	C
Approach Vol, veh/h		694			1463			1036			1252	
Approach Delay, s/veh		39.5			43.6			38.4			43.4	
Approach LOS		D			D			D			D	

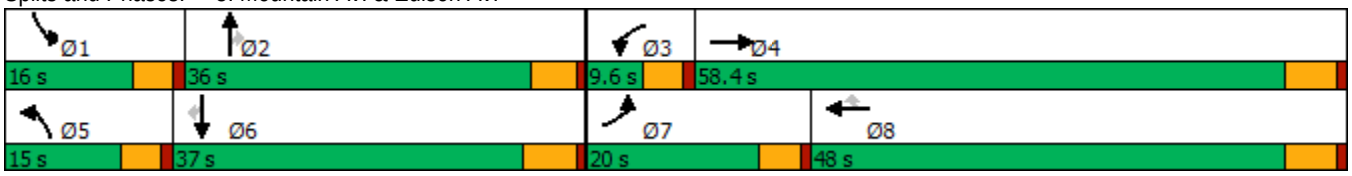
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	40.6	18.7	43.4	11.4	41.0	17.3	44.8
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	8.1	37.2	18.9	35.0	8.2	37.1	14.9	39.0
Max Q Clear Time (g_c+I1), s	7.7	26.5	13.8	16.0	7.4	32.5	12.7	34.2
Green Ext Time (p_c), s	0.0	4.2	0.3	2.7	0.0	2.7	0.0	2.8

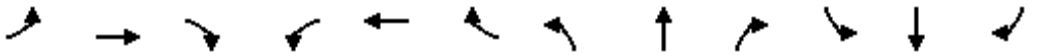
Intersection Summary	
HCM 6th Ctrl Delay	41.7
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	142	519	10	1018	107	85	155	41	100	79	265
Future Volume (vph)	142	519	10	1018	107	85	155	41	100	79	265
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	20.0	58.4	9.6	48.0	48.0	15.0	36.0	36.0	16.0	37.0	37.0
Total Split (%)	16.7%	48.7%	8.0%	40.0%	40.0%	12.5%	30.0%	30.0%	13.3%	30.8%	30.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	13.7	60.5	5.7	44.5	44.5	9.7	17.4	17.4	10.6	20.8	20.8
Actuated g/C Ratio	0.13	0.59	0.06	0.43	0.43	0.09	0.17	0.17	0.10	0.20	0.20
v/c Ratio	0.72	0.21	0.12	0.74	0.16	0.61	0.55	0.12	0.65	0.23	0.57
Control Delay	63.1	11.3	54.2	29.8	2.2	63.9	46.2	0.6	64.8	37.7	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.1	11.3	54.2	29.8	2.2	63.9	46.2	0.6	64.8	37.7	12.6
LOS	E	B	D	C	A	E	D	A	E	D	B
Approach Delay		21.8		27.5			44.8			28.8	
Approach LOS		C		C			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.3	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 28.1	Intersection LOS: C
Intersection Capacity Utilization 66.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	519	40	10	1018	107	85	155	41	100	79	265
Future Volume (veh/h)	142	519	40	10	1018	107	85	155	41	100	79	265
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	154	564	39	11	1107	105	92	168	15	109	86	150
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	193	2726	187	32	1649	735	124	237	201	144	272	226
Arrive On Green	0.12	0.58	0.56	0.02	0.48	0.48	0.08	0.13	0.13	0.09	0.15	0.15
Sat Flow, veh/h	1619	4689	321	1619	3420	1524	1619	1800	1525	1619	1800	1496
Grp Volume(v), veh/h	154	393	210	11	1107	105	92	168	15	109	86	150
Grp Sat Flow(s),veh/h/ln	1619	1638	1734	1619	1710	1524	1619	1800	1525	1619	1800	1496
Q Serve(g_s), s	8.7	5.3	5.5	0.6	23.2	3.6	5.2	8.4	0.8	6.2	4.0	8.9
Cycle Q Clear(g_c), s	8.7	5.3	5.5	0.6	23.2	3.6	5.2	8.4	0.8	6.2	4.0	8.9
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	193	1905	1008	32	1649	735	124	237	201	144	272	226
V/C Ratio(X)	0.80	0.21	0.21	0.34	0.67	0.14	0.74	0.71	0.07	0.76	0.32	0.66
Avail Cap(c_a), veh/h	277	1905	1008	97	1649	735	190	616	522	208	635	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.1	9.3	9.4	45.3	18.6	13.5	42.3	38.9	35.6	41.6	35.4	37.5
Incr Delay (d2), s/veh	6.4	0.2	0.5	2.4	2.2	0.4	3.3	3.9	0.2	4.7	0.7	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	1.7	1.9	0.3	8.6	1.2	2.1	3.9	0.3	2.5	1.7	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.5	9.6	9.9	47.6	20.8	13.9	45.5	42.8	35.8	46.4	36.1	40.8
LnGrp LOS	D	A	A	D	C	B	D	D	D	D	D	D
Approach Vol, veh/h		757			1223			275			345	
Approach Delay, s/veh		17.2			20.4			43.3			41.4	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	17.0	5.8	58.4	11.2	18.1	15.1	49.1
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	11.4	* 31	5.0	52.6	10.4	31.2	15.4	42.2
Max Q Clear Time (g_c+I1), s	8.2	10.4	2.6	7.5	7.2	10.9	10.7	25.2
Green Ext Time (p_c), s	0.0	0.8	0.0	3.8	0.0	0.8	0.1	7.2

Intersection Summary	
HCM 6th Ctrl Delay	24.7
HCM 6th LOS	C

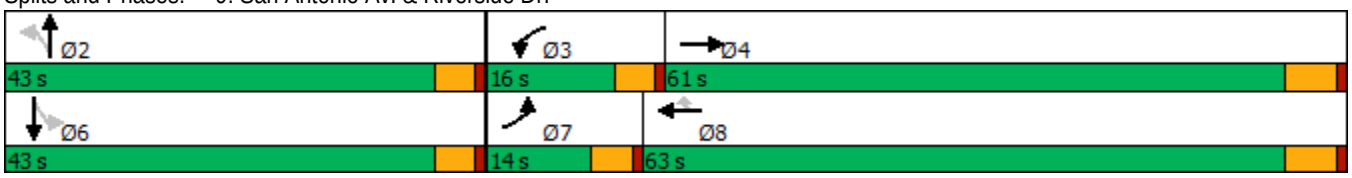
Notes

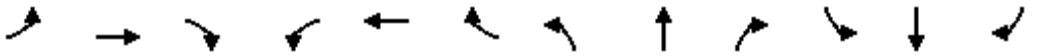
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	17	484	36	844	5	117	2	18	6
Future Volume (vph)	17	484	36	844	5	117	2	18	6
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	14.0	61.0	16.0	63.0	63.0	43.0	43.0	43.0	43.0
Total Split (%)	11.7%	50.8%	13.3%	52.5%	52.5%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	6.4	61.7	7.5	64.7	64.7	16.5	16.5	16.5	16.5
Actuated g/C Ratio	0.07	0.66	0.08	0.69	0.69	0.18	0.18	0.18	0.18
v/c Ratio	0.16	0.26	0.30	0.38	0.00	0.59	0.16	0.09	0.19
Control Delay	47.4	8.7	48.6	8.6	0.0	46.2	11.2	32.1	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.4	8.7	48.6	8.6	0.0	46.2	11.2	32.1	11.8
LOS	D	A	D	A	A	D	B	C	B
Approach Delay		9.9		10.2			36.2		16.7
Approach LOS		A		B			D		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 93.5	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 12.9	Intersection LOS: B
Intersection Capacity Utilization 53.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	484	58	36	844	5	117	2	45	18	6	50
Future Volume (veh/h)	17	484	58	36	844	5	117	2	45	18	6	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	18	520	58	39	908	4	126	2	25	19	6	37
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	44	2065	230	68	2326	1015	253	18	220	267	34	207
Arrive On Green	0.03	0.67	0.64	0.04	0.68	0.68	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1619	3103	345	1619	3420	1492	1308	114	1426	1325	217	1341
Grp Volume(v), veh/h	18	286	292	39	908	4	126	0	27	19	0	43
Grp Sat Flow(s),veh/h/ln	1619	1710	1738	1619	1710	1492	1308	0	1540	1325	0	1559
Q Serve(g_s), s	0.9	5.8	5.9	2.1	10.0	0.1	8.0	0.0	1.3	1.1	0.0	2.1
Cycle Q Clear(g_c), s	0.9	5.8	5.9	2.1	10.0	0.1	10.1	0.0	1.3	2.4	0.0	2.1
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.93	1.00		0.86
Lane Grp Cap(c), veh/h	44	1138	1156	68	2326	1015	253	0	238	267	0	240
V/C Ratio(X)	0.41	0.25	0.25	0.57	0.39	0.00	0.50	0.00	0.11	0.07	0.00	0.18
Avail Cap(c_a), veh/h	187	1138	1156	224	2326	1015	640	0	692	659	0	701
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.5	5.8	5.9	40.8	6.0	4.4	36.3	0.0	31.8	32.6	0.0	32.1
Incr Delay (d2), s/veh	2.2	0.5	0.5	2.8	0.5	0.0	1.5	0.0	0.2	0.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.7	1.8	0.8	2.7	0.0	2.7	0.0	0.5	0.4	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.8	6.4	6.4	43.6	6.5	4.5	37.8	0.0	32.0	32.7	0.0	32.5
LnGrp LOS	D	A	A	D	A	A	D	A	C	C	A	C
Approach Vol, veh/h		596			951			153			62	
Approach Delay, s/veh		7.5			8.0			36.8			32.6	
Approach LOS		A			A			D			C	

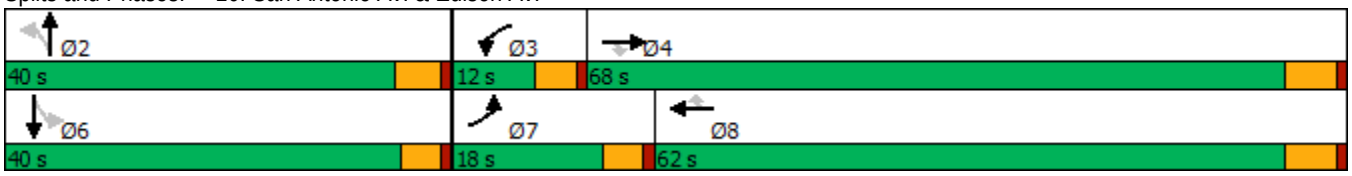
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		17.4	7.6	61.7		17.4	6.4	63.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		38.4	11.4	55.2		38.4	9.4	57.2				
Max Q Clear Time (g_c+I1), s		12.1	4.1	7.9		4.4	2.9	12.0				
Green Ext Time (p_c), s		0.5	0.0	3.4		0.3	0.0	7.0				

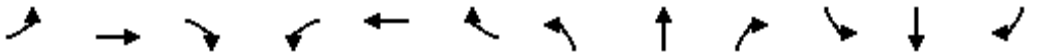
Intersection Summary												
HCM 6th Ctrl Delay			11.2									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	47	588	28	3	907	21	42	74	15	38
Future Volume (vph)	47	588	28	3	907	21	42	74	15	38
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	18.0	68.0	68.0	12.0	62.0	62.0	40.0	40.0	40.0	40.0
Total Split (%)	15.0%	56.7%	56.7%	10.0%	51.7%	51.7%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	8.2	69.2	69.2	5.9	61.0	61.0		16.4		16.4
Actuated g/C Ratio	0.09	0.72	0.72	0.06	0.64	0.64		0.17		0.17
v/c Ratio	0.37	0.26	0.03	0.05	0.45	0.02		0.61		0.48
Control Delay	50.8	6.2	0.6	48.3	11.5	0.0		46.9		23.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	50.8	6.2	0.6	48.3	11.5	0.0		46.9		23.5
LOS	D	A	A	D	B	A		D		C
Approach Delay		9.1			11.3			46.9		23.5
Approach LOS		A			B			D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 95.5	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 13.9	Intersection LOS: B
Intersection Capacity Utilization 58.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	588	28	3	907	21	42	74	14	15	38	94
Future Volume (veh/h)	47	588	28	3	907	21	42	74	14	15	38	94
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1000	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	51	639	22	3	986	23	46	80	6	16	41	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	76	2438	1086	10	2314	1032	119	162	11	62	88	115
Arrive On Green	0.05	0.71	0.71	0.01	0.68	0.68	0.14	0.14	0.13	0.14	0.14	0.13
Sat Flow, veh/h	1619	3420	1523	952	3420	1525	456	1138	76	122	638	840
Grp Volume(v), veh/h	51	639	22	3	986	23	132	0	0	120	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1523	952	1710	1525	1670	0	0	1599	0	0
Q Serve(g_s), s	2.8	5.9	0.4	0.3	11.8	0.4	0.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.8	5.9	0.4	0.3	11.8	0.4	6.2	0.0	0.0	6.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.35		0.05	0.13		0.52
Lane Grp Cap(c), veh/h	76	2438	1086	10	2314	1032	293	0	0	265	0	0
V/C Ratio(X)	0.67	0.26	0.02	0.29	0.43	0.02	0.45	0.00	0.00	0.45	0.00	0.00
Avail Cap(c_a), veh/h	252	2438	1086	85	2314	1032	699	0	0	674	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.1	4.6	3.8	44.1	6.6	4.8	35.7	0.0	0.0	36.2	0.0	0.0
Incr Delay (d2), s/veh	3.8	0.3	0.0	5.8	0.6	0.0	1.1	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.5	0.1	0.1	3.3	0.1	2.7	0.0	0.0	2.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.0	4.8	3.8	49.9	7.2	4.8	36.7	0.0	0.0	37.4	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		712			1012			132			120	
Approach Delay, s/veh		7.7			7.2			36.7			37.4	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.8	5.0	68.0		16.8	8.2	64.8				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		34.9	7.4	62.2		* 35	13.4	56.2				
Max Q Clear Time (g_c+I1), s		8.2	2.3	7.9		8.1	4.8	13.8				
Green Ext Time (p_c), s		0.7	0.0	4.5		0.7	0.0	7.8				

Intersection Summary	
HCM 6th Ctrl Delay	11.2
HCM 6th LOS	B

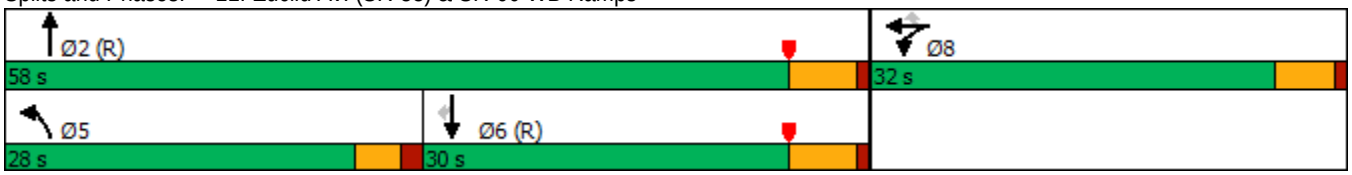
Notes

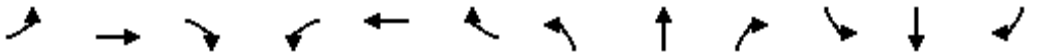
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	668	6	433	390	961	1011	498
Future Volume (vph)	668	6	433	390	961	1011	498
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	32.0	32.0	32.0	28.0	58.0	30.0	30.0
Total Split (%)	35.6%	35.6%	35.6%	31.1%	64.4%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	24.7	24.7	24.7	22.5	54.8	27.8	27.8
Actuated g/C Ratio	0.27	0.27	0.27	0.25	0.61	0.31	0.31
v/c Ratio	0.86	0.89	0.74	0.92	0.46	0.97	0.61
Control Delay	50.0	53.1	30.3	40.8	19.8	53.3	6.0
Queue Delay	0.0	0.0	0.0	0.0	1.3	0.0	0.0
Total Delay	50.0	53.1	30.3	40.8	21.1	53.3	6.0
LOS	D	D	C	D	C	D	A
Approach Delay		44.9			26.8	37.7	
Approach LOS		D			C	D	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 36.0	Intersection LOS: D
Intersection Capacity Utilization 101.1%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	668	6	433	390	961	0	0	1011	498
Future Volume (veh/h)	0	0	0	668	6	433	390	961	0	0	1011	498
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				789	0	163	415	1022	0	0	1076	302
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				890	0	396	438	2301	0	0	1245	556
Arrive On Green				0.25	0.00	0.25	0.48	1.00	0.00	0.00	0.35	0.35
Sat Flow, veh/h				3619	0	1610	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				789	0	163	415	1022	0	0	1076	302
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1610
Q Serve(g_s), s				18.9	0.0	7.6	19.7	0.0	0.0	0.0	25.0	13.6
Cycle Q Clear(g_c), s				18.9	0.0	7.6	19.7	0.0	0.0	0.0	25.0	13.6
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				890	0	396	438	2301	0	0	1245	556
V/C Ratio(X)				0.89	0.00	0.41	0.95	0.44	0.00	0.00	0.86	0.54
Avail Cap(c_a), veh/h				1086	0	483	472	2301	0	0	1245	556
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.42	0.42	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				32.7	0.0	28.5	22.6	0.0	0.0	0.0	27.5	23.8
Incr Delay (d2), s/veh				6.9	0.0	0.3	14.7	0.3	0.0	0.0	8.1	3.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.6	0.0	2.8	7.0	0.1	0.0	0.0	11.4	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				39.6	0.0	28.7	37.3	0.3	0.0	0.0	35.6	27.6
LnGrp LOS				D	A	C	D	A	A	A	D	C
Approach Vol, veh/h					952			1437			1378	
Approach Delay, s/veh					37.7			11.0			33.8	
Approach LOS					D			B			C	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	62.9		26.3	36.6		27.1						
Change Period (Y+Rc), s	5.5		4.5	5.5		5.0						
Max Green Setting (Gmax), s	52.5		23.5	24.5		27.0						
Max Q Clear Time (g_c+I1), s	2.0		21.7	27.0		20.9						
Green Ext Time (p_c), s	13.2		0.2	0.0		1.2						

Intersection Summary	
HCM 6th Ctrl Delay	26.1
HCM 6th LOS	C

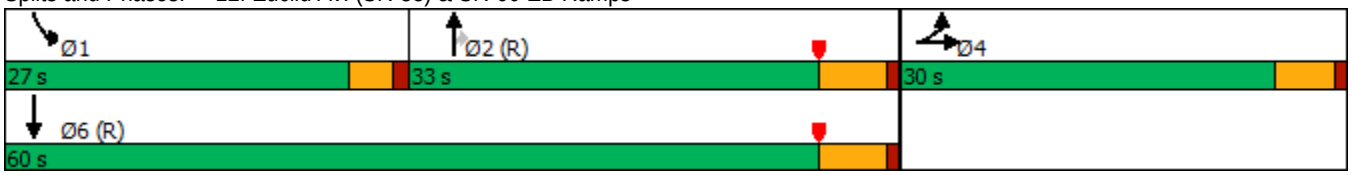
Notes

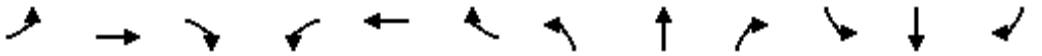
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	428	2	923	713	385	1294
Future Volume (vph)	428	2	923	713	385	1294
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	30.0	30.0	33.0	33.0	27.0	60.0
Total Split (%)	33.3%	33.3%	36.7%	36.7%	30.0%	66.7%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	24.1	24.1	29.4	29.4	22.0	55.4
Actuated g/C Ratio	0.27	0.27	0.33	0.33	0.24	0.62
v/c Ratio	0.89	0.95	0.83	0.80	0.92	0.61
Control Delay	54.2	60.7	36.0	13.3	54.9	5.9
Queue Delay	3.8	8.2	0.0	0.0	0.0	0.6
Total Delay	58.0	68.9	36.0	13.3	54.9	6.5
LOS	E	E	D	B	D	A
Approach Delay		63.6	26.1			17.6
Approach LOS		E	C			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 29.9	Intersection LOS: C
Intersection Capacity Utilization 101.1%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	428	2	365	0	0	0	0	923	713	385	1294	0
Future Volume (veh/h)	428	2	365	0	0	0	0	923	713	385	1294	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	391	86	329				0	972	552	405	1362	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	487	93	355				0	1189	516	435	2217	0
Arrive On Green	0.27	0.27	0.27				0.00	0.33	0.33	0.32	0.82	0.00
Sat Flow, veh/h	1810	345	1318				0	3705	1567	1810	3705	0
Grp Volume(v), veh/h	391	0	415				0	972	552	405	1362	0
Grp Sat Flow(s),veh/h/ln	1810	0	1663				0	1805	1567	1810	1805	0
Q Serve(g_s), s	18.1	0.0	21.9				0.0	22.2	29.6	19.5	12.5	0.0
Cycle Q Clear(g_c), s	18.1	0.0	21.9				0.0	22.2	29.6	19.5	12.5	0.0
Prop In Lane	1.00		0.79				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	487	0	448				0	1189	516	435	2217	0
V/C Ratio(X)	0.80	0.00	0.93				0.00	0.82	1.07	0.93	0.61	0.00
Avail Cap(c_a), veh/h	503	0	462				0	1189	516	462	2217	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.33	1.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.72	0.72	0.61	0.61	0.00
Uniform Delay (d), s/veh	30.7	0.0	32.0				0.0	27.7	30.2	29.9	4.3	0.0
Incr Delay (d2), s/veh	8.1	0.0	24.0				0.0	4.6	53.9	17.0	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	0.0	11.1				0.0	9.7	18.1	9.3	2.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.8	0.0	56.1				0.0	32.3	84.1	46.9	5.1	0.0
LnGrp LOS	D	A	E				A	C	F	D	A	A
Approach Vol, veh/h		806						1524			1767	
Approach Delay, s/veh		47.7						51.1			14.7	
Approach LOS		D						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	25.6	35.1		29.2		60.8
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	23.0	27.5		25.0		54.5
Max Q Clear Time (g_c+I1), s	21.5	31.6		23.9		14.5
Green Ext Time (p_c), s	0.1	0.0		0.3		18.8

Intersection Summary	
HCM 6th Ctrl Delay	34.7
HCM 6th LOS	C

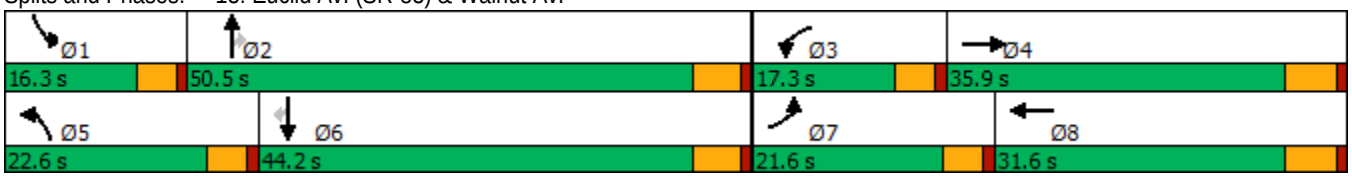
Notes

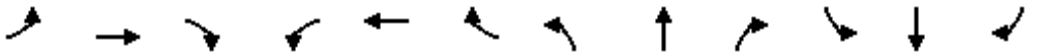
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	120	306	76	326	133	1249	48	159	1304	63
Future Volume (vph)	120	306	76	326	133	1249	48	159	1304	63
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	21.6	35.9	17.3	31.6	22.6	50.5	50.5	16.3	44.2	44.2
Total Split (%)	18.0%	29.9%	14.4%	26.3%	18.8%	42.1%	42.1%	13.6%	36.8%	36.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	12.5	26.3	9.4	20.9	13.4	45.5	45.5	9.9	42.1	42.1
Actuated g/C Ratio	0.11	0.24	0.09	0.19	0.12	0.42	0.42	0.09	0.38	0.38
v/c Ratio	0.68	0.54	0.58	0.81	0.71	0.64	0.07	0.63	0.73	0.10
Control Delay	66.9	36.2	66.6	43.2	67.1	28.7	0.2	60.4	33.6	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.9	36.2	66.6	43.2	67.1	28.7	0.2	60.4	33.6	0.3
LOS	E	D	E	D	E	C	A	E	C	A
Approach Delay		43.0		46.1		31.3			35.0	
Approach LOS		D		D		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 36.4	Intersection LOS: D
Intersection Capacity Utilization 76.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	306	117	76	326	216	133	1249	48	159	1304	63
Future Volume (veh/h)	120	306	117	76	326	216	133	1249	48	159	1304	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	126	322	87	80	343	187	140	1315	33	167	1373	45
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	152	606	161	100	418	224	167	2153	668	222	2015	625
Arrive On Green	0.09	0.23	0.23	0.06	0.19	0.19	0.10	0.44	0.44	0.08	0.41	0.41
Sat Flow, veh/h	1619	2671	711	1619	2150	1149	1619	4914	1524	2956	4914	1524
Grp Volume(v), veh/h	126	204	205	80	271	259	140	1315	33	167	1373	45
Grp Sat Flow(s),veh/h/ln	1619	1710	1672	1619	1710	1589	1619	1638	1524	1478	1638	1524
Q Serve(g_s), s	7.9	10.8	11.1	5.0	15.6	16.1	8.7	21.1	1.3	5.7	23.5	1.8
Cycle Q Clear(g_c), s	7.9	10.8	11.1	5.0	15.6	16.1	8.7	21.1	1.3	5.7	23.5	1.8
Prop In Lane	1.00		0.43	1.00		0.72	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	388	379	100	333	309	167	2153	668	222	2015	625
V/C Ratio(X)	0.83	0.53	0.54	0.80	0.82	0.84	0.84	0.61	0.05	0.75	0.68	0.07
Avail Cap(c_a), veh/h	267	500	489	200	429	398	283	2153	668	336	2015	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.8	34.9	35.0	47.7	39.7	39.9	45.3	22.2	16.6	46.7	24.9	18.5
Incr Delay (d2), s/veh	4.3	1.1	1.2	5.5	9.2	11.6	4.2	1.3	0.1	1.9	1.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	4.4	4.4	2.1	7.1	7.0	3.6	7.9	0.4	2.1	8.9	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.1	36.0	36.2	53.2	48.9	51.5	49.5	23.5	16.7	48.6	26.7	18.7
LnGrp LOS	D	D	D	D	D	D	D	C	B	D	C	B
Approach Vol, veh/h		535			610			1488			1585	
Approach Delay, s/veh		39.4			50.5			25.8			28.8	
Approach LOS		D			D			C			C	

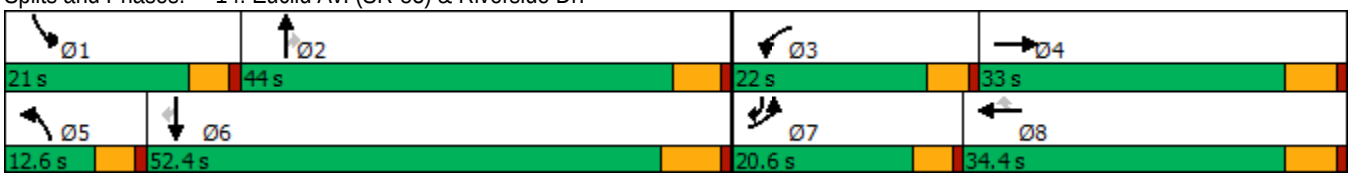
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	50.5	10.9	29.2	15.2	47.6	14.3	25.8
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	11.7	45.1	12.7	30.1	18.0	38.8	17.0	25.8
Max Q Clear Time (g_c+I1), s	7.7	23.1	7.0	13.1	10.7	25.5	9.9	18.1
Green Ext Time (p_c), s	0.1	9.6	0.0	2.0	0.1	7.5	0.1	1.8

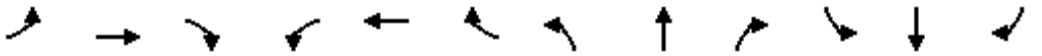
Intersection Summary	
HCM 6th Ctrl Delay	32.2
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	162	330	200	517	122	74	1023	166	184	1108	161
Future Volume (vph)	162	330	200	517	122	74	1023	166	184	1108	161
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	20.6	33.0	22.0	34.4	34.4	12.6	44.0	44.0	21.0	52.4	20.6
Total Split (%)	17.2%	27.5%	18.3%	28.7%	28.7%	10.5%	36.7%	36.7%	17.5%	43.7%	17.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None
Act Effct Green (s)	14.8	27.2	16.9	29.3	29.3	7.7	38.9	38.9	15.8	45.9	62.7
Actuated g/C Ratio	0.12	0.23	0.14	0.25	0.25	0.06	0.33	0.33	0.13	0.39	0.53
v/c Ratio	0.85	1.01	0.92	0.65	0.26	0.76	0.97	0.29	0.91	0.89	0.20
Control Delay	85.7	92.1	93.5	44.9	4.3	95.6	59.8	8.1	93.5	43.8	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.7	92.1	93.5	44.9	4.3	95.6	59.8	8.1	93.5	43.8	6.3
LOS	F	F	F	D	A	F	E	A	F	D	A
Approach Delay		90.3		50.6			55.1			45.9	
Approach LOS		F		D			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.2	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 55.7	Intersection LOS: E
Intersection Capacity Utilization 92.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	330	60	200	517	122	74	1023	166	184	1108	161
Future Volume (veh/h)	162	330	60	200	517	122	74	1023	166	184	1108	161
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	171	347	47	211	544	99	78	1077	135	194	1166	110
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	195	349	47	233	850	379	96	1092	487	217	1347	784
Arrive On Green	0.12	0.22	0.22	0.14	0.25	0.25	0.06	0.32	0.32	0.13	0.39	0.39
Sat Flow, veh/h	1619	1552	210	1619	3420	1525	1619	3420	1525	1619	3420	1524
Grp Volume(v), veh/h	171	0	394	211	544	99	78	1077	135	194	1166	110
Grp Sat Flow(s),veh/h/ln	1619	0	1762	1619	1710	1525	1619	1710	1525	1619	1710	1524
Q Serve(g_s), s	12.6	0.0	27.0	15.5	17.2	6.3	5.8	37.8	8.0	14.3	37.9	4.6
Cycle Q Clear(g_c), s	12.6	0.0	27.0	15.5	17.2	6.3	5.8	37.8	8.0	14.3	37.9	4.6
Prop In Lane	1.00		0.12	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	195	0	396	233	850	379	96	1092	487	217	1347	784
V/C Ratio(X)	0.88	0.00	0.99	0.91	0.64	0.26	0.81	0.99	0.28	0.89	0.87	0.14
Avail Cap(c_a), veh/h	214	0	396	233	850	379	107	1092	487	220	1347	784
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.3	0.0	46.8	51.0	40.6	36.5	56.2	40.9	30.7	51.5	33.7	15.4
Incr Delay (d2), s/veh	27.8	0.0	43.6	34.1	1.6	0.4	29.6	24.2	1.4	32.4	7.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	0.0	16.2	8.3	7.2	2.3	3.1	18.5	3.0	7.6	16.5	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.1	0.0	90.3	85.0	42.2	36.9	85.8	65.1	32.2	83.9	41.3	15.8
LnGrp LOS	F	A	F	F	D	D	F	E	C	F	D	B
Approach Vol, veh/h		565			854			1290			1470	
Approach Delay, s/veh		87.2			52.2			62.9			45.0	
Approach LOS		F			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.8	45.1	22.0	33.0	11.8	54.1	19.1	35.9
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	16.4	* 39	17.4	27.2	8.0	45.9	16.0	28.6
Max Q Clear Time (g_c+I1), s	16.3	39.8	17.5	29.0	7.8	39.9	14.6	19.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	3.8	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	57.7
HCM 6th LOS	E

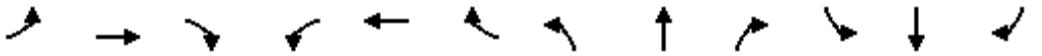
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	110	175	42	76	160	51	1095	137	59	1188	98
Future Volume (vph)	110	175	42	76	160	51	1095	137	59	1188	98
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	44.0	44.0	44.0	44.0	44.0	15.0	60.0	60.0	16.0	61.0	61.0
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	12.5%	50.0%	50.0%	13.3%	50.8%	50.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	26.5	26.5	26.5		26.5	7.8	56.3	56.3	8.3	55.4	55.4
Actuated g/C Ratio	0.25	0.25	0.25		0.25	0.07	0.54	0.54	0.08	0.53	0.53
v/c Ratio	0.63	0.41	0.10		0.90	0.45	0.63	0.17	0.50	0.70	0.12
Control Delay	50.8	35.3	2.7		66.2	62.0	21.6	9.7	62.9	23.6	4.8
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	35.3	2.7		66.2	62.0	21.6	9.7	62.9	23.6	4.8
LOS	D	D	A		E	E	C	A	E	C	A
Approach Delay		36.3			66.2		21.9			23.9	
Approach LOS		D			E		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 104.5	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 28.1	Intersection LOS: C
Intersection Capacity Utilization 84.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	175	42	76	160	54	51	1095	137	59	1188	98
Future Volume (veh/h)	110	175	42	76	160	54	51	1095	137	59	1188	98
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	117	186	29	81	170	45	54	1165	122	63	1264	73
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	226	465	393	117	212	51	67	1812	808	79	1837	802
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.04	0.53	0.53	0.05	0.54	0.54
Sat Flow, veh/h	1119	1800	1524	281	822	198	1619	3420	1525	1619	3420	1494
Grp Volume(v), veh/h	117	186	29	296	0	0	54	1165	122	63	1264	73
Grp Sat Flow(s),veh/h/ln	1119	1800	1524	1301	0	0	1619	1710	1525	1619	1710	1494
Q Serve(g_s), s	0.0	8.8	1.5	14.5	0.0	0.0	3.4	25.1	4.2	4.0	28.1	2.5
Cycle Q Clear(g_c), s	21.6	8.8	1.5	23.4	0.0	0.0	3.4	25.1	4.2	4.0	28.1	2.5
Prop In Lane	1.00		1.00	0.27		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	226	465	393	380	0	0	67	1812	808	79	1837	802
V/C Ratio(X)	0.52	0.40	0.07	0.78	0.00	0.00	0.81	0.64	0.15	0.80	0.69	0.09
Avail Cap(c_a), veh/h	350	665	563	551	0	0	163	1812	808	178	1837	802
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.5	31.7	29.0	38.1	0.0	0.0	49.1	17.3	12.4	48.7	17.6	11.6
Incr Delay (d2), s/veh	1.8	0.6	0.1	4.4	0.0	0.0	8.2	1.8	0.4	6.9	2.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	3.8	0.5	7.4	0.0	0.0	1.5	8.8	1.3	1.7	9.8	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.3	32.3	29.1	42.4	0.0	0.0	57.3	19.1	12.8	55.6	19.7	11.9
LnGrp LOS	D	C	C	D	A	A	E	B	B	E	B	B
Approach Vol, veh/h		332			296			1341			1400	
Approach Delay, s/veh		34.1			42.4			20.1			20.9	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	61.3		32.5	8.9	62.0		32.5				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	11.4	* 55		38.2	10.4	54.5		38.2				
Max Q Clear Time (g_c+I1), s	6.0	27.1		23.6	5.4	30.1		25.4				
Green Ext Time (p_c), s	0.0	8.8		1.2	0.0	9.2		1.3				

Intersection Summary			
HCM 6th Ctrl Delay		23.8	
HCM 6th LOS		C	

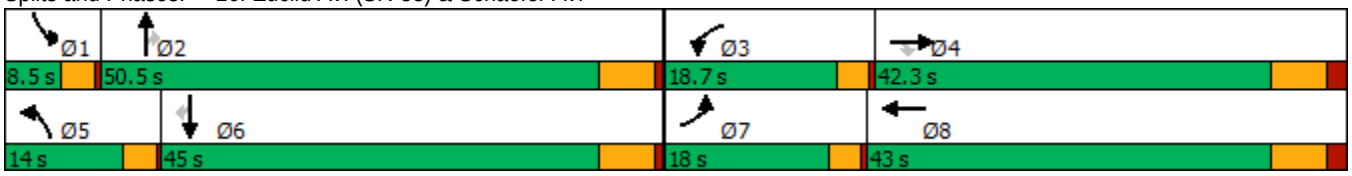
Notes

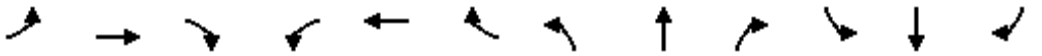
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	162	77	66	149	187	111	1059	37	31	1094	129
Future Volume (vph)	162	77	66	149	187	111	1059	37	31	1094	129
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	18.0	42.3	42.3	18.7	43.0	14.0	50.5	50.5	8.5	45.0	45.0
Total Split (%)	15.0%	35.3%	35.3%	15.6%	35.8%	11.7%	42.1%	42.1%	7.1%	37.5%	37.5%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	13.9	17.6	17.6	17.9	18.6	10.1	48.1	48.1	5.0	39.4	39.4
Actuated g/C Ratio	0.14	0.17	0.17	0.18	0.18	0.10	0.47	0.47	0.05	0.39	0.39
v/c Ratio	0.79	0.27	0.19	0.57	0.66	0.75	0.71	0.05	0.42	0.89	0.21
Control Delay	70.1	37.4	1.8	51.8	47.6	74.8	27.1	0.1	66.8	40.8	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.1	37.4	1.8	51.8	47.6	74.8	27.1	0.1	66.8	40.8	6.1
LOS	E	D	A	D	D	E	C	A	E	D	A
Approach Delay		47.0			49.4		30.7			37.9	
Approach LOS		D			D		C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 37.3	Intersection LOS: D
Intersection Capacity Utilization 79.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	77	66	149	187	12	111	1059	37	31	1094	129
Future Volume (veh/h)	162	77	66	149	187	12	111	1059	37	31	1094	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	174	83	52	160	201	11	119	1139	30	33	1176	105
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	206	297	251	191	264	14	146	1559	695	51	1358	604
Arrive On Green	0.13	0.16	0.16	0.12	0.16	0.16	0.09	0.46	0.46	0.03	0.40	0.40
Sat Flow, veh/h	1619	1800	1525	1619	1690	92	1619	3420	1525	1619	3420	1522
Grp Volume(v), veh/h	174	83	52	160	0	212	119	1139	30	33	1176	105
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1783	1619	1710	1525	1619	1710	1522
Q Serve(g_s), s	9.2	3.5	2.6	8.4	0.0	9.9	6.3	23.7	1.0	1.8	27.5	3.9
Cycle Q Clear(g_c), s	9.2	3.5	2.6	8.4	0.0	9.9	6.3	23.7	1.0	1.8	27.5	3.9
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	206	297	251	191	0	278	146	1559	695	51	1358	604
V/C Ratio(X)	0.85	0.28	0.21	0.84	0.00	0.76	0.82	0.73	0.04	0.65	0.87	0.17
Avail Cap(c_a), veh/h	270	730	619	283	0	737	195	1748	780	93	1532	682
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.2	31.8	31.4	37.6	0.0	35.2	38.9	19.3	13.2	41.7	24.1	17.0
Incr Delay (d2), s/veh	13.9	0.4	0.3	8.7	0.0	3.2	13.3	1.4	0.0	5.0	5.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	1.5	0.9	3.6	0.0	4.3	2.8	8.1	0.3	0.7	10.4	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.1	32.2	31.7	46.3	0.0	38.4	52.2	20.7	13.2	46.7	29.1	17.1
LnGrp LOS	D	C	C	D	A	D	D	C	B	D	C	B
Approach Vol, veh/h		309			372			1288			1314	
Approach Delay, s/veh		42.8			41.8			23.5			28.6	
Approach LOS		D			D			C			C	

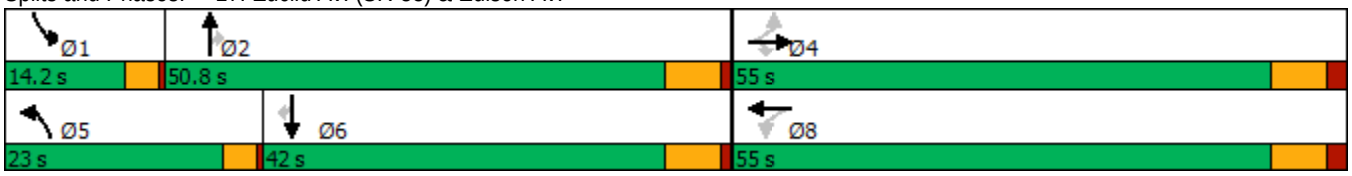
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	45.7	13.8	21.4	11.3	40.6	14.6	20.6
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	44.5	15.2	35.3	10.5	39.0	14.5	36.0
Max Q Clear Time (g_c+I1), s	3.8	25.7	10.4	5.5	8.3	29.5	11.2	11.9
Green Ext Time (p_c), s	0.0	7.1	0.1	0.4	0.0	5.1	0.1	0.8

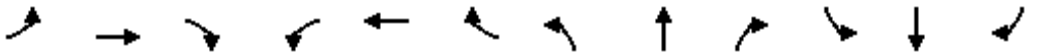
Intersection Summary	
HCM 6th Ctrl Delay	29.4
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	165	269	121	36	447	230	991	40	71	972	177
Future Volume (vph)	165	269	121	36	447	230	991	40	71	972	177
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	55.0	55.0	55.0	55.0	55.0	23.0	50.8	50.8	14.2	42.0	42.0
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	19.2%	42.3%	42.3%	11.8%	35.0%	35.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	45.0	45.0	45.0	45.0	45.0	18.8	48.1	48.1	8.8	36.1	36.1
Actuated g/C Ratio	0.39	0.39	0.39	0.39	0.39	0.16	0.41	0.41	0.08	0.31	0.31
v/c Ratio	1.19	0.40	0.19	0.11	0.78	0.92	0.73	0.06	0.61	0.95	0.33
Control Delay	170.6	27.9	4.7	23.9	40.2	88.8	34.5	2.4	73.7	59.2	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	170.6	27.9	4.7	23.9	40.2	88.8	34.5	2.4	73.7	59.2	12.1
LOS	F	C	A	C	D	F	C	A	E	E	B
Approach Delay		65.3			39.1		43.4			53.2	
Approach LOS		E			D		D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.5	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.19	
Intersection Signal Delay: 49.5	Intersection LOS: D
Intersection Capacity Utilization 102.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	269	121	36	447	68	230	991	40	71	972	177
Future Volume (veh/h)	165	269	121	36	447	68	230	991	40	71	972	177
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	172	280	71	38	466	66	240	1032	34	74	1012	133
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	177	720	610	346	617	87	263	1388	619	92	1026	447
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.16	0.41	0.41	0.06	0.30	0.30
Sat Flow, veh/h	836	1800	1524	988	1542	218	1619	3420	1525	1619	3420	1489
Grp Volume(v), veh/h	172	280	71	38	0	532	240	1032	34	74	1012	133
Grp Sat Flow(s),veh/h/ln	836	1800	1524	988	0	1760	1619	1710	1525	1619	1710	1489
Q Serve(g_s), s	16.8	13.3	3.5	3.4	0.0	31.2	17.5	30.8	1.6	5.4	35.3	8.2
Cycle Q Clear(g_c), s	48.0	13.3	3.5	16.7	0.0	31.2	17.5	30.8	1.6	5.4	35.3	8.2
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	177	720	610	346	0	704	263	1388	619	92	1026	447
V/C Ratio(X)	0.97	0.39	0.12	0.11	0.00	0.76	0.91	0.74	0.05	0.81	0.99	0.30
Avail Cap(c_a), veh/h	177	720	610	346	0	704	263	1388	619	144	1026	447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.3	25.6	22.6	31.5	0.0	30.9	49.4	30.3	21.7	55.9	41.7	32.3
Incr Delay (d2), s/veh	58.6	0.3	0.1	0.1	0.0	4.7	32.8	2.2	0.0	7.7	24.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	5.5	1.2	0.8	0.0	13.4	9.1	12.1	0.6	2.3	17.4	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	112.9	25.9	22.7	31.6	0.0	35.6	82.2	32.6	21.7	63.7	66.4	32.6
LnGrp LOS	F	C	C	C	A	D	F	C	C	E	E	C
Approach Vol, veh/h		523			570			1306			1219	
Approach Delay, s/veh		54.1			35.3			41.4			62.6	
Approach LOS		D			D			D			E	

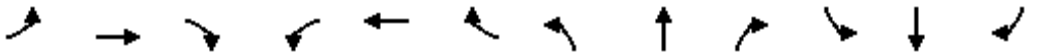
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.3	54.7		55.0	23.0	42.0		55.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	10.7	44.8		48.0	19.5	36.0		48.0				
Max Q Clear Time (g_c+I1), s	7.4	32.8		50.0	19.5	37.3		33.2				
Green Ext Time (p_c), s	0.0	5.0		0.0	0.0	0.0		2.9				

Intersection Summary												
HCM 6th Ctrl Delay			49.4									
HCM 6th LOS			D									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	71	27	166	34	160	182	1196	13	53	1126	42
Future Volume (vph)	71	27	166	34	160	182	1196	13	53	1126	42
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	46.8	46.8	46.8	46.8	46.8	24.0	63.5	63.5	9.7	49.2	49.2
Total Split (%)	39.0%	39.0%	39.0%	39.0%	39.0%	20.0%	52.9%	52.9%	8.1%	41.0%	41.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	17.9	17.9	17.9	17.9	17.9	14.8	47.4	47.4	6.4	36.2	36.2
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.18	0.56	0.56	0.08	0.43	0.43
v/c Ratio	0.41	0.07	0.37	0.13	0.55	0.65	0.63	0.01	0.44	0.78	0.06
Control Delay	37.7	28.2	7.0	29.4	34.1	48.0	16.5	0.0	56.9	27.0	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.7	28.2	7.0	29.4	34.1	48.0	16.5	0.0	56.9	27.0	1.2
LOS	D	C	A	C	C	D	B	A	E	C	A
Approach Delay		17.4			33.5		20.5			27.4	
Approach LOS		B			C		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 83.9	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 23.9	Intersection LOS: C
Intersection Capacity Utilization 76.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	27	166	34	160	47	182	1196	13	53	1126	42
Future Volume (veh/h)	71	27	166	34	160	47	182	1196	13	53	1126	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	72	28	83	35	163	40	186	1220	12	54	1149	32
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	224	369	312	348	286	70	228	1813	809	78	1495	666
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.14	0.53	0.53	0.05	0.44	0.44
Sat Flow, veh/h	1131	1800	1525	1230	1396	343	1619	3420	1525	1619	3420	1524
Grp Volume(v), veh/h	72	28	83	35	0	203	186	1220	12	54	1149	32
Grp Sat Flow(s),veh/h/ln	1131	1800	1525	1230	0	1738	1619	1710	1525	1619	1710	1524
Q Serve(g_s), s	3.9	0.8	3.0	1.5	0.0	6.8	7.2	16.8	0.2	2.1	18.4	0.8
Cycle Q Clear(g_c), s	10.7	0.8	3.0	2.3	0.0	6.8	7.2	16.8	0.2	2.1	18.4	0.8
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	224	369	312	348	0	356	228	1813	809	78	1495	666
V/C Ratio(X)	0.32	0.08	0.27	0.10	0.00	0.57	0.81	0.67	0.01	0.69	0.77	0.05
Avail Cap(c_a), veh/h	729	1172	993	897	0	1132	514	3064	1367	156	2306	1027
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	20.7	21.6	21.7	0.0	23.1	26.9	11.1	7.2	30.2	15.4	10.4
Incr Delay (d2), s/veh	0.6	0.1	0.3	0.1	0.0	1.1	5.2	0.4	0.0	8.0	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.3	1.0	0.4	0.0	2.6	2.7	4.3	0.1	0.9	5.4	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.5	20.8	21.9	21.8	0.0	24.2	32.1	11.5	7.2	38.2	16.2	10.5
LnGrp LOS	C	C	C	C	A	C	C	B	A	D	B	B
Approach Vol, veh/h		183			238			1418			1235	
Approach Delay, s/veh		24.3			23.8			14.2			17.1	
Approach LOS		C			C			B			B	

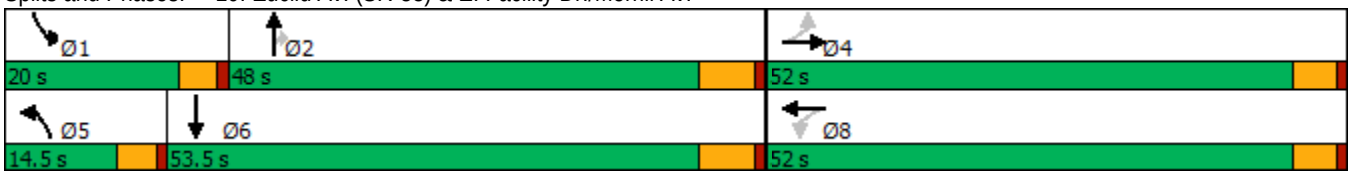
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	39.9		18.0	12.6	33.9		18.0				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	6.2	57.8		42.0	20.5	43.5		42.0				
Max Q Clear Time (g_c+I1), s	4.1	18.8		12.7	9.2	20.4		8.8				
Green Ext Time (p_c), s	0.0	9.7		0.5	0.2	7.8		0.9				

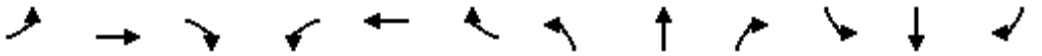
Intersection Summary			
HCM 6th Ctrl Delay		16.7	
HCM 6th LOS		B	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	4	8	248	50	11	1041	179	164	1108
Future Volume (vph)	4	8	248	50	11	1041	179	164	1108
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	52.0	52.0	52.0	52.0	14.5	48.0	48.0	20.0	53.5
Total Split (%)	43.3%	43.3%	43.3%	43.3%	12.1%	40.0%	40.0%	16.7%	44.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		47.1		47.1	10.0	40.2	40.2	14.5	56.4
Actuated g/C Ratio		0.40		0.40	0.09	0.34	0.34	0.12	0.48
v/c Ratio		0.05		1.09	0.08	0.91	0.31	0.85	0.72
Control Delay		12.9		95.2	52.4	49.8	14.6	85.6	28.2
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		12.9		95.2	52.4	49.8	14.6	85.6	28.2
LOS		B		F	D	D	B	F	C
Approach Delay		12.9		95.2		44.7			35.3
Approach LOS		B		F		D			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.3	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 50.7	Intersection LOS: D
Intersection Capacity Utilization 101.3%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	8	18	248	50	346	11	1041	179	164	1108	41
Future Volume (veh/h)	4	8	18	248	50	346	11	1041	179	164	1108	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	4	8	18	256	52	330	11	1073	142	169	1142	28
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	95	189	373	287	49	314	42	1173	523	194	1489	37
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.03	0.34	0.34	0.12	0.44	0.44
Sat Flow, veh/h	147	468	922	602	122	776	1619	3420	1525	1619	3409	84
Grp Volume(v), veh/h	30	0	0	638	0	0	11	1073	142	169	573	597
Grp Sat Flow(s),veh/h/ln	1536	0	0	1501	0	0	1619	1710	1525	1619	1710	1783
Q Serve(g_s), s	0.0	0.0	0.0	45.7	0.0	0.0	0.8	34.9	7.8	11.9	33.0	33.0
Cycle Q Clear(g_c), s	1.3	0.0	0.0	47.0	0.0	0.0	0.8	34.9	7.8	11.9	33.0	33.0
Prop In Lane	0.13		0.60	0.40		0.52	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	656	0	0	650	0	0	42	1173	523	194	747	779
V/C Ratio(X)	0.05	0.00	0.00	0.98	0.00	0.00	0.26	0.91	0.27	0.87	0.77	0.77
Avail Cap(c_a), veh/h	656	0	0	650	0	0	139	1235	551	216	747	779
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.0	0.0	0.0	35.7	0.0	0.0	55.6	36.6	27.7	50.3	27.7	27.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	30.5	0.0	0.0	1.2	10.3	0.3	26.3	4.8	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	22.7	0.0	0.0	0.3	15.2	2.7	6.0	13.2	13.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.0	0.0	0.0	66.2	0.0	0.0	56.8	46.9	28.0	76.6	32.5	32.4
LnGrp LOS	C	A	A	E	A	A	E	D	C	E	C	C
Approach Vol, veh/h		30			638			1226			1339	
Approach Delay, s/veh		21.0			66.2			44.8			38.0	
Approach LOS		C			E			D			D	

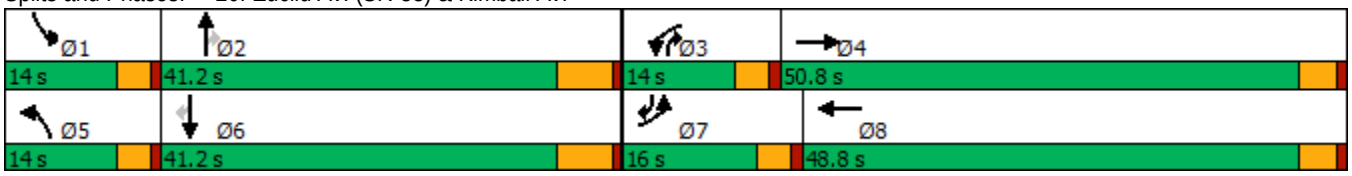
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.4	45.9		52.0	7.5	56.8		52.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	15.5	42.0		47.0	10.0	47.5		47.0				
Max Q Clear Time (g_c+I1), s	13.9	36.9		3.3	2.8	35.0		49.0				
Green Ext Time (p_c), s	0.0	3.0		0.1	0.0	5.3		0.0				

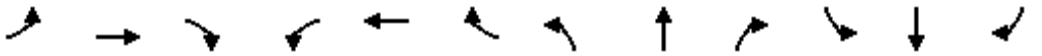
Intersection Summary			
HCM 6th Ctrl Delay		46.0	
HCM 6th LOS		D	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	133	255	52	779	103	829	44	220	678	402
Future Volume (vph)	133	255	52	779	103	829	44	220	678	402
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	16.0	50.8	14.0	48.8	14.0	41.2	14.0	14.0	41.2	16.0
Total Split (%)	13.3%	42.3%	11.7%	40.7%	11.7%	34.3%	11.7%	11.7%	34.3%	13.3%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	10.7	41.3	10.1	37.3	10.1	31.4	47.6	10.1	31.3	44.1
Actuated g/C Ratio	0.10	0.38	0.09	0.34	0.09	0.29	0.44	0.09	0.29	0.41
v/c Ratio	0.47	0.23	0.35	0.88	0.70	0.85	0.06	0.81	0.70	0.61
Control Delay	54.4	23.2	57.3	42.6	75.1	46.6	5.2	73.5	39.3	22.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.4	23.2	57.3	42.6	75.1	46.6	5.2	73.5	39.3	22.5
LOS	D	C	E	D	E	D	A	E	D	C
Approach Delay		32.9		43.3		47.7			39.9	
Approach LOS		C		D		D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 42.1	Intersection LOS: D
Intersection Capacity Utilization 85.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	133	255	39	52	779	228	103	829	44	220	678	402
Future Volume (veh/h)	133	255	39	52	779	228	103	829	44	220	678	402
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	136	260	31	53	795	197	105	846	33	224	692	281
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	291	1084	128	125	899	223	154	993	561	279	990	586
Arrive On Green	0.10	0.35	0.35	0.08	0.33	0.33	0.10	0.29	0.29	0.09	0.29	0.29
Sat Flow, veh/h	2956	3081	364	1619	2716	673	1619	3420	1525	2956	3420	1506
Grp Volume(v), veh/h	136	143	148	53	501	491	105	846	33	224	692	281
Grp Sat Flow(s),veh/h/ln	1478	1710	1735	1619	1710	1679	1619	1710	1525	1478	1710	1506
Q Serve(g_s), s	4.3	5.9	6.0	3.1	27.5	27.5	6.2	23.2	1.4	7.4	17.9	14.0
Cycle Q Clear(g_c), s	4.3	5.9	6.0	3.1	27.5	27.5	6.2	23.2	1.4	7.4	17.9	14.0
Prop In Lane	1.00		0.21	1.00		0.40	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	291	602	610	125	566	556	154	993	561	279	990	586
V/C Ratio(X)	0.47	0.24	0.24	0.42	0.88	0.88	0.68	0.85	0.06	0.80	0.70	0.48
Avail Cap(c_a), veh/h	357	797	808	163	762	748	163	1211	658	297	1211	683
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	22.8	22.8	43.7	31.5	31.5	43.5	33.3	20.3	44.1	31.4	22.9
Incr Delay (d2), s/veh	0.4	0.2	0.2	0.8	7.8	7.9	8.2	5.1	0.0	12.5	1.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	2.3	2.4	1.2	11.8	11.6	2.7	9.5	0.5	3.0	6.9	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.8	23.0	23.0	44.6	39.3	39.4	51.7	38.4	20.4	56.6	32.8	23.5
LnGrp LOS	D	C	C	D	D	D	D	D	C	E	C	C
Approach Vol, veh/h		427			1045			984			1197	
Approach Delay, s/veh		29.3			39.6			39.2			35.1	
Approach LOS		C			D			D			D	

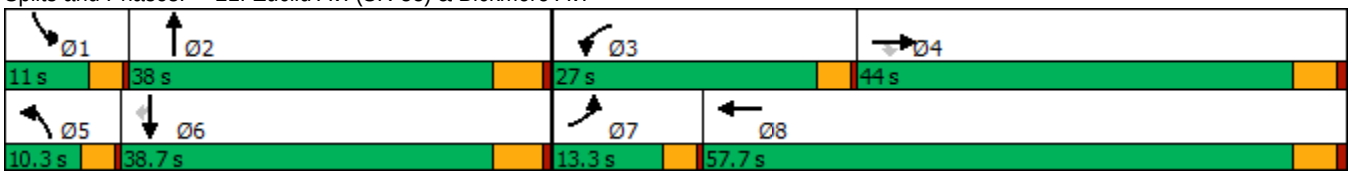
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	34.8	11.7	39.5	13.4	34.8	13.8	37.4
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	10.0	35.2	10.0	46.3	10.0	35.2	12.0	44.3
Max Q Clear Time (g_c+I1), s	9.4	25.2	5.1	8.0	8.2	19.9	6.3	29.5
Green Ext Time (p_c), s	0.0	3.7	0.0	1.6	0.0	4.5	0.1	3.4

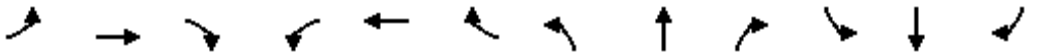
Intersection Summary	
HCM 6th Ctrl Delay	36.8
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	60	11	32	190	215	55	655	44	637	180
Future Volume (vph)	60	11	32	190	215	55	655	44	637	180
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	13.3	44.0	44.0	27.0	57.7	10.3	38.0	11.0	38.7	38.7
Total Split (%)	11.1%	36.7%	36.7%	22.5%	48.1%	8.6%	31.7%	9.2%	32.3%	32.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	8.5	15.6	15.6	22.3	26.4	7.5	25.1	7.5	23.0	23.0
Actuated g/C Ratio	0.11	0.20	0.20	0.28	0.34	0.10	0.32	0.10	0.29	0.29
v/c Ratio	0.38	0.03	0.09	0.46	0.70	0.40	0.70	0.32	0.70	0.34
Control Delay	49.0	27.5	0.4	36.5	29.2	52.4	31.2	49.9	32.4	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	27.5	0.4	36.5	29.2	52.4	31.2	49.9	32.4	6.3
LOS	D	C	A	D	C	D	C	D	C	A
Approach Delay		31.6			31.7		32.7		27.8	
Approach LOS		C			C		C		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 78.3	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 30.6	Intersection LOS: C
Intersection Capacity Utilization 66.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	11	32	190	215	161	55	655	28	44	637	180
Future Volume (veh/h)	60	11	32	190	215	161	55	655	28	44	637	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	67	12	32	211	239	140	61	728	24	49	708	152
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	96	314	266	260	293	172	91	967	32	79	954	425
Arrive On Green	0.06	0.17	0.17	0.16	0.28	0.28	0.06	0.29	0.29	0.05	0.28	0.28
Sat Flow, veh/h	1619	1800	1525	1619	1064	623	1619	3379	111	1619	3420	1525
Grp Volume(v), veh/h	67	12	32	211	0	379	61	368	384	49	708	152
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1688	1619	1710	1780	1619	1710	1525
Q Serve(g_s), s	2.2	0.3	0.9	6.7	0.0	11.1	2.0	10.4	10.4	1.6	10.0	4.2
Cycle Q Clear(g_c), s	2.2	0.3	0.9	6.7	0.0	11.1	2.0	10.4	10.4	1.6	10.0	4.2
Prop In Lane	1.00		1.00	1.00		0.37	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	96	314	266	260	0	465	91	490	510	79	954	425
V/C Ratio(X)	0.70	0.04	0.12	0.81	0.00	0.82	0.67	0.75	0.75	0.62	0.74	0.36
Avail Cap(c_a), veh/h	300	1326	1124	719	0	1680	208	1050	1092	229	2144	956
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.4	18.2	18.4	21.5	0.0	17.9	24.5	17.2	17.2	24.7	17.4	15.3
Incr Delay (d2), s/veh	3.4	0.0	0.1	2.3	0.0	1.3	3.2	0.9	0.9	3.0	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.1	0.3	2.3	0.0	3.7	0.7	3.2	3.3	0.6	3.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.9	18.2	18.5	23.8	0.0	19.3	27.7	18.1	18.0	27.7	17.8	15.5
LnGrp LOS	C	B	B	C	A	B	C	B	B	C	B	B
Approach Vol, veh/h		111			590			813			909	
Approach Delay, s/veh		24.1			20.9			18.8			17.9	
Approach LOS		C			C			B			B	

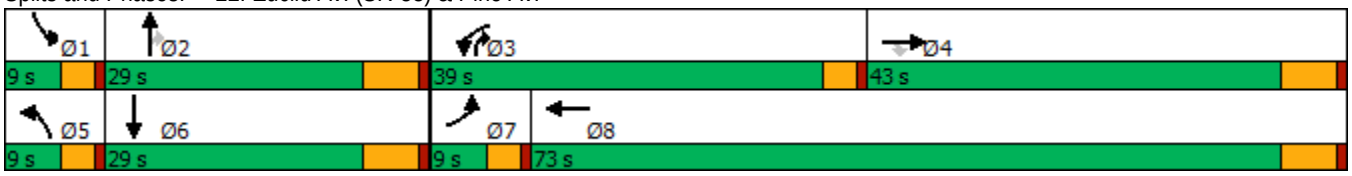
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.1	20.7	12.0	14.2	6.5	20.3	6.6	19.6
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	7.5	32.5	23.5	39.0	6.8	33.2	9.8	52.7
Max Q Clear Time (g_c+I1), s	3.6	12.4	8.7	2.9	4.0	12.0	4.2	13.1
Green Ext Time (p_c), s	0.0	2.3	0.2	0.1	0.0	2.8	0.0	1.5

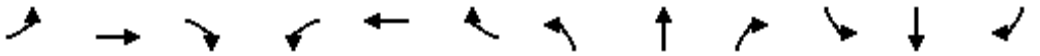
Intersection Summary	
HCM 6th Ctrl Delay	19.2
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	8	186	50	1077	332	57	713	705	52	688
Future Volume (vph)	8	186	50	1077	332	57	713	705	52	688
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	39.0	73.0	9.0	29.0	39.0	9.0	29.0
Total Split (%)	7.5%	35.8%	35.8%	32.5%	60.8%	7.5%	24.2%	32.5%	7.5%	24.2%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.0	19.1	19.1	35.3	56.8	5.0	25.1	62.4	5.0	23.2
Actuated g/C Ratio	0.05	0.19	0.19	0.34	0.55	0.05	0.24	0.61	0.05	0.23
v/c Ratio	0.10	0.57	0.13	1.10	0.43	0.75	0.88	0.66	0.68	0.94
Control Delay	54.0	44.3	0.7	91.9	14.6	99.9	52.2	8.4	90.8	61.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.0	44.3	0.7	91.9	14.6	99.9	52.2	8.4	90.8	61.9
LOS	D	D	A	F	B	F	D	A	F	E
Approach Delay		35.6			70.9		33.1			63.9
Approach LOS		D			E		C			E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 53.3	Intersection LOS: D
Intersection Capacity Utilization 88.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	186	50	1077	332	72	57	713	705	52	688	17
Future Volume (veh/h)	8	186	50	1077	332	72	57	713	705	52	688	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	8	192	0	1110	342	72	59	735	471	54	709	14
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	16	249		1098	721	152	73	810	920	67	799	16
Arrive On Green	0.01	0.14	0.00	0.37	0.50	0.50	0.05	0.24	0.24	0.04	0.23	0.23
Sat Flow, veh/h	1619	1800	1525	2956	1442	304	1619	3420	1493	1619	3430	68
Grp Volume(v), veh/h	8	192	0	1110	0	414	59	735	471	54	353	370
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1745	1619	1710	1493	1619	1710	1788
Q Serve(g_s), s	0.5	9.7	0.0	35.0	0.0	14.7	3.4	19.7	17.0	3.1	18.8	18.8
Cycle Q Clear(g_c), s	0.5	9.7	0.0	35.0	0.0	14.7	3.4	19.7	17.0	3.1	18.8	18.8
Prop In Lane	1.00		1.00	1.00		0.17	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	16	249		1098	0	872	73	810	920	67	398	416
V/C Ratio(X)	0.49	0.77		1.01	0.00	0.47	0.81	0.91	0.51	0.81	0.89	0.89
Avail Cap(c_a), veh/h	86	707		1098	0	1241	86	835	931	86	417	436
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.4	39.2	0.0	29.6	0.0	15.5	44.6	35.0	10.6	44.8	35.0	35.0
Incr Delay (d2), s/veh	8.3	7.0	0.0	29.9	0.0	0.6	32.1	12.9	0.2	27.8	18.7	18.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.6	0.0	15.6	0.0	5.2	1.9	8.9	4.5	1.7	9.2	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.8	46.2	0.0	59.5	0.0	16.0	76.7	47.9	10.8	72.6	53.6	53.1
LnGrp LOS	D	D		F	A	B	E	D	B	E	D	D
Approach Vol, veh/h		200	A		1524			1265			777	
Approach Delay, s/veh		46.5			47.7			35.4			54.7	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	28.3	39.0	19.0	8.3	27.9	4.9	53.1
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.0	23.0	35.0	37.0	5.0	23.0	5.0	67.0
Max Q Clear Time (g_c+I1), s	5.1	21.7	37.0	11.7	5.4	20.8	2.5	16.7
Green Ext Time (p_c), s	0.0	0.6	0.0	1.3	0.0	0.6	0.0	3.8

Intersection Summary	
HCM 6th Ctrl Delay	45.0
HCM 6th LOS	D

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	34.6
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	51	245	14	20	532	16	18	77	14	19	103	46
Future Vol, veh/h	51	245	14	20	532	16	18	77	14	19	103	46
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	56	269	15	22	585	18	20	85	15	21	113	51
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	17.2	54.5	12.5	13.6
HCM LOS	C	F	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	16%	4%	11%
Vol Thru, %	71%	79%	94%	61%
Vol Right, %	13%	5%	3%	27%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	109	310	568	168
LT Vol	18	51	20	19
Through Vol	77	245	532	103
RT Vol	14	14	16	46
Lane Flow Rate	120	341	624	185
Geometry Grp	1	1	1	1
Degree of Util (X)	0.238	0.576	0.981	0.35
Departure Headway (Hd)	7.156	6.091	5.658	6.834
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	499	589	643	524
Service Time	5.235	4.148	3.658	4.905
HCM Lane V/C Ratio	0.24	0.579	0.97	0.353
HCM Control Delay	12.5	17.2	54.5	13.6
HCM Lane LOS	B	C	F	B
HCM 95th-tile Q	0.9	3.6	14.6	1.6

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	51	3	1	211	20	18	58	3	30	58	51
Future Vol, veh/h	19	51	3	1	211	20	18	58	3	30	58	51
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	20	55	3	1	227	22	19	62	3	32	62	55
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.4	9.6	8.6	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	26%	0%	22%
Vol Thru, %	73%	70%	91%	42%
Vol Right, %	4%	4%	9%	37%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	79	73	232	139
LT Vol	18	19	1	30
Through Vol	58	51	211	58
RT Vol	3	3	20	51
Lane Flow Rate	85	78	249	149
Geometry Grp	1	1	1	1
Degree of Util (X)	0.115	0.104	0.312	0.191
Departure Headway (Hd)	4.87	4.775	4.5	4.594
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	734	748	798	779
Service Time	2.916	2.82	2.536	2.635
HCM Lane V/C Ratio	0.116	0.104	0.312	0.191
HCM Control Delay	8.6	8.4	9.6	8.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.3	1.3	0.7

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	44	298	692	63	24	44
Future Vol, veh/h	44	298	692	63	24	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	47	317	736	67	26	47

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	803	0	-	0	1181	770
Stage 1	-	-	-	-	770	-
Stage 2	-	-	-	-	411	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	830	-	-	-	294	479
Stage 1	-	-	-	-	460	-
Stage 2	-	-	-	-	674	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	830	-	-	-	274	479
Mov Cap-2 Maneuver	-	-	-	-	274	-
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	674	-

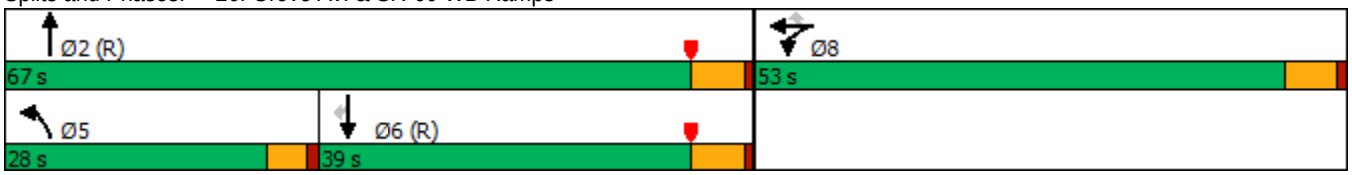
Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	16.7
HCM LOS			C

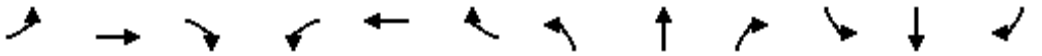
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	830	-	-	-	379
HCM Lane V/C Ratio	0.056	-	-	-	0.191
HCM Control Delay (s)	9.6	0	-	-	16.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.7

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	577	269	1100	712	588
Future Volume (vph)	0	577	269	1100	712	588
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	53.0	53.0	28.0	67.0	39.0	39.0
Total Split (%)	44.2%	44.2%	23.3%	55.8%	32.5%	32.5%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	45.8	45.8	21.7	62.6	36.3	36.3
Actuated g/C Ratio	0.38	0.38	0.18	0.52	0.30	0.30
v/c Ratio	0.40	0.95	0.90	0.63	0.71	0.70
Control Delay	28.7	58.1	60.4	23.7	42.3	7.3
Queue Delay	0.0	0.0	0.0	1.3	0.0	0.0
Total Delay	28.7	58.1	60.4	25.0	42.3	7.3
LOS	C	E	E	C	D	A
Approach Delay	49.2			32.0	26.5	
Approach LOS	D			C	C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 34.0	Intersection LOS: C
Intersection Capacity Utilization 101.8%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	251	0	577	269	1100	0	0	712	588
Future Volume (veh/h)	0	0	0	251	0	577	269	1100	0	0	712	588
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				273	0	498	292	1196	0	0	774	528
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				606	0	539	314	2052	0	0	1288	572
Arrive On Green				0.33	0.00	0.33	0.35	1.00	0.00	0.00	0.36	0.36
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1603
Grp Volume(v), veh/h				273	0	498	292	1196	0	0	774	528
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1603
Q Serve(g_s), s				14.2	0.0	35.7	18.7	0.0	0.0	0.0	21.1	37.9
Cycle Q Clear(g_c), s				14.2	0.0	35.7	18.7	0.0	0.0	0.0	21.1	37.9
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				606	0	539	314	2052	0	0	1288	572
V/C Ratio(X)				0.45	0.00	0.92	0.93	0.58	0.00	0.00	0.60	0.92
Avail Cap(c_a), veh/h				712	0	633	353	2052	0	0	1288	572
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.3	0.0	38.4	38.5	0.0	0.0	0.0	31.6	37.0
Incr Delay (d2), s/veh				0.5	0.0	17.7	4.2	0.1	0.0	0.0	2.1	22.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.1	0.0	16.1	6.7	0.0	0.0	0.0	9.2	17.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				31.8	0.0	56.2	42.7	0.1	0.0	0.0	33.7	59.7
LnGrp LOS				C	A	E	D	A	A	A	C	E
Approach Vol, veh/h					771			1488			1302	
Approach Delay, s/veh					47.6			8.5			44.2	
Approach LOS					D			A			D	

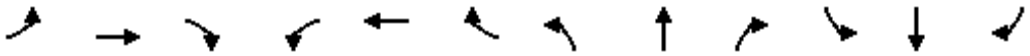
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		74.0			25.4	48.6		46.0				
Change Period (Y+Rc), s		5.8			4.6	5.8		5.8				
Max Green Setting (Gmax), s		61.2			23.4	33.2		47.2				
Max Q Clear Time (g_c+I1), s		2.0			20.7	39.9		37.7				
Green Ext Time (p_c), s		10.7			0.1	0.0		2.4				

Intersection Summary												
HCM 6th Ctrl Delay			30.0									
HCM 6th LOS			C									

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	1	196	715	367	595
Future Volume (vph)	1	196	715	367	595
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	48.0	48.0	43.0	29.0	72.0
Total Split (%)	40.0%	40.0%	35.8%	24.2%	60.0%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	42.2	42.2	37.2	24.4	66.2
Actuated g/C Ratio	0.35	0.35	0.31	0.20	0.55
v/c Ratio	1.12	0.31	1.06	1.09	0.32
Control Delay	110.7	6.8	83.0	129.3	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	110.7	6.8	83.0	129.3	12.8
LOS	F	A	F	F	B
Approach Delay	86.8		83.0		57.2
Approach LOS	F		F		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 75.5	Intersection LOS: E
Intersection Capacity Utilization 101.8%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	655	1	196	0	0	0	0	715	368	367	595	0
Future Volume (veh/h)	655	1	196	0	0	0	0	715	368	367	595	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	712	1	138				0	777	291	399	647	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	635	1	565				0	796	298	368	1992	0
Arrive On Green	0.35	0.35	0.35				0.00	0.31	0.31	0.41	1.00	0.00
Sat Flow, veh/h	1807	3	1607				0	2662	961	1810	3705	0
Grp Volume(v), veh/h	713	0	138				0	546	522	399	647	0
Grp Sat Flow(s),veh/h/ln	1810	0	1607				0	1805	1723	1810	1805	0
Q Serve(g_s), s	42.2	0.0	7.3				0.0	35.9	36.0	24.4	0.0	0.0
Cycle Q Clear(g_c), s	42.2	0.0	7.3				0.0	35.9	36.0	24.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.56	1.00		0.00
Lane Grp Cap(c), veh/h	636	0	565				0	560	534	368	1992	0
V/C Ratio(X)	1.12	0.00	0.24				0.00	0.98	0.98	1.08	0.32	0.00
Avail Cap(c_a), veh/h	636	0	565				0	560	534	368	1992	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.70	0.70	0.64	0.64	0.00
Uniform Delay (d), s/veh	38.9	0.0	27.6				0.0	41.0	41.0	35.6	0.0	0.0
Incr Delay (d2), s/veh	73.6	0.0	0.2				0.0	26.5	27.4	62.5	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	30.7	0.0	2.8				0.0	19.3	18.6	14.2	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	112.5	0.0	27.8				0.0	67.5	68.4	98.1	0.3	0.0
LnGrp LOS	F	A	C				A	E	E	F	A	A
Approach Vol, veh/h		851						1068			1046	
Approach Delay, s/veh		98.7						67.9			37.6	
Approach LOS		F						E			D	

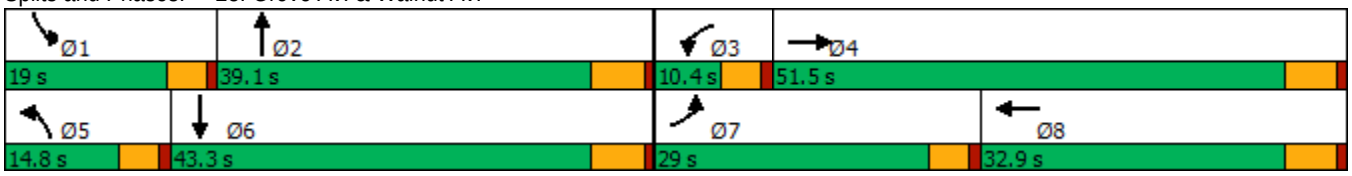
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	29.0	43.0		48.0		72.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	24.4	37.2		42.2		66.2
Max Q Clear Time (g_c+I1), s	26.4	38.0		44.2		2.0
Green Ext Time (p_c), s	0.0	0.0		0.0		4.5

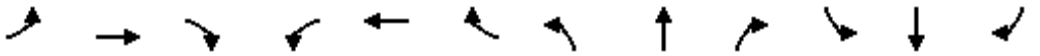
Intersection Summary		
HCM 6th Ctrl Delay		66.1
HCM 6th LOS		E

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	187	199	16	199	51	614	94	543
Future Volume (vph)	187	199	16	199	51	614	94	543
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	29.0	51.5	10.4	32.9	14.8	39.1	19.0	43.3
Total Split (%)	24.2%	42.9%	8.7%	27.4%	12.3%	32.6%	15.8%	36.1%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	17.3	34.0	5.5	15.7	7.8	34.6	10.7	39.9
Actuated g/C Ratio	0.17	0.34	0.06	0.16	0.08	0.35	0.11	0.40
v/c Ratio	0.79	0.26	0.21	0.70	0.47	0.62	0.64	0.57
Control Delay	60.4	21.9	56.5	29.5	60.1	32.3	62.1	27.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.4	21.9	56.5	29.5	60.1	32.3	62.1	27.8
LOS	E	C	E	C	E	C	E	C
Approach Delay		38.1		30.5		34.4		32.1
Approach LOS		D		C		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99.5	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 33.7	Intersection LOS: C
Intersection Capacity Utilization 67.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	199	58	16	199	190	51	614	13	94	543	109
Future Volume (veh/h)	187	199	58	16	199	190	51	614	13	94	543	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	220	234	53	19	234	153	60	722	14	111	639	92
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	253	843	187	34	340	213	74	1256	24	137	1214	174
Arrive On Green	0.16	0.30	0.30	0.02	0.17	0.17	0.05	0.37	0.37	0.08	0.40	0.40
Sat Flow, veh/h	1619	2772	615	1619	2010	1260	1619	3431	67	1619	3000	431
Grp Volume(v), veh/h	220	142	145	19	198	189	60	360	376	111	364	367
Grp Sat Flow(s),veh/h/ln	1619	1710	1677	1619	1710	1560	1619	1710	1788	1619	1710	1722
Q Serve(g_s), s	12.3	5.9	6.1	1.1	10.1	10.6	3.4	15.7	15.7	6.2	14.9	15.0
Cycle Q Clear(g_c), s	12.3	5.9	6.1	1.1	10.1	10.6	3.4	15.7	15.7	6.2	14.9	15.0
Prop In Lane	1.00		0.37	1.00		0.81	1.00		0.04	1.00		0.25
Lane Grp Cap(c), veh/h	253	520	510	34	289	264	74	626	655	137	692	697
V/C Ratio(X)	0.87	0.27	0.28	0.56	0.68	0.72	0.81	0.57	0.57	0.81	0.53	0.53
Avail Cap(c_a), veh/h	426	843	827	101	500	456	178	626	655	252	692	697
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.2	24.5	24.6	45.0	36.2	36.4	43.8	23.6	23.6	41.7	20.9	20.9
Incr Delay (d2), s/veh	4.9	0.3	0.3	5.3	2.8	3.7	7.4	3.8	3.6	4.3	2.8	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	2.3	2.3	0.5	4.2	4.1	1.5	6.5	6.7	2.6	6.0	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.1	24.8	24.9	50.3	39.0	40.1	51.2	27.4	27.2	46.0	23.7	23.7
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		507			406			796			842	
Approach Delay, s/veh		32.7			40.0			29.1			26.7	
Approach LOS		C			D			C			C	

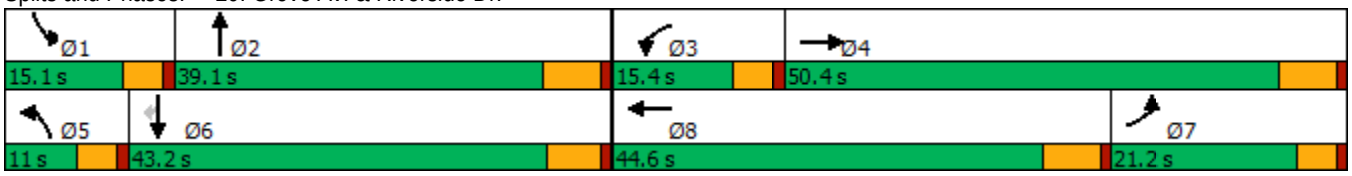
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	39.7	6.5	34.0	8.9	43.3	19.1	21.5
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	33.3	5.8	45.7	10.2	37.5	24.4	27.1
Max Q Clear Time (g_c+I1), s	8.2	17.7	3.1	8.1	5.4	17.0	14.3	12.6
Green Ext Time (p_c), s	0.1	3.7	0.0	1.6	0.0	4.1	0.2	1.8

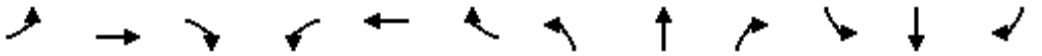
Intersection Summary	
HCM 6th Ctrl Delay	30.8
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	153	394	61	782	23	334	87	318	173
Future Volume (vph)	153	394	61	782	23	334	87	318	173
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	21.2	50.4	15.4	44.6	11.0	39.1	15.1	43.2	43.2
Total Split (%)	17.7%	42.0%	12.8%	37.2%	9.2%	32.6%	12.6%	36.0%	36.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	14.8	45.5	8.7	37.2	5.9	33.0	9.5	41.2	41.2
Actuated g/C Ratio	0.13	0.39	0.07	0.32	0.05	0.28	0.08	0.35	0.35
v/c Ratio	0.83	0.68	0.57	0.93	0.32	0.85	0.73	0.55	0.29
Control Delay	80.5	36.2	71.2	53.5	65.4	56.8	83.6	36.3	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.5	36.2	71.2	53.5	65.4	56.8	83.6	36.3	5.4
LOS	F	D	E	D	E	E	F	D	A
Approach Delay		47.9		54.7		57.3		34.2	
Approach LOS		D		D		E		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.2	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 48.9	Intersection LOS: D
Intersection Capacity Utilization 81.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	394	31	61	782	122	23	334	51	87	318	173
Future Volume (veh/h)	153	394	31	61	782	122	23	334	51	87	318	173
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	170	438	27	68	869	110	26	371	35	97	353	106
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	195	664	41	85	955	121	40	467	44	119	608	515
Arrive On Green	0.12	0.40	0.40	0.05	0.31	0.31	0.02	0.29	0.29	0.07	0.34	0.34
Sat Flow, veh/h	1619	1678	103	1619	3048	386	1619	1616	152	1619	1800	1525
Grp Volume(v), veh/h	170	0	465	68	488	491	26	0	406	97	353	106
Grp Sat Flow(s),veh/h/ln	1619	0	1781	1619	1710	1724	1619	0	1769	1619	1800	1525
Q Serve(g_s), s	11.7	0.0	24.3	4.7	31.2	31.2	1.8	0.0	24.1	6.7	18.4	3.7
Cycle Q Clear(g_c), s	11.7	0.0	24.3	4.7	31.2	31.2	1.8	0.0	24.1	6.7	18.4	3.7
Prop In Lane	1.00		0.06	1.00		0.22	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	195	0	705	85	536	540	40	0	511	119	608	515
V/C Ratio(X)	0.87	0.00	0.66	0.80	0.91	0.91	0.65	0.00	0.79	0.82	0.58	0.21
Avail Cap(c_a), veh/h	236	0	705	154	577	581	91	0	511	149	608	515
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	0.0	28.1	53.4	37.5	37.5	55.0	0.0	37.4	52.0	31.1	11.5
Incr Delay (d2), s/veh	21.8	0.0	2.3	6.4	17.8	17.7	6.5	0.0	12.0	19.6	4.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	10.1	2.0	14.9	15.0	0.8	0.0	11.6	3.3	8.3	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.0	0.0	30.4	59.8	55.4	55.3	61.6	0.0	49.4	71.6	35.1	12.4
LnGrp LOS	E	A	C	E	E	E	E	A	D	E	D	B
Approach Vol, veh/h		635			1047			432			556	
Approach Delay, s/veh		41.3			55.6			50.1			37.1	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.9	39.1	10.6	51.3	7.4	44.6	19.9	41.9
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	10.5	32.9	10.8	44.2	6.4	* 37	16.6	* 38
Max Q Clear Time (g_c+I1), s	8.7	26.1	6.7	26.3	3.8	20.4	13.7	33.2
Green Ext Time (p_c), s	0.0	1.2	0.0	2.4	0.0	2.0	0.1	2.5

Intersection Summary	
HCM 6th Ctrl Delay	47.5
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	21.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	64	91	28	11	82	30	37	320	14	47	351	32
Future Vol, veh/h	64	91	28	11	82	30	37	320	14	47	351	32
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	71	101	31	12	91	33	41	356	16	52	390	36
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	14.2	12.5	21.2	26.5
HCM LOS	B	B	C	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	35%	9%	11%
Vol Thru, %	86%	50%	67%	82%
Vol Right, %	4%	15%	24%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	371	183	123	430
LT Vol	37	64	11	47
Through Vol	320	91	82	351
RT Vol	14	28	30	32
Lane Flow Rate	412	203	137	478
Geometry Grp	1	1	1	1
Degree of Util (X)	0.686	0.386	0.264	0.778
Departure Headway (Hd)	5.995	6.839	6.963	5.865
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	602	525	514	616
Service Time	4.045	4.902	5.034	3.913
HCM Lane V/C Ratio	0.684	0.387	0.267	0.776
HCM Control Delay	21.2	14.2	12.5	26.5
HCM Lane LOS	C	B	B	D
HCM 95th-tile Q	5.3	1.8	1.1	7.3

Intersection	
Intersection Delay, s/veh	14.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	45	47	23	36	102	40	36	262	11	42	271	43
Future Vol, veh/h	45	47	23	36	102	40	36	262	11	42	271	43
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	50	52	26	40	113	44	40	291	12	47	301	48
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.2	12.2	14.8	16.3
HCM LOS	B	B	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	39%	20%	12%
Vol Thru, %	85%	41%	57%	76%
Vol Right, %	4%	20%	22%	12%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	309	115	178	356
LT Vol	36	45	36	42
Through Vol	262	47	102	271
RT Vol	11	23	40	43
Lane Flow Rate	343	128	198	396
Geometry Grp	1	1	1	1
Degree of Util (X)	0.529	0.223	0.333	0.596
Departure Headway (Hd)	5.552	6.289	6.067	5.427
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	645	566	587	661
Service Time	3.624	4.386	4.153	3.495
HCM Lane V/C Ratio	0.532	0.226	0.337	0.599
HCM Control Delay	14.8	11.2	12.2	16.3
HCM Lane LOS	B	B	B	C
HCM 95th-tile Q	3.1	0.8	1.5	4

Intersection	
Intersection Delay, s/veh	123.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	213	28	87	525	32	26	205	31	61	213	29
Future Vol, veh/h	34	213	28	87	525	32	26	205	31	61	213	29
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	37	234	31	96	577	35	29	225	34	67	234	32
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	27.9	245.4	27.5	33
HCM LOS	D	F	D	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	12%	14%	20%
Vol Thru, %	78%	77%	82%	70%
Vol Right, %	12%	10%	5%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	262	275	644	303
LT Vol	26	34	87	61
Through Vol	205	213	525	213
RT Vol	31	28	32	29
Lane Flow Rate	288	302	708	333
Geometry Grp	1	1	1	1
Degree of Util (X)	0.641	0.662	1.475	0.728
Departure Headway (Hd)	9.326	8.991	7.501	9.127
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	392	405	488	400
Service Time	7.326	6.991	5.501	7.127
HCM Lane V/C Ratio	0.735	0.746	1.451	0.833
HCM Control Delay	27.5	27.9	245.4	33
HCM Lane LOS	D	D	F	D
HCM 95th-tile Q	4.3	4.6	35.9	5.6

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	33	34	14	12	86	17	64	294	12	29	237	79
Future Vol, veh/h	33	34	14	12	86	17	64	294	12	29	237	79
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	36	37	15	13	95	19	70	323	13	32	260	87

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	895	844	304	864	881	330	347	0	0	336	0	0
Stage 1	368	368	-	470	470	-	-	-	-	-	-	-
Stage 2	527	476	-	394	411	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	264	302	740	277	288	716	1223	-	-	1235	-	-
Stage 1	656	625	-	578	563	-	-	-	-	-	-	-
Stage 2	538	560	-	635	598	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	171	271	740	224	259	716	1223	-	-	1235	-	-
Mov Cap-2 Maneuver	171	271	-	224	259	-	-	-	-	-	-	-
Stage 1	609	605	-	537	523	-	-	-	-	-	-	-
Stage 2	399	520	-	565	579	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28.6	27.9	1.4	0.7
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1223	-	-	240	281	1235	-	-
HCM Lane V/C Ratio	0.058	-	-	0.371	0.45	0.026	-	-
HCM Control Delay (s)	8.1	0	-	28.6	27.9	8	0	-
HCM Lane LOS	A	A	-	D	D	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	1.6	2.2	0.1	-	-

Intersection	
Intersection Delay, s/veh	123.8
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	88	262	635	281	165	98
Future Vol, veh/h	88	262	635	281	165	98
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	91	270	655	290	170	101
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	17.6	195.3	16.3
HCM LOS	C	F	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	0%	63%
Vol Thru, %	75%	69%	0%
Vol Right, %	0%	31%	37%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	350	916	263
LT Vol	88	0	165
Through Vol	262	635	0
RT Vol	0	281	98
Lane Flow Rate	361	944	271
Geometry Grp	1	1	1
Degree of Util (X)	0.578	1.377	0.476
Departure Headway (Hd)	6.316	5.25	7.073
Convergence, Y/N	Yes	Yes	Yes
Cap	574	699	512
Service Time	4.316	3.25	5.073
HCM Lane V/C Ratio	0.629	1.351	0.529
HCM Control Delay	17.6	195.3	16.3
HCM Lane LOS	C	F	C
HCM 95th-tile Q	3.7	41	2.5

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	18	249	10	117	435	147	4	19	8	27	18	12
Future Vol, veh/h	18	249	10	117	435	147	4	19	8	27	18	12
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	18	254	10	119	444	150	4	19	8	28	18	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	594	0	0	265	0	0	1068	1128	260	1066	1058	519
Stage 1	-	-	-	-	-	-	296	296	-	757	757	-
Stage 2	-	-	-	-	-	-	772	832	-	309	301	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	992	-	-	1311	-	-	201	206	784	202	227	561
Stage 1	-	-	-	-	-	-	717	672	-	403	419	-
Stage 2	-	-	-	-	-	-	395	387	-	705	669	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	992	-	-	1310	-	-	160	173	783	161	191	561
Mov Cap-2 Maneuver	-	-	-	-	-	-	160	173	-	161	191	-
Stage 1	-	-	-	-	-	-	701	657	-	395	361	-
Stage 2	-	-	-	-	-	-	316	333	-	663	654	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	1.3	24.7	30
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	214	992	-	-	1310	-	-	201
HCM Lane V/C Ratio	0.148	0.019	-	-	0.091	-	-	0.289
HCM Control Delay (s)	24.7	8.7	0	-	8	0	-	30
HCM Lane LOS	C	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0.3	-	-	1.1

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	61	0	0	86	24	0	0	0	128	0	39
Future Vol, veh/h	10	61	0	0	86	24	0	0	0	128	0	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16965	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	12	74	0	0	105	29	0	0	0	156	0	48

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	134	0	-	-	-	0			218	218	120
Stage 1	-	-	-	-	-	-			120	120	-
Stage 2	-	-	-	-	-	-			98	98	-
Critical Hdwy	4.1	-	-	-	-	-			6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-			5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.4	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-			3.5	4	3.3
Pot Cap-1 Maneuver	1463	-	0	0	-	-			775	684	937
Stage 1	-	-	0	0	-	-			910	800	-
Stage 2	-	-	0	0	-	-			931	818	-
Platoon blocked, %		-			-	-					
Mov Cap-1 Maneuver	1463	-	-	-	-	-			768	0	937
Mov Cap-2 Maneuver	-	-	-	-	-	-			768	0	-
Stage 1	-	-	-	-	-	-			902	0	-
Stage 2	-	-	-	-	-	-			931	0	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1463	-	-	-	802
HCM Lane V/C Ratio	0.008	-	-	-	0.254
HCM Control Delay (s)	7.5	0	-	-	11
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	1

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑			✣				
Traffic Vol, veh/h	0	324	103	122	735	0	134	0	101	0	0	0
Future Vol, veh/h	0	324	103	122	735	0	134	0	101	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	334	106	126	758	0	138	0	104	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	440	0	0	1344	1344	334
Stage 1	-	-	-	-	-	-	334	334	-
Stage 2	-	-	-	-	-	-	1010	1010	-
Critical Hdwy	-	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	1131	-	0	169	153	712
Stage 1	0	-	-	-	-	0	730	647	-
Stage 2	0	-	-	-	-	0	355	320	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1131	-	-	150	0	712
Mov Cap-2 Maneuver	-	-	-	-	-	-	255	0	-
Stage 1	-	-	-	-	-	-	730	0	-
Stage 2	-	-	-	-	-	-	316	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	35
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	352	-	-	1131	-
HCM Lane V/C Ratio	0.688	-	-	0.111	-
HCM Control Delay (s)	35	-	-	8.6	-
HCM Lane LOS	E	-	-	A	-
HCM 95th %tile Q(veh)	4.9	-	-	0.4	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	377	48	26	843	0	14	0	33	0	0	0
Future Vol, veh/h	0	377	48	26	843	0	14	0	33	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	414	53	29	926	0	15	0	36	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	467	0	0	1425	1425	234
Stage 1	-	-	-	-	-	-	441	441	-
Stage 2	-	-	-	-	-	-	984	984	-
Critical Hdwy	-	-	-	4.1	-	-	6.6	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	1105	-	0	139	137	774
Stage 1	0	-	-	-	-	0	622	580	-
Stage 2	0	-	-	-	-	0	365	329	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1105	-	-	135	0	774
Mov Cap-2 Maneuver	-	-	-	-	-	-	262	0	-
Stage 1	-	-	-	-	-	-	622	0	-
Stage 2	-	-	-	-	-	-	356	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	13.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	489	-	-	1105	-
HCM Lane V/C Ratio	0.106	-	-	0.026	-
HCM Control Delay (s)	13.2	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	409	1	25	727	0	142	0	23	0	0	0
Future Vol, veh/h	0	409	1	25	727	0	142	0	23	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	200	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	440	1	27	782	0	153	0	25	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	441	0	0	1277	-	221
Stage 1	-	-	-	-	-	-	441	-	-
Stage 2	-	-	-	-	-	-	836	-	-
Critical Hdwy	-	-	-	4.1	-	-	6.6	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	-	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	-	3.3
Pot Cap-1 Maneuver	0	-	-	1130	-	0	173	0	789
Stage 1	0	-	-	-	-	0	622	0	-
Stage 2	0	-	-	-	-	0	429	0	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1130	-	-	169	0	789
Mov Cap-2 Maneuver	-	-	-	-	-	-	301	0	-
Stage 1	-	-	-	-	-	-	622	0	-
Stage 2	-	-	-	-	-	-	419	0	-

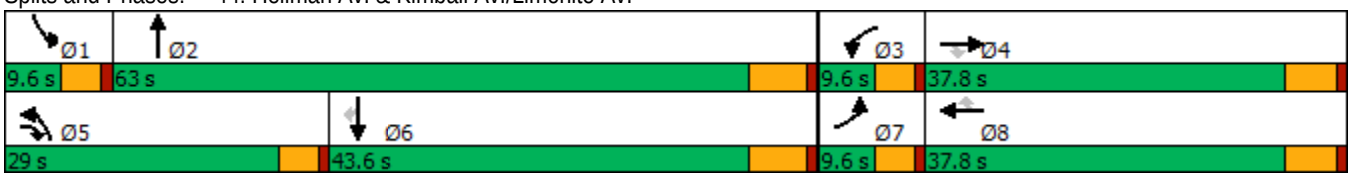
Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	26.1
HCM LOS			D

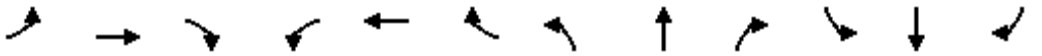
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	301	789	-	-	1130	-
HCM Lane V/C Ratio	0.507	0.031	-	-	0.024	-
HCM Control Delay (s)	28.7	9.7	-	-	8.3	-
HCM Lane LOS	D	A	-	-	A	-
HCM 95th %tile Q(veh)	2.7	0.1	-	-	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	33	4	311	1	1	802	200	32	18	
Future Volume (vph)	33	4	311	1	1	802	200	32	18	
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	NA	Perm	
Protected Phases	7	4	5	3	8	5	2	6		1
Permitted Phases			4						6	
Detector Phase	7	4	5	3	8	5	2	6	6	
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	10.0	5.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	9.6	43.2	43.2	43.2	9.6
Total Split (s)	9.6	37.8	29.0	9.6	37.8	29.0	63.0	43.6	43.6	9.6
Total Split (%)	8.0%	31.5%	24.2%	8.0%	31.5%	24.2%	52.5%	36.3%	36.3%	8%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	5.2	5.2	5.2	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	4.6	6.2	6.2	6.2	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	None	None	Max	Max	None	None	None
Act Effct Green (s)	7.9	13.5	61.3	5.1	13.5	48.9	69.2	22.0	22.0	
Actuated g/C Ratio	0.09	0.16	0.71	0.06	0.16	0.56	0.80	0.25	0.25	
v/c Ratio	0.24	0.01	0.28	0.01	0.00	0.93	0.08	0.04	0.04	
Control Delay	45.8	31.5	2.2	46.0	31.0	48.5	5.5	23.0	0.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	45.8	31.5	2.2	46.0	31.0	48.5	5.5	23.0	0.2	
LOS	D	C	A	D	C	D	A	C	A	
Approach Delay		6.7			38.5		39.8	14.8		
Approach LOS		A			D		D	B		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 86.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 30.7	Intersection LOS: C
Intersection Capacity Utilization 80.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	4	311	1	1	0	802	200	3	0	32	18
Future Volume (veh/h)	33	4	311	1	1	0	802	200	3	0	32	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	35	4	327	1	1	0	844	211	3	0	34	19
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	52	328	692	4	517	231	439	2181	31	2	1057	472
Arrive On Green	0.03	0.18	0.18	0.00	0.15	0.00	0.27	0.63	0.63	0.00	0.31	0.31
Sat Flow, veh/h	1619	1800	1525	2956	3420	1525	1619	3452	49	1619	3420	1525
Grp Volume(v), veh/h	35	4	327	1	1	0	844	104	110	0	34	19
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	1710	1525	1619	1710	1791	1619	1710	1525
Q Serve(g_s), s	1.9	0.2	13.4	0.0	0.0	0.0	24.4	2.2	2.2	0.0	0.6	0.8
Cycle Q Clear(g_c), s	1.9	0.2	13.4	0.0	0.0	0.0	24.4	2.2	2.2	0.0	0.6	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	52	328	692	4	517	231	439	1080	1131	2	1057	472
V/C Ratio(X)	0.67	0.01	0.47	0.25	0.00	0.00	1.92	0.10	0.10	0.00	0.03	0.04
Avail Cap(c_a), veh/h	90	641	957	164	1217	543	439	1080	1131	90	1422	634
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	30.1	17.1	44.9	32.4	0.0	32.8	6.5	6.5	0.0	21.7	21.7
Incr Delay (d2), s/veh	5.3	0.0	0.5	11.3	0.0	0.0	422.9	0.2	0.2	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.1	4.3	0.0	0.0	0.0	60.3	0.7	0.7	0.0	0.2	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.3	30.1	17.6	56.1	32.4	0.0	455.6	6.7	6.7	0.0	21.7	21.8
LnGrp LOS	D	C	B	E	C	A	F	A	A	A	C	C
Approach Vol, veh/h		366			2			1058			53	
Approach Delay, s/veh		20.7			44.3			364.8			21.7	
Approach LOS		C			D			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	63.0	4.7	22.2	29.0	34.0	7.5	19.4
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	5.0	56.8	5.0	32.0	24.4	37.4	5.0	32.0
Max Q Clear Time (g_c+I1), s	0.0	4.2	2.0	15.4	26.4	2.8	3.9	2.0
Green Ext Time (p_c), s	0.0	1.1	0.0	1.0	0.0	0.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	266.9
HCM 6th LOS	F

Intersection	
Intersection Delay, s/veh	146.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	392	30	212	721	42	21	0	120	120	0	10
Future Vol, veh/h	10	392	30	212	721	42	21	0	120	120	0	10
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	11	417	32	226	767	45	22	0	128	128	0	11
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

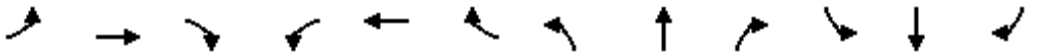
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	31.3	234.7	14.8	16.3
HCM LOS	D	F	B	C

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	15%	100%	0%	0%	100%	0%	92%
Vol Thru, %	0%	0%	100%	0%	0%	94%	0%
Vol Right, %	85%	0%	0%	100%	0%	6%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	141	10	392	30	212	763	130
LT Vol	21	10	0	0	212	0	120
Through Vol	0	0	392	0	0	721	0
RT Vol	120	0	0	30	0	42	10
Lane Flow Rate	150	11	417	32	226	812	138
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.314	0.022	0.795	0.055	0.477	1.594	0.324
Departure Headway (Hd)	8.32	8.039	7.525	6.805	7.619	7.068	9.263
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	435	448	484	529	471	519	391
Service Time	6.02	5.739	5.225	4.505	5.403	4.851	6.963
HCM Lane V/C Ratio	0.345	0.025	0.862	0.06	0.48	1.565	0.353
HCM Control Delay	14.8	10.9	33.5	9.9	17.2	295.1	16.3
HCM Lane LOS	B	B	D	A	C	F	C
HCM 95th-tile Q	1.3	0.1	7.3	0.2	2.5	44.2	1.4

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	4	499	672	1067	409
Future Volume (vph)	4	499	672	1067	409
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (%)	32.2%	32.2%	31.1%	67.8%	36.7%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	23.0	23.0	35.8	55.2	15.4
Actuated g/C Ratio	0.26	0.26	0.40	0.61	0.17
v/c Ratio	1.08	1.13	1.04	0.37	0.58
Control Delay	100.5	109.3	73.0	17.6	28.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	100.5	109.3	73.0	17.6	28.8
LOS	F	F	E	B	C
Approach Delay	105.1			39.0	28.8
Approach LOS	F			D	C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 56.2	Intersection LOS: E
Intersection Capacity Utilization 87.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	447	4	499	672	1067	0	0	409	199
Future Volume (veh/h)	0	0	0	447	4	499	672	1067	0	0	409	199
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				497	4	367	747	1186	0	0	454	211
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				459	4	411	660	3181	0	0	902	295
Arrive On Green				0.26	0.26	0.26	0.73	1.00	0.00	0.00	0.18	0.18
Sat Flow, veh/h				1796	14	1610	1810	5358	0	0	5168	1606
Grp Volume(v), veh/h				501	0	367	747	1186	0	0	454	211
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1729	0	0	1634	1606
Q Serve(g_s), s				23.0	0.0	19.8	32.8	0.0	0.0	0.0	7.5	11.1
Cycle Q Clear(g_c), s				23.0	0.0	19.8	32.8	0.0	0.0	0.0	7.5	11.1
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				463	0	411	660	3181	0	0	902	295
V/C Ratio(X)				1.08	0.00	0.89	1.13	0.37	0.00	0.00	0.50	0.71
Avail Cap(c_a), veh/h				463	0	411	660	3181	0	0	1481	485
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.39	0.39	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.5	0.0	32.3	12.2	0.0	0.0	0.0	33.0	34.5
Incr Delay (d2), s/veh				66.1	0.0	22.0	67.1	0.1	0.0	0.0	2.0	13.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				17.8	0.0	18.5	16.4	0.0	0.0	0.0	3.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				99.6	0.0	54.3	79.3	0.1	0.0	0.0	35.0	48.3
LnGrp LOS				F	A	D	F	A	A	A	D	D
Approach Vol, veh/h					868			1933			665	
Approach Delay, s/veh					80.4			30.7			39.2	
Approach LOS					F			C			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	61.0	29.0	38.6	22.4
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	55.2	23.0	24.0	* 27
Max Q Clear Time (g_c+I1), s	2.0	25.0	34.8	13.1
Green Ext Time (p_c), s	10.1	0.0	0.0	3.4

Intersection Summary	
HCM 6th Ctrl Delay	44.8
HCM 6th LOS	D

Notes

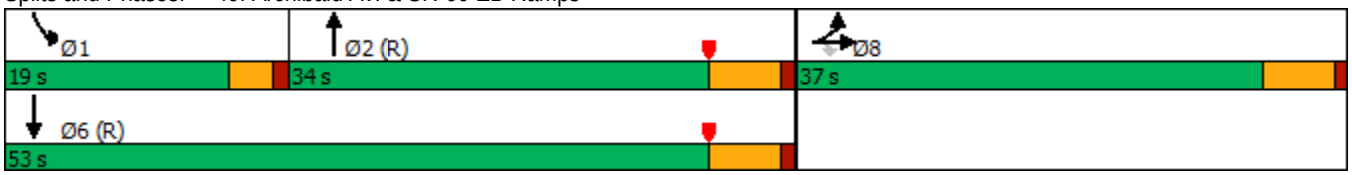
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

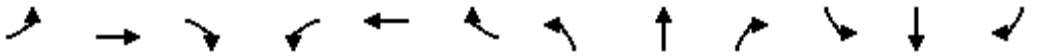
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	3	512	1363	161	696
Future Volume (vph)	3	512	1363	161	696
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (%)	41.1%	41.1%	37.8%	21.1%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	27.7	27.7	34.5	12.2	50.7
Actuated g/C Ratio	0.31	0.31	0.38	0.14	0.56
v/c Ratio	0.73	0.89	0.94dr	0.70	0.25
Control Delay	35.4	37.3	30.6	42.6	22.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	35.4	37.3	30.6	42.6	22.5
LOS	D	D	C	D	C
Approach Delay	36.5		30.6		26.3
Approach LOS	D		C		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 31.0	Intersection LOS: C
Intersection Capacity Utilization 87.2%	ICU Level of Service E
Analysis Period (min) 15	

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	377	3	512	0	0	0	0	1363	624	161	696	0
Future Volume (veh/h)	377	3	512	0	0	0	0	1363	624	161	696	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	401	3	328				0	1450	433	171	740	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	472	4	423				0	2244	670	209	3157	0
Arrive On Green	0.26	0.26	0.26				0.00	0.45	0.45	0.04	0.20	0.00
Sat Flow, veh/h	1797	13	1610				0	5267	1493	1810	5358	0
Grp Volume(v), veh/h	404	0	328				0	1421	462	171	740	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1592	1810	1729	0
Q Serve(g_s), s	19.1	0.0	17.0				0.0	20.3	20.3	8.4	10.8	0.0
Cycle Q Clear(g_c), s	19.1	0.0	17.0				0.0	20.3	20.3	8.4	10.8	0.0
Prop In Lane	0.99		1.00				0.00		0.94	1.00		0.00
Lane Grp Cap(c), veh/h	475	0	423				0	2200	714	209	3157	0
V/C Ratio(X)	0.85	0.00	0.78				0.00	0.65	0.65	0.82	0.23	0.00
Avail Cap(c_a), veh/h	628	0	558				0	2200	714	302	3157	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.47	0.47	0.79	0.79	0.00
Uniform Delay (d), s/veh	31.5	0.0	30.7				0.0	19.3	19.3	42.4	18.4	0.0
Incr Delay (d2), s/veh	8.4	0.0	5.0				0.0	0.7	2.1	5.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	0.0	6.7				0.0	6.8	6.9	4.1	4.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.9	0.0	35.7				0.0	20.0	21.4	48.2	18.5	0.0
LnGrp LOS	D	A	D				A	B	C	D	B	A
Approach Vol, veh/h		732						1883			911	
Approach Delay, s/veh		38.0						20.3			24.1	
Approach LOS		D						C			C	

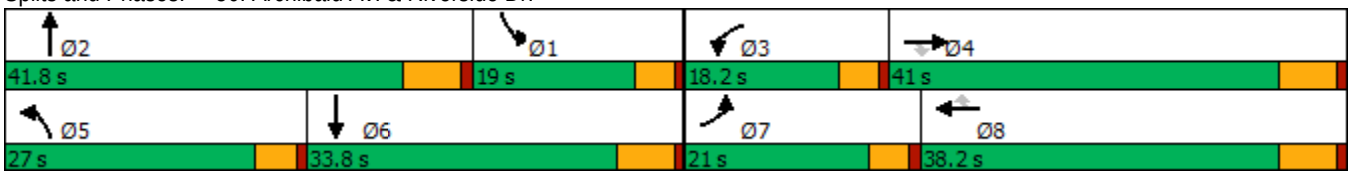
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	14.4	46.2				60.6		29.4				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	15.0	28.2				47.2		31.2				
Max Q Clear Time (g_c+I1), s	10.4	22.3				12.8		21.1				
Green Ext Time (p_c), s	0.1	4.7				5.0		2.6				

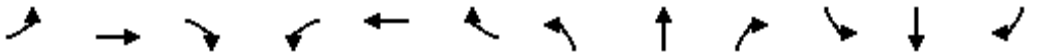
Intersection Summary			
HCM 6th Ctrl Delay			25.0
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	241	310	255	91	480	176	338	1117	135	562
Future Volume (vph)	241	310	255	91	480	176	338	1117	135	562
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.0	41.0	41.0	18.2	38.2	38.2	27.0	41.8	19.0	33.8
Total Split (%)	17.5%	34.2%	34.2%	15.2%	31.8%	31.8%	22.5%	34.8%	15.8%	28.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	16.5	28.8	28.8	10.4	22.6	22.6	22.6	32.9	14.1	24.4
Actuated g/C Ratio	0.15	0.27	0.27	0.10	0.21	0.21	0.21	0.30	0.13	0.23
v/c Ratio	1.04	0.36	0.45	0.63	0.71	0.40	1.07	0.83	0.69	0.77
Control Delay	113.7	34.2	6.5	66.6	45.6	7.8	110.5	41.0	64.5	40.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	113.7	34.2	6.5	66.6	45.6	7.8	110.5	41.0	64.5	40.6
LOS	F	C	A	E	D	A	F	D	E	D
Approach Delay		49.2			39.3			56.6		44.1
Approach LOS		D			D			E		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 48.9	Intersection LOS: D
Intersection Capacity Utilization 87.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	241	310	255	91	480	176	338	1117	49	135	562	247
Future Volume (veh/h)	241	310	255	91	480	176	338	1117	49	135	562	247
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	256	330	137	97	511	105	360	1188	49	144	598	185
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	258	993	435	120	700	306	353	1440	59	182	777	235
Arrive On Green	0.16	0.29	0.29	0.07	0.20	0.20	0.22	0.30	0.30	0.11	0.21	0.21
Sat Flow, veh/h	1619	3420	1498	1619	3420	1495	1619	4840	200	1619	3739	1132
Grp Volume(v), veh/h	256	330	137	97	511	105	360	804	433	144	522	261
Grp Sat Flow(s),veh/h/ln	1619	1710	1498	1619	1710	1495	1619	1638	1764	1619	1638	1594
Q Serve(g_s), s	16.2	7.8	7.3	6.1	14.4	4.4	22.4	23.5	23.5	8.9	15.4	15.9
Cycle Q Clear(g_c), s	16.2	7.8	7.3	6.1	14.4	4.4	22.4	23.5	23.5	8.9	15.4	15.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.11	1.00		0.71
Lane Grp Cap(c), veh/h	258	993	435	120	700	306	353	975	525	182	681	331
V/C Ratio(X)	0.99	0.33	0.32	0.81	0.73	0.34	1.02	0.82	0.83	0.79	0.77	0.79
Avail Cap(c_a), veh/h	258	1158	507	214	1065	465	353	1135	611	227	880	428
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	28.7	28.5	46.9	38.2	17.5	40.2	33.6	33.6	44.4	38.4	38.6
Incr Delay (d2), s/veh	53.3	0.2	0.4	4.9	1.5	0.7	53.2	4.5	8.0	11.0	3.1	7.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	3.0	2.5	2.5	5.8	2.1	13.6	9.3	10.5	4.0	6.1	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	96.4	28.8	28.9	51.8	39.7	18.1	93.3	38.1	41.6	55.4	41.5	45.8
LnGrp LOS	F	C	C	D	D	B	F	D	D	E	D	D
Approach Vol, veh/h		723			713			1597			927	
Approach Delay, s/veh		52.8			38.2			51.5			44.8	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	36.8	12.2	36.0	27.0	27.6	21.0	27.2
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	14.4	* 36	13.6	34.8	22.4	27.6	16.4	32.0
Max Q Clear Time (g_c+I1), s	10.9	25.5	8.1	9.8	24.4	17.9	18.2	16.4
Green Ext Time (p_c), s	0.1	5.1	0.0	2.3	0.0	3.2	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	47.8
HCM 6th LOS	D

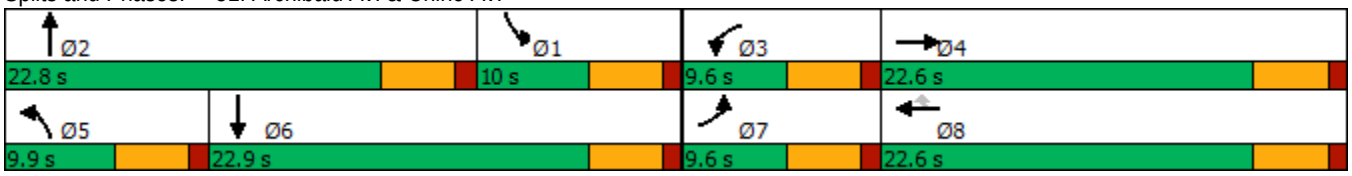
Notes

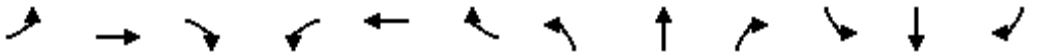
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	97	3	72	4	249	108	1099	117	758
Future Volume (vph)	97	3	72	4	249	108	1099	117	758
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	9.6	22.6	9.6	22.6	22.6	9.9	22.8	10.0	22.9
Total Split (%)	14.8%	34.8%	14.8%	34.8%	34.8%	15.2%	35.1%	15.4%	35.2%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	5.0	12.3	7.2	8.2	8.2	5.3	18.1	5.4	18.2
Actuated g/C Ratio	0.09	0.22	0.13	0.15	0.15	0.10	0.33	0.10	0.33
v/c Ratio	0.73	0.09	0.38	0.01	0.60	0.77	0.78	0.82	0.77
Control Delay	58.4	9.3	32.6	18.5	9.0	61.0	22.4	67.1	23.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.4	9.3	32.6	18.5	9.0	61.0	22.4	67.1	23.9
LOS	E	A	C	B	A	E	C	E	C
Approach Delay		46.8		14.3			25.8		29.5
Approach LOS		D		B			C		C

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 55.3	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 26.7	Intersection LOS: C
Intersection Capacity Utilization 57.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	3	27	72	4	249	108	1099	36	117	758	25
Future Volume (veh/h)	97	3	27	72	4	249	108	1099	36	117	758	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	107	3	12	79	4	137	119	1208	38	129	833	25
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	131	38	150	110	192	163	147	1615	51	159	1145	34
Arrive On Green	0.08	0.12	0.12	0.07	0.11	0.11	0.09	0.33	0.33	0.10	0.34	0.34
Sat Flow, veh/h	1619	313	1254	1619	1800	1525	1619	4894	154	1619	3390	102
Grp Volume(v), veh/h	107	0	15	79	4	137	119	809	437	129	420	438
Grp Sat Flow(s),veh/h/ln	1619	0	1567	1619	1800	1525	1619	1638	1772	1619	1710	1782
Q Serve(g_s), s	3.1	0.0	0.4	2.3	0.1	2.9	3.5	10.5	10.5	3.7	10.3	10.3
Cycle Q Clear(g_c), s	3.1	0.0	0.4	2.3	0.1	2.9	3.5	10.5	10.5	3.7	10.3	10.3
Prop In Lane	1.00		0.80	1.00		1.00	1.00		0.09	1.00		0.06
Lane Grp Cap(c), veh/h	131	0	188	110	192	163	147	1081	585	159	578	602
V/C Ratio(X)	0.82	0.00	0.08	0.72	0.02	0.84	0.81	0.75	0.75	0.81	0.73	0.73
Avail Cap(c_a), veh/h	169	0	589	169	676	573	179	1244	673	182	653	680
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	0.0	18.7	21.9	19.2	9.6	21.4	14.3	14.3	21.2	13.9	13.9
Incr Delay (d2), s/veh	20.6	0.0	0.2	8.5	0.0	11.1	20.3	2.2	4.0	21.0	3.6	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.1	1.0	0.0	1.7	1.9	3.0	3.5	2.1	3.4	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.3	0.0	18.9	30.4	19.2	20.6	41.7	16.5	18.3	42.2	17.5	17.4
LnGrp LOS	D	A	B	C	B	C	D	B	B	D	B	B
Approach Vol, veh/h		122			220			1365			987	
Approach Delay, s/veh		39.4			24.1			19.2			20.7	
Approach LOS		D			C			B			C	

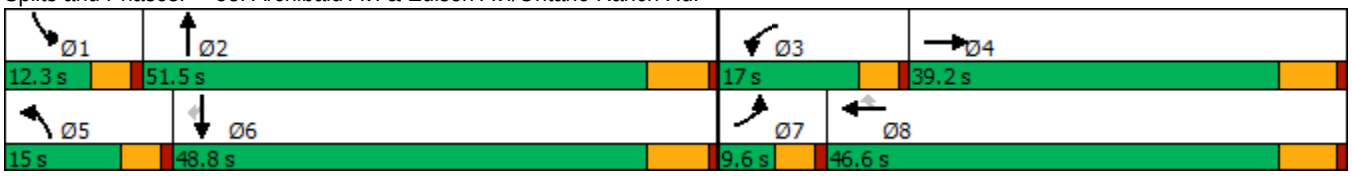
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	20.4	7.9	10.3	8.9	20.8	8.5	9.7
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	5.4	18.2	5.0	18.0	5.3	18.3	5.0	18.0
Max Q Clear Time (g_c+I1), s	5.7	12.5	4.3	2.4	5.5	12.3	5.1	4.9
Green Ext Time (p_c), s	0.0	3.3	0.0	0.0	0.0	2.4	0.0	0.3

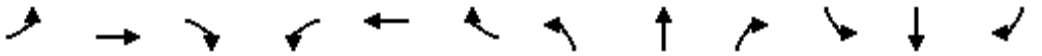
Intersection Summary	
HCM 6th Ctrl Delay	21.1
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	205	43	405	492	141	167	1030	404	66	438	99
Future Volume (vph)	25	205	43	405	492	141	167	1030	404	66	438	99
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	9.6	39.2		17.0	46.6	46.6	15.0	51.5		12.3	48.8	48.8
Total Split (%)	8.0%	32.7%		14.2%	38.8%	38.8%	12.5%	42.9%		10.3%	40.7%	40.7%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.3	22.5	101.5	13.2	35.6	35.6	11.0	38.3	101.5	7.4	31.6	31.6
Actuated g/C Ratio	0.05	0.22	1.00	0.13	0.35	0.35	0.11	0.38	1.00	0.07	0.31	0.31
v/c Ratio	0.17	0.28	0.03	1.10	0.80	0.23	0.98	0.82	0.28	0.58	0.42	0.17
Control Delay	56.9	34.1	0.0	118.8	44.0	6.1	115.2	36.5	0.5	72.6	28.8	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.9	34.1	0.0	118.8	44.0	6.1	115.2	36.5	0.5	72.6	28.8	1.6
LOS	E	C	A	F	D	A	F	D	A	E	C	A
Approach Delay		30.9			68.1			35.6			29.1	
Approach LOS		C			E			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 101.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 43.7	Intersection LOS: D
Intersection Capacity Utilization 84.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	205	43	405	492	141	167	1030	404	66	438	99
Future Volume (veh/h)	25	205	43	405	492	141	167	1030	404	66	438	99
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	26	211	0	418	507	91	172	1062	0	68	452	69
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	78	720		393	571	483	180	1265		85	1063	474
Arrive On Green	0.03	0.21	0.00	0.13	0.32	0.32	0.11	0.37	0.00	0.05	0.31	0.31
Sat Flow, veh/h	2956	3420	1525	2956	1800	1525	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	26	211	0	418	507	91	172	1062	0	68	452	69
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1800	1525	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	0.8	4.8	0.0	12.4	25.0	4.0	9.9	26.5	0.0	3.9	9.8	3.0
Cycle Q Clear(g_c), s	0.8	4.8	0.0	12.4	25.0	4.0	9.9	26.5	0.0	3.9	9.8	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	78	720		393	571	483	180	1265		85	1063	474
V/C Ratio(X)	0.33	0.29		1.06	0.89	0.19	0.95	0.84		0.80	0.43	0.15
Avail Cap(c_a), veh/h	158	1209		393	779	660	180	1649		134	1550	691
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	31.0	0.0	40.5	30.3	23.2	41.2	26.9	0.0	43.8	25.5	23.2
Incr Delay (d2), s/veh	0.9	0.2	0.0	63.5	9.6	0.2	53.0	3.2	0.0	7.8	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.9	0.0	7.7	11.3	1.4	6.3	10.1	0.0	1.6	3.6	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.6	31.2	0.0	104.0	39.9	23.3	94.2	30.0	0.0	51.5	25.8	23.4
LnGrp LOS	D	C		F	D	C	F	C		D	C	C
Approach Vol, veh/h		237	A		1016			1234	A		589	
Approach Delay, s/veh		32.8			64.8			39.0			28.5	
Approach LOS		C			E			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	41.0	17.0	25.8	15.0	35.5	7.1	35.8
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	7.7	45.0	12.4	33.0	10.4	42.3	5.0	40.4
Max Q Clear Time (g_c+I1), s	5.9	28.5	14.4	6.8	11.9	11.8	2.8	27.0
Green Ext Time (p_c), s	0.0	6.0	0.0	1.1	0.0	2.8	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	45.0
HCM 6th LOS	D

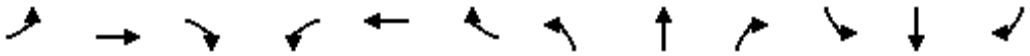
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	16	1585	8	24	863
Future Volume (vph)	11	16	1585	8	24	863
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.5	9.5	32.5	32.5	9.6	16.5
Total Split (s)	9.5	9.5	41.4	41.4	9.6	51.0
Total Split (%)	13.6%	13.6%	59.1%	59.1%	13.7%	72.9%
Yellow Time (s)	3.5	3.5	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	6.5	6.5	4.6	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max
Act Effct Green (s)	5.1	5.1	54.8	54.8	5.1	56.5
Actuated g/C Ratio	0.08	0.08	0.90	0.90	0.08	0.93
v/c Ratio	0.05	0.04	0.55	0.01	0.19	0.29
Control Delay	26.4	0.2	6.9	4.9	29.7	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.4	0.2	6.9	4.9	29.7	2.1
LOS	C	A	A	A	C	A
Approach Delay			6.9			2.9
Approach LOS			A			A

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 60.9	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 5.5	Intersection LOS: A
Intersection Capacity Utilization 59.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	11	0	16	0	1585	8	24	863	0
Future Volume (veh/h)	0	0	0	11	0	16	0	1585	8	24	863	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1700	0	1800	0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h				12	0	6	0	1704	6	26	928	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				68	0	58	0	2304	1028	48	2682	0
Arrive On Green				0.02	0.00	0.02	0.00	0.67	0.67	0.03	0.78	0.00
Sat Flow, veh/h				3141	0	2685	0	3510	1525	1619	3510	0
Grp Volume(v), veh/h				12	0	6	0	1704	6	26	928	0
Grp Sat Flow(s),veh/h/ln				1570	0	1342	0	1710	1525	1619	1710	0
Q Serve(g_s), s				0.2	0.0	0.1	0.0	18.4	0.1	0.9	4.6	0.0
Cycle Q Clear(g_c), s				0.2	0.0	0.1	0.0	18.4	0.1	0.9	4.6	0.0
Prop In Lane				1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				68	0	58	0	2304	1028	48	2682	0
V/C Ratio(X)				0.18	0.00	0.10	0.00	0.74	0.01	0.54	0.35	0.00
Avail Cap(c_a), veh/h				277	0	237	0	2304	1028	143	2682	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				27.3	0.0	27.2	0.0	6.0	3.0	27.1	1.8	0.0
Incr Delay (d2), s/veh				1.2	0.0	0.8	0.0	2.2	0.0	3.5	0.4	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.1	0.0	0.0	0.0	2.6	0.0	0.3	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.5	0.0	28.0	0.0	8.2	3.0	30.7	2.2	0.0
LnGrp LOS				C	A	C	A	A	A	C	A	A
Approach Vol, veh/h					18			1710			954	
Approach Delay, s/veh					28.3			8.2			2.9	
Approach LOS					C			A			A	

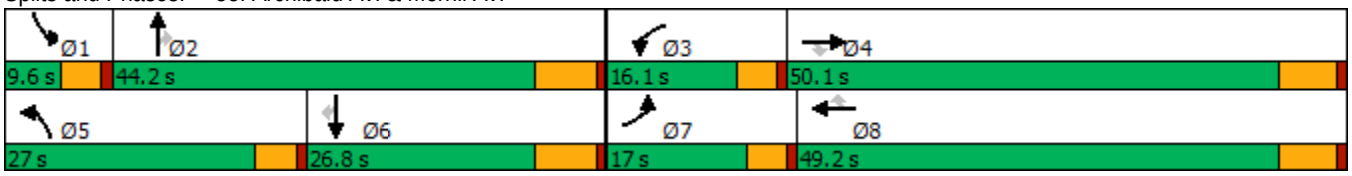
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	6.3	44.7				51.0		5.7				
Change Period (Y+Rc), s	4.6	6.5				6.5		4.5				
Max Green Setting (Gmax), s	5.0	34.9				44.5		5.0				
Max Q Clear Time (g_c+I1), s	2.9	20.4				6.6		2.2				
Green Ext Time (p_c), s	0.0	9.4				6.5		0.0				

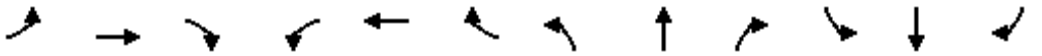
Intersection Summary		
HCM 6th Ctrl Delay		6.5
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	233	21	118	76	46	133	463	1228	38	40	540	293
Future Volume (vph)	233	21	118	76	46	133	463	1228	38	40	540	293
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	17.0	50.1	50.1	16.1	49.2	49.2	27.0	44.2	44.2	9.6	26.8	26.8
Total Split (%)	14.2%	41.8%	41.8%	13.4%	41.0%	41.0%	22.5%	36.8%	36.8%	8.0%	22.3%	22.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	12.6	21.7	21.7	8.4	15.3	15.3	22.8	42.0	42.0	5.1	20.1	20.1
Actuated g/C Ratio	0.14	0.23	0.23	0.09	0.16	0.16	0.24	0.45	0.45	0.05	0.22	0.22
v/c Ratio	1.10	0.05	0.26	0.54	0.16	0.36	1.21	0.82	0.05	0.25	0.75	0.63
Control Delay	129.8	28.9	3.2	56.7	32.6	6.0	148.3	30.4	0.1	50.2	43.1	21.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	129.8	28.9	3.2	56.7	32.6	6.0	148.3	30.4	0.1	50.2	43.1	21.0
LOS	F	C	A	E	C	A	F	C	A	D	D	C
Approach Delay		83.8			25.9			61.3			36.0	
Approach LOS		F			C			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 93.1	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.21	
Intersection Signal Delay: 54.3	Intersection LOS: D
Intersection Capacity Utilization 79.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	233	21	118	76	46	133	463	1228	38	40	540	293
Future Volume (veh/h)	233	21	118	76	46	133	463	1228	38	40	540	293
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	240	22	67	78	47	42	477	1266	20	41	557	236
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	240	374	317	97	215	182	434	1482	661	109	691	308
Arrive On Green	0.15	0.21	0.21	0.06	0.12	0.12	0.27	0.43	0.43	0.04	0.20	0.20
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	1619	3420	1525	2956	3420	1525
Grp Volume(v), veh/h	240	22	67	78	47	42	477	1266	20	41	557	236
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1710	1525	1478	1710	1525
Q Serve(g_s), s	12.4	0.8	3.0	4.0	2.0	2.1	22.4	27.8	0.6	1.1	13.0	12.2
Cycle Q Clear(g_c), s	12.4	0.8	3.0	4.0	2.0	2.1	22.4	27.8	0.6	1.1	13.0	12.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	240	374	317	97	215	182	434	1482	661	109	691	308
V/C Ratio(X)	1.00	0.06	0.21	0.80	0.22	0.23	1.10	0.85	0.03	0.38	0.81	0.77
Avail Cap(c_a), veh/h	240	946	801	223	926	785	434	1543	688	177	831	371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	26.6	27.4	38.8	33.3	33.3	30.6	21.3	13.6	39.3	31.8	31.5
Incr Delay (d2), s/veh	57.7	0.1	0.3	5.6	0.5	0.6	72.7	4.8	0.0	0.8	5.0	7.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	0.3	1.1	1.7	0.9	0.8	16.5	10.2	0.2	0.4	5.3	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.3	26.6	27.8	44.4	33.8	34.0	103.3	26.1	13.6	40.1	36.7	39.1
LnGrp LOS	F	C	C	D	C	C	F	C	B	D	D	D
Approach Vol, veh/h		329			167			1763			834	
Approach Delay, s/veh		75.5			38.8			46.8			37.6	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	42.7	9.6	23.5	27.0	23.4	17.0	16.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	37.7	11.5	43.9	22.4	20.3	12.4	43.0
Max Q Clear Time (g_c+I1), s	3.1	29.8	6.0	5.0	24.4	15.0	14.4	4.1
Green Ext Time (p_c), s	0.0	4.6	0.0	0.3	0.0	1.9	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	46.9
HCM 6th LOS	D

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	316	826	861	334	206	507
Future Volume (vph)	316	826	861	334	206	507
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	27.0	56.7	36.3	27.0	83.7
Total Split (%)	30.3%	22.5%	47.3%	30.3%	22.5%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min
Act Effct Green (s)	23.7	46.1	51.5	80.5	22.0	78.9
Actuated g/C Ratio	0.21	0.41	0.46	0.71	0.19	0.70
v/c Ratio	0.87	1.25	1.04	0.29	0.61	0.40
Control Delay	65.8	150.0	71.9	2.3	51.1	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.8	150.0	71.9	2.3	51.1	8.9
LOS	E	F	E	A	D	A
Approach Delay	126.7		52.4			21.1
Approach LOS	F		D			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.25	
Intersection Signal Delay: 72.9	Intersection LOS: E
Intersection Capacity Utilization 105.0%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	316	826	861	334	206	507
Future Volume (veh/h)	316	826	861	334	206	507
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	329	804	897	301	215	528
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	494	660	860	1169	247	1204
Arrive On Green	0.27	0.27	0.45	0.45	0.14	0.63
Sat Flow, veh/h	1810	1610	1900	1610	1810	1900
Grp Volume(v), veh/h	329	804	897	301	215	528
Grp Sat Flow(s),veh/h/ln	1810	1610	1900	1610	1810	1900
Q Serve(g_s), s	18.3	31.0	51.4	7.1	13.2	16.0
Cycle Q Clear(g_c), s	18.3	31.0	51.4	7.1	13.2	16.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	494	660	860	1169	247	1204
V/C Ratio(X)	0.67	1.22	1.04	0.26	0.87	0.44
Avail Cap(c_a), veh/h	494	660	860	1169	351	1317
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.6	33.5	31.0	5.2	48.0	10.6
Incr Delay (d2), s/veh	2.7	111.9	42.3	0.1	15.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	37.1	31.3	5.0	6.7	5.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	39.4	145.4	73.4	5.4	63.2	10.7
LnGrp LOS	D	F	F	A	E	B
Approach Vol, veh/h	1133		1198			743
Approach Delay, s/veh	114.6		56.3			25.9
Approach LOS	F		E			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	20.5	56.7			77.2	36.3
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	22.0	51.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	15.2	53.4			18.0	33.0
Green Ext Time (p_c), s	0.3	0.0			1.7	0.0

Intersection Summary	
HCM 6th Ctrl Delay	70.4
HCM 6th LOS	E

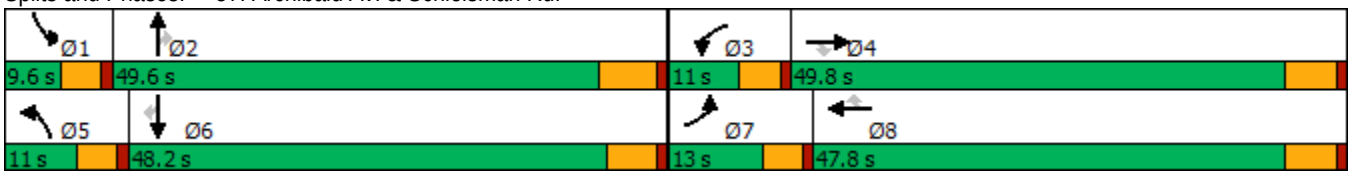
Notes

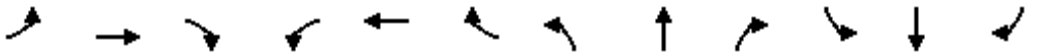
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	451	409	132	263	751	148	266	834	228	110	471	474
Future Volume (vph)	451	409	132	263	751	148	266	834	228	110	471	474
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	49.8	49.8	11.0	47.8	47.8	11.0	49.6	49.6	9.6	48.2	48.2
Total Split (%)	10.8%	41.5%	41.5%	9.2%	39.8%	39.8%	9.2%	41.3%	41.3%	8.0%	40.2%	40.2%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	8.5	44.3	44.3	6.4	42.3	42.3	6.4	34.1	34.1	5.0	33.5	33.5
Actuated g/C Ratio	0.08	0.40	0.40	0.06	0.38	0.38	0.06	0.31	0.31	0.04	0.30	0.30
v/c Ratio	1.88	0.22	0.20	1.45	0.42	0.24	1.47	0.58	0.38	0.77	0.34	0.89
Control Delay	440.2	23.7	4.8	263.0	27.4	8.5	270.8	33.6	4.9	84.9	30.1	42.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	440.2	23.7	4.8	263.0	27.4	8.5	270.8	33.6	4.9	84.9	30.1	42.4
LOS	F	C	A	F	C	A	F	C	A	F	C	D
Approach Delay		210.5			78.3			76.3			41.4	
Approach LOS		F			E			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.88	
Intersection Signal Delay: 98.0	Intersection LOS: F
Intersection Capacity Utilization 80.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	451	409	132	263	751	148	266	834	228	110	471	474
Future Volume (veh/h)	451	409	132	263	751	148	266	834	228	110	471	474
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	501	454	83	292	834	87	296	927	180	122	523	405
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	266	2060	629	203	1966	603	203	1601	497	158	1536	470
Arrive On Green	0.08	0.40	0.40	0.06	0.38	0.38	0.06	0.31	0.31	0.05	0.30	0.30
Sat Flow, veh/h	3510	5187	1584	3510	5187	1590	3510	5187	1610	3510	5187	1588
Grp Volume(v), veh/h	501	454	83	292	834	87	296	927	180	122	523	405
Grp Sat Flow(s),veh/h/ln	1755	1729	1584	1755	1729	1590	1755	1729	1610	1755	1729	1588
Q Serve(g_s), s	8.4	6.4	3.7	6.4	13.2	4.0	6.4	16.7	9.6	3.8	8.7	26.7
Cycle Q Clear(g_c), s	8.4	6.4	3.7	6.4	13.2	4.0	6.4	16.7	9.6	3.8	8.7	26.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	266	2060	629	203	1966	603	203	1601	497	158	1536	470
V/C Ratio(X)	1.88	0.22	0.13	1.44	0.42	0.14	1.46	0.58	0.36	0.77	0.34	0.86
Avail Cap(c_a), veh/h	266	2060	629	203	1966	603	203	2032	631	158	2003	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.2	22.1	21.3	52.2	25.5	22.6	52.2	32.2	29.8	52.3	30.5	36.8
Incr Delay (d2), s/veh	411.1	0.2	0.4	223.8	0.7	0.5	232.1	0.3	0.4	18.6	0.1	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.8	2.5	1.4	9.0	5.3	1.5	9.2	6.6	3.7	2.0	3.5	11.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	462.3	22.3	21.7	276.0	26.1	23.1	284.3	32.6	30.3	71.0	30.7	46.5
LnGrp LOS	F	C	C	F	C	C	F	C	C	E	C	D
Approach Vol, veh/h		1038			1213			1403			1050	
Approach Delay, s/veh		234.7			86.1			85.4			41.4	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	40.4	11.0	49.8	11.0	39.0	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.0	43.4	6.4	44.0	6.4	* 43	8.4	42.0
Max Q Clear Time (g_c+I1), s	5.8	18.7	8.4	8.4	8.4	28.7	10.4	15.2
Green Ext Time (p_c), s	0.0	6.8	0.0	3.3	0.0	4.0	0.0	6.0

Intersection Summary	
HCM 6th Ctrl Delay	108.7
HCM 6th LOS	F

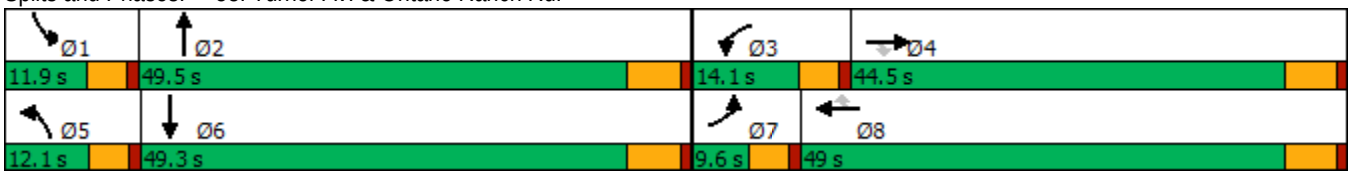
Notes

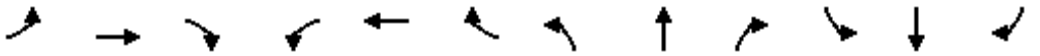
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	27	579	34	44	1092	19	59	25	35	16
Future Volume (vph)	27	579	34	44	1092	19	59	25	35	16
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	9.6	44.5	44.5	14.1	49.0	49.0	12.1	49.5	11.9	49.3
Total Split (%)	8.0%	37.1%	37.1%	11.8%	40.8%	40.8%	10.1%	41.3%	9.9%	41.1%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	5.2	49.0	49.0	7.1	50.6	50.6	7.1	18.0	6.4	15.1
Actuated g/C Ratio	0.06	0.57	0.57	0.08	0.59	0.59	0.08	0.21	0.07	0.17
v/c Ratio	0.31	0.33	0.04	0.37	0.61	0.02	0.50	0.19	0.33	0.26
Control Delay	54.7	17.8	0.1	51.3	20.6	0.1	57.2	16.4	51.7	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.7	17.8	0.1	51.3	20.6	0.1	57.2	16.4	51.7	13.0
LOS	D	B	A	D	C	A	E	B	D	B
Approach Delay		18.4			21.5			36.2		25.1
Approach LOS		B			C			D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 86.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 21.6	Intersection LOS: C
Intersection Capacity Utilization 59.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	579	34	44	1092	19	59	25	38	35	16	61
Future Volume (veh/h)	27	579	34	44	1092	19	59	25	38	35	16	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	30	643	27	49	1213	12	66	28	29	39	18	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	49	1805	805	67	1842	822	82	110	113	59	55	138
Arrive On Green	0.03	0.53	0.53	0.04	0.54	0.54	0.05	0.14	0.14	0.04	0.12	0.12
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	810	839	1619	456	1139
Grp Volume(v), veh/h	30	643	27	49	1213	12	66	0	57	39	0	63
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	0	1649	1619	0	1595
Q Serve(g_s), s	1.5	8.8	0.7	2.4	20.3	0.3	3.2	0.0	2.5	1.9	0.0	2.9
Cycle Q Clear(g_c), s	1.5	8.8	0.7	2.4	20.3	0.3	3.2	0.0	2.5	1.9	0.0	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.51	1.00		0.71
Lane Grp Cap(c), veh/h	49	1805	805	67	1842	822	82	0	223	59	0	193
V/C Ratio(X)	0.61	0.36	0.03	0.73	0.66	0.01	0.81	0.00	0.26	0.67	0.00	0.33
Avail Cap(c_a), veh/h	101	1805	805	192	1842	822	151	0	899	147	0	865
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.4	11.0	9.1	38.0	13.2	8.6	37.7	0.0	31.1	38.2	0.0	32.2
Incr Delay (d2), s/veh	4.5	0.6	0.1	5.6	1.9	0.0	6.9	0.0	0.6	4.8	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.9	0.2	1.0	6.8	0.1	1.4	0.0	1.0	0.8	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.9	11.6	9.2	43.6	15.1	8.6	44.6	0.0	31.7	42.9	0.0	33.2
LnGrp LOS	D	B	A	D	B	A	D	A	C	D	A	C
Approach Vol, veh/h		700			1274			123			102	
Approach Delay, s/veh		12.8			16.1			38.6			36.9	
Approach LOS		B			B			D			D	

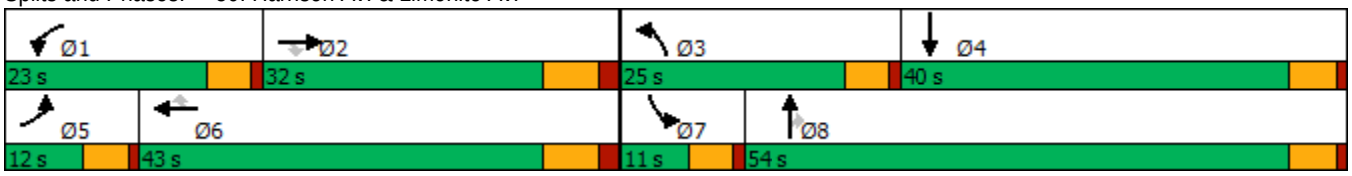
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	16.6	7.9	48.1	8.6	15.5	7.0	49.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	7.3	43.7	9.5	38.7	7.5	43.5	5.0	43.2
Max Q Clear Time (g_c+I1), s	3.9	4.5	4.4	10.8	5.2	4.9	3.5	22.3
Green Ext Time (p_c), s	0.0	0.3	0.0	4.3	0.0	0.3	0.0	8.4

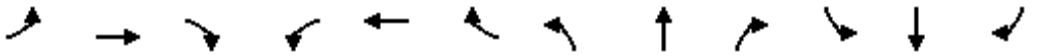
Intersection Summary	
HCM 6th Ctrl Delay	17.3
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	43	476	21	145	910	22	153	109	216	27	115
Future Volume (vph)	43	476	21	145	910	22	153	109	216	27	115
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	12.0	32.0	32.0	23.0	43.0	43.0	25.0	54.0	54.0	11.0	40.0
Total Split (%)	10.0%	26.7%	26.7%	19.2%	35.8%	35.8%	20.8%	45.0%	45.0%	9.2%	33.3%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	6.3	15.6	15.6	11.1	26.0	26.0	11.6	29.0	29.0	5.8	15.5
Actuated g/C Ratio	0.08	0.20	0.20	0.14	0.33	0.33	0.15	0.37	0.37	0.07	0.20
v/c Ratio	0.31	0.48	0.05	0.59	0.55	0.04	0.59	0.16	0.31	0.21	0.54
Control Delay	48.0	31.2	0.2	45.8	25.4	0.1	44.6	20.2	4.4	47.3	31.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.0	31.2	0.2	45.8	25.4	0.1	44.6	20.2	4.4	47.3	31.0
LOS	D	C	A	D	C	A	D	C	A	D	C
Approach Delay		31.3			27.6			20.9			33.0
Approach LOS		C			C			C			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 77.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 27.6	Intersection LOS: C
Intersection Capacity Utilization 59.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 59: Harrison Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	476	21	145	910	22	153	109	216	27	115	79
Future Volume (veh/h)	43	476	21	145	910	22	153	109	216	27	115	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	45	496	15	151	948	21	159	114	107	28	120	53
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	81	1262	379	193	1585	480	203	435	368	57	185	82
Arrive On Green	0.04	0.24	0.24	0.11	0.31	0.31	0.11	0.23	0.23	0.03	0.15	0.15
Sat Flow, veh/h	1810	5187	1558	1810	5187	1571	1810	1900	1606	1810	1249	552
Grp Volume(v), veh/h	45	496	15	151	948	21	159	114	107	28	0	173
Grp Sat Flow(s),veh/h/ln	1810	1729	1558	1810	1729	1571	1810	1900	1606	1810	0	1801
Q Serve(g_s), s	1.4	4.6	0.4	4.7	8.9	0.5	4.9	2.8	3.2	0.9	0.0	5.2
Cycle Q Clear(g_c), s	1.4	4.6	0.4	4.7	8.9	0.5	4.9	2.8	3.2	0.9	0.0	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	81	1262	379	193	1585	480	203	435	368	57	0	266
V/C Ratio(X)	0.56	0.39	0.04	0.78	0.60	0.04	0.78	0.26	0.29	0.49	0.00	0.65
Avail Cap(c_a), veh/h	221	2265	680	569	3262	988	632	1616	1366	190	0	1092
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.8	18.1	16.6	24.9	16.9	14.0	24.7	18.1	18.2	27.3	0.0	23.0
Incr Delay (d2), s/veh	2.2	0.2	0.0	2.6	0.4	0.0	2.5	0.3	0.4	2.4	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.5	0.1	1.9	2.9	0.2	2.0	1.1	1.0	0.4	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.0	18.3	16.6	27.5	17.3	14.0	27.2	18.4	18.7	29.7	0.0	25.6
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	A	C
Approach Vol, veh/h		556			1120			380			201	
Approach Delay, s/veh		19.1			18.6			22.2			26.2	
Approach LOS		B			B			C			C	

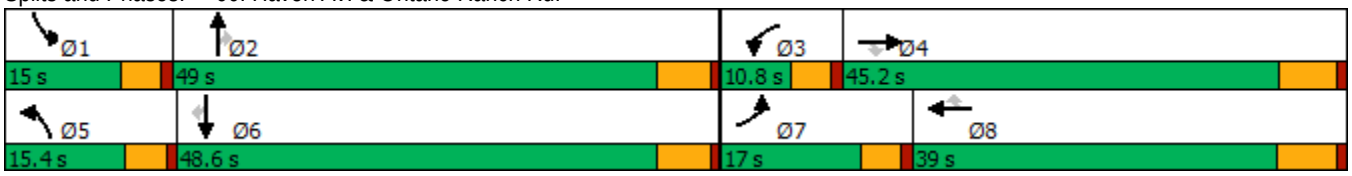
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	20.9	11.4	13.8	7.6	24.5	6.8	18.4
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	18.0	25.0	20.0	34.7	7.0	36.0	6.0	48.7
Max Q Clear Time (g_c+I1), s	6.7	6.6	6.9	7.2	3.4	10.9	2.9	5.2
Green Ext Time (p_c), s	0.1	2.8	0.1	0.9	0.0	6.4	0.0	0.9

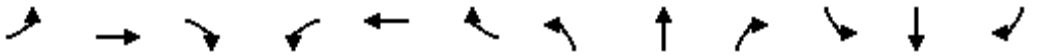
Intersection Summary	
HCM 6th Ctrl Delay	20.0
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	610	29	22	914	84	64	195	81	122	59	72
Future Volume (vph)	138	610	29	22	914	84	64	195	81	122	59	72
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	17.0	45.2	45.2	10.8	39.0	39.0	15.4	49.0	49.0	15.0	48.6	48.6
Total Split (%)	14.2%	37.7%	37.7%	9.0%	32.5%	32.5%	12.8%	40.8%	40.8%	12.5%	40.5%	40.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	12.0	46.0	46.0	5.6	32.9	32.9	8.0	19.0	19.0	10.5	23.7	23.7
Actuated g/C Ratio	0.12	0.48	0.48	0.06	0.34	0.34	0.08	0.20	0.20	0.11	0.25	0.25
v/c Ratio	0.73	0.28	0.04	0.24	0.83	0.14	0.51	0.58	0.20	0.74	0.14	0.16
Control Delay	64.4	18.3	0.1	54.0	38.1	0.8	58.3	40.9	1.1	69.0	30.3	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.4	18.3	0.1	54.0	38.1	0.8	58.3	40.9	1.1	69.0	30.3	0.7
LOS	E	B	A	D	D	A	E	D	A	E	C	A
Approach Delay		25.8			35.4			34.7			40.5	
Approach LOS		C			D			C			D	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 96.2		
Natural Cycle: 115		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.83		
Intersection Signal Delay: 32.7	Intersection LOS: C	
Intersection Capacity Utilization 71.5%	ICU Level of Service C	
Analysis Period (min) 15		

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	610	29	22	914	84	64	195	81	122	59	72
Future Volume (veh/h)	138	610	29	22	914	84	64	195	81	122	59	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	147	649	18	23	972	44	68	207	36	130	63	44
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	177	2322	721	40	1325	591	85	267	227	159	350	296
Arrive On Green	0.11	0.47	0.47	0.02	0.39	0.39	0.05	0.15	0.15	0.10	0.19	0.19
Sat Flow, veh/h	1619	4914	1525	1619	3420	1525	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	147	649	18	23	972	44	68	207	36	130	63	44
Grp Sat Flow(s),veh/h/ln	1619	1638	1525	1619	1710	1525	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	7.5	6.7	0.5	1.2	20.4	1.5	3.5	9.3	1.7	6.6	2.5	2.0
Cycle Q Clear(g_c), s	7.5	6.7	0.5	1.2	20.4	1.5	3.5	9.3	1.7	6.6	2.5	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	177	2322	721	40	1325	591	85	267	227	159	350	296
V/C Ratio(X)	0.83	0.28	0.02	0.57	0.73	0.07	0.80	0.77	0.16	0.82	0.18	0.15
Avail Cap(c_a), veh/h	239	2322	721	120	1325	591	209	927	786	201	919	779
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.6	13.4	11.8	40.5	22.0	16.2	39.3	34.4	31.1	37.1	28.2	28.0
Incr Delay (d2), s/veh	12.2	0.3	0.1	4.8	3.6	0.2	6.5	4.8	0.3	15.3	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	2.2	0.2	0.5	7.6	0.5	1.5	4.2	0.6	3.1	1.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.8	13.7	11.9	45.2	25.6	16.4	45.9	39.1	31.5	52.4	28.5	28.3
LnGrp LOS	D	B	B	D	C	B	D	D	C	D	C	C
Approach Vol, veh/h		814			1039			311			237	
Approach Delay, s/veh		20.0			25.6			39.7			41.5	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.8	18.3	6.7	46.1	9.0	22.1	13.8	39.0
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	10.4	43.2	6.2	* 39	10.8	42.8	12.4	32.5
Max Q Clear Time (g_c+I1), s	8.6	11.3	3.2	8.7	5.5	4.5	9.5	22.4
Green Ext Time (p_c), s	0.0	1.2	0.0	4.3	0.0	0.4	0.0	4.3

Intersection Summary	
HCM 6th Ctrl Delay	27.1
HCM 6th LOS	C

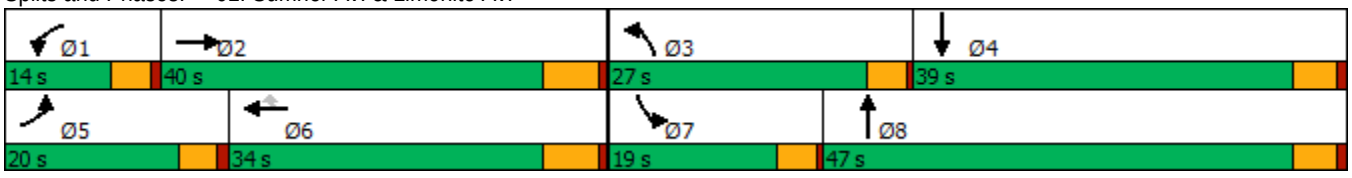
Notes

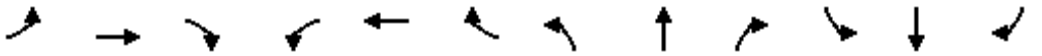
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	246	517	111	723	33	183	389	99	195
Future Volume (vph)	246	517	111	723	33	183	389	99	195
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	20.0	40.0	14.0	34.0	34.0	27.0	47.0	19.0	39.0
Total Split (%)	16.7%	33.3%	11.7%	28.3%	28.3%	22.5%	39.2%	15.8%	32.5%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	10.2	24.6	6.9	18.5	18.5	12.9	20.9	8.9	14.2
Actuated g/C Ratio	0.13	0.32	0.09	0.24	0.24	0.17	0.27	0.12	0.18
v/c Ratio	0.55	0.34	0.36	0.60	0.07	0.63	0.54	0.49	0.49
Control Delay	39.6	23.3	42.5	29.9	0.2	43.0	26.1	45.5	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.6	23.3	42.5	29.9	0.2	43.0	26.1	45.5	18.0
LOS	D	C	D	C	A	D	C	D	B
Approach Delay		28.4		30.4			30.6		24.0
Approach LOS		C		C			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 76.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 28.8	Intersection LOS: C
Intersection Capacity Utilization 57.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 61: Sumner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	246	517	30	111	723	33	183	389	114	99	195	160
Future Volume (veh/h)	246	517	30	111	723	33	183	389	114	99	195	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	254	533	25	114	745	30	189	401	44	102	201	68
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	382	1508	70	217	1297	397	240	641	70	132	363	119
Arrive On Green	0.11	0.30	0.30	0.06	0.25	0.25	0.13	0.20	0.20	0.07	0.14	0.14
Sat Flow, veh/h	3510	5079	237	3510	5187	1589	1810	3282	358	1810	2670	877
Grp Volume(v), veh/h	254	362	196	114	745	30	189	220	225	102	134	135
Grp Sat Flow(s),veh/h/ln	1755	1729	1857	1755	1729	1589	1810	1805	1835	1810	1805	1742
Q Serve(g_s), s	3.6	4.3	4.3	1.6	6.6	0.8	5.3	5.8	5.9	2.9	3.6	3.8
Cycle Q Clear(g_c), s	3.6	4.3	4.3	1.6	6.6	0.8	5.3	5.8	5.9	2.9	3.6	3.8
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.20	1.00		0.50
Lane Grp Cap(c), veh/h	382	1027	552	217	1297	397	240	353	359	132	245	237
V/C Ratio(X)	0.66	0.35	0.36	0.52	0.57	0.08	0.79	0.62	0.63	0.77	0.55	0.57
Avail Cap(c_a), veh/h	1040	2248	1207	638	2776	851	796	1449	1473	519	1173	1132
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	14.4	14.5	23.8	17.2	15.0	22.0	19.3	19.3	23.8	21.1	21.2
Incr Delay (d2), s/veh	0.7	0.2	0.4	0.7	0.4	0.1	2.2	1.3	1.4	3.6	1.4	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.3	1.5	0.6	2.1	0.2	2.1	2.2	2.2	1.2	1.4	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.1	14.6	14.8	24.5	17.6	15.1	24.2	20.6	20.7	27.4	22.5	22.8
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		812			889			634			371	
Approach Delay, s/veh		17.3			18.4			21.7			24.0	
Approach LOS		B			B			C			C	

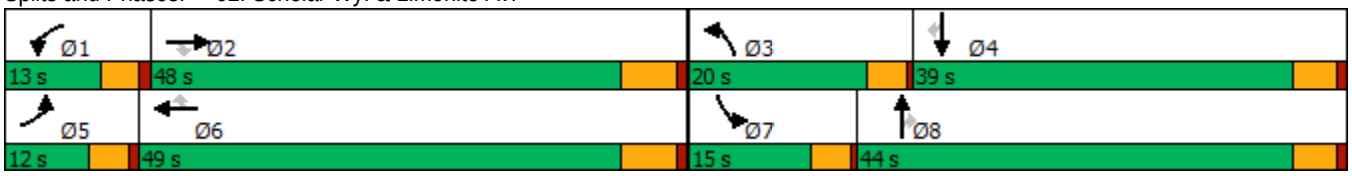
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	21.5	10.9	12.1	10.2	19.1	7.8	15.2
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	9.5	34.0	23.0	34.0	15.5	28.0	15.0	42.0
Max Q Clear Time (g_c+I1), s	3.6	6.3	7.3	5.8	5.6	8.6	4.9	7.9
Green Ext Time (p_c), s	0.0	3.2	0.1	1.1	0.2	4.5	0.0	1.9

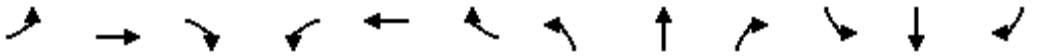
Intersection Summary	
HCM 6th Ctrl Delay	19.6
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	745	65	42	675	26	100	179	102	52	196	29
Future Volume (vph)	31	745	65	42	675	26	100	179	102	52	196	29
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	12.0	48.0	48.0	13.0	49.0	49.0	20.0	44.0	44.0	15.0	39.0	39.0
Total Split (%)	10.0%	40.0%	40.0%	10.8%	40.8%	40.8%	16.7%	36.7%	36.7%	12.5%	32.5%	32.5%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.2	25.0	25.0	6.6	25.3	25.3	9.5	18.0	18.0	7.2	13.5	13.5
Actuated g/C Ratio	0.09	0.37	0.37	0.10	0.37	0.37	0.14	0.26	0.26	0.11	0.20	0.20
v/c Ratio	0.21	0.61	0.11	0.26	0.55	0.04	0.43	0.39	0.22	0.30	0.30	0.08
Control Delay	43.4	23.0	0.3	43.0	21.5	0.1	40.5	27.5	7.0	41.9	28.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.4	23.0	0.3	43.0	21.5	0.1	40.5	27.5	7.0	41.9	28.1	0.3
LOS	D	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		22.0			22.0			25.4			27.7	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 68	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 23.3	Intersection LOS: C
Intersection Capacity Utilization 59.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	745	65	42	675	26	100	179	102	52	196	29
Future Volume (veh/h)	31	745	65	42	675	26	100	179	102	52	196	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	34	810	37	46	734	17	109	195	69	57	213	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	54	1224	545	68	1251	558	141	385	326	78	606	258
Arrive On Green	0.03	0.34	0.34	0.04	0.35	0.35	0.08	0.20	0.20	0.04	0.17	0.17
Sat Flow, veh/h	1810	3610	1609	1810	3610	1610	1810	1900	1608	1810	3610	1535
Grp Volume(v), veh/h	34	810	37	46	734	17	109	195	69	57	213	30
Grp Sat Flow(s),veh/h/ln	1810	1805	1609	1810	1805	1610	1810	1900	1608	1810	1805	1535
Q Serve(g_s), s	1.0	9.9	0.8	1.3	8.6	0.4	3.1	4.7	1.8	1.6	2.7	0.9
Cycle Q Clear(g_c), s	1.0	9.9	0.8	1.3	8.6	0.4	3.1	4.7	1.8	1.6	2.7	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	54	1224	545	68	1251	558	141	385	326	78	606	258
V/C Ratio(X)	0.63	0.66	0.07	0.68	0.59	0.03	0.77	0.51	0.21	0.73	0.35	0.12
Avail Cap(c_a), veh/h	263	2936	1308	298	3006	1341	561	1435	1214	385	2377	1011
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	14.5	11.5	24.6	13.8	11.1	23.4	18.3	17.2	24.4	19.0	18.2
Incr Delay (d2), s/veh	4.4	0.6	0.1	4.4	0.4	0.0	3.3	0.8	0.2	4.7	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.1	0.2	0.6	2.6	0.1	1.3	1.9	0.6	0.7	1.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	15.2	11.6	28.9	14.3	11.2	26.7	19.1	17.4	29.1	19.3	18.4
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		881			797			373			300	
Approach Delay, s/veh		15.6			15.1			21.0			21.1	
Approach LOS		B			B			C			C	

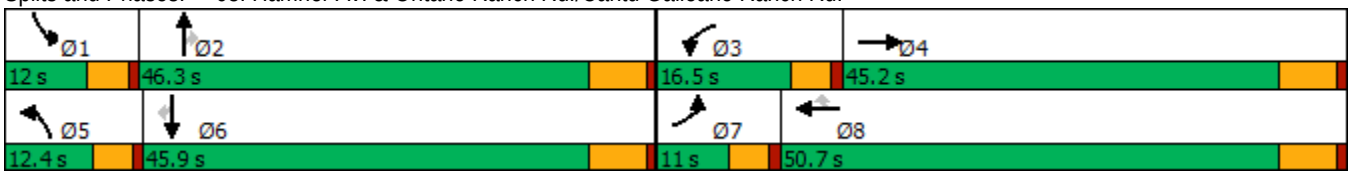
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	23.5	8.0	13.7	6.0	23.9	6.2	15.5
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	8.5	42.0	16.0	34.0	7.5	43.0	11.0	39.0
Max Q Clear Time (g_c+I1), s	3.3	11.9	5.1	4.7	3.0	10.6	3.6	6.7
Green Ext Time (p_c), s	0.0	5.6	0.1	1.1	0.0	4.9	0.0	1.0

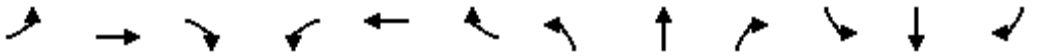
Intersection Summary	
HCM 6th Ctrl Delay	16.9
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	99	569	280	856	207	175	717	514	157	214	85
Future Volume (vph)	99	569	280	856	207	175	717	514	157	214	85
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	11.0	45.2	16.5	50.7	50.7	12.4	46.3	46.3	12.0	45.9	45.9
Total Split (%)	9.2%	37.7%	13.8%	42.3%	42.3%	10.3%	38.6%	38.6%	10.0%	38.3%	38.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.4	32.1	12.1	37.9	37.9	7.9	36.2	36.2	7.5	35.8	35.8
Actuated g/C Ratio	0.06	0.29	0.11	0.34	0.34	0.07	0.33	0.33	0.07	0.33	0.33
v/c Ratio	0.66	0.41	0.98	0.83	0.36	0.94	0.50	0.91	0.89	0.22	0.16
Control Delay	72.7	30.5	96.7	40.1	8.1	100.9	31.2	42.8	92.8	28.1	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.7	30.5	96.7	40.1	8.1	100.9	31.2	42.8	92.8	28.1	1.2
LOS	E	C	F	D	A	F	C	D	F	C	A
Approach Delay		36.0		47.0			44.2			45.3	
Approach LOS		D		D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 43.7	Intersection LOS: D
Intersection Capacity Utilization 67.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	569	84	280	856	207	175	717	514	157	214	85
Future Volume (veh/h)	99	569	84	280	856	207	175	717	514	157	214	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	112	647	95	318	973	235	199	815	577	178	243	97
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	158	1544	221	313	1137	507	205	1751	544	194	1207	538
Arrive On Green	0.05	0.28	0.28	0.11	0.33	0.33	0.07	0.36	0.36	0.07	0.35	0.35
Sat Flow, veh/h	2956	5513	789	2956	3420	1525	2956	4914	1525	2956	3420	1524
Grp Volume(v), veh/h	112	542	200	318	973	235	199	815	577	178	243	97
Grp Sat Flow(s),veh/h/ln	1478	1548	1658	1478	1710	1525	1478	1638	1525	1478	1710	1524
Q Serve(g_s), s	4.2	10.7	11.1	11.9	29.9	13.7	7.6	14.4	40.1	6.7	5.6	4.9
Cycle Q Clear(g_c), s	4.2	10.7	11.1	11.9	29.9	13.7	7.6	14.4	40.1	6.7	5.6	4.9
Prop In Lane	1.00		0.48	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	158	1301	464	313	1137	507	205	1751	544	194	1207	538
V/C Ratio(X)	0.71	0.42	0.43	1.02	0.86	0.46	0.97	0.47	1.06	0.92	0.20	0.18
Avail Cap(c_a), veh/h	168	1610	575	313	1353	603	205	1751	544	194	1207	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.4	33.0	33.1	50.3	35.0	29.6	52.2	27.9	36.2	52.2	25.4	25.2
Incr Delay (d2), s/veh	10.0	0.2	0.6	55.3	4.9	0.7	54.1	0.2	55.9	40.8	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	3.8	4.3	6.6	12.4	4.8	4.2	5.4	22.2	3.5	2.2	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.4	33.2	33.8	105.6	39.9	30.3	106.3	28.1	92.1	93.1	25.4	25.3
LnGrp LOS	E	C	C	F	D	C	F	C	F	F	C	C
Approach Vol, veh/h		854			1526			1591			518	
Approach Delay, s/veh		37.2			52.1			61.1			48.7	
Approach LOS		D			D			E			D	

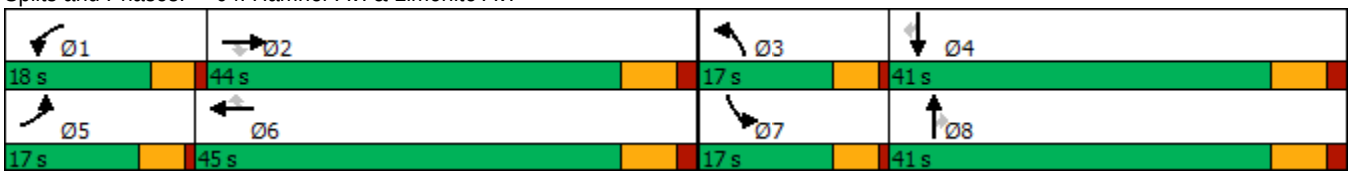
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	46.3	16.5	37.7	12.4	45.9	10.6	43.6
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	7.4	40.1	11.9	39.0	7.8	39.7	6.4	44.5
Max Q Clear Time (g_c+I1), s	8.7	42.1	13.9	13.1	9.6	7.6	6.2	31.9
Green Ext Time (p_c), s	0.0	0.0	0.0	4.4	0.0	1.7	0.0	5.5

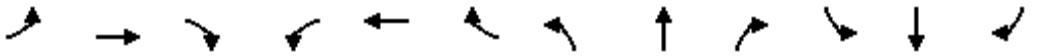
Intersection Summary	
HCM 6th Ctrl Delay	52.1
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	552	46	179	446	87	171	708	259	161	381	117
Future Volume (vph)	176	552	46	179	446	87	171	708	259	161	381	117
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	17.0	44.0	44.0	18.0	45.0	45.0	17.0	41.0	41.0	17.0	41.0	41.0
Total Split (%)	14.2%	36.7%	36.7%	15.0%	37.5%	37.5%	14.2%	34.2%	34.2%	14.2%	34.2%	34.2%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	8.9	21.4	21.4	9.1	21.6	21.6	8.8	26.7	26.7	8.5	26.5	26.5
Actuated g/C Ratio	0.10	0.24	0.24	0.10	0.24	0.24	0.10	0.30	0.30	0.09	0.29	0.29
v/c Ratio	0.55	0.48	0.10	0.54	0.55	0.19	0.54	0.49	0.42	0.52	0.27	0.22
Control Delay	48.0	32.0	0.4	47.4	33.8	3.4	47.9	28.3	5.6	47.8	26.0	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.0	32.0	0.4	47.4	33.8	3.4	47.9	28.3	5.6	47.8	26.0	6.1
LOS	D	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		33.8			33.5			26.1			27.8	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 90.5	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 29.8	Intersection LOS: C
Intersection Capacity Utilization 56.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 64: Hamner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	552	46	179	446	87	171	708	259	161	381	117
Future Volume (veh/h)	176	552	46	179	446	87	171	708	259	161	381	117
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	187	587	36	190	474	67	182	753	178	171	405	84
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	277	1193	370	280	834	372	271	1496	464	259	1478	459
Arrive On Green	0.08	0.23	0.23	0.08	0.23	0.23	0.08	0.29	0.29	0.07	0.28	0.28
Sat Flow, veh/h	3510	5187	1608	3510	3610	1610	3510	5187	1608	3510	5187	1610
Grp Volume(v), veh/h	187	587	36	190	474	67	182	753	178	171	405	84
Grp Sat Flow(s),veh/h/ln	1755	1729	1608	1755	1805	1610	1755	1729	1608	1755	1729	1610
Q Serve(g_s), s	3.8	7.2	1.3	3.9	8.5	2.4	3.7	8.8	6.5	3.5	4.4	2.9
Cycle Q Clear(g_c), s	3.8	7.2	1.3	3.9	8.5	2.4	3.7	8.8	6.5	3.5	4.4	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	277	1193	370	280	834	372	271	1496	464	259	1478	459
V/C Ratio(X)	0.68	0.49	0.10	0.68	0.57	0.18	0.67	0.50	0.38	0.66	0.27	0.18
Avail Cap(c_a), veh/h	576	2622	813	624	1874	836	576	2410	747	576	2410	748
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.8	24.5	22.2	32.8	24.9	22.6	32.9	21.7	20.8	33.0	20.3	19.7
Incr Delay (d2), s/veh	1.1	0.7	0.2	1.1	1.3	0.5	1.1	0.6	1.1	1.1	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	2.7	0.5	1.6	3.4	0.9	1.5	3.3	2.3	1.4	1.6	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.9	25.1	22.4	33.8	26.2	23.1	33.9	22.2	22.0	34.1	20.5	20.2
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		810			731			1113			660	
Approach Delay, s/veh		27.0			27.9			24.1			24.0	
Approach LOS		C			C			C			C	

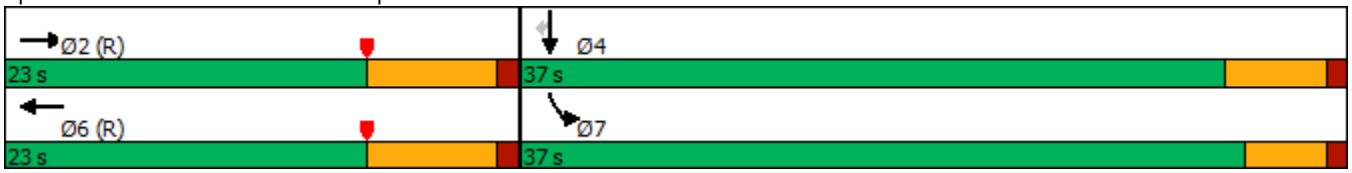
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	23.8	10.7	27.8	10.8	23.9	10.4	28.1
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	13.0	37.0	12.0	34.0	12.0	38.0	12.0	34.0
Max Q Clear Time (g_c+I1), s	5.9	9.2	5.7	6.4	5.8	10.5	5.5	10.8
Green Ext Time (p_c), s	0.1	7.5	0.1	5.5	0.1	6.2	0.1	10.2

Intersection Summary	
HCM 6th Ctrl Delay	25.6
HCM 6th LOS	C

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1015	337	544	186	329	0	1162
Future Volume (vph)	1015	337	544	186	329	0	1162
Turn Type	NA	Free	NA	Free	Prot	NA	Perm
Protected Phases	2		6		7	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		7	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		9.6	10.5	10.5
Total Split (s)	23.0		23.0		37.0	37.0	37.0
Total Split (%)	38.3%		38.3%		61.7%	61.7%	61.7%
Yellow Time (s)	5.8		5.8		3.6	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8		6.8		4.6	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Min		None	Min	Min
Act Effct Green (s)	16.2	60.0	16.2	60.0	32.4	31.5	31.5
Actuated g/C Ratio	0.27	1.00	0.27	1.00	0.54	0.52	0.52
v/c Ratio	0.81	0.23	0.62	0.13	0.36	0.83	0.79
Control Delay	26.1	0.3	19.5	0.2	9.2	22.2	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.1	0.3	19.5	0.2	9.2	22.2	19.1
LOS	C	A	B	A	A	C	B
Approach Delay	19.7		14.6			18.4	
Approach LOS	B		B			B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 53 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 18.1	Intersection LOS: B
Intersection Capacity Utilization 73.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	✣	↱
Traffic Volume (veh/h)	0	1015	337	0	544	186	0	0	0	329	0	1162
Future Volume (veh/h)	0	1015	337	0	544	186	0	0	0	329	0	1162
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1128	0	0	604	0				244	0	1124
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2014		0	1402					763	0	1358
Arrive On Green	0.00	0.39	0.00	0.00	0.39	0.00				0.42	0.00	0.42
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1128	0	0	604	0				244	0	1124
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	10.2	0.0	0.0	7.4	0.0				5.4	0.0	18.6
Cycle Q Clear(g_c), s	0.0	10.2	0.0	0.0	7.4	0.0				5.4	0.0	18.6
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2014		0	1402					763	0	1358
V/C Ratio(X)	0.00	0.56		0.00	0.43					0.32	0.00	0.83
Avail Cap(c_a), veh/h	0	2014		0	1402					977	0	1739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.70	0.00	0.00	0.92	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	14.3	0.0	0.0	13.5	0.0				11.6	0.0	15.4
Incr Delay (d2), s/veh	0.0	0.8	0.0	0.0	0.9	0.0				0.2	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.2	0.0	0.0	2.5	0.0				1.8	0.0	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	15.1	0.0	0.0	14.4	0.0				11.8	0.0	18.2
LnGrp LOS	A	B		A	B					B	A	B
Approach Vol, veh/h		1128	A		604	A					1368	
Approach Delay, s/veh		15.1			14.4						17.0	
Approach LOS		B			B						B	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	30.1	29.9	30.1
Change Period (Y+Rc), s	6.8	4.6	6.8
Max Green Setting (Gmax), s	16.2	32.4	16.2
Max Q Clear Time (g_c+I1), s	12.2	20.6	9.4
Green Ext Time (p_c), s	2.4	4.7	2.0

Intersection Summary	
HCM 6th Ctrl Delay	15.8
HCM 6th LOS	B

Notes

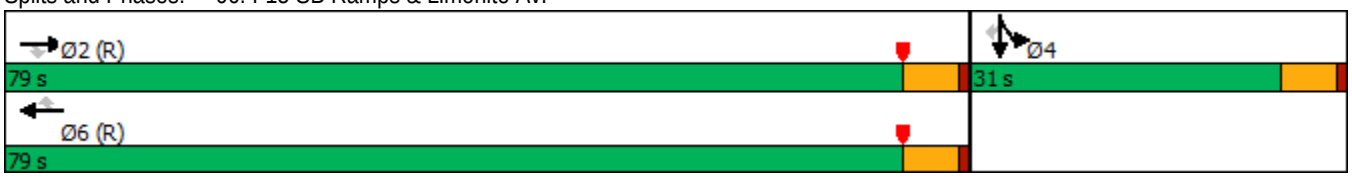
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1115	561	689	673	152	0	426
Future Volume (vph)	1115	561	689	673	152	0	426
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		4	4	
Permitted Phases		2		6			4
Detector Phase	2	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	36.5	36.5	23.5	23.5	23.5
Total Split (s)	79.0	79.0	79.0	79.0	31.0	31.0	31.0
Total Split (%)	71.8%	71.8%	71.8%	71.8%	28.2%	28.2%	28.2%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	Min	Min
Act Effct Green (s)	89.0	89.0	89.0	89.0	10.0	10.0	10.0
Actuated g/C Ratio	0.81	0.81	0.81	0.81	0.09	0.09	0.09
v/c Ratio	0.28	0.43	0.17	0.50	0.52	0.52	0.68
Control Delay	3.0	1.2	2.9	3.8	58.7	58.7	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.0	1.2	2.9	3.8	58.7	58.7	9.8
LOS	A	A	A	A	E	E	A
Approach Delay	2.4		3.4			22.7	
Approach LOS	A		A			C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 6.0	Intersection LOS: A
Intersection Capacity Utilization 48.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	↰	↱↱
Traffic Volume (veh/h)	0	1115	561	0	689	673	0	0	0	152	0	426
Future Volume (veh/h)	0	1115	561	0	689	673	0	0	0	152	0	426
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1186	475	0	733	716				162	0	155
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	4300	1334	0	4300	1335				257	0	225
Arrive On Green	0.00	0.83	0.83	0.00	1.00	1.00				0.07	0.00	0.07
Sat Flow, veh/h	0	5358	1610	0	5358	1610				3619	0	3172
Grp Volume(v), veh/h	0	1186	475	0	733	716				162	0	155
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1610				1810	0	1586
Q Serve(g_s), s	0.0	5.6	7.9	0.0	0.0	0.0				4.8	0.0	5.3
Cycle Q Clear(g_c), s	0.0	5.6	7.9	0.0	0.0	0.0				4.8	0.0	5.3
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	4300	1334	0	4300	1335				257	0	225
V/C Ratio(X)	0.00	0.28	0.36	0.00	0.17	0.54				0.63	0.00	0.69
Avail Cap(c_a), veh/h	0	4300	1334	0	4300	1335				839	0	735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.96	0.96				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	2.1	2.3	0.0	0.0	0.0				49.7	0.0	49.9
Incr Delay (d2), s/veh	0.0	0.2	0.7	0.0	0.1	1.5				1.0	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.9	1.4	0.0	0.0	0.6				2.1	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	2.2	3.0	0.0	0.1	1.5				50.7	0.0	51.3
LnGrp LOS	A	A	A	A	A	A				D	A	D
Approach Vol, veh/h		1661			1449						317	
Approach Delay, s/veh		2.5			0.8						51.0	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		96.7		13.3		96.7						
Change Period (Y+Rc), s		5.5		5.5		5.5						
Max Green Setting (Gmax), s		73.5		25.5		73.5						
Max Q Clear Time (g_c+I1), s		9.9		7.3		2.0						
Green Ext Time (p_c), s		7.2		0.6		4.9						

Intersection Summary	
HCM 6th Ctrl Delay	6.2
HCM 6th LOS	A

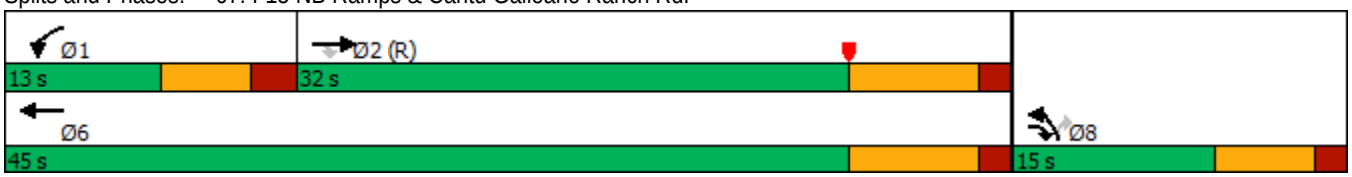
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	511	833	374	472	258	306
Future Volume (vph)	511	833	374	472	258	306
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	32.0	15.0	13.0	45.0	15.0	15.0
Total Split (%)	53.3%	25.0%	21.7%	75.0%	25.0%	25.0%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.0	6.0	7.3	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max
Act Effct Green (s)	24.7	41.0	7.0	37.7	9.0	9.0
Actuated g/C Ratio	0.41	0.68	0.12	0.63	0.15	0.15
v/c Ratio	0.26	0.83	1.01	0.16	0.69	0.51
Control Delay	8.8	14.7	77.1	4.7	23.4	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.8	14.7	77.1	4.7	23.4	9.5
LOS	A	B	E	A	C	A
Approach Delay	12.5			36.7	19.0	
Approach LOS	B			D	B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 21.3	Intersection LOS: C
Intersection Capacity Utilization 72.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	511	833	374	472	258	306
Future Volume (veh/h)	511	833	374	472	258	306
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	562	581	411	519	313	158
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2135	904	410	3259	543	242
Arrive On Green	0.69	0.69	0.12	0.63	0.15	0.15
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	562	581	411	519	313	158
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	2.5	12.7	7.0	2.5	4.8	5.5
Cycle Q Clear(g_c), s	2.5	12.7	7.0	2.5	4.8	5.5
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2135	904	410	3259	543	242
V/C Ratio(X)	0.26	0.64	1.00	0.16	0.58	0.65
Avail Cap(c_a), veh/h	2135	904	410	3259	543	242
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.64	0.64	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.9	4.5	26.5	4.6	23.7	24.0
Incr Delay (d2), s/veh	0.2	2.3	45.4	0.0	4.4	13.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.9	5.1	0.5	2.1	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.1	6.8	71.9	4.6	28.1	37.0
LnGrp LOS	A	A	F	A	C	D
Approach Vol, veh/h	1143			930	471	
Approach Delay, s/veh	6.5			34.3	31.1	
Approach LOS	A			C	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.0	32.0				45.0	15.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	7.0	24.7				37.7	9.0
Max Q Clear Time (g_c+I1), s	9.0	14.7				4.5	7.5
Green Ext Time (p_c), s	0.0	4.0				3.3	0.3

Intersection Summary	
HCM 6th Ctrl Delay	21.2
HCM 6th LOS	C

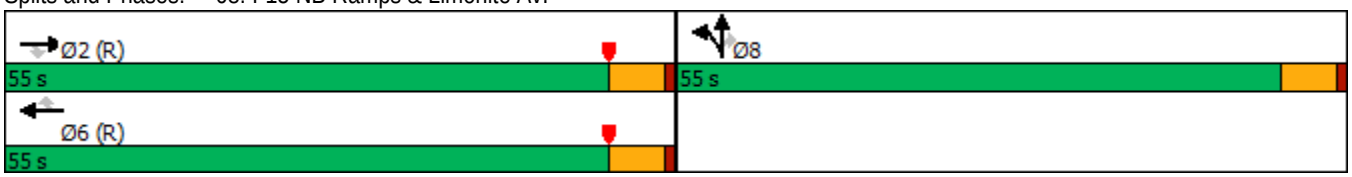
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	525	743	1134	401	227	0	326
Future Volume (vph)	525	743	1134	401	227	0	326
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		8	8	
Permitted Phases		2		6			8
Detector Phase	2	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	55.0	55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None
Act Effct Green (s)	85.2	85.2	85.2	85.2	13.8	13.8	13.8
Actuated g/C Ratio	0.77	0.77	0.77	0.77	0.13	0.13	0.13
v/c Ratio	0.14	0.54	0.29	0.31	0.55	0.55	0.52
Control Delay	3.1	3.1	4.2	1.1	53.9	53.9	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.1	3.1	4.2	1.1	53.9	53.9	7.4
LOS	A	A	A	A	D	D	A
Approach Delay	3.1		3.4			26.5	
Approach LOS	A		A			C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 7.1	Intersection LOS: A
Intersection Capacity Utilization 50.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱	↰	↕	↱↱			
Traffic Volume (veh/h)	0	525	743	0	1134	401	227	0	326	0	0	0
Future Volume (veh/h)	0	525	743	0	1134	401	227	0	326	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	0	547	774	0	1181	298	236	0	126			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	0	4185	1299	0	4185	1299	337	0	295			
Arrive On Green	0.00	1.00	1.00	0.00	0.81	0.81	0.09	0.00	0.09			
Sat Flow, veh/h	0	5358	1610	0	5358	1610	3619	0	3166			
Grp Volume(v), veh/h	0	547	774	0	1181	298	236	0	126			
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1610	1810	0	1583			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	6.3	4.8	7.0	0.0	4.1			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	6.3	4.8	7.0	0.0	4.1			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	4185	1299	0	4185	1299	337	0	295			
V/C Ratio(X)	0.00	0.13	0.60	0.00	0.28	0.23	0.70	0.00	0.43			
Avail Cap(c_a), veh/h	0	4185	1299	0	4185	1299	1629	0	1425			
HCM Platoon Ratio	1.00	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.96	0.96	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	2.7	2.5	48.4	0.0	47.1			
Incr Delay (d2), s/veh	0.0	0.1	1.9	0.0	0.2	0.4	2.6	0.0	1.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.7	0.0	1.3	1.0	3.2	0.0	1.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.1	1.9	0.0	2.8	2.9	51.0	0.0	48.1			
LnGrp LOS	A	A	A	A	A	A	D	A	D			
Approach Vol, veh/h		1321			1479			362				
Approach Delay, s/veh		1.2			2.8			50.0				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		94.2				94.2		15.8				
Change Period (Y+Rc), s		5.5				5.5		5.5				
Max Green Setting (Gmax), s		49.5				49.5		49.5				
Max Q Clear Time (g_c+I1), s		2.0				8.3		9.0				
Green Ext Time (p_c), s		4.1				6.5		1.3				
Intersection Summary												
HCM 6th Ctrl Delay			7.5									
HCM 6th LOS			A									

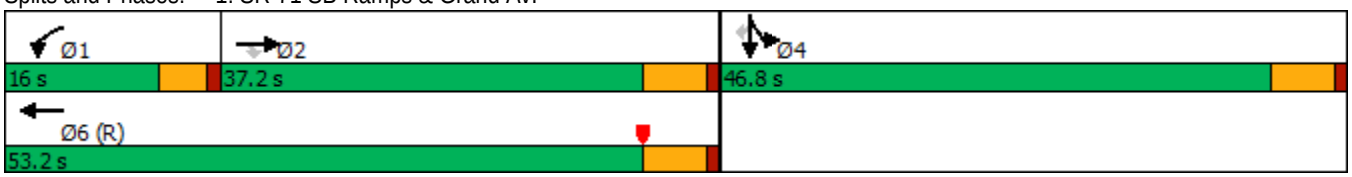
Notes

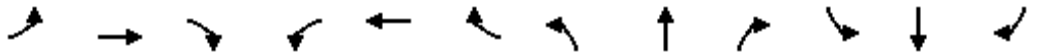
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1396	554	297	1345	870	1	467
Future Volume (vph)	1396	554	297	1345	870	1	467
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	37.2	37.2	16.0	53.2	46.8	46.8	46.8
Total Split (%)	37.2%	37.2%	16.0%	53.2%	46.8%	46.8%	46.8%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None
Act Effct Green (s)	36.7	36.7	12.2	52.9	39.1	39.1	39.1
Actuated g/C Ratio	0.37	0.37	0.12	0.53	0.39	0.39	0.39
v/c Ratio	0.86	0.65	0.82	0.58	0.76	0.76	0.81
Control Delay	36.3	5.8	51.0	21.0	34.3	34.3	32.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.3	5.8	51.0	21.0	34.3	34.3	32.6
LOS	D	A	D	C	C	C	C
Approach Delay	27.6			26.4		33.7	
Approach LOS	C			C		C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 28.9	Intersection LOS: C
Intersection Capacity Utilization 76.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1396	554	297	1345	0	0	0	0	870	1	467
Future Volume (veh/h)	0	1396	554	297	1345	0	0	0	0	870	1	467
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1642	563	349	1582	0				1025	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85				0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1722	535	421	2552	0				1212	0	
Arrive On Green	0.00	0.33	0.33	0.12	0.49	0.00				0.33	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	1642	563	349	1582	0				1025	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	30.9	33.2	9.7	22.3	0.0				26.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	30.9	33.2	9.7	22.3	0.0				26.3	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1722	535	421	2552	0				1212	0	
V/C Ratio(X)	0.00	0.95	1.05	0.83	0.62	0.00				0.85	0.00	
Avail Cap(c_a), veh/h	0	1722	535	421	2552	0				1549	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.18	0.18	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	32.6	33.4	43.0	18.6	0.0				30.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	13.2	53.7	2.5	0.2	0.0				3.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	14.1	20.0	4.2	8.0	0.0				11.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	45.8	87.1	45.5	18.8	0.0				34.5	0.0	0.0
LnGrp LOS	A	D	F	D	B	A				C	A	
Approach Vol, veh/h		2205			1931						1025	A
Approach Delay, s/veh		56.3			23.6						34.5	
Approach LOS		E			C						C	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	16.0	37.2		37.5		53.2						
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8						
Max Green Setting (Gmax), s	11.4	31.4		41.0		47.4						
Max Q Clear Time (g_c+I1), s	11.7	35.2		28.3		24.3						
Green Ext Time (p_c), s	0.0	0.0		3.4		11.7						

Intersection Summary			
HCM 6th Ctrl Delay		39.7	
HCM 6th LOS		D	

Notes

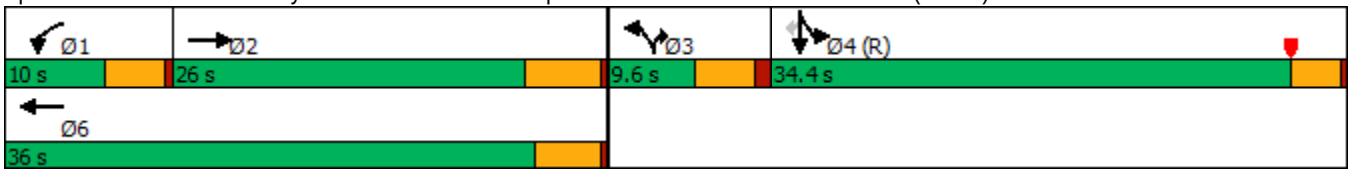
User approved volume balancing among the lanes for turning movement.

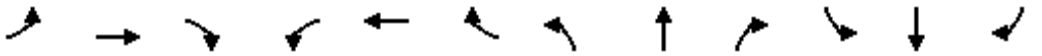
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	900	128	277	18	156	685	70	71
Future Volume (vph)	900	128	277	18	156	685	70	71
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	26.0	10.0	36.0	9.6	9.6	34.4	34.4	34.4
Total Split (%)	32.5%	12.5%	45.0%	12.0%	12.0%	43.0%	43.0%	43.0%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	23.7	9.8	38.0	5.1	5.1	24.4	24.4	24.4
Actuated g/C Ratio	0.30	0.12	0.48	0.06	0.06	0.30	0.30	0.30
v/c Ratio	0.94	0.60	0.17	0.17	0.64	0.75	0.74	0.12
Control Delay	47.2	45.5	24.6	39.0	19.3	33.8	33.3	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.2	45.5	24.6	39.0	19.3	33.8	33.3	0.6
LOS	D	D	C	D	B	C	C	A
Approach Delay	47.2		31.2				30.7	
Approach LOS	D		C				C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 36.8	Intersection LOS: D
Intersection Capacity Utilization 72.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	900	62	128	277	0	18	0	156	685	70	71
Future Volume (veh/h)	0	900	62	128	277	0	18	0	156	685	70	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	938	53	133	289	0	19	0	103	766	0	47
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	912	52	136	1399		0	0	0	1832	0	815
Arrive On Green	0.00	0.26	0.26	0.02	0.13	0.00	0.00	0.00	0.00	0.51	0.00	0.51
Sat Flow, veh/h	0	3568	196	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	487	504	133	289	0		0.0		766	0	47
Grp Sat Flow(s),veh/h/ln	0	1805	1865	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	21.0	21.0	5.9	5.7	0.0				10.6	0.0	1.2
Cycle Q Clear(g_c), s	0.0	21.0	21.0	5.9	5.7	0.0				10.6	0.0	1.2
Prop In Lane	0.00		0.11	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	474	489	136	1399					1832	0	815
V/C Ratio(X)	0.00	1.03	1.03	0.98	0.21					0.42	0.00	0.06
Avail Cap(c_a), veh/h	0	474	489	136	1421					1832	0	815
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.80	0.80	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.5	29.5	39.0	23.9	0.0				12.4	0.0	10.0
Incr Delay (d2), s/veh	0.0	48.9	48.2	63.0	0.0	0.0				0.7	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	14.7	15.1	5.0	2.3	0.0				3.8	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	78.4	77.7	101.9	23.9	0.0				13.1	0.0	10.2
LnGrp LOS	A	F	F	F	C					B	A	B
Approach Vol, veh/h		991			422	A					813	
Approach Delay, s/veh		78.1			48.5						12.9	
Approach LOS		E			D						B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	10.0	26.0		44.0		36.0						
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5						
Max Green Setting (Gmax), s	6.0	21.0		30.9		* 32						
Max Q Clear Time (g_c+I1), s	7.9	23.0		12.6		7.7						
Green Ext Time (p_c), s	0.0	0.0		2.9		1.3						

Intersection Summary			
HCM 6th Ctrl Delay		48.7	
HCM 6th LOS		D	

Notes

User approved volume balancing among the lanes for turning movement.

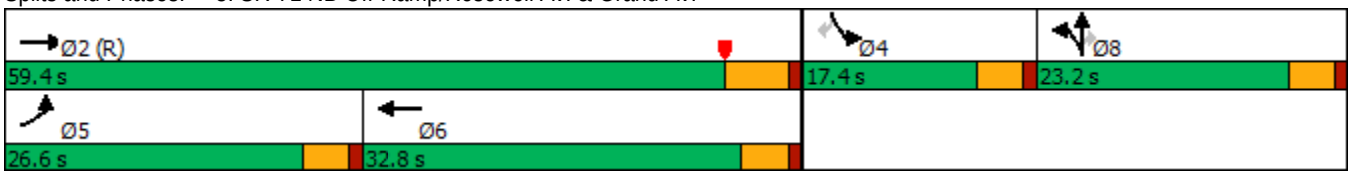
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

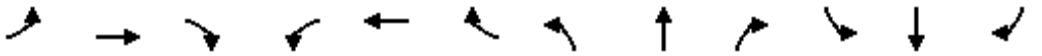
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	367	1584	316	1616	379	137	214	162	799
Future Volume (vph)	367	1584	316	1616	379	137	214	162	799
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	34.8		14.7	21.5	21.5	21.5	9.5	9.5
Total Split (s)	26.6	59.4		32.8	23.2	23.2	23.2	17.4	17.4
Total Split (%)	26.6%	59.4%		32.8%	23.2%	23.2%	23.2%	17.4%	17.4%
Yellow Time (s)	3.5	4.8		3.7	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.8		4.7	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	22.1	53.6	100.0	28.1	19.5	19.5	19.5	12.1	12.1
Actuated g/C Ratio	0.22	0.54	1.00	0.28	0.20	0.20	0.20	0.12	0.12
v/c Ratio	1.00	0.62	0.21	1.00	0.71	0.95	0.56	0.81	0.95
Control Delay	81.3	20.4	0.2	57.3	50.9	80.2	22.3	70.2	30.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.3	20.4	0.2	57.3	50.9	80.2	22.3	70.2	30.6
LOS	F	C	A	E	D	F	C	E	C
Approach Delay		27.4		57.3		54.5			
Approach LOS		C		E		D			

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 41.5	Intersection LOS: D
Intersection Capacity Utilization 82.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	367	1584	316	0	1616	67	379	137	214	162	0	799
Future Volume (veh/h)	367	1584	316	0	1616	67	379	137	214	162	0	799
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	399	1722	0	0	1757	73	280	333	92	176	0	550
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	400	3683		0	2879	120	338	355	301	0	0	0
Arrive On Green	0.22	0.71	0.00	0.00	0.44	0.44	0.19	0.19	0.19	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6750	269	1810	1900	1610		0	
Grp Volume(v), veh/h	399	1722	0	0	1328	502	280	333	92		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1852	1810	1900	1610			
Q Serve(g_s), s	22.0	14.4	0.0	0.0	20.7	20.7	14.9	17.3	4.9			
Cycle Q Clear(g_c), s	22.0	14.4	0.0	0.0	20.7	20.7	14.9	17.3	4.9			
Prop In Lane	1.00		1.00	0.00		0.15	1.00		1.00			
Lane Grp Cap(c), veh/h	400	3683		0	2176	822	338	355	301			
V/C Ratio(X)	1.00	0.47		0.00	0.61	0.61	0.83	0.94	0.31			
Avail Cap(c_a), veh/h	400	3683		0	2176	822	338	355	301			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.43	0.43	0.00	0.00	0.64	0.64	1.00	1.00	1.00			
Uniform Delay (d), s/veh	38.9	6.3	0.0	0.0	21.2	21.2	39.1	40.1	35.1			
Incr Delay (d2), s/veh	28.9	0.2	0.0	0.0	0.3	0.8	14.7	31.6	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	12.5	3.9	0.0	0.0	7.6	8.7	7.7	10.8	1.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.8	6.5	0.0	0.0	21.5	22.1	53.7	71.7	35.3			
LnGrp LOS	E	A		A	C	C	D	E	D			
Approach Vol, veh/h		2121	A		1830			705				
Approach Delay, s/veh		18.0			21.7			59.8				
Approach LOS		B			C			E				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		76.8			26.6	50.2		23.2				
Change Period (Y+Rc), s		5.8			4.5	* 5.8		4.5				
Max Green Setting (Gmax), s		53.6			22.1	* 28		18.7				
Max Q Clear Time (g_c+I1), s		16.4			24.0	22.7		19.3				
Green Ext Time (p_c), s		16.5			0.0	4.4		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	25.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

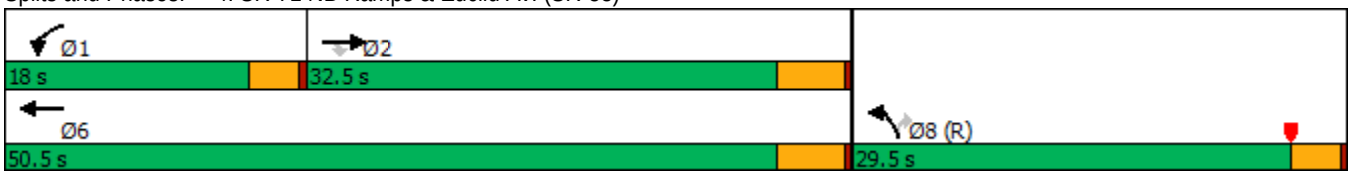
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	880	159	387	1085	135	1019
Future Volume (vph)	880	159	387	1085	135	1019
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	32.5	32.5	18.0	50.5	29.5	29.5
Total Split (%)	40.6%	40.6%	22.5%	63.1%	36.9%	36.9%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max
Act Effct Green (s)	26.6	26.6	14.5	44.6	27.4	27.4
Actuated g/C Ratio	0.33	0.33	0.18	0.56	0.34	0.34
v/c Ratio	0.85	0.30	1.38	0.63	0.13	1.47
Control Delay	26.8	7.8	217.1	13.6	19.1	236.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.8	7.8	217.1	13.6	19.1	236.8
LOS	C	A	F	B	B	F
Approach Delay	23.9			67.1	211.3	
Approach LOS	C			E	F	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.47	
Intersection Signal Delay: 100.2	Intersection LOS: F
Intersection Capacity Utilization 94.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	880	159	387	1085	135	1019
Future Volume (veh/h)	880	159	387	1085	135	1019
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	1023	0	450	1262	157	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1148		328	1960	1254	
Arrive On Green	0.42	0.00	0.18	0.54	0.36	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	1023	0	450	1262	157	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	21.0	0.0	14.5	19.7	2.4	0.0
Cycle Q Clear(g_c), s	21.0	0.0	14.5	19.7	2.4	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1148		328	1960	1254	
V/C Ratio(X)	0.89		1.37	0.64	0.13	
Avail Cap(c_a), veh/h	1264		328	2076	1254	
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.39	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.8	0.0	32.8	12.9	17.3	0.0
Incr Delay (d2), s/veh	3.2	0.0	185.7	0.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	0.0	22.6	6.1	0.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.0	0.0	218.4	13.5	17.5	0.0
LnGrp LOS	C		F	B	B	
Approach Vol, veh/h	1023	A		1712	157	A
Approach Delay, s/veh	25.0			67.4	17.5	
Approach LOS	C			E	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	18.0	29.9				47.9	32.1
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	14.5	28.0				46.0	26.0
Max Q Clear Time (g_c+I1), s	16.5	23.0				21.7	4.4
Green Ext Time (p_c), s	0.0	2.4				8.8	0.2

Intersection Summary	
HCM 6th Ctrl Delay	49.7
HCM 6th LOS	D

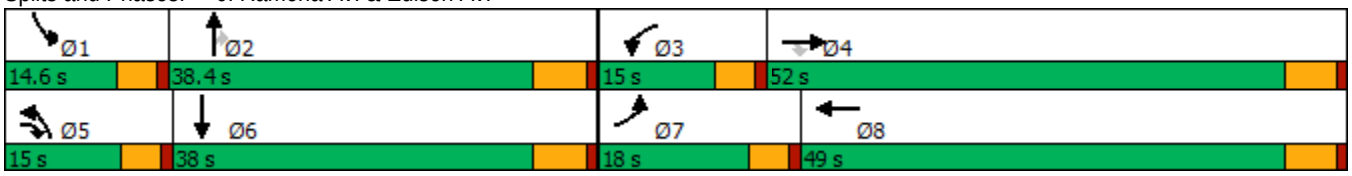
Notes

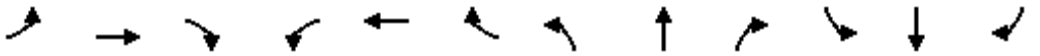
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	113	1127	113	87	908	92	432	73	60	400
Future Volume (vph)	113	1127	113	87	908	92	432	73	60	400
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	18.0	52.0	15.0	15.0	49.0	15.0	38.4	38.4	14.6	38.0
Total Split (%)	15.0%	43.3%	12.5%	12.5%	40.8%	12.5%	32.0%	32.0%	12.2%	31.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None
Act Effct Green (s)	9.4	48.3	62.4	8.3	47.2	10.1	28.4	28.4	8.7	24.9
Actuated g/C Ratio	0.09	0.45	0.58	0.08	0.44	0.09	0.26	0.26	0.08	0.23
v/c Ratio	0.47	0.83	0.08	0.40	0.73	0.68	0.54	0.17	0.51	0.72
Control Delay	53.7	33.1	2.4	53.9	29.9	72.1	37.4	3.7	63.5	41.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.7	33.1	2.4	53.9	29.9	72.1	37.4	3.7	63.5	41.9
LOS	D	C	A	D	C	E	D	A	E	D
Approach Delay		32.2			31.9		38.6			44.2
Approach LOS		C			C		D			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.7	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 35.1	Intersection LOS: D
Intersection Capacity Utilization 71.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	1127	113	87	908	61	92	432	73	60	400	101
Future Volume (veh/h)	113	1127	113	87	908	61	92	432	73	60	400	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1700	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	127	1266	103	98	1020	67	103	485	60	67	449	92
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	204	1662	1414	169	1547	102	136	824	367	93	607	123
Arrive On Green	0.06	0.49	0.47	0.05	0.47	0.46	0.08	0.24	0.24	0.06	0.21	0.20
Sat Flow, veh/h	3141	3420	2536	3141	3257	214	1619	3420	1525	1619	2830	576
Grp Volume(v), veh/h	127	1266	103	98	535	552	103	485	60	67	270	271
Grp Sat Flow(s),veh/h/ln	1570	1710	1268	1570	1710	1761	1619	1710	1525	1619	1710	1696
Q Serve(g_s), s	3.9	29.8	1.9	3.0	23.6	23.7	6.1	12.4	3.1	4.0	14.6	14.8
Cycle Q Clear(g_c), s	3.9	29.8	1.9	3.0	23.6	23.7	6.1	12.4	3.1	4.0	14.6	14.8
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	204	1662	1414	169	812	836	136	824	367	93	367	364
V/C Ratio(X)	0.62	0.76	0.07	0.58	0.66	0.66	0.76	0.59	0.16	0.72	0.74	0.75
Avail Cap(c_a), veh/h	445	1662	1414	350	812	836	180	1191	531	174	589	584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	20.7	10.1	45.6	19.8	19.9	44.3	33.2	29.6	45.8	36.2	36.6
Incr Delay (d2), s/veh	1.2	3.4	0.1	1.2	4.2	4.1	8.2	0.7	0.2	3.9	2.9	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	11.4	0.5	1.2	9.4	9.7	2.7	5.0	1.1	1.7	6.1	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.2	24.1	10.2	46.8	24.0	24.0	52.5	33.8	29.8	49.6	39.1	39.6
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		1496			1185			648			608	
Approach Delay, s/veh		25.0			25.9			36.4			40.5	
Approach LOS		C			C			D			D	

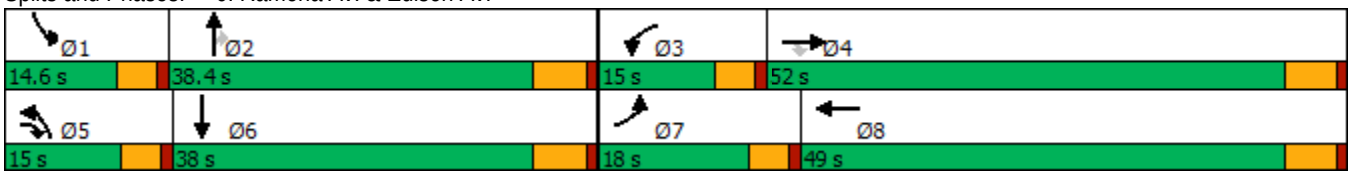
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	27.8	9.3	52.0	12.3	25.2	10.4	50.9
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.0	32.6	10.4	46.2	10.4	32.2	13.4	43.2
Max Q Clear Time (g_c+I1), s	6.0	14.4	5.0	31.8	8.1	16.8	5.9	25.7
Green Ext Time (p_c), s	0.0	2.9	0.1	7.5	0.0	2.6	0.1	6.2

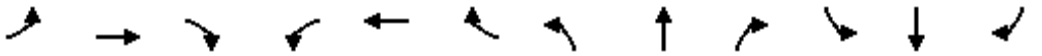
Intersection Summary	
HCM 6th Ctrl Delay	29.5
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	113	1127	113	87	908	92	432	73	60	400
Future Volume (vph)	113	1127	113	87	908	92	432	73	60	400
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	18.0	52.0	15.0	15.0	49.0	15.0	38.4	38.4	14.6	38.0
Total Split (%)	15.0%	43.3%	12.5%	12.5%	40.8%	12.5%	32.0%	32.0%	12.2%	31.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None
Act Effct Green (s)	12.3	48.2	62.3	10.0	45.9	10.1	28.6	28.6	8.8	25.1
Actuated g/C Ratio	0.11	0.44	0.57	0.09	0.42	0.09	0.26	0.26	0.08	0.23
v/c Ratio	0.71	0.84	0.08	0.67	0.77	0.70	0.54	0.17	0.52	0.72
Control Delay	69.2	34.8	2.5	72.2	32.9	74.0	38.3	3.7	64.8	42.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.2	34.8	2.5	72.2	32.9	74.0	38.3	3.7	64.8	42.8
LOS	E	C	A	E	C	E	D	A	E	D
Approach Delay		35.0			36.1		39.5			45.1
Approach LOS		C			D		D			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.5	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 37.7	Intersection LOS: D
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	1127	113	87	908	61	92	432	73	60	400	101
Future Volume (veh/h)	113	1127	113	87	908	61	92	432	73	60	400	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1700	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	127	1266	103	98	1020	67	103	485	60	67	449	92
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	162	1602	1369	130	1461	96	135	815	363	93	600	122
Arrive On Green	0.10	0.47	0.46	0.08	0.45	0.43	0.08	0.24	0.24	0.06	0.21	0.19
Sat Flow, veh/h	1619	3420	2536	1619	3257	214	1619	3420	1525	1619	2830	576
Grp Volume(v), veh/h	127	1266	103	98	535	552	103	485	60	67	270	271
Grp Sat Flow(s),veh/h/ln	1619	1710	1268	1619	1710	1761	1619	1710	1525	1619	1710	1696
Q Serve(g_s), s	7.9	32.0	2.0	6.1	25.8	25.8	6.4	12.9	3.2	4.2	15.1	15.4
Cycle Q Clear(g_c), s	7.9	32.0	2.0	6.1	25.8	25.8	6.4	12.9	3.2	4.2	15.1	15.4
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	162	1602	1369	130	767	790	135	815	363	93	363	360
V/C Ratio(X)	0.79	0.79	0.08	0.76	0.70	0.70	0.76	0.60	0.17	0.72	0.74	0.75
Avail Cap(c_a), veh/h	221	1602	1369	174	767	790	174	1148	512	167	567	563
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.1	23.0	11.3	46.2	22.7	22.8	46.0	34.6	31.0	47.5	37.8	38.2
Incr Delay (d2), s/veh	8.2	4.1	0.1	8.0	5.2	5.1	9.8	0.7	0.2	3.9	3.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	12.5	0.5	2.6	10.6	10.9	2.8	5.2	1.2	1.7	6.4	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.2	27.1	11.4	54.1	27.9	27.9	55.8	35.3	31.2	51.4	40.8	41.4
LnGrp LOS	D	C	B	D	C	C	E	D	C	D	D	D
Approach Vol, veh/h		1496			1185			648			608	
Approach Delay, s/veh		28.2			30.1			38.2			42.2	
Approach LOS		C			C			D			D	

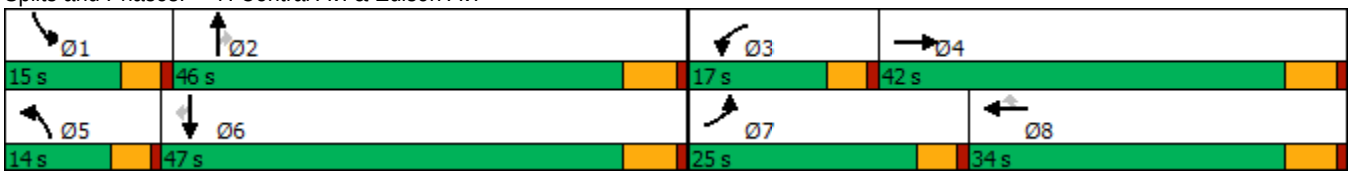
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	28.4	12.2	52.0	12.6	25.7	14.2	50.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.0	32.6	10.4	46.2	10.4	32.2	13.4	43.2
Max Q Clear Time (g_c+I1), s	6.2	14.9	8.1	34.0	8.4	17.4	9.9	27.8
Green Ext Time (p_c), s	0.0	2.9	0.0	6.8	0.0	2.5	0.0	5.8

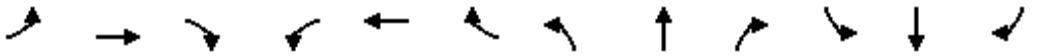
Intersection Summary	
HCM 6th Ctrl Delay	32.6
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	220	871	257	616	91	85	1002	414	111	802	137
Future Volume (vph)	220	871	257	616	91	85	1002	414	111	802	137
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	25.0	42.0	17.0	34.0	34.0	14.0	46.0	46.0	15.0	47.0	47.0
Total Split (%)	20.8%	35.0%	14.2%	28.3%	28.3%	11.7%	38.3%	38.3%	12.5%	39.2%	39.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	19.3	38.1	12.5	31.3	31.3	9.3	40.8	40.8	10.5	42.0	42.0
Actuated g/C Ratio	0.16	0.32	0.11	0.27	0.27	0.08	0.35	0.35	0.09	0.36	0.36
v/c Ratio	0.86	0.90	0.80	0.70	0.18	0.69	0.87	0.63	0.79	0.68	0.22
Control Delay	77.7	50.5	70.0	44.7	1.6	80.7	45.7	18.3	88.9	35.8	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.7	50.5	70.0	44.7	1.6	80.7	45.7	18.3	88.9	35.8	4.4
LOS	E	D	E	D	A	F	D	B	F	D	A
Approach Delay		55.6		47.4			40.1			37.3	
Approach LOS		E		D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 44.8	Intersection LOS: D
Intersection Capacity Utilization 85.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	871	85	257	616	91	85	1002	414	111	802	137
Future Volume (veh/h)	220	871	85	257	616	91	85	1002	414	111	802	137
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	227	898	84	265	635	83	88	1033	346	114	827	107
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	259	1026	96	330	924	412	116	1176	515	144	1236	551
Arrive On Green	0.16	0.33	0.31	0.11	0.27	0.27	0.07	0.34	0.34	0.09	0.36	0.36
Sat Flow, veh/h	1619	3157	295	3141	3420	1525	1619	3420	1499	1619	3420	1524
Grp Volume(v), veh/h	227	486	496	265	635	83	88	1033	346	114	827	107
Grp Sat Flow(s),veh/h/ln	1619	1710	1742	1570	1710	1525	1619	1710	1499	1619	1710	1524
Q Serve(g_s), s	16.0	31.4	31.4	9.6	19.4	4.9	6.2	33.2	23.0	8.1	23.8	5.6
Cycle Q Clear(g_c), s	16.0	31.4	31.4	9.6	19.4	4.9	6.2	33.2	23.0	8.1	23.8	5.6
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	259	556	566	330	924	412	116	1176	515	144	1236	551
V/C Ratio(X)	0.88	0.88	0.88	0.80	0.69	0.20	0.76	0.88	0.67	0.79	0.67	0.19
Avail Cap(c_a), veh/h	291	556	566	349	924	412	139	1229	538	152	1258	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.0	37.2	37.4	51.1	38.2	32.9	53.3	36.1	32.7	52.2	31.4	25.6
Incr Delay (d2), s/veh	21.4	17.3	17.1	11.0	4.1	1.1	14.2	7.3	3.1	20.7	1.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	15.1	15.4	4.2	8.4	1.9	2.9	14.3	8.4	4.0	9.6	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.4	54.5	54.4	62.1	42.4	34.0	67.5	43.4	35.8	72.8	32.8	25.8
LnGrp LOS	E	D	D	E	D	C	E	D	D	E	C	C
Approach Vol, veh/h		1209			983			1467			1048	
Approach Delay, s/veh		57.3			47.0			43.0			36.4	
Approach LOS		E			D			D			D	

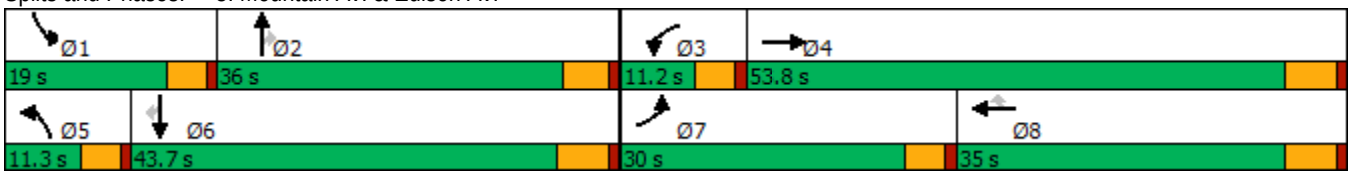
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.4	44.2	16.3	42.0	12.4	46.2	22.7	35.6
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.4	40.2	12.4	36.2	9.4	41.2	20.4	28.2
Max Q Clear Time (g_c+I1), s	10.1	35.2	11.6	33.4	8.2	25.8	18.0	21.4
Green Ext Time (p_c), s	0.0	3.2	0.0	1.5	0.0	5.0	0.1	2.3

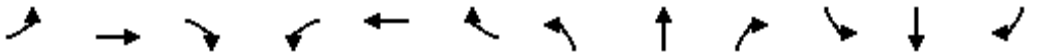
Intersection Summary	
HCM 6th Ctrl Delay	46.0
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	208	1131	36	665	87	38	93	29	109	171	216
Future Volume (vph)	208	1131	36	665	87	38	93	29	109	171	216
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	30.0	53.8	11.2	35.0	35.0	11.3	36.0	36.0	19.0	43.7	43.7
Total Split (%)	25.0%	44.8%	9.3%	29.2%	29.2%	9.4%	30.0%	30.0%	15.8%	36.4%	36.4%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	16.8	51.5	6.8	36.5	36.5	6.8	15.3	15.3	11.0	21.5	21.5
Actuated g/C Ratio	0.18	0.55	0.07	0.39	0.39	0.07	0.16	0.16	0.12	0.23	0.23
v/c Ratio	0.73	0.46	0.32	0.51	0.12	0.33	0.32	0.07	0.59	0.42	0.42
Control Delay	52.9	16.3	54.7	27.0	0.4	55.1	40.1	0.3	55.6	35.4	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.9	16.3	54.7	27.0	0.4	55.1	40.1	0.3	55.6	35.4	6.9
LOS	D	B	D	C	A	E	D	A	E	D	A
Approach Delay		21.6		25.4			36.4			27.4	
Approach LOS		C		C			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 93.3	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 24.5	Intersection LOS: C
Intersection Capacity Utilization 62.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	208	1131	82	36	665	87	38	93	29	109	171	216
Future Volume (veh/h)	208	1131	82	36	665	87	38	93	29	109	171	216
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	212	1154	82	37	679	77	39	95	15	111	174	155
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	255	2583	183	65	1489	664	67	236	196	147	339	287
Arrive On Green	0.16	0.55	0.53	0.04	0.44	0.44	0.04	0.13	0.13	0.09	0.19	0.19
Sat Flow, veh/h	1619	4673	332	1619	3420	1525	1619	1800	1492	1619	1800	1525
Grp Volume(v), veh/h	212	809	427	37	679	77	39	95	15	111	174	155
Grp Sat Flow(s),veh/h/ln	1619	1638	1729	1619	1710	1525	1619	1800	1492	1619	1800	1525
Q Serve(g_s), s	11.4	13.2	13.3	2.0	12.6	2.7	2.1	4.4	0.8	6.0	7.8	8.3
Cycle Q Clear(g_c), s	11.4	13.2	13.3	2.0	12.6	2.7	2.1	4.4	0.8	6.0	7.8	8.3
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	255	1810	956	65	1489	664	67	236	196	147	339	287
V/C Ratio(X)	0.83	0.45	0.45	0.57	0.46	0.12	0.58	0.40	0.08	0.75	0.51	0.54
Avail Cap(c_a), veh/h	467	1810	956	129	1489	664	131	639	530	269	793	672
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.8	12.0	12.1	42.5	17.9	15.1	42.4	35.9	34.4	40.0	32.9	33.0
Incr Delay (d2), s/veh	2.7	0.8	1.5	2.9	1.0	0.4	3.0	1.1	0.2	2.9	1.2	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	4.3	4.8	0.8	4.7	0.9	0.9	1.9	0.3	2.4	3.3	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.5	12.8	13.6	45.4	18.9	15.5	45.4	37.0	34.5	42.9	34.1	34.6
LnGrp LOS	D	B	B	D	B	B	D	D	C	D	C	C
Approach Vol, veh/h		1448			793			149			440	
Approach Delay, s/veh		16.9			19.8			39.0			36.5	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	16.5	7.6	53.8	7.7	21.0	18.2	43.2
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	* 31	6.6	48.0	6.7	37.9	25.4	29.2
Max Q Clear Time (g_c+I1), s	8.0	6.4	4.0	15.3	4.1	10.3	13.4	14.6
Green Ext Time (p_c), s	0.1	0.5	0.0	9.2	0.0	1.4	0.2	3.9

Intersection Summary	
HCM 6th Ctrl Delay	21.9
HCM 6th LOS	C

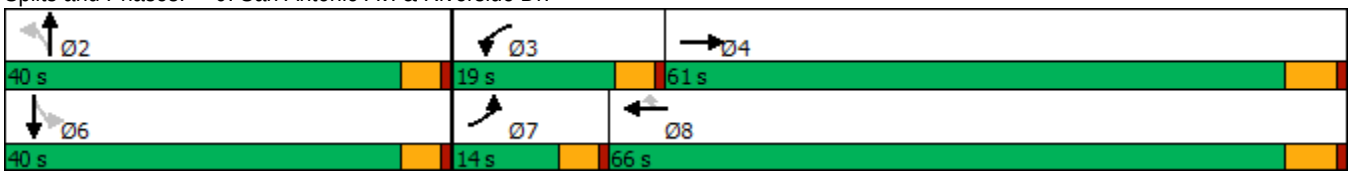
Notes

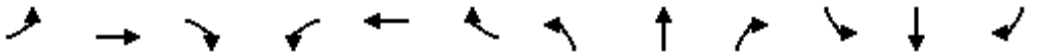
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	31	801	59	740	22	90	15	11	7
Future Volume (vph)	31	801	59	740	22	90	15	11	7
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	14.0	61.0	19.0	66.0	66.0	40.0	40.0	40.0	40.0
Total Split (%)	11.7%	50.8%	15.8%	55.0%	55.0%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	7.2	63.1	8.7	66.9	66.9	15.2	15.2	15.2	15.2
Actuated g/C Ratio	0.07	0.65	0.09	0.69	0.69	0.16	0.16	0.16	0.16
v/c Ratio	0.27	0.44	0.42	0.33	0.02	0.48	0.21	0.06	0.14
Control Delay	50.1	10.8	51.9	8.5	0.2	45.4	16.7	34.2	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.1	10.8	51.9	8.5	0.2	45.4	16.7	34.2	15.5
LOS	D	B	D	A	A	D	B	C	B
Approach Delay		12.1		11.3			34.3		19.6
Approach LOS		B		B			C		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.2	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.48	
Intersection Signal Delay: 13.6	Intersection LOS: B
Intersection Capacity Utilization 54.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	801	116	59	740	22	90	15	41	11	7	31
Future Volume (veh/h)	31	801	116	59	740	22	90	15	41	11	7	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	32	834	115	61	771	23	94	16	19	11	7	9
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	61	2069	285	86	2406	1072	235	92	109	218	88	113
Arrive On Green	0.04	0.69	0.67	0.05	0.70	0.70	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1619	3010	415	1619	3420	1524	1340	747	887	1312	715	919
Grp Volume(v), veh/h	32	474	475	61	771	23	94	0	35	11	0	16
Grp Sat Flow(s),veh/h/ln	1619	1710	1715	1619	1710	1524	1340	0	1635	1312	0	1635
Q Serve(g_s), s	1.7	10.6	10.7	3.3	7.6	0.4	5.9	0.0	1.7	0.7	0.0	0.8
Cycle Q Clear(g_c), s	1.7	10.6	10.7	3.3	7.6	0.4	6.7	0.0	1.7	2.4	0.0	0.8
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.54	1.00		0.56
Lane Grp Cap(c), veh/h	61	1176	1179	86	2406	1072	235	0	201	218	0	201
V/C Ratio(X)	0.53	0.40	0.40	0.71	0.32	0.02	0.40	0.00	0.17	0.05	0.00	0.08
Avail Cap(c_a), veh/h	184	1176	1179	276	2406	1072	617	0	668	592	0	668
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.6	6.0	6.1	41.0	5.0	3.9	37.2	0.0	34.8	35.7	0.0	34.4
Incr Delay (d2), s/veh	2.6	1.0	1.0	3.9	0.4	0.0	1.1	0.0	0.4	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.0	3.1	1.3	2.0	0.1	2.0	0.0	0.7	0.2	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.2	7.0	7.1	44.9	5.4	4.0	38.3	0.0	35.2	35.8	0.0	34.6
LnGrp LOS	D	A	A	D	A	A	D	A	D	D	A	C
Approach Vol, veh/h		981			855			129			27	
Approach Delay, s/veh		8.3			8.1			37.5			35.1	
Approach LOS		A			A			D			D	

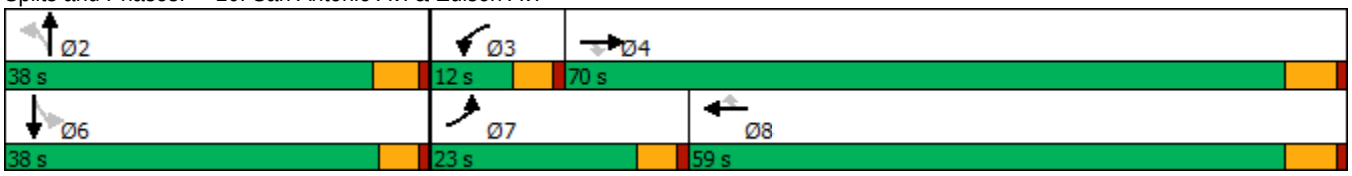
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.8	8.7	64.6		14.8	7.3	66.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		35.4	14.4	55.2		35.4	9.4	60.2				
Max Q Clear Time (g_c+I1), s		8.7	5.3	12.7		4.4	3.7	9.6				
Green Ext Time (p_c), s		0.5	0.0	6.5		0.1	0.0	5.7				

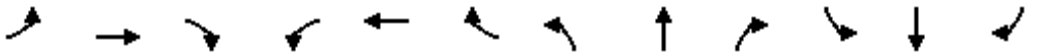
Intersection Summary												
HCM 6th Ctrl Delay			10.5									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	84	1082	39	7	713	16	22	31	11	42
Future Volume (vph)	84	1082	39	7	713	16	22	31	11	42
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	23.0	70.0	70.0	12.0	59.0	59.0	38.0	38.0	38.0	38.0
Total Split (%)	19.2%	58.3%	58.3%	10.0%	49.2%	49.2%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	10.3	71.5	71.5	6.3	61.1	61.1		14.3		14.3
Actuated g/C Ratio	0.11	0.75	0.75	0.07	0.64	0.64		0.15		0.15
v/c Ratio	0.51	0.45	0.04	0.11	0.35	0.02		0.28		0.40
Control Delay	51.4	7.2	1.4	49.3	10.6	0.0		34.2		27.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	51.4	7.2	1.4	49.3	10.6	0.0		34.2		27.7
LOS	D	A	A	D	B	A		C		C
Approach Delay		10.1			10.7			34.2		27.7
Approach LOS		B			B			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 95.9	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 11.9	Intersection LOS: B
Intersection Capacity Utilization 54.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	1082	39	7	713	16	22	31	10	11	42	50
Future Volume (veh/h)	84	1082	39	7	713	16	22	31	10	11	42	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1000	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	89	1151	40	7	759	14	23	33	7	12	45	23
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	122	2502	1116	15	2298	1025	104	126	22	62	120	55
Arrive On Green	0.08	0.73	0.73	0.02	0.67	0.67	0.12	0.12	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1619	3420	1525	952	3420	1525	412	1052	183	139	1052	481
Grp Volume(v), veh/h	89	1151	40	7	759	14	63	0	0	80	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	952	1710	1525	1646	0	0	1672	0	0
Q Serve(g_s), s	4.9	12.3	0.7	0.7	8.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.9	12.3	0.7	0.7	8.4	0.3	2.9	0.0	0.0	3.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.37		0.11	0.15		0.29
Lane Grp Cap(c), veh/h	122	2502	1116	15	2298	1025	252	0	0	237	0	0
V/C Ratio(X)	0.73	0.46	0.04	0.47	0.33	0.01	0.25	0.00	0.00	0.34	0.00	0.00
Avail Cap(c_a), veh/h	341	2502	1116	84	2298	1025	657	0	0	668	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	40.8	4.9	3.3	44.0	6.2	4.9	36.3	0.0	0.0	37.2	0.0	0.0
Incr Delay (d2), s/veh	3.2	0.6	0.1	8.4	0.4	0.0	0.5	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	3.0	0.1	0.2	2.4	0.1	1.3	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.0	5.5	3.4	52.5	6.6	4.9	36.8	0.0	0.0	38.0	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1280			780			63			80	
Approach Delay, s/veh		8.1			7.0			36.8			38.0	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.8	5.4	70.0		14.8	10.8	64.6				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		32.9	7.4	64.2		* 33	18.4	53.2				
Max Q Clear Time (g_c+I1), s		4.9	2.7	14.3		5.9	6.9	10.4				
Green Ext Time (p_c), s		0.3	0.0	10.1		0.4	0.1	5.5				

Intersection Summary	
HCM 6th Ctrl Delay	9.6
HCM 6th LOS	A

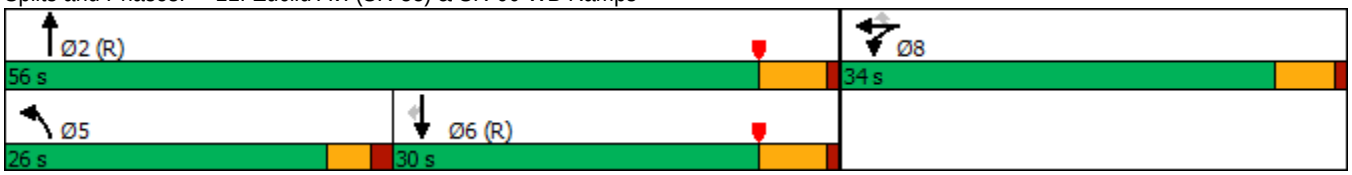
Notes

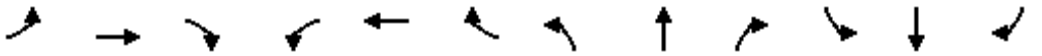
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	636	6	415	312	1105	1031	502
Future Volume (vph)	636	6	415	312	1105	1031	502
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	34.0	34.0	34.0	26.0	56.0	30.0	30.0
Total Split (%)	37.8%	37.8%	37.8%	28.9%	62.2%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	24.5	24.5	24.5	19.1	55.0	31.4	31.4
Actuated g/C Ratio	0.27	0.27	0.27	0.21	0.61	0.35	0.35
v/c Ratio	0.81	0.84	0.73	0.85	0.52	0.85	0.58
Control Delay	44.2	46.1	31.1	38.1	22.2	38.1	5.5
Queue Delay	0.0	0.0	0.0	0.0	2.5	0.0	0.0
Total Delay	44.2	46.1	31.1	38.1	24.7	38.1	5.5
LOS	D	D	C	D	C	D	A
Approach Delay		40.7			27.6	27.4	
Approach LOS		D			C	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 31.0	Intersection LOS: C
Intersection Capacity Utilization 95.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	636	6	415	312	1105	0	0	1031	502
Future Volume (veh/h)	0	0	0	636	6	415	312	1105	0	0	1031	502
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				742	0	169	325	1151	0	0	1074	318
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				851	0	378	353	2340	0	0	1455	649
Arrive On Green				0.24	0.00	0.24	0.39	1.00	0.00	0.00	0.40	0.40
Sat Flow, veh/h				3619	0	1608	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				742	0	169	325	1151	0	0	1074	318
Grp Sat Flow(s),veh/h/ln				1810	0	1608	1810	1805	0	0	1805	1610
Q Serve(g_s), s				17.8	0.0	8.1	15.4	0.0	0.0	0.0	22.8	13.2
Cycle Q Clear(g_c), s				17.8	0.0	8.1	15.4	0.0	0.0	0.0	22.8	13.2
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				851	0	378	353	2340	0	0	1455	649
V/C Ratio(X)				0.87	0.00	0.45	0.92	0.49	0.00	0.00	0.74	0.49
Avail Cap(c_a), veh/h				1166	0	518	432	2340	0	0	1455	649
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.43	0.43	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.1	0.0	29.4	26.8	0.0	0.0	0.0	22.8	20.0
Incr Delay (d2), s/veh				4.4	0.0	0.3	10.5	0.3	0.0	0.0	3.4	2.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.8	0.0	3.0	5.8	0.1	0.0	0.0	9.5	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				37.6	0.0	29.7	37.3	0.3	0.0	0.0	26.2	22.6
LnGrp LOS				D	A	C	D	A	A	A	C	C
Approach Vol, veh/h					911			1476			1392	
Approach Delay, s/veh					36.1			8.5			25.4	
Approach LOS					D			A			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		63.8			22.1	41.8		26.2				
Change Period (Y+Rc), s		5.5			4.5	5.5		5.0				
Max Green Setting (Gmax), s		50.5			21.5	24.5		29.0				
Max Q Clear Time (g_c+I1), s		2.0			17.4	24.8		19.8				
Green Ext Time (p_c), s		15.6			0.2	0.0		1.4				

Intersection Summary		
HCM 6th Ctrl Delay	21.4	
HCM 6th LOS	C	

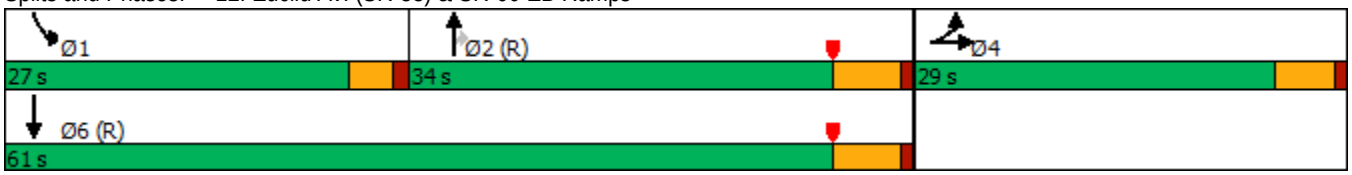
Notes

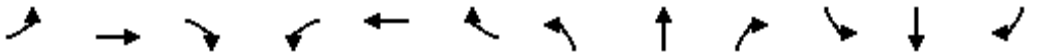
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	424	3	993	629	383	1285
Future Volume (vph)	424	3	993	629	383	1285
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	29.0	29.0	34.0	34.0	27.0	61.0
Total Split (%)	32.2%	32.2%	37.8%	37.8%	30.0%	67.8%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	23.0	23.0	30.9	30.9	21.6	56.5
Actuated g/C Ratio	0.26	0.26	0.34	0.34	0.24	0.63
v/c Ratio	0.89	0.94	0.82	0.68	0.90	0.58
Control Delay	56.1	60.0	34.7	6.8	52.4	5.6
Queue Delay	26.8	39.8	0.0	0.0	0.0	0.4
Total Delay	82.8	99.8	34.7	6.8	52.4	6.1
LOS	F	F	C	A	D	A
Approach Delay		91.6	23.8			16.7
Approach LOS		F	C			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 34.1	Intersection LOS: C
Intersection Capacity Utilization 95.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	424	3	367	0	0	0	0	993	629	383	1285	0
Future Volume (veh/h)	424	3	367	0	0	0	0	993	629	383	1285	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	371	89	307				0	1013	448	391	1311	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	466	96	333				0	1269	553	416	2260	0
Arrive On Green	0.26	0.26	0.26				0.00	0.35	0.35	0.46	1.00	0.00
Sat Flow, veh/h	1810	375	1293				0	3705	1572	1810	3705	0
Grp Volume(v), veh/h	371	0	396				0	1013	448	391	1311	0
Grp Sat Flow(s),veh/h/ln	1810	0	1667				0	1805	1572	1810	1805	0
Q Serve(g_s), s	17.2	0.0	20.8				0.0	22.8	23.3	18.5	0.0	0.0
Cycle Q Clear(g_c), s	17.2	0.0	20.8				0.0	22.8	23.3	18.5	0.0	0.0
Prop In Lane	1.00		0.78				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	466	0	429				0	1269	553	416	2260	0
V/C Ratio(X)	0.80	0.00	0.92				0.00	0.80	0.81	0.94	0.58	0.00
Avail Cap(c_a), veh/h	483	0	445				0	1269	553	462	2260	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.56	0.56	0.72	0.72	0.00
Uniform Delay (d), s/veh	31.2	0.0	32.5				0.0	26.3	26.5	23.7	0.0	0.0
Incr Delay (d2), s/veh	8.0	0.0	23.8				0.0	3.0	7.2	20.1	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	0.0	10.6				0.0	9.6	9.2	7.5	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.2	0.0	56.3				0.0	29.3	33.7	43.8	0.8	0.0
LnGrp LOS	D	A	E				A	C	C	D	A	A
Approach Vol, veh/h		767						1461			1702	
Approach Delay, s/veh		48.1						30.7			10.7	
Approach LOS		D						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	24.7	37.1		28.2		61.8
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	23.0	28.5		24.0		55.5
Max Q Clear Time (g_c+I1), s	20.5	25.3		22.8		2.0
Green Ext Time (p_c), s	0.2	2.6		0.3		19.8

Intersection Summary	
HCM 6th Ctrl Delay	25.4
HCM 6th LOS	C

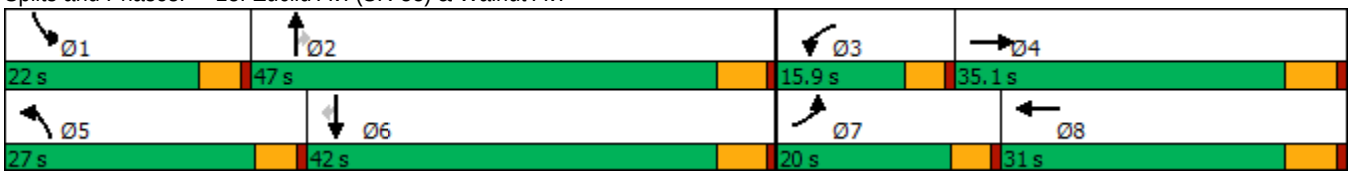
Notes

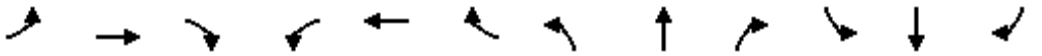
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	109	377	71	377	191	1345	75	268	1194	149
Future Volume (vph)	109	377	71	377	191	1345	75	268	1194	149
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	20.0	35.1	15.9	31.0	27.0	47.0	47.0	22.0	42.0	42.0
Total Split (%)	16.7%	29.3%	13.3%	25.8%	22.5%	39.2%	39.2%	18.3%	35.0%	35.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	11.8	26.9	9.0	21.7	17.5	41.9	41.9	14.4	38.9	38.9
Actuated g/C Ratio	0.11	0.24	0.08	0.20	0.16	0.38	0.38	0.13	0.35	0.35
v/c Ratio	0.67	0.67	0.58	0.82	0.80	0.77	0.12	0.74	0.73	0.25
Control Delay	68.4	40.3	68.9	50.7	68.0	34.7	2.7	59.5	36.2	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.4	40.3	68.9	50.7	68.0	34.7	2.7	59.5	36.2	5.8
LOS	E	D	E	D	E	C	A	E	D	A
Approach Delay		45.2		52.9		37.2			37.3	
Approach LOS		D		D		D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 40.4	Intersection LOS: D
Intersection Capacity Utilization 77.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	377	142	71	377	143	191	1345	75	268	1194	149
Future Volume (veh/h)	109	377	142	71	377	143	191	1345	75	268	1194	149
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	116	401	128	76	401	126	203	1431	53	285	1270	105
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	141	566	178	95	494	153	232	1989	616	344	1856	576
Arrive On Green	0.09	0.22	0.22	0.06	0.19	0.19	0.14	0.40	0.40	0.12	0.38	0.38
Sat Flow, veh/h	1619	2548	803	1619	2554	792	1619	4914	1523	2956	4914	1524
Grp Volume(v), veh/h	116	267	262	76	267	260	203	1431	53	285	1270	105
Grp Sat Flow(s),veh/h/ln	1619	1710	1642	1619	1710	1636	1619	1638	1523	1478	1638	1524
Q Serve(g_s), s	7.2	14.8	15.2	4.8	15.3	15.7	12.6	25.1	2.2	9.7	22.3	4.7
Cycle Q Clear(g_c), s	7.2	14.8	15.2	4.8	15.3	15.7	12.6	25.1	2.2	9.7	22.3	4.7
Prop In Lane	1.00		0.49	1.00		0.48	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	141	379	364	95	330	316	232	1989	616	344	1856	576
V/C Ratio(X)	0.82	0.70	0.72	0.80	0.81	0.82	0.87	0.72	0.09	0.83	0.68	0.18
Avail Cap(c_a), veh/h	243	487	468	178	419	401	353	1989	616	500	1856	576
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.1	36.9	37.0	47.8	39.6	39.8	43.1	25.7	18.9	44.4	26.8	21.4
Incr Delay (d2), s/veh	4.5	3.2	3.8	5.8	8.9	10.5	10.0	2.3	0.3	4.9	2.1	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	6.3	6.2	2.0	7.0	7.0	5.6	9.6	0.8	3.7	8.6	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.6	40.1	40.8	53.6	48.5	50.3	53.1	28.0	19.1	49.4	28.9	22.1
LnGrp LOS	D	D	D	D	D	D	D	C	B	D	C	C
Approach Vol, veh/h		645			603			1687			1660	
Approach Delay, s/veh		42.3			49.9			30.7			32.0	
Approach LOS		D			D			C			C	

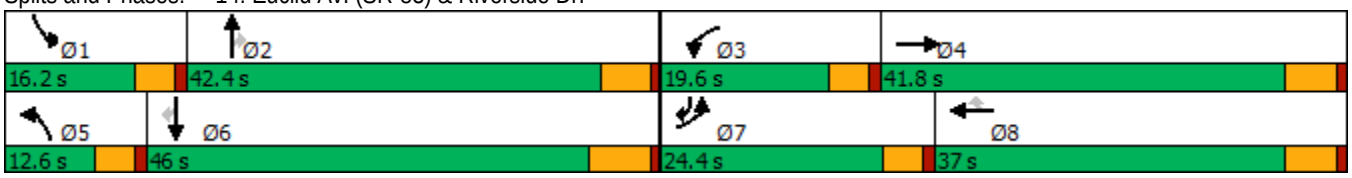
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.6	47.0	10.6	28.6	19.3	44.2	13.6	25.7
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	17.4	41.6	11.3	29.3	22.4	36.6	15.4	25.2
Max Q Clear Time (g_c+I1), s	11.7	27.1	6.8	17.2	14.6	24.3	9.2	17.7
Green Ext Time (p_c), s	0.3	8.3	0.0	2.3	0.2	6.8	0.1	1.7

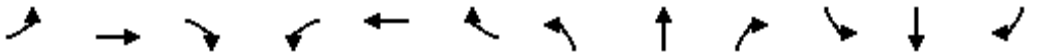
Intersection Summary	
HCM 6th Ctrl Delay	35.3
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	154	467	190	417	65	76	1154	246	142	1003	196
Future Volume (vph)	154	467	190	417	65	76	1154	246	142	1003	196
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	24.4	41.8	19.6	37.0	37.0	12.6	42.4	42.4	16.2	46.0	24.4
Total Split (%)	20.3%	34.8%	16.3%	30.8%	30.8%	10.5%	35.3%	35.3%	13.5%	38.3%	20.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None
Act Effct Green (s)	15.6	36.0	15.0	35.4	35.4	7.7	37.0	37.0	11.6	39.8	57.3
Actuated g/C Ratio	0.13	0.30	0.12	0.30	0.30	0.06	0.31	0.31	0.10	0.33	0.48
v/c Ratio	0.76	1.07	0.99	0.43	0.12	0.77	1.14	0.42	0.95	0.92	0.26
Control Delay	72.5	99.0	112.6	36.6	0.4	97.0	113.3	11.2	114.0	52.6	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.5	99.0	112.6	36.6	0.4	97.0	113.3	11.2	114.0	52.6	5.6
LOS	E	F	F	D	A	F	F	B	F	D	A
Approach Delay		93.2		54.6			95.4			52.3	
Approach LOS		F		D			F			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.14	
Intersection Signal Delay: 74.7	Intersection LOS: E
Intersection Capacity Utilization 102.3%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	467	80	190	417	65	76	1154	246	142	1003	196
Future Volume (veh/h)	154	467	80	190	417	65	76	1154	246	142	1003	196
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	160	486	58	198	434	52	79	1202	202	148	1045	113
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	184	469	56	201	1051	468	97	1045	466	155	1167	688
Arrive On Green	0.11	0.30	0.30	0.12	0.31	0.31	0.06	0.31	0.31	0.10	0.34	0.34
Sat Flow, veh/h	1619	1578	188	1619	3420	1524	1619	3420	1525	1619	3420	1506
Grp Volume(v), veh/h	160	0	544	198	434	52	79	1202	202	148	1045	113
Grp Sat Flow(s),veh/h/ln	1619	0	1766	1619	1710	1524	1619	1710	1525	1619	1710	1506
Q Serve(g_s), s	11.8	0.0	36.0	14.8	12.2	3.0	5.8	37.0	12.8	11.0	35.1	5.4
Cycle Q Clear(g_c), s	11.8	0.0	36.0	14.8	12.2	3.0	5.8	37.0	12.8	11.0	35.1	5.4
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	184	0	525	201	1051	468	97	1045	466	155	1167	688
V/C Ratio(X)	0.87	0.00	1.04	0.99	0.41	0.11	0.81	1.15	0.43	0.95	0.90	0.16
Avail Cap(c_a), veh/h	265	0	525	201	1051	468	107	1045	466	155	1167	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	0.0	42.6	53.0	33.3	30.1	56.2	42.0	33.7	54.5	37.9	19.4
Incr Delay (d2), s/veh	14.1	0.0	48.9	59.6	0.3	0.1	30.3	78.9	2.9	58.1	10.8	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	22.1	9.2	4.9	1.1	3.1	26.0	5.0	6.9	15.9	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.8	0.0	91.5	112.6	33.5	30.2	86.5	121.0	36.6	112.5	48.6	20.0
LnGrp LOS	E	A	F	F	C	C	F	F	D	F	D	B
Approach Vol, veh/h		704			684			1483			1306	
Approach Delay, s/veh		85.9			56.2			107.7			53.4	
Approach LOS		F			E			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	43.5	19.6	41.8	11.9	47.8	18.4	43.0
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	11.6	* 37	15.0	36.0	8.0	39.5	19.8	31.2
Max Q Clear Time (g_c+I1), s	13.0	39.0	16.8	38.0	7.8	37.1	13.8	14.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	1.6	0.1	2.5

Intersection Summary	
HCM 6th Ctrl Delay	78.6
HCM 6th LOS	E

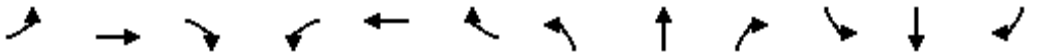
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	98	290	52	80	115	44	1365	233	25	1136	73
Future Volume (vph)	98	290	52	80	115	44	1365	233	25	1136	73
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	44.0	44.0	44.0	44.0	44.0	12.4	65.0	65.0	11.0	63.6	63.6
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	10.3%	54.2%	54.2%	9.2%	53.0%	53.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	27.9	27.9	27.9		27.9	6.8	62.6	62.6	5.9	58.3	58.3
Actuated g/C Ratio	0.26	0.26	0.26		0.26	0.06	0.58	0.58	0.05	0.54	0.54
v/c Ratio	0.43	0.67	0.12		1.08	0.46	0.74	0.28	0.31	0.66	0.09
Control Delay	39.1	43.3	4.6		125.3	67.1	22.4	11.4	62.6	22.3	4.4
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.1	43.3	4.6		125.3	67.1	22.4	11.4	62.6	22.3	4.4
LOS	D	D	A		F	E	C	B	E	C	A
Approach Delay		37.8			125.3		22.1			22.1	
Approach LOS		D			F		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 30.1	Intersection LOS: C
Intersection Capacity Utilization 82.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	290	52	80	115	10	44	1365	233	25	1136	73
Future Volume (veh/h)	98	290	52	80	115	10	44	1365	233	25	1136	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	105	312	33	86	124	7	47	1468	180	27	1222	45
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	274	520	441	122	159	8	58	1828	799	41	1792	783
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.04	0.53	0.53	0.03	0.52	0.52
Sat Flow, veh/h	1208	1800	1525	268	550	27	1619	3420	1494	1619	3420	1494
Grp Volume(v), veh/h	105	312	33	217	0	0	47	1468	180	27	1222	45
Grp Sat Flow(s),veh/h/ln	1208	1800	1525	845	0	0	1619	1710	1494	1619	1710	1494
Q Serve(g_s), s	0.0	16.7	1.8	13.1	0.0	0.0	3.2	39.2	7.1	1.8	29.6	1.7
Cycle Q Clear(g_c), s	14.4	16.7	1.8	29.7	0.0	0.0	3.2	39.2	7.1	1.8	29.6	1.7
Prop In Lane	1.00		1.00	0.40		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	274	520	441	289	0	0	58	1828	799	41	1792	783
V/C Ratio(X)	0.38	0.60	0.07	0.75	0.00	0.00	0.81	0.80	0.23	0.66	0.68	0.06
Avail Cap(c_a), veh/h	338	615	521	363	0	0	113	1828	799	93	1792	783
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.4	34.2	28.9	42.1	0.0	0.0	53.5	21.2	13.8	54.0	19.7	13.1
Incr Delay (d2), s/veh	0.9	1.2	0.1	6.5	0.0	0.0	9.5	3.8	0.7	6.5	2.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	7.2	0.6	6.2	0.0	0.0	1.4	14.4	2.3	0.8	10.8	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.3	35.4	29.0	48.7	0.0	0.0	63.0	25.1	14.4	60.5	21.8	13.2
LnGrp LOS	C	D	C	D	A	A	E	C	B	E	C	B
Approach Vol, veh/h		450			217			1695			1294	
Approach Delay, s/veh		34.7			48.7			25.0			22.3	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	66.3		38.1	8.6	65.1		38.1				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	6.4	* 60		38.2	7.8	57.1		38.2				
Max Q Clear Time (g_c+I1), s	3.8	41.2		18.7	5.2	31.6		31.7				
Green Ext Time (p_c), s	0.0	10.0		2.0	0.0	8.8		0.6				

Intersection Summary			
HCM 6th Ctrl Delay		26.7	
HCM 6th LOS		C	

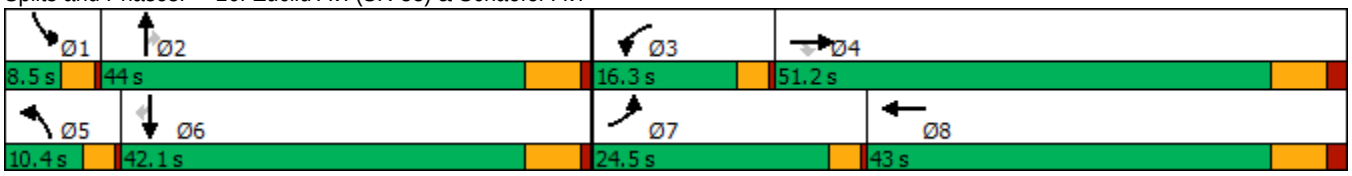
Notes

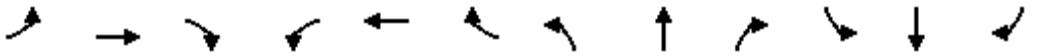
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	297	292	192	80	68	91	1292	84	30	1158	118
Future Volume (vph)	297	292	192	80	68	91	1292	84	30	1158	118
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	24.5	51.2	51.2	16.3	43.0	10.4	44.0	44.0	8.5	42.1	42.1
Total Split (%)	20.4%	42.7%	42.7%	13.6%	35.8%	8.7%	36.7%	36.7%	7.1%	35.1%	35.1%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	21.4	24.0	24.0	10.8	13.1	7.0	42.7	42.7	5.1	36.9	36.9
Actuated g/C Ratio	0.22	0.25	0.25	0.11	0.14	0.07	0.45	0.45	0.05	0.39	0.39
v/c Ratio	0.83	0.65	0.37	0.45	0.38	0.78	0.86	0.11	0.35	0.89	0.18
Control Delay	58.6	39.6	6.0	52.1	35.0	87.4	34.3	1.5	60.5	39.5	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.6	39.6	6.0	52.1	35.0	87.4	34.3	1.5	60.5	39.5	4.7
LOS	E	D	A	D	C	F	C	A	E	D	A
Approach Delay		38.6			42.8		35.7			36.8	
Approach LOS		D			D		D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 95.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 37.0	Intersection LOS: D
Intersection Capacity Utilization 83.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	297	292	192	80	68	26	91	1292	84	30	1158	118
Future Volume (veh/h)	297	292	192	80	68	26	91	1292	84	30	1158	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	300	295	153	81	69	21	92	1305	67	30	1170	89
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	334	360	305	164	125	38	114	1475	658	49	1336	596
Arrive On Green	0.21	0.20	0.20	0.10	0.09	0.09	0.07	0.43	0.43	0.03	0.39	0.39
Sat Flow, veh/h	1619	1800	1525	1619	1324	403	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	300	295	153	81	0	90	92	1305	67	30	1170	89
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1727	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	15.2	13.2	7.5	4.0	0.0	4.2	4.7	29.5	2.2	1.5	26.6	3.2
Cycle Q Clear(g_c), s	15.2	13.2	7.5	4.0	0.0	4.2	4.7	29.5	2.2	1.5	26.6	3.2
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	334	360	305	164	0	163	114	1475	658	49	1336	596
V/C Ratio(X)	0.90	0.82	0.50	0.50	0.00	0.55	0.81	0.88	0.10	0.62	0.88	0.15
Avail Cap(c_a), veh/h	405	947	802	247	0	740	133	1546	690	96	1469	655
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.5	32.2	29.9	35.8	0.0	36.3	38.5	22.0	14.2	40.3	23.7	16.6
Incr Delay (d2), s/veh	18.0	3.5	1.0	0.9	0.0	2.1	22.6	6.3	0.1	4.7	5.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	5.7	2.6	1.5	0.0	1.8	2.4	11.1	0.7	0.6	10.2	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.5	35.7	30.9	36.6	0.0	38.5	61.1	28.3	14.3	45.0	29.5	16.7
LnGrp LOS	D	D	C	D	A	D	E	C	B	D	C	B
Approach Vol, veh/h		748			171			1464			1289	
Approach Delay, s/veh		40.6			37.6			29.7			29.0	
Approach LOS		D			D			C			C	

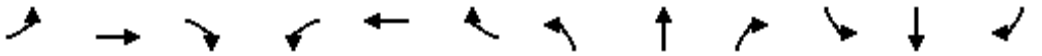
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.0	42.3	12.0	23.8	9.4	38.8	20.8	14.9
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	38.0	12.8	44.2	6.9	36.1	21.0	36.0
Max Q Clear Time (g_c+I1), s	3.5	31.5	6.0	15.2	6.7	28.6	17.2	6.2
Green Ext Time (p_c), s	0.0	4.1	0.0	1.6	0.0	4.2	0.2	0.3

Intersection Summary	
HCM 6th Ctrl Delay	32.1
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	281	498	307	43	284	169	1243	75	88	1240	185
Future Volume (vph)	281	498	307	43	284	169	1243	75	88	1240	185
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	17.0	54.8	54.8	13.2	51.0	51.0
Total Split (%)	43.3%	43.3%	43.3%	43.3%	43.3%	14.2%	45.7%	45.7%	11.0%	42.5%	42.5%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	45.0	45.0	45.0	45.0	45.0	13.5	49.4	49.4	9.1	45.0	45.0
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.11	0.41	0.41	0.08	0.38	0.38
v/c Ratio	1.09	0.78	0.46	0.32	0.51	0.98	0.93	0.12	0.76	1.02	0.30
Control Delay	118.2	42.4	12.1	34.5	31.7	116.3	46.5	7.1	89.8	67.1	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	118.2	42.4	12.1	34.5	31.7	116.3	46.5	7.1	89.8	67.1	11.4
LOS	F	D	B	C	C	F	D	A	F	E	B
Approach Delay		53.5			32.0		52.5			61.6	
Approach LOS		D			C		D			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 54.2	Intersection LOS: D
Intersection Capacity Utilization 102.4%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	281	498	307	43	284	40	169	1243	75	88	1240	185
Future Volume (veh/h)	281	498	307	43	284	40	169	1243	75	88	1240	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	296	524	241	45	299	36	178	1308	71	93	1305	163
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	289	675	572	140	590	71	182	1428	635	113	1282	572
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.11	0.42	0.42	0.07	0.38	0.38
Sat Flow, veh/h	1003	1800	1525	674	1574	189	1619	3420	1522	1619	3420	1525
Grp Volume(v), veh/h	296	524	241	45	0	335	178	1308	71	93	1305	163
Grp Sat Flow(s),veh/h/ln	1003	1800	1525	674	0	1763	1619	1710	1522	1619	1710	1525
Q Serve(g_s), s	27.4	30.8	14.1	7.6	0.0	17.6	13.2	43.3	3.4	6.8	45.0	9.0
Cycle Q Clear(g_c), s	45.0	30.8	14.1	38.4	0.0	17.6	13.2	43.3	3.4	6.8	45.0	9.0
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	289	675	572	140	0	661	182	1428	635	113	1283	572
V/C Ratio(X)	1.02	0.78	0.42	0.32	0.00	0.51	0.98	0.92	0.11	0.82	1.02	0.28
Avail Cap(c_a), veh/h	289	675	572	140	0	661	182	1428	635	131	1283	572
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.1	33.1	27.8	50.0	0.0	28.9	53.1	33.0	21.4	55.0	37.5	26.2
Incr Delay (d2), s/veh	59.3	5.7	0.5	1.3	0.0	0.6	59.6	9.6	0.1	25.6	29.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.3	13.8	5.0	1.3	0.0	7.3	8.1	18.2	1.2	3.5	22.5	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	108.4	38.7	28.3	51.3	0.0	29.6	112.7	42.5	21.4	80.7	67.1	26.5
LnGrp LOS	F	D	C	D	A	C	F	D	C	F	F	C
Approach Vol, veh/h		1061			380			1557			1561	
Approach Delay, s/veh		55.8			32.1			49.6			63.7	
Approach LOS		E			C			D			E	

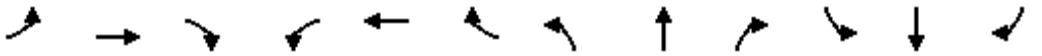
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.9	56.1		52.0	17.0	51.0		52.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	9.7	48.8		45.0	13.5	45.0		45.0				
Max Q Clear Time (g_c+I1), s	8.8	45.3		47.0	15.2	47.0		40.4				
Green Ext Time (p_c), s	0.0	2.4		0.0	0.0	0.0		0.9				

Intersection Summary			
HCM 6th Ctrl Delay		54.4	
HCM 6th LOS		D	

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	39	166	219	8	22	117	1270	18	57	1398	65
Future Volume (vph)	39	166	219	8	22	117	1270	18	57	1398	65
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	46.8	46.8	46.8	46.8	46.8	14.0	63.2	63.2	10.0	59.2	59.2
Total Split (%)	39.0%	39.0%	39.0%	39.0%	39.0%	11.7%	52.7%	52.7%	8.3%	49.3%	49.3%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	17.8	17.8	17.8	17.8	17.8	10.6	60.4	60.4	6.5	54.2	54.2
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.18	0.11	0.62	0.62	0.07	0.56	0.56
v/c Ratio	0.20	0.56	0.63	0.06	0.21	0.74	0.67	0.02	0.59	0.82	0.08
Control Delay	33.4	41.5	23.0	30.4	15.3	69.2	16.8	0.5	69.6	24.0	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	41.5	23.0	30.4	15.3	69.2	16.8	0.5	69.6	24.0	3.6
LOS	C	D	C	C	B	E	B	A	E	C	A
Approach Delay		31.2			17.0		20.9			24.8	
Approach LOS		C			B		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 23.9	Intersection LOS: C
Intersection Capacity Utilization 72.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	166	219	8	22	42	117	1270	18	57	1398	65
Future Volume (veh/h)	39	166	219	8	22	42	117	1270	18	57	1398	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	44	187	130	9	25	44	131	1427	19	64	1571	61
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	233	258	219	144	84	148	162	2101	937	81	1931	843
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.10	0.61	0.61	0.05	0.56	0.56
Sat Flow, veh/h	1278	1800	1525	1019	585	1030	1619	3420	1525	1619	3420	1494
Grp Volume(v), veh/h	44	187	130	9	0	69	131	1427	19	64	1571	61
Grp Sat Flow(s),veh/h/ln	1278	1800	1525	1019	0	1615	1619	1710	1525	1619	1710	1494
Q Serve(g_s), s	2.3	7.2	5.8	0.6	0.0	2.8	5.8	20.1	0.4	2.8	26.9	1.3
Cycle Q Clear(g_c), s	5.1	7.2	5.8	7.8	0.0	2.8	5.8	20.1	0.4	2.8	26.9	1.3
Prop In Lane	1.00		1.00	1.00		0.64	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	233	258	219	144	0	231	162	2101	937	81	1931	843
V/C Ratio(X)	0.19	0.72	0.59	0.06	0.00	0.30	0.81	0.68	0.02	0.79	0.81	0.07
Avail Cap(c_a), veh/h	787	1039	880	586	0	932	234	2702	1205	145	2514	1098
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.2	29.8	29.2	33.6	0.0	27.9	32.1	9.3	5.5	34.2	12.8	7.2
Incr Delay (d2), s/veh	0.3	2.9	1.9	0.1	0.0	0.5	11.1	0.5	0.0	12.1	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.1	2.1	0.1	0.0	1.0	2.5	4.8	0.1	1.3	7.4	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	32.7	31.1	33.7	0.0	28.4	43.1	9.8	5.5	46.3	14.4	7.2
LnGrp LOS	C	C	C	C	A	C	D	A	A	D	B	A
Approach Vol, veh/h		361			78			1577			1696	
Approach Delay, s/veh		31.8			29.0			12.5			15.4	
Approach LOS		C			C			B			B	

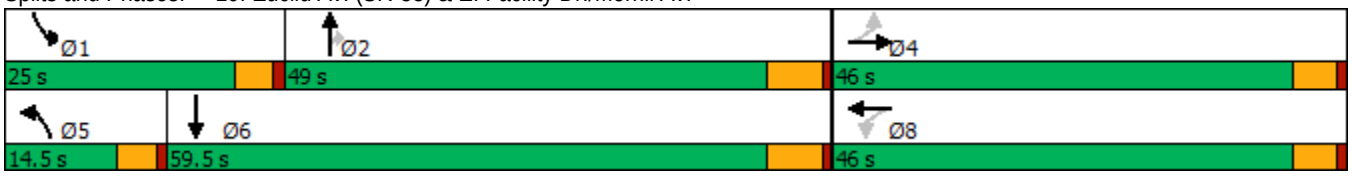
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	50.4		15.2	10.8	46.8		15.2				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	6.5	57.5		42.0	10.5	53.5		42.0				
Max Q Clear Time (g_c+I1), s	4.8	22.1		9.2	7.8	28.9		9.8				
Green Ext Time (p_c), s	0.0	12.1		1.2	0.1	12.2		0.3				

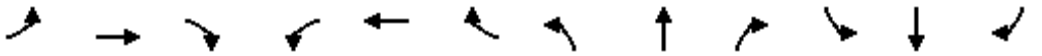
Intersection Summary			
HCM 6th Ctrl Delay		16.0	
HCM 6th LOS		B	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	12	31	226	2	4	1255	251	280	1293
Future Volume (vph)	12	31	226	2	4	1255	251	280	1293
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	14.5	49.0	49.0	25.0	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	12.1%	40.8%	40.8%	20.8%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		40.5		40.5	10.0	43.0	43.0	20.5	65.1
Actuated g/C Ratio		0.34		0.34	0.08	0.36	0.36	0.17	0.54
v/c Ratio		0.11		0.98	0.03	1.12	0.45	1.12	0.76
Control Delay		22.2		71.9	51.2	102.0	20.9	134.3	25.7
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		22.2		71.9	51.2	102.0	20.9	134.3	25.7
LOS		C		E	D	F	C	F	C
Approach Delay		22.2		71.9		88.4			45.0
Approach LOS		C		E		F			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 66.3	Intersection LOS: E
Intersection Capacity Utilization 100.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	31	13	226	2	213	4	1255	251	280	1293	1
Future Volume (veh/h)	12	31	13	226	2	213	4	1255	251	280	1293	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	13	34	13	248	2	224	4	1379	211	308	1421	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	127	317	113	304	2	233	17	1237	552	279	1791	0
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.01	0.36	0.36	0.17	0.52	0.00
Sat Flow, veh/h	268	945	335	768	6	694	1619	3420	1525	1619	3510	0
Grp Volume(v), veh/h	60	0	0	474	0	0	4	1379	211	308	1421	0
Grp Sat Flow(s),veh/h/ln	1548	0	0	1469	0	0	1619	1710	1525	1619	1710	0
Q Serve(g_s), s	0.0	0.0	0.0	34.8	0.0	0.0	0.3	43.0	12.2	20.5	40.3	0.0
Cycle Q Clear(g_c), s	2.8	0.0	0.0	37.6	0.0	0.0	0.3	43.0	12.2	20.5	40.3	0.0
Prop In Lane	0.22		0.22	0.52		0.47	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	556	0	0	539	0	0	17	1237	552	279	1791	0
V/C Ratio(X)	0.11	0.00	0.00	0.88	0.00	0.00	0.24	1.11	0.38	1.10	0.79	0.00
Avail Cap(c_a), veh/h	571	0	0	552	0	0	136	1237	552	279	1791	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.2	0.0	0.0	38.5	0.0	0.0	58.4	37.9	28.1	49.2	23.1	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	14.3	0.0	0.0	2.6	63.3	0.4	84.4	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	14.8	0.0	0.0	0.1	27.4	4.2	14.4	14.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.2	0.0	0.0	52.7	0.0	0.0	61.0	101.2	28.5	133.6	25.6	0.0
LnGrp LOS	C	A	A	D	A	A	E	F	C	F	C	A
Approach Vol, veh/h		60			474			1594			1729	
Approach Delay, s/veh		27.2			52.7			91.5			44.9	
Approach LOS		C			D			F			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.0	49.0		44.9	5.7	68.3		44.9				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	20.5	43.0		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	22.5	45.0		4.8	2.3	42.3		39.6				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	6.6		0.3				

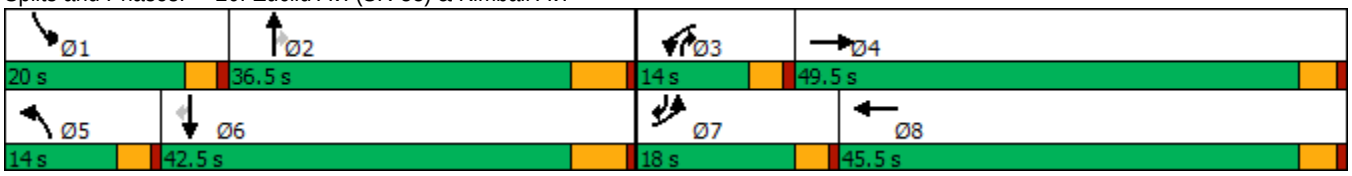
Intersection Summary			
HCM 6th Ctrl Delay		64.8	
HCM 6th LOS		E	

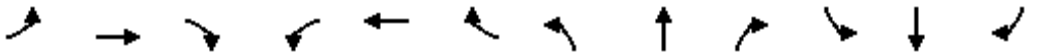
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	367	805	76	346	73	924	44	446	859	243
Future Volume (vph)	367	805	76	346	73	924	44	446	859	243
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	18.0	49.5	14.0	45.5	14.0	36.5	14.0	20.0	42.5	18.0
Total Split (%)	15.0%	41.3%	11.7%	37.9%	11.7%	30.4%	11.7%	16.7%	35.4%	15.0%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	14.1	36.4	10.1	29.0	10.1	30.8	46.9	16.1	40.1	56.3
Actuated g/C Ratio	0.13	0.33	0.09	0.27	0.09	0.28	0.43	0.15	0.37	0.52
v/c Ratio	0.99	0.79	0.52	0.57	0.50	0.98	0.06	1.05	0.70	0.28
Control Delay	92.0	38.5	63.3	31.2	62.4	65.8	0.8	103.2	36.0	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.0	38.5	63.3	31.2	62.4	65.8	0.8	103.2	36.0	3.0
LOS	F	D	E	C	E	E	A	F	D	A
Approach Delay		54.4		35.4		62.9			50.2	
Approach LOS		D		D		E			D	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 108.7
Natural Cycle: 115
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 52.4 — Intersection LOS: D
Intersection Capacity Utilization 91.8% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	367	805	63	76	346	163	73	924	44	446	859	243
Future Volume (veh/h)	367	805	63	76	346	163	73	924	44	446	859	243
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	378	830	62	78	357	130	75	953	30	460	886	153
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	388	988	74	137	640	229	135	978	565	443	1205	737
Arrive On Green	0.13	0.31	0.31	0.08	0.26	0.26	0.08	0.29	0.29	0.15	0.35	0.35
Sat Flow, veh/h	2956	3225	241	1619	2466	884	1619	3420	1525	2956	3420	1524
Grp Volume(v), veh/h	378	440	452	78	246	241	75	953	30	460	886	153
Grp Sat Flow(s),veh/h/ln	1478	1710	1756	1619	1710	1641	1619	1710	1525	1478	1710	1524
Q Serve(g_s), s	13.6	25.6	25.6	4.9	13.3	13.6	4.7	29.4	1.3	16.0	24.2	6.1
Cycle Q Clear(g_c), s	13.6	25.6	25.6	4.9	13.3	13.6	4.7	29.4	1.3	16.0	24.2	6.1
Prop In Lane	1.00		0.14	1.00		0.54	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	388	524	538	137	444	426	135	978	565	443	1205	737
V/C Ratio(X)	0.97	0.84	0.84	0.57	0.55	0.57	0.55	0.97	0.05	1.04	0.74	0.21
Avail Cap(c_a), veh/h	388	721	741	152	657	631	152	978	565	443	1205	737
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.2	34.6	34.6	47.0	34.2	34.3	47.0	37.7	21.6	45.3	30.2	15.8
Incr Delay (d2), s/veh	38.6	6.5	6.3	1.8	0.4	0.4	1.3	22.7	0.0	52.7	2.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	11.0	11.3	2.0	5.3	5.2	1.9	14.4	0.5	8.8	9.5	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	84.8	41.0	40.9	48.8	34.6	34.7	48.3	60.4	21.6	98.1	32.6	15.9
LnGrp LOS	F	D	D	D	C	C	D	E	C	F	C	B
Approach Vol, veh/h		1270			565			1058			1499	
Approach Delay, s/veh		54.0			36.6			58.4			51.0	
Approach LOS		D			D			E			D	

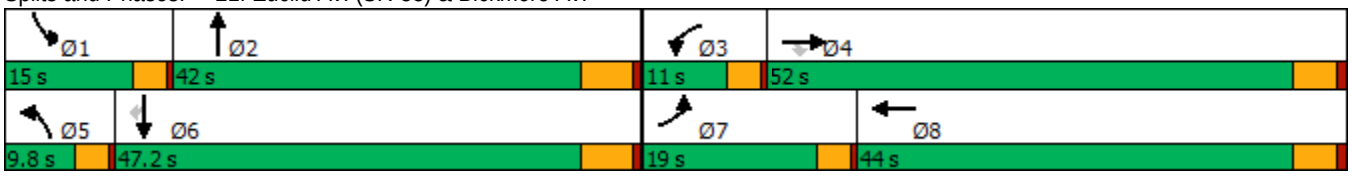
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	36.5	13.0	37.2	12.9	43.6	18.0	32.2
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	16.0	30.5	10.0	45.0	10.0	36.5	14.0	41.0
Max Q Clear Time (g_c+I1), s	18.0	31.4	6.9	27.6	6.7	26.2	15.6	15.6
Green Ext Time (p_c), s	0.0	0.0	0.0	4.8	0.0	4.2	0.0	1.6

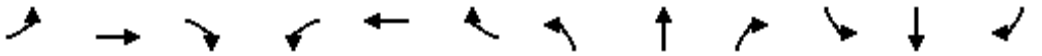
Intersection Summary	
HCM 6th Ctrl Delay	51.8
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	156	111	89	49	27	36	694	104	747	156
Future Volume (vph)	156	111	89	49	27	36	694	104	747	156
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	19.0	52.0	52.0	11.0	44.0	9.8	42.0	15.0	47.2	47.2
Total Split (%)	15.8%	43.3%	43.3%	9.2%	36.7%	8.2%	35.0%	12.5%	39.3%	39.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	13.8	19.1	19.1	7.1	10.6	6.4	24.7	10.4	33.9	33.9
Actuated g/C Ratio	0.18	0.25	0.25	0.09	0.14	0.08	0.33	0.14	0.45	0.45
v/c Ratio	0.58	0.27	0.20	0.35	0.36	0.29	0.77	0.51	0.53	0.22
Control Delay	43.4	26.1	4.2	47.8	16.1	48.0	30.6	46.6	21.0	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.4	26.1	4.2	47.8	16.1	48.0	30.6	46.6	21.0	4.7
LOS	D	C	A	D	B	D	C	D	C	A
Approach Delay		28.2			26.9		31.3		21.1	
Approach LOS		C			C		C		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 75.5	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 26.2	Intersection LOS: C
Intersection Capacity Utilization 58.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	111	89	49	27	67	36	694	93	104	747	156
Future Volume (veh/h)	156	111	89	49	27	67	36	694	93	104	747	156
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	170	121	82	53	29	45	39	754	78	113	812	138
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	212	326	277	85	65	101	68	984	102	140	1228	548
Arrive On Green	0.13	0.18	0.18	0.05	0.10	0.10	0.04	0.31	0.31	0.09	0.36	0.36
Sat Flow, veh/h	1619	1800	1525	1619	636	987	1619	3128	323	1619	3420	1525
Grp Volume(v), veh/h	170	121	82	53	0	74	39	412	420	113	812	138
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1622	1619	1710	1742	1619	1710	1525
Q Serve(g_s), s	4.9	2.8	2.2	1.5	0.0	2.1	1.1	10.4	10.5	3.3	9.6	3.1
Cycle Q Clear(g_c), s	4.9	2.8	2.2	1.5	0.0	2.1	1.1	10.4	10.5	3.3	9.6	3.1
Prop In Lane	1.00		1.00	1.00		0.61	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	212	326	277	85	0	167	68	538	548	140	1228	548
V/C Ratio(X)	0.80	0.37	0.30	0.62	0.00	0.44	0.57	0.77	0.77	0.81	0.66	0.25
Avail Cap(c_a), veh/h	523	1762	1493	253	0	1318	212	1300	1324	388	2971	1325
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.2	17.2	17.0	22.3	0.0	20.2	22.6	14.9	14.9	21.5	12.9	10.8
Incr Delay (d2), s/veh	2.6	0.3	0.2	2.7	0.0	0.7	2.8	0.9	0.9	4.1	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	1.0	0.7	0.6	0.0	0.7	0.4	2.9	3.0	1.2	2.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.9	17.5	17.2	25.0	0.0	20.9	25.3	15.7	15.7	25.6	13.2	10.9
LnGrp LOS	C	B	B	C	A	C	C	B	B	C	B	B
Approach Vol, veh/h		373			127			871			1063	
Approach Delay, s/veh		19.9			22.6			16.1			14.2	
Approach LOS		B			C			B			B	

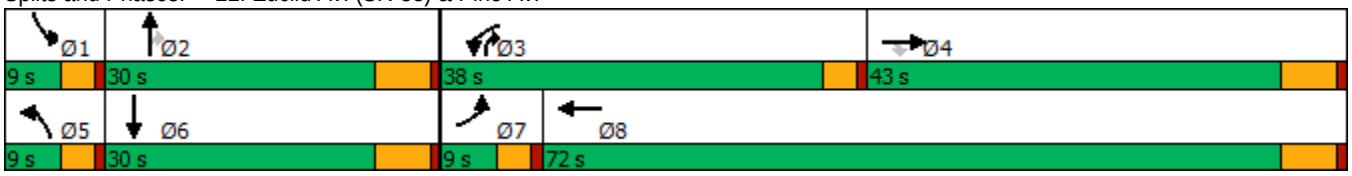
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	20.6	6.0	13.7	5.5	22.7	9.8	9.9
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	11.5	36.5	7.5	47.0	6.3	41.7	15.5	39.0
Max Q Clear Time (g_c+I1), s	5.3	12.5	3.5	4.8	3.1	11.6	6.9	4.1
Green Ext Time (p_c), s	0.1	2.7	0.0	0.5	0.0	3.4	0.1	0.2

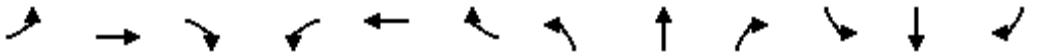
Intersection Summary	
HCM 6th Ctrl Delay	16.2
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	5	459	99	575	72	58	740	1167	105	801
Future Volume (vph)	5	459	99	575	72	58	740	1167	105	801
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	38.0	72.0	9.0	30.0	38.0	9.0	30.0
Total Split (%)	7.5%	35.8%	35.8%	31.7%	60.0%	7.5%	25.0%	31.7%	7.5%	25.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.0	34.1	34.1	34.1	70.4	5.0	24.0	64.1	5.0	24.0
Actuated g/C Ratio	0.04	0.29	0.29	0.29	0.60	0.04	0.20	0.55	0.04	0.20
v/c Ratio	0.07	0.89	0.19	0.69	0.12	0.86	1.08	1.33	1.55	1.17
Control Delay	57.6	60.7	2.9	42.2	7.0	130.9	100.9	179.1	346.4	133.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.6	60.7	2.9	42.2	7.0	130.9	100.9	179.1	346.4	133.6
LOS	E	E	A	D	A	F	F	F	F	F
Approach Delay		50.5			36.0		148.3			158.1
Approach LOS		D			D		F			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.2	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.55	
Intersection Signal Delay: 118.2	Intersection LOS: F
Intersection Capacity Utilization 119.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	459	99	575	72	51	58	740	1167	105	801	4
Future Volume (veh/h)	5	459	99	575	72	51	58	740	1167	105	801	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	5	468	0	587	73	50	59	755	774	107	817	4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	10	528		656	506	347	73	812	701	80	844	4
Arrive On Green	0.01	0.29	0.00	0.22	0.51	0.51	0.05	0.24	0.24	0.05	0.24	0.24
Sat Flow, veh/h	1619	1800	1525	2956	995	682	1619	3420	1525	1619	3490	17
Grp Volume(v), veh/h	5	468	0	587	0	123	59	755	774	107	400	421
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1677	1619	1710	1525	1619	1710	1797
Q Serve(g_s), s	0.3	25.1	0.0	19.5	0.0	3.9	3.6	21.8	24.0	5.0	23.4	23.4
Cycle Q Clear(g_c), s	0.3	25.1	0.0	19.5	0.0	3.9	3.6	21.8	24.0	5.0	23.4	23.4
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	10	528		656	0	853	73	812	701	80	413	434
V/C Ratio(X)	0.48	0.89		0.90	0.00	0.14	0.81	0.93	1.10	1.34	0.97	0.97
Avail Cap(c_a), veh/h	80	659		995	0	1096	80	812	701	80	413	434
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.0	34.1	0.0	38.2	0.0	13.2	47.8	37.7	27.3	48.0	37.9	37.9
Incr Delay (d2), s/veh	11.9	12.8	0.0	5.2	0.0	0.1	36.9	16.7	66.3	214.1	35.7	34.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	12.2	0.0	7.1	0.0	1.4	2.1	10.3	27.7	6.7	13.1	13.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.0	46.9	0.0	43.4	0.0	13.3	84.7	54.4	93.6	262.1	73.7	72.6
LnGrp LOS	E	D		D	A	B	F	D	F	F	E	E
Approach Vol, veh/h		473	A		710			1588			928	
Approach Delay, s/veh		47.0			38.1			74.6			94.9	
Approach LOS		D			D			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	30.0	26.4	35.6	8.6	30.4	4.7	57.4
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.0	24.0	34.0	37.0	5.0	24.0	5.0	66.0
Max Q Clear Time (g_c+I1), s	7.0	26.0	21.5	27.1	5.6	25.4	2.3	5.9
Green Ext Time (p_c), s	0.0	0.0	0.9	2.5	0.0	0.0	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	69.2
HCM 6th LOS	E

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	34.4
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	72	507	23	6	319	6	13	92	11	18	83	49
Future Vol, veh/h	72	507	23	6	319	6	13	92	11	18	83	49
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	76	534	24	6	336	6	14	97	12	19	87	52
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	53.6	16.9	12.4	12.8
HCM LOS	F	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	12%	2%	12%
Vol Thru, %	79%	84%	96%	55%
Vol Right, %	9%	4%	2%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	116	602	331	150
LT Vol	13	72	6	18
Through Vol	92	507	319	83
RT Vol	11	23	6	49
Lane Flow Rate	122	634	348	158
Geometry Grp	1	1	1	1
Degree of Util (X)	0.24	0.979	0.577	0.299
Departure Headway (Hd)	7.068	5.564	5.962	6.81
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	507	659	603	526
Service Time	5.138	3.564	4.012	4.875
HCM Lane V/C Ratio	0.241	0.962	0.577	0.3
HCM Control Delay	12.4	53.6	16.9	12.8
HCM Lane LOS	B	F	C	B
HCM 95th-tile Q	0.9	14.6	3.7	1.2

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	250	4	2	68	9	5	84	7	21	66	14
Future Vol, veh/h	17	250	4	2	68	9	5	84	7	21	66	14
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	20	287	5	2	78	10	6	97	8	24	76	16
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.6	8.5	8.9	8.9
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	6%	3%	21%
Vol Thru, %	88%	92%	86%	65%
Vol Right, %	7%	1%	11%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	96	271	79	101
LT Vol	5	17	2	21
Through Vol	84	250	68	66
RT Vol	7	4	9	14
Lane Flow Rate	110	311	91	116
Geometry Grp	1	1	1	1
Degree of Util (X)	0.152	0.396	0.12	0.159
Departure Headway (Hd)	4.962	4.574	4.766	4.946
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	718	785	748	721
Service Time	3.02	2.616	2.822	3.004
HCM Lane V/C Ratio	0.153	0.396	0.122	0.161
HCM Control Delay	8.9	10.6	8.5	8.9
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.5	1.9	0.4	0.6

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	88	658	411	33	51	55
Future Vol, veh/h	88	658	411	33	51	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	94	700	437	35	54	59

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	472	0	-	0	1343	455
Stage 1	-	-	-	-	455	-
Stage 2	-	-	-	-	888	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1100	-	-	-	246	674
Stage 1	-	-	-	-	643	-
Stage 2	-	-	-	-	405	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1100	-	-	-	212	674
Mov Cap-2 Maneuver	-	-	-	-	212	-
Stage 1	-	-	-	-	553	-
Stage 2	-	-	-	-	405	-

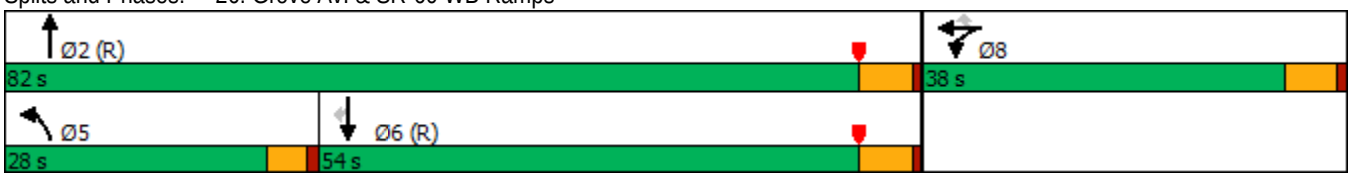
Approach	EB	WB	SB
HCM Control Delay, s	1	0	21.5
HCM LOS			C

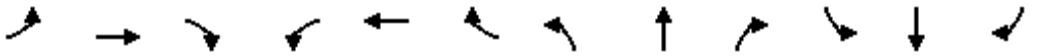
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1100	-	-	-	329
HCM Lane V/C Ratio	0.085	-	-	-	0.343
HCM Control Delay (s)	8.6	0	-	-	21.5
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	1.5

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	348	210	888	1009	674
Future Volume (vph)	0	348	210	888	1009	674
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	38.0	38.0	28.0	82.0	54.0	54.0
Total Split (%)	31.7%	31.7%	23.3%	68.3%	45.0%	45.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	26.1	26.1	18.4	82.3	59.4	59.4
Actuated g/C Ratio	0.22	0.22	0.15	0.69	0.50	0.50
v/c Ratio	0.79	0.76	0.79	0.37	0.59	0.62
Control Delay	58.6	34.4	52.2	11.3	25.1	4.5
Queue Delay	2.2	0.0	0.0	0.4	0.0	0.0
Total Delay	60.8	34.4	52.2	11.8	25.1	4.5
LOS	E	C	D	B	C	A
Approach Delay	46.5			19.5	16.9	
Approach LOS	D			B	B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 23.3	Intersection LOS: C
Intersection Capacity Utilization 90.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	297	0	348	210	888	0	0	1009	674
Future Volume (veh/h)	0	0	0	297	0	348	210	888	0	0	1009	674
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				309	0	182	219	925	0	0	1051	527
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				355	0	316	244	2552	0	0	1928	841
Arrive On Green				0.20	0.00	0.20	0.27	1.00	0.00	0.00	0.53	0.53
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1575
Grp Volume(v), veh/h				309	0	182	219	925	0	0	1051	527
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1575
Q Serve(g_s), s				19.9	0.0	12.3	14.0	0.0	0.0	0.0	23.0	28.1
Cycle Q Clear(g_c), s				19.9	0.0	12.3	14.0	0.0	0.0	0.0	23.0	28.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				355	0	316	244	2552	0	0	1928	841
V/C Ratio(X)				0.87	0.00	0.58	0.90	0.36	0.00	0.00	0.55	0.63
Avail Cap(c_a), veh/h				486	0	432	353	2552	0	0	1928	841
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.28	0.28	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				46.7	0.0	43.7	43.0	0.0	0.0	0.0	18.4	19.6
Incr Delay (d2), s/veh				12.1	0.0	1.7	5.0	0.1	0.0	0.0	1.1	3.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				9.9	0.0	4.9	5.5	0.0	0.0	0.0	9.2	10.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				58.8	0.0	45.4	48.0	0.1	0.0	0.0	19.5	23.1
LnGrp LOS				E	A	D	D	A	A	A	B	C
Approach Vol, veh/h					491			1144			1578	
Approach Delay, s/veh					53.8			9.3			20.7	
Approach LOS					D			A			C	

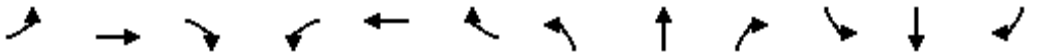
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		90.6			20.8	69.9		29.4				
Change Period (Y+Rc), s		5.8			4.6	5.8		5.8				
Max Green Setting (Gmax), s		76.2			23.4	48.2		32.2				
Max Q Clear Time (g_c+I1), s		2.0			16.0	30.1		21.9				
Green Ext Time (p_c), s		7.3			0.2	8.7		1.7				

Intersection Summary		
HCM 6th Ctrl Delay	21.7	
HCM 6th LOS	C	

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	341	668	443	863
Future Volume (vph)	0	341	668	443	863
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	38.0	38.0	44.0	38.0	82.0
Total Split (%)	31.7%	31.7%	36.7%	31.7%	68.3%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	31.9	31.9	39.1	32.8	76.5
Actuated g/C Ratio	0.27	0.27	0.33	0.27	0.64
v/c Ratio	0.97	0.67	0.92	0.97	0.40
Control Delay	77.4	28.4	49.8	84.7	8.1
Queue Delay	0.0	0.0	0.0	3.7	0.1
Total Delay	77.4	28.4	49.8	88.4	8.2
LOS	E	C	D	F	A
Approach Delay	55.7		49.8		35.4
Approach LOS	E		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 45.1	Intersection LOS: D
Intersection Capacity Utilization 90.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	431	0	341	0	0	0	0	668	317	443	863	0
Future Volume (veh/h)	431	0	341	0	0	0	0	668	317	443	863	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	463	0	280				0	718	258	476	928	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	485	0	432				0	839	302	491	2292	0
Arrive On Green	0.27	0.00	0.27				0.00	0.33	0.33	0.54	1.00	0.00
Sat Flow, veh/h	1810	0	1610				0	2675	927	1810	3705	0
Grp Volume(v), veh/h	463	0	280				0	502	474	476	928	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1702	1810	1805	0
Q Serve(g_s), s	30.2	0.0	18.5				0.0	31.2	31.2	30.5	0.0	0.0
Cycle Q Clear(g_c), s	30.2	0.0	18.5				0.0	31.2	31.2	30.5	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.54	1.00		0.00
Lane Grp Cap(c), veh/h	485	0	432				0	587	554	491	2292	0
V/C Ratio(X)	0.95	0.00	0.65				0.00	0.86	0.86	0.97	0.40	0.00
Avail Cap(c_a), veh/h	486	0	432				0	587	554	504	2292	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.79	0.79	0.78	0.78	0.00
Uniform Delay (d), s/veh	43.2	0.0	38.9				0.0	37.8	37.8	27.0	0.0	0.0
Incr Delay (d2), s/veh	29.4	0.0	3.4				0.0	12.1	12.7	27.3	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.9	0.0	7.5				0.0	15.2	14.4	11.9	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.5	0.0	42.3				0.0	49.9	50.6	54.3	0.4	0.0
LnGrp LOS	E	A	D				A	D	D	D	A	A
Approach Vol, veh/h		743						976			1404	
Approach Delay, s/veh		61.1						50.2			18.7	
Approach LOS		E						D			B	

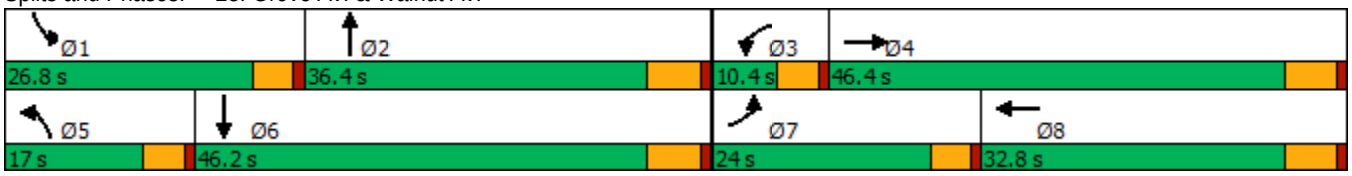
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	37.2	44.8		38.0		82.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	33.4	38.2		32.2		76.2
Max Q Clear Time (g_c+I1), s	32.5	33.2		32.2		2.0
Green Ext Time (p_c), s	0.1	2.5		0.0		7.3

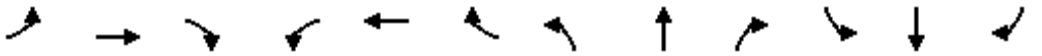
Intersection Summary	
HCM 6th Ctrl Delay	38.6
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	154	300	18	162	84	594	178	710
Future Volume (vph)	154	300	18	162	84	594	178	710
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	24.0	46.4	10.4	32.8	17.0	36.4	26.8	46.2
Total Split (%)	20.0%	38.7%	8.7%	27.3%	14.2%	30.3%	22.3%	38.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	13.5	28.2	5.5	13.7	9.3	33.8	15.1	42.1
Actuated g/C Ratio	0.14	0.29	0.06	0.14	0.10	0.35	0.16	0.43
v/c Ratio	0.71	0.41	0.21	0.54	0.57	0.55	0.74	0.64
Control Delay	59.8	27.8	55.2	25.7	60.3	30.2	58.9	26.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.8	27.8	55.2	25.7	60.3	30.2	58.9	26.4
LOS	E	C	E	C	E	C	E	C
Approach Delay		37.0		27.4		33.9		31.8
Approach LOS		D		C		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.3	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 32.9	Intersection LOS: C
Intersection Capacity Utilization 68.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	300	82	18	162	128	84	594	24	178	710	175
Future Volume (veh/h)	154	300	82	18	162	128	84	594	24	178	710	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	160	312	70	19	169	98	88	619	15	185	740	114
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	192	606	134	34	255	139	110	1334	32	218	1360	209
Arrive On Green	0.12	0.22	0.22	0.02	0.12	0.12	0.07	0.39	0.39	0.13	0.46	0.46
Sat Flow, veh/h	1619	2783	616	1619	2117	1159	1619	3412	83	1619	2970	457
Grp Volume(v), veh/h	160	190	192	19	135	132	88	310	324	185	426	428
Grp Sat Flow(s),veh/h/ln	1619	1710	1689	1619	1710	1566	1619	1710	1785	1619	1710	1718
Q Serve(g_s), s	8.5	8.6	8.9	1.0	6.6	7.2	4.7	11.9	11.9	9.9	15.9	15.9
Cycle Q Clear(g_c), s	8.5	8.6	8.9	1.0	6.6	7.2	4.7	11.9	11.9	9.9	15.9	15.9
Prop In Lane	1.00		0.36	1.00		0.74	1.00		0.05	1.00		0.27
Lane Grp Cap(c), veh/h	192	372	368	34	206	188	110	668	698	218	783	786
V/C Ratio(X)	0.83	0.51	0.52	0.56	0.65	0.70	0.80	0.46	0.46	0.85	0.54	0.54
Avail Cap(c_a), veh/h	356	787	777	106	523	479	228	668	698	407	783	786
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.1	30.4	30.5	42.8	37.1	37.3	40.5	20.0	20.0	37.3	17.3	17.3
Incr Delay (d2), s/veh	3.6	1.1	1.2	5.2	3.5	4.7	5.0	2.3	2.2	3.5	2.7	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	3.4	3.5	0.4	2.8	2.8	1.9	4.7	4.9	3.9	6.1	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.7	31.5	31.6	47.9	40.6	42.0	45.6	22.3	22.2	40.8	20.0	20.0
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	B	B
Approach Vol, veh/h		542			286			722			1039	
Approach Delay, s/veh		34.5			41.7			25.1			23.7	
Approach LOS		C			D			C			C	

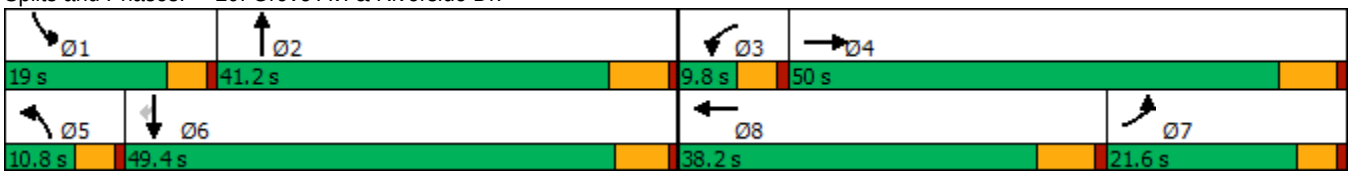
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	40.3	6.5	25.0	10.6	46.2	15.0	16.4
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	22.2	30.6	5.8	40.6	12.4	40.4	19.4	27.0
Max Q Clear Time (g_c+I1), s	11.9	13.9	3.0	10.9	6.7	17.9	10.5	9.2
Green Ext Time (p_c), s	0.2	3.1	0.0	2.1	0.0	5.0	0.1	1.2

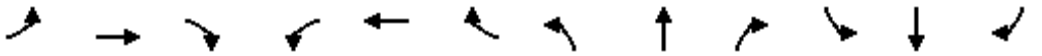
Intersection Summary	
HCM 6th Ctrl Delay	28.3
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	169	599	39	563	22	396	159	357	178
Future Volume (vph)	169	599	39	563	22	396	159	357	178
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	21.6	50.0	9.8	38.2	10.8	41.2	19.0	49.4	49.4
Total Split (%)	18.0%	41.7%	8.2%	31.8%	9.0%	34.3%	15.8%	41.2%	41.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	17.9	43.5	5.2	28.6	5.7	35.1	13.7	47.6	47.6
Actuated g/C Ratio	0.15	0.37	0.04	0.24	0.05	0.30	0.12	0.41	0.41
v/c Ratio	0.72	0.97	0.58	0.85	0.29	0.92	0.88	0.51	0.25
Control Delay	65.2	65.4	87.5	51.5	64.7	63.3	92.1	30.9	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.2	65.4	87.5	51.5	64.7	63.3	92.1	30.9	4.6
LOS	E	E	F	D	E	E	F	C	A
Approach Delay		65.3		53.5		63.4		38.2	
Approach LOS		E		D		E		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 54.8	Intersection LOS: D
Intersection Capacity Utilization 93.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	599	20	39	563	109	22	396	72	159	357	178
Future Volume (veh/h)	169	599	20	39	563	109	22	396	72	159	357	178
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	176	624	20	41	586	68	23	412	58	166	372	128
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	274	643	21	51	678	78	36	458	65	190	705	598
Arrive On Green	0.17	0.37	0.37	0.03	0.22	0.22	0.02	0.30	0.30	0.12	0.39	0.39
Sat Flow, veh/h	1619	1733	56	1619	3088	358	1619	1544	217	1619	1800	1525
Grp Volume(v), veh/h	176	0	644	41	324	330	23	0	470	166	372	128
Grp Sat Flow(s),veh/h/ln	1619	0	1789	1619	1710	1735	1619	0	1761	1619	1800	1525
Q Serve(g_s), s	11.9	0.0	41.7	3.0	21.5	21.6	1.7	0.0	30.2	11.9	18.7	3.6
Cycle Q Clear(g_c), s	11.9	0.0	41.7	3.0	21.5	21.6	1.7	0.0	30.2	11.9	18.7	3.6
Prop In Lane	1.00		0.03	1.00		0.21	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	274	0	664	51	375	381	36	0	523	190	705	598
V/C Ratio(X)	0.64	0.00	0.97	0.81	0.86	0.87	0.63	0.00	0.90	0.87	0.53	0.21
Avail Cap(c_a), veh/h	274	0	665	71	464	471	85	0	523	198	705	598
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	0.0	36.4	56.7	44.3	44.3	57.1	0.0	39.7	51.2	27.5	7.2
Incr Delay (d2), s/veh	3.9	0.0	27.5	25.1	13.1	13.3	6.6	0.0	21.0	30.1	2.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	0.0	22.0	1.5	10.1	10.3	0.7	0.0	15.4	6.3	8.2	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.5	0.0	63.9	81.8	57.4	57.7	63.7	0.0	60.7	81.3	30.3	8.0
LnGrp LOS	D	A	E	F	E	E	E	A	E	F	C	A
Approach Vol, veh/h		820			695			493			666	
Approach Delay, s/veh		60.9			59.0			60.9			38.7	
Approach LOS		E			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.4	41.2	8.3	49.9	7.2	52.4	26.2	32.1
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	14.4	35.0	5.2	43.8	6.2	* 44	17.0	* 32
Max Q Clear Time (g_c+I1), s	13.9	32.2	5.0	43.7	3.7	20.7	13.9	23.6
Green Ext Time (p_c), s	0.0	0.7	0.0	0.0	0.0	2.4	0.1	2.3

Intersection Summary	
HCM 6th Ctrl Delay	54.8
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	25.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	78	187	27	9	40	40	37	404	20	37	352	22
Future Vol, veh/h	78	187	27	9	40	40	37	404	20	37	352	22
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	81	195	28	9	42	42	39	421	21	39	367	23
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	19.2	12.3	32.7	26.1
HCM LOS	C	B	D	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	27%	10%	9%
Vol Thru, %	88%	64%	45%	86%
Vol Right, %	4%	9%	45%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	461	292	89	411
LT Vol	37	78	9	37
Through Vol	404	187	40	352
RT Vol	20	27	40	22
Lane Flow Rate	480	304	93	428
Geometry Grp	1	1	1	1
Degree of Util (X)	0.829	0.582	0.194	0.75
Departure Headway (Hd)	6.214	6.89	7.54	6.306
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	581	520	479	569
Service Time	4.293	4.974	5.54	4.389
HCM Lane V/C Ratio	0.826	0.585	0.194	0.752
HCM Control Delay	32.7	19.2	12.3	26.1
HCM Lane LOS	D	C	B	D
HCM 95th-tile Q	8.6	3.7	0.7	6.6

Intersection	
Intersection Delay, s/veh	22.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	101	146	90	2	47	38	20	340	32	55	260	56
Future Vol, veh/h	101	146	90	2	47	38	20	340	32	55	260	56
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	109	157	97	2	51	41	22	366	34	59	280	60
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	21.5	12.1	25	22.9
HCM LOS	C	B	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	30%	2%	15%
Vol Thru, %	87%	43%	54%	70%
Vol Right, %	8%	27%	44%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	392	337	87	371
LT Vol	20	101	2	55
Through Vol	340	146	47	260
RT Vol	32	90	38	56
Lane Flow Rate	422	362	94	399
Geometry Grp	1	1	1	1
Degree of Util (X)	0.736	0.659	0.192	0.699
Departure Headway (Hd)	6.288	6.55	7.377	6.312
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	573	547	489	570
Service Time	4.367	4.629	5.377	4.394
HCM Lane V/C Ratio	0.736	0.662	0.192	0.7
HCM Control Delay	25	21.5	12.1	22.9
HCM Lane LOS	C	C	B	C
HCM 95th-tile Q	6.3	4.8	0.7	5.5

Intersection	
Intersection Delay, s/veh	189.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	456	16	72	282	53	35	294	159	135	205	23
Future Vol, veh/h	45	456	16	72	282	53	35	294	159	135	205	23
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	48	490	17	77	303	57	38	316	171	145	220	25
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	262.1	140	216.9	104.6
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	9%	18%	37%
Vol Thru, %	60%	88%	69%	56%
Vol Right, %	33%	3%	13%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	488	517	407	363
LT Vol	35	45	72	135
Through Vol	294	456	282	205
RT Vol	159	16	53	23
Lane Flow Rate	525	556	438	390
Geometry Grp	1	1	1	1
Degree of Util (X)	1.372	1.482	1.161	1.045
Departure Headway (Hd)	11.495	11.429	12.43	12.912
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	320	322	298	285
Service Time	9.495	9.429	10.43	10.912
HCM Lane V/C Ratio	1.641	1.727	1.47	1.368
HCM Control Delay	216.9	262.1	140	104.6
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	21.9	25.8	14.5	11.3

Intersection	
Int Delay, s/veh	359.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	126	88	72	5	18	27	14	376	4	18	231	41
Future Vol, veh/h	126	88	72	5	18	27	14	376	4	18	231	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	25	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	140	98	80	6	20	30	16	1504	4	20	257	46

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1883	1860	280	1947	1881	1506	303	0	0	1508	0	0
Stage 1	320	320	-	1538	1538	-	-	-	-	-	-	-
Stage 2	1563	1540	-	409	343	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 55	~ 74	764	49	72	150	1269	-	-	450	-	-
Stage 1	696	656	-	146	179	-	-	-	-	-	-	-
Stage 2	142	179	-	623	641	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 30	~ 65	764	-	63	150	1269	-	-	450	-	-
Mov Cap-2 Maneuver	~ 30	~ 65	-	-	63	-	-	-	-	-	-	-
Stage 1	642	621	-	135	165	-	-	-	-	-	-	-
Stage 2	~ 92	165	-	445	606	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, $	2510.8		0.1	0.8
HCM LOS	F	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1269	-	-	51	-	450	-	-
HCM Lane V/C Ratio	0.012	-	-	6.231	-	0.044	-	-
HCM Control Delay (s)	7.9	0	-	$ 2510.8	-	13.4	0	-
HCM Lane LOS	A	A	-	F	-	B	A	-
HCM 95th %tile Q(veh)	0	-	-	36.6	-	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	90.1
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	187	530	341	207	209	99
Future Vol, veh/h	187	530	341	207	209	99
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	195	552	355	216	218	103
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	153.2	46.3	21
HCM LOS	F	E	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	26%	0%	68%
Vol Thru, %	74%	62%	0%
Vol Right, %	0%	38%	32%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	717	548	308
LT Vol	187	0	209
Through Vol	530	341	0
RT Vol	0	207	99
Lane Flow Rate	747	571	321
Geometry Grp	1	1	1
Degree of Util (X)	1.266	0.926	0.608
Departure Headway (Hd)	6.103	6.249	7.321
Convergence, Y/N	Yes	Yes	Yes
Cap	598	582	497
Service Time	4.164	4.249	5.321
HCM Lane V/C Ratio	1.249	0.981	0.646
HCM Control Delay	153.2	46.3	21
HCM Lane LOS	F	E	C
HCM 95th-tile Q	29	11.7	4

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	21	715	1	15	380	31	3	21	51	67	14	10
Future Vol, veh/h	21	715	1	15	380	31	3	21	51	67	14	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	22	753	1	16	400	33	3	22	54	71	15	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	433	0	0	754	0	0	1260	1263	754	1285	1247	417
Stage 1	-	-	-	-	-	-	798	798	-	449	449	-
Stage 2	-	-	-	-	-	-	462	465	-	836	798	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1137	-	-	865	-	-	149	171	412	143	175	640
Stage 1	-	-	-	-	-	-	382	401	-	593	576	-
Stage 2	-	-	-	-	-	-	584	566	-	364	401	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1137	-	-	865	-	-	131	161	412	107	165	640
Mov Cap-2 Maneuver	-	-	-	-	-	-	131	161	-	107	165	-
Stage 1	-	-	-	-	-	-	369	388	-	573	562	-
Stage 2	-	-	-	-	-	-	546	552	-	289	388	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	23.7	93.9
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	271	1137	-	-	865	-	-	125
HCM Lane V/C Ratio	0.291	0.019	-	-	0.018	-	-	0.766
HCM Control Delay (s)	23.7	8.2	0	-	9.2	0	-	93.9
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	1.2	0.1	-	-	0.1	-	-	4.4

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	42	71	0	0	48	32	0	0	0	22	0	3
Future Vol, veh/h	42	71	0	0	48	32	0	0	0	22	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16965	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	46	77	0	0	52	35	0	0	0	24	0	3

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	87	0	-	-	-	0			239	239	70
Stage 1	-	-	-	-	-	-			70	70	-
Stage 2	-	-	-	-	-	-			169	169	-
Critical Hdwy	4.1	-	-	-	-	-			6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-			5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.4	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-			3.5	4	3.3
Pot Cap-1 Maneuver	1522	-	0	0	-	-			754	666	998
Stage 1	-	-	0	0	-	-			958	841	-
Stage 2	-	-	0	0	-	-			866	763	-
Platoon blocked, %		-			-	-					
Mov Cap-1 Maneuver	1522	-	-	-	-	-			730	0	998
Mov Cap-2 Maneuver	-	-	-	-	-	-			730	0	-
Stage 1	-	-	-	-	-	-			927	0	-
Stage 2	-	-	-	-	-	-			866	0	-

Approach	EB	WB	SB
HCM Control Delay, s	2.8	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1522	-	-	-	754
HCM Lane V/C Ratio	0.03	-	-	-	0.036
HCM Control Delay (s)	7.4	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑			✣				
Traffic Vol, veh/h	0	623	117	89	439	0	94	0	129	0	0	0
Future Vol, veh/h	0	623	117	89	439	0	94	0	129	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	25	91	91	91	91	91	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	685	129	98	482	0	103	0	142	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	814	0	0	1363	1363	685
Stage 1	-	-	-	-	-	-	685	685	-
Stage 2	-	-	-	-	-	-	678	678	-
Critical Hdwy	-	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	822	-	0	165	149	452
Stage 1	0	-	-	-	-	0	504	451	-
Stage 2	0	-	-	-	-	0	508	455	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	822	-	-	145	0	452
Mov Cap-2 Maneuver	-	-	-	-	-	-	282	0	-
Stage 1	-	-	-	-	-	-	504	0	-
Stage 2	-	-	-	-	-	-	448	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	33.8
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	360	-	-	822	-
HCM Lane V/C Ratio	0.681	-	-	0.119	-
HCM Control Delay (s)	33.8	-	-	10	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	4.8	-	-	0.4	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	739	13	11	499	0	28	0	19	0	0	0
Future Vol, veh/h	0	739	13	11	499	0	28	0	19	0	0	0
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	840	15	13	567	0	32	0	22	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	856	0	0	1442	1442	429
Stage 1	-	-	-	-	-	-	849	849	-
Stage 2	-	-	-	-	-	-	593	593	-
Critical Hdwy	-	-	-	4.1	-	-	6.6	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	793	-	0	136	134	580
Stage 1	0	-	-	-	-	0	385	380	-
Stage 2	0	-	-	-	-	0	556	497	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	792	-	-	134	0	579
Mov Cap-2 Maneuver	-	-	-	-	-	-	265	0	-
Stage 1	-	-	-	-	-	-	385	0	-
Stage 2	-	-	-	-	-	-	547	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	17.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	339	-	-	792	-
HCM Lane V/C Ratio	0.158	-	-	0.016	-
HCM Control Delay (s)	17.6	-	-	9.6	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	757	0	40	458	0	51	0	47	0	0	0
Future Vol, veh/h	0	757	0	40	458	0	51	0	47	0	0	0
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	200	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	841	0	44	509	0	57	0	52	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	842	0	0	1439	-	422
Stage 1	-	-	-	-	-	-	842	-	-
Stage 2	-	-	-	-	-	-	597	-	-
Critical Hdwy	-	-	-	4.1	-	-	6.6	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	-	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	-	3.3
Pot Cap-1 Maneuver	0	-	-	802	-	0	137	0	586
Stage 1	0	-	-	-	-	0	388	0	-
Stage 2	0	-	-	-	-	0	554	0	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	801	-	-	129	0	585
Mov Cap-2 Maneuver	-	-	-	-	-	-	261	0	-
Stage 1	-	-	-	-	-	-	388	0	-
Stage 2	-	-	-	-	-	-	524	0	-

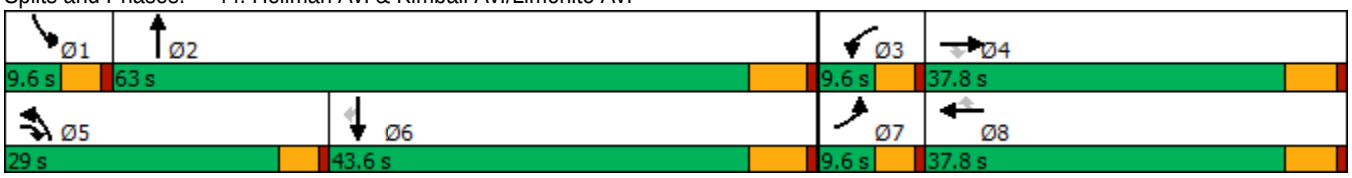
Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	17.4
HCM LOS			C

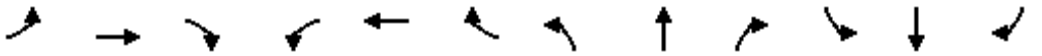
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	261	585	-	-	801	-
HCM Lane V/C Ratio	0.217	0.089	-	-	0.055	-
HCM Control Delay (s)	22.6	11.8	-	-	9.8	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.8	0.3	-	-	0.2	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	20	2	787	4	5	268	68	56	111	
Future Volume (vph)	20	2	787	4	5	268	68	56	111	
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	NA	Perm	
Protected Phases	7	4	5	3	8	5	2	6		1
Permitted Phases			4						6	
Detector Phase	7	4	5	3	8	5	2	6	6	
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	10.0	5.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	9.6	43.2	43.2	43.2	9.6
Total Split (s)	9.6	37.8	29.0	9.6	37.8	29.0	63.0	43.6	43.6	9.6
Total Split (%)	8.0%	31.5%	24.2%	8.0%	31.5%	24.2%	52.5%	36.3%	36.3%	8%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	5.2	5.2	5.2	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	4.6	6.2	6.2	6.2	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	None	None	Max	Max	Min	Min	None
Act Effct Green (s)	5.3	13.4	30.7	5.3	13.4	26.1	67.6	30.8	30.8	
Actuated g/C Ratio	0.07	0.18	0.41	0.07	0.18	0.35	0.91	0.41	0.41	
v/c Ratio	0.18	0.01	0.74	0.02	0.01	0.50	0.02	0.04	0.16	
Control Delay	44.1	28.0	5.8	42.0	27.6	27.8	4.7	17.7	2.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	44.1	28.0	5.8	42.0	27.6	27.8	4.7	17.7	2.9	
LOS	D	C	A	D	C	C	A	B	A	
Approach Delay		6.8			34.0		23.0	7.8		
Approach LOS		A			C		C	A		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 74.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 11.2	Intersection LOS: B
Intersection Capacity Utilization 76.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	2	787	4	5	0	268	68	1	0	56	111
Future Volume (veh/h)	20	2	787	4	5	0	268	68	1	0	56	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	21	2	828	4	5	0	282	72	1	0	59	117
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	35	544	812	15	976	436	373	1851	26	2	897	400
Arrive On Green	0.02	0.30	0.30	0.01	0.29	0.00	0.23	0.54	0.54	0.00	0.26	0.26
Sat Flow, veh/h	1619	1800	1525	2956	3420	1525	1619	3454	48	1619	3420	1525
Grp Volume(v), veh/h	21	2	828	4	5	0	282	36	37	0	59	117
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	1710	1525	1619	1710	1791	1619	1710	1525
Q Serve(g_s), s	1.4	0.1	32.0	0.1	0.1	0.0	17.2	1.0	1.0	0.0	1.4	6.5
Cycle Q Clear(g_c), s	1.4	0.1	32.0	0.1	0.1	0.0	17.2	1.0	1.0	0.0	1.4	6.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	35	544	812	15	976	436	373	917	960	2	897	400
V/C Ratio(X)	0.60	0.00	1.02	0.26	0.01	0.00	0.76	0.04	0.04	0.00	0.07	0.29
Avail Cap(c_a), veh/h	76	544	812	140	1033	461	373	917	960	76	1207	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	25.8	24.8	52.5	27.1	0.0	38.0	11.6	11.6	0.0	29.3	31.2
Incr Delay (d2), s/veh	5.9	0.0	36.6	3.2	0.0	0.0	13.4	0.1	0.1	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	26.0	0.1	0.0	0.0	7.8	0.4	0.4	0.0	0.5	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.2	25.8	61.4	55.7	27.1	0.0	51.4	11.7	11.7	0.0	29.4	31.6
LnGrp LOS	E	C	F	E	C	A	D	B	B	A	C	C
Approach Vol, veh/h		851			9			355			176	
Approach Delay, s/veh		61.2			39.8			43.2			30.9	
Approach LOS		E			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	63.0	5.2	37.8	29.0	34.0	6.9	36.1
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	5.0	56.8	5.0	32.0	24.4	37.4	5.0	32.0
Max Q Clear Time (g_c+I1), s	0.0	3.0	2.1	34.0	19.2	8.5	3.4	2.1
Green Ext Time (p_c), s	0.0	0.3	0.0	0.0	0.2	0.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	52.7
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	165.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	777	23	35	456	7	41	4	126	55	5	2
Future Vol, veh/h	4	777	23	35	456	7	41	4	126	55	5	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	4	863	26	39	507	8	46	4	140	61	6	2
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

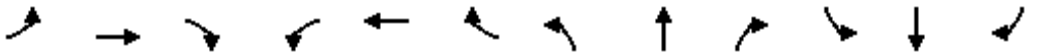
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	265.4	73.7	16.7	14.7
HCM LOS	F	F	C	B

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	24%	100%	0%	0%	100%	0%	89%
Vol Thru, %	2%	0%	100%	0%	0%	98%	8%
Vol Right, %	74%	0%	0%	100%	0%	2%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	171	4	777	23	35	463	62
LT Vol	41	4	0	0	35	0	55
Through Vol	4	0	777	0	0	456	5
RT Vol	126	0	0	23	0	7	2
Lane Flow Rate	190	4	863	26	39	514	69
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.398	0.009	1.55	0.041	0.083	1.026	0.169
Departure Headway (Hd)	8.486	7.135	6.624	5.907	8.681	8.155	9.971
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	427	505	553	610	415	448	362
Service Time	6.186	4.835	4.324	3.607	6.381	5.855	7.671
HCM Lane V/C Ratio	0.445	0.008	1.561	0.043	0.094	1.147	0.191
HCM Control Delay	16.7	9.9	274.3	8.9	12.2	78.3	14.7
HCM Lane LOS	C	A	F	A	B	F	B
HCM 95th-tile Q	1.9	0	44.5	0.1	0.3	13.8	0.6

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	5	268	416	509	1111
Future Volume (vph)	5	268	416	509	1111
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (%)	32.2%	32.2%	31.1%	67.8%	36.7%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	23.4	23.4	23.2	54.8	27.7
Actuated g/C Ratio	0.26	0.26	0.26	0.61	0.31
v/c Ratio	0.93	0.45	0.93	0.17	0.82
Control Delay	61.6	6.0	72.2	21.0	31.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	61.6	6.0	72.2	21.0	31.0
LOS	E	A	E	C	C
Approach Delay	39.9			44.0	31.0
Approach LOS	D			D	C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 36.7	Intersection LOS: D
Intersection Capacity Utilization 83.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	414	5	268	416	509	0	0	1111	461
Future Volume (veh/h)	0	0	0	414	5	268	416	509	0	0	1111	461
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				431	5	134	433	530	0	0	1157	345
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				457	5	411	480	3181	0	0	1422	420
Arrive On Green				0.26	0.26	0.26	0.53	1.00	0.00	0.00	0.28	0.28
Sat Flow, veh/h				1790	21	1610	1810	5358	0	0	5280	1483
Grp Volume(v), veh/h				436	0	134	433	530	0	0	1131	371
Grp Sat Flow(s),veh/h/ln				1811	0	1610	1810	1729	0	0	1634	1595
Q Serve(g_s), s				21.3	0.0	6.1	19.4	0.0	0.0	0.0	19.3	19.6
Cycle Q Clear(g_c), s				21.3	0.0	6.1	19.4	0.0	0.0	0.0	19.3	19.6
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.93
Lane Grp Cap(c), veh/h				463	0	411	480	3181	0	0	1390	452
V/C Ratio(X)				0.94	0.00	0.33	0.90	0.17	0.00	0.00	0.81	0.82
Avail Cap(c_a), veh/h				463	0	411	483	3181	0	0	1481	482
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.64	0.64	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				32.8	0.0	27.2	20.1	0.0	0.0	0.0	30.0	30.1
Incr Delay (d2), s/veh				28.4	0.0	1.0	13.6	0.1	0.0	0.0	5.3	15.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				12.3	0.0	6.0	6.7	0.0	0.0	0.0	7.7	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				61.3	0.0	28.2	33.7	0.1	0.0	0.0	35.3	45.4
LnGrp LOS				E	A	C	C	A	A	A	D	D
Approach Vol, veh/h					570			963			1502	
Approach Delay, s/veh					53.5			15.2			37.8	
Approach LOS					D			B			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	61.0	29.0	29.7	31.3
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	55.2	23.0	24.0	* 27
Max Q Clear Time (g_c+I1), s	2.0	23.3	21.4	21.6
Green Ext Time (p_c), s	3.6	0.0	0.2	4.0

Intersection Summary	
HCM 6th Ctrl Delay	33.6
HCM 6th LOS	C

Notes

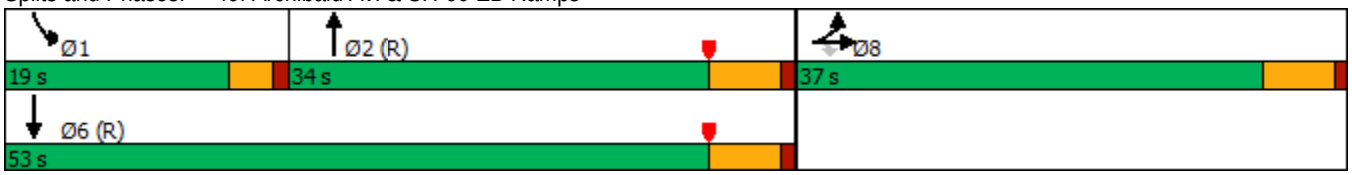
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

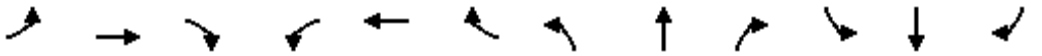
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	572	817	392	1134
Future Volume (vph)	0	572	817	392	1134
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (%)	41.1%	41.1%	37.8%	21.1%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	31.2	31.2	28.2	15.0	47.2
Actuated g/C Ratio	0.35	0.35	0.31	0.17	0.52
v/c Ratio	0.18	0.97	0.92dr	1.36	0.43
Control Delay	21.5	57.2	25.4	197.1	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.5	57.2	25.4	197.1	20.9
LOS	C	E	C	F	C
Approach Delay	51.6		25.4		66.1
Approach LOS	D		C		E

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.36	
Intersection Signal Delay: 47.7	Intersection LOS: D
Intersection Capacity Utilization 83.2%	ICU Level of Service E
Analysis Period (min) 15	

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	0	572	0	0	0	0	817	570	392	1134	0
Future Volume (veh/h)	107	0	572	0	0	0	0	817	570	392	1134	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	111	0	346				0	851	419	408	1181	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	441	0	393				0	2040	668	302	3254	0
Arrive On Green	0.24	0.00	0.24				0.00	0.42	0.42	0.06	0.21	0.00
Sat Flow, veh/h	1810	0	1610				0	5168	1606	1810	5358	0
Grp Volume(v), veh/h	111	0	346				0	851	419	408	1181	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1606	1810	1729	0
Q Serve(g_s), s	4.4	0.0	18.6				0.0	11.0	18.5	15.0	17.6	0.0
Cycle Q Clear(g_c), s	4.4	0.0	18.6				0.0	11.0	18.5	15.0	17.6	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	441	0	393				0	2040	668	302	3254	0
V/C Ratio(X)	0.25	0.00	0.88				0.00	0.42	0.63	1.35	0.36	0.00
Avail Cap(c_a), veh/h	627	0	558				0	2040	668	302	3254	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.57	0.57	0.46	0.46	0.00
Uniform Delay (d), s/veh	27.4	0.0	32.8				0.0	18.6	20.8	42.5	20.3	0.0
Incr Delay (d2), s/veh	0.3	0.0	11.3				0.0	0.4	2.5	168.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	8.0				0.0	3.8	6.6	21.3	8.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.7	0.0	44.1				0.0	18.9	23.3	211.2	20.4	0.0
LnGrp LOS	C	A	D				A	B	C	F	C	A
Approach Vol, veh/h		457						1270			1589	
Approach Delay, s/veh		40.1						20.4			69.4	
Approach LOS		D						C			E	

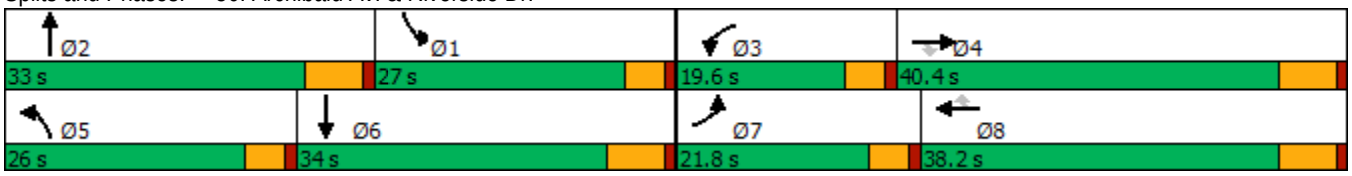
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	19.0	43.3				62.3		27.7				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	15.0	28.2				47.2		31.2				
Max Q Clear Time (g_c+I1), s	17.0	20.5				19.6		20.6				
Green Ext Time (p_c), s	0.0	4.4				8.5		1.3				

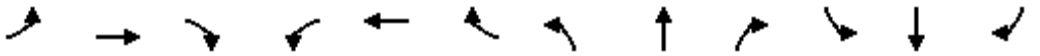
Intersection Summary			
HCM 6th Ctrl Delay			46.6
HCM 6th LOS			D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	227	634	353	150	452	118	289	660	289	915
Future Volume (vph)	227	634	353	150	452	118	289	660	289	915
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.8	40.4	40.4	19.6	38.2	38.2	26.0	33.0	27.0	34.0
Total Split (%)	18.2%	33.7%	33.7%	16.3%	31.8%	31.8%	21.7%	27.5%	22.5%	28.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	17.3	29.2	29.2	13.7	25.6	25.6	21.5	23.1	26.2	27.9
Actuated g/C Ratio	0.15	0.26	0.26	0.12	0.22	0.22	0.19	0.20	0.23	0.24
v/c Ratio	0.99	0.77	0.57	0.82	0.62	0.27	1.01	0.77	0.83	1.03
Control Delay	104.4	45.8	7.0	81.9	43.2	3.3	101.5	48.1	63.5	75.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	104.4	45.8	7.0	81.9	43.2	3.3	101.5	48.1	63.5	75.9
LOS	F	D	A	F	D	A	F	D	E	E
Approach Delay		45.4			44.8			63.5		73.4
Approach LOS		D			D			E		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 58.7	Intersection LOS: E
Intersection Capacity Utilization 90.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	634	353	150	452	118	289	660	55	289	915	249
Future Volume (veh/h)	227	634	353	150	452	118	289	660	55	289	915	249
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	241	674	219	160	481	67	307	702	50	307	973	201
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	252	838	365	186	698	310	313	911	64	382	1025	211
Arrive On Green	0.16	0.24	0.24	0.11	0.20	0.20	0.19	0.19	0.19	0.24	0.25	0.25
Sat Flow, veh/h	1619	3420	1490	1619	3420	1519	1619	4678	331	1619	4076	840
Grp Volume(v), veh/h	241	674	219	160	481	67	307	490	262	307	782	392
Grp Sat Flow(s),veh/h/ln	1619	1710	1490	1619	1710	1519	1619	1638	1733	1619	1638	1639
Q Serve(g_s), s	16.3	20.5	14.4	10.7	14.4	2.3	20.9	15.7	15.8	19.8	25.9	26.0
Cycle Q Clear(g_c), s	16.3	20.5	14.4	10.7	14.4	2.3	20.9	15.7	15.8	19.8	25.9	26.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.51
Lane Grp Cap(c), veh/h	252	838	365	186	698	310	313	638	338	382	824	412
V/C Ratio(X)	0.96	0.80	0.60	0.86	0.69	0.22	0.98	0.77	0.78	0.80	0.95	0.95
Avail Cap(c_a), veh/h	252	1058	461	220	990	440	313	794	420	382	824	412
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.3	39.3	36.9	48.1	40.8	11.6	44.4	42.2	42.2	39.8	40.7	40.7
Incr Delay (d2), s/veh	44.4	3.7	1.6	22.2	1.2	0.3	45.0	3.6	7.0	11.0	20.0	32.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	8.6	5.1	5.3	5.9	1.4	11.9	6.4	7.1	8.6	12.1	13.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	90.7	42.9	38.5	70.3	42.0	12.0	89.4	45.8	49.3	50.9	60.6	72.9
LnGrp LOS	F	D	D	E	D	B	F	D	D	D	E	E
Approach Vol, veh/h		1134			708			1059			1481	
Approach Delay, s/veh		52.2			45.5			59.3			61.9	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.3	27.7	17.3	33.3	26.0	34.0	21.8	28.8
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	22.4	* 27	15.0	34.2	21.4	27.8	17.2	32.0
Max Q Clear Time (g_c+I1), s	21.8	17.8	12.7	22.5	22.9	28.0	18.3	16.4
Green Ext Time (p_c), s	0.0	2.9	0.0	3.8	0.0	0.0	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	56.1
HCM 6th LOS	E

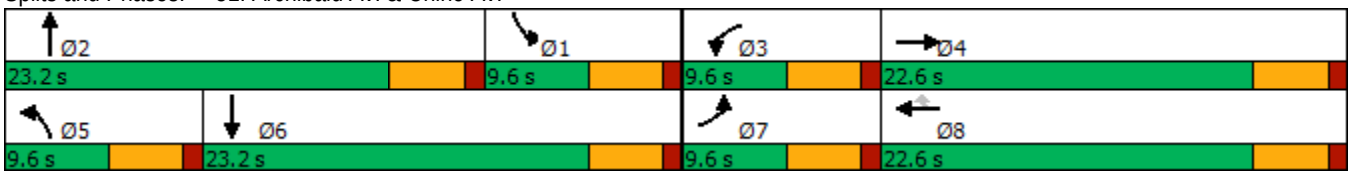
Notes

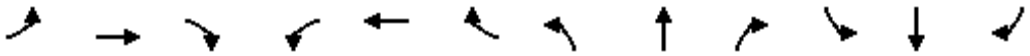
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	21	1	21	113	20	818	145	1126
Future Volume (vph)	21	1	21	113	20	818	145	1126
Turn Type	Prot	NA	Prot	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3		5	2	1	6
Permitted Phases				8				
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	9.6	22.6	9.6	22.6	9.6	23.2	9.6	23.2
Total Split (%)	14.8%	34.8%	14.8%	34.8%	14.8%	35.7%	14.8%	35.7%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	5.6	7.8	5.6	7.8	5.6	15.0	5.6	26.2
Actuated g/C Ratio	0.14	0.19	0.14	0.19	0.14	0.36	0.14	0.63
v/c Ratio	0.11	0.03	0.11	0.21	0.10	0.54	0.74	0.59
Control Delay	23.7	11.6	23.7	0.8	23.6	13.2	50.1	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.7	11.6	23.7	0.8	23.6	13.2	50.1	13.5
LOS	C	B	C	A	C	B	D	B
Approach Delay		20.5				13.5		17.7
Approach LOS		C				B		B

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 41.4	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 15.3	Intersection LOS: B
Intersection Capacity Utilization 56.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	1	6	21	0	113	20	818	40	145	1126	13
Future Volume (veh/h)	21	1	6	21	0	113	20	818	40	145	1126	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	23	1	5	23	0	42	22	909	35	161	1251	13
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	46	18	88	46	122	103	44	1474	57	242	1478	15
Arrive On Green	0.03	0.07	0.07	0.03	0.00	0.07	0.03	0.30	0.30	0.15	0.43	0.43
Sat Flow, veh/h	1619	261	1304	1619	1800	1525	1619	4855	187	1619	3467	36
Grp Volume(v), veh/h	23	0	6	23	0	42	22	613	331	161	617	647
Grp Sat Flow(s),veh/h/ln	1619	0	1565	1619	1800	1525	1619	1638	1766	1619	1710	1794
Q Serve(g_s), s	0.6	0.0	0.1	0.6	0.0	0.6	0.5	6.5	6.6	3.8	13.2	13.2
Cycle Q Clear(g_c), s	0.6	0.0	0.1	0.6	0.0	0.6	0.5	6.5	6.6	3.8	13.2	13.2
Prop In Lane	1.00		0.83	1.00		1.00	1.00		0.11	1.00		0.02
Lane Grp Cap(c), veh/h	46	0	106	46	122	103	44	995	536	242	729	765
V/C Ratio(X)	0.51	0.00	0.06	0.51	0.00	0.41	0.50	0.62	0.62	0.66	0.85	0.85
Avail Cap(c_a), veh/h	198	0	690	198	794	673	198	1493	805	242	779	817
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.6	0.0	17.8	19.6	0.0	6.5	19.6	12.2	12.2	16.4	10.5	10.5
Incr Delay (d2), s/veh	8.4	0.0	0.2	8.4	0.0	2.6	8.6	0.6	1.2	6.7	8.2	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.3	0.0	0.4	0.3	1.6	1.8	1.5	4.3	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.0	0.0	18.0	28.0	0.0	9.1	28.2	12.8	13.3	23.0	18.7	18.4
LnGrp LOS	C	A	B	C	A	A	C	B	B	C	B	B
Approach Vol, veh/h		29			65			966			1425	
Approach Delay, s/veh		25.9			15.8			13.3			19.0	
Approach LOS		C			B			B			B	

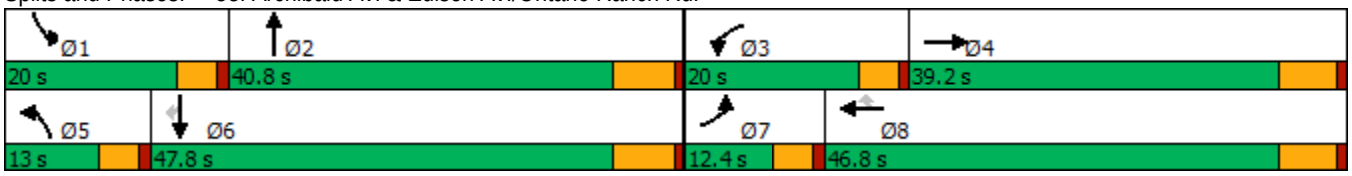
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	17.0	5.7	7.4	5.7	22.0	5.7	7.4
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	5.0	18.6	5.0	18.0	5.0	18.6	5.0	18.0
Max Q Clear Time (g_c+I1), s	5.8	8.6	2.6	2.1	2.5	15.2	2.6	2.6
Green Ext Time (p_c), s	0.0	3.8	0.0	0.0	0.0	2.2	0.0	0.1

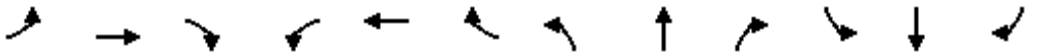
Intersection Summary	
HCM 6th Ctrl Delay	16.8
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	581	127	311	217	75	72	618	341	139	840	74
Future Volume (vph)	93	581	127	311	217	75	72	618	341	139	840	74
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	12.4	39.2		20.0	46.8	46.8	13.0	40.8		20.0	47.8	47.8
Total Split (%)	10.3%	32.7%		16.7%	39.0%	39.0%	10.8%	34.0%		16.7%	39.8%	39.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	7.1	23.6	99.2	14.2	33.5	33.5	7.8	26.1	99.2	12.6	33.8	33.8
Actuated g/C Ratio	0.07	0.24	1.00	0.14	0.34	0.34	0.08	0.26	1.00	0.13	0.34	0.34
v/c Ratio	0.45	0.74	0.09	0.76	0.37	0.12	0.59	0.71	0.23	0.70	0.74	0.12
Control Delay	56.4	41.9	0.1	56.0	29.8	0.4	68.8	38.8	0.4	63.5	35.1	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.4	41.9	0.1	56.0	29.8	0.4	68.8	38.8	0.4	63.5	35.1	0.4
LOS	E	D	A	E	C	A	E	D	A	E	D	A
Approach Delay		37.0			39.7			28.2			36.4	
Approach LOS		D			D			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99.2	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 34.7	Intersection LOS: C
Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	581	127	311	217	75	72	618	341	139	840	74
Future Volume (veh/h)	93	581	127	311	217	75	72	618	341	139	840	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	96	599	0	321	224	43	74	637	0	143	866	54
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	157	776		392	551	467	92	931		174	1103	481
Arrive On Green	0.05	0.23	0.00	0.13	0.31	0.31	0.06	0.27	0.00	0.11	0.32	0.32
Sat Flow, veh/h	2956	3420	1525	2956	1800	1525	1619	3420	1525	1619	3420	1491
Grp Volume(v), veh/h	96	599	0	321	224	43	74	637	0	143	866	54
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1800	1525	1619	1710	1525	1619	1710	1491
Q Serve(g_s), s	2.7	13.8	0.0	8.9	8.3	1.7	3.8	14.0	0.0	7.3	19.3	2.1
Cycle Q Clear(g_c), s	2.7	13.8	0.0	8.9	8.3	1.7	3.8	14.0	0.0	7.3	19.3	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	157	776		392	551	467	92	931		174	1103	481
V/C Ratio(X)	0.61	0.77		0.82	0.41	0.09	0.80	0.68		0.82	0.79	0.11
Avail Cap(c_a), veh/h	275	1346		543	871	739	162	1399		297	1684	734
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	30.4	0.0	35.4	23.1	20.8	39.1	27.3	0.0	36.7	25.8	20.0
Incr Delay (d2), s/veh	1.4	1.7	0.0	4.9	0.5	0.1	6.0	0.9	0.0	3.7	1.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.3	0.0	3.2	3.2	0.6	1.5	5.2	0.0	2.8	7.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.3	32.1	0.0	40.3	23.5	20.9	45.1	28.2	0.0	40.4	27.2	20.1
LnGrp LOS	D	C		D	C	C	D	C		D	C	C
Approach Vol, veh/h		695	A		588			711	A		1063	
Approach Delay, s/veh		33.2			32.5			30.0			28.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	29.3	15.7	25.2	9.4	33.5	9.1	31.9
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	15.4	34.3	15.4	33.0	8.4	41.3	7.8	40.6
Max Q Clear Time (g_c+I1), s	9.3	16.0	10.9	15.8	5.8	21.3	4.7	10.3
Green Ext Time (p_c), s	0.1	3.5	0.3	3.3	0.0	5.3	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	30.7
HCM 6th LOS	C

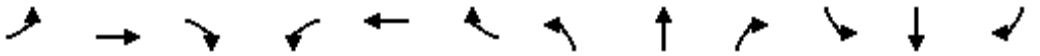
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	11	1020	1	10	1269
Future Volume (vph)	2	11	1020	1	10	1269
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.5	9.5	32.5	32.5	9.6	16.5
Total Split (s)	10.0	10.0	40.0	40.0	10.0	50.0
Total Split (%)	14.3%	14.3%	57.1%	57.1%	14.3%	71.4%
Yellow Time (s)	3.5	3.5	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	6.5	6.5	4.6	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max
Act Effct Green (s)	5.6	5.6	56.7	56.7	5.2	58.5
Actuated g/C Ratio	0.09	0.09	0.90	0.90	0.08	0.92
v/c Ratio	0.01	0.03	0.35	0.00	0.08	0.43
Control Delay	26.5	0.1	4.4	6.0	28.3	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	0.1	4.4	6.0	28.3	2.9
LOS	C	A	A	A	C	A
Approach Delay			4.4			3.1
Approach LOS			A			A

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 63.3	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.43	
Intersection Signal Delay: 3.7	Intersection LOS: A
Intersection Capacity Utilization 49.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	2	0	11	0	1020	1	10	1269	0
Future Volume (veh/h)	0	0	0	2	0	11	0	1020	1	10	1269	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1700	0	1800	0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h				2	0	3	0	1085	1	11	1350	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				21	0	18	0	2377	1059	23	2711	0
Arrive On Green				0.01	0.00	0.01	0.00	0.69	0.69	0.01	0.79	0.00
Sat Flow, veh/h				3141	0	2685	0	3510	1524	1619	3510	0
Grp Volume(v), veh/h				2	0	3	0	1085	1	11	1350	0
Grp Sat Flow(s),veh/h/ln				1570	0	1342	0	1710	1524	1619	1710	0
Q Serve(g_s), s				0.0	0.0	0.1	0.0	7.8	0.0	0.4	7.4	0.0
Cycle Q Clear(g_c), s				0.0	0.0	0.1	0.0	7.8	0.0	0.4	7.4	0.0
Prop In Lane				1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				21	0	18	0	2377	1059	23	2711	0
V/C Ratio(X)				0.10	0.00	0.17	0.00	0.46	0.00	0.48	0.50	0.00
Avail Cap(c_a), veh/h				315	0	269	0	2377	1059	159	2711	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				27.1	0.0	27.1	0.0	3.7	2.6	26.8	1.9	0.0
Incr Delay (d2), s/veh				1.9	0.0	4.3	0.0	0.6	0.0	5.8	0.7	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.0	0.0	0.0	0.0	0.7	0.0	0.2	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				29.0	0.0	31.4	0.0	4.4	2.6	32.6	2.6	0.0
LnGrp LOS				C	A	C	A	A	A	C	A	A
Approach Vol, veh/h					5			1086			1361	
Approach Delay, s/veh					30.4			4.4			2.8	
Approach LOS					C			A			A	

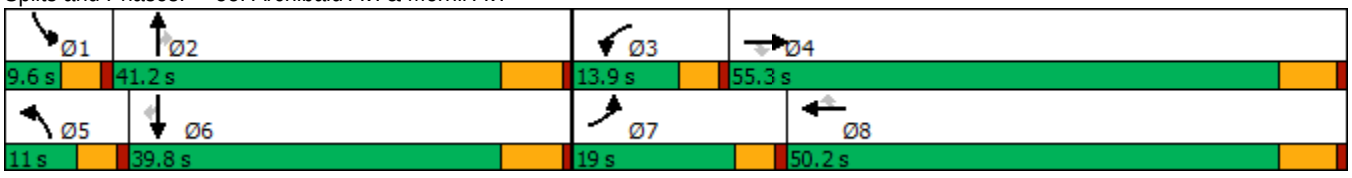
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	5.4	44.6				50.0		4.9				
Change Period (Y+Rc), s	4.6	6.5				6.5		4.5				
Max Green Setting (Gmax), s	5.4	33.5				43.5		5.5				
Max Q Clear Time (g_c+I1), s	2.4	9.8				9.4		2.1				
Green Ext Time (p_c), s	0.0	7.2				10.9		0.0				

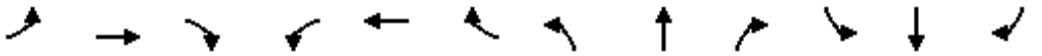
Intersection Summary		
HCM 6th Ctrl Delay		3.6
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	393	79	555	50	26	60	175	698	43	78	1072	232
Future Volume (vph)	393	79	555	50	26	60	175	698	43	78	1072	232
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	19.0	55.3	55.3	13.9	50.2	50.2	11.0	41.2	41.2	9.6	39.8	39.8
Total Split (%)	15.8%	46.1%	46.1%	11.6%	41.8%	41.8%	9.2%	34.3%	34.3%	8.0%	33.2%	33.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	15.7	32.3	32.3	7.4	25.9	25.9	6.6	38.4	38.4	5.2	34.3	34.3
Actuated g/C Ratio	0.16	0.32	0.32	0.07	0.26	0.26	0.07	0.38	0.38	0.05	0.34	0.34
v/c Ratio	1.61	0.14	0.91	0.44	0.06	0.12	1.70	0.55	0.07	0.53	0.95	0.38
Control Delay	323.1	24.2	39.4	61.3	26.6	0.5	385.4	31.1	0.2	65.3	51.9	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	323.1	24.2	39.4	61.3	26.6	0.5	385.4	31.1	0.2	65.3	51.9	13.7
LOS	F	C	D	E	C	A	F	C	A	E	D	B
Approach Delay		146.8			27.9			97.2			46.3	
Approach LOS		F			C			F			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 100.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.70	
Intersection Signal Delay: 88.9	Intersection LOS: F
Intersection Capacity Utilization 87.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	393	79	555	50	26	60	175	698	43	78	1072	232
Future Volume (veh/h)	393	79	555	50	26	60	175	698	43	78	1072	232
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	405	81	387	52	27	23	180	720	30	80	1105	181
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	262	512	434	66	294	250	116	1302	573	143	1222	545
Arrive On Green	0.16	0.28	0.28	0.04	0.16	0.16	0.07	0.38	0.38	0.05	0.36	0.36
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	1619	3420	1506	2956	3420	1525
Grp Volume(v), veh/h	405	81	387	52	27	23	180	720	30	80	1105	181
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1710	1506	1478	1710	1525
Q Serve(g_s), s	14.4	3.0	21.7	2.8	1.1	1.1	6.4	14.7	1.1	2.4	27.3	7.7
Cycle Q Clear(g_c), s	14.4	3.0	21.7	2.8	1.1	1.1	6.4	14.7	1.1	2.4	27.3	7.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	262	512	434	66	294	250	116	1302	573	143	1222	545
V/C Ratio(X)	1.55	0.16	0.89	0.79	0.09	0.09	1.55	0.55	0.05	0.56	0.90	0.33
Avail Cap(c_a), veh/h	262	992	840	169	889	753	116	1332	587	166	1278	570
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.4	23.9	30.6	42.4	31.6	31.6	41.4	21.6	17.4	41.5	27.2	20.9
Incr Delay (d2), s/veh	264.7	0.1	6.5	7.7	0.1	0.2	284.5	0.5	0.0	1.3	9.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.5	1.2	8.3	1.2	0.5	0.4	11.6	5.2	0.4	0.8	11.2	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	302.1	24.0	37.1	50.0	31.8	31.8	325.9	22.1	17.5	42.7	36.3	21.2
LnGrp LOS	F	C	D	D	C	C	F	C	B	D	D	C
Approach Vol, veh/h		873			102			930			1366	
Approach Delay, s/veh		158.8			41.1			80.8			34.7	
Approach LOS		F			D			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	40.4	8.2	31.6	11.0	38.3	19.0	20.8
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	34.7	9.3	49.1	6.4	33.3	14.4	44.0
Max Q Clear Time (g_c+I1), s	4.4	16.7	4.8	23.7	8.4	29.3	16.4	3.1
Green Ext Time (p_c), s	0.0	4.1	0.0	1.7	0.0	2.5	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	81.1
HCM 6th LOS	F

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	402	262	564	393	606	922
Future Volume (vph)	402	262	564	393	606	922
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	37.0	46.7	36.3	37.0	83.7
Total Split (%)	30.3%	30.8%	38.9%	30.3%	30.8%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min
Act Effct Green (s)	28.0	65.6	37.8	65.8	32.2	75.4
Actuated g/C Ratio	0.25	0.58	0.33	0.58	0.28	0.66
v/c Ratio	0.92	0.27	0.91	0.42	1.21	0.75
Control Delay	69.8	7.5	57.2	10.5	148.3	18.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.8	7.5	57.2	10.5	148.3	18.1
LOS	E	A	E	B	F	B
Approach Delay	45.3		38.0			69.7
Approach LOS	D		D			E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.21	
Intersection Signal Delay: 54.9	Intersection LOS: D
Intersection Capacity Utilization 98.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	402	262	564	393	606	922
Future Volume (veh/h)	402	262	564	393	606	922
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	410	217	576	380	618	941
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	439	848	636	918	514	1260
Arrive On Green	0.24	0.24	0.33	0.33	0.28	0.66
Sat Flow, veh/h	1810	1610	1900	1576	1810	1900
Grp Volume(v), veh/h	410	217	576	380	618	941
Grp Sat Flow(s),veh/h/ln	1810	1610	1900	1576	1810	1900
Q Serve(g_s), s	25.0	8.3	32.6	15.1	32.0	37.2
Cycle Q Clear(g_c), s	25.0	8.3	32.6	15.1	32.0	37.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	439	848	636	918	514	1260
V/C Ratio(X)	0.93	0.26	0.91	0.41	1.20	0.75
Avail Cap(c_a), veh/h	498	901	699	970	514	1328
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.8	14.6	35.7	13.3	40.3	12.6
Incr Delay (d2), s/veh	22.4	0.1	14.9	0.4	108.3	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.3	2.8	16.7	8.6	28.7	12.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	64.2	14.6	50.6	13.6	148.6	14.6
LnGrp LOS	E	B	D	B	F	B
Approach Vol, veh/h	627		956			1559
Approach Delay, s/veh	47.0		35.9			67.7
Approach LOS	D		D			E

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	37.0	43.0			80.0	32.6
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	32.0	41.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	34.0	34.6			39.2	27.0
Green Ext Time (p_c), s	0.0	3.1			4.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	53.9
HCM 6th LOS	D

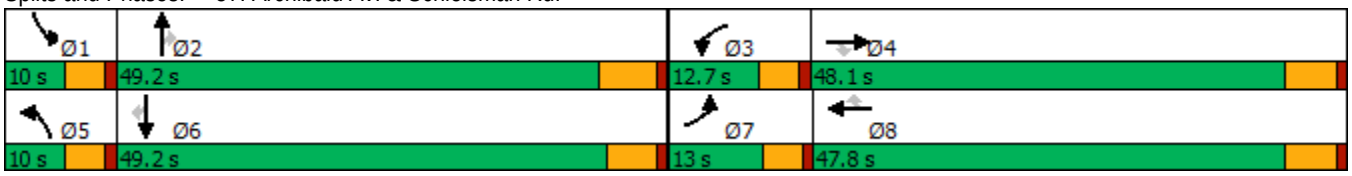
Notes

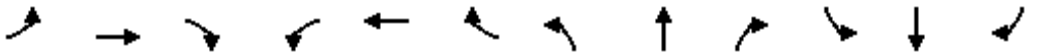
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	440	1064	197	114	339	60	204	635	115	172	693	371
Future Volume (vph)	440	1064	197	114	339	60	204	635	115	172	693	371
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	48.1	48.1	12.7	47.8	47.8	10.0	49.2	49.2	10.0	49.2	49.2
Total Split (%)	10.8%	40.1%	40.1%	10.6%	39.8%	39.8%	8.3%	41.0%	41.0%	8.3%	41.0%	41.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	8.5	43.6	43.6	7.2	42.3	42.3	5.4	22.9	22.9	5.4	23.7	23.7
Actuated g/C Ratio	0.08	0.43	0.43	0.07	0.42	0.42	0.05	0.23	0.23	0.05	0.24	0.24
v/c Ratio	1.52	0.48	0.25	0.46	0.16	0.08	1.10	0.55	0.26	0.93	0.58	0.57
Control Delay	285.7	22.7	5.4	52.9	19.7	0.5	140.7	35.4	6.6	99.3	35.3	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	285.7	22.7	5.4	52.9	19.7	0.5	140.7	35.4	6.6	99.3	35.3	6.5
LOS	F	C	A	D	B	A	F	D	A	F	D	A
Approach Delay		88.7			24.8			54.4			35.6	
Approach LOS		F			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 100.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.52	
Intersection Signal Delay: 58.9	Intersection LOS: E
Intersection Capacity Utilization 85.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	440	1064	197	114	339	60	204	635	115	172	693	371
Future Volume (veh/h)	440	1064	197	114	339	60	204	635	115	172	693	371
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	449	1086	119	116	346	35	208	648	80	176	707	265
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	293	2336	725	178	2166	671	188	1216	377	188	1216	376
Arrive On Green	0.08	0.45	0.45	0.05	0.42	0.42	0.05	0.23	0.23	0.05	0.23	0.23
Sat Flow, veh/h	3510	5187	1610	3510	5187	1608	3510	5187	1610	3510	5187	1604
Grp Volume(v), veh/h	449	1086	119	116	346	35	208	648	80	176	707	265
Grp Sat Flow(s),veh/h/ln	1755	1729	1610	1755	1729	1608	1755	1729	1610	1755	1729	1604
Q Serve(g_s), s	8.4	14.6	4.4	3.3	4.2	1.3	5.4	11.0	4.0	5.0	12.2	15.2
Cycle Q Clear(g_c), s	8.4	14.6	4.4	3.3	4.2	1.3	5.4	11.0	4.0	5.0	12.2	15.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	293	2336	725	178	2166	671	188	1216	377	188	1216	376
V/C Ratio(X)	1.53	0.46	0.16	0.65	0.16	0.05	1.10	0.53	0.21	0.93	0.58	0.70
Avail Cap(c_a), veh/h	293	2336	725	283	2166	671	188	2218	688	188	2259	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.1	19.2	16.4	46.9	18.3	17.4	47.6	33.7	31.0	47.4	34.1	35.3
Incr Delay (d2), s/veh	255.7	0.7	0.5	1.5	0.2	0.1	96.0	0.4	0.3	46.3	0.4	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.9	5.5	1.6	1.4	1.6	0.5	4.8	4.4	1.5	3.3	4.9	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	301.8	19.9	16.9	48.4	18.4	17.6	143.6	34.0	31.3	93.7	34.6	37.7
LnGrp LOS	F	B	B	D	B	B	F	C	C	F	C	D
Approach Vol, veh/h		1654			497			936			1148	
Approach Delay, s/veh		96.2			25.4			58.2			44.4	
Approach LOS		F			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	29.8	9.7	51.1	10.0	29.8	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.4	43.0	8.1	42.3	5.4	* 44	8.4	42.0
Max Q Clear Time (g_c+I1), s	7.0	13.0	5.3	16.6	7.4	17.2	10.4	6.2
Green Ext Time (p_c), s	0.0	4.5	0.0	8.2	0.0	5.5	0.0	2.3

Intersection Summary	
HCM 6th Ctrl Delay	65.4
HCM 6th LOS	E

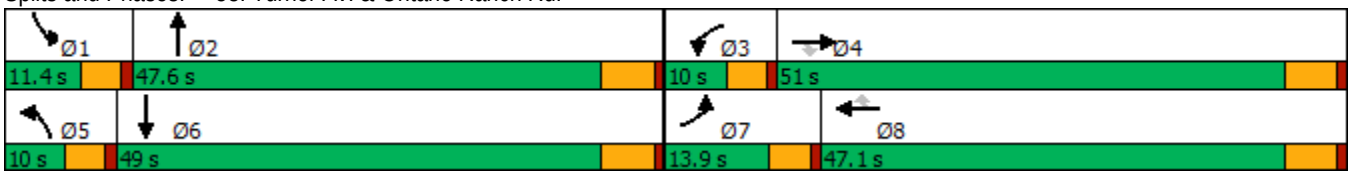
Notes

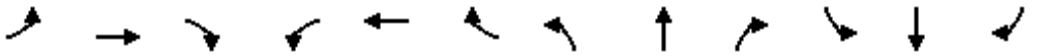
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	45	1128	40	32	626	13	27	7	28	7
Future Volume (vph)	45	1128	40	32	626	13	27	7	28	7
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	13.9	51.0	51.0	10.0	47.1	47.1	10.0	47.6	11.4	49.0
Total Split (%)	11.6%	42.5%	42.5%	8.3%	39.3%	39.3%	8.3%	39.7%	9.5%	40.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	7.0	57.8	57.8	5.5	56.4	56.4	5.5	14.9	6.1	15.5
Actuated g/C Ratio	0.08	0.68	0.68	0.06	0.67	0.67	0.06	0.18	0.07	0.18
v/c Ratio	0.37	0.53	0.04	0.33	0.30	0.01	0.29	0.17	0.27	0.10
Control Delay	51.2	17.7	0.1	54.7	15.5	0.0	53.4	12.9	50.9	15.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.2	17.7	0.1	54.7	15.5	0.0	53.4	12.9	50.9	15.3
LOS	D	B	A	D	B	A	D	B	D	B
Approach Delay		18.4			17.1			27.8		32.8
Approach LOS		B			B			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 84.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.53	
Intersection Signal Delay: 18.7	Intersection LOS: B
Intersection Capacity Utilization 62.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	1128	40	32	626	13	27	7	40	28	7	22
Future Volume (veh/h)	45	1128	40	32	626	13	27	7	40	28	7	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	49	1240	32	35	688	11	30	8	25	31	8	10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	67	1906	850	54	1880	838	49	46	145	50	89	111
Arrive On Green	0.04	0.56	0.56	0.03	0.55	0.55	0.03	0.12	0.12	0.03	0.12	0.12
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	381	1191	1619	727	909
Grp Volume(v), veh/h	49	1240	32	35	688	11	30	0	33	31	0	18
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	0	1572	1619	0	1636
Q Serve(g_s), s	2.4	20.4	0.8	1.7	9.2	0.3	1.5	0.0	1.5	1.5	0.0	0.8
Cycle Q Clear(g_c), s	2.4	20.4	0.8	1.7	9.2	0.3	1.5	0.0	1.5	1.5	0.0	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.76	1.00		0.56
Lane Grp Cap(c), veh/h	67	1906	850	54	1880	838	49	0	191	50	0	200
V/C Ratio(X)	0.73	0.65	0.04	0.64	0.37	0.01	0.61	0.00	0.17	0.62	0.00	0.09
Avail Cap(c_a), veh/h	186	1906	850	108	1880	838	108	0	810	136	0	871
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.4	12.5	8.1	38.7	10.3	8.3	38.9	0.0	32.0	38.8	0.0	31.6
Incr Delay (d2), s/veh	5.7	1.7	0.1	4.6	0.6	0.0	4.5	0.0	0.4	4.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	6.7	0.2	0.7	3.0	0.1	0.6	0.0	0.6	0.6	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.2	14.2	8.2	43.4	10.8	8.3	43.4	0.0	32.4	43.4	0.0	31.8
LnGrp LOS	D	B	A	D	B	A	D	A	C	D	A	C
Approach Vol, veh/h		1321			734			63			49	
Approach Delay, s/veh		15.2			12.4			37.6			39.1	
Approach LOS		B			B			D			D	

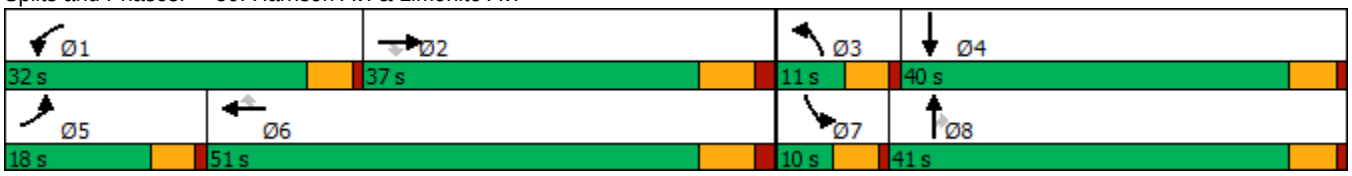
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	15.7	7.3	51.0	7.1	15.7	7.9	50.4
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	6.8	41.8	5.4	45.2	5.4	43.2	9.3	41.3
Max Q Clear Time (g_c+I1), s	3.5	3.5	3.7	22.4	3.5	2.8	4.4	11.2
Green Ext Time (p_c), s	0.0	0.1	0.0	9.1	0.0	0.1	0.0	4.7

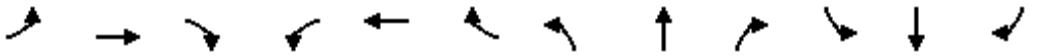
Intersection Summary	
HCM 6th Ctrl Delay	15.4
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	80	863	56	214	595	5	36	45	160	17	47
Future Volume (vph)	80	863	56	214	595	5	36	45	160	17	47
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	18.0	37.0	37.0	32.0	51.0	51.0	11.0	41.0	41.0	10.0	40.0
Total Split (%)	15.0%	30.8%	30.8%	26.7%	42.5%	42.5%	9.2%	34.2%	34.2%	8.3%	33.3%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	8.1	19.9	19.9	13.6	28.7	28.7	6.1	15.5	15.5	5.7	11.2
Actuated g/C Ratio	0.12	0.28	0.28	0.19	0.41	0.41	0.09	0.22	0.22	0.08	0.16
v/c Ratio	0.39	0.60	0.10	0.62	0.28	0.01	0.24	0.11	0.33	0.12	0.26
Control Delay	41.9	25.9	0.4	38.4	17.4	0.0	44.6	24.6	6.2	44.6	22.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	25.9	0.4	38.4	17.4	0.0	44.6	24.6	6.2	44.6	22.7
LOS	D	C	A	D	B	A	D	C	A	D	C
Approach Delay		25.8			22.8			15.4			26.5
Approach LOS		C			C			B			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 69.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 23.5	Intersection LOS: C
Intersection Capacity Utilization 51.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 59: Harrison Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	863	56	214	595	5	36	45	160	17	47	32
Future Volume (veh/h)	80	863	56	214	595	5	36	45	160	17	47	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	82	881	52	218	607	3	37	46	78	17	48	24
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	119	1484	461	272	1923	597	71	247	206	38	133	66
Arrive On Green	0.07	0.29	0.29	0.15	0.37	0.37	0.04	0.13	0.13	0.02	0.11	0.11
Sat Flow, veh/h	1810	5187	1610	1810	5187	1610	1810	1900	1588	1810	1195	597
Grp Volume(v), veh/h	82	881	52	218	607	3	37	46	78	17	0	72
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1610	1810	1900	1588	1810	0	1792
Q Serve(g_s), s	2.4	7.9	1.3	6.3	4.5	0.1	1.1	1.2	2.4	0.5	0.0	2.0
Cycle Q Clear(g_c), s	2.4	7.9	1.3	6.3	4.5	0.1	1.1	1.2	2.4	0.5	0.0	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	119	1484	461	272	1923	597	71	247	206	38	0	199
V/C Ratio(X)	0.69	0.59	0.11	0.80	0.32	0.01	0.52	0.19	0.38	0.45	0.00	0.36
Avail Cap(c_a), veh/h	436	2883	895	905	4228	1313	201	1257	1050	168	0	1152
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.7	16.6	14.2	22.2	12.1	10.7	25.4	20.9	21.5	26.1	0.0	22.2
Incr Delay (d2), s/veh	2.7	0.4	0.1	2.1	0.1	0.0	2.2	0.4	1.1	3.1	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.5	0.4	2.4	1.3	0.0	0.5	0.5	0.8	0.2	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.4	17.0	14.3	24.3	12.2	10.7	27.6	21.3	22.6	29.2	0.0	23.3
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	A	C
Approach Vol, veh/h		1015			828			161			89	
Approach Delay, s/veh		17.7			15.4			23.4			24.4	
Approach LOS		B			B			C			C	

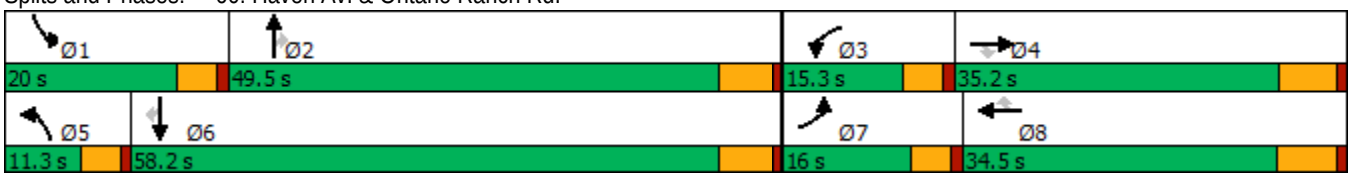
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	22.4	7.1	11.3	8.5	27.0	6.1	12.3
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	27.0	30.0	6.0	34.7	13.0	44.0	5.0	35.7
Max Q Clear Time (g_c+I1), s	8.3	9.9	3.1	4.0	4.4	6.5	2.5	4.4
Green Ext Time (p_c), s	0.1	5.6	0.0	0.3	0.0	4.0	0.0	0.4

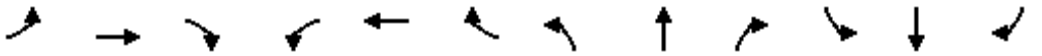
Intersection Summary	
HCM 6th Ctrl Delay	17.5
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	922	68	63	545	133	29	91	24	172	268	115
Future Volume (vph)	123	922	68	63	545	133	29	91	24	172	268	115
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	16.0	35.2	35.2	15.3	34.5	34.5	11.3	49.5	49.5	20.0	58.2	58.2
Total Split (%)	13.3%	29.3%	29.3%	12.8%	28.8%	28.8%	9.4%	41.3%	41.3%	16.7%	48.5%	48.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	10.8	35.0	35.0	7.8	29.1	29.1	6.0	15.6	15.6	14.7	26.8	26.8
Actuated g/C Ratio	0.12	0.40	0.40	0.09	0.33	0.33	0.07	0.18	0.18	0.17	0.30	0.30
v/c Ratio	0.65	0.49	0.10	0.46	0.50	0.23	0.27	0.30	0.06	0.67	0.51	0.22
Control Delay	57.6	25.9	0.3	53.9	29.2	5.6	51.7	34.5	0.3	51.4	28.5	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.6	25.9	0.3	53.9	29.2	5.6	51.7	34.5	0.3	51.4	28.5	5.4
LOS	E	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		27.8			27.1			32.2			30.8	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 88.2	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 28.5	Intersection LOS: C
Intersection Capacity Utilization 60.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	922	68	63	545	133	29	91	24	172	268	115
Future Volume (veh/h)	123	922	68	63	545	133	29	91	24	172	268	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	128	960	40	66	568	65	30	95	11	179	279	47
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	157	2012	625	82	1240	553	50	233	198	214	416	352
Arrive On Green	0.10	0.41	0.41	0.05	0.36	0.36	0.03	0.13	0.13	0.13	0.23	0.23
Sat Flow, veh/h	1619	4914	1525	1619	3420	1525	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	128	960	40	66	568	65	30	95	11	179	279	47
Grp Sat Flow(s),veh/h/ln	1619	1638	1525	1619	1710	1525	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	6.0	11.1	1.2	3.1	9.8	2.2	1.4	3.7	0.5	8.3	10.9	1.9
Cycle Q Clear(g_c), s	6.0	11.1	1.2	3.1	9.8	2.2	1.4	3.7	0.5	8.3	10.9	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	157	2012	625	82	1240	553	50	233	198	214	416	352
V/C Ratio(X)	0.81	0.48	0.06	0.81	0.46	0.12	0.60	0.41	0.06	0.84	0.67	0.13
Avail Cap(c_a), veh/h	239	2012	625	224	1240	553	140	1019	863	323	1222	1035
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.2	16.7	13.8	36.3	18.8	16.4	37.0	30.9	29.5	32.7	27.0	23.6
Incr Delay (d2), s/veh	6.7	0.8	0.2	6.9	1.2	0.4	4.3	1.1	0.1	7.1	1.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	3.7	0.4	1.3	3.5	0.7	0.6	1.6	0.2	3.4	4.5	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.9	17.5	14.0	43.2	20.0	16.8	41.3	32.0	29.6	39.8	28.9	23.7
LnGrp LOS	D	B	B	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1128			699			136			505	
Approach Delay, s/veh		20.1			21.9			33.9			32.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	15.8	8.5	38.1	7.0	23.6	12.1	34.5
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	15.4	43.7	10.7	* 29	6.7	52.4	11.4	28.0
Max Q Clear Time (g_c+I1), s	10.3	5.7	5.1	13.1	3.4	12.9	8.0	11.8
Green Ext Time (p_c), s	0.1	0.5	0.0	5.5	0.0	1.7	0.0	3.1

Intersection Summary	
HCM 6th Ctrl Delay	23.8
HCM 6th LOS	C

Notes

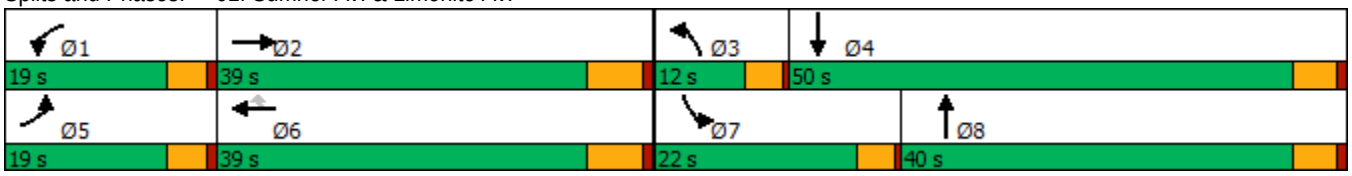
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

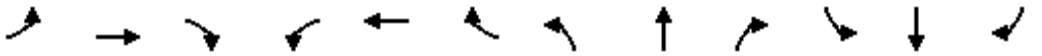
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	221	691	219	582	46	45	220	119	454
Future Volume (vph)	221	691	219	582	46	45	220	119	454
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	19.0	39.0	19.0	39.0	39.0	12.0	40.0	22.0	50.0
Total Split (%)	15.8%	32.5%	15.8%	32.5%	32.5%	10.0%	33.3%	18.3%	41.7%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	9.6	19.5	9.6	19.5	19.5	6.2	17.1	9.9	22.6
Actuated g/C Ratio	0.13	0.26	0.13	0.26	0.26	0.08	0.23	0.13	0.30
v/c Ratio	0.50	0.59	0.50	0.44	0.09	0.31	0.43	0.51	0.62
Control Delay	38.7	27.5	38.7	26.3	0.3	45.8	18.8	43.6	23.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.7	27.5	38.7	26.3	0.3	45.8	18.8	43.6	23.6
LOS	D	C	D	C	A	D	B	D	C
Approach Delay		30.0		28.1			21.8		26.7
Approach LOS		C		C			C		C

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 74.5
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 27.5 — Intersection LOS: C
Intersection Capacity Utilization 60.2% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 61: Sumner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	221	691	83	219	582	46	45	220	144	119	454	201
Future Volume (veh/h)	221	691	83	219	582	46	45	220	144	119	454	201
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	228	712	74	226	600	39	46	227	77	123	468	109
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	350	1228	127	348	1330	413	67	507	167	160	705	163
Arrive On Green	0.10	0.26	0.26	0.10	0.26	0.26	0.04	0.19	0.19	0.09	0.24	0.24
Sat Flow, veh/h	3510	4776	493	3510	5187	1610	1810	2654	873	1810	2910	673
Grp Volume(v), veh/h	228	514	272	226	600	39	46	152	152	123	289	288
Grp Sat Flow(s),veh/h/ln	1755	1729	1811	1755	1729	1610	1810	1805	1723	1810	1805	1779
Q Serve(g_s), s	3.3	6.9	7.0	3.3	5.2	1.0	1.3	4.0	4.2	3.6	7.7	7.8
Cycle Q Clear(g_c), s	3.3	6.9	7.0	3.3	5.2	1.0	1.3	4.0	4.2	3.6	7.7	7.8
Prop In Lane	1.00		0.27	1.00		1.00	1.00		0.51	1.00		0.38
Lane Grp Cap(c), veh/h	350	889	466	348	1330	413	67	345	329	160	437	431
V/C Ratio(X)	0.65	0.58	0.58	0.65	0.45	0.09	0.69	0.44	0.46	0.77	0.66	0.67
Avail Cap(c_a), veh/h	952	2135	1118	952	3202	994	271	1182	1128	609	1519	1497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	17.3	17.4	23.2	16.7	15.1	25.4	19.1	19.2	23.8	18.3	18.3
Incr Delay (d2), s/veh	0.8	0.6	1.2	0.8	0.2	0.1	4.6	0.7	0.8	3.0	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.3	2.5	1.2	1.7	0.3	0.6	1.5	1.5	1.4	2.8	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.9	17.9	18.5	24.0	16.9	15.2	30.0	19.8	19.9	26.8	19.6	19.7
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		1014			865			350			700	
Approach Delay, s/veh		19.4			18.7			21.2			20.9	
Approach LOS		B			B			C			C	

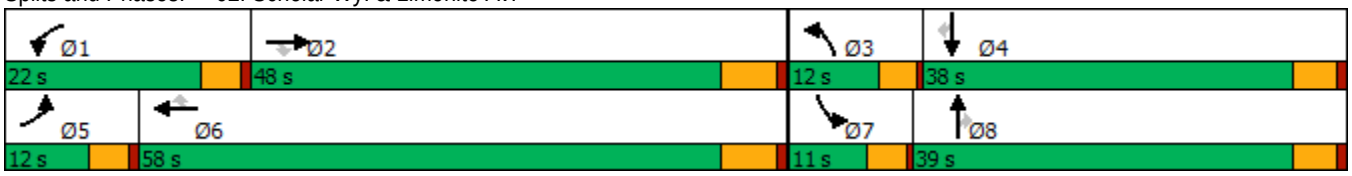
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	19.7	6.0	17.9	9.8	19.7	8.7	15.2
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	14.5	33.0	8.0	45.0	14.5	33.0	18.0	35.0
Max Q Clear Time (g_c+I1), s	5.3	9.0	3.3	9.8	5.3	7.2	5.6	6.2
Green Ext Time (p_c), s	0.2	4.6	0.0	2.7	0.2	3.9	0.1	1.3

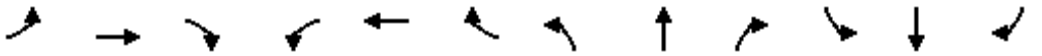
Intersection Summary	
HCM 6th Ctrl Delay	19.8
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	878	43	126	781	57	44	97	129	29	136	31
Future Volume (vph)	40	878	43	126	781	57	44	97	129	29	136	31
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	12.0	48.0	48.0	22.0	58.0	58.0	12.0	39.0	39.0	11.0	38.0	38.0
Total Split (%)	10.0%	40.0%	40.0%	18.3%	48.3%	48.3%	10.0%	32.5%	32.5%	9.2%	31.7%	31.7%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.2	27.0	27.0	10.6	37.0	37.0	6.4	14.1	14.1	5.8	11.7	11.7
Actuated g/C Ratio	0.09	0.37	0.37	0.15	0.51	0.51	0.09	0.19	0.19	0.08	0.16	0.16
v/c Ratio	0.28	0.70	0.07	0.51	0.45	0.07	0.30	0.28	0.32	0.22	0.25	0.09
Control Delay	45.9	24.7	0.2	42.4	15.9	1.6	45.8	30.4	7.4	45.7	31.0	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.9	24.7	0.2	42.4	15.9	1.6	45.8	30.4	7.4	45.7	31.0	0.5
LOS	D	C	A	D	B	A	D	C	A	D	C	A
Approach Delay		24.5			18.5			21.9			28.4	
Approach LOS		C			B			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 72.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 22.1	Intersection LOS: C
Intersection Capacity Utilization 57.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	878	43	126	781	57	44	97	129	29	136	31
Future Volume (veh/h)	40	878	43	126	781	57	44	97	129	29	136	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	43	934	32	134	831	37	47	103	57	31	145	26
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	64	1375	613	173	1592	710	69	231	196	50	403	175
Arrive On Green	0.04	0.38	0.38	0.10	0.44	0.44	0.04	0.12	0.12	0.03	0.11	0.11
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	1900	1610	1810	3610	1571
Grp Volume(v), veh/h	43	934	32	134	831	37	47	103	57	31	145	26
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1900	1610	1810	1805	1571
Q Serve(g_s), s	1.2	11.3	0.7	3.8	8.7	0.7	1.3	2.6	1.7	0.9	1.9	0.8
Cycle Q Clear(g_c), s	1.2	11.3	0.7	3.8	8.7	0.7	1.3	2.6	1.7	0.9	1.9	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	64	1375	613	173	1592	710	69	231	196	50	403	175
V/C Ratio(X)	0.67	0.68	0.05	0.77	0.52	0.05	0.69	0.45	0.29	0.62	0.36	0.15
Avail Cap(c_a), veh/h	260	2908	1297	607	3600	1606	278	1239	1050	243	2285	994
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	13.5	10.2	23.0	10.6	8.3	24.8	21.3	20.9	25.1	21.4	20.9
Incr Delay (d2), s/veh	4.4	0.6	0.0	2.7	0.3	0.0	4.4	1.0	0.6	4.5	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.4	0.2	1.5	2.4	0.2	0.6	1.1	0.6	0.4	0.8	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	14.1	10.2	25.8	10.8	8.4	29.2	22.3	21.5	29.6	21.8	21.2
LnGrp LOS	C	B	B	C	B	A	C	C	C	C	C	C
Approach Vol, veh/h		1009			1002			207			202	
Approach Delay, s/veh		14.6			12.7			23.6			23.0	
Approach LOS		B			B			C			C	

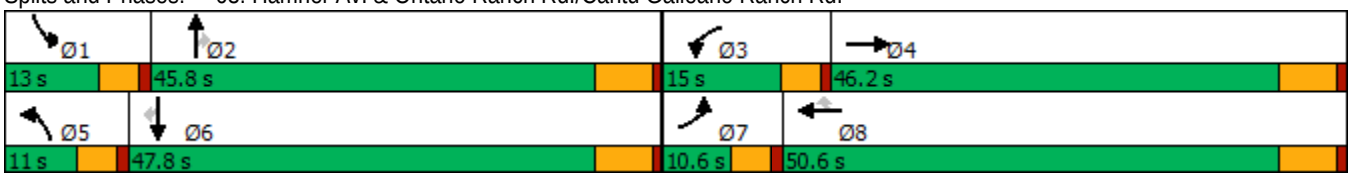
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	25.9	6.0	10.8	6.4	29.0	5.4	11.3
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	17.5	42.0	8.0	33.0	7.5	52.0	7.0	34.0
Max Q Clear Time (g_c+I1), s	5.8	13.3	3.3	3.9	3.2	10.7	2.9	4.6
Green Ext Time (p_c), s	0.1	6.6	0.0	0.8	0.0	6.0	0.0	0.5

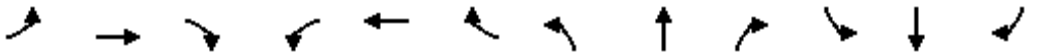
Intersection Summary	
HCM 6th Ctrl Delay	15.3
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	94	834	615	468	114	206	397	247	478	841	114
Future Volume (vph)	94	834	615	468	114	206	397	247	478	841	114
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	10.6	46.2	15.0	50.6	50.6	11.0	45.8	45.8	13.0	47.8	47.8
Total Split (%)	8.8%	38.5%	12.5%	42.2%	42.2%	9.2%	38.2%	38.2%	10.8%	39.8%	39.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.0	27.1	10.6	31.8	31.8	6.5	29.5	29.5	8.6	31.6	31.6
Actuated g/C Ratio	0.06	0.28	0.11	0.32	0.32	0.07	0.30	0.30	0.09	0.32	0.32
v/c Ratio	0.54	0.68	2.01	0.44	0.21	1.10	0.28	0.46	1.93	0.79	0.21
Control Delay	60.5	31.7	490.2	27.9	5.6	137.6	26.8	14.8	460.0	36.6	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.5	31.7	490.2	27.9	5.6	137.6	26.8	14.8	460.0	36.6	6.5
LOS	E	C	F	C	A	F	C	B	F	D	A
Approach Delay		33.9		263.2			50.2			175.4	
Approach LOS		C		F			D			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.01	
Intersection Signal Delay: 138.7	Intersection LOS: F
Intersection Capacity Utilization 88.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	834	279	615	468	114	206	397	247	478	841	114
Future Volume (veh/h)	94	834	279	615	468	114	206	397	247	478	841	114
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	98	869	234	641	488	85	215	414	178	498	876	64
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	149	1281	337	337	1109	495	207	1457	452	272	1089	485
Arrive On Green	0.05	0.26	0.26	0.11	0.32	0.32	0.07	0.30	0.30	0.09	0.32	0.32
Sat Flow, veh/h	2956	4917	1294	2956	3420	1525	2956	4914	1524	2956	3420	1524
Grp Volume(v), veh/h	98	820	283	641	488	85	215	414	178	498	876	64
Grp Sat Flow(s),veh/h/ln	1478	1548	1567	1478	1710	1525	1478	1638	1524	1478	1710	1524
Q Serve(g_s), s	3.0	14.5	14.9	10.4	10.3	3.6	6.4	5.9	8.5	8.4	21.4	2.7
Cycle Q Clear(g_c), s	3.0	14.5	14.9	10.4	10.3	3.6	6.4	5.9	8.5	8.4	21.4	2.7
Prop In Lane	1.00		0.83	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	149	1210	408	337	1109	495	207	1457	452	272	1089	485
V/C Ratio(X)	0.66	0.68	0.69	1.90	0.44	0.17	1.04	0.28	0.39	1.83	0.80	0.13
Avail Cap(c_a), veh/h	194	2037	687	337	1665	743	207	2133	662	272	1560	695
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.5	30.3	30.4	40.4	24.3	22.1	42.4	24.6	25.6	41.4	28.5	22.1
Incr Delay (d2), s/veh	2.0	0.7	2.1	416.7	0.3	0.2	72.4	0.1	0.6	387.2	2.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	5.0	5.3	23.1	3.8	1.2	4.3	2.1	2.9	17.5	8.2	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.6	31.0	32.6	457.1	24.6	22.2	114.8	24.8	26.1	428.6	30.6	22.2
LnGrp LOS	D	C	C	F	C	C	F	C	C	F	C	C
Approach Vol, veh/h		1201			1214			807			1438	
Approach Delay, s/veh		32.4			252.8			49.0			168.0	
Approach LOS		C			F			D			F	

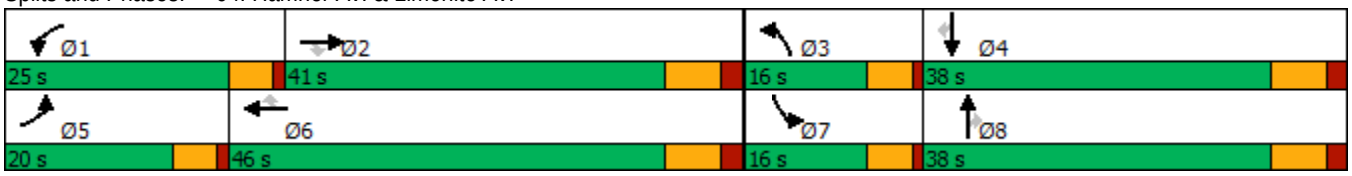
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	33.2	15.0	30.0	11.0	35.2	9.2	35.8
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	8.4	39.6	10.4	40.0	6.4	41.6	6.0	44.4
Max Q Clear Time (g_c+I1), s	10.4	10.5	12.4	16.9	8.4	23.4	5.0	12.3
Green Ext Time (p_c), s	0.0	3.1	0.0	6.9	0.0	5.4	0.0	3.3

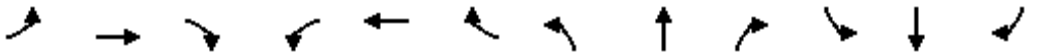
Intersection Summary	
HCM 6th Ctrl Delay	134.6
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	294	592	82	378	469	153	203	594	184	193	642	225
Future Volume (vph)	294	592	82	378	469	153	203	594	184	193	642	225
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	20.0	41.0	41.0	25.0	46.0	46.0	16.0	38.0	38.0	16.0	38.0	38.0
Total Split (%)	16.7%	34.2%	34.2%	20.8%	38.3%	38.3%	13.3%	31.7%	31.7%	13.3%	31.7%	31.7%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	11.9	21.6	21.6	14.5	24.1	24.1	9.2	24.1	24.1	9.0	23.9	23.9
Actuated g/C Ratio	0.13	0.23	0.23	0.15	0.26	0.26	0.10	0.26	0.26	0.10	0.25	0.25
v/c Ratio	0.68	0.51	0.18	0.72	0.52	0.30	0.61	0.46	0.35	0.59	0.50	0.40
Control Delay	49.8	34.2	2.8	47.6	33.0	6.5	51.6	31.6	6.7	51.3	32.2	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.8	34.2	2.8	47.6	33.0	6.5	51.6	31.6	6.7	51.3	32.2	6.6
LOS	D	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		36.3			34.5			31.0			30.3	
Approach LOS		D			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 94	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 33.0	Intersection LOS: C
Intersection Capacity Utilization 63.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 64: Hamner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	294	592	82	378	469	153	203	594	184	193	642	225
Future Volume (veh/h)	294	592	82	378	469	153	203	594	184	193	642	225
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	303	610	64	390	484	113	209	612	106	199	662	169
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	391	1185	367	481	918	403	292	1327	404	282	1312	400
Arrive On Green	0.11	0.23	0.23	0.14	0.25	0.25	0.08	0.26	0.26	0.08	0.25	0.25
Sat Flow, veh/h	3510	5187	1606	3510	3610	1586	3510	5187	1577	3510	5187	1581
Grp Volume(v), veh/h	303	610	64	390	484	113	209	612	106	199	662	169
Grp Sat Flow(s),veh/h/ln	1755	1729	1606	1755	1805	1586	1755	1729	1577	1755	1729	1581
Q Serve(g_s), s	6.8	8.3	2.6	8.7	9.3	4.6	4.7	8.0	4.3	4.4	8.8	7.2
Cycle Q Clear(g_c), s	6.8	8.3	2.6	8.7	9.3	4.6	4.7	8.0	4.3	4.4	8.8	7.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	391	1185	367	481	918	403	292	1327	404	282	1312	400
V/C Ratio(X)	0.78	0.51	0.17	0.81	0.53	0.28	0.71	0.46	0.26	0.71	0.50	0.42
Avail Cap(c_a), veh/h	654	2192	679	873	1750	769	480	1998	608	480	1998	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.8	27.1	24.9	33.7	25.8	24.1	35.9	25.3	23.9	36.1	25.7	25.1
Incr Delay (d2), s/veh	1.3	0.7	0.5	1.3	1.0	0.8	1.2	0.5	0.7	1.2	0.6	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	3.2	1.0	3.5	3.8	1.7	1.9	3.1	1.6	1.8	3.4	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.0	27.9	25.4	35.0	26.8	24.9	37.2	25.8	24.6	37.3	26.4	26.7
LnGrp LOS	D	C	C	C	C	C	D	C	C	D	C	C
Approach Vol, veh/h		977			987			927			1030	
Approach Delay, s/veh		30.3			29.8			28.2			28.5	
Approach LOS		C			C			C			C	

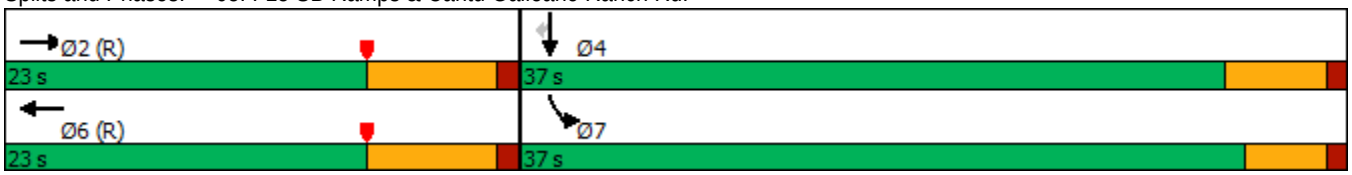
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	25.4	11.7	27.4	14.0	27.5	11.5	27.6
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	20.0	34.0	11.0	31.0	15.0	39.0	11.0	31.0
Max Q Clear Time (g_c+I1), s	10.7	10.3	6.7	10.8	8.8	11.3	6.4	10.0
Green Ext Time (p_c), s	0.3	7.6	0.1	8.4	0.2	6.8	0.1	7.5

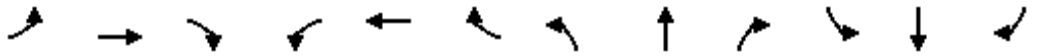
Intersection Summary	
HCM 6th Ctrl Delay	29.2
HCM 6th LOS	C

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1136	521	472	443	307	0	1015
Future Volume (vph)	1136	521	472	443	307	0	1015
Turn Type	NA	Free	NA	Free	Prot	NA	Perm
Protected Phases	2		6		7	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		7	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		9.6	10.5	10.5
Total Split (s)	23.0		23.0		37.0	37.0	37.0
Total Split (%)	38.3%		38.3%		61.7%	61.7%	61.7%
Yellow Time (s)	5.8		5.8		3.6	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8		6.8		4.6	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Min		None	Min	Min
Act Effct Green (s)	16.2	60.0	16.2	60.0	32.4	31.5	31.5
Actuated g/C Ratio	0.27	1.00	0.27	1.00	0.54	0.52	0.52
v/c Ratio	0.84	0.33	0.50	0.28	0.31	0.66	0.63
Control Delay	27.6	0.6	16.5	1.0	8.7	13.0	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.6	0.6	16.5	1.0	8.7	13.0	12.0
LOS	C	A	B	A	A	B	B
Approach Delay	19.1		9.0			11.7	
Approach LOS	B		A			B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 53 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 14.2	Intersection LOS: B
Intersection Capacity Utilization 65.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	✣	↱
Traffic Volume (veh/h)	0	1136	521	0	472	443	0	0	0	307	0	1015
Future Volume (veh/h)	0	1136	521	0	472	443	0	0	0	307	0	1015
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1171	0	0	487	0				211	0	827
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2492		0	1734					596	0	1062
Arrive On Green	0.00	0.48	0.00	0.00	0.48	0.00				0.33	0.00	0.33
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1171	0	0	487	0				211	0	827
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	9.1	0.0	0.0	4.9	0.0				5.3	0.0	13.9
Cycle Q Clear(g_c), s	0.0	9.1	0.0	0.0	4.9	0.0				5.3	0.0	13.9
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2492		0	1734					596	0	1062
V/C Ratio(X)	0.00	0.47		0.00	0.28					0.35	0.00	0.78
Avail Cap(c_a), veh/h	0	2492		0	1734					977	0	1739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.15	0.00	0.00	0.96	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.5	0.0	0.0	9.4	0.0				15.3	0.0	18.1
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.4	0.0				0.4	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.5	0.0	0.0	1.5	0.0				1.9	0.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	10.6	0.0	0.0	9.8	0.0				15.6	0.0	19.4
LnGrp LOS	A	B		A	A					B	A	B
Approach Vol, veh/h		1171	A		487	A					1038	
Approach Delay, s/veh		10.6			9.8						18.6	
Approach LOS		B			A						B	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		35.6		24.4		35.6						
Change Period (Y+Rc), s		6.8		4.6		6.8						
Max Green Setting (Gmax), s		16.2		32.4		16.2						
Max Q Clear Time (g_c+I1), s		11.1		15.9		6.9						
Green Ext Time (p_c), s		3.0		3.9		1.9						

Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Notes

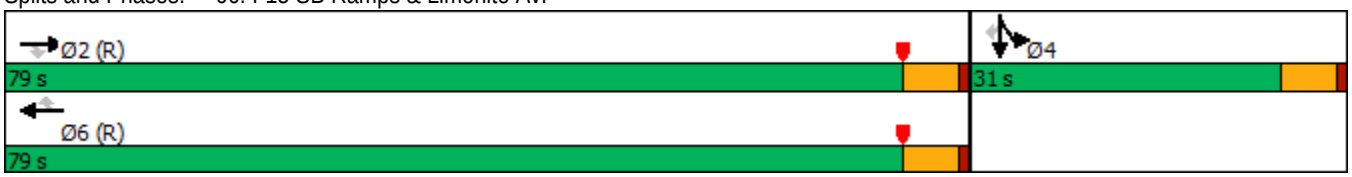
User approved volume balancing among the lanes for turning movement.

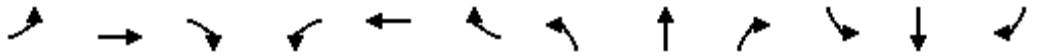
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1193	584	1027	544	137	1	441
Future Volume (vph)	1193	584	1027	544	137	1	441
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		4	4	
Permitted Phases		2		6			4
Detector Phase	2	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	36.5	36.5	23.5	23.5	23.5
Total Split (s)	79.0	79.0	79.0	79.0	31.0	31.0	31.0
Total Split (%)	71.8%	71.8%	71.8%	71.8%	28.2%	28.2%	28.2%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	Min	Min
Act Effct Green (s)	85.7	85.7	85.7	85.7	13.3	13.3	13.3
Actuated g/C Ratio	0.78	0.78	0.78	0.78	0.12	0.12	0.12
v/c Ratio	0.30	0.43	0.26	0.40	0.34	0.34	0.81
Control Delay	4.1	1.4	5.5	5.0	46.8	46.9	32.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.1	1.4	5.5	5.0	46.8	46.9	32.7
LOS	A	A	A	A	D	D	C
Approach Delay	3.2		5.4			36.1	
Approach LOS	A		A			D	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 8.9	Intersection LOS: A
Intersection Capacity Utilization 49.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	↰	↱↱
Traffic Volume (veh/h)	0	1193	584	0	1027	544	0	0	0	137	1	441
Future Volume (veh/h)	0	1193	584	0	1027	544	0	0	0	137	1	441
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1217	450	0	1048	555				141	0	216
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	4205	1305	0	4205	1305				323	0	288
Arrive On Green	0.00	0.81	0.81	0.00	1.00	1.00				0.09	0.00	0.09
Sat Flow, veh/h	0	5358	1610	0	5358	1610				3619	0	3220
Grp Volume(v), veh/h	0	1217	450	0	1048	555				141	0	216
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1610				1810	0	1610
Q Serve(g_s), s	0.0	6.4	8.1	0.0	0.0	0.0				4.1	0.0	7.2
Cycle Q Clear(g_c), s	0.0	6.4	8.1	0.0	0.0	0.0				4.1	0.0	7.2
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	4205	1305	0	4205	1305				323	0	288
V/C Ratio(X)	0.00	0.29	0.34	0.00	0.25	0.43				0.44	0.00	0.75
Avail Cap(c_a), veh/h	0	4205	1305	0	4205	1305				839	0	747
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.92	0.92				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	2.6	2.7	0.0	0.0	0.0				47.5	0.0	48.9
Incr Delay (d2), s/veh	0.0	0.2	0.7	0.0	0.1	0.9				0.3	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.3	1.6	0.0	0.1	0.3				1.8	0.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	2.8	3.5	0.0	0.1	0.9				47.8	0.0	50.4
LnGrp LOS	A	A	A	A	A	A				D	A	D
Approach Vol, veh/h		1667			1603						357	
Approach Delay, s/veh		2.9			0.4						49.4	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		94.7		15.3		94.7						
Change Period (Y+Rc), s		5.5		5.5		5.5						
Max Green Setting (Gmax), s		73.5		25.5		73.5						
Max Q Clear Time (g_c+I1), s		10.1		9.2		2.0						
Green Ext Time (p_c), s		7.4		0.6		6.4						

Intersection Summary	
HCM 6th Ctrl Delay	6.4
HCM 6th LOS	A

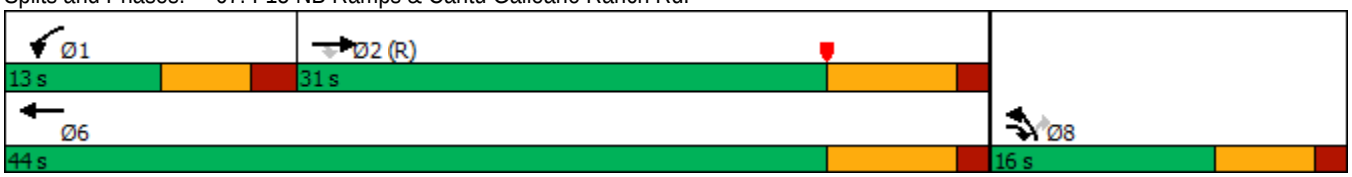
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	677	799	309	716	203	242
Future Volume (vph)	677	799	309	716	203	242
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	31.0	16.0	13.0	44.0	16.0	16.0
Total Split (%)	51.7%	26.7%	21.7%	73.3%	26.7%	26.7%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.0	6.0	7.3	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max
Act Effct Green (s)	23.7	41.0	7.0	36.7	10.0	10.0
Actuated g/C Ratio	0.40	0.68	0.12	0.61	0.17	0.17
v/c Ratio	0.35	0.76	0.80	0.24	0.49	0.40
Control Delay	9.6	10.6	42.8	5.5	17.8	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	10.6	42.8	5.5	17.8	8.4
LOS	A	B	D	A	B	A
Approach Delay	10.1			16.7	14.9	
Approach LOS	B			B	B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 13.2	Intersection LOS: B
Intersection Capacity Utilization 68.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	677	799	309	716	203	242
Future Volume (veh/h)	677	799	309	716	203	242
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	713	625	325	754	242	122
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2049	904	410	3173	603	268
Arrive On Green	0.66	0.66	0.12	0.61	0.17	0.17
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	713	625	325	754	242	122
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	3.6	16.3	5.4	4.0	3.6	4.1
Cycle Q Clear(g_c), s	3.6	16.3	5.4	4.0	3.6	4.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2049	904	410	3173	603	268
V/C Ratio(X)	0.35	0.69	0.79	0.24	0.40	0.45
Avail Cap(c_a), veh/h	2049	904	410	3173	603	268
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.60	0.60	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.8	5.3	25.8	5.3	22.3	22.5
Incr Delay (d2), s/veh	0.3	2.6	14.6	0.0	2.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	3.5	2.8	0.8	1.5	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.1	7.9	40.4	5.3	24.3	28.0
LnGrp LOS	A	A	D	A	C	C
Approach Vol, veh/h	1338			1079	364	
Approach Delay, s/veh	7.5			15.9	25.6	
Approach LOS	A			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.0	31.0				44.0	16.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	7.0	23.7				36.7	10.0
Max Q Clear Time (g_c+I1), s	7.4	18.3				6.0	6.1
Green Ext Time (p_c), s	0.0	3.1				5.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	13.1
HCM 6th LOS	B

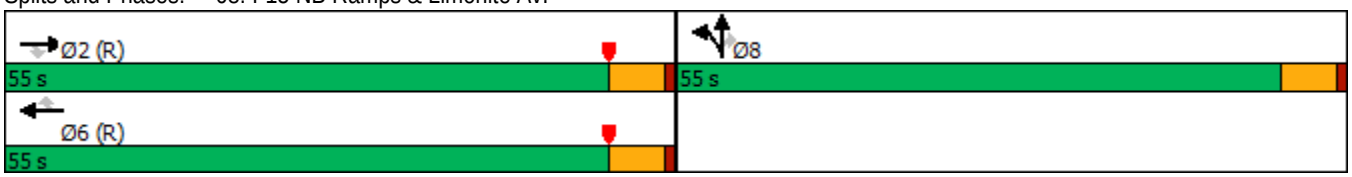
Notes

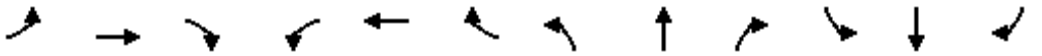
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	837	492	1165	197	406	2	803
Future Volume (vph)	837	492	1165	197	406	2	803
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		8	8	
Permitted Phases		2		6			8
Detector Phase	2	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	55.0	55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None
Act Effct Green (s)	62.2	62.2	62.2	62.2	36.8	36.8	36.8
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.33	0.33	0.33
v/c Ratio	0.29	0.44	0.40	0.20	0.36	0.36	0.78
Control Delay	12.1	2.7	15.0	2.7	28.0	28.0	31.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	2.7	15.0	2.7	28.0	28.0	31.0
LOS	B	A	B	A	C	C	C
Approach Delay	8.6		13.3			30.0	
Approach LOS	A		B			C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 16.9	Intersection LOS: B
Intersection Capacity Utilization 53.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱	↰	↕	↱↱			
Traffic Volume (veh/h)	0	837	492	0	1165	197	406	2	803	0	0	0
Future Volume (veh/h)	0	837	492	0	1165	197	406	2	803	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	0	845	497	0	1177	108	411	0	518			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	0	3594	1116	0	3594	1115	749	0	657			
Arrive On Green	0.00	1.00	1.00	0.00	0.69	0.69	0.21	0.00	0.21			
Sat Flow, veh/h	0	5358	1610	0	5358	1609	3619	0	3175			
Grp Volume(v), veh/h	0	845	497	0	1177	108	411	0	518			
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1609	1810	0	1587			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	9.9	2.4	11.2	0.0	17.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	9.9	2.4	11.2	0.0	17.0			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3594	1116	0	3594	1115	749	0	657			
V/C Ratio(X)	0.00	0.24	0.45	0.00	0.33	0.10	0.55	0.00	0.79			
Avail Cap(c_a), veh/h	0	3594	1116	0	3594	1115	1629	0	1429			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.96	0.96	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	6.7	5.6	39.0	0.0	41.3			
Incr Delay (d2), s/veh	0.0	0.1	1.2	0.0	0.2	0.2	0.6	0.0	2.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.4	0.0	3.0	0.7	4.9	0.0	6.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.1	1.2	0.0	7.0	5.7	39.6	0.0	43.5			
LnGrp LOS	A	A	A	A	A	A	D	A	D			
Approach Vol, veh/h		1342			1285			929				
Approach Delay, s/veh		0.6			6.8			41.8				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		81.7				81.7		28.3				
Change Period (Y+Rc), s		5.5				5.5		5.5				
Max Green Setting (Gmax), s		49.5				49.5		49.5				
Max Q Clear Time (g_c+I1), s		2.0				11.9		19.0				
Green Ext Time (p_c), s		4.9				6.0		3.8				
Intersection Summary												
HCM 6th Ctrl Delay			13.6									
HCM 6th LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.

APPENDIX 6.2:

OPENING YEAR CUMULATIVE (2022) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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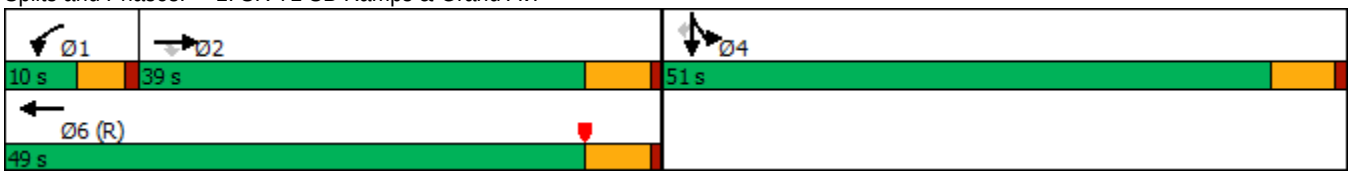
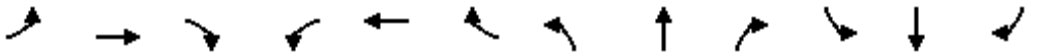
Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	783	212	67	1406	869	5	326
Future Volume (vph)	783	212	67	1406	869	5	326
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	39.0	39.0	10.0	49.0	51.0	51.0	51.0
Total Split (%)	39.0%	39.0%	10.0%	49.0%	51.0%	51.0%	51.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	783	212	67	1406	0	0	0	0	869	5	326
Future Volume (veh/h)	0	783	212	67	1406	0	0	0	0	869	5	326
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	921	160	79	1654	0				1026	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85				0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1865	579	177	2334	0				1223	0	
Arrive On Green	0.00	0.36	0.36	0.05	0.45	0.00				0.34	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	921	160	79	1654	0				1026	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	13.8	7.1	2.2	25.7	0.0				26.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	13.8	7.1	2.2	25.7	0.0				26.2	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1865	579	177	2334	0				1223	0	
V/C Ratio(X)	0.00	0.49	0.28	0.45	0.71	0.00				0.84	0.00	
Avail Cap(c_a), veh/h	0	1865	579	211	2334	0				1701	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.39	0.39	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	24.9	22.8	46.1	22.2	0.0				30.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.9	1.2	0.3	0.7	0.0				2.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.5	2.7	0.9	9.6	0.0				11.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	25.9	24.0	46.4	22.9	0.0				33.4	0.0	0.0
LnGrp LOS	A	C	C	D	C	A				C	A	
Approach Vol, veh/h		1081			1733						1026	A
Approach Delay, s/veh		25.6			24.0						33.4	
Approach LOS		C			C						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.0	40.0		37.8		49.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	5.4	33.2		45.2		43.2
Max Q Clear Time (g_c+I1), s	4.2	15.8		28.2		27.7
Green Ext Time (p_c), s	0.0	6.0		3.8		9.6

Intersection Summary		
HCM 6th Ctrl Delay		27.0
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

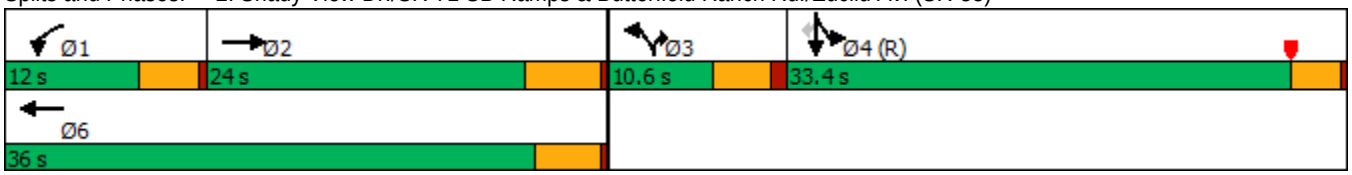
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

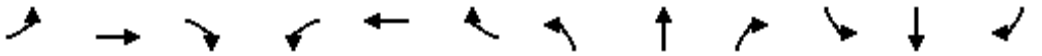
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	736	206	298	20	305	671	28	42
Future Volume (vph)	736	206	298	20	305	671	28	42
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	24.0	12.0	36.0	10.6	10.6	33.4	33.4	33.4
Total Split (%)	30.0%	15.0%	45.0%	13.3%	13.3%	41.8%	41.8%	41.8%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	736	33	206	298	0	20	0	305	671	28	42
Future Volume (veh/h)	0	736	33	206	298	0	20	0	305	671	28	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	751	25	210	304	0	20	0	242	706	0	27
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	829	28	181	1381		0	0	0	1850	0	823
Arrive On Green	0.00	0.23	0.23	0.03	0.13	0.00	0.00	0.00	0.00	0.51	0.00	0.51
Sat Flow, veh/h	0	3660	119	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	380	396	210	304	0		0.0		706	0	27
Grp Sat Flow(s),veh/h/ln	0	1805	1879	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	16.4	16.4	8.0	6.1	0.0				9.5	0.0	0.7
Cycle Q Clear(g_c), s	0.0	16.4	16.4	8.0	6.1	0.0				9.5	0.0	0.7
Prop In Lane	0.00		0.06	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	420	437	181	1381					1850	0	823
V/C Ratio(X)	0.00	0.91	0.91	1.16	0.22					0.38	0.00	0.03
Avail Cap(c_a), veh/h	0	429	446	181	1421					1850	0	823
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.93	0.93	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.8	29.8	38.7	24.2	0.0				11.9	0.0	9.7
Incr Delay (d2), s/veh	0.0	21.5	21.0	114.4	0.1	0.0				0.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.0	9.3	9.3	2.5	0.0				3.4	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	51.4	50.8	153.1	24.3	0.0				12.5	0.0	9.8
LnGrp LOS	A	D	D	F	C					B	A	A
Approach Vol, veh/h		776			514	A					733	
Approach Delay, s/veh		51.1			76.9						12.4	
Approach LOS		D			E						B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	12.0	23.6		44.4		35.6
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5
Max Green Setting (Gmax), s	8.0	19.0		29.9		* 32
Max Q Clear Time (g_c+I1), s	10.0	18.4		11.5		8.1
Green Ext Time (p_c), s	0.0	0.2		2.5		1.4

Intersection Summary		
HCM 6th Ctrl Delay		43.6
HCM 6th LOS		D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

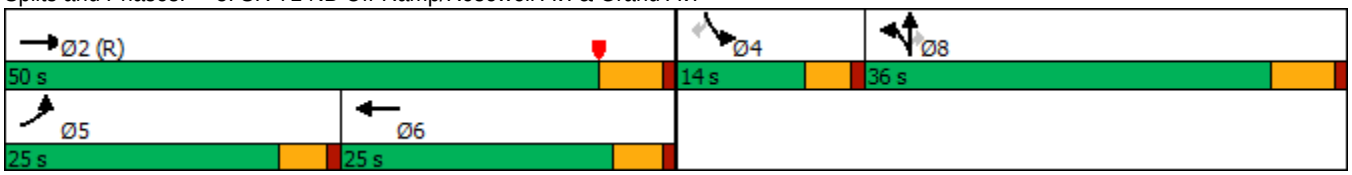
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

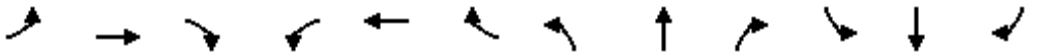
Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	338	1130	184	1118	497	74	69	44	712
Future Volume (vph)	338	1130	184	1118	497	74	69	44	712
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.6	34.8		14.7	34.8	34.8	34.8	9.5	9.5
Total Split (s)	25.0	50.0		25.0	36.0	36.0	36.0	14.0	14.0
Total Split (%)	25.0%	50.0%		25.0%	36.0%	36.0%	36.0%	14.0%	14.0%
Yellow Time (s)	3.6	4.8		3.7	4.8	4.8	4.8	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8		-0.7	-1.8	-1.8	-1.8	-0.5	-0.5
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	Max	Max	Max	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	338	1130	184	0	1118	31	497	74	69	44	0	712
Future Volume (veh/h)	338	1130	184	0	1118	31	497	74	69	44	0	712
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	367	1228	0	0	1215	34	597	0	35	48	0	498
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	380	3112		0	2232	62	1158	0	515	0	0	0
Arrive On Green	0.21	0.60	0.00	0.00	0.34	0.33	0.32	0.00	0.32	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6851	184	3619	0	1610		0	
Grp Volume(v), veh/h	367	1228	0	0	904	345	597	0	35		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1867	1810	0	1610			
Q Serve(g_s), s	20.1	12.4	0.0	0.0	14.9	15.0	13.4	0.0	1.5			
Cycle Q Clear(g_c), s	20.1	12.4	0.0	0.0	14.9	15.0	13.4	0.0	1.5			
Prop In Lane	1.00		1.00	0.00		0.10	1.00		1.00			
Lane Grp Cap(c), veh/h	380	3112		0	1662	633	1158	0	515			
V/C Ratio(X)	0.97	0.39		0.00	0.54	0.55	0.52	0.00	0.07			
Avail Cap(c_a), veh/h	380	3112		0	1662	633	1158	0	515			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.84	0.84	0.00	0.00	0.90	0.90	1.00	0.00	1.00			
Uniform Delay (d), s/veh	39.1	10.5	0.0	0.0	26.8	26.8	27.7	0.0	23.6			
Incr Delay (d2), s/veh	33.3	0.3	0.0	0.0	0.3	0.9	1.6	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	12.0	4.1	0.0	0.0	5.7	6.6	5.7	0.0	0.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.4	10.8	0.0	0.0	27.1	27.7	29.3	0.0	23.9			
LnGrp LOS	E	B		A	C	C	C	A	C			
Approach Vol, veh/h		1595	A		1249			632				
Approach Delay, s/veh		25.0			27.3			29.0				
Approach LOS		C			C			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		64.0			25.0	39.0		36.0				
Change Period (Y+Rc), s		5.8			4.6	* 5.8		5.8				
Max Green Setting (Gmax), s		44.2			20.4	* 20		30.2				
Max Q Clear Time (g_c+I1), s		14.4			22.1	17.0		15.4				
Green Ext Time (p_c), s		9.5			0.0	2.2		2.0				

Intersection Summary	
HCM 6th Ctrl Delay	26.5
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

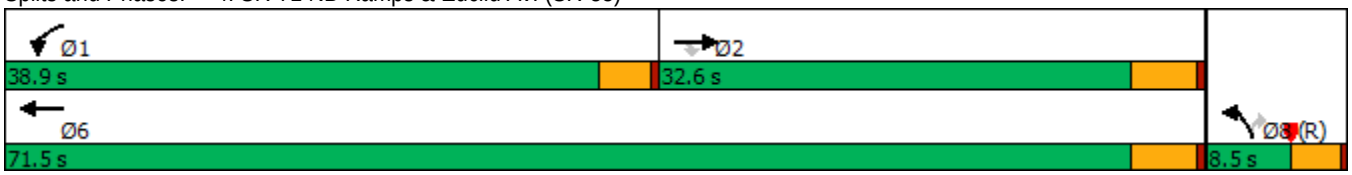
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	712	306	800	1036	45	763
Future Volume (vph)	712	306	800	1036	45	763
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	32.6	32.6	38.9	71.5	8.5	8.5
Total Split (%)	40.8%	40.8%	48.6%	89.4%	10.6%	10.6%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	712	306	800	1036	45	763
Future Volume (veh/h)	712	306	800	1036	45	763
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	757	0	851	1102	48	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	958		801	2713	521	
Arrive On Green	0.09	0.00	0.44	0.75	0.15	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	757	0	851	1102	48	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	16.4	0.0	35.4	8.7	0.9	0.0
Cycle Q Clear(g_c), s	16.4	0.0	35.4	8.7	0.9	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	958		801	2713	521	
V/C Ratio(X)	0.79		1.06	0.41	0.09	
Avail Cap(c_a), veh/h	1268		801	3023	521	
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.35	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.3	0.0	22.3	3.6	29.4	0.0
Incr Delay (d2), s/veh	0.8	0.0	49.8	0.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	23.1	1.2	0.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.1	0.0	72.1	3.7	29.8	0.0
LnGrp LOS	D		F	A	C	
Approach Vol, veh/h	757	A		1953	48	A
Approach Delay, s/veh	35.1			33.5	29.8	
Approach LOS	D			C	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	38.9	25.7				64.6	15.4
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	35.4	28.1				67.0	5.0
Max Q Clear Time (g_c+I1), s	37.4	18.4				10.7	2.9
Green Ext Time (p_c), s	0.0	2.8				8.6	0.0

Intersection Summary	
HCM 6th Ctrl Delay	33.9
HCM 6th LOS	C

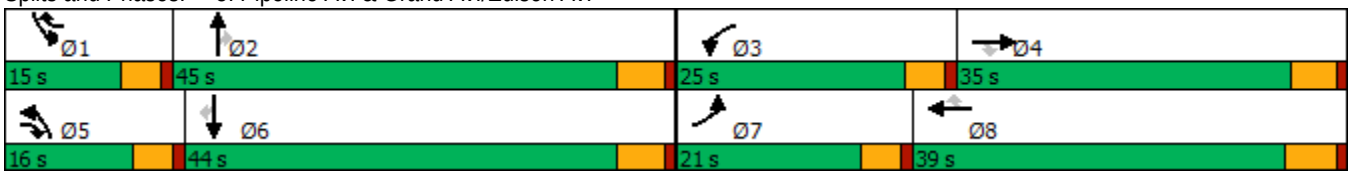
Notes

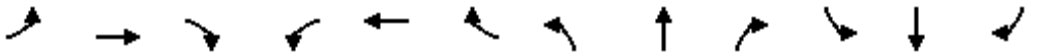
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	859	150	159	851	45	151	207	104	62	336	71
Future Volume (vph)	112	859	150	159	851	45	151	207	104	62	336	71
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	21.0	35.0	16.0	25.0	39.0	15.0	16.0	45.0	45.0	15.0	44.0	44.0
Total Split (%)	17.5%	29.2%	13.3%	20.8%	32.5%	12.5%	13.3%	37.5%	37.5%	12.5%	36.7%	36.7%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 87.9
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	859	150	159	851	45	151	207	104	62	336	71
Future Volume (veh/h)	112	859	150	159	851	45	151	207	104	62	336	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	115	886	112	164	877	31	156	213	38	64	346	39
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	211	2106	763	266	2236	755	247	729	324	91	636	279
Arrive On Green	0.07	0.43	0.42	0.08	0.46	0.44	0.08	0.21	0.21	0.06	0.19	0.19
Sat Flow, veh/h	3141	4914	1505	3141	4914	1522	2956	3420	1519	1619	3420	1498
Grp Volume(v), veh/h	115	886	112	164	877	31	156	213	38	64	346	39
Grp Sat Flow(s),veh/h/ln	1570	1638	1505	1570	1638	1522	1478	1710	1519	1619	1710	1498
Q Serve(g_s), s	2.7	9.7	3.1	3.9	9.1	0.8	3.9	4.0	1.6	3.0	7.0	1.7
Cycle Q Clear(g_c), s	2.7	9.7	3.1	3.9	9.1	0.8	3.9	4.0	1.6	3.0	7.0	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	211	2106	763	266	2236	755	247	729	324	91	636	279
V/C Ratio(X)	0.54	0.42	0.15	0.62	0.39	0.04	0.63	0.29	0.12	0.70	0.54	0.14
Avail Cap(c_a), veh/h	694	2106	763	858	2236	755	461	1823	810	232	1779	779
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.7	15.3	10.2	34.0	13.9	10.0	34.1	25.4	24.4	35.7	28.3	26.2
Incr Delay (d2), s/veh	0.8	0.6	0.4	0.9	0.5	0.1	1.0	0.2	0.2	3.6	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	3.4	0.9	1.4	3.0	0.2	1.4	1.6	0.5	1.2	2.8	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.5	15.9	10.6	34.9	14.4	10.1	35.1	25.6	24.6	39.3	29.1	26.4
LnGrp LOS	D	B	B	C	B	B	D	C	C	D	C	C
Approach Vol, veh/h		1113			1072			407			449	
Approach Delay, s/veh		17.4			17.4			29.1			30.3	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	20.4	10.5	37.7	10.4	18.3	9.2	39.0
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	10.4	39.6	20.4	* 30	11.4	38.6	16.4	33.2
Max Q Clear Time (g_c+I1), s	5.0	6.0	5.9	11.7	5.9	9.0	4.7	11.1
Green Ext Time (p_c), s	0.0	1.4	0.2	6.2	0.1	2.3	0.1	5.8

Intersection Summary	
HCM 6th Ctrl Delay	20.9
HCM 6th LOS	C

Notes

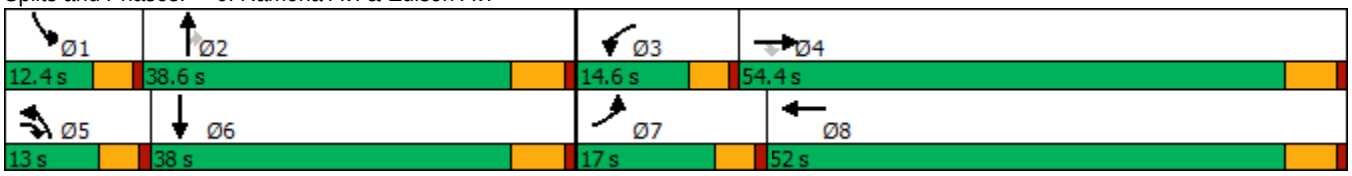
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

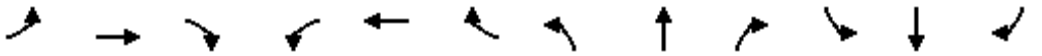
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	97	812	58	51	981	43	302	57	46	445
Future Volume (vph)	97	812	58	51	981	43	302	57	46	445
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	17.0	54.4	13.0	14.6	52.0	13.0	38.6	38.6	12.4	38.0
Total Split (%)	14.2%	45.3%	10.8%	12.2%	43.3%	10.8%	32.2%	32.2%	10.3%	31.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 107.2
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	812	58	51	981	67	43	302	57	46	445	91
Future Volume (veh/h)	97	812	58	51	981	67	43	302	57	46	445	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1700	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	108	902	60	57	1090	70	48	336	32	51	494	89
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	141	1774	1366	80	1568	101	69	775	345	72	660	118
Arrive On Green	0.09	0.52	0.51	0.05	0.48	0.46	0.04	0.23	0.23	0.04	0.23	0.21
Sat Flow, veh/h	1619	3420	2481	1619	3260	209	1619	3420	1521	1619	2891	518
Grp Volume(v), veh/h	108	902	60	57	572	588	48	336	32	51	291	292
Grp Sat Flow(s),veh/h/ln	1619	1710	1240	1619	1710	1759	1619	1710	1521	1619	1710	1699
Q Serve(g_s), s	6.5	17.2	1.1	3.5	26.0	26.1	2.9	8.4	1.7	3.1	15.8	16.0
Cycle Q Clear(g_c), s	6.5	17.2	1.1	3.5	26.0	26.1	2.9	8.4	1.7	3.1	15.8	16.0
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	141	1774	1366	80	823	846	69	775	345	72	391	388
V/C Ratio(X)	0.76	0.51	0.04	0.71	0.69	0.70	0.69	0.43	0.09	0.70	0.75	0.75
Avail Cap(c_a), veh/h	211	1774	1366	172	823	846	146	1186	527	136	583	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	15.7	10.4	46.7	20.2	20.3	47.1	33.1	30.5	47.0	35.8	36.1
Incr Delay (d2), s/veh	4.1	1.0	0.1	4.3	4.8	4.7	4.5	0.4	0.1	4.6	2.8	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	6.3	0.3	1.4	10.4	10.7	1.2	3.4	0.6	1.3	6.6	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.6	16.7	10.4	51.0	25.0	25.0	51.6	33.5	30.6	51.6	38.6	39.2
LnGrp LOS	D	B	B	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		1070			1217			416			634	
Approach Delay, s/veh		19.6			26.2			35.4			39.9	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	26.6	8.9	55.8	8.3	26.8	12.7	52.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	7.8	32.8	10.0	48.6	8.4	32.2	12.4	46.2
Max Q Clear Time (g_c+I1), s	5.1	10.4	5.5	19.2	4.9	18.0	8.5	28.1
Green Ext Time (p_c), s	0.0	2.0	0.0	6.8	0.0	2.7	0.0	6.8

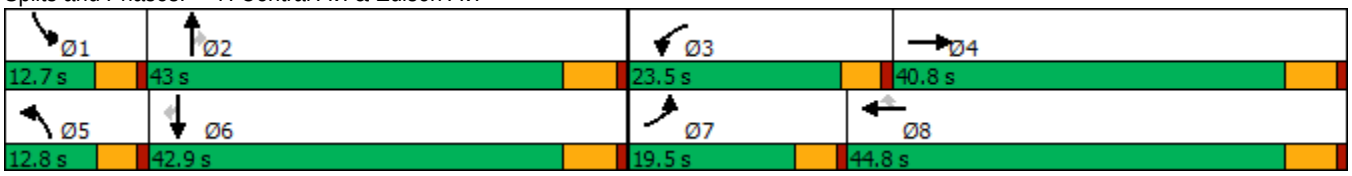
Intersection Summary	
HCM 6th Ctrl Delay	27.8
HCM 6th LOS	C

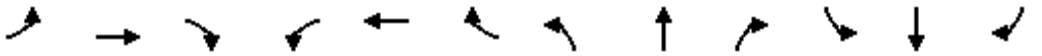
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	149	485	318	1004	114	75	785	309	81	927	252
Future Volume (vph)	149	485	318	1004	114	75	785	309	81	927	252
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	19.5	40.8	23.5	44.8	44.8	12.8	43.0	43.0	12.7	42.9	42.9
Total Split (%)	16.3%	34.0%	19.6%	37.3%	37.3%	10.7%	35.8%	35.8%	10.6%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 115.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	485	55	318	1004	114	75	785	309	81	927	252
Future Volume (veh/h)	149	485	55	318	1004	114	75	785	309	81	927	252
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	155	505	51	331	1046	91	78	818	140	84	966	204
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	188	1080	109	402	1219	537	105	1090	479	112	1105	486
Arrive On Green	0.12	0.34	0.33	0.13	0.36	0.36	0.06	0.32	0.32	0.07	0.32	0.32
Sat Flow, veh/h	1619	3137	316	3141	3420	1505	1619	3420	1503	1619	3420	1504
Grp Volume(v), veh/h	155	275	281	331	1046	91	78	818	140	84	966	204
Grp Sat Flow(s),veh/h/ln	1619	1710	1743	1570	1710	1505	1619	1710	1503	1619	1710	1504
Q Serve(g_s), s	10.7	14.3	14.5	11.8	32.4	4.7	5.4	24.5	8.0	5.8	30.5	12.2
Cycle Q Clear(g_c), s	10.7	14.3	14.5	11.8	32.4	4.7	5.4	24.5	8.0	5.8	30.5	12.2
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	589	600	402	1219	537	105	1090	479	112	1105	486
V/C Ratio(X)	0.83	0.47	0.47	0.82	0.86	0.17	0.74	0.75	0.29	0.75	0.87	0.42
Avail Cap(c_a), veh/h	219	589	600	535	1219	537	125	1166	512	123	1163	511
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.5	29.3	29.5	48.6	34.1	25.2	52.6	34.9	29.3	52.3	36.5	30.3
Incr Delay (d2), s/veh	17.2	2.6	2.6	5.8	7.9	0.7	14.0	2.6	0.3	17.6	7.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	6.1	6.3	4.8	14.1	1.7	2.6	10.1	2.8	2.9	13.2	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.7	31.9	32.1	54.4	42.1	25.9	66.6	37.5	29.6	69.9	43.9	30.9
LnGrp LOS	E	C	C	D	D	C	E	D	C	E	D	C
Approach Vol, veh/h		711			1468			1036			1254	
Approach Delay, s/veh		39.6			43.8			38.6			43.5	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	40.5	18.7	43.4	11.4	41.0	17.3	44.8
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	8.1	37.2	18.9	35.0	8.2	37.1	14.9	39.0
Max Q Clear Time (g_c+I1), s	7.8	26.5	13.8	16.5	7.4	32.5	12.7	34.4
Green Ext Time (p_c), s	0.0	4.1	0.3	2.8	0.0	2.7	0.0	2.7

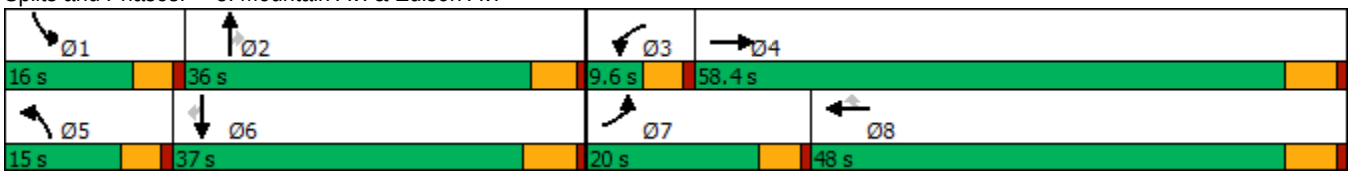
Intersection Summary	
HCM 6th Ctrl Delay	41.9
HCM 6th LOS	D

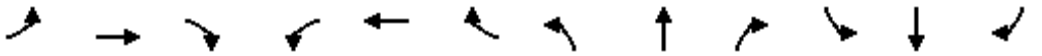
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	142	537	10	1023	107	85	155	41	102	79	265
Future Volume (vph)	142	537	10	1023	107	85	155	41	102	79	265
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	20.0	58.4	9.6	48.0	48.0	15.0	36.0	36.0	16.0	37.0	37.0
Total Split (%)	16.7%	48.7%	8.0%	40.0%	40.0%	12.5%	30.0%	30.0%	13.3%	30.8%	30.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 102.3
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	537	40	10	1023	107	85	155	41	102	79	265
Future Volume (veh/h)	142	537	40	10	1023	107	85	155	41	102	79	265
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	154	584	39	11	1112	105	92	168	15	111	86	150
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	193	2729	181	32	1645	733	124	237	201	146	274	228
Arrive On Green	0.12	0.58	0.56	0.02	0.48	0.48	0.08	0.13	0.13	0.09	0.15	0.15
Sat Flow, veh/h	1619	4701	311	1619	3420	1524	1619	1800	1525	1619	1800	1496
Grp Volume(v), veh/h	154	406	217	11	1112	105	92	168	15	111	86	150
Grp Sat Flow(s),veh/h/ln	1619	1638	1736	1619	1710	1524	1619	1800	1525	1619	1800	1496
Q Serve(g_s), s	8.7	5.6	5.7	0.6	23.4	3.6	5.2	8.4	0.8	6.3	4.0	8.9
Cycle Q Clear(g_c), s	8.7	5.6	5.7	0.6	23.4	3.6	5.2	8.4	0.8	6.3	4.0	8.9
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	193	1902	1008	32	1645	733	124	237	201	146	274	228
V/C Ratio(X)	0.80	0.21	0.22	0.35	0.68	0.14	0.74	0.71	0.07	0.76	0.31	0.66
Avail Cap(c_a), veh/h	276	1902	1008	97	1645	733	190	615	521	207	634	527
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.2	9.4	9.5	45.3	18.7	13.5	42.4	39.0	35.7	41.6	35.3	37.4
Incr Delay (d2), s/veh	6.4	0.3	0.5	2.4	2.2	0.4	3.3	3.9	0.2	5.4	0.6	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	1.8	2.0	0.3	8.7	1.2	2.2	3.9	0.3	2.6	1.7	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.6	9.7	10.0	47.7	20.9	14.0	45.6	42.9	35.9	47.1	36.0	40.6
LnGrp LOS	D	A	B	D	C	B	D	D	D	D	D	D
Approach Vol, veh/h		777			1228			275			347	
Approach Delay, s/veh		17.1			20.6			43.4			41.5	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	17.0	5.8	58.4	11.2	18.3	15.2	49.1
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	11.4	* 31	5.0	52.6	10.4	31.2	15.4	42.2
Max Q Clear Time (g_c+I1), s	8.3	10.4	2.6	7.7	7.2	10.9	10.7	25.4
Green Ext Time (p_c), s	0.0	0.8	0.0	4.0	0.0	0.8	0.1	7.1

Intersection Summary	
HCM 6th Ctrl Delay	24.7
HCM 6th LOS	C

Notes

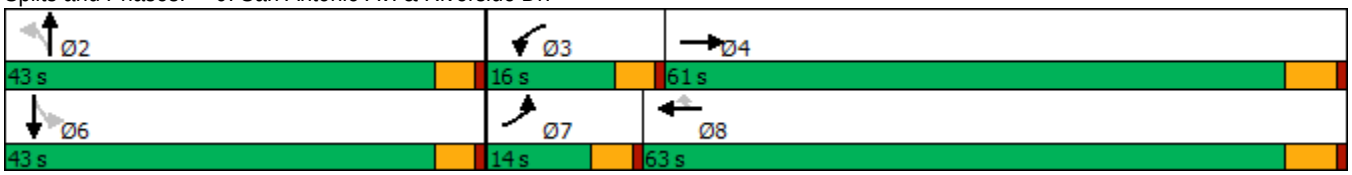
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

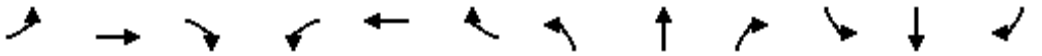
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	17	486	36	844	6	117	2	21	6
Future Volume (vph)	17	486	36	844	6	117	2	21	6
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	14.0	61.0	16.0	63.0	63.0	43.0	43.0	43.0	43.0
Total Split (%)	11.7%	50.8%	13.3%	52.5%	52.5%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 93.4
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	486	58	36	844	6	117	2	45	21	6	50
Future Volume (veh/h)	17	486	58	36	844	6	117	2	45	21	6	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	18	523	58	39	908	5	126	2	25	23	6	37
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	44	2066	228	68	2326	1015	253	18	220	267	34	207
Arrive On Green	0.03	0.67	0.64	0.04	0.68	0.68	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1619	3105	343	1619	3420	1492	1308	114	1426	1325	217	1341
Grp Volume(v), veh/h	18	287	294	39	908	5	126	0	27	23	0	43
Grp Sat Flow(s),veh/h/ln	1619	1710	1738	1619	1710	1492	1308	0	1540	1325	0	1559
Q Serve(g_s), s	0.9	5.9	6.0	2.1	10.0	0.1	8.0	0.0	1.3	1.3	0.0	2.1
Cycle Q Clear(g_c), s	0.9	5.9	6.0	2.1	10.0	0.1	10.1	0.0	1.3	2.6	0.0	2.1
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.93	1.00		0.86
Lane Grp Cap(c), veh/h	44	1138	1156	68	2326	1015	253	0	238	267	0	241
V/C Ratio(X)	0.41	0.25	0.25	0.57	0.39	0.00	0.50	0.00	0.11	0.09	0.00	0.18
Avail Cap(c_a), veh/h	187	1138	1156	224	2326	1015	640	0	692	658	0	701
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.5	5.8	5.9	40.8	6.0	4.5	36.3	0.0	31.8	32.7	0.0	32.1
Incr Delay (d2), s/veh	2.2	0.5	0.5	2.8	0.5	0.0	1.5	0.0	0.2	0.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.7	1.8	0.8	2.7	0.0	2.7	0.0	0.5	0.4	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.8	6.4	6.5	43.6	6.5	4.5	37.8	0.0	32.0	32.8	0.0	32.5
LnGrp LOS	D	A	A	D	A	A	D	A	C	C	A	C
Approach Vol, veh/h		599			952			153			66	
Approach Delay, s/veh		7.5			8.0			36.8			32.6	
Approach LOS		A			A			D			C	

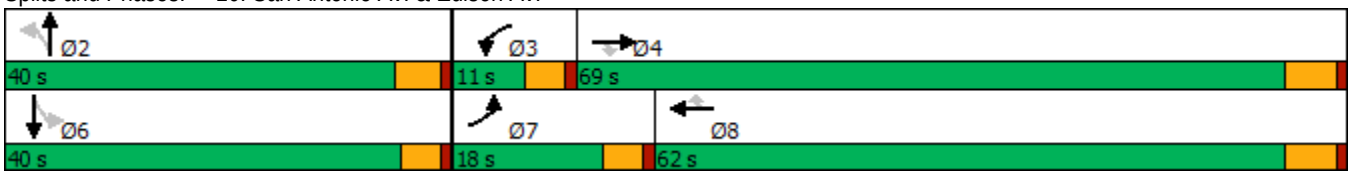
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		17.4	7.6	61.7		17.4	6.4	63.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		38.4	11.4	55.2		38.4	9.4	57.2				
Max Q Clear Time (g_c+I1), s		12.1	4.1	8.0		4.6	2.9	12.0				
Green Ext Time (p_c), s		0.5	0.0	3.4		0.3	0.0	7.0				

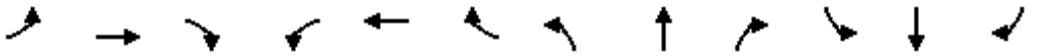
Intersection Summary												
HCM 6th Ctrl Delay			11.3									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	47	608	28	3	913	21	42	74	15	38
Future Volume (vph)	47	608	28	3	913	21	42	74	15	38
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	18.0	69.0	69.0	11.0	62.0	62.0	40.0	40.0	40.0	40.0
Total Split (%)	15.0%	57.5%	57.5%	9.2%	51.7%	51.7%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 95.9
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	608	28	3	913	21	42	74	14	15	38	94
Future Volume (veh/h)	47	608	28	3	913	21	42	74	14	15	38	94
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1000	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	51	661	22	3	992	23	46	80	6	16	41	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	75	2448	1090	10	2325	1037	118	161	11	62	87	114
Arrive On Green	0.05	0.72	0.72	0.01	0.68	0.68	0.14	0.14	0.13	0.14	0.14	0.13
Sat Flow, veh/h	1619	3420	1523	952	3420	1525	458	1137	76	122	638	840
Grp Volume(v), veh/h	51	661	22	3	992	23	132	0	0	120	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1523	952	1710	1525	1670	0	0	1601	0	0
Q Serve(g_s), s	2.8	6.2	0.4	0.3	11.9	0.4	0.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.8	6.2	0.4	0.3	11.9	0.4	6.3	0.0	0.0	6.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.35		0.05	0.13		0.52
Lane Grp Cap(c), veh/h	75	2448	1090	10	2325	1037	290	0	0	263	0	0
V/C Ratio(X)	0.68	0.27	0.02	0.30	0.43	0.02	0.46	0.00	0.00	0.46	0.00	0.00
Avail Cap(c_a), veh/h	250	2448	1090	73	2325	1037	691	0	0	667	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.6	4.5	3.7	44.6	6.6	4.7	36.2	0.0	0.0	36.8	0.0	0.0
Incr Delay (d2), s/veh	3.9	0.3	0.0	5.9	0.6	0.0	1.1	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.6	0.1	0.1	3.3	0.1	2.7	0.0	0.0	2.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.6	4.8	3.8	50.5	7.1	4.8	37.3	0.0	0.0	38.0	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		734			1018			132			120	
Approach Delay, s/veh		7.7			7.2			37.3			38.0	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.8	5.0	69.0		16.8	8.2	65.7				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		34.9	6.4	63.2		* 35	13.4	56.2				
Max Q Clear Time (g_c+I1), s		8.3	2.3	8.2		8.2	4.8	13.9				
Green Ext Time (p_c), s		0.7	0.0	4.7		0.7	0.0	7.9				

Intersection Summary	
HCM 6th Ctrl Delay	11.2
HCM 6th LOS	B

Notes

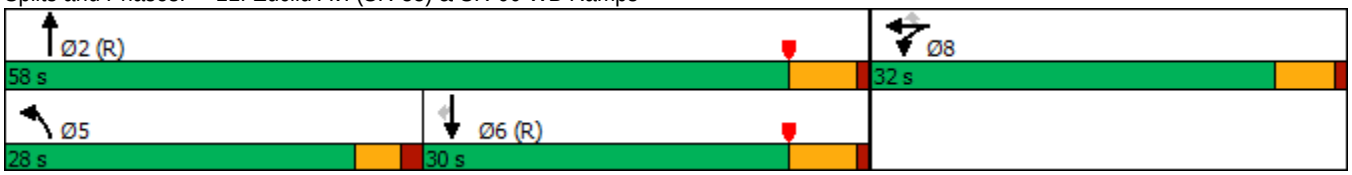
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

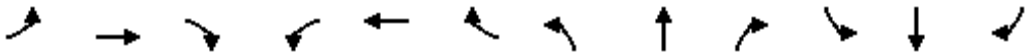
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	668	6	433	401	961	1013	498
Future Volume (vph)	668	6	433	401	961	1013	498
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	32.0	32.0	32.0	28.0	58.0	30.0	30.0
Total Split (%)	35.6%	35.6%	35.6%	31.1%	64.4%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	668	6	433	401	961	0	0	1013	498
Future Volume (veh/h)	0	0	0	668	6	433	401	961	0	0	1013	498
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				789	0	163	427	1022	0	0	1078	302
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				890	0	396	449	2301	0	0	1224	546
Arrive On Green				0.25	0.00	0.25	0.50	1.00	0.00	0.00	0.34	0.34
Sat Flow, veh/h				3619	0	1610	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				789	0	163	427	1022	0	0	1078	302
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1610
Q Serve(g_s), s				18.9	0.0	7.6	20.2	0.0	0.0	0.0	25.3	13.7
Cycle Q Clear(g_c), s				18.9	0.0	7.6	20.2	0.0	0.0	0.0	25.3	13.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				890	0	396	449	2301	0	0	1224	546
V/C Ratio(X)				0.89	0.00	0.41	0.95	0.44	0.00	0.00	0.88	0.55
Avail Cap(c_a), veh/h				1086	0	483	472	2301	0	0	1224	546
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.39	0.39	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				32.7	0.0	28.5	22.1	0.0	0.0	0.0	28.0	24.2
Incr Delay (d2), s/veh				6.9	0.0	0.3	14.7	0.2	0.0	0.0	9.3	4.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.6	0.0	2.8	7.1	0.1	0.0	0.0	11.7	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				39.6	0.0	28.7	36.9	0.2	0.0	0.0	37.3	28.2
LnGrp LOS				D	A	C	D	A	A	A	D	C
Approach Vol, veh/h					952			1449			1380	
Approach Delay, s/veh					37.7			11.0			35.3	
Approach LOS					D			B			D	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	62.9		26.9	36.0		27.1						
Change Period (Y+Rc), s	5.5		4.5	5.5		5.0						
Max Green Setting (Gmax), s	52.5		23.5	24.5		27.0						
Max Q Clear Time (g_c+I1), s	2.0		22.2	27.3		20.9						
Green Ext Time (p_c), s	13.2		0.1	0.0		1.2						

Intersection Summary		
HCM 6th Ctrl Delay	26.6	
HCM 6th LOS	C	

Notes

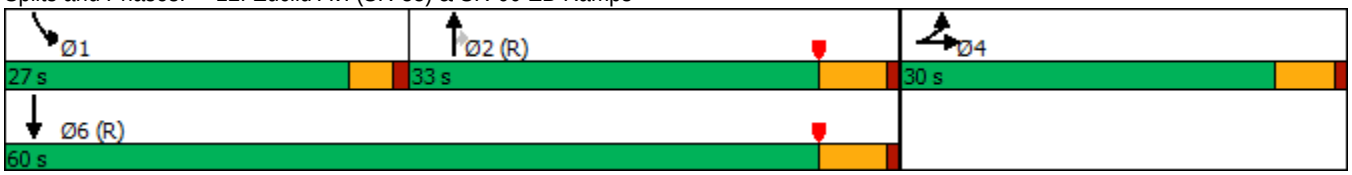
User approved volume balancing among the lanes for turning movement.

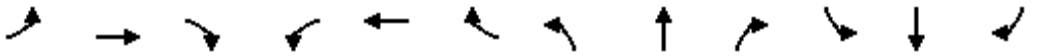
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	428	2	935	713	385	1296
Future Volume (vph)	428	2	935	713	385	1296
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	30.0	30.0	33.0	33.0	27.0	60.0
Total Split (%)	33.3%	33.3%	36.7%	36.7%	30.0%	66.7%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	428	2	402	0	0	0	0	935	713	385	1296	0
Future Volume (veh/h)	428	2	402	0	0	0	0	935	713	385	1296	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	411	59	368				0	984	552	405	1364	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	500	63	392				0	1162	504	435	2191	0
Arrive On Green	0.28	0.28	0.28				0.00	0.32	0.32	0.32	0.81	0.00
Sat Flow, veh/h	1810	227	1418				0	3705	1566	1810	3705	0
Grp Volume(v), veh/h	411	0	427				0	984	552	405	1364	0
Grp Sat Flow(s),veh/h/ln	1810	0	1645				0	1805	1566	1810	1805	0
Q Serve(g_s), s	19.1	0.0	22.8				0.0	22.9	29.0	19.5	13.2	0.0
Cycle Q Clear(g_c), s	19.1	0.0	22.8				0.0	22.9	29.0	19.5	13.2	0.0
Prop In Lane	1.00		0.86				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	500	0	455				0	1162	504	435	2191	0
V/C Ratio(X)	0.82	0.00	0.94				0.00	0.85	1.09	0.93	0.62	0.00
Avail Cap(c_a), veh/h	503	0	457				0	1162	504	462	2191	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.33	1.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.71	0.71	0.21	0.21	0.00
Uniform Delay (d), s/veh	30.5	0.0	31.8				0.0	28.4	30.5	29.9	4.7	0.0
Incr Delay (d2), s/veh	9.8	0.0	27.0				0.0	5.6	62.6	7.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	0.0	11.8				0.0	10.1	18.9	8.1	2.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.3	0.0	58.8				0.0	34.1	93.1	37.2	5.0	0.0
LnGrp LOS	D	A	E				A	C	F	D	A	A
Approach Vol, veh/h		838						1536			1769	
Approach Delay, s/veh		49.7						55.3			12.4	
Approach LOS		D						E			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	25.6	34.5		29.9		60.1
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	23.0	27.5		25.0		54.5
Max Q Clear Time (g_c+I1), s	21.5	31.0		24.8		15.2
Green Ext Time (p_c), s	0.1	0.0		0.1		18.6

Intersection Summary		
HCM 6th Ctrl Delay		35.8
HCM 6th LOS		D

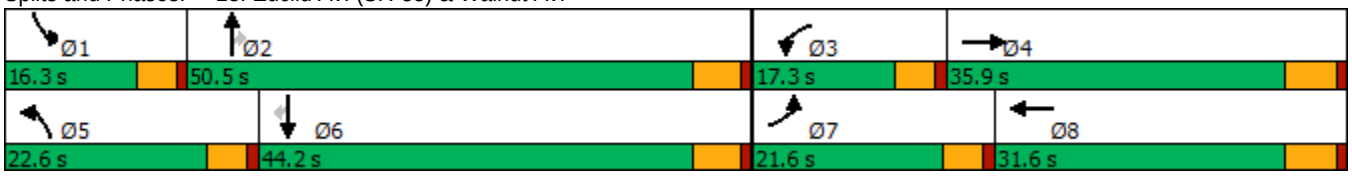
Notes

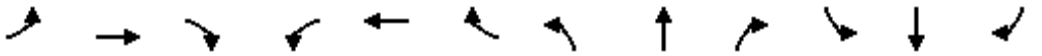
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	120	306	76	326	133	1261	48	159	1342	63
Future Volume (vph)	120	306	76	326	133	1261	48	159	1342	63
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	21.6	35.9	17.3	31.6	22.6	50.5	50.5	16.3	44.2	44.2
Total Split (%)	18.0%	29.9%	14.4%	26.3%	18.8%	42.1%	42.1%	13.6%	36.8%	36.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 109.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	306	117	76	326	216	133	1261	48	159	1342	63
Future Volume (veh/h)	120	306	117	76	326	216	133	1261	48	159	1342	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	126	322	87	80	343	187	140	1327	33	167	1413	45
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	152	606	161	100	418	224	167	2153	668	222	2015	625
Arrive On Green	0.09	0.23	0.23	0.06	0.19	0.19	0.10	0.44	0.44	0.08	0.41	0.41
Sat Flow, veh/h	1619	2671	711	1619	2150	1149	1619	4914	1524	2956	4914	1524
Grp Volume(v), veh/h	126	204	205	80	271	259	140	1327	33	167	1413	45
Grp Sat Flow(s),veh/h/ln	1619	1710	1672	1619	1710	1589	1619	1638	1524	1478	1638	1524
Q Serve(g_s), s	7.9	10.8	11.1	5.0	15.6	16.1	8.7	21.4	1.3	5.7	24.5	1.8
Cycle Q Clear(g_c), s	7.9	10.8	11.1	5.0	15.6	16.1	8.7	21.4	1.3	5.7	24.5	1.8
Prop In Lane	1.00		0.43	1.00		0.72	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	388	379	100	333	309	167	2153	668	222	2015	625
V/C Ratio(X)	0.83	0.53	0.54	0.80	0.82	0.84	0.84	0.62	0.05	0.75	0.70	0.07
Avail Cap(c_a), veh/h	267	500	489	200	429	398	283	2153	668	336	2015	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.8	34.9	35.0	47.7	39.7	39.9	45.3	22.3	16.6	46.7	25.1	18.5
Incr Delay (d2), s/veh	4.3	1.1	1.2	5.5	9.2	11.6	4.2	1.3	0.1	1.9	2.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	4.4	4.4	2.1	7.1	7.0	3.6	8.0	0.4	2.1	9.3	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.1	36.0	36.2	53.2	48.9	51.5	49.5	23.6	16.7	48.6	27.2	18.7
LnGrp LOS	D	D	D	D	D	D	D	C	B	D	C	B
Approach Vol, veh/h		535			610			1500			1625	
Approach Delay, s/veh		39.4			50.5			25.9			29.2	
Approach LOS		D			D			C			C	

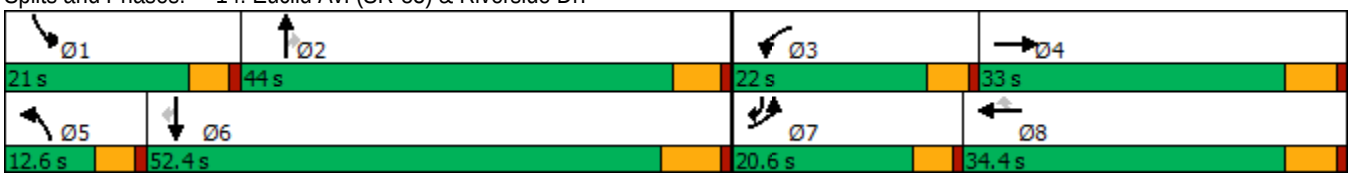
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	50.5	10.9	29.2	15.2	47.6	14.3	25.8
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	11.7	45.1	12.7	30.1	18.0	38.8	17.0	25.8
Max Q Clear Time (g_c+I1), s	7.7	23.4	7.0	13.1	10.7	26.5	9.9	18.1
Green Ext Time (p_c), s	0.1	9.7	0.0	2.0	0.1	7.3	0.1	1.8

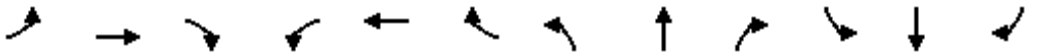
Intersection Summary	
HCM 6th Ctrl Delay	32.3
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	162	330	200	517	122	75	1035	166	184	1146	161
Future Volume (vph)	162	330	200	517	122	75	1035	166	184	1146	161
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	20.6	33.0	22.0	34.4	34.4	12.6	44.0	44.0	21.0	52.4	20.6
Total Split (%)	17.2%	27.5%	18.3%	28.7%	28.7%	10.5%	36.7%	36.7%	17.5%	43.7%	17.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None
Act Effct Green (s)	14.8	27.2	16.9	29.3	29.3	7.7	38.9	38.9	15.8	45.9	62.7
Actuated g/C Ratio	0.12	0.23	0.14	0.25	0.25	0.06	0.33	0.33	0.13	0.39	0.53
v/c Ratio	0.85	1.02	0.92	0.65	0.26	0.77	0.98	0.29	0.91	0.92	0.20
Control Delay	85.7	95.5	93.5	44.9	4.3	96.4	62.0	8.1	93.1	46.8	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.7	95.5	93.5	44.9	4.3	96.4	62.0	8.1	93.1	46.8	6.4
LOS	F	F	F	D	A	F	E	A	F	D	A
Approach Delay		92.6		50.7			57.0			48.2	
Approach LOS		F		D			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.2	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 57.3	Intersection LOS: E
Intersection Capacity Utilization 93.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	330	65	200	517	122	75	1035	166	184	1146	161
Future Volume (veh/h)	162	330	65	200	517	122	75	1035	166	184	1146	161
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	171	347	52	211	544	99	79	1089	135	194	1206	110
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	195	344	52	233	850	379	97	1092	487	217	1345	783
Arrive On Green	0.12	0.22	0.22	0.14	0.25	0.25	0.06	0.32	0.32	0.13	0.39	0.39
Sat Flow, veh/h	1619	1530	229	1619	3420	1525	1619	3420	1525	1619	3420	1524
Grp Volume(v), veh/h	171	0	399	211	544	99	79	1089	135	194	1206	110
Grp Sat Flow(s),veh/h/ln	1619	0	1759	1619	1710	1525	1619	1710	1525	1619	1710	1524
Q Serve(g_s), s	12.6	0.0	27.2	15.5	17.2	6.3	5.8	38.5	8.0	14.3	40.0	4.6
Cycle Q Clear(g_c), s	12.6	0.0	27.2	15.5	17.2	6.3	5.8	38.5	8.0	14.3	40.0	4.6
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	195	0	396	233	850	379	97	1092	487	217	1345	783
V/C Ratio(X)	0.88	0.00	1.01	0.91	0.64	0.26	0.81	1.00	0.28	0.89	0.90	0.14
Avail Cap(c_a), veh/h	214	0	396	233	850	379	107	1092	487	220	1345	783
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.3	0.0	46.9	51.0	40.6	36.5	56.1	41.1	30.7	51.5	34.4	15.4
Incr Delay (d2), s/veh	27.8	0.0	47.4	34.1	1.6	0.4	30.2	26.7	1.4	32.4	9.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	0.0	16.7	8.3	7.2	2.3	3.1	19.1	3.0	7.6	17.7	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.1	0.0	94.3	85.0	42.2	36.9	86.3	67.8	32.2	83.9	44.0	15.8
LnGrp LOS	F	A	F	F	D	D	F	E	C	F	D	B
Approach Vol, veh/h		570			854			1303			1510	
Approach Delay, s/veh		90.0			52.2			65.2			47.1	
Approach LOS		F			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.8	45.1	22.0	33.0	11.9	54.1	19.1	35.9
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	16.4	* 39	17.4	27.2	8.0	45.9	16.0	28.6
Max Q Clear Time (g_c+I1), s	16.3	40.5	17.5	29.2	7.8	42.0	14.6	19.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.7	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	59.5
HCM 6th LOS	E

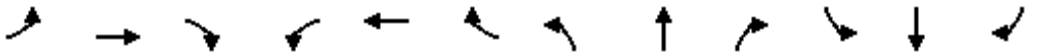
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	110	175	44	76	160	51	1108	137	59	1231	98
Future Volume (vph)	110	175	44	76	160	51	1108	137	59	1231	98
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	44.0	44.0	44.0	44.0	44.0	15.0	60.0	60.0	16.0	61.0	61.0
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	12.5%	50.0%	50.0%	13.3%	50.8%	50.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	26.5	26.5	26.5		26.5	7.8	56.3	56.3	8.3	55.4	55.4
Actuated g/C Ratio	0.25	0.25	0.25		0.25	0.07	0.54	0.54	0.08	0.53	0.53
v/c Ratio	0.63	0.41	0.11		0.90	0.45	0.64	0.17	0.50	0.72	0.12
Control Delay	50.8	35.3	3.0		66.2	62.0	21.7	9.7	62.9	24.3	5.2
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	35.3	3.0		66.2	62.0	21.7	9.7	62.9	24.3	5.2
LOS	D	D	A		E	E	C	A	E	C	A
Approach Delay		36.1			66.2		22.0			24.6	
Approach LOS		D			E		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 104.5	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 28.4	Intersection LOS: C
Intersection Capacity Utilization 85.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	175	44	76	160	54	51	1108	137	59	1231	98
Future Volume (veh/h)	110	175	44	76	160	54	51	1108	137	59	1231	98
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	117	186	31	81	170	45	54	1179	122	63	1310	73
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	226	465	393	117	212	51	67	1812	808	79	1837	802
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.04	0.53	0.53	0.05	0.54	0.54
Sat Flow, veh/h	1119	1800	1524	281	822	198	1619	3420	1525	1619	3420	1494
Grp Volume(v), veh/h	117	186	31	296	0	0	54	1179	122	63	1310	73
Grp Sat Flow(s),veh/h/ln	1119	1800	1524	1300	0	0	1619	1710	1525	1619	1710	1494
Q Serve(g_s), s	0.0	8.8	1.6	14.5	0.0	0.0	3.4	25.6	4.2	4.0	29.7	2.5
Cycle Q Clear(g_c), s	21.6	8.8	1.6	23.4	0.0	0.0	3.4	25.6	4.2	4.0	29.7	2.5
Prop In Lane	1.00		1.00	0.27		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	226	465	393	380	0	0	67	1812	808	79	1837	802
V/C Ratio(X)	0.52	0.40	0.08	0.78	0.00	0.00	0.81	0.65	0.15	0.80	0.71	0.09
Avail Cap(c_a), veh/h	350	665	563	551	0	0	163	1812	808	178	1837	802
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.5	31.7	29.0	38.1	0.0	0.0	49.2	17.4	12.4	48.7	18.0	11.7
Incr Delay (d2), s/veh	1.8	0.6	0.1	4.4	0.0	0.0	8.2	1.8	0.4	6.9	2.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	3.8	0.6	7.4	0.0	0.0	1.5	9.0	1.3	1.7	10.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.3	32.3	29.1	42.5	0.0	0.0	57.3	19.3	12.8	55.6	20.4	11.9
LnGrp LOS	D	C	C	D	A	A	E	B	B	E	C	B
Approach Vol, veh/h		334			296			1355			1446	
Approach Delay, s/veh		34.1			42.5			20.2			21.5	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	61.3		32.5	8.9	62.0		32.5				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	11.4	* 55		38.2	10.4	54.5		38.2				
Max Q Clear Time (g_c+I1), s	6.0	27.6		23.6	5.4	31.7		25.4				
Green Ext Time (p_c), s	0.0	8.9		1.2	0.0	9.3		1.3				

Intersection Summary			
HCM 6th Ctrl Delay		24.0	
HCM 6th LOS		C	

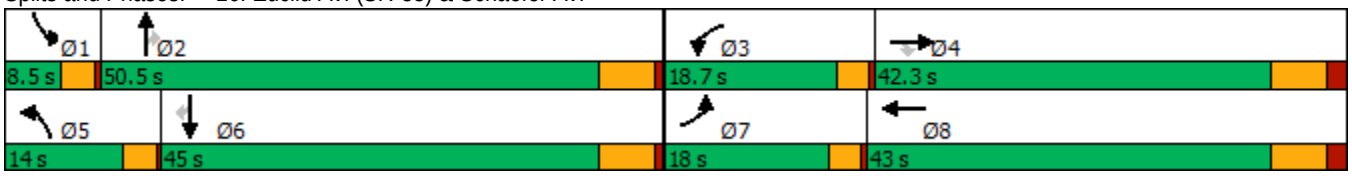
Notes

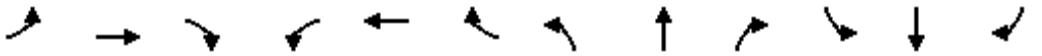
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	162	79	66	149	187	111	1073	37	31	1139	129
Future Volume (vph)	162	79	66	149	187	111	1073	37	31	1139	129
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	18.0	42.3	42.3	18.7	43.0	14.0	50.5	50.5	8.5	45.0	45.0
Total Split (%)	15.0%	35.3%	35.3%	15.6%	35.8%	11.7%	42.1%	42.1%	7.1%	37.5%	37.5%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	13.9	18.9	18.9	13.6	18.6	10.1	48.1	48.1	5.0	39.4	39.4
Actuated g/C Ratio	0.14	0.18	0.18	0.13	0.18	0.10	0.47	0.47	0.05	0.39	0.39
v/c Ratio	0.79	0.26	0.19	0.75	0.66	0.75	0.72	0.05	0.42	0.93	0.21
Control Delay	70.1	37.0	1.7	65.8	47.6	74.8	27.4	0.1	66.8	44.8	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.1	37.0	1.7	65.8	47.6	74.8	27.4	0.1	66.8	44.8	6.1
LOS	E	D	A	E	D	E	C	A	E	D	A
Approach Delay		46.9			55.4		30.9			41.5	
Approach LOS		D			E		C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 39.4	Intersection LOS: D
Intersection Capacity Utilization 80.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	79	66	149	187	12	111	1073	37	31	1139	129
Future Volume (veh/h)	162	79	66	149	187	12	111	1073	37	31	1139	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	174	85	52	160	201	11	119	1154	30	33	1225	105
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	205	295	250	191	262	14	146	1582	706	51	1381	615
Arrive On Green	0.13	0.16	0.16	0.12	0.16	0.16	0.09	0.46	0.46	0.03	0.40	0.40
Sat Flow, veh/h	1619	1800	1525	1619	1690	92	1619	3420	1525	1619	3420	1522
Grp Volume(v), veh/h	174	85	52	160	0	212	119	1154	30	33	1225	105
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1783	1619	1710	1525	1619	1710	1522
Q Serve(g_s), s	9.4	3.7	2.6	8.6	0.0	10.2	6.4	24.4	1.0	1.8	29.7	3.9
Cycle Q Clear(g_c), s	9.4	3.7	2.6	8.6	0.0	10.2	6.4	24.4	1.0	1.8	29.7	3.9
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	205	295	250	191	0	277	146	1582	706	51	1381	615
V/C Ratio(X)	0.85	0.29	0.21	0.84	0.00	0.77	0.82	0.73	0.04	0.65	0.89	0.17
Avail Cap(c_a), veh/h	263	713	604	276	0	720	191	1707	761	91	1496	666
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.1	32.7	32.3	38.5	0.0	36.1	39.8	19.4	13.1	42.7	24.7	17.0
Incr Delay (d2), s/veh	15.2	0.4	0.3	9.8	0.0	3.3	14.5	1.5	0.0	5.1	6.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	1.6	0.9	3.8	0.0	4.4	3.0	8.4	0.3	0.7	11.5	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.3	33.1	32.6	48.3	0.0	39.4	54.4	20.9	13.2	47.8	31.2	17.1
LnGrp LOS	D	C	C	D	A	D	D	C	B	D	C	B
Approach Vol, veh/h		311			372			1303			1363	
Approach Delay, s/veh		44.3			43.3			23.8			30.5	
Approach LOS		D			D			C			C	

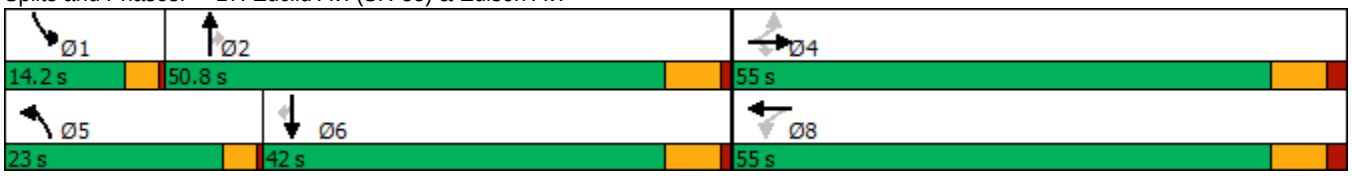
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	47.2	14.0	21.6	11.5	42.0	14.8	20.8
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	44.5	15.2	35.3	10.5	39.0	14.5	36.0
Max Q Clear Time (g_c+I1), s	3.8	26.4	10.6	5.7	8.4	31.7	11.4	12.2
Green Ext Time (p_c), s	0.0	7.1	0.1	0.4	0.0	4.4	0.1	0.8

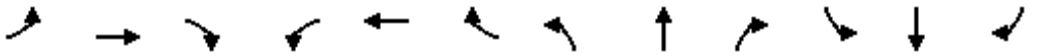
Intersection Summary	
HCM 6th Ctrl Delay	30.6
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	165	269	141	36	447	236	1005	40	71	1020	177
Future Volume (vph)	165	269	141	36	447	236	1005	40	71	1020	177
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	55.0	55.0	55.0	55.0	55.0	23.0	50.8	50.8	14.2	42.0	42.0
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	19.2%	42.3%	42.3%	11.8%	35.0%	35.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	48.0	48.0	48.0	48.0	48.0	19.3	48.1	48.1	9.0	36.0	36.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.16	0.40	0.40	0.08	0.30	0.30
v/c Ratio	1.08	0.39	0.21	0.11	0.76	0.95	0.76	0.06	0.62	1.03	0.34
Control Delay	130.7	27.5	4.4	23.8	38.6	94.5	36.3	2.4	74.8	78.5	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	130.7	27.5	4.4	23.8	38.6	94.5	36.3	2.4	74.8	78.5	13.0
LOS	F	C	A	C	D	F	D	A	E	E	B
Approach Delay		51.5			37.6		45.9			69.2	
Approach LOS		D			D		D			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.8	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 53.6	Intersection LOS: D
Intersection Capacity Utilization 104.0%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	269	141	36	447	68	236	1005	40	71	1020	177
Future Volume (veh/h)	165	269	141	36	447	68	236	1005	40	71	1020	177
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	172	280	92	38	466	66	246	1047	34	74	1062	133
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	177	720	610	341	617	87	263	1388	619	92	1026	447
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.16	0.41	0.41	0.06	0.30	0.30
Sat Flow, veh/h	836	1800	1524	969	1542	218	1619	3420	1525	1619	3420	1489
Grp Volume(v), veh/h	172	280	92	38	0	532	246	1047	34	74	1062	133
Grp Sat Flow(s),veh/h/ln	836	1800	1524	969	0	1760	1619	1710	1525	1619	1710	1489
Q Serve(g_s), s	16.8	13.3	4.6	3.5	0.0	31.2	18.0	31.5	1.6	5.4	36.0	8.2
Cycle Q Clear(g_c), s	48.0	13.3	4.6	16.7	0.0	31.2	18.0	31.5	1.6	5.4	36.0	8.2
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	177	720	610	341	0	704	263	1388	619	92	1026	447
V/C Ratio(X)	0.97	0.39	0.15	0.11	0.00	0.76	0.94	0.75	0.05	0.81	1.04	0.30
Avail Cap(c_a), veh/h	177	720	610	341	0	704	263	1388	619	144	1026	447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.3	25.6	23.0	31.5	0.0	31.0	49.6	30.5	21.7	55.9	42.0	32.3
Incr Delay (d2), s/veh	58.7	0.3	0.1	0.1	0.0	4.7	37.8	2.4	0.0	7.7	37.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	5.5	1.6	0.8	0.0	13.4	9.7	12.4	0.6	2.3	19.5	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	113.0	25.9	23.1	31.7	0.0	35.6	87.4	32.9	21.7	63.7	79.6	32.7
LnGrp LOS	F	C	C	C	A	D	F	C	C	E	F	C
Approach Vol, veh/h		544			570			1327			1269	
Approach Delay, s/veh		53.0			35.4			42.7			73.7	
Approach LOS		D			D			D			E	

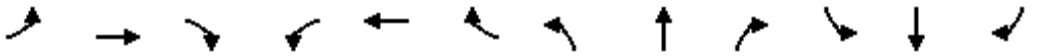
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.3	54.7		55.0	23.0	42.0		55.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	10.7	44.8		48.0	19.5	36.0		48.0				
Max Q Clear Time (g_c+I1), s	7.4	33.5		50.0	20.0	38.0		33.2				
Green Ext Time (p_c), s	0.0	4.9		0.0	0.0	0.0		2.9				

Intersection Summary												
HCM 6th Ctrl Delay			53.7									
HCM 6th LOS			D									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	71	27	168	34	160	182	1216	13	53	1194	42
Future Volume (vph)	71	27	168	34	160	182	1216	13	53	1194	42
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	46.8	46.8	46.8	46.8	46.8	24.0	63.5	63.5	9.7	49.2	49.2
Total Split (%)	39.0%	39.0%	39.0%	39.0%	39.0%	20.0%	52.9%	52.9%	8.1%	41.0%	41.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	18.0	18.0	18.0	18.0	18.0	14.8	51.3	51.3	6.3	40.3	40.3
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.17	0.58	0.58	0.07	0.46	0.46
v/c Ratio	0.44	0.08	0.38	0.14	0.57	0.68	0.62	0.01	0.47	0.78	0.06
Control Delay	40.3	28.9	7.2	30.2	36.0	51.2	16.1	0.0	59.7	26.6	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.3	28.9	7.2	30.2	36.0	51.2	16.1	0.0	59.7	26.6	1.2
LOS	D	C	A	C	D	D	B	A	E	C	A
Approach Delay		18.2			35.2		20.5			27.1	
Approach LOS		B			D		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 87.7	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 24.1	Intersection LOS: C
Intersection Capacity Utilization 78.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	27	168	34	160	47	182	1216	13	53	1194	42
Future Volume (veh/h)	71	27	168	34	160	47	182	1216	13	53	1194	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	72	28	85	35	163	40	186	1241	12	54	1218	32
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	216	366	310	340	284	70	227	1862	830	76	1543	687
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.14	0.54	0.54	0.05	0.45	0.45
Sat Flow, veh/h	1131	1800	1525	1228	1396	343	1619	3420	1525	1619	3420	1524
Grp Volume(v), veh/h	72	28	85	35	0	203	186	1241	12	54	1218	32
Grp Sat Flow(s),veh/h/ln	1131	1800	1525	1228	0	1738	1619	1710	1525	1619	1710	1524
Q Serve(g_s), s	4.2	0.9	3.2	1.6	0.0	7.2	7.6	17.7	0.2	2.2	20.7	0.8
Cycle Q Clear(g_c), s	11.4	0.9	3.2	2.5	0.0	7.2	7.6	17.7	0.2	2.2	20.7	0.8
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	216	366	310	340	0	353	227	1862	830	76	1543	687
V/C Ratio(X)	0.33	0.08	0.27	0.10	0.00	0.57	0.82	0.67	0.01	0.71	0.79	0.05
Avail Cap(c_a), veh/h	684	1110	940	847	0	1072	487	2901	1294	147	2184	973
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	22.0	22.9	23.0	0.0	24.5	28.5	11.1	7.1	32.0	15.9	10.5
Incr Delay (d2), s/veh	0.7	0.1	0.4	0.1	0.0	1.1	5.4	0.4	0.0	8.7	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.3	1.1	0.4	0.0	2.7	2.9	4.6	0.1	1.0	6.3	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.3	22.0	23.3	23.1	0.0	25.6	33.9	11.5	7.1	40.7	17.3	10.5
LnGrp LOS	C	C	C	C	A	C	C	B	A	D	B	B
Approach Vol, veh/h		185			238			1439			1304	
Approach Delay, s/veh		25.8			25.2			14.4			18.1	
Approach LOS		C			C			B			B	

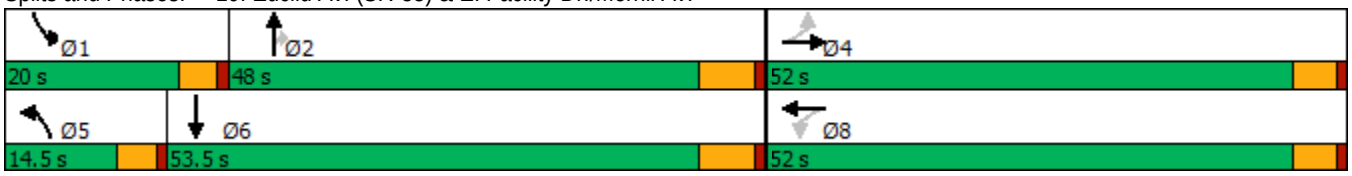
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	42.8		18.6	13.1	36.4		18.6				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	6.2	57.8		42.0	20.5	43.5		42.0				
Max Q Clear Time (g_c+I1), s	4.2	19.7		13.4	9.6	22.7		9.2				
Green Ext Time (p_c), s	0.0	9.9		0.5	0.2	8.0		0.9				

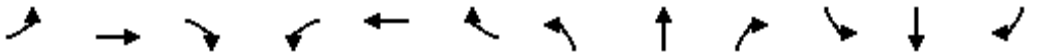
Intersection Summary			
HCM 6th Ctrl Delay		17.4	
HCM 6th LOS		B	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	4	8	258	50	11	1041	212	234	1108
Future Volume (vph)	4	8	258	50	11	1041	212	234	1108
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	52.0	52.0	52.0	52.0	14.5	48.0	48.0	20.0	53.5
Total Split (%)	43.3%	43.3%	43.3%	43.3%	12.1%	40.0%	40.0%	16.7%	44.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		47.0		47.0	10.0	40.6	40.6	15.5	57.7
Actuated g/C Ratio		0.40		0.40	0.08	0.34	0.34	0.13	0.49
v/c Ratio		0.05		1.15	0.08	0.92	0.37	1.14	0.71
Control Delay		12.9		117.3	52.4	50.5	17.3	152.7	27.8
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		12.9		117.3	52.4	50.5	17.3	152.7	27.8
LOS		B		F	D	D	B	F	C
Approach Delay		12.9		117.3		44.9			48.9
Approach LOS		B		F		D			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.6	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.15	
Intersection Signal Delay: 60.9	Intersection LOS: E
Intersection Capacity Utilization 106.1%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	8	18	258	50	367	11	1041	212	234	1108	41
Future Volume (veh/h)	4	8	18	258	50	367	11	1041	212	234	1108	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	4	8	18	266	52	351	11	1073	176	241	1142	28
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	93	185	366	280	46	313	42	1165	520	212	1521	37
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.03	0.34	0.34	0.13	0.45	0.45
Sat Flow, veh/h	147	467	920	597	117	787	1619	3420	1525	1619	3409	84
Grp Volume(v), veh/h	30	0	0	669	0	0	11	1073	176	241	573	597
Grp Sat Flow(s),veh/h/ln	1534	0	0	1501	0	0	1619	1710	1525	1619	1710	1783
Q Serve(g_s), s	0.0	0.0	0.0	45.7	0.0	0.0	0.8	35.7	10.2	15.5	33.0	33.0
Cycle Q Clear(g_c), s	1.3	0.0	0.0	47.0	0.0	0.0	0.8	35.7	10.2	15.5	33.0	33.0
Prop In Lane	0.13		0.60	0.40		0.52	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	644	0	0	639	0	0	42	1165	520	212	763	795
V/C Ratio(X)	0.05	0.00	0.00	1.05	0.00	0.00	0.26	0.92	0.34	1.14	0.75	0.75
Avail Cap(c_a), veh/h	644	0	0	639	0	0	137	1214	542	212	763	795
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.9	0.0	0.0	37.1	0.0	0.0	56.5	37.5	29.1	51.4	27.3	27.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	48.6	0.0	0.0	1.2	11.2	0.4	103.2	4.2	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	26.4	0.0	0.0	0.3	15.6	3.6	12.1	13.1	13.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.9	0.0	0.0	85.7	0.0	0.0	57.8	48.7	29.5	154.6	31.5	31.3
LnGrp LOS	C	A	A	F	A	A	E	D	C	F	C	C
Approach Vol, veh/h		30			669			1260			1411	
Approach Delay, s/veh		21.9			85.7			46.1			52.4	
Approach LOS		C			F			D			D	

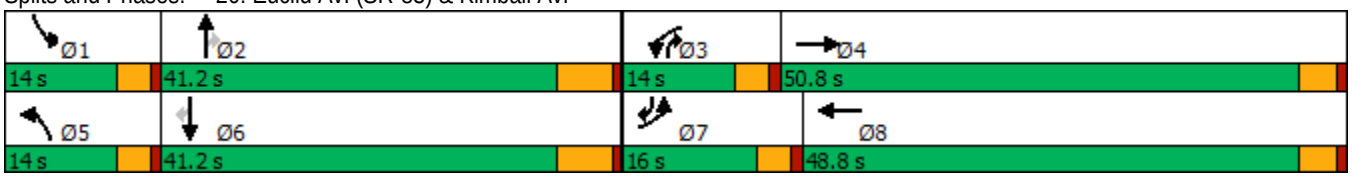
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.0	46.3		52.0	7.5	58.8		52.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	15.5	42.0		47.0	10.0	47.5		47.0				
Max Q Clear Time (g_c+I1), s	17.5	37.7		3.3	2.8	35.0		49.0				
Green Ext Time (p_c), s	0.0	2.6		0.1	0.0	5.3		0.0				

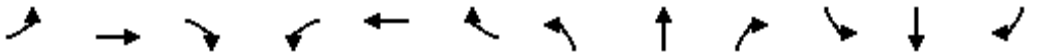
Intersection Summary												
HCM 6th Ctrl Delay			56.4									
HCM 6th LOS			E									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	135	255	52	779	103	860	44	220	687	402
Future Volume (vph)	135	255	52	779	103	860	44	220	687	402
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	16.0	50.8	14.0	48.8	14.0	41.2	14.0	14.0	41.2	16.0
Total Split (%)	13.3%	42.3%	11.7%	40.7%	11.7%	34.3%	11.7%	11.7%	34.3%	13.3%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	10.7	41.5	10.1	37.5	10.1	32.0	48.2	10.1	32.0	44.8
Actuated g/C Ratio	0.10	0.38	0.09	0.34	0.09	0.29	0.44	0.09	0.29	0.41
v/c Ratio	0.48	0.23	0.36	0.89	0.70	0.88	0.06	0.82	0.70	0.61
Control Delay	54.9	23.4	57.7	43.0	76.2	48.2	5.2	74.6	39.3	22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.9	23.4	57.7	43.0	76.2	48.2	5.2	74.6	39.3	22.4
LOS	D	C	E	D	E	D	A	E	D	C
Approach Delay		33.3		43.7		49.2			40.0	
Approach LOS		C		D		D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.1	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 42.7	Intersection LOS: D
Intersection Capacity Utilization 86.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	255	39	52	779	228	103	860	44	220	687	402
Future Volume (veh/h)	135	255	39	52	779	228	103	860	44	220	687	402
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	138	260	31	53	795	197	105	878	33	224	701	281
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	286	1078	127	124	896	222	152	1015	569	278	1016	595
Arrive On Green	0.10	0.35	0.35	0.08	0.33	0.33	0.09	0.30	0.30	0.09	0.30	0.30
Sat Flow, veh/h	2956	3081	364	1619	2716	673	1619	3420	1525	2956	3420	1506
Grp Volume(v), veh/h	138	143	148	53	501	491	105	878	33	224	701	281
Grp Sat Flow(s),veh/h/ln	1478	1710	1735	1619	1710	1679	1619	1710	1525	1478	1710	1506
Q Serve(g_s), s	4.5	6.0	6.1	3.2	28.1	28.1	6.4	24.6	1.4	7.5	18.4	14.1
Cycle Q Clear(g_c), s	4.5	6.0	6.1	3.2	28.1	28.1	6.4	24.6	1.4	7.5	18.4	14.1
Prop In Lane	1.00		0.21	1.00		0.40	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	286	599	607	124	564	554	152	1015	569	278	1016	595
V/C Ratio(X)	0.48	0.24	0.24	0.43	0.89	0.89	0.69	0.87	0.06	0.81	0.69	0.47
Avail Cap(c_a), veh/h	350	782	793	160	748	734	160	1189	647	292	1189	671
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	23.3	23.4	44.6	32.2	32.2	44.5	33.7	20.3	45.0	31.5	22.9
Incr Delay (d2), s/veh	0.5	0.2	0.2	0.9	8.4	8.6	9.3	6.1	0.0	13.3	1.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	2.3	2.4	1.3	12.2	12.0	2.8	10.2	0.5	3.1	7.1	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.8	23.6	23.6	45.5	40.6	40.7	53.8	39.8	20.4	58.3	32.9	23.5
LnGrp LOS	D	C	C	D	D	D	D	D	C	E	C	C
Approach Vol, veh/h		429			1045			1016			1206	
Approach Delay, s/veh		30.1			40.9			40.6			35.4	
Approach LOS		C			D			D			D	

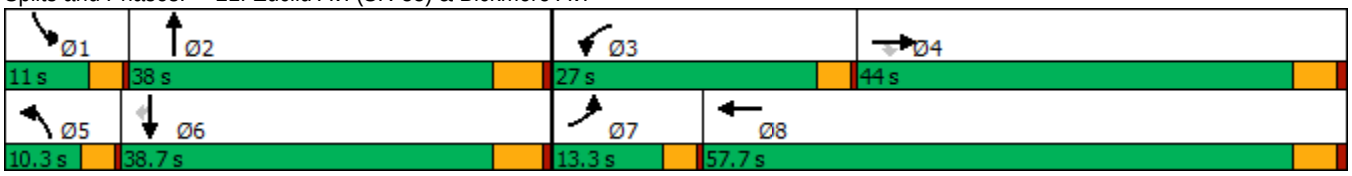
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	36.1	11.7	40.0	13.5	36.1	13.8	37.9
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	10.0	35.2	10.0	46.3	10.0	35.2	12.0	44.3
Max Q Clear Time (g_c+I1), s	9.5	26.6	5.2	8.1	8.4	20.4	6.5	30.1
Green Ext Time (p_c), s	0.0	3.5	0.0	1.6	0.0	4.5	0.1	3.3

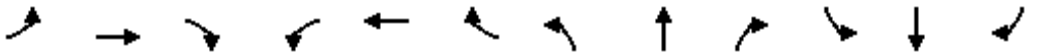
Intersection Summary	
HCM 6th Ctrl Delay	37.8
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	60	11	32	190	215	55	686	44	646	180
Future Volume (vph)	60	11	32	190	215	55	686	44	646	180
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	13.3	44.0	44.0	27.0	57.7	10.3	38.0	11.0	38.7	38.7
Total Split (%)	11.1%	36.7%	36.7%	22.5%	48.1%	8.6%	31.7%	9.2%	32.3%	32.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	8.5	15.7	15.7	22.5	26.6	7.4	26.3	7.5	24.2	24.2
Actuated g/C Ratio	0.11	0.20	0.20	0.28	0.33	0.09	0.33	0.09	0.30	0.30
v/c Ratio	0.39	0.03	0.09	0.46	0.71	0.41	0.71	0.32	0.69	0.33
Control Delay	50.0	28.1	0.5	37.2	30.0	53.5	31.3	50.8	31.9	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.0	28.1	0.5	37.2	30.0	53.5	31.3	50.8	31.9	6.2
LOS	D	C	A	D	C	D	C	D	C	A
Approach Delay		32.2			32.4		32.9		27.5	
Approach LOS		C			C		C		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 79.6	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 30.7	Intersection LOS: C
Intersection Capacity Utilization 67.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	11	32	190	215	161	55	686	28	44	646	180
Future Volume (veh/h)	60	11	32	190	215	161	55	686	28	44	646	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	67	12	32	211	239	140	61	762	24	49	718	152
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	96	313	265	260	293	172	90	978	31	78	963	430
Arrive On Green	0.06	0.17	0.17	0.16	0.28	0.28	0.06	0.29	0.29	0.05	0.28	0.28
Sat Flow, veh/h	1619	1800	1525	1619	1064	623	1619	3384	107	1619	3420	1525
Grp Volume(v), veh/h	67	12	32	211	0	379	61	385	401	49	718	152
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1688	1619	1710	1781	1619	1710	1525
Q Serve(g_s), s	2.2	0.3	0.9	6.7	0.0	11.2	2.0	11.0	11.0	1.6	10.2	4.2
Cycle Q Clear(g_c), s	2.2	0.3	0.9	6.7	0.0	11.2	2.0	11.0	11.0	1.6	10.2	4.2
Prop In Lane	1.00		1.00	1.00		0.37	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	96	313	265	260	0	464	90	494	515	78	963	430
V/C Ratio(X)	0.70	0.04	0.12	0.81	0.00	0.82	0.68	0.78	0.78	0.63	0.75	0.35
Avail Cap(c_a), veh/h	298	1317	1116	714	0	1669	207	1043	1086	228	2130	950
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	18.3	18.6	21.6	0.0	18.1	24.7	17.4	17.4	24.9	17.4	15.3
Incr Delay (d2), s/veh	3.5	0.0	0.1	2.3	0.0	1.4	3.3	1.0	1.0	3.0	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.1	0.3	2.4	0.0	3.8	0.7	3.4	3.5	0.6	3.1	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.1	18.3	18.7	23.9	0.0	19.4	27.9	18.4	18.4	27.9	17.8	15.5
LnGrp LOS	C	B	B	C	A	B	C	B	B	C	B	B
Approach Vol, veh/h		111			590			847			919	
Approach Delay, s/veh		24.3			21.0			19.1			18.0	
Approach LOS		C			C			B			B	

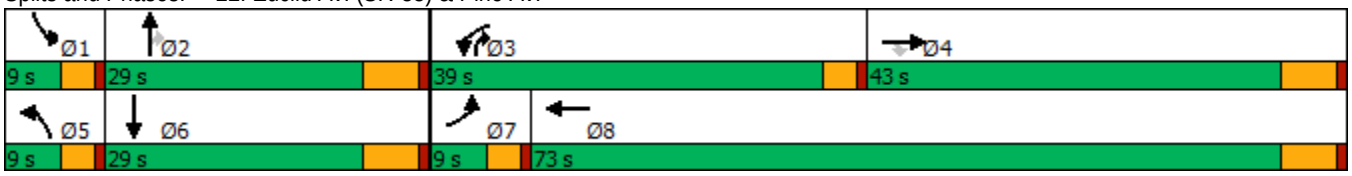
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.1	20.9	12.0	14.3	6.5	20.5	6.6	19.7
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	7.5	32.5	23.5	39.0	6.8	33.2	9.8	52.7
Max Q Clear Time (g_c+I1), s	3.6	13.0	8.7	2.9	4.0	12.2	4.2	13.2
Green Ext Time (p_c), s	0.0	2.4	0.2	0.1	0.0	2.8	0.0	1.5

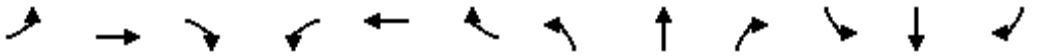
Intersection Summary	
HCM 6th Ctrl Delay	19.4
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	8	186	50	1077	332	57	744	705	52	697
Future Volume (vph)	8	186	50	1077	332	57	744	705	52	697
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	39.0	73.0	9.0	29.0	39.0	9.0	29.0
Total Split (%)	7.5%	35.8%	35.8%	32.5%	60.8%	7.5%	24.2%	32.5%	7.5%	24.2%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.0	19.1	19.1	35.3	56.8	5.0	25.1	62.4	5.0	23.2
Actuated g/C Ratio	0.05	0.19	0.19	0.34	0.55	0.05	0.24	0.61	0.05	0.23
v/c Ratio	0.10	0.57	0.13	1.10	0.43	0.75	0.92	0.66	0.68	0.96
Control Delay	54.0	44.3	0.7	91.9	14.6	99.9	56.4	8.4	90.8	64.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.0	44.3	0.7	91.9	14.6	99.9	56.4	8.4	90.8	64.2
LOS	D	D	A	F	B	F	E	A	F	E
Approach Delay		35.6			70.9		35.6			66.0
Approach LOS		D			E		D			E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 54.5	Intersection LOS: D
Intersection Capacity Utilization 89.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	186	50	1077	332	72	57	744	705	52	697	17
Future Volume (veh/h)	8	186	50	1077	332	72	57	744	705	52	697	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	8	192	0	1110	342	72	59	767	471	54	719	14
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	16	249		1090	716	151	73	826	923	67	815	16
Arrive On Green	0.01	0.14	0.00	0.37	0.50	0.50	0.05	0.24	0.24	0.04	0.24	0.24
Sat Flow, veh/h	1619	1800	1525	2956	1442	304	1619	3420	1493	1619	3431	67
Grp Volume(v), veh/h	8	192	0	1110	0	414	59	767	471	54	358	375
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1745	1619	1710	1493	1619	1710	1788
Q Serve(g_s), s	0.5	9.8	0.0	35.0	0.0	14.9	3.4	20.8	17.1	3.1	19.2	19.2
Cycle Q Clear(g_c), s	0.5	9.8	0.0	35.0	0.0	14.9	3.4	20.8	17.1	3.1	19.2	19.2
Prop In Lane	1.00		1.00	1.00		0.17	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	16	249		1090	0	867	73	826	923	67	406	424
V/C Ratio(X)	0.49	0.77		1.02	0.00	0.48	0.81	0.93	0.51	0.81	0.88	0.88
Avail Cap(c_a), veh/h	85	702		1090	0	1232	85	829	924	85	414	433
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.8	39.5	0.0	30.0	0.0	15.8	44.9	35.2	10.5	45.2	34.9	34.9
Incr Delay (d2), s/veh	8.4	7.1	0.0	32.0	0.0	0.6	32.6	16.3	0.2	28.3	18.5	17.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.6	0.0	15.9	0.0	5.3	2.0	9.8	4.5	1.7	9.4	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.1	46.5	0.0	62.0	0.0	16.3	77.5	51.5	10.7	73.5	53.5	52.9
LnGrp LOS	E	D		F	A	B	E	D	B	E	D	D
Approach Vol, veh/h		200	A		1524			1297			787	
Approach Delay, s/veh		46.9			49.6			37.9			54.5	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	28.9	39.0	19.1	8.3	28.5	5.0	53.2
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.0	23.0	35.0	37.0	5.0	23.0	5.0	67.0
Max Q Clear Time (g_c+I1), s	5.1	22.8	37.0	11.8	5.4	21.2	2.5	16.9
Green Ext Time (p_c), s	0.0	0.1	0.0	1.3	0.0	0.5	0.0	3.8

Intersection Summary	
HCM 6th Ctrl Delay	46.5
HCM 6th LOS	D

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	35
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	51	245	14	20	532	16	18	77	14	19	105	46
Future Vol, veh/h	51	245	14	20	532	16	18	77	14	19	105	46
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	56	269	15	22	585	18	20	85	15	21	115	51
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	17.3	55.3	12.5	13.7
HCM LOS	C	F	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	16%	4%	11%
Vol Thru, %	71%	79%	94%	62%
Vol Right, %	13%	5%	3%	27%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	109	310	568	170
LT Vol	18	51	20	19
Through Vol	77	245	532	105
RT Vol	14	14	16	46
Lane Flow Rate	120	341	624	187
Geometry Grp	1	1	1	1
Degree of Util (X)	0.239	0.578	0.984	0.355
Departure Headway (Hd)	7.169	6.103	5.674	6.841
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	498	589	643	523
Service Time	5.254	4.166	3.674	4.917
HCM Lane V/C Ratio	0.241	0.579	0.97	0.358
HCM Control Delay	12.5	17.3	55.3	13.7
HCM Lane LOS	B	C	F	B
HCM 95th-tile Q	0.9	3.7	14.7	1.6

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	51	3	1	211	20	18	58	3	30	60	51
Future Vol, veh/h	19	51	3	1	211	20	18	58	3	30	60	51
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	20	55	3	1	227	22	19	62	3	32	65	55
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.4	9.6	8.6	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	26%	0%	21%
Vol Thru, %	73%	70%	91%	43%
Vol Right, %	4%	4%	9%	36%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	79	73	232	141
LT Vol	18	19	1	30
Through Vol	58	51	211	60
RT Vol	3	3	20	51
Lane Flow Rate	85	78	249	152
Geometry Grp	1	1	1	1
Degree of Util (X)	0.115	0.104	0.312	0.194
Departure Headway (Hd)	4.873	4.781	4.506	4.597
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	733	747	796	779
Service Time	2.919	2.826	2.542	2.637
HCM Lane V/C Ratio	0.116	0.104	0.313	0.195
HCM Control Delay	8.6	8.4	9.6	8.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.3	1.3	0.7

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	44	401	723	63	26	44
Future Vol, veh/h	44	401	723	63	26	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	47	427	769	67	28	47

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	836	0	-	0	1324	803
Stage 1	-	-	-	-	803	-
Stage 2	-	-	-	-	521	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	807	-	-	-	251	462
Stage 1	-	-	-	-	444	-
Stage 2	-	-	-	-	600	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	807	-	-	-	232	462
Mov Cap-2 Maneuver	-	-	-	-	232	-
Stage 1	-	-	-	-	410	-
Stage 2	-	-	-	-	600	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	18.6
HCM LOS			C

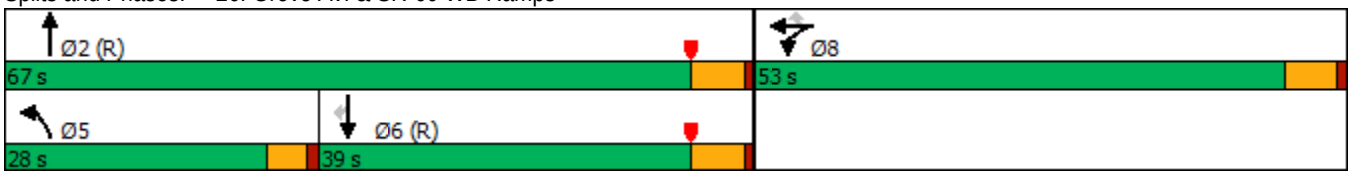
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	807	-	-	-	338
HCM Lane V/C Ratio	0.058	-	-	-	0.22
HCM Control Delay (s)	9.7	0	-	-	18.6
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.8

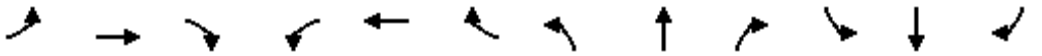
Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	577	270	1101	717	588
Future Volume (vph)	0	577	270	1101	717	588
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	53.0	53.0	28.0	67.0	39.0	39.0
Total Split (%)	44.2%	44.2%	23.3%	55.8%	32.5%	32.5%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	254	0	577	270	1101	0	0	717	588
Future Volume (veh/h)	0	0	0	254	0	577	270	1101	0	0	717	588
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				276	0	498	293	1197	0	0	779	528
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				606	0	539	315	2052	0	0	1286	571
Arrive On Green				0.33	0.00	0.33	0.35	1.00	0.00	0.00	0.36	0.36
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1603
Grp Volume(v), veh/h				276	0	498	293	1197	0	0	779	528
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1603
Q Serve(g_s), s				14.4	0.0	35.7	18.7	0.0	0.0	0.0	21.3	37.9
Cycle Q Clear(g_c), s				14.4	0.0	35.7	18.7	0.0	0.0	0.0	21.3	37.9
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				606	0	539	315	2052	0	0	1286	571
V/C Ratio(X)				0.46	0.00	0.92	0.93	0.58	0.00	0.00	0.61	0.92
Avail Cap(c_a), veh/h				712	0	633	353	2052	0	0	1286	571
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.3	0.0	38.4	38.4	0.0	0.0	0.0	31.7	37.1
Incr Delay (d2), s/veh				0.5	0.0	17.7	4.2	0.1	0.0	0.0	2.1	23.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.1	0.0	16.1	6.7	0.0	0.0	0.0	9.3	17.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				31.9	0.0	56.1	42.7	0.1	0.0	0.0	33.8	60.1
LnGrp LOS				C	A	E	D	A	A	A	C	E
Approach Vol, veh/h					774			1490			1307	
Approach Delay, s/veh					47.5			8.5			44.4	
Approach LOS					D			A			D	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		74.0			25.5	48.6		46.0				
Change Period (Y+Rc), s		5.8			4.6	5.8		5.8				
Max Green Setting (Gmax), s		61.2			23.4	33.2		47.2				
Max Q Clear Time (g_c+I1), s		2.0			20.7	39.9		37.7				
Green Ext Time (p_c), s		10.7			0.1	0.0		2.4				

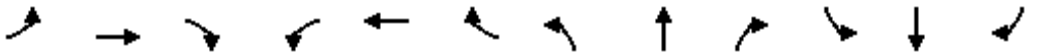
Intersection Summary												
HCM 6th Ctrl Delay			30.1									
HCM 6th LOS			C									

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	1	201	718	367	603
Future Volume (vph)	1	201	718	367	603
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	48.0	48.0	44.0	28.0	72.0
Total Split (%)	40.0%	40.0%	36.7%	23.3%	60.0%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	655	1	201	0	0	0	0	718	369	367	603	0
Future Volume (veh/h)	655	1	201	0	0	0	0	718	369	367	603	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	712	1	143				0	780	292	399	655	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	635	1	565				0	817	306	353	1992	0
Arrive On Green	0.35	0.35	0.35				0.00	0.32	0.32	0.39	1.00	0.00
Sat Flow, veh/h	1807	3	1607				0	2663	961	1810	3705	0
Grp Volume(v), veh/h	713	0	143				0	548	524	399	655	0
Grp Sat Flow(s),veh/h/ln	1810	0	1607				0	1805	1724	1810	1805	0
Q Serve(g_s), s	42.2	0.0	7.6				0.0	35.7	35.7	23.4	0.0	0.0
Cycle Q Clear(g_c), s	42.2	0.0	7.6				0.0	35.7	35.7	23.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.56	1.00		0.00
Lane Grp Cap(c), veh/h	636	0	565				0	575	549	353	1992	0
V/C Ratio(X)	1.12	0.00	0.25				0.00	0.95	0.95	1.13	0.33	0.00
Avail Cap(c_a), veh/h	636	0	565				0	575	549	353	1992	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.70	0.70	0.63	0.63	0.00
Uniform Delay (d), s/veh	38.9	0.0	27.7				0.0	40.0	40.1	36.6	0.0	0.0
Incr Delay (d2), s/veh	73.6	0.0	0.2				0.0	22.0	22.9	79.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	30.7	0.0	2.9				0.0	18.6	17.9	15.4	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	112.5	0.0	27.9				0.0	62.1	62.9	116.0	0.3	0.0
LnGrp LOS	F	A	C				A	E	E	F	A	A
Approach Vol, veh/h		856						1072			1054	
Approach Delay, s/veh		98.3						62.5			44.1	
Approach LOS		F						E			D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	28.0	44.0		48.0		72.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	23.4	38.2		42.2		66.2
Max Q Clear Time (g_c+I1), s	25.4	37.7		44.2		2.0
Green Ext Time (p_c), s	0.0	0.3		0.0		4.6

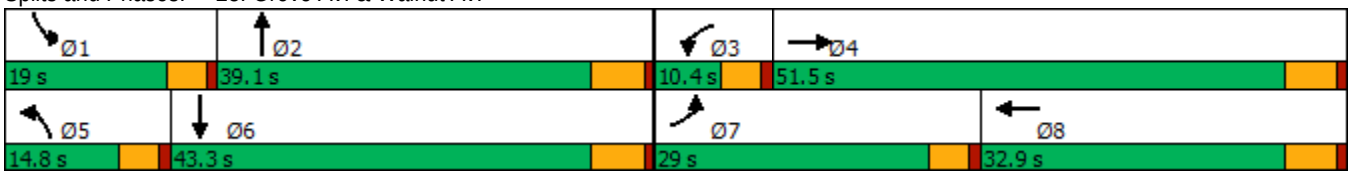
Intersection Summary		
HCM 6th Ctrl Delay		66.3
HCM 6th LOS		E

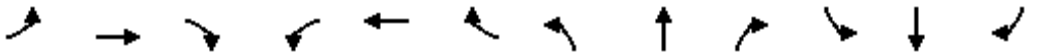
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	187	199	16	199	51	618	94	556
Future Volume (vph)	187	199	16	199	51	618	94	556
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	29.0	51.5	10.4	32.9	14.8	39.1	19.0	43.3
Total Split (%)	24.2%	42.9%	8.7%	27.4%	12.3%	32.6%	15.8%	36.1%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 99.5
Natural Cycle: 85
Control Type: Actuated-Uncoordinated

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	199	58	16	199	190	51	618	13	94	556	109
Future Volume (veh/h)	187	199	58	16	199	190	51	618	13	94	556	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	220	234	53	19	234	153	60	727	14	111	654	92
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	253	843	187	34	340	213	74	1257	24	137	1218	171
Arrive On Green	0.16	0.30	0.30	0.02	0.17	0.17	0.05	0.37	0.37	0.08	0.40	0.40
Sat Flow, veh/h	1619	2772	615	1619	2010	1260	1619	3432	66	1619	3010	423
Grp Volume(v), veh/h	220	142	145	19	198	189	60	362	379	111	371	375
Grp Sat Flow(s),veh/h/ln	1619	1710	1677	1619	1710	1560	1619	1710	1788	1619	1710	1723
Q Serve(g_s), s	12.3	5.9	6.1	1.1	10.1	10.6	3.4	15.8	15.8	6.2	15.3	15.3
Cycle Q Clear(g_c), s	12.3	5.9	6.1	1.1	10.1	10.6	3.4	15.8	15.8	6.2	15.3	15.3
Prop In Lane	1.00		0.37	1.00		0.81	1.00		0.04	1.00		0.25
Lane Grp Cap(c), veh/h	253	520	510	34	289	264	74	626	655	137	692	697
V/C Ratio(X)	0.87	0.27	0.28	0.56	0.68	0.72	0.81	0.58	0.58	0.81	0.54	0.54
Avail Cap(c_a), veh/h	426	843	827	101	500	456	178	626	655	252	692	697
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.2	24.5	24.6	45.0	36.2	36.4	43.8	23.6	23.6	41.7	21.0	21.0
Incr Delay (d2), s/veh	4.9	0.3	0.3	5.3	2.8	3.7	7.4	3.9	3.7	4.3	3.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	2.3	2.3	0.5	4.2	4.1	1.5	6.5	6.8	2.6	6.1	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.1	24.8	24.9	50.3	39.0	40.1	51.2	27.5	27.3	46.0	24.0	24.0
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		507			406			801			857	
Approach Delay, s/veh		32.7			40.0			29.2			26.8	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	39.7	6.5	34.0	8.9	43.3	19.1	21.5
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	33.3	5.8	45.7	10.2	37.5	24.4	27.1
Max Q Clear Time (g_c+I1), s	8.2	17.8	3.1	8.1	5.4	17.3	14.3	12.6
Green Ext Time (p_c), s	0.1	3.7	0.0	1.6	0.0	4.1	0.2	1.8

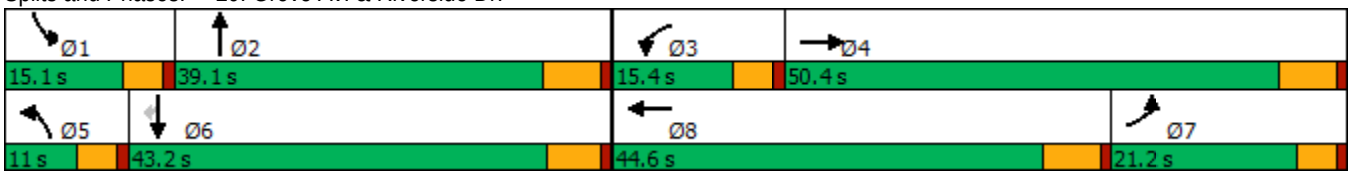
Intersection Summary	
HCM 6th Ctrl Delay	30.8
HCM 6th LOS	C

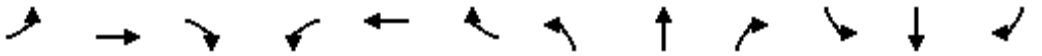
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	153	394	63	782	23	338	87	331	173
Future Volume (vph)	153	394	63	782	23	338	87	331	173
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	21.2	50.4	15.4	44.6	11.0	39.1	15.1	43.2	43.2
Total Split (%)	17.7%	42.0%	12.8%	37.2%	9.2%	32.6%	12.6%	36.0%	36.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 116.2
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	394	33	63	782	122	23	338	51	87	331	173
Future Volume (veh/h)	153	394	33	63	782	122	23	338	51	87	331	173
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	170	438	30	70	869	110	26	376	35	97	368	106
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	195	657	45	87	955	121	40	468	44	119	608	515
Arrive On Green	0.12	0.39	0.39	0.05	0.31	0.31	0.02	0.29	0.29	0.07	0.34	0.34
Sat Flow, veh/h	1619	1665	114	1619	3048	386	1619	1618	151	1619	1800	1525
Grp Volume(v), veh/h	170	0	468	70	488	491	26	0	411	97	368	106
Grp Sat Flow(s),veh/h/ln	1619	0	1779	1619	1710	1724	1619	0	1769	1619	1800	1525
Q Serve(g_s), s	11.7	0.0	24.6	4.9	31.2	31.2	1.8	0.0	24.5	6.7	19.4	3.7
Cycle Q Clear(g_c), s	11.7	0.0	24.6	4.9	31.2	31.2	1.8	0.0	24.5	6.7	19.4	3.7
Prop In Lane	1.00		0.06	1.00		0.22	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	195	0	702	87	536	540	40	0	511	119	608	515
V/C Ratio(X)	0.87	0.00	0.67	0.80	0.91	0.91	0.65	0.00	0.80	0.82	0.61	0.21
Avail Cap(c_a), veh/h	236	0	702	154	577	581	91	0	511	149	608	515
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	0.0	28.3	53.3	37.5	37.5	55.0	0.0	37.5	52.0	31.4	11.5
Incr Delay (d2), s/veh	21.8	0.0	2.4	6.3	17.8	17.7	6.5	0.0	12.6	19.6	4.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	10.2	2.1	14.9	15.0	0.8	0.0	11.8	3.3	8.8	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.0	0.0	30.8	59.5	55.4	55.3	61.6	0.0	50.1	71.6	35.8	12.4
LnGrp LOS	E	A	C	E	E	E	E	A	D	E	D	B
Approach Vol, veh/h		638			1049			437			571	
Approach Delay, s/veh		41.5			55.6			50.8			37.6	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.9	39.1	10.7	51.1	7.4	44.6	19.9	41.9
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	10.5	32.9	10.8	44.2	6.4	* 37	16.6	* 38
Max Q Clear Time (g_c+I1), s	8.7	26.5	6.9	26.6	3.8	21.4	13.7	33.2
Green Ext Time (p_c), s	0.0	1.2	0.0	2.4	0.0	2.1	0.1	2.5

Intersection Summary	
HCM 6th Ctrl Delay	47.7
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	22.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	64	91	28	11	82	30	37	325	14	47	368	32
Future Vol, veh/h	64	91	28	11	82	30	37	325	14	47	368	32
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	71	101	31	12	91	33	41	361	16	52	409	36
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	14.4	12.7	22.3	29.8
HCM LOS	B	B	C	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	35%	9%	11%
Vol Thru, %	86%	50%	67%	82%
Vol Right, %	4%	15%	24%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	376	183	123	447
LT Vol	37	64	11	47
Through Vol	325	91	82	368
RT Vol	14	28	30	32
Lane Flow Rate	418	203	137	497
Geometry Grp	1	1	1	1
Degree of Util (X)	0.703	0.391	0.268	0.814
Departure Headway (Hd)	6.055	6.931	7.066	5.902
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	597	516	506	611
Service Time	4.11	5.003	5.145	3.955
HCM Lane V/C Ratio	0.7	0.393	0.271	0.813
HCM Control Delay	22.3	14.4	12.7	29.8
HCM Lane LOS	C	B	B	D
HCM 95th-tile Q	5.6	1.8	1.1	8.3

Intersection	
Intersection Delay, s/veh	15.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	45	47	25	36	102	40	36	267	11	42	288	43
Future Vol, veh/h	45	47	25	36	102	40	36	267	11	42	288	43
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	50	52	28	40	113	44	40	297	12	47	320	48
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.5	12.5	15.3	17.5
HCM LOS	B	B	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	38%	20%	11%
Vol Thru, %	85%	40%	57%	77%
Vol Right, %	4%	21%	22%	12%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	314	117	178	373
LT Vol	36	45	36	42
Through Vol	267	47	102	288
RT Vol	11	25	40	43
Lane Flow Rate	349	130	198	414
Geometry Grp	1	1	1	1
Degree of Util (X)	0.544	0.234	0.344	0.629
Departure Headway (Hd)	5.71	6.476	6.258	5.465
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	635	556	578	655
Service Time	3.71	4.486	4.258	3.562
HCM Lane V/C Ratio	0.55	0.234	0.343	0.632
HCM Control Delay	15.3	11.5	12.5	17.5
HCM Lane LOS	C	B	B	C
HCM 95th-tile Q	3.3	0.9	1.5	4.4

Intersection	
Intersection Delay, s/veh	64.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	213	28	139	525	32	26	210	46	61	230	29
Future Vol, veh/h	34	213	28	139	525	32	26	210	46	61	230	29
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	37	234	31	153	577	35	29	231	51	67	253	32
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	31.4	327.2	33.3	40.5
HCM LOS	D	F	D	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	12%	20%	19%
Vol Thru, %	74%	77%	75%	72%
Vol Right, %	16%	10%	5%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	282	275	696	320
LT Vol	26	34	139	61
Through Vol	210	213	525	230
RT Vol	46	28	32	29
Lane Flow Rate	310	302	765	352
Geometry Grp	1	1	1	1
Degree of Util (X)	0.702	0.685	1.662	0.785
Departure Headway (Hd)	9.943	9.735	7.823	9.765
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	366	375	474	373
Service Time	7.943	7.735	5.823	7.765
HCM Lane V/C Ratio	0.847	0.805	1.614	0.944
HCM Control Delay	33.3	31.4	327.2	40.5
HCM Lane LOS	D	D	F	E
HCM 95th-tile Q	5.1	4.9	44.5	6.6

Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	33	34	14	12	86	17	64	314	12	29	305	79
Future Vol, veh/h	33	34	14	12	86	17	64	314	12	29	305	79
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	36	37	15	13	95	19	70	345	13	32	335	87

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	992	941	379	961	978	352	422	0	0	358	0	0
Stage 1	443	443	-	492	492	-	-	-	-	-	-	-
Stage 2	549	498	-	469	486	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	227	265	672	238	252	696	1148	-	-	1212	-	-
Stage 1	598	579	-	562	551	-	-	-	-	-	-	-
Stage 2	524	548	-	579	554	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	137	236	672	188	225	696	1148	-	-	1212	-	-
Mov Cap-2 Maneuver	137	236	-	188	225	-	-	-	-	-	-	-
Stage 1	553	559	-	519	509	-	-	-	-	-	-	-
Stage 2	384	506	-	509	535	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	36.7	34.6	1.4	0.6
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1148	-	-	200	244	1212	-	-
HCM Lane V/C Ratio	0.061	-	-	0.445	0.518	0.026	-	-
HCM Control Delay (s)	8.3	0	-	36.7	34.6	8.1	0	-
HCM Lane LOS	A	A	-	E	D	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	2.1	2.7	0.1	-	-

Intersection	
Intersection Delay, s/veh	177.7
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	88	367	666	301	233	98
Future Vol, veh/h	88	367	666	301	233	98
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	91	378	687	310	240	101
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	33.2	298.5	23.2
HCM LOS	D	F	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	19%	0%	70%
Vol Thru, %	81%	69%	0%
Vol Right, %	0%	31%	30%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	455	967	331
LT Vol	88	0	233
Through Vol	367	666	0
RT Vol	0	301	98
Lane Flow Rate	469	997	341
Geometry Grp	1	1	1
Degree of Util (X)	0.809	1.611	0.636
Departure Headway (Hd)	6.973	5.816	7.697
Convergence, Y/N	Yes	Yes	Yes
Cap	525	628	474
Service Time	4.973	3.857	5.697
HCM Lane V/C Ratio	0.893	1.588	0.719
HCM Control Delay	33.2	298.5	23.2
HCM Lane LOS	D	F	C
HCM 95th-tile Q	7.8	53.8	4.4

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	18	264	10	117	487	147	4	19	8	27	18	12
Future Vol, veh/h	18	264	10	117	487	147	4	19	8	27	18	12
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	18	269	10	119	497	150	4	19	8	28	18	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	647	0	0	280	0	0	1136	1196	275	1134	1126	572
Stage 1	-	-	-	-	-	-	311	311	-	810	810	-
Stage 2	-	-	-	-	-	-	825	885	-	324	316	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	948	-	-	1294	-	-	181	188	769	181	207	523
Stage 1	-	-	-	-	-	-	704	662	-	377	396	-
Stage 2	-	-	-	-	-	-	370	366	-	692	659	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	948	-	-	1293	-	-	142	156	768	142	172	523
Mov Cap-2 Maneuver	-	-	-	-	-	-	142	156	-	142	172	-
Stage 1	-	-	-	-	-	-	687	646	-	368	337	-
Stage 2	-	-	-	-	-	-	291	312	-	649	643	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.3	27.3	34.5
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	193	948	-	-	1293	-	-	179
HCM Lane V/C Ratio	0.164	0.019	-	-	0.092	-	-	0.325
HCM Control Delay (s)	27.3	8.9	0	-	8.1	0	-	34.5
HCM Lane LOS	D	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0.3	-	-	1.3

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	61	0	0	86	24	0	0	0	128	0	39
Future Vol, veh/h	10	61	0	0	86	24	0	0	0	128	0	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16965	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	12	74	0	0	105	29	0	0	0	156	0	48

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	134	0	-	-	-	0			218	218	120
Stage 1	-	-	-	-	-	-			120	120	-
Stage 2	-	-	-	-	-	-			98	98	-
Critical Hdwy	4.1	-	-	-	-	-			6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-			5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.4	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-			3.5	4	3.3
Pot Cap-1 Maneuver	1463	-	0	0	-	-			775	684	937
Stage 1	-	-	0	0	-	-			910	800	-
Stage 2	-	-	0	0	-	-			931	818	-
Platoon blocked, %		-			-	-					
Mov Cap-1 Maneuver	1463	-	-	-	-	-			768	0	937
Mov Cap-2 Maneuver	-	-	-	-	-	-			768	0	-
Stage 1	-	-	-	-	-	-			902	0	-
Stage 2	-	-	-	-	-	-			931	0	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1463	-	-	-	802
HCM Lane V/C Ratio	0.008	-	-	-	0.254
HCM Control Delay (s)	7.5	0	-	-	11
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	1

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑			✣				
Traffic Vol, veh/h	0	497	103	123	786	0	134	0	104	0	0	0
Future Vol, veh/h	0	497	103	123	786	0	134	0	104	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	512	106	127	810	0	138	0	107	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	618	0	0	1576	1576	512
Stage 1	-	-	-	-	-	-	512	512	-
Stage 2	-	-	-	-	-	-	1064	1064	-
Critical Hdwy	-	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	972	-	0	~ 122	111	566
Stage 1	0	-	-	-	-	0	606	540	-
Stage 2	0	-	-	-	-	0	335	302	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	972	-	-	~ 106	0	566
Mov Cap-2 Maneuver	-	-	-	-	-	-	220	0	-
Stage 1	-	-	-	-	-	-	606	0	-
Stage 2	-	-	-	-	-	-	291	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	54.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	300	-	-	972	-
HCM Lane V/C Ratio	0.818	-	-	0.13	-
HCM Control Delay (s)	54.1	-	-	9.3	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	6.8	-	-	0.4	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	121	432	48	26	859	33	14	0	33	10	0	36
Future Vol, veh/h	121	432	48	26	859	33	14	0	33	10	0	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	133	475	53	29	944	36	15	0	36	11	0	40

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	980	0	0	528	0	0	1808	1806	264	1524	1814	962
Stage 1	-	-	-	-	-	-	768	768	-	1020	1020	-
Stage 2	-	-	-	-	-	-	1040	1038	-	504	794	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	712	-	-	1049	-	-	56	80	741	90	79	313
Stage 1	-	-	-	-	-	-	365	414	-	288	317	-
Stage 2	-	-	-	-	-	-	281	311	-	524	403	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	712	-	-	1049	-	-	41	63	741	72	62	313
Mov Cap-2 Maneuver	-	-	-	-	-	-	85	127	-	162	167	-
Stage 1	-	-	-	-	-	-	297	337	-	234	308	-
Stage 2	-	-	-	-	-	-	239	302	-	405	328	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.3	0.2	25.7	22.2
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	225	712	-	-	1049	-	-	260
HCM Lane V/C Ratio	0.23	0.187	-	-	0.027	-	-	0.194
HCM Control Delay (s)	25.7	11.2	-	-	8.5	-	-	22.2
HCM Lane LOS	D	B	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.9	0.7	-	-	0.1	-	-	0.7

Intersection	
Int Delay, s/veh	9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	419	1	25	760	44	142	3	23	13	1	16
Future Vol, veh/h	55	419	1	25	760	44	142	3	23	13	1	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	200	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	59	451	1	27	817	47	153	3	25	14	1	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	864	0	0	452	0	0	1474	1488	226	1240	1465	841
Stage 1	-	-	-	-	-	-	570	570	-	895	895	-
Stage 2	-	-	-	-	-	-	904	918	-	345	570	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	787	-	-	1119	-	-	~ 97	125	783	143	129	368
Stage 1	-	-	-	-	-	-	479	509	-	338	362	-
Stage 2	-	-	-	-	-	-	334	353	-	649	509	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	787	-	-	1119	-	-	~ 85	113	783	127	116	368
Mov Cap-2 Maneuver	-	-	-	-	-	-	181	210	-	234	231	-
Stage 1	-	-	-	-	-	-	443	471	-	313	353	-
Stage 2	-	-	-	-	-	-	310	345	-	577	471	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.3	72.2	18.2
HCM LOS			F	C

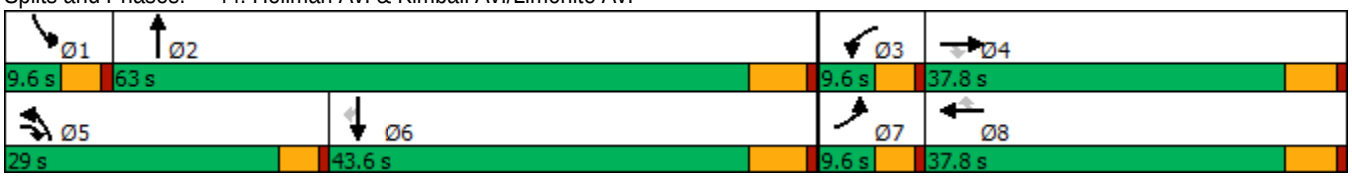
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	181	596	787	-	-	1119	-	-	234	356
HCM Lane V/C Ratio	0.844	0.047	0.075	-	-	0.024	-	-	0.06	0.051
HCM Control Delay (s)	83.4	11.3	9.9	-	-	8.3	-	-	21.4	15.7
HCM Lane LOS	F	B	A	-	-	A	-	-	C	C
HCM 95th %tile Q(veh)	6	0.1	0.2	-	-	0.1	-	-	0.2	0.2

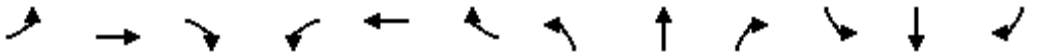
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	33	4	311	1	1	802	203	33	18	
Future Volume (vph)	33	4	311	1	1	802	203	33	18	
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	NA	Perm	
Protected Phases	7	4	5	3	8	5	2	6		1
Permitted Phases			4						6	
Detector Phase	7	4	5	3	8	5	2	6	6	
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	10.0	5.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	9.6	43.2	43.2	43.2	9.6
Total Split (s)	9.6	37.8	29.0	9.6	37.8	29.0	63.0	43.6	43.6	9.6
Total Split (%)	8.0%	31.5%	24.2%	8.0%	31.5%	24.2%	52.5%	36.3%	36.3%	8%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	5.2	5.2	5.2	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	4.6	6.2	6.2	6.2	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	None	None	Max	Max	None	None	None
Act Effct Green (s)	7.9	13.5	61.2	5.1	13.5	48.8	69.1	22.0	22.0	
Actuated g/C Ratio	0.09	0.16	0.71	0.06	0.16	0.56	0.80	0.25	0.25	
v/c Ratio	0.24	0.01	0.28	0.01	0.00	0.93	0.08	0.04	0.04	
Control Delay	45.8	31.5	2.2	46.0	31.0	48.5	5.5	23.1	0.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	45.8	31.5	2.2	46.0	31.0	48.5	5.5	23.1	0.2	
LOS	D	C	A	D	C	D	A	C	A	
Approach Delay		6.7			38.5		39.7	15.0		
Approach LOS		A			D		D	B		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 86.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 30.6	Intersection LOS: C
Intersection Capacity Utilization 80.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	4	311	1	1	0	802	203	3	0	33	18
Future Volume (veh/h)	33	4	311	1	1	0	802	203	3	0	33	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	35	4	327	1	1	0	844	214	3	0	35	19
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	52	328	692	4	517	231	439	2181	31	2	1057	472
Arrive On Green	0.03	0.18	0.18	0.00	0.15	0.00	0.27	0.63	0.63	0.00	0.31	0.31
Sat Flow, veh/h	1619	1800	1525	2956	3420	1525	1619	3453	48	1619	3420	1525
Grp Volume(v), veh/h	35	4	327	1	1	0	844	106	111	0	35	19
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	1710	1525	1619	1710	1791	1619	1710	1525
Q Serve(g_s), s	1.9	0.2	13.4	0.0	0.0	0.0	24.4	2.2	2.2	0.0	0.6	0.8
Cycle Q Clear(g_c), s	1.9	0.2	13.4	0.0	0.0	0.0	24.4	2.2	2.2	0.0	0.6	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	52	328	692	4	517	231	439	1080	1132	2	1057	472
V/C Ratio(X)	0.67	0.01	0.47	0.25	0.00	0.00	1.92	0.10	0.10	0.00	0.03	0.04
Avail Cap(c_a), veh/h	90	641	957	164	1217	543	439	1080	1132	90	1422	634
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	30.1	17.1	44.9	32.4	0.0	32.8	6.5	6.5	0.0	21.7	21.7
Incr Delay (d2), s/veh	5.3	0.0	0.5	11.3	0.0	0.0	422.9	0.2	0.2	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.1	4.3	0.0	0.0	0.0	60.3	0.7	0.7	0.0	0.2	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.3	30.1	17.6	56.1	32.4	0.0	455.6	6.7	6.7	0.0	21.7	21.8
LnGrp LOS	D	C	B	E	C	A	F	A	A	A	C	C
Approach Vol, veh/h		366			2			1061			54	
Approach Delay, s/veh		20.7			44.3			363.8			21.7	
Approach LOS		C			D			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	63.0	4.7	22.2	29.0	34.0	7.5	19.4
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	5.0	56.8	5.0	32.0	24.4	37.4	5.0	32.0
Max Q Clear Time (g_c+I1), s	0.0	4.2	2.0	15.4	26.4	2.8	3.9	2.0
Green Ext Time (p_c), s	0.0	1.1	0.0	1.0	0.0	0.2	0.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay		266.2
HCM 6th LOS		F

Intersection	
Intersection Delay, s/veh	190.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	415	30	212	797	42	21	0	120	120	0	10
Future Vol, veh/h	10	415	30	212	797	42	21	0	120	120	0	10
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	11	441	32	226	848	45	22	0	128	128	0	11
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

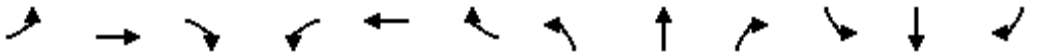
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	37.1	302.2	15.2	16.7
HCM LOS	E	F	C	C

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	15%	100%	0%	0%	100%	0%	92%
Vol Thru, %	0%	0%	100%	0%	0%	95%	0%
Vol Right, %	85%	0%	0%	100%	0%	5%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	141	10	415	30	212	839	130
LT Vol	21	10	0	0	212	0	120
Through Vol	0	0	415	0	0	797	0
RT Vol	120	0	0	30	0	42	10
Lane Flow Rate	150	11	441	32	226	893	138
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.316	0.022	0.844	0.055	0.483	1.774	0.327
Departure Headway (Hd)	8.553	8.205	7.69	6.969	7.704	7.156	9.496
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	423	439	477	517	465	509	382
Service Time	6.253	5.905	5.39	4.669	5.489	4.94	7.196
HCM Lane V/C Ratio	0.355	0.025	0.925	0.062	0.486	1.754	0.361
HCM Control Delay	15.2	11.1	39.7	10.1	17.6	374.1	16.7
HCM Lane LOS	C	B	E	B	C	F	C
HCM 95th-tile Q	1.3	0.1	8.4	0.2	2.6	54.2	1.4

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	4	499	672	1067	411
Future Volume (vph)	4	499	672	1067	411
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (%)	32.2%	32.2%	31.1%	67.8%	36.7%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	23.0	23.0	35.8	55.2	15.4
Actuated g/C Ratio	0.26	0.26	0.40	0.61	0.17
v/c Ratio	1.16	1.13	1.04	0.37	0.58
Control Delay	124.9	109.3	73.3	17.7	28.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	124.9	109.3	73.3	17.7	28.9
LOS	F	F	E	B	C
Approach Delay	116.9			39.2	28.9
Approach LOS	F			D	C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 60.2	Intersection LOS: E
Intersection Capacity Utilization 88.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	477	4	499	672	1067	0	0	411	199
Future Volume (veh/h)	0	0	0	477	4	499	672	1067	0	0	411	199
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				530	4	367	747	1186	0	0	457	211
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				459	3	411	660	3181	0	0	903	296
Arrive On Green				0.26	0.26	0.26	0.73	1.00	0.00	0.00	0.18	0.18
Sat Flow, veh/h				1797	14	1610	1810	5358	0	0	5168	1606
Grp Volume(v), veh/h				534	0	367	747	1186	0	0	457	211
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1729	0	0	1634	1606
Q Serve(g_s), s				23.0	0.0	19.8	32.8	0.0	0.0	0.0	7.5	11.1
Cycle Q Clear(g_c), s				23.0	0.0	19.8	32.8	0.0	0.0	0.0	7.5	11.1
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				463	0	411	660	3181	0	0	903	296
V/C Ratio(X)				1.15	0.00	0.89	1.13	0.37	0.00	0.00	0.51	0.71
Avail Cap(c_a), veh/h				463	0	411	660	3181	0	0	1481	485
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.36	0.36	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.5	0.0	32.3	12.2	0.0	0.0	0.0	33.0	34.5
Incr Delay (d2), s/veh				91.5	0.0	22.0	66.8	0.1	0.0	0.0	2.0	13.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				21.1	0.0	18.5	16.3	0.0	0.0	0.0	3.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				125.0	0.0	54.3	78.9	0.1	0.0	0.0	35.1	48.2
LnGrp LOS				F	A	D	F	A	A	A	D	D
Approach Vol, veh/h					901			1933			668	
Approach Delay, s/veh					96.2			30.6			39.2	
Approach LOS					F			C			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	61.0	29.0	38.6	22.4
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	55.2	23.0	24.0	* 27
Max Q Clear Time (g_c+I1), s	2.0	25.0	34.8	13.1
Green Ext Time (p_c), s	10.1	0.0	0.0	3.5

Intersection Summary	
HCM 6th Ctrl Delay	49.1
HCM 6th LOS	D

Notes

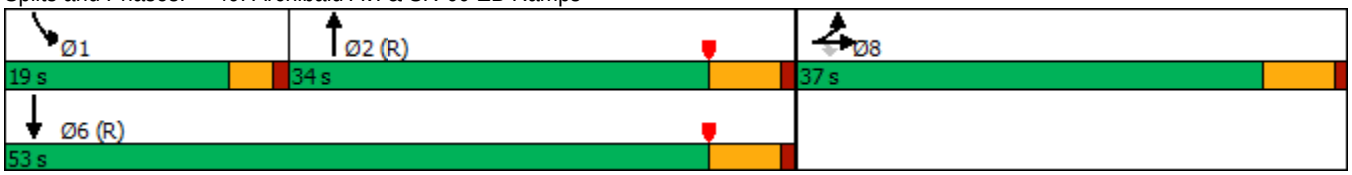
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

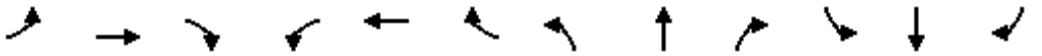
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	3	512	1363	161	727
Future Volume (vph)	3	512	1363	161	727
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (%)	41.1%	41.1%	37.8%	21.1%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	28.0	28.0	34.2	12.2	50.4
Actuated g/C Ratio	0.31	0.31	0.38	0.14	0.56
v/c Ratio	0.72	0.89	0.96dr	0.70	0.27
Control Delay	34.8	38.9	31.3	41.9	23.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	34.8	38.9	31.3	41.9	23.1
LOS	C	D	C	D	C
Approach Delay	37.2		31.3		26.5
Approach LOS	D		C		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 31.6	Intersection LOS: C
Intersection Capacity Utilization 88.9%	ICU Level of Service E
Analysis Period (min) 15	

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	377	3	512	0	0	0	0	1363	633	161	727	0
Future Volume (veh/h)	377	3	512	0	0	0	0	1363	633	161	727	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	401	3	328				0	1450	442	171	773	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	472	4	423				0	2232	680	209	3157	0
Arrive On Green	0.26	0.26	0.26				0.00	0.45	0.45	0.04	0.20	0.00
Sat Flow, veh/h	1797	13	1610				0	5239	1516	1810	5358	0
Grp Volume(v), veh/h	404	0	328				0	1429	463	171	773	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1587	1810	1729	0
Q Serve(g_s), s	19.1	0.0	17.0				0.0	20.4	20.4	8.4	11.3	0.0
Cycle Q Clear(g_c), s	19.1	0.0	17.0				0.0	20.4	20.4	8.4	11.3	0.0
Prop In Lane	0.99		1.00				0.00		0.96	1.00		0.00
Lane Grp Cap(c), veh/h	475	0	423				0	2200	712	209	3157	0
V/C Ratio(X)	0.85	0.00	0.78				0.00	0.65	0.65	0.82	0.24	0.00
Avail Cap(c_a), veh/h	628	0	558				0	2200	712	302	3157	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.46	0.46	0.79	0.79	0.00
Uniform Delay (d), s/veh	31.5	0.0	30.7				0.0	19.3	19.3	42.4	18.6	0.0
Incr Delay (d2), s/veh	8.4	0.0	5.0				0.0	0.7	2.1	5.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	0.0	6.7				0.0	6.9	7.0	4.1	4.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.9	0.0	35.7				0.0	20.0	21.4	48.2	18.7	0.0
LnGrp LOS	D	A	D				A	B	C	D	B	A
Approach Vol, veh/h		732						1892			944	
Approach Delay, s/veh		38.0						20.3			24.1	
Approach LOS		D						C			C	

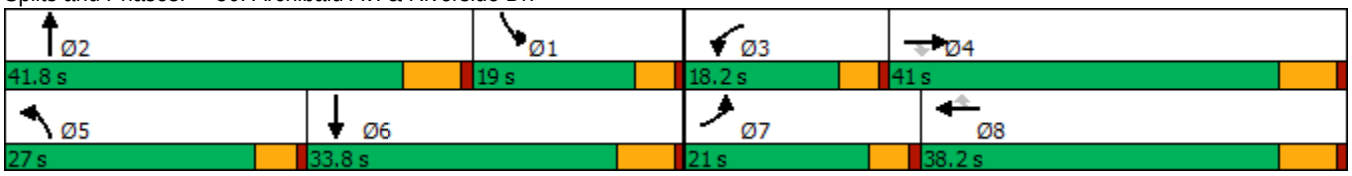
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	14.4	46.2				60.6		29.4				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	15.0	28.2				47.2		31.2				
Max Q Clear Time (g_c+I1), s	10.4	22.4				13.3		21.1				
Green Ext Time (p_c), s	0.1	4.6				5.2		2.6				

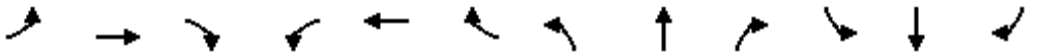
Intersection Summary			
HCM 6th Ctrl Delay			25.0
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	241	310	257	94	480	176	338	1126	135	593
Future Volume (vph)	241	310	257	94	480	176	338	1126	135	593
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.0	41.0	41.0	18.2	38.2	38.2	27.0	41.8	19.0	33.8
Total Split (%)	17.5%	34.2%	34.2%	15.2%	31.8%	31.8%	22.5%	34.8%	15.8%	28.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	16.5	28.7	28.7	10.5	22.7	22.7	22.6	33.0	14.2	24.7
Actuated g/C Ratio	0.15	0.27	0.27	0.10	0.21	0.21	0.21	0.30	0.13	0.23
v/c Ratio	1.04	0.36	0.46	0.64	0.71	0.40	1.07	0.84	0.68	0.79
Control Delay	114.9	34.4	6.6	67.3	45.8	7.8	112.0	41.3	64.1	41.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	114.9	34.4	6.6	67.3	45.8	7.8	112.0	41.3	64.1	41.9
LOS	F	C	A	E	D	A	F	D	E	D
Approach Delay		49.6			39.6			57.1		45.0
Approach LOS		D			D			E		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108.2	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 49.4	Intersection LOS: D
Intersection Capacity Utilization 87.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	241	310	257	94	480	176	338	1126	50	135	593	247
Future Volume (veh/h)	241	310	257	94	480	176	338	1126	50	135	593	247
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	256	330	139	100	511	105	360	1198	50	144	631	185
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	256	979	429	123	698	305	350	1444	60	187	806	232
Arrive On Green	0.16	0.29	0.29	0.08	0.20	0.20	0.22	0.30	0.30	0.12	0.21	0.21
Sat Flow, veh/h	1619	3420	1498	1619	3420	1494	1619	4837	202	1619	3788	1090
Grp Volume(v), veh/h	256	330	139	100	511	105	360	811	437	144	544	272
Grp Sat Flow(s),veh/h/ln	1619	1710	1498	1619	1710	1494	1619	1638	1763	1619	1638	1602
Q Serve(g_s), s	16.4	7.9	7.6	6.3	14.5	4.4	22.4	23.9	23.9	8.9	16.2	16.7
Cycle Q Clear(g_c), s	16.4	7.9	7.6	6.3	14.5	4.4	22.4	23.9	23.9	8.9	16.2	16.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.11	1.00		0.68
Lane Grp Cap(c), veh/h	256	979	429	123	698	305	350	978	526	187	697	341
V/C Ratio(X)	1.00	0.34	0.32	0.81	0.73	0.34	1.03	0.83	0.83	0.77	0.78	0.80
Avail Cap(c_a), veh/h	256	1149	503	213	1056	462	350	1126	606	225	873	427
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	29.2	29.1	47.1	38.6	17.5	40.6	33.9	33.9	44.5	38.5	38.7
Incr Delay (d2), s/veh	55.8	0.2	0.4	4.8	1.5	0.7	55.6	4.7	8.5	10.0	3.6	8.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.2	3.1	2.6	2.6	5.9	2.2	13.8	9.5	10.8	3.9	6.5	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	99.4	29.4	29.5	51.9	40.1	18.2	96.1	38.6	42.3	54.5	42.1	46.9
LnGrp LOS	F	C	C	D	D	B	F	D	D	D	D	D
Approach Vol, veh/h		725			716			1608			960	
Approach Delay, s/veh		54.1			38.5			52.5			45.3	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.1	37.1	12.5	35.9	27.0	28.3	21.0	27.3
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	14.4	* 36	13.6	34.8	22.4	27.6	16.4	32.0
Max Q Clear Time (g_c+I1), s	10.9	25.9	8.3	9.9	24.4	18.7	18.4	16.5
Green Ext Time (p_c), s	0.1	5.0	0.0	2.3	0.0	3.2	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	48.6
HCM 6th LOS	D

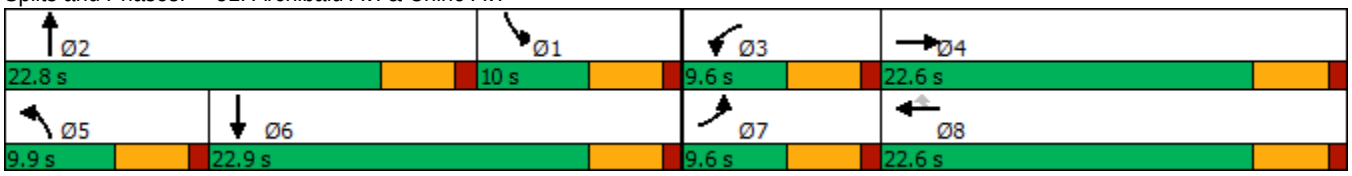
Notes

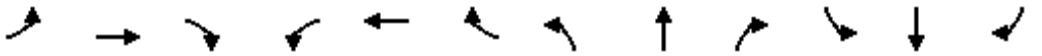
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	97	3	74	4	249	108	1110	117	794
Future Volume (vph)	97	3	74	4	249	108	1110	117	794
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	9.6	22.6	9.6	22.6	22.6	9.9	22.8	10.0	22.9
Total Split (%)	14.8%	34.8%	14.8%	34.8%	34.8%	15.2%	35.1%	15.4%	35.2%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	5.0	10.3	9.3	8.2	8.2	5.3	18.1	5.4	18.2
Actuated g/C Ratio	0.09	0.19	0.17	0.15	0.15	0.10	0.33	0.10	0.33
v/c Ratio	0.73	0.11	0.30	0.01	0.60	0.77	0.79	0.82	0.80
Control Delay	58.5	9.5	29.5	18.5	9.0	61.1	22.6	67.3	25.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.5	9.5	29.5	18.5	9.0	61.1	22.6	67.3	25.4
LOS	E	A	C	B	A	E	C	E	C
Approach Delay		47.0		13.7			25.9		30.6
Approach LOS		D		B			C		C

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 55.4	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 27.1	Intersection LOS: C
Intersection Capacity Utilization 57.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	3	27	74	4	249	108	1110	36	117	794	25
Future Volume (veh/h)	97	3	27	74	4	249	108	1110	36	117	794	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	107	3	12	81	4	137	119	1220	38	129	873	25
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	131	37	149	111	192	163	147	1622	51	159	1151	33
Arrive On Green	0.08	0.12	0.12	0.07	0.11	0.11	0.09	0.33	0.33	0.10	0.34	0.34
Sat Flow, veh/h	1619	313	1254	1619	1800	1525	1619	4896	152	1619	3395	97
Grp Volume(v), veh/h	107	0	15	81	4	137	119	816	442	129	440	458
Grp Sat Flow(s),veh/h/ln	1619	0	1567	1619	1800	1525	1619	1638	1772	1619	1710	1782
Q Serve(g_s), s	3.1	0.0	0.4	2.4	0.1	2.9	3.5	10.7	10.7	3.8	11.0	11.0
Cycle Q Clear(g_c), s	3.1	0.0	0.4	2.4	0.1	2.9	3.5	10.7	10.7	3.8	11.0	11.0
Prop In Lane	1.00		0.80	1.00		1.00	1.00		0.09	1.00		0.05
Lane Grp Cap(c), veh/h	131	0	187	111	192	163	147	1085	587	159	580	604
V/C Ratio(X)	0.82	0.00	0.08	0.73	0.02	0.84	0.81	0.75	0.75	0.81	0.76	0.76
Avail Cap(c_a), veh/h	168	0	587	168	674	571	178	1240	671	182	651	678
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	0.0	18.8	21.9	19.2	9.6	21.5	14.3	14.3	21.2	14.1	14.1
Incr Delay (d2), s/veh	20.7	0.0	0.2	8.7	0.0	11.0	20.4	2.3	4.2	21.1	4.6	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.1	1.0	0.0	1.7	1.9	3.0	3.6	2.1	3.7	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.5	0.0	19.0	30.7	19.3	20.6	41.9	16.6	18.5	42.4	18.7	18.6
LnGrp LOS	D	A	B	C	B	C	D	B	B	D	B	B
Approach Vol, veh/h		122			222			1377			1027	
Approach Delay, s/veh		39.6			24.3			19.4			21.6	
Approach LOS		D			C			B			C	

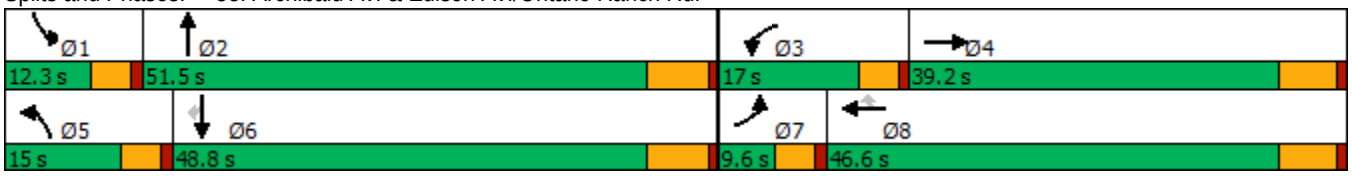
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	20.5	7.9	10.3	9.0	20.9	8.5	9.7
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	5.4	18.2	5.0	18.0	5.3	18.3	5.0	18.0
Max Q Clear Time (g_c+I1), s	5.8	12.7	4.4	2.4	5.5	13.0	5.1	4.9
Green Ext Time (p_c), s	0.0	3.2	0.0	0.0	0.0	2.3	0.0	0.3

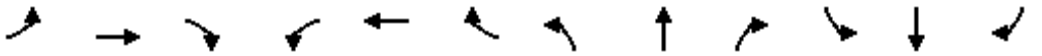
Intersection Summary	
HCM 6th Ctrl Delay	21.5
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	215	43	423	527	141	167	1036	409	66	459	116
Future Volume (vph)	30	215	43	423	527	141	167	1036	409	66	459	116
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	9.6	39.2		17.0	46.6	46.6	15.0	51.5		12.3	48.8	48.8
Total Split (%)	8.0%	32.7%		14.2%	38.8%	38.8%	12.5%	42.9%		10.3%	40.7%	40.7%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.3	23.9	103.5	13.1	36.9	36.9	11.0	39.1	103.5	7.4	32.4	32.4
Actuated g/C Ratio	0.05	0.23	1.00	0.13	0.36	0.36	0.11	0.38	1.00	0.07	0.31	0.31
v/c Ratio	0.21	0.28	0.03	1.17	0.85	0.23	1.01	0.83	0.28	0.60	0.44	0.21
Control Delay	57.9	34.1	0.0	144.7	47.5	7.1	122.9	37.2	0.5	74.8	29.5	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.9	34.1	0.0	144.7	47.5	7.1	122.9	37.2	0.5	74.8	29.5	2.7
LOS	E	C	A	F	D	A	F	D	A	E	C	A
Approach Delay		31.6			80.0			36.7			29.3	
Approach LOS		C			E			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 48.0	Intersection LOS: D
Intersection Capacity Utilization 86.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	215	43	423	527	141	167	1036	409	66	459	116
Future Volume (veh/h)	30	215	43	423	527	141	167	1036	409	66	459	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	31	222	0	436	543	91	172	1068	0	68	473	87
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	86	809		369	599	507	170	1250		85	1070	477
Arrive On Green	0.03	0.24	0.00	0.12	0.33	0.33	0.10	0.37	0.00	0.05	0.31	0.31
Sat Flow, veh/h	2956	3420	1525	2956	1800	1525	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	31	222	0	436	543	91	172	1068	0	68	473	87
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1800	1525	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	1.0	5.3	0.0	12.4	28.6	4.2	10.4	28.6	0.0	4.1	10.9	4.1
Cycle Q Clear(g_c), s	1.0	5.3	0.0	12.4	28.6	4.2	10.4	28.6	0.0	4.1	10.9	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	86	809		369	599	507	170	1250		85	1070	477
V/C Ratio(X)	0.36	0.27		1.18	0.91	0.18	1.01	0.85		0.80	0.44	0.18
Avail Cap(c_a), veh/h	149	1137		369	733	621	170	1551		126	1458	650
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.3	30.9	0.0	43.4	31.6	23.5	44.4	29.0	0.0	46.5	27.2	24.8
Incr Delay (d2), s/veh	1.0	0.2	0.0	105.6	13.2	0.2	72.7	4.1	0.0	11.9	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.1	0.0	9.7	13.6	1.4	7.3	11.2	0.0	1.8	4.1	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.2	31.1	0.0	149.0	44.9	23.7	117.1	33.1	0.0	58.4	27.5	25.0
LnGrp LOS	D	C		F	D	C	F	C		E	C	C
Approach Vol, veh/h		253	A		1070			1240	A		628	
Approach Delay, s/veh		33.2			85.5			44.8			30.5	
Approach LOS		C			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	42.8	17.0	29.7	15.0	37.6	7.5	39.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	7.7	45.0	12.4	33.0	10.4	42.3	5.0	40.4
Max Q Clear Time (g_c+I1), s	6.1	30.6	14.4	7.3	12.4	12.9	3.0	30.6
Green Ext Time (p_c), s	0.0	5.7	0.0	1.2	0.0	3.0	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	54.7
HCM 6th LOS	D

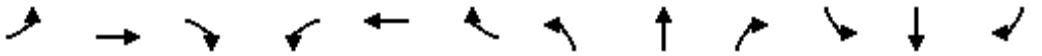
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	16	1597	8	24	902
Future Volume (vph)	11	16	1597	8	24	902
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.5	9.5	32.5	32.5	9.6	16.5
Total Split (s)	9.5	9.5	41.4	41.4	9.6	51.0
Total Split (%)	13.6%	13.6%	59.1%	59.1%	13.7%	72.9%
Yellow Time (s)	3.5	3.5	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	6.5	6.5	4.6	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max
Act Effct Green (s)	5.1	5.1	54.8	54.8	5.1	56.5
Actuated g/C Ratio	0.08	0.08	0.90	0.90	0.08	0.93
v/c Ratio	0.05	0.04	0.56	0.01	0.19	0.31
Control Delay	26.4	0.2	7.0	4.9	29.7	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.4	0.2	7.0	4.9	29.7	2.1
LOS	C	A	A	A	C	A
Approach Delay			6.9			2.9
Approach LOS			A			A

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 60.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 5.5	Intersection LOS: A
Intersection Capacity Utilization 59.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	11	0	16	0	1597	8	24	902	0
Future Volume (veh/h)	0	0	0	11	0	16	0	1597	8	24	902	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1700	0	1800	0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h				12	0	6	0	1717	6	26	970	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				68	0	58	0	2304	1028	48	2682	0
Arrive On Green				0.02	0.00	0.02	0.00	0.67	0.67	0.03	0.78	0.00
Sat Flow, veh/h				3141	0	2685	0	3510	1525	1619	3510	0
Grp Volume(v), veh/h				12	0	6	0	1717	6	26	970	0
Grp Sat Flow(s),veh/h/ln				1570	0	1342	0	1710	1525	1619	1710	0
Q Serve(g_s), s				0.2	0.0	0.1	0.0	18.7	0.1	0.9	4.8	0.0
Cycle Q Clear(g_c), s				0.2	0.0	0.1	0.0	18.7	0.1	0.9	4.8	0.0
Prop In Lane				1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				68	0	58	0	2304	1028	48	2682	0
V/C Ratio(X)				0.18	0.00	0.10	0.00	0.75	0.01	0.54	0.36	0.00
Avail Cap(c_a), veh/h				277	0	237	0	2304	1028	143	2682	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				27.3	0.0	27.2	0.0	6.1	3.0	27.1	1.8	0.0
Incr Delay (d2), s/veh				1.2	0.0	0.8	0.0	2.2	0.0	3.5	0.4	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.1	0.0	0.0	0.0	2.7	0.0	0.3	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.5	0.0	28.0	0.0	8.3	3.0	30.7	2.2	0.0
LnGrp LOS				C	A	C	A	A	A	C	A	A
Approach Vol, veh/h					18			1723			996	
Approach Delay, s/veh					28.3			8.3			3.0	
Approach LOS					C			A			A	

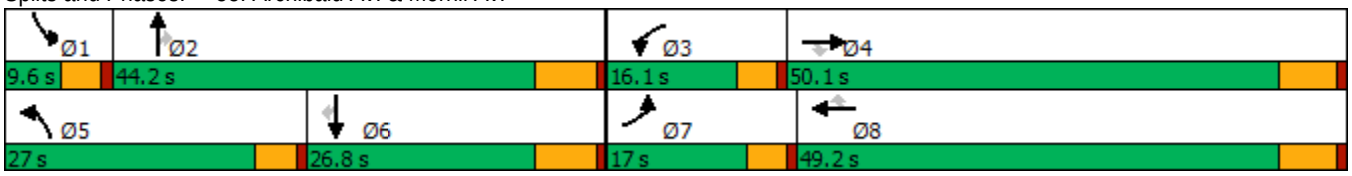
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	6.3	44.7				51.0		5.7				
Change Period (Y+Rc), s	4.6	6.5				6.5		4.5				
Max Green Setting (Gmax), s	5.0	34.9				44.5		5.0				
Max Q Clear Time (g_c+I1), s	2.9	20.7				6.8		2.2				
Green Ext Time (p_c), s	0.0	9.4				6.9		0.0				

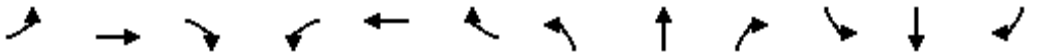
Intersection Summary		
HCM 6th Ctrl Delay		6.5
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	245	21	129	76	48	133	499	1228	38	40	540	332
Future Volume (vph)	245	21	129	76	48	133	499	1228	38	40	540	332
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	17.0	50.1	50.1	16.1	49.2	49.2	27.0	44.2	44.2	9.6	26.8	26.8
Total Split (%)	14.2%	41.8%	41.8%	13.4%	41.0%	41.0%	22.5%	36.8%	36.8%	8.0%	22.3%	22.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	12.6	21.7	21.7	8.4	15.3	15.3	22.8	42.2	42.2	5.1	20.3	20.3
Actuated g/C Ratio	0.14	0.23	0.23	0.09	0.16	0.16	0.24	0.45	0.45	0.05	0.22	0.22
v/c Ratio	1.16	0.05	0.28	0.54	0.17	0.36	1.30	0.82	0.05	0.26	0.75	0.69
Control Delay	149.4	28.9	4.4	56.8	32.8	6.0	186.2	30.3	0.1	50.3	42.8	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	149.4	28.9	4.4	56.8	32.8	6.0	186.2	30.3	0.1	50.3	42.8	22.2
LOS	F	C	A	E	C	A	F	C	A	D	D	C
Approach Delay		95.6			26.0			73.7			35.6	
Approach LOS		F			C			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 93.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.30	
Intersection Signal Delay: 62.2	Intersection LOS: E
Intersection Capacity Utilization 82.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	245	21	129	76	48	133	499	1228	38	40	540	332
Future Volume (veh/h)	245	21	129	76	48	133	499	1228	38	40	540	332
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	253	22	78	78	49	42	514	1266	20	41	557	276
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	237	366	311	97	212	179	427	1511	674	108	733	327
Arrive On Green	0.15	0.20	0.20	0.06	0.12	0.12	0.26	0.44	0.44	0.04	0.21	0.21
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	1619	3420	1525	2956	3420	1525
Grp Volume(v), veh/h	253	22	78	78	49	42	514	1266	20	41	557	276
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1710	1525	1478	1710	1525
Q Serve(g_s), s	12.4	0.8	3.6	4.0	2.1	2.1	22.4	27.8	0.6	1.1	13.0	14.7
Cycle Q Clear(g_c), s	12.4	0.8	3.6	4.0	2.1	2.1	22.4	27.8	0.6	1.1	13.0	14.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	237	366	311	97	212	179	427	1511	674	108	733	327
V/C Ratio(X)	1.07	0.06	0.25	0.80	0.23	0.23	1.20	0.84	0.03	0.38	0.76	0.84
Avail Cap(c_a), veh/h	237	931	789	219	912	773	427	1519	678	174	818	365
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.2	27.2	28.4	39.4	34.0	34.0	31.2	21.0	13.4	39.9	31.3	32.0
Incr Delay (d2), s/veh	78.1	0.1	0.4	5.6	0.6	0.7	111.7	4.3	0.0	0.8	3.8	15.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	0.3	1.3	1.7	0.9	0.8	21.0	10.1	0.2	0.4	5.2	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	114.4	27.3	28.8	45.0	34.5	34.6	142.9	25.3	13.4	40.8	35.1	47.2
LnGrp LOS	F	C	C	D	C	C	F	C	B	D	D	D
Approach Vol, veh/h		353			169			1800			874	
Approach Delay, s/veh		90.0			39.4			58.7			39.2	
Approach LOS		F			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	44.0	9.7	23.5	27.0	24.7	17.0	16.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	37.7	11.5	43.9	22.4	20.3	12.4	43.0
Max Q Clear Time (g_c+I1), s	3.1	29.8	6.0	5.6	24.4	16.7	14.4	4.1
Green Ext Time (p_c), s	0.0	4.6	0.0	0.3	0.0	1.5	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	55.8
HCM 6th LOS	E

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	316	855	868	334	215	509
Future Volume (vph)	316	855	868	334	215	509
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	27.0	56.7	36.3	27.0	83.7
Total Split (%)	30.3%	22.5%	47.3%	30.3%	22.5%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min
Act Effct Green (s)	23.7	46.1	51.5	80.5	22.0	78.9
Actuated g/C Ratio	0.21	0.41	0.46	0.71	0.19	0.70
v/c Ratio	0.87	1.29	1.04	0.29	0.64	0.40
Control Delay	65.8	169.1	74.2	2.5	52.1	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.8	169.1	74.2	2.5	52.1	8.9
LOS	E	F	E	A	D	A
Approach Delay	141.3		54.3			21.8
Approach LOS	F		D			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.29	
Intersection Signal Delay: 79.6	Intersection LOS: E
Intersection Capacity Utilization 107.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	316	855	868	334	215	509
Future Volume (veh/h)	316	855	868	334	215	509
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	329	835	904	301	224	530
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	492	665	856	1163	256	1207
Arrive On Green	0.27	0.27	0.45	0.45	0.14	0.64
Sat Flow, veh/h	1810	1610	1900	1610	1810	1900
Grp Volume(v), veh/h	329	835	904	301	224	530
Grp Sat Flow(s),veh/h/ln	1810	1610	1900	1610	1810	1900
Q Serve(g_s), s	18.5	31.0	51.4	7.3	13.8	16.1
Cycle Q Clear(g_c), s	18.5	31.0	51.4	7.3	13.8	16.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	492	665	856	1163	256	1207
V/C Ratio(X)	0.67	1.26	1.06	0.26	0.88	0.44
Avail Cap(c_a), veh/h	492	665	856	1163	349	1310
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.0	33.5	31.4	5.4	48.0	10.5
Incr Delay (d2), s/veh	2.8	127.1	46.8	0.1	16.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	40.3	32.4	5.1	7.1	5.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	39.9	160.6	78.1	5.6	64.8	10.6
LnGrp LOS	D	F	F	A	E	B
Approach Vol, veh/h	1164		1205			754
Approach Delay, s/veh	126.5		60.0			26.7
Approach LOS	F		E			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	21.1	56.7			77.8	36.3
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	22.0	51.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	15.8	53.4			18.1	33.0
Green Ext Time (p_c), s	0.3	0.0			1.7	0.0

Intersection Summary	
HCM 6th Ctrl Delay	76.8
HCM 6th LOS	E

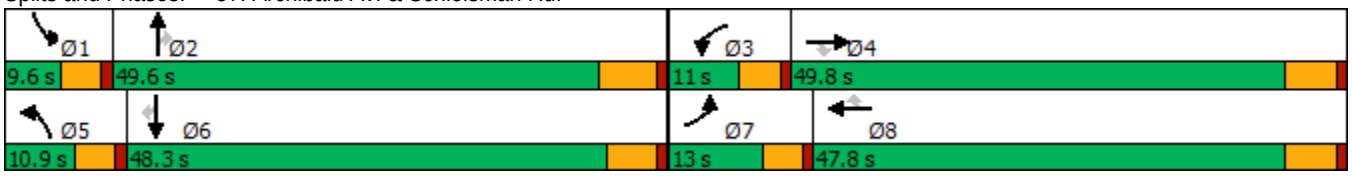
Notes

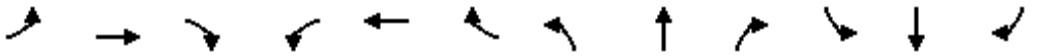
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	451	409	132	263	751	150	266	839	228	110	472	474
Future Volume (vph)	451	409	132	263	751	150	266	839	228	110	472	474
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	49.8	49.8	11.0	47.8	47.8	10.9	49.6	49.6	9.6	48.3	48.3
Total Split (%)	10.8%	41.5%	41.5%	9.2%	39.8%	39.8%	9.1%	41.3%	41.3%	8.0%	40.3%	40.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	8.5	44.3	44.3	6.4	42.3	42.3	6.3	33.9	33.9	5.0	33.4	33.4
Actuated g/C Ratio	0.08	0.40	0.40	0.06	0.38	0.38	0.06	0.31	0.31	0.05	0.30	0.30
v/c Ratio	1.88	0.22	0.20	1.44	0.42	0.24	1.49	0.59	0.38	0.77	0.34	0.89
Control Delay	440.1	23.6	4.8	262.4	27.3	8.8	280.6	33.7	4.9	84.7	30.1	42.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	440.1	23.6	4.8	262.4	27.3	8.8	280.6	33.7	4.9	84.7	30.1	42.3
LOS	F	C	A	F	C	A	F	C	A	F	C	D
Approach Delay		210.5			78.0			78.1			41.3	
Approach LOS		F			E			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.88	
Intersection Signal Delay: 98.4	Intersection LOS: F
Intersection Capacity Utilization 80.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	451	409	132	263	751	150	266	839	228	110	472	474
Future Volume (veh/h)	451	409	132	263	751	150	266	839	228	110	472	474
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	501	454	83	292	834	90	296	932	180	122	524	405
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	266	2062	630	203	1968	603	200	1598	496	159	1537	471
Arrive On Green	0.08	0.40	0.40	0.06	0.38	0.38	0.06	0.31	0.31	0.05	0.30	0.30
Sat Flow, veh/h	3510	5187	1584	3510	5187	1590	3510	5187	1610	3510	5187	1588
Grp Volume(v), veh/h	501	454	83	292	834	90	296	932	180	122	524	405
Grp Sat Flow(s),veh/h/ln	1755	1729	1584	1755	1729	1590	1755	1729	1610	1755	1729	1588
Q Serve(g_s), s	8.4	6.4	3.7	6.4	13.2	4.1	6.3	16.8	9.6	3.8	8.8	26.7
Cycle Q Clear(g_c), s	8.4	6.4	3.7	6.4	13.2	4.1	6.3	16.8	9.6	3.8	8.8	26.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	266	2062	630	203	1968	603	200	1598	496	159	1537	471
V/C Ratio(X)	1.88	0.22	0.13	1.44	0.42	0.15	1.48	0.58	0.36	0.77	0.34	0.86
Avail Cap(c_a), veh/h	266	2062	630	203	1968	603	200	2034	631	159	2010	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	22.0	21.2	52.1	25.4	22.6	52.2	32.3	29.8	52.3	30.5	36.8
Incr Delay (d2), s/veh	410.3	0.2	0.4	223.2	0.7	0.5	241.6	0.3	0.4	18.5	0.1	9.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.8	2.5	1.4	9.0	5.3	1.6	9.4	6.7	3.7	2.0	3.5	11.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	461.4	22.3	21.6	275.3	26.1	23.1	293.8	32.6	30.3	70.8	30.6	46.3
LnGrp LOS	F	C	C	F	C	C	F	C	C	E	C	D
Approach Vol, veh/h		1038			1216			1408			1051	
Approach Delay, s/veh		234.2			85.7			87.2			41.3	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	40.3	11.0	49.8	10.9	39.0	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.0	43.4	6.4	44.0	6.3	* 43	8.4	42.0
Max Q Clear Time (g_c+I1), s	5.8	18.8	8.4	8.4	8.3	28.7	10.4	15.2
Green Ext Time (p_c), s	0.0	6.8	0.0	3.3	0.0	4.0	0.0	6.0

Intersection Summary	
HCM 6th Ctrl Delay	109.0
HCM 6th LOS	F

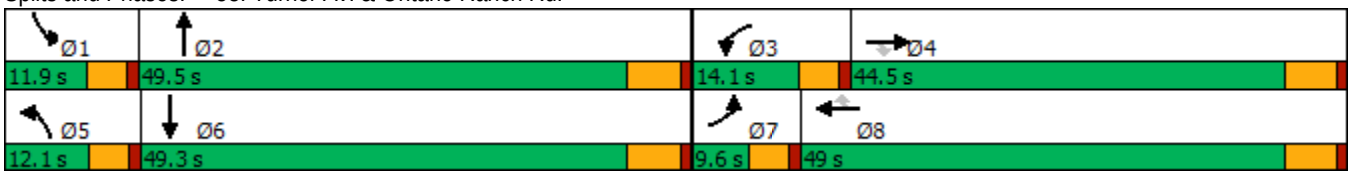
Notes

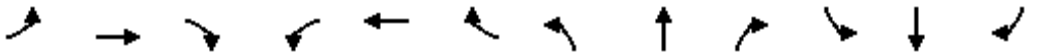
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	27	594	34	44	1143	19	59	25	35	16
Future Volume (vph)	27	594	34	44	1143	19	59	25	35	16
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	9.6	44.5	44.5	14.1	49.0	49.0	12.1	49.5	11.9	49.3
Total Split (%)	8.0%	37.1%	37.1%	11.8%	40.8%	40.8%	10.1%	41.3%	9.9%	41.1%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	5.2	49.0	49.0	7.1	50.6	50.6	7.1	18.0	6.4	15.1
Actuated g/C Ratio	0.06	0.57	0.57	0.08	0.59	0.59	0.08	0.21	0.07	0.17
v/c Ratio	0.31	0.34	0.04	0.37	0.63	0.02	0.50	0.19	0.33	0.26
Control Delay	54.7	18.0	0.1	51.3	21.2	0.1	57.2	16.4	51.7	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.7	18.0	0.1	51.3	21.2	0.1	57.2	16.4	51.7	12.9
LOS	D	B	A	D	C	A	E	B	D	B
Approach Delay		18.5			22.0			36.2		24.8
Approach LOS		B			C			D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 86.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 21.9	Intersection LOS: C
Intersection Capacity Utilization 60.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	594	34	44	1143	19	59	25	38	35	16	63
Future Volume (veh/h)	27	594	34	44	1143	19	59	25	38	35	16	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	30	660	27	49	1270	12	66	28	29	39	18	47
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	49	1804	805	67	1842	822	82	110	114	59	53	140
Arrive On Green	0.03	0.53	0.53	0.04	0.54	0.54	0.05	0.14	0.14	0.04	0.12	0.12
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	810	839	1619	441	1152
Grp Volume(v), veh/h	30	660	27	49	1270	12	66	0	57	39	0	65
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	0	1649	1619	0	1593
Q Serve(g_s), s	1.5	9.1	0.7	2.4	21.9	0.3	3.2	0.0	2.5	1.9	0.0	3.0
Cycle Q Clear(g_c), s	1.5	9.1	0.7	2.4	21.9	0.3	3.2	0.0	2.5	1.9	0.0	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.51	1.00		0.72
Lane Grp Cap(c), veh/h	49	1804	805	67	1842	822	82	0	223	59	0	193
V/C Ratio(X)	0.61	0.37	0.03	0.73	0.69	0.01	0.81	0.00	0.26	0.67	0.00	0.34
Avail Cap(c_a), veh/h	101	1804	805	192	1842	822	151	0	898	147	0	864
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.4	11.1	9.1	38.0	13.6	8.6	37.7	0.0	31.0	38.2	0.0	32.3
Incr Delay (d2), s/veh	4.5	0.6	0.1	5.6	2.1	0.0	6.9	0.0	0.6	4.8	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.0	0.2	1.0	7.3	0.1	1.4	0.0	1.0	0.8	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.9	11.7	9.2	43.6	15.7	8.6	44.6	0.0	31.6	42.9	0.0	33.3
LnGrp LOS	D	B	A	D	B	A	D	A	C	D	A	C
Approach Vol, veh/h		717			1331			123			104	
Approach Delay, s/veh		12.9			16.7			38.6			36.9	
Approach LOS		B			B			D			D	

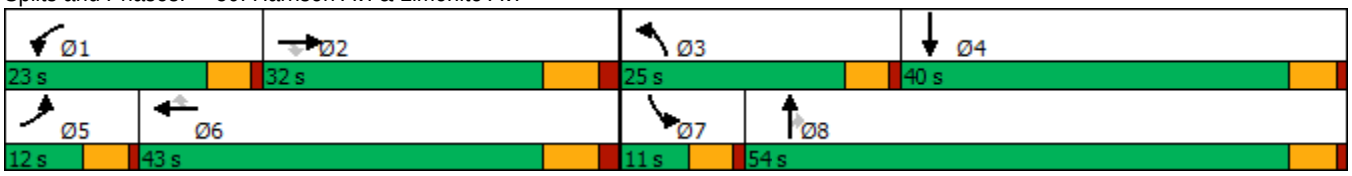
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	16.7	7.9	48.1	8.6	15.5	7.0	49.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	7.3	43.7	9.5	38.7	7.5	43.5	5.0	43.2
Max Q Clear Time (g_c+I1), s	3.9	4.5	4.4	11.1	5.2	5.0	3.5	23.9
Green Ext Time (p_c), s	0.0	0.3	0.0	4.4	0.0	0.3	0.0	8.6

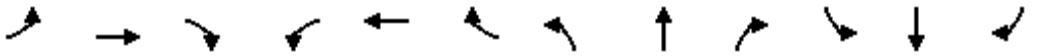
Intersection Summary	
HCM 6th Ctrl Delay	17.6
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	43	485	21	145	939	22	153	109	216	27	115
Future Volume (vph)	43	485	21	145	939	22	153	109	216	27	115
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	12.0	32.0	32.0	23.0	43.0	43.0	25.0	54.0	54.0	11.0	40.0
Total Split (%)	10.0%	26.7%	26.7%	19.2%	35.8%	35.8%	20.8%	45.0%	45.0%	9.2%	33.3%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	6.3	16.3	16.3	11.2	26.8	26.8	11.7	29.2	29.2	5.8	15.6
Actuated g/C Ratio	0.08	0.21	0.21	0.14	0.34	0.34	0.15	0.37	0.37	0.07	0.20
v/c Ratio	0.31	0.47	0.05	0.59	0.56	0.04	0.60	0.16	0.31	0.21	0.54
Control Delay	48.9	30.9	0.2	46.5	25.3	0.1	45.6	20.7	4.5	48.1	31.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	30.9	0.2	46.5	25.3	0.1	45.6	20.7	4.5	48.1	31.7
LOS	D	C	A	D	C	A	D	C	A	D	C
Approach Delay		31.2			27.6			21.3			33.7
Approach LOS		C			C			C			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 78.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 27.7	Intersection LOS: C
Intersection Capacity Utilization 60.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 59: Harrison Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	485	21	145	939	22	153	109	216	27	115	79
Future Volume (veh/h)	43	485	21	145	939	22	153	109	216	27	115	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	45	505	15	151	978	21	159	114	107	28	120	53
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	80	1292	388	193	1616	489	203	434	367	57	184	81
Arrive On Green	0.04	0.25	0.25	0.11	0.31	0.31	0.11	0.23	0.23	0.03	0.15	0.15
Sat Flow, veh/h	1810	5187	1558	1810	5187	1571	1810	1900	1606	1810	1249	552
Grp Volume(v), veh/h	45	505	15	151	978	21	159	114	107	28	0	173
Grp Sat Flow(s),veh/h/ln	1810	1729	1558	1810	1729	1571	1810	1900	1606	1810	0	1801
Q Serve(g_s), s	1.4	4.7	0.4	4.7	9.3	0.5	5.0	2.9	3.2	0.9	0.0	5.3
Cycle Q Clear(g_c), s	1.4	4.7	0.4	4.7	9.3	0.5	5.0	2.9	3.2	0.9	0.0	5.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	80	1292	388	193	1616	489	203	434	367	57	0	265
V/C Ratio(X)	0.56	0.39	0.04	0.78	0.61	0.04	0.78	0.26	0.29	0.49	0.00	0.65
Avail Cap(c_a), veh/h	218	2236	672	562	3220	975	624	1596	1349	187	0	1077
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.2	18.1	16.5	25.2	16.9	13.9	25.1	18.4	18.5	27.6	0.0	23.3
Incr Delay (d2), s/veh	2.2	0.2	0.0	2.6	0.4	0.0	2.5	0.3	0.4	2.5	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.6	0.1	1.9	3.0	0.2	2.0	1.1	1.1	0.4	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.4	18.3	16.5	27.8	17.3	14.0	27.6	18.7	18.9	30.1	0.0	26.0
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	A	C
Approach Vol, veh/h		565			1150			380			201	
Approach Delay, s/veh		19.1			18.6			22.5			26.6	
Approach LOS		B			B			C			C	

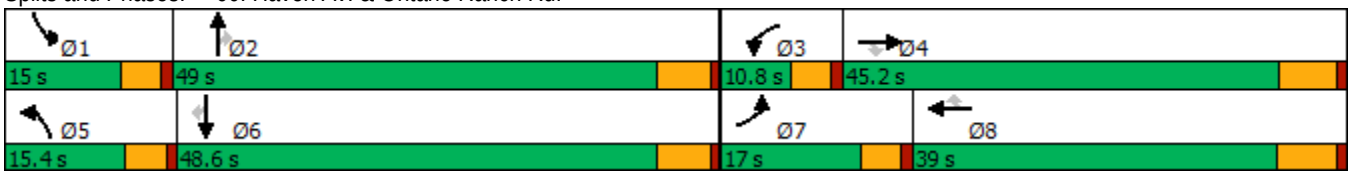
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	21.4	11.5	13.8	7.6	25.1	6.8	18.5
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	18.0	25.0	20.0	34.7	7.0	36.0	6.0	48.7
Max Q Clear Time (g_c+I1), s	6.7	6.7	7.0	7.3	3.4	11.3	2.9	5.2
Green Ext Time (p_c), s	0.1	2.8	0.1	0.9	0.0	6.6	0.0	0.9

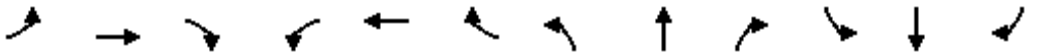
Intersection Summary	
HCM 6th Ctrl Delay	20.1
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	625	29	22	964	84	64	195	81	122	59	74
Future Volume (vph)	138	625	29	22	964	84	64	195	81	122	59	74
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	17.0	45.2	45.2	10.8	39.0	39.0	15.4	49.0	49.0	15.0	48.6	48.6
Total Split (%)	14.2%	37.7%	37.7%	9.0%	32.5%	32.5%	12.8%	40.8%	40.8%	12.5%	40.5%	40.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	12.0	46.0	46.0	5.6	32.9	32.9	8.0	19.0	19.0	10.5	23.7	23.7
Actuated g/C Ratio	0.12	0.48	0.48	0.06	0.34	0.34	0.08	0.20	0.20	0.11	0.25	0.25
v/c Ratio	0.73	0.28	0.04	0.24	0.88	0.14	0.51	0.58	0.20	0.74	0.14	0.16
Control Delay	64.4	18.4	0.1	54.0	41.1	0.8	58.3	40.9	1.1	69.0	30.3	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.4	18.4	0.1	54.0	41.1	0.8	58.3	40.9	1.1	69.0	30.3	0.7
LOS	E	B	A	D	D	A	E	D	A	E	C	A
Approach Delay		25.7			38.2			34.7			40.2	
Approach LOS		C			D			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.2	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 33.9	Intersection LOS: C
Intersection Capacity Utilization 73.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	625	29	22	964	84	64	195	81	122	59	74
Future Volume (veh/h)	138	625	29	22	964	84	64	195	81	122	59	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	147	665	18	23	1026	44	68	207	36	130	63	46
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	177	2322	721	40	1325	591	85	267	227	159	350	296
Arrive On Green	0.11	0.47	0.47	0.02	0.39	0.39	0.05	0.15	0.15	0.10	0.19	0.19
Sat Flow, veh/h	1619	4914	1525	1619	3420	1525	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	147	665	18	23	1026	44	68	207	36	130	63	46
Grp Sat Flow(s),veh/h/ln	1619	1638	1525	1619	1710	1525	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	7.5	6.9	0.5	1.2	22.0	1.5	3.5	9.3	1.7	6.6	2.5	2.1
Cycle Q Clear(g_c), s	7.5	6.9	0.5	1.2	22.0	1.5	3.5	9.3	1.7	6.6	2.5	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	177	2322	721	40	1325	591	85	267	227	159	350	296
V/C Ratio(X)	0.83	0.29	0.02	0.57	0.77	0.07	0.80	0.77	0.16	0.82	0.18	0.16
Avail Cap(c_a), veh/h	239	2322	721	120	1325	591	209	927	786	201	919	779
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.6	13.5	11.8	40.5	22.5	16.2	39.3	34.4	31.1	37.1	28.2	28.1
Incr Delay (d2), s/veh	12.2	0.3	0.1	4.8	4.5	0.2	6.5	4.8	0.3	15.3	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	2.2	0.2	0.5	8.3	0.5	1.5	4.2	0.6	3.1	1.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.8	13.8	11.9	45.2	26.9	16.4	45.9	39.1	31.5	52.4	28.5	28.3
LnGrp LOS	D	B	B	D	C	B	D	D	C	D	C	C
Approach Vol, veh/h		830			1093			311			239	
Approach Delay, s/veh		20.0			26.9			39.7			41.4	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.8	18.3	6.7	46.1	9.0	22.1	13.8	39.0
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	10.4	43.2	6.2	* 39	10.8	42.8	12.4	32.5
Max Q Clear Time (g_c+I1), s	8.6	11.3	3.2	8.9	5.5	4.5	9.5	24.0
Green Ext Time (p_c), s	0.0	1.2	0.0	4.4	0.0	0.4	0.0	4.0

Intersection Summary	
HCM 6th Ctrl Delay	27.6
HCM 6th LOS	C

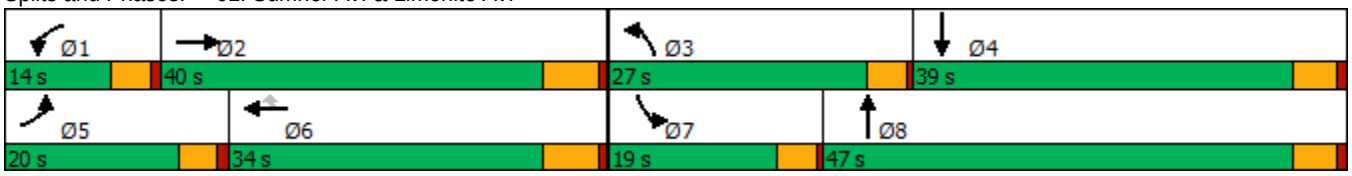
Notes

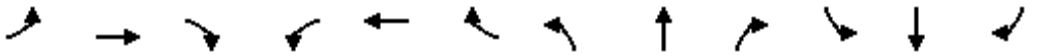
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	246	525	111	750	33	185	389	99	195
Future Volume (vph)	246	525	111	750	33	185	389	99	195
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	20.0	40.0	14.0	34.0	34.0	27.0	47.0	19.0	39.0
Total Split (%)	16.7%	33.3%	11.7%	28.3%	28.3%	22.5%	39.2%	15.8%	32.5%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	10.3	25.2	6.9	19.1	19.1	13.1	20.9	8.9	14.1
Actuated g/C Ratio	0.13	0.32	0.09	0.25	0.25	0.17	0.27	0.11	0.18
v/c Ratio	0.55	0.34	0.37	0.60	0.07	0.63	0.54	0.49	0.49
Control Delay	39.9	23.3	42.8	30.0	0.2	43.2	26.3	45.9	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.9	23.3	42.8	30.0	0.2	43.2	26.3	45.9	18.2
LOS	D	C	D	C	A	D	C	D	B
Approach Delay		28.4		30.5			30.9		24.3
Approach LOS		C		C			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 77.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 29.0	Intersection LOS: C
Intersection Capacity Utilization 58.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 61: Sumner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	246	525	30	111	750	33	185	389	114	99	195	160
Future Volume (veh/h)	246	525	30	111	750	33	185	389	114	99	195	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	254	541	25	114	773	30	191	401	44	102	201	68
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	381	1539	71	215	1326	406	242	642	70	132	360	118
Arrive On Green	0.11	0.30	0.30	0.06	0.26	0.26	0.13	0.20	0.20	0.07	0.13	0.13
Sat Flow, veh/h	3510	5082	234	3510	5187	1589	1810	3282	358	1810	2670	877
Grp Volume(v), veh/h	254	367	199	114	773	30	191	220	225	102	134	135
Grp Sat Flow(s),veh/h/ln	1755	1729	1858	1755	1729	1589	1810	1805	1835	1810	1805	1742
Q Serve(g_s), s	3.7	4.4	4.4	1.7	6.9	0.8	5.4	5.9	6.0	2.9	3.7	3.9
Cycle Q Clear(g_c), s	3.7	4.4	4.4	1.7	6.9	0.8	5.4	5.9	6.0	2.9	3.7	3.9
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.20	1.00		0.50
Lane Grp Cap(c), veh/h	381	1047	563	215	1326	406	242	353	359	132	244	235
V/C Ratio(X)	0.67	0.35	0.35	0.53	0.58	0.07	0.79	0.62	0.63	0.77	0.55	0.57
Avail Cap(c_a), veh/h	1025	2214	1190	628	2735	838	784	1428	1451	511	1156	1116
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.8	14.4	14.5	24.2	17.3	15.0	22.3	19.6	19.6	24.2	21.5	21.5
Incr Delay (d2), s/veh	0.8	0.2	0.4	0.8	0.4	0.1	2.2	1.3	1.3	3.6	1.4	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.4	1.5	0.6	2.2	0.2	2.1	2.2	2.3	1.2	1.4	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.5	14.6	14.8	24.9	17.7	15.1	24.5	20.9	20.9	27.7	22.9	23.2
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		820			917			636			371	
Approach Delay, s/veh		17.4			18.5			22.0			24.3	
Approach LOS		B			B			C			C	

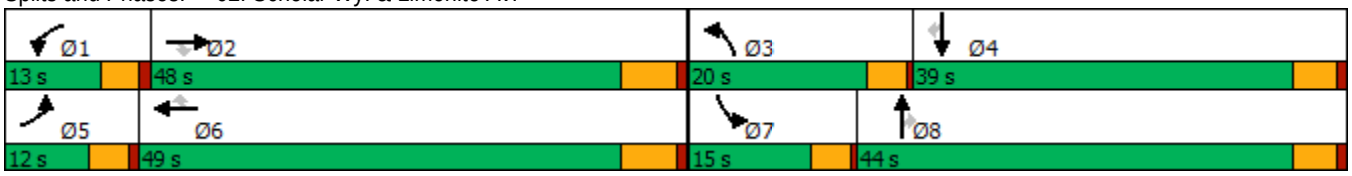
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	22.1	11.1	12.2	10.3	19.6	7.9	15.4
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	9.5	34.0	23.0	34.0	15.5	28.0	15.0	42.0
Max Q Clear Time (g_c+I1), s	3.7	6.4	7.4	5.9	5.7	8.9	4.9	8.0
Green Ext Time (p_c), s	0.0	3.2	0.1	1.1	0.2	4.7	0.0	1.9

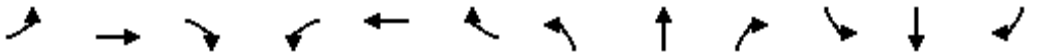
Intersection Summary	
HCM 6th Ctrl Delay	19.8
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	753	65	42	702	26	100	179	102	52	196	29
Future Volume (vph)	31	753	65	42	702	26	100	179	102	52	196	29
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	12.0	48.0	48.0	13.0	49.0	49.0	20.0	44.0	44.0	15.0	39.0	39.0
Total Split (%)	10.0%	40.0%	40.0%	10.8%	40.8%	40.8%	16.7%	36.7%	36.7%	12.5%	32.5%	32.5%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.2	25.2	25.2	6.6	25.5	25.5	9.5	18.1	18.1	7.2	13.6	13.6
Actuated g/C Ratio	0.09	0.37	0.37	0.10	0.37	0.37	0.14	0.27	0.27	0.11	0.20	0.20
v/c Ratio	0.21	0.62	0.11	0.26	0.57	0.04	0.43	0.39	0.22	0.30	0.30	0.08
Control Delay	43.6	23.0	0.3	43.2	21.8	0.1	40.7	27.6	7.1	42.2	28.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.6	23.0	0.3	43.2	21.8	0.1	40.7	27.6	7.1	42.2	28.2	0.3
LOS	D	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		22.0			22.2			25.6			27.9	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 68.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 23.4	Intersection LOS: C
Intersection Capacity Utilization 59.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	753	65	42	702	26	100	179	102	52	196	29
Future Volume (veh/h)	31	753	65	42	702	26	100	179	102	52	196	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	34	818	37	46	763	17	109	195	69	57	213	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	54	1232	549	68	1259	562	141	385	325	78	605	257
Arrive On Green	0.03	0.34	0.34	0.04	0.35	0.35	0.08	0.20	0.20	0.04	0.17	0.17
Sat Flow, veh/h	1810	3610	1609	1810	3610	1610	1810	1900	1608	1810	3610	1535
Grp Volume(v), veh/h	34	818	37	46	763	17	109	195	69	57	213	30
Grp Sat Flow(s),veh/h/ln	1810	1805	1609	1810	1805	1610	1810	1900	1608	1810	1805	1535
Q Serve(g_s), s	1.0	10.0	0.8	1.3	9.1	0.4	3.1	4.7	1.9	1.6	2.7	0.9
Cycle Q Clear(g_c), s	1.0	10.0	0.8	1.3	9.1	0.4	3.1	4.7	1.9	1.6	2.7	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	54	1232	549	68	1259	562	141	385	325	78	605	257
V/C Ratio(X)	0.63	0.66	0.07	0.68	0.61	0.03	0.77	0.51	0.21	0.73	0.35	0.12
Avail Cap(c_a), veh/h	261	2921	1302	296	2991	1334	558	1428	1208	383	2365	1005
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.9	14.6	11.5	24.7	14.0	11.1	23.5	18.4	17.2	24.5	19.1	18.3
Incr Delay (d2), s/veh	4.4	0.6	0.1	4.4	0.5	0.0	3.3	0.8	0.2	4.8	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.1	0.2	0.6	2.8	0.1	1.3	1.9	0.6	0.7	1.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.3	15.2	11.6	29.1	14.4	11.1	26.8	19.2	17.5	29.3	19.4	18.5
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		889			826			373			300	
Approach Delay, s/veh		15.6			15.2			21.1			21.2	
Approach LOS		B			B			C			C	

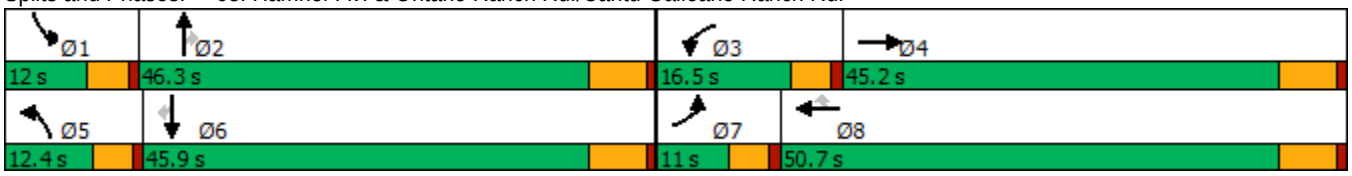
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	23.7	8.1	13.7	6.1	24.1	6.2	15.5
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	8.5	42.0	16.0	34.0	7.5	43.0	11.0	39.0
Max Q Clear Time (g_c+I1), s	3.3	12.0	5.1	4.7	3.0	11.1	3.6	6.7
Green Ext Time (p_c), s	0.0	5.6	0.1	1.1	0.0	5.2	0.0	1.0

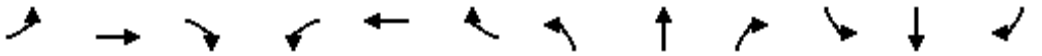
Intersection Summary	
HCM 6th Ctrl Delay	17.0
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	99	583	280	904	207	175	717	514	157	214	87
Future Volume (vph)	99	583	280	904	207	175	717	514	157	214	87
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	11.0	45.2	16.5	50.7	50.7	12.4	46.3	46.3	12.0	45.9	45.9
Total Split (%)	9.2%	37.7%	13.8%	42.3%	42.3%	10.3%	38.6%	38.6%	10.0%	38.3%	38.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.4	33.9	12.1	39.6	39.6	7.9	36.7	36.7	7.5	36.3	36.3
Actuated g/C Ratio	0.06	0.30	0.11	0.35	0.35	0.07	0.33	0.33	0.07	0.32	0.32
v/c Ratio	0.67	0.41	1.00	0.85	0.35	0.96	0.51	0.92	0.90	0.22	0.17
Control Delay	74.6	30.4	103.3	41.5	8.0	107.1	32.0	44.8	97.7	28.7	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.6	30.4	103.3	41.5	8.0	107.1	32.0	44.8	97.7	28.7	1.4
LOS	E	C	F	D	A	F	C	D	F	C	A
Approach Delay		36.1		49.0			46.0			47.1	
Approach LOS		D		D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.1	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 45.3	Intersection LOS: D
Intersection Capacity Utilization 68.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	583	84	280	904	207	175	717	514	157	214	87
Future Volume (veh/h)	99	583	84	280	904	207	175	717	514	157	214	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	112	662	95	318	1027	235	199	815	577	178	243	99
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	157	1620	227	307	1175	524	201	1720	534	191	1185	528
Arrive On Green	0.05	0.29	0.29	0.10	0.34	0.34	0.07	0.35	0.35	0.06	0.35	0.35
Sat Flow, veh/h	2956	5530	774	2956	3420	1525	2956	4914	1525	2956	3420	1524
Grp Volume(v), veh/h	112	553	204	318	1027	235	199	815	577	178	243	99
Grp Sat Flow(s),veh/h/ln	1478	1548	1661	1478	1710	1525	1478	1638	1525	1478	1710	1524
Q Serve(g_s), s	4.3	11.0	11.3	11.9	32.3	13.7	7.7	14.8	40.1	6.9	5.7	5.2
Cycle Q Clear(g_c), s	4.3	11.0	11.3	11.9	32.3	13.7	7.7	14.8	40.1	6.9	5.7	5.2
Prop In Lane	1.00		0.47	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	157	1361	487	307	1175	524	201	1720	534	191	1185	528
V/C Ratio(X)	0.71	0.41	0.42	1.04	0.87	0.45	0.99	0.47	1.08	0.93	0.21	0.19
Avail Cap(c_a), veh/h	165	1581	565	307	1328	592	201	1720	534	191	1185	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	32.5	32.6	51.3	35.3	29.2	53.3	29.0	37.2	53.3	26.3	26.2
Incr Delay (d2), s/veh	10.7	0.2	0.6	60.9	6.2	0.6	59.9	0.2	62.5	45.5	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.9	4.4	6.8	13.5	4.8	4.4	5.5	23.2	3.7	2.2	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.0	32.7	33.2	112.2	41.4	29.8	113.3	29.2	99.8	98.9	26.4	26.3
LnGrp LOS	E	C	C	F	D	C	F	C	F	F	C	C
Approach Vol, veh/h		869			1580			1591			520	
Approach Delay, s/veh		36.9			53.9			65.3			51.2	
Approach LOS		D			D			E			D	

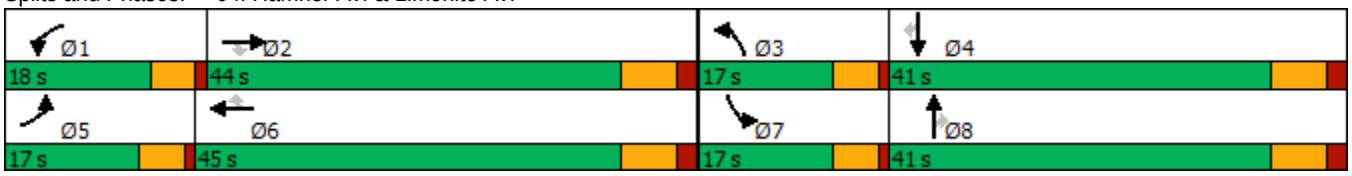
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	46.3	16.5	39.8	12.4	45.9	10.7	45.6
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	7.4	40.1	11.9	39.0	7.8	39.7	6.4	44.5
Max Q Clear Time (g_c+I1), s	8.9	42.1	13.9	13.3	9.7	7.7	6.3	34.3
Green Ext Time (p_c), s	0.0	0.0	0.0	4.5	0.0	1.7	0.0	5.1

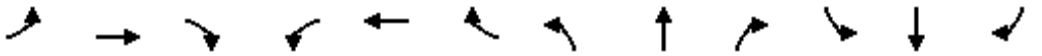
Intersection Summary	
HCM 6th Ctrl Delay	54.3
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	560	46	179	472	87	173	708	259	161	381	117
Future Volume (vph)	176	560	46	179	472	87	173	708	259	161	381	117
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	17.0	44.0	44.0	18.0	45.0	45.0	17.0	41.0	41.0	17.0	41.0	41.0
Total Split (%)	14.2%	36.7%	36.7%	15.0%	37.5%	37.5%	14.2%	34.2%	34.2%	14.2%	34.2%	34.2%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	8.9	22.0	22.0	9.1	22.2	22.2	8.8	26.8	26.8	8.6	26.6	26.6
Actuated g/C Ratio	0.10	0.24	0.24	0.10	0.24	0.24	0.10	0.29	0.29	0.09	0.29	0.29
v/c Ratio	0.55	0.48	0.10	0.54	0.57	0.19	0.54	0.49	0.42	0.52	0.27	0.22
Control Delay	48.4	32.0	0.4	47.9	34.2	3.3	48.4	28.6	5.6	48.2	26.3	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.4	32.0	0.4	47.9	34.2	3.3	48.4	28.6	5.6	48.2	26.3	6.0
LOS	D	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		33.8			33.9			26.4			28.0	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 91.3	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 30.1	Intersection LOS: C
Intersection Capacity Utilization 56.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 64: Hamner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	560	46	179	472	87	173	708	259	161	381	117
Future Volume (veh/h)	176	560	46	179	472	87	173	708	259	161	381	117
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	187	596	36	190	502	67	184	753	178	171	405	84
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	276	1236	383	279	864	385	272	1482	460	258	1461	453
Arrive On Green	0.08	0.24	0.24	0.08	0.24	0.24	0.08	0.29	0.29	0.07	0.28	0.28
Sat Flow, veh/h	3510	5187	1608	3510	3610	1610	3510	5187	1608	3510	5187	1610
Grp Volume(v), veh/h	187	596	36	190	502	67	184	753	178	171	405	84
Grp Sat Flow(s),veh/h/ln	1755	1729	1608	1755	1805	1610	1755	1729	1608	1755	1729	1610
Q Serve(g_s), s	3.9	7.3	1.3	3.9	9.1	2.5	3.8	9.0	6.6	3.5	4.5	2.9
Cycle Q Clear(g_c), s	3.9	7.3	1.3	3.9	9.1	2.5	3.8	9.0	6.6	3.5	4.5	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	276	1236	383	279	864	385	272	1482	460	258	1461	453
V/C Ratio(X)	0.68	0.48	0.09	0.68	0.58	0.17	0.68	0.51	0.39	0.66	0.28	0.19
Avail Cap(c_a), veh/h	567	2582	801	614	1846	823	567	2373	736	567	2373	737
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.3	24.4	22.1	33.3	25.0	22.4	33.4	22.2	21.3	33.5	20.8	20.2
Incr Delay (d2), s/veh	1.1	0.6	0.2	1.1	1.3	0.5	1.1	0.6	1.1	1.1	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	2.8	0.5	1.6	3.7	0.9	1.5	3.4	2.4	1.4	1.7	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.4	25.0	22.3	34.4	26.3	22.9	34.5	22.8	22.5	34.6	21.0	20.6
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		819			759			1115			660	
Approach Delay, s/veh		27.0			28.0			24.6			24.5	
Approach LOS		C			C			C			C	

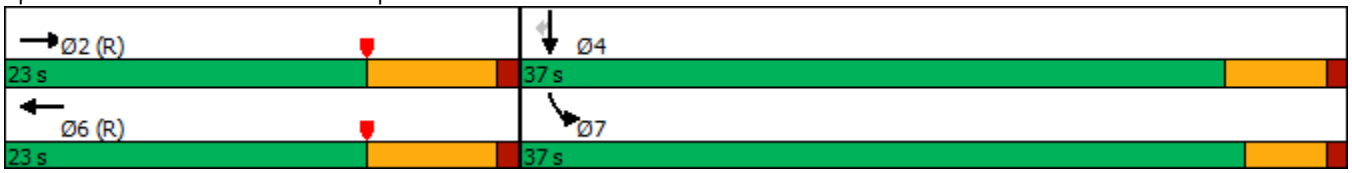
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	24.7	10.8	27.9	10.8	24.8	10.5	28.2
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	13.0	37.0	12.0	34.0	12.0	38.0	12.0	34.0
Max Q Clear Time (g_c+I1), s	5.9	9.3	5.8	6.5	5.9	11.1	5.5	11.0
Green Ext Time (p_c), s	0.1	7.6	0.1	5.5	0.1	6.5	0.1	10.1

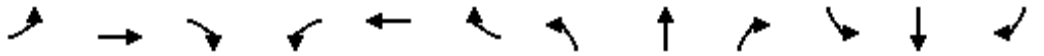
Intersection Summary	
HCM 6th Ctrl Delay	26.0
HCM 6th LOS	C

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1029	337	546	186	329	0	1208
Future Volume (vph)	1029	337	546	186	329	0	1208
Turn Type	NA	Free	NA	Free	Prot	NA	Perm
Protected Phases	2		6		7	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		7	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		9.6	10.5	10.5
Total Split (s)	23.0		23.0		37.0	37.0	37.0
Total Split (%)	38.3%		38.3%		61.7%	61.7%	61.7%
Yellow Time (s)	5.8		5.8		3.6	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8		6.8		4.6	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Min		None	Min	Min
Act Effct Green (s)	16.2	60.0	16.2	60.0	32.4	31.5	31.5
Actuated g/C Ratio	0.27	1.00	0.27	1.00	0.54	0.52	0.52
v/c Ratio	0.82	0.23	0.62	0.13	0.36	0.86	0.82
Control Delay	26.6	0.3	19.5	0.2	9.2	24.8	21.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.6	0.3	19.5	0.2	9.2	24.8	21.1
LOS	C	A	B	A	A	C	C
Approach Delay	20.1		14.6			20.3	
Approach LOS	C		B			C	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 53 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 19.1	Intersection LOS: B
Intersection Capacity Utilization 75.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1029	337	0	546	186	0	0	0	329	0	1208
Future Volume (veh/h)	0	1029	337	0	546	186	0	0	0	329	0	1208
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1143	0	0	607	0				244	0	1175
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1941		0	1351					789	0	1404
Arrive On Green	0.00	0.37	0.00	0.00	0.37	0.00				0.44	0.00	0.44
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1143	0	0	607	0				244	0	1175
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	10.6	0.0	0.0	7.6	0.0				5.3	0.0	19.4
Cycle Q Clear(g_c), s	0.0	10.6	0.0	0.0	7.6	0.0				5.3	0.0	19.4
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1941		0	1351					789	0	1404
V/C Ratio(X)	0.00	0.59		0.00	0.45					0.31	0.00	0.84
Avail Cap(c_a), veh/h	0	1941		0	1351					977	0	1739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.70	0.00	0.00	0.92	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	15.1	0.0	0.0	14.1	0.0				11.0	0.0	15.0
Incr Delay (d2), s/veh	0.0	0.9	0.0	0.0	1.0	0.0				0.2	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.4	0.0	0.0	2.6	0.0				1.7	0.0	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	16.0	0.0	0.0	15.1	0.0				11.3	0.0	18.1
LnGrp LOS	A	B		A	B					B	A	B
Approach Vol, veh/h		1143	A		607	A					1419	
Approach Delay, s/veh		16.0			15.1						17.0	
Approach LOS		B			B						B	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		29.2		30.8		29.2						
Change Period (Y+Rc), s		6.8		4.6		6.8						
Max Green Setting (Gmax), s		16.2		32.4		16.2						
Max Q Clear Time (g_c+I1), s		12.6		21.4		9.6						
Green Ext Time (p_c), s		2.2		4.7		2.0						

Intersection Summary		
HCM 6th Ctrl Delay		16.3
HCM 6th LOS		B

Notes

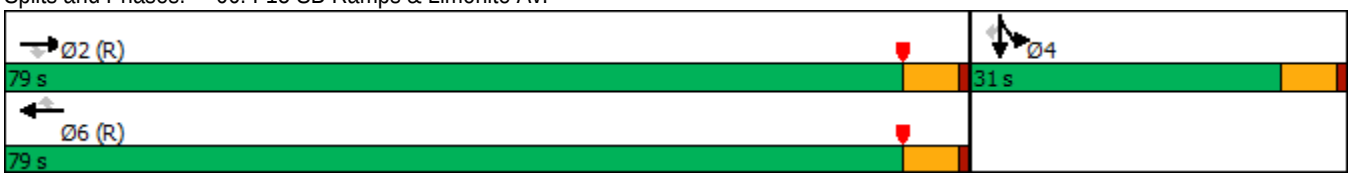
User approved volume balancing among the lanes for turning movement.

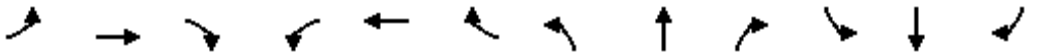
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1117	567	715	673	152	0	426
Future Volume (vph)	1117	567	715	673	152	0	426
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		4	4	
Permitted Phases		2		6			4
Detector Phase	2	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	36.5	36.5	23.5	23.5	23.5
Total Split (s)	79.0	79.0	79.0	79.0	31.0	31.0	31.0
Total Split (%)	71.8%	71.8%	71.8%	71.8%	28.2%	28.2%	28.2%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	Min	Min
Act Effct Green (s)	89.0	89.0	89.0	89.0	10.0	10.0	10.0
Actuated g/C Ratio	0.81	0.81	0.81	0.81	0.09	0.09	0.09
v/c Ratio	0.28	0.43	0.18	0.50	0.52	0.52	0.70
Control Delay	3.0	1.2	3.1	3.9	58.7	58.7	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.0	1.2	3.1	3.9	58.7	58.7	11.5
LOS	A	A	A	A	E	E	B
Approach Delay	2.4		3.5			23.9	
Approach LOS	A		A			C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 6.2	Intersection LOS: A
Intersection Capacity Utilization 48.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	↰	↱↱
Traffic Volume (veh/h)	0	1117	567	0	715	673	0	0	0	152	0	426
Future Volume (veh/h)	0	1117	567	0	715	673	0	0	0	152	0	426
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1188	481	0	761	716				162	0	155
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	4300	1334	0	4300	1335				257	0	225
Arrive On Green	0.00	0.83	0.83	0.00	1.00	1.00				0.07	0.00	0.07
Sat Flow, veh/h	0	5358	1610	0	5358	1610				3619	0	3172
Grp Volume(v), veh/h	0	1188	481	0	761	716				162	0	155
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1610				1810	0	1586
Q Serve(g_s), s	0.0	5.6	8.0	0.0	0.0	0.0				4.8	0.0	5.3
Cycle Q Clear(g_c), s	0.0	5.6	8.0	0.0	0.0	0.0				4.8	0.0	5.3
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	4300	1334	0	4300	1335				257	0	225
V/C Ratio(X)	0.00	0.28	0.36	0.00	0.18	0.54				0.63	0.00	0.69
Avail Cap(c_a), veh/h	0	4300	1334	0	4300	1335				839	0	735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.96	0.96				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	2.1	2.3	0.0	0.0	0.0				49.7	0.0	49.9
Incr Delay (d2), s/veh	0.0	0.2	0.8	0.0	0.1	1.5				1.0	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.9	1.4	0.0	0.0	0.6				2.1	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	2.2	3.1	0.0	0.1	1.5				50.7	0.0	51.3
LnGrp LOS	A	A	A	A	A	A				D	A	D
Approach Vol, veh/h		1669			1477						317	
Approach Delay, s/veh		2.5			0.8						51.0	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		96.7		13.3		96.7						
Change Period (Y+Rc), s		5.5		5.5		5.5						
Max Green Setting (Gmax), s		73.5		25.5		73.5						
Max Q Clear Time (g_c+I1), s		10.0		7.3		2.0						
Green Ext Time (p_c), s		7.2		0.6		5.1						

Intersection Summary	
HCM 6th Ctrl Delay	6.2
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	511	847	374	474	258	306
Future Volume (vph)	511	847	374	474	258	306
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	31.9	15.0	12.9	45.0	15.0	15.0
Total Split (%)	53.2%	25.0%	21.5%	75.0%	25.0%	25.0%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.0	6.0	7.3	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max
Act Effct Green (s)	24.8	41.1	6.9	37.7	9.0	9.0
Actuated g/C Ratio	0.41	0.68	0.12	0.63	0.15	0.15
v/c Ratio	0.26	0.84	1.02	0.16	0.69	0.51
Control Delay	8.8	15.5	81.3	4.8	23.4	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.8	15.5	81.3	4.8	23.4	9.5
LOS	A	B	F	A	C	A
Approach Delay	13.0			38.5	19.0	
Approach LOS	B			D	B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 22.0	Intersection LOS: C
Intersection Capacity Utilization 73.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	511	847	374	474	258	306
Future Volume (veh/h)	511	847	374	474	258	306
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	562	597	411	521	313	158
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2144	907	404	3259	543	242
Arrive On Green	0.69	0.69	0.11	0.63	0.15	0.15
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	562	597	411	521	313	158
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	2.5	13.5	6.9	2.5	4.8	5.5
Cycle Q Clear(g_c), s	2.5	13.5	6.9	2.5	4.8	5.5
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2144	907	404	3259	543	242
V/C Ratio(X)	0.26	0.66	1.02	0.16	0.58	0.65
Avail Cap(c_a), veh/h	2144	907	404	3259	543	242
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.63	0.63	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.8	4.6	26.5	4.6	23.7	24.0
Incr Delay (d2), s/veh	0.2	2.4	49.4	0.0	4.4	13.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.9	5.3	0.5	2.1	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.0	6.9	76.0	4.6	28.1	37.0
LnGrp LOS	A	A	F	A	C	D
Approach Vol, veh/h	1159			932	471	
Approach Delay, s/veh	6.5			36.1	31.1	
Approach LOS	A			D	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	12.9	32.1				45.0	15.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	6.9	24.6				37.7	9.0
Max Q Clear Time (g_c+I1), s	8.9	15.5				4.5	7.5
Green Ext Time (p_c), s	0.0	3.9				3.3	0.3

Intersection Summary			
HCM 6th Ctrl Delay		21.8	
HCM 6th LOS		C	

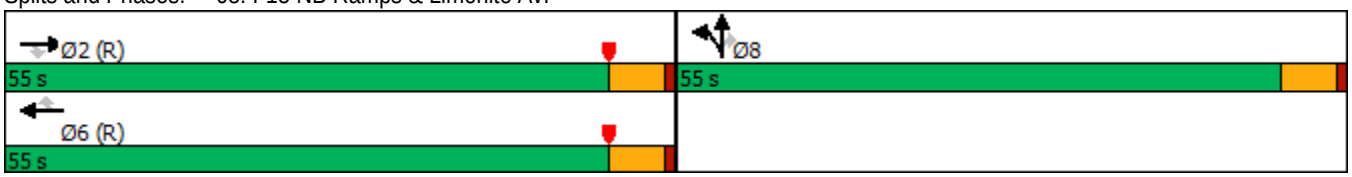
Notes

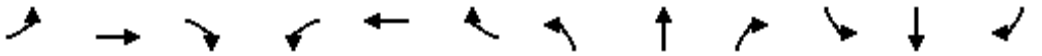
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	526	742	1140	401	248	0	326
Future Volume (vph)	526	742	1140	401	248	0	326
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		8	8	
Permitted Phases		2		6			8
Detector Phase	2	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	55.0	55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None
Act Effct Green (s)	84.5	84.5	84.5	84.5	14.5	14.5	14.5
Actuated g/C Ratio	0.77	0.77	0.77	0.77	0.13	0.13	0.13
v/c Ratio	0.14	0.54	0.30	0.31	0.57	0.57	0.51
Control Delay	3.3	3.1	4.4	1.1	53.8	53.8	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.3	3.1	4.4	1.1	53.8	53.8	7.1
LOS	A	A	A	A	D	D	A
Approach Delay	3.2		3.6			27.3	
Approach LOS	A		A			C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 7.4	Intersection LOS: A
Intersection Capacity Utilization 50.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	526	742	0	1140	401	248	0	326	0	0	0
Future Volume (veh/h)	0	526	742	0	1140	401	248	0	326	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	0	548	773	0	1188	298	258	0	126			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	0	4151	1288	0	4151	1288	361	0	316			
Arrive On Green	0.00	1.00	1.00	0.00	0.80	0.80	0.10	0.00	0.10			
Sat Flow, veh/h	0	5358	1610	0	5358	1610	3619	0	3167			
Grp Volume(v), veh/h	0	548	773	0	1188	298	258	0	126			
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1610	1810	0	1584			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	6.5	5.0	7.6	0.0	4.1			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	6.5	5.0	7.6	0.0	4.1			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	4151	1288	0	4151	1288	361	0	316			
V/C Ratio(X)	0.00	0.13	0.60	0.00	0.29	0.23	0.71	0.00	0.40			
Avail Cap(c_a), veh/h	0	4151	1288	0	4151	1288	1629	0	1425			
HCM Platoon Ratio	1.00	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.96	0.96	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	2.8	2.7	48.0	0.0	46.4			
Incr Delay (d2), s/veh	0.0	0.1	2.0	0.0	0.2	0.4	2.6	0.0	0.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.7	0.0	1.4	1.1	3.5	0.0	1.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.1	2.0	0.0	3.0	3.1	50.6	0.0	47.2			
LnGrp LOS	A	A	A	A	A	A	D	A	D			
Approach Vol, veh/h		1321			1486			384				
Approach Delay, s/veh		1.2			3.0			49.5				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		93.5				93.5		16.5				
Change Period (Y+Rc), s		5.5				5.5		5.5				
Max Green Setting (Gmax), s		49.5				49.5		49.5				
Max Q Clear Time (g_c+I1), s		2.0				8.5		9.6				
Green Ext Time (p_c), s		4.1				6.5		1.4				
Intersection Summary												
HCM 6th Ctrl Delay			7.9									
HCM 6th LOS			A									

Notes

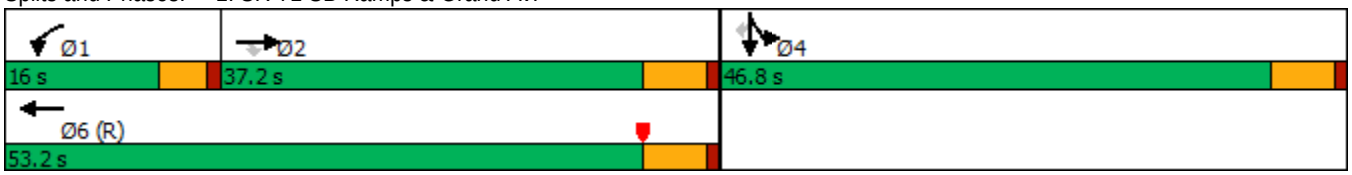
User approved volume balancing among the lanes for turning movement.

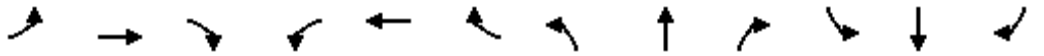
Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1397	554	297	1347	878	1	467
Future Volume (vph)	1397	554	297	1347	878	1	467
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	37.2	37.2	16.0	53.2	46.8	46.8	46.8
Total Split (%)	37.2%	37.2%	16.0%	53.2%	46.8%	46.8%	46.8%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1397	554	297	1347	0	0	0	0	878	1	467
Future Volume (veh/h)	0	1397	554	297	1347	0	0	0	0	878	1	467
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1644	563	349	1585	0				1034	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85				0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1722	535	421	2552	0				1220	0	
Arrive On Green	0.00	0.33	0.33	0.12	0.49	0.00				0.34	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	1644	563	349	1585	0				1034	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	31.0	33.2	9.7	22.4	0.0				26.5	0.0	0.0
Cycle Q Clear(g_c), s	0.0	31.0	33.2	9.7	22.4	0.0				26.5	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1722	535	421	2552	0				1220	0	
V/C Ratio(X)	0.00	0.95	1.05	0.83	0.62	0.00				0.85	0.00	
Avail Cap(c_a), veh/h	0	1722	535	421	2552	0				1549	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.16	0.16	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	32.7	33.4	43.0	18.6	0.0				30.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	13.3	53.7	2.2	0.2	0.0				3.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	14.1	20.0	4.2	8.1	0.0				11.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	46.0	87.1	45.2	18.8	0.0				34.5	0.0	0.0
LnGrp LOS	A	D	F	D	B	A				C	A	
Approach Vol, veh/h		2207			1934						1034	A
Approach Delay, s/veh		56.5			23.5						34.5	
Approach LOS		E			C						C	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	16.0	37.2		37.7		53.2						
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8						
Max Green Setting (Gmax), s	11.4	31.4		41.0		47.4						
Max Q Clear Time (g_c+I1), s	11.7	35.2		28.5		24.4						
Green Ext Time (p_c), s	0.0	0.0		3.4		11.7						

Intersection Summary												
HCM 6th Ctrl Delay			39.8									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

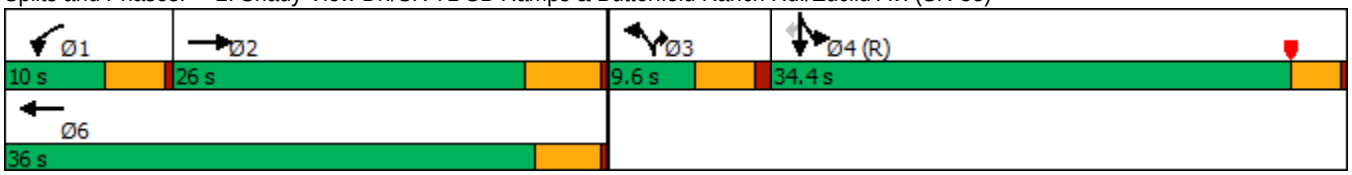
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

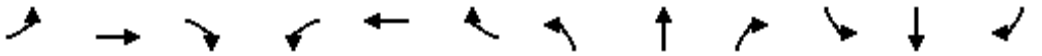
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	901	128	279	18	156	685	70	71
Future Volume (vph)	901	128	279	18	156	685	70	71
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	26.0	10.0	36.0	9.6	9.6	34.4	34.4	34.4
Total Split (%)	32.5%	12.5%	45.0%	12.0%	12.0%	43.0%	43.0%	43.0%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	901	62	128	279	0	18	0	156	685	70	71
Future Volume (veh/h)	0	901	62	128	279	0	18	0	156	685	70	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	939	53	133	291	0	19	0	103	766	0	47
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	912	51	136	1399		0	0	0	1832	0	815
Arrive On Green	0.00	0.26	0.26	0.02	0.13	0.00	0.00	0.00	0.00	0.51	0.00	0.51
Sat Flow, veh/h	0	3569	196	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	488	504	133	291	0		0.0		766	0	47
Grp Sat Flow(s),veh/h/ln	0	1805	1865	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	21.0	21.0	5.9	5.8	0.0				10.6	0.0	1.2
Cycle Q Clear(g_c), s	0.0	21.0	21.0	5.9	5.8	0.0				10.6	0.0	1.2
Prop In Lane	0.00		0.11	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	474	489	136	1399					1832	0	815
V/C Ratio(X)	0.00	1.03	1.03	0.98	0.21					0.42	0.00	0.06
Avail Cap(c_a), veh/h	0	474	489	136	1421					1832	0	815
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.78	0.78	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.5	29.5	39.0	23.9	0.0				12.4	0.0	10.0
Incr Delay (d2), s/veh	0.0	49.2	48.5	62.1	0.0	0.0				0.7	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	14.7	15.1	4.9	2.4	0.0				3.8	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	78.7	78.0	101.1	23.9	0.0				13.1	0.0	10.2
LnGrp LOS	A	F	F	F	C					B	A	B
Approach Vol, veh/h		992			424	A					813	
Approach Delay, s/veh		78.4			48.1						12.9	
Approach LOS		E			D						B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.0	26.0		44.0		36.0
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5
Max Green Setting (Gmax), s	6.0	21.0		30.9		* 32
Max Q Clear Time (g_c+I1), s	7.9	23.0		12.6		7.8
Green Ext Time (p_c), s	0.0	0.0		2.9		1.3

Intersection Summary	
HCM 6th Ctrl Delay	48.7
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

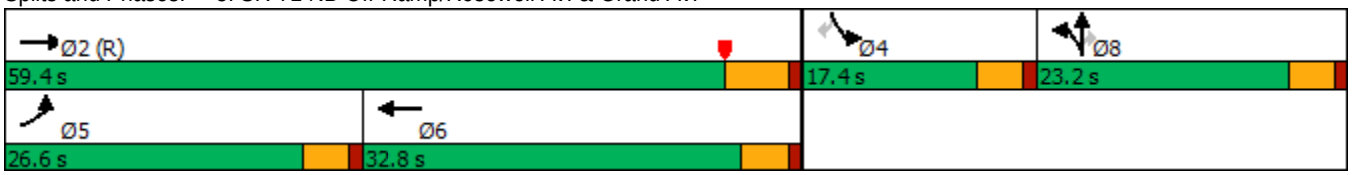
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

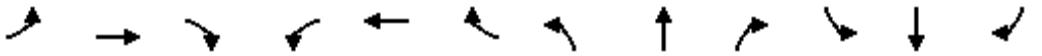
Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	367	1592	316	1618	379	137	214	162	799
Future Volume (vph)	367	1592	316	1618	379	137	214	162	799
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	34.8		14.7	21.5	21.5	21.5	9.5	9.5
Total Split (s)	26.6	59.4		32.8	23.2	23.2	23.2	17.4	17.4
Total Split (%)	26.6%	59.4%		32.8%	23.2%	23.2%	23.2%	17.4%	17.4%
Yellow Time (s)	3.5	4.8		3.7	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.8		4.7	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	None	None	None	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	367	1592	316	0	1618	86	379	137	214	162	0	799
Future Volume (veh/h)	367	1592	316	0	1618	86	379	137	214	162	0	799
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	399	1730	0	0	1759	93	280	333	92	176	0	550
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	400	3683		0	2843	150	338	355	301	0	0	0
Arrive On Green	0.22	0.71	0.00	0.00	0.44	0.44	0.19	0.19	0.19	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6669	338	1810	1900	1610		0	
Grp Volume(v), veh/h	399	1730	0	0	1347	505	280	333	92		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1839	1810	1900	1610			
Q Serve(g_s), s	22.0	14.5	0.0	0.0	21.1	21.1	14.9	17.3	4.9			
Cycle Q Clear(g_c), s	22.0	14.5	0.0	0.0	21.1	21.1	14.9	17.3	4.9			
Prop In Lane	1.00		1.00	0.00		0.18	1.00		1.00			
Lane Grp Cap(c), veh/h	400	3683		0	2176	817	338	355	301			
V/C Ratio(X)	1.00	0.47		0.00	0.62	0.62	0.83	0.94	0.31			
Avail Cap(c_a), veh/h	400	3683		0	2176	817	338	355	301			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.42	0.42	0.00	0.00	0.71	0.71	1.00	1.00	1.00			
Uniform Delay (d), s/veh	38.9	6.3	0.0	0.0	21.3	21.3	39.1	40.1	35.1			
Incr Delay (d2), s/veh	28.6	0.2	0.0	0.0	0.4	1.0	14.7	31.6	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	12.4	4.0	0.0	0.0	7.7	8.8	7.7	10.8	1.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.5	6.5	0.0	0.0	21.7	22.3	53.7	71.7	35.3			
LnGrp LOS	E	A		A	C	C	D	E	D			
Approach Vol, veh/h		2129	A		1852			705				
Approach Delay, s/veh		17.9			21.9			59.8				
Approach LOS		B			C			E				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		76.8			26.6	50.2		23.2				
Change Period (Y+Rc), s		5.8			4.5	* 5.8		4.5				
Max Green Setting (Gmax), s		53.6			22.1	* 28		18.7				
Max Q Clear Time (g_c+I1), s		16.5			24.0	23.1		19.3				
Green Ext Time (p_c), s		16.6			0.0	4.1		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	25.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

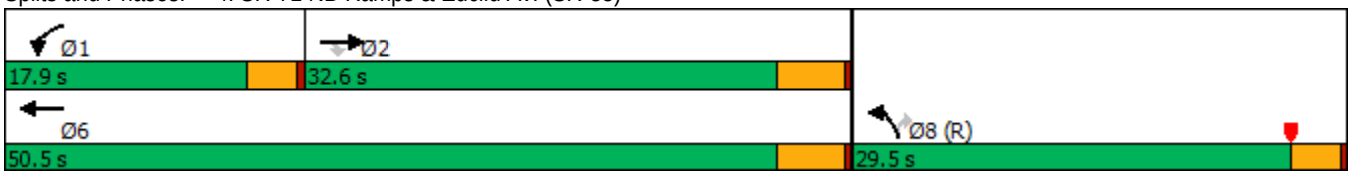
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	881	159	387	1119	135	1031
Future Volume (vph)	881	159	387	1119	135	1031
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	32.6	32.6	17.9	50.5	29.5	29.5
Total Split (%)	40.8%	40.8%	22.4%	63.1%	36.9%	36.9%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	881	159	387	1119	135	1031
Future Volume (veh/h)	881	159	387	1119	135	1031
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	1024	0	450	1301	157	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1150		326	1957	1256	
Arrive On Green	0.42	0.00	0.18	0.54	0.36	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	1024	0	450	1301	157	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	21.0	0.0	14.4	20.6	2.4	0.0
Cycle Q Clear(g_c), s	21.0	0.0	14.4	20.6	2.4	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1150		326	1957	1256	
V/C Ratio(X)	0.89		1.38	0.66	0.12	
Avail Cap(c_a), veh/h	1268		326	2076	1256	
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.39	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.8	0.0	32.8	13.1	17.3	0.0
Incr Delay (d2), s/veh	3.2	0.0	189.8	0.8	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	0.0	22.8	6.5	0.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.9	0.0	222.6	13.9	17.5	0.0
LnGrp LOS	C		F	B	B	
Approach Vol, veh/h	1024	A		1751	157	A
Approach Delay, s/veh	24.9			67.5	17.5	
Approach LOS	C			E	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	17.9	30.0				47.9	32.1
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	14.4	28.1				46.0	26.0
Max Q Clear Time (g_c+I1), s	16.4	23.0				22.6	4.4
Green Ext Time (p_c), s	0.0	2.5				9.1	0.2

Intersection Summary	
HCM 6th Ctrl Delay	50.0
HCM 6th LOS	D

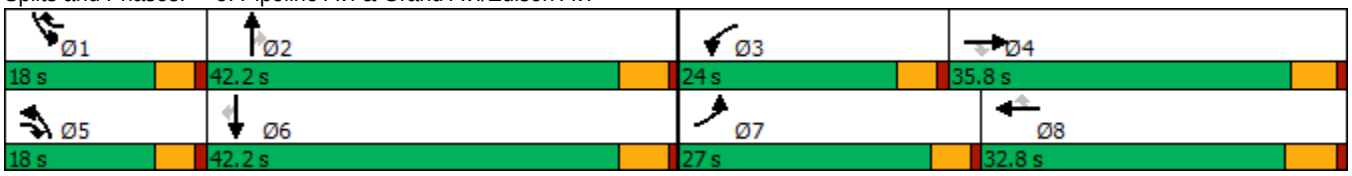
Notes

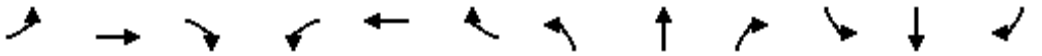
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	264	1054	238	233	907	84	284	437	170	131	549	157
Future Volume (vph)	264	1054	238	233	907	84	284	437	170	131	549	157
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	27.0	35.8	18.0	24.0	32.8	18.0	18.0	42.2	42.2	18.0	42.2	42.2
Total Split (%)	22.5%	29.8%	15.0%	20.0%	27.3%	15.0%	15.0%	35.2%	35.2%	15.0%	35.2%	35.2%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 101.7
Natural Cycle: 105
Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	264	1054	238	233	907	84	284	437	170	131	549	157
Future Volume (veh/h)	264	1054	238	233	907	84	284	437	170	131	549	157
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	290	1158	196	256	997	54	312	480	100	144	603	97
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	380	1636	699	344	1615	653	387	926	413	181	861	374
Arrive On Green	0.12	0.33	0.33	0.11	0.33	0.32	0.13	0.27	0.27	0.11	0.25	0.25
Sat Flow, veh/h	3141	4914	1523	3141	4914	1524	2956	3420	1525	1619	3420	1487
Grp Volume(v), veh/h	290	1158	196	256	997	54	312	480	100	144	603	97
Grp Sat Flow(s),veh/h/ln	1570	1638	1523	1570	1638	1524	1478	1710	1525	1619	1710	1487
Q Serve(g_s), s	8.5	19.6	7.6	7.5	16.3	2.0	9.8	11.4	4.9	8.3	15.3	5.0
Cycle Q Clear(g_c), s	8.5	19.6	7.6	7.5	16.3	2.0	9.8	11.4	4.9	8.3	15.3	5.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	380	1636	699	344	1615	653	387	926	413	181	861	374
V/C Ratio(X)	0.76	0.71	0.28	0.74	0.62	0.08	0.81	0.52	0.24	0.79	0.70	0.26
Avail Cap(c_a), veh/h	756	1636	699	658	1615	653	433	1368	610	237	1368	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.6	27.8	16.1	41.2	27.0	16.2	40.3	29.5	27.2	41.3	32.5	28.6
Incr Delay (d2), s/veh	1.2	2.6	1.0	1.2	1.8	0.2	8.5	0.5	0.3	9.6	1.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	7.8	2.6	2.9	6.2	0.7	3.9	4.5	1.7	3.7	6.2	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.9	30.4	17.1	42.4	28.8	16.4	48.9	30.0	27.5	50.9	33.5	29.0
LnGrp LOS	D	C	B	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1644			1307			892			844	
Approach Delay, s/veh		30.8			30.9			36.3			35.9	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.7	29.8	14.5	36.5	16.5	28.0	15.6	35.4
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	13.4	36.8	19.4	* 31	13.4	36.8	22.4	27.0
Max Q Clear Time (g_c+I1), s	10.3	13.4	9.5	21.6	11.8	17.3	10.5	18.3
Green Ext Time (p_c), s	0.1	3.3	0.3	5.4	0.1	4.0	0.4	4.1

Intersection Summary	
HCM 6th Ctrl Delay	32.8
HCM 6th LOS	C

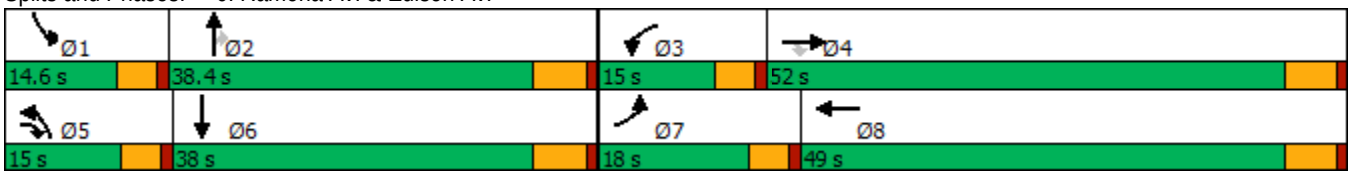
Notes

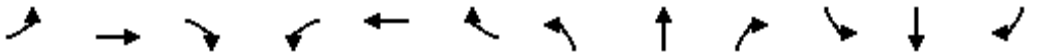
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	113	1135	113	87	930	92	432	73	60	400
Future Volume (vph)	113	1135	113	87	930	92	432	73	60	400
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	18.0	52.0	15.0	15.0	49.0	15.0	38.4	38.4	14.6	38.0
Total Split (%)	15.0%	43.3%	12.5%	12.5%	40.8%	12.5%	32.0%	32.0%	12.2%	31.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 109.5
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	1135	113	87	930	61	92	432	73	60	400	101
Future Volume (veh/h)	113	1135	113	87	930	61	92	432	73	60	400	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1700	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	127	1275	103	98	1045	67	103	485	60	67	449	92
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	162	1602	1369	130	1464	94	135	815	363	93	600	122
Arrive On Green	0.10	0.47	0.46	0.08	0.45	0.43	0.08	0.24	0.24	0.06	0.21	0.19
Sat Flow, veh/h	1619	3420	2536	1619	3263	209	1619	3420	1525	1619	2830	576
Grp Volume(v), veh/h	127	1275	103	98	548	564	103	485	60	67	270	271
Grp Sat Flow(s),veh/h/ln	1619	1710	1268	1619	1710	1762	1619	1710	1525	1619	1710	1696
Q Serve(g_s), s	7.9	32.4	2.0	6.1	26.6	26.7	6.4	12.9	3.2	4.2	15.1	15.4
Cycle Q Clear(g_c), s	7.9	32.4	2.0	6.1	26.6	26.7	6.4	12.9	3.2	4.2	15.1	15.4
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	162	1602	1369	130	767	790	135	815	363	93	363	360
V/C Ratio(X)	0.79	0.80	0.08	0.76	0.71	0.71	0.76	0.60	0.17	0.72	0.74	0.75
Avail Cap(c_a), veh/h	221	1602	1369	174	767	790	174	1148	512	167	567	563
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.1	23.1	11.3	46.2	22.9	23.0	46.0	34.6	31.0	47.5	37.8	38.2
Incr Delay (d2), s/veh	8.2	4.2	0.1	8.0	5.6	5.5	9.8	0.7	0.2	3.9	3.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	12.7	0.5	2.6	11.0	11.3	2.8	5.2	1.2	1.7	6.4	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.2	27.3	11.4	54.1	28.5	28.5	55.8	35.3	31.2	51.4	40.8	41.4
LnGrp LOS	D	C	B	D	C	C	E	D	C	D	D	D
Approach Vol, veh/h		1505			1210			648			608	
Approach Delay, s/veh		28.4			30.6			38.2			42.2	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	28.4	12.2	52.0	12.6	25.7	14.2	50.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.0	32.6	10.4	46.2	10.4	32.2	13.4	43.2
Max Q Clear Time (g_c+I1), s	6.2	14.9	8.1	34.4	8.4	17.4	9.9	28.7
Green Ext Time (p_c), s	0.0	2.9	0.0	6.7	0.0	2.5	0.0	5.8

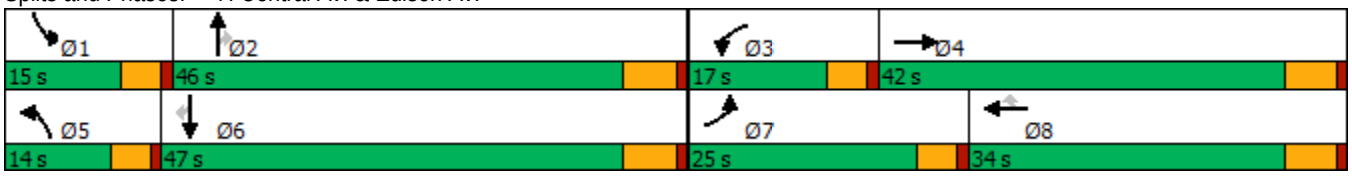
Intersection Summary	
HCM 6th Ctrl Delay	32.8
HCM 6th LOS	C

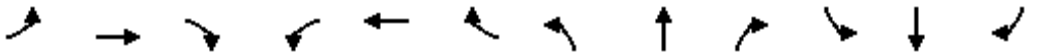
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	220	879	257	638	93	85	1002	414	112	802	137
Future Volume (vph)	220	879	257	638	93	85	1002	414	112	802	137
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	25.0	42.0	17.0	34.0	34.0	14.0	46.0	46.0	15.0	47.0	47.0
Total Split (%)	20.8%	35.0%	14.2%	28.3%	28.3%	11.7%	38.3%	38.3%	12.5%	39.2%	39.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 117.9
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	879	85	257	638	93	85	1002	414	112	802	137
Future Volume (veh/h)	220	879	85	257	638	93	85	1002	414	112	802	137
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	227	906	84	265	658	85	88	1033	346	115	827	107
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	259	1026	95	330	923	412	116	1175	515	145	1238	552
Arrive On Green	0.16	0.32	0.31	0.11	0.27	0.27	0.07	0.34	0.34	0.09	0.36	0.36
Sat Flow, veh/h	1619	3160	293	3141	3420	1525	1619	3420	1499	1619	3420	1524
Grp Volume(v), veh/h	227	490	500	265	658	85	88	1033	346	115	827	107
Grp Sat Flow(s),veh/h/ln	1619	1710	1743	1570	1710	1525	1619	1710	1499	1619	1710	1524
Q Serve(g_s), s	16.0	31.8	31.8	9.6	20.3	5.0	6.2	33.2	23.1	8.1	23.8	5.6
Cycle Q Clear(g_c), s	16.0	31.8	31.8	9.6	20.3	5.0	6.2	33.2	23.1	8.1	23.8	5.6
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	259	555	566	330	923	412	116	1175	515	145	1238	552
V/C Ratio(X)	0.88	0.88	0.88	0.80	0.71	0.21	0.76	0.88	0.67	0.79	0.67	0.19
Avail Cap(c_a), veh/h	291	555	566	349	923	412	138	1228	538	152	1257	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.0	37.4	37.5	51.2	38.6	33.0	53.3	36.1	32.8	52.2	31.4	25.6
Incr Delay (d2), s/veh	21.4	18.2	17.9	11.0	4.7	1.1	14.3	7.4	3.1	21.1	1.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	15.4	15.7	4.2	8.8	1.9	2.9	14.3	8.4	4.1	9.6	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.5	55.6	55.5	62.2	43.3	34.1	67.6	43.5	35.9	73.3	32.8	25.8
LnGrp LOS	E	E	E	E	D	C	E	D	D	E	C	C
Approach Vol, veh/h		1217			1008			1467			1049	
Approach Delay, s/veh		58.1			47.5			43.1			36.5	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	44.2	16.3	42.0	12.4	46.3	22.7	35.6
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.4	40.2	12.4	36.2	9.4	41.2	20.4	28.2
Max Q Clear Time (g_c+I1), s	10.1	35.2	11.6	33.8	8.2	25.8	18.0	22.3
Green Ext Time (p_c), s	0.0	3.2	0.0	1.3	0.0	5.0	0.1	2.2

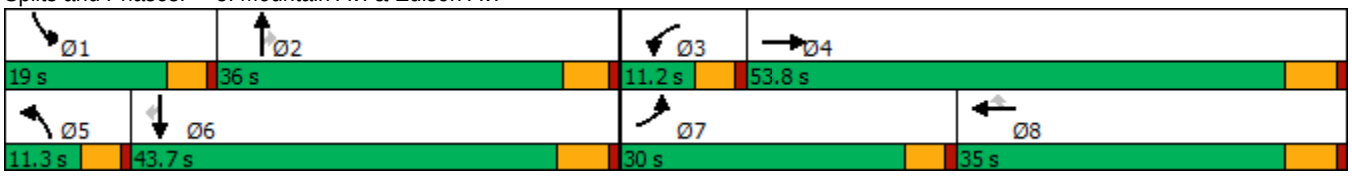
Intersection Summary	
HCM 6th Ctrl Delay	46.4
HCM 6th LOS	D

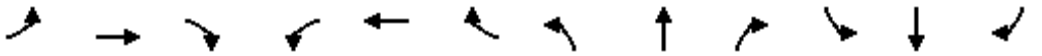
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	208	1140	36	689	89	38	93	29	110	171	216
Future Volume (vph)	208	1140	36	689	89	38	93	29	110	171	216
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	30.0	53.8	11.2	35.0	35.0	11.3	36.0	36.0	19.0	43.7	43.7
Total Split (%)	25.0%	44.8%	9.3%	29.2%	29.2%	9.4%	30.0%	30.0%	15.8%	36.4%	36.4%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 93.3
Natural Cycle: 85
Control Type: Actuated-Uncoordinated

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	208	1140	82	36	689	89	38	93	29	110	171	216
Future Volume (veh/h)	208	1140	82	36	689	89	38	93	29	110	171	216
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	212	1163	82	37	703	79	39	95	15	112	174	155
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	255	2582	182	65	1487	663	67	236	195	148	340	288
Arrive On Green	0.16	0.55	0.53	0.04	0.43	0.43	0.04	0.13	0.13	0.09	0.19	0.19
Sat Flow, veh/h	1619	4676	330	1619	3420	1525	1619	1800	1492	1619	1800	1525
Grp Volume(v), veh/h	212	815	430	37	703	79	39	95	15	112	174	155
Grp Sat Flow(s),veh/h/ln	1619	1638	1730	1619	1710	1525	1619	1800	1492	1619	1800	1525
Q Serve(g_s), s	11.5	13.4	13.5	2.0	13.2	2.8	2.1	4.4	0.8	6.1	7.8	8.3
Cycle Q Clear(g_c), s	11.5	13.4	13.5	2.0	13.2	2.8	2.1	4.4	0.8	6.1	7.8	8.3
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	255	1809	955	65	1487	663	67	236	195	148	340	288
V/C Ratio(X)	0.83	0.45	0.45	0.57	0.47	0.12	0.58	0.40	0.08	0.76	0.51	0.54
Avail Cap(c_a), veh/h	467	1809	955	129	1487	663	131	639	529	269	792	671
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.8	12.0	12.2	42.5	18.1	15.2	42.5	36.0	34.4	40.0	32.8	33.0
Incr Delay (d2), s/veh	2.7	0.8	1.5	2.9	1.1	0.4	3.0	1.1	0.2	2.9	1.2	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	4.4	4.8	0.8	4.9	0.9	0.9	1.9	0.3	2.4	3.3	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.6	12.8	13.7	45.4	19.2	15.6	45.5	37.1	34.6	42.9	34.0	34.6
LnGrp LOS	D	B	B	D	B	B	D	D	C	D	C	C
Approach Vol, veh/h		1457			819			149			441	
Approach Delay, s/veh		17.0			20.0			39.0			36.5	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	16.5	7.6	53.8	7.7	21.1	18.2	43.2
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	* 31	6.6	48.0	6.7	37.9	25.4	29.2
Max Q Clear Time (g_c+I1), s	8.1	6.4	4.0	15.5	4.1	10.3	13.5	15.2
Green Ext Time (p_c), s	0.1	0.5	0.0	9.3	0.0	1.4	0.2	3.9

Intersection Summary	
HCM 6th Ctrl Delay	22.0
HCM 6th LOS	C

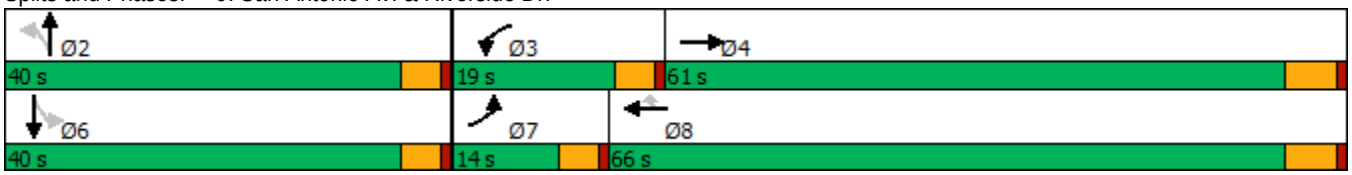
Notes

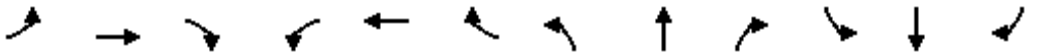
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	31	802	59	742	26	90	15	13	7
Future Volume (vph)	31	802	59	742	26	90	15	13	7
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	14.0	61.0	19.0	66.0	66.0	40.0	40.0	40.0	40.0
Total Split (%)	11.7%	50.8%	15.8%	55.0%	55.0%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 97.2
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	802	116	59	742	26	90	15	41	13	7	31
Future Volume (veh/h)	31	802	116	59	742	26	90	15	41	13	7	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	32	835	115	61	773	27	94	16	19	14	7	9
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	61	2069	285	86	2405	1072	235	92	109	218	88	113
Arrive On Green	0.04	0.69	0.67	0.05	0.70	0.70	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1619	3010	415	1619	3420	1524	1340	747	887	1312	715	919
Grp Volume(v), veh/h	32	474	476	61	773	27	94	0	35	14	0	16
Grp Sat Flow(s),veh/h/ln	1619	1710	1715	1619	1710	1524	1340	0	1635	1312	0	1635
Q Serve(g_s), s	1.7	10.6	10.7	3.3	7.6	0.5	5.9	0.0	1.7	0.9	0.0	0.8
Cycle Q Clear(g_c), s	1.7	10.6	10.7	3.3	7.6	0.5	6.7	0.0	1.7	2.5	0.0	0.8
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.54	1.00		0.56
Lane Grp Cap(c), veh/h	61	1176	1179	86	2405	1072	235	0	201	218	0	201
V/C Ratio(X)	0.53	0.40	0.40	0.71	0.32	0.03	0.40	0.00	0.17	0.06	0.00	0.08
Avail Cap(c_a), veh/h	184	1176	1179	275	2405	1072	617	0	668	592	0	667
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.7	6.0	6.1	41.0	5.0	4.0	37.2	0.0	34.8	35.8	0.0	34.4
Incr Delay (d2), s/veh	2.6	1.0	1.0	3.9	0.4	0.0	1.1	0.0	0.4	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.0	3.1	1.3	2.0	0.1	2.0	0.0	0.7	0.3	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.2	7.0	7.1	44.9	5.4	4.0	38.3	0.0	35.2	35.9	0.0	34.6
LnGrp LOS	D	A	A	D	A	A	D	A	D	D	A	C
Approach Vol, veh/h		982			861			129			30	
Approach Delay, s/veh		8.3			8.1			37.4			35.2	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.8	8.7	64.6		14.8	7.3	66.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		35.4	14.4	55.2		35.4	9.4	60.2				
Max Q Clear Time (g_c+I1), s		8.7	5.3	12.7		4.5	3.7	9.6				
Green Ext Time (p_c), s		0.5	0.0	6.5		0.1	0.0	5.7				

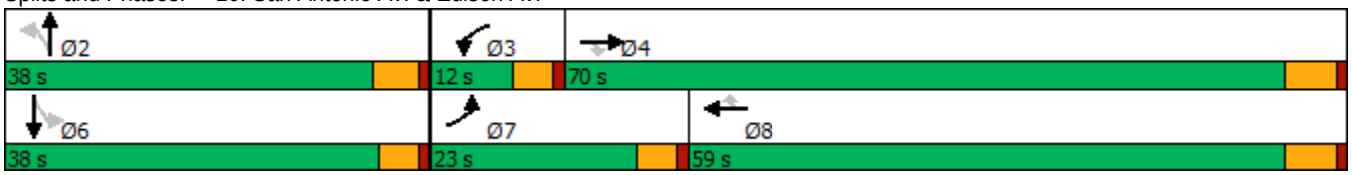
Intersection Summary												
HCM 6th Ctrl Delay			10.5									
HCM 6th LOS			B									

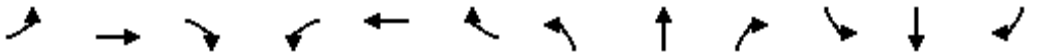
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	84	1092	39	7	739	16	22	31	11	42
Future Volume (vph)	84	1092	39	7	739	16	22	31	11	42
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	23.0	70.0	70.0	12.0	59.0	59.0	38.0	38.0	38.0	38.0
Total Split (%)	19.2%	58.3%	58.3%	10.0%	49.2%	49.2%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 95.9
Natural Cycle: 75
Control Type: Actuated-Uncoordinated

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	1092	39	7	739	16	22	31	10	11	42	50
Future Volume (veh/h)	84	1092	39	7	739	16	22	31	10	11	42	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1000	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	89	1162	40	7	786	14	23	33	7	12	45	23
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	122	2502	1116	15	2298	1025	104	126	22	62	120	55
Arrive On Green	0.08	0.73	0.73	0.02	0.67	0.67	0.12	0.12	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1619	3420	1525	952	3420	1525	412	1052	183	139	1052	481
Grp Volume(v), veh/h	89	1162	40	7	786	14	63	0	0	80	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	952	1710	1525	1646	0	0	1672	0	0
Q Serve(g_s), s	4.9	12.5	0.7	0.7	8.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.9	12.5	0.7	0.7	8.8	0.3	2.9	0.0	0.0	3.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.37		0.11	0.15		0.29
Lane Grp Cap(c), veh/h	122	2502	1116	15	2298	1025	252	0	0	237	0	0
V/C Ratio(X)	0.73	0.46	0.04	0.47	0.34	0.01	0.25	0.00	0.00	0.34	0.00	0.00
Avail Cap(c_a), veh/h	341	2502	1116	84	2298	1025	657	0	0	668	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	40.8	4.9	3.3	44.0	6.3	4.9	36.3	0.0	0.0	37.2	0.0	0.0
Incr Delay (d2), s/veh	3.2	0.6	0.1	8.4	0.4	0.0	0.5	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	3.0	0.1	0.2	2.5	0.1	1.3	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.0	5.5	3.4	52.5	6.7	4.9	36.8	0.0	0.0	38.0	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1291			807			63			80	
Approach Delay, s/veh		8.1			7.1			36.8			38.0	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.8	5.4	70.0		14.8	10.8	64.6				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		32.9	7.4	64.2		* 33	18.4	53.2				
Max Q Clear Time (g_c+I1), s		4.9	2.7	14.5		5.9	6.9	10.8				
Green Ext Time (p_c), s		0.3	0.0	10.3		0.4	0.1	5.7				

Intersection Summary	
HCM 6th Ctrl Delay	9.6
HCM 6th LOS	A

Notes

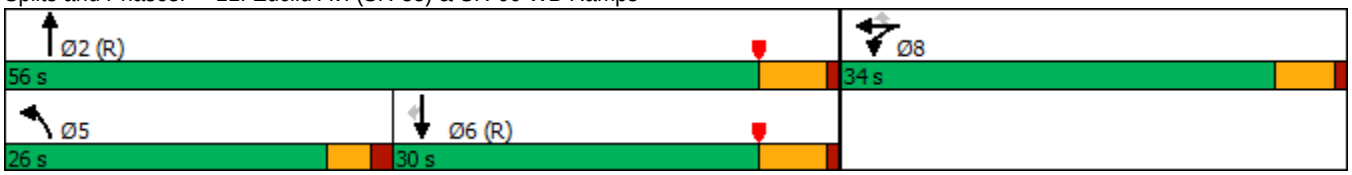
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

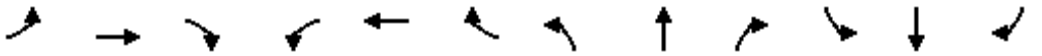
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	636	6	415	350	1107	1032	502
Future Volume (vph)	636	6	415	350	1107	1032	502
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	34.0	34.0	34.0	26.0	56.0	30.0	30.0
Total Split (%)	37.8%	37.8%	37.8%	28.9%	62.2%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	636	6	415	350	1107	0	0	1032	502
Future Volume (veh/h)	0	0	0	636	6	415	350	1107	0	0	1032	502
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				742	0	169	365	1153	0	0	1075	318
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				851	0	378	391	2340	0	0	1380	616
Arrive On Green				0.24	0.00	0.24	0.43	1.00	0.00	0.00	0.38	0.38
Sat Flow, veh/h				3619	0	1608	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				742	0	169	365	1153	0	0	1075	318
Grp Sat Flow(s),veh/h/ln				1810	0	1608	1810	1805	0	0	1805	1610
Q Serve(g_s), s				17.8	0.0	8.1	17.3	0.0	0.0	0.0	23.6	13.7
Cycle Q Clear(g_c), s				17.8	0.0	8.1	17.3	0.0	0.0	0.0	23.6	13.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				851	0	378	391	2340	0	0	1380	616
V/C Ratio(X)				0.87	0.00	0.45	0.93	0.49	0.00	0.00	0.78	0.52
Avail Cap(c_a), veh/h				1166	0	518	432	2340	0	0	1380	616
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.38	0.38	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.1	0.0	29.4	25.0	0.0	0.0	0.0	24.5	21.4
Incr Delay (d2), s/veh				4.4	0.0	0.3	12.5	0.3	0.0	0.0	4.4	3.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.8	0.0	3.0	6.4	0.1	0.0	0.0	10.1	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				37.6	0.0	29.7	37.4	0.3	0.0	0.0	28.9	24.5
LnGrp LOS				D	A	C	D	A	A	A	C	C
Approach Vol, veh/h					911			1518			1393	
Approach Delay, s/veh					36.1			9.2			27.9	
Approach LOS					D			A			C	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	63.8		23.9	39.9		26.2						
Change Period (Y+Rc), s	5.5		4.5	5.5		5.0						
Max Green Setting (Gmax), s	50.5		21.5	24.5		29.0						
Max Q Clear Time (g_c+I1), s	2.0		19.3	25.6		19.8						
Green Ext Time (p_c), s	15.7		0.2	0.0		1.4						

Intersection Summary		
HCM 6th Ctrl Delay	22.4	
HCM 6th LOS	C	

Notes

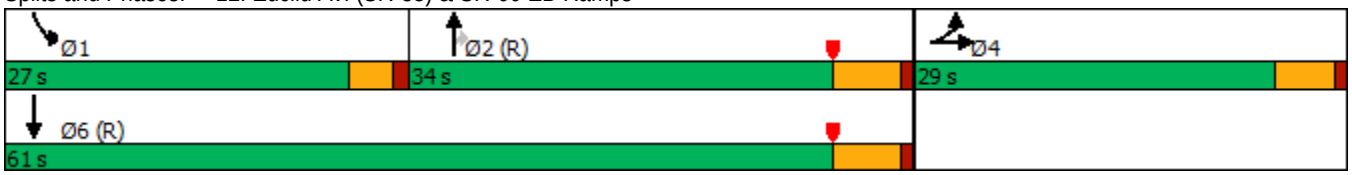
User approved volume balancing among the lanes for turning movement.

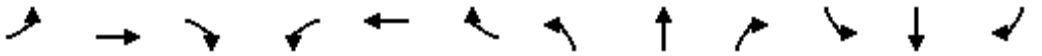
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	424	3	1033	629	383	1286
Future Volume (vph)	424	3	1033	629	383	1286
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	29.0	29.0	34.0	34.0	27.0	61.0
Total Split (%)	32.2%	32.2%	37.8%	37.8%	30.0%	67.8%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	424	3	381	0	0	0	0	1033	629	383	1286	0
Future Volume (veh/h)	424	3	381	0	0	0	0	1033	629	383	1286	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	379	79	322				0	1054	448	391	1312	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	471	85	347				0	1258	548	416	2248	0
Arrive On Green	0.26	0.26	0.26				0.00	0.35	0.35	0.46	1.00	0.00
Sat Flow, veh/h	1810	327	1333				0	3705	1572	1810	3705	0
Grp Volume(v), veh/h	379	0	401				0	1054	448	391	1312	0
Grp Sat Flow(s),veh/h/ln	1810	0	1660				0	1805	1572	1810	1805	0
Q Serve(g_s), s	17.6	0.0	21.2				0.0	24.2	23.4	18.5	0.0	0.0
Cycle Q Clear(g_c), s	17.6	0.0	21.2				0.0	24.2	23.4	18.5	0.0	0.0
Prop In Lane	1.00		0.80				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	471	0	432				0	1258	548	416	2248	0
V/C Ratio(X)	0.80	0.00	0.93				0.00	0.84	0.82	0.94	0.58	0.00
Avail Cap(c_a), veh/h	483	0	443				0	1258	548	462	2248	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.53	0.53	0.36	0.36	0.00
Uniform Delay (d), s/veh	31.1	0.0	32.4				0.0	27.0	26.7	23.7	0.0	0.0
Incr Delay (d2), s/veh	8.6	0.0	24.9				0.0	3.7	7.2	12.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	0.0	10.9				0.0	10.3	9.2	6.5	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.8	0.0	57.4				0.0	30.7	33.9	35.8	0.4	0.0
LnGrp LOS	D	A	E				A	C	C	D	A	A
Approach Vol, veh/h		780						1502			1703	
Approach Delay, s/veh		48.8						31.7			8.5	
Approach LOS		D						C			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	24.7	36.9		28.4		61.6
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	23.0	28.5		24.0		55.5
Max Q Clear Time (g_c+I1), s	20.5	26.2		23.2		2.0
Green Ext Time (p_c), s	0.2	1.9		0.2		19.8

Intersection Summary		
HCM 6th Ctrl Delay		25.1
HCM 6th LOS		C

Notes

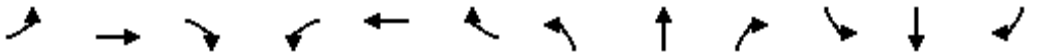
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	109	377	71	377	191	1385	75	268	1209	149
Future Volume (vph)	109	377	71	377	191	1385	75	268	1209	149
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	20.0	35.1	15.9	31.0	27.0	47.0	47.0	22.0	42.0	42.0
Total Split (%)	16.7%	29.3%	13.3%	25.8%	22.5%	39.2%	39.2%	18.3%	35.0%	35.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 110.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	377	142	71	377	143	191	1385	75	268	1209	149
Future Volume (veh/h)	109	377	142	71	377	143	191	1385	75	268	1209	149
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	116	401	128	76	401	126	203	1473	53	285	1286	105
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	141	566	178	95	494	153	232	1989	616	344	1856	576
Arrive On Green	0.09	0.22	0.22	0.06	0.19	0.19	0.14	0.40	0.40	0.12	0.38	0.38
Sat Flow, veh/h	1619	2548	803	1619	2554	792	1619	4914	1523	2956	4914	1524
Grp Volume(v), veh/h	116	267	262	76	267	260	203	1473	53	285	1286	105
Grp Sat Flow(s),veh/h/ln	1619	1710	1642	1619	1710	1636	1619	1638	1523	1478	1638	1524
Q Serve(g_s), s	7.2	14.8	15.2	4.8	15.3	15.7	12.6	26.2	2.2	9.7	22.7	4.7
Cycle Q Clear(g_c), s	7.2	14.8	15.2	4.8	15.3	15.7	12.6	26.2	2.2	9.7	22.7	4.7
Prop In Lane	1.00		0.49	1.00		0.48	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	141	379	364	95	330	316	232	1989	616	344	1856	576
V/C Ratio(X)	0.82	0.70	0.72	0.80	0.81	0.82	0.87	0.74	0.09	0.83	0.69	0.18
Avail Cap(c_a), veh/h	243	487	468	178	419	401	353	1989	616	500	1856	576
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.1	36.9	37.0	47.8	39.6	39.8	43.1	26.0	18.9	44.4	27.0	21.4
Incr Delay (d2), s/veh	4.5	3.2	3.8	5.8	8.9	10.5	10.0	2.5	0.3	4.9	2.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	6.3	6.2	2.0	7.0	7.0	5.6	10.0	0.8	3.7	8.8	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.6	40.1	40.8	53.6	48.5	50.3	53.1	28.5	19.1	49.4	29.1	22.1
LnGrp LOS	D	D	D	D	D	D	D	C	B	D	C	C
Approach Vol, veh/h		645			603			1729			1676	
Approach Delay, s/veh		42.3			49.9			31.1			32.1	
Approach LOS		D			D			C			C	

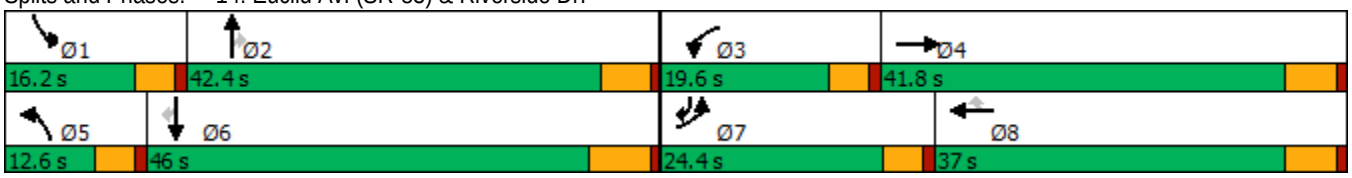
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.6	47.0	10.6	28.6	19.3	44.2	13.6	25.7
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	17.4	41.6	11.3	29.3	22.4	36.6	15.4	25.2
Max Q Clear Time (g_c+I1), s	11.7	28.2	6.8	17.2	14.6	24.7	9.2	17.7
Green Ext Time (p_c), s	0.3	8.1	0.0	2.3	0.2	6.7	0.1	1.7

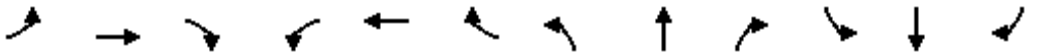
Intersection Summary	
HCM 6th Ctrl Delay	35.5
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	154	467	190	417	65	82	1194	246	142	1018	196
Future Volume (vph)	154	467	190	417	65	82	1194	246	142	1018	196
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	24.4	41.8	19.6	37.0	37.0	12.6	42.4	42.4	16.2	46.0	24.4
Total Split (%)	20.3%	34.8%	16.3%	30.8%	30.8%	10.5%	35.3%	35.3%	13.5%	38.3%	20.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None
Act Effct Green (s)	15.6	36.0	15.0	35.4	35.4	7.8	37.0	37.0	11.6	39.7	57.2
Actuated g/C Ratio	0.13	0.30	0.12	0.30	0.30	0.06	0.31	0.31	0.10	0.33	0.48
v/c Ratio	0.76	1.07	0.99	0.43	0.12	0.81	1.18	0.43	0.95	0.94	0.26
Control Delay	72.5	100.0	112.6	36.6	0.4	103.6	128.6	12.0	114.0	54.9	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.5	100.0	112.6	36.6	0.4	103.6	128.6	12.0	114.0	54.9	6.0
LOS	E	F	F	D	A	F	F	B	F	D	A
Approach Delay		94.0		54.6			108.4			54.0	
Approach LOS		F		D			F			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 80.2	Intersection LOS: F
Intersection Capacity Utilization 103.7%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	467	83	190	417	65	82	1194	246	142	1018	196
Future Volume (veh/h)	154	467	83	190	417	65	82	1194	246	142	1018	196
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	160	486	61	198	434	52	85	1244	202	148	1060	113
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	184	466	58	201	1051	468	104	1045	466	155	1152	681
Arrive On Green	0.11	0.30	0.30	0.12	0.31	0.31	0.06	0.31	0.31	0.10	0.34	0.34
Sat Flow, veh/h	1619	1568	197	1619	3420	1524	1619	3420	1525	1619	3420	1506
Grp Volume(v), veh/h	160	0	547	198	434	52	85	1244	202	148	1060	113
Grp Sat Flow(s),veh/h/ln	1619	0	1765	1619	1710	1524	1619	1710	1525	1619	1710	1506
Q Serve(g_s), s	11.8	0.0	36.0	14.8	12.2	3.0	6.3	37.0	12.8	11.0	36.1	5.4
Cycle Q Clear(g_c), s	11.8	0.0	36.0	14.8	12.2	3.0	6.3	37.0	12.8	11.0	36.1	5.4
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	184	0	525	201	1051	468	104	1045	466	155	1152	681
V/C Ratio(X)	0.87	0.00	1.04	0.99	0.41	0.11	0.81	1.19	0.43	0.95	0.92	0.17
Avail Cap(c_a), veh/h	265	0	525	201	1051	468	107	1045	466	155	1152	681
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	0.0	42.6	53.0	33.3	30.1	55.9	42.0	33.7	54.5	38.6	19.7
Incr Delay (d2), s/veh	14.1	0.0	50.9	59.6	0.3	0.1	33.6	95.4	2.9	58.1	13.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	22.4	9.2	4.9	1.1	3.4	28.4	5.0	6.9	16.7	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.8	0.0	93.4	112.6	33.5	30.2	89.6	137.5	36.6	112.5	51.7	20.3
LnGrp LOS	E	A	F	F	C	C	F	F	D	F	D	C
Approach Vol, veh/h		707			684			1531			1321	
Approach Delay, s/veh		87.4			56.2			121.5			55.9	
Approach LOS		F			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	43.5	19.6	41.8	12.4	47.3	18.4	43.0
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	11.6	* 37	15.0	36.0	8.0	39.5	19.8	31.2
Max Q Clear Time (g_c+I1), s	13.0	39.0	16.8	38.0	8.3	38.1	13.8	14.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	1.0	0.1	2.5

Intersection Summary	
HCM 6th Ctrl Delay	84.8
HCM 6th LOS	F

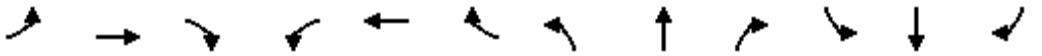
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	98	290	53	80	115	46	1412	233	25	1154	73
Future Volume (vph)	98	290	53	80	115	46	1412	233	25	1154	73
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	44.0	44.0	44.0	44.0	44.0	12.4	65.0	65.0	11.0	63.6	63.6
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	10.3%	54.2%	54.2%	9.2%	53.0%	53.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	27.9	27.9	27.9		27.9	6.9	62.7	62.7	5.9	58.3	58.3
Actuated g/C Ratio	0.26	0.26	0.26		0.26	0.06	0.58	0.58	0.05	0.54	0.54
v/c Ratio	0.43	0.67	0.13		1.08	0.48	0.76	0.28	0.31	0.67	0.09
Control Delay	39.1	43.3	4.8		125.3	67.9	23.3	11.4	62.6	22.6	4.5
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.1	43.3	4.8		125.3	67.9	23.3	11.4	62.6	22.6	4.5
LOS	D	D	A		F	E	C	B	E	C	A
Approach Delay		37.7			125.3		22.9			22.4	
Approach LOS		D			F		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 30.4	Intersection LOS: C
Intersection Capacity Utilization 84.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	290	53	80	115	10	46	1412	233	25	1154	73
Future Volume (veh/h)	98	290	53	80	115	10	46	1412	233	25	1154	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	105	312	34	86	124	7	49	1518	180	27	1241	45
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	274	520	441	122	159	8	61	1828	799	41	1787	780
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.04	0.53	0.53	0.03	0.52	0.52
Sat Flow, veh/h	1208	1800	1525	268	550	27	1619	3420	1494	1619	3420	1494
Grp Volume(v), veh/h	105	312	34	217	0	0	49	1518	180	27	1241	45
Grp Sat Flow(s),veh/h/ln	1208	1800	1525	845	0	0	1619	1710	1494	1619	1710	1494
Q Serve(g_s), s	0.0	16.7	1.8	13.1	0.0	0.0	3.4	41.6	7.1	1.8	30.4	1.7
Cycle Q Clear(g_c), s	14.4	16.7	1.8	29.7	0.0	0.0	3.4	41.6	7.1	1.8	30.4	1.7
Prop In Lane	1.00		1.00	0.40		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	274	520	441	289	0	0	61	1828	799	41	1787	780
V/C Ratio(X)	0.38	0.60	0.08	0.75	0.00	0.00	0.81	0.83	0.23	0.66	0.69	0.06
Avail Cap(c_a), veh/h	338	615	521	362	0	0	113	1828	799	93	1787	780
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.4	34.2	28.9	42.1	0.0	0.0	53.4	21.8	13.8	54.0	20.0	13.2
Incr Delay (d2), s/veh	0.9	1.2	0.1	6.6	0.0	0.0	9.0	4.5	0.7	6.5	2.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	7.2	0.7	6.2	0.0	0.0	1.5	15.4	2.3	0.8	11.1	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.3	35.4	29.0	48.7	0.0	0.0	62.4	26.3	14.4	60.5	22.3	13.3
LnGrp LOS	C	D	C	D	A	A	E	C	B	E	C	B
Approach Vol, veh/h		451			217			1747			1313	
Approach Delay, s/veh		34.6			48.7			26.1			22.8	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	66.3		38.1	8.8	64.9		38.1				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	6.4	* 60		38.2	7.8	57.1		38.2				
Max Q Clear Time (g_c+I1), s	3.8	43.6		18.7	5.4	32.4		31.7				
Green Ext Time (p_c), s	0.0	9.5		2.0	0.0	8.9		0.6				

Intersection Summary			
HCM 6th Ctrl Delay		27.3	
HCM 6th LOS		C	

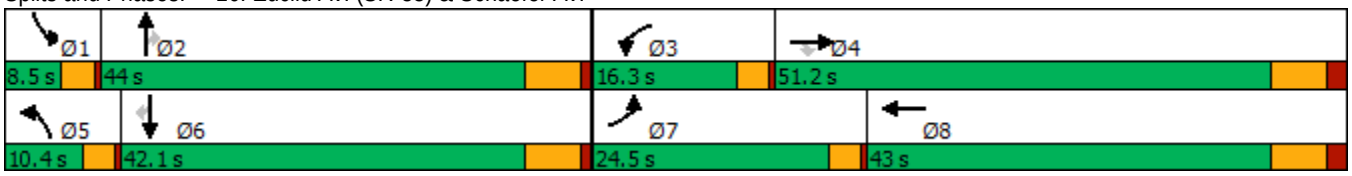
Notes

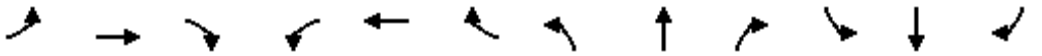
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	297	293	192	80	70	91	1341	84	30	1177	118
Future Volume (vph)	297	293	192	80	70	91	1341	84	30	1177	118
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	24.5	51.2	51.2	16.3	43.0	10.4	44.0	44.0	8.5	42.1	42.1
Total Split (%)	20.4%	42.7%	42.7%	13.6%	35.8%	8.7%	36.7%	36.7%	7.1%	35.1%	35.1%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	21.4	24.1	24.1	10.8	13.2	7.0	42.7	42.7	5.1	36.8	36.8
Actuated g/C Ratio	0.22	0.25	0.25	0.11	0.14	0.07	0.45	0.45	0.05	0.38	0.38
v/c Ratio	0.83	0.65	0.37	0.45	0.38	0.78	0.89	0.11	0.35	0.90	0.18
Control Delay	58.8	39.6	6.0	52.1	35.1	87.4	36.7	1.5	60.6	40.9	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.8	39.6	6.0	52.1	35.1	87.4	36.7	1.5	60.6	40.9	4.7
LOS	E	D	A	D	D	F	D	A	E	D	A
Approach Delay		38.6			42.9		37.8			38.1	
Approach LOS		D			D		D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 95.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 38.3	Intersection LOS: D
Intersection Capacity Utilization 85.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	297	293	192	80	70	26	91	1341	84	30	1177	118
Future Volume (veh/h)	297	293	192	80	70	26	91	1341	84	30	1177	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	300	296	153	81	71	21	92	1355	67	30	1189	89
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	333	360	305	163	126	37	114	1484	662	48	1345	600
Arrive On Green	0.21	0.20	0.20	0.10	0.09	0.09	0.07	0.43	0.43	0.03	0.39	0.39
Sat Flow, veh/h	1619	1800	1525	1619	1334	395	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	300	296	153	81	0	92	92	1355	67	30	1189	89
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1729	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	15.3	13.4	7.6	4.0	0.0	4.3	4.7	31.5	2.2	1.6	27.4	3.2
Cycle Q Clear(g_c), s	15.3	13.4	7.6	4.0	0.0	4.3	4.7	31.5	2.2	1.6	27.4	3.2
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	333	360	305	163	0	163	114	1484	662	48	1345	600
V/C Ratio(X)	0.90	0.82	0.50	0.50	0.00	0.56	0.81	0.91	0.10	0.62	0.88	0.15
Avail Cap(c_a), veh/h	401	938	795	244	0	734	132	1533	684	95	1456	649
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.8	32.5	30.2	36.1	0.0	36.7	38.8	22.5	14.2	40.7	23.9	16.6
Incr Delay (d2), s/veh	18.4	3.5	0.9	0.9	0.0	2.3	23.1	8.6	0.1	4.7	6.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	5.8	2.7	1.5	0.0	1.8	2.5	12.3	0.7	0.6	10.6	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.3	36.0	31.1	37.0	0.0	39.0	61.9	31.1	14.3	45.4	30.4	16.7
LnGrp LOS	D	D	C	D	A	D	E	C	B	D	C	B
Approach Vol, veh/h		749			173			1514			1308	
Approach Delay, s/veh		41.1			38.0			32.2			29.8	
Approach LOS		D			D			C			C	

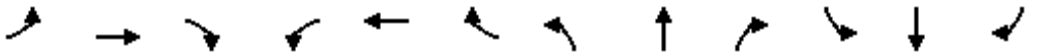
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.0	42.8	12.0	24.0	9.5	39.3	21.0	15.0
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	38.0	12.8	44.2	6.9	36.1	21.0	36.0
Max Q Clear Time (g_c+I1), s	3.6	33.5	6.0	15.4	6.7	29.4	17.3	6.3
Green Ext Time (p_c), s	0.0	3.1	0.0	1.6	0.0	3.9	0.2	0.3

Intersection Summary	
HCM 6th Ctrl Delay	33.4
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	281	498	317	43	284	195	1296	75	88	1260	185
Future Volume (vph)	281	498	317	43	284	195	1296	75	88	1260	185
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	17.0	54.8	54.8	13.2	51.0	51.0
Total Split (%)	43.3%	43.3%	43.3%	43.3%	43.3%	14.2%	45.7%	45.7%	11.0%	42.5%	42.5%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	45.0	45.0	45.0	45.0	45.0	13.5	49.4	49.4	9.1	45.0	45.0
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.11	0.41	0.41	0.08	0.38	0.38
v/c Ratio	1.09	0.78	0.48	0.32	0.51	1.13	0.97	0.12	0.76	1.03	0.30
Control Delay	118.2	42.4	12.9	34.5	31.7	154.9	53.0	7.1	89.8	71.6	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	118.2	42.4	12.9	34.5	31.7	154.9	53.0	7.1	89.8	71.6	11.6
LOS	F	D	B	C	C	F	D	A	F	E	B
Approach Delay		53.3			32.0		63.4			65.4	
Approach LOS		D			C		E			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 59.1	Intersection LOS: E
Intersection Capacity Utilization 104.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	281	498	317	43	284	40	195	1296	75	88	1260	185
Future Volume (veh/h)	281	498	317	43	284	40	195	1296	75	88	1260	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	296	524	252	45	299	36	205	1364	71	93	1326	163
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	289	675	572	139	590	71	182	1428	635	113	1282	572
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.11	0.42	0.42	0.07	0.38	0.38
Sat Flow, veh/h	1003	1800	1525	667	1574	189	1619	3420	1522	1619	3420	1525
Grp Volume(v), veh/h	296	524	252	45	0	335	205	1364	71	93	1326	163
Grp Sat Flow(s),veh/h/ln	1003	1800	1525	667	0	1763	1619	1710	1522	1619	1710	1525
Q Serve(g_s), s	27.4	30.8	14.8	7.7	0.0	17.6	13.5	46.4	3.4	6.8	45.0	9.0
Cycle Q Clear(g_c), s	45.0	30.8	14.8	38.5	0.0	17.6	13.5	46.4	3.4	6.8	45.0	9.0
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	289	675	572	139	0	661	182	1428	635	113	1283	572
V/C Ratio(X)	1.02	0.78	0.44	0.32	0.00	0.51	1.13	0.96	0.11	0.82	1.03	0.28
Avail Cap(c_a), veh/h	289	675	572	139	0	661	182	1428	635	131	1283	572
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.1	33.1	28.1	50.0	0.0	28.9	53.3	33.9	21.4	55.0	37.5	26.2
Incr Delay (d2), s/veh	59.3	5.7	0.5	1.3	0.0	0.6	104.4	14.6	0.1	25.6	34.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.3	13.8	5.3	1.3	0.0	7.3	10.5	20.4	1.2	3.5	23.4	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	108.4	38.7	28.6	51.4	0.0	29.6	157.7	48.4	21.4	80.7	71.8	26.5
LnGrp LOS	F	D	C	D	A	C	F	D	C	F	F	C
Approach Vol, veh/h		1072			380			1640			1582	
Approach Delay, s/veh		55.6			32.1			60.9			67.7	
Approach LOS		E			C			E			E	

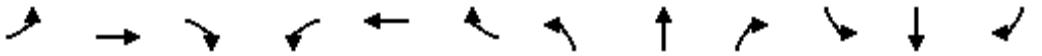
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.9	56.1		52.0	17.0	51.0		52.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	9.7	48.8		45.0	13.5	45.0		45.0				
Max Q Clear Time (g_c+I1), s	8.8	48.4		47.0	15.5	47.0		40.5				
Green Ext Time (p_c), s	0.0	0.3		0.0	0.0	0.0		0.9				

Intersection Summary			
HCM 6th Ctrl Delay		59.6	
HCM 6th LOS		E	

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	39	166	220	8	22	119	1349	18	57	1428	65
Future Volume (vph)	39	166	220	8	22	119	1349	18	57	1428	65
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	46.8	46.8	46.8	46.8	46.8	14.0	63.2	63.2	10.0	59.2	59.2
Total Split (%)	39.0%	39.0%	39.0%	39.0%	39.0%	11.7%	52.7%	52.7%	8.3%	49.3%	49.3%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	17.8	17.8	17.8	17.8	17.8	10.6	60.4	60.4	6.5	54.2	54.2
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.18	0.11	0.62	0.62	0.07	0.56	0.56
v/c Ratio	0.20	0.56	0.63	0.06	0.21	0.76	0.71	0.02	0.59	0.84	0.08
Control Delay	33.4	41.5	23.3	30.4	15.3	70.9	17.8	0.5	69.6	24.7	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	41.5	23.3	30.4	15.3	70.9	17.8	0.5	69.6	24.7	3.6
LOS	C	D	C	C	B	E	B	A	E	C	A
Approach Delay		31.4			17.0		21.9			25.5	
Approach LOS		C			B		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 24.5	Intersection LOS: C
Intersection Capacity Utilization 73.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	166	220	8	22	42	119	1349	18	57	1428	65
Future Volume (veh/h)	39	166	220	8	22	42	119	1349	18	57	1428	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	44	187	131	9	25	44	134	1516	19	64	1604	61
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	229	256	217	140	83	147	165	2125	948	80	1945	850
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.10	0.62	0.62	0.05	0.57	0.57
Sat Flow, veh/h	1278	1800	1525	1019	585	1030	1619	3420	1525	1619	3420	1494
Grp Volume(v), veh/h	44	187	131	9	0	69	134	1516	19	64	1604	61
Grp Sat Flow(s),veh/h/ln	1278	1800	1525	1019	0	1615	1619	1710	1525	1619	1710	1494
Q Serve(g_s), s	2.4	7.4	6.0	0.6	0.0	2.9	6.1	22.5	0.4	2.9	28.5	1.4
Cycle Q Clear(g_c), s	5.3	7.4	6.0	8.1	0.0	2.9	6.1	22.5	0.4	2.9	28.5	1.4
Prop In Lane	1.00		1.00	1.00		0.64	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	229	256	217	140	0	230	165	2125	948	80	1945	850
V/C Ratio(X)	0.19	0.73	0.60	0.06	0.00	0.30	0.81	0.71	0.02	0.80	0.82	0.07
Avail Cap(c_a), veh/h	765	1011	857	567	0	907	227	2629	1173	141	2447	1069
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.1	30.7	30.1	34.6	0.0	28.7	32.9	9.6	5.4	35.2	13.1	7.2
Incr Delay (d2), s/veh	0.3	3.0	2.0	0.1	0.0	0.5	12.8	0.7	0.0	13.0	2.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.2	2.2	0.2	0.0	1.1	2.7	5.5	0.1	1.3	8.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.4	33.7	32.1	34.7	0.0	29.3	45.7	10.3	5.4	48.2	15.0	7.3
LnGrp LOS	C	C	C	C	A	C	D	B	A	D	B	A
Approach Vol, veh/h		362			78			1669			1729	
Approach Delay, s/veh		32.8			29.9			13.1			16.0	
Approach LOS		C			C			B			B	

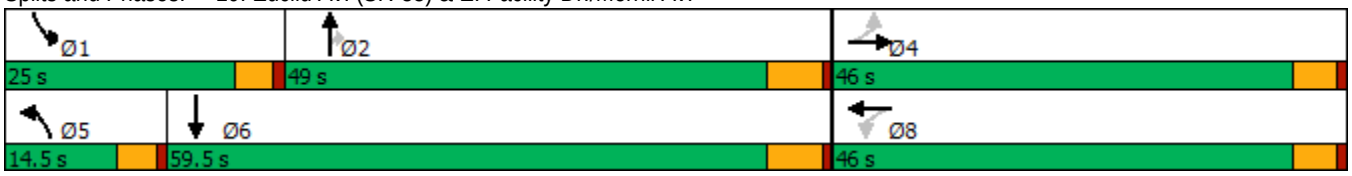
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.2	52.2		15.4	11.1	48.2		15.4				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	6.5	57.5		42.0	10.5	53.5		42.0				
Max Q Clear Time (g_c+I1), s	4.9	24.5		9.4	8.1	30.5		10.1				
Green Ext Time (p_c), s	0.0	13.0		1.2	0.0	12.0		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		16.6	
HCM 6th LOS		B	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	12	31	262	2	4	1255	265	311	1293
Future Volume (vph)	12	31	262	2	4	1255	265	311	1293
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	14.5	49.0	49.0	25.0	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	12.1%	40.8%	40.8%	20.8%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		41.0		41.0	10.0	43.0	43.0	20.5	65.1
Actuated g/C Ratio		0.34		0.34	0.08	0.36	0.36	0.17	0.54
v/c Ratio		0.11		1.21	0.03	1.13	0.48	1.24	0.77
Control Delay		22.2		144.3	51.2	103.9	22.0	178.2	26.0
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		22.2		144.3	51.2	103.9	22.0	178.2	26.0
LOS		C		F	D	F	C	F	C
Approach Delay		22.2		144.3		89.6			55.5
Approach LOS		C		F		F			E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.24	
Intersection Signal Delay: 82.1	Intersection LOS: F
Intersection Capacity Utilization 109.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	31	13	262	2	294	4	1255	265	311	1293	1
Future Volume (veh/h)	12	31	13	262	2	294	4	1255	265	311	1293	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	13	34	13	288	2	313	4	1379	226	342	1421	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	125	314	111	285	2	261	17	1226	547	277	1774	0
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.01	0.36	0.36	0.17	0.52	0.00
Sat Flow, veh/h	260	918	326	704	5	765	1619	3420	1525	1619	3510	0
Grp Volume(v), veh/h	60	0	0	603	0	0	4	1379	226	342	1421	0
Grp Sat Flow(s),veh/h/ln	1505	0	0	1474	0	0	1619	1710	1525	1619	1710	0
Q Serve(g_s), s	0.0	0.0	0.0	38.2	0.0	0.0	0.3	43.0	13.4	20.5	41.1	0.0
Cycle Q Clear(g_c), s	2.8	0.0	0.0	41.0	0.0	0.0	0.3	43.0	13.4	20.5	41.1	0.0
Prop In Lane	0.22		0.22	0.48		0.52	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	551	0	0	548	0	0	17	1226	547	277	1774	0
V/C Ratio(X)	0.11	0.00	0.00	1.10	0.00	0.00	0.24	1.13	0.41	1.24	0.80	0.00
Avail Cap(c_a), veh/h	551	0	0	548	0	0	135	1226	547	277	1774	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.9	0.0	0.0	40.9	0.0	0.0	58.9	38.5	29.0	49.7	23.8	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	68.8	0.0	0.0	2.7	67.4	0.5	133.5	2.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	26.3	0.0	0.0	0.1	28.1	4.7	18.1	15.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.0	0.0	0.0	109.7	0.0	0.0	61.6	105.9	29.5	183.3	26.5	0.0
LnGrp LOS	C	A	A	F	A	A	E	F	C	F	C	A
Approach Vol, veh/h		60			603			1609			1763	
Approach Delay, s/veh		27.0			109.7			95.1			56.9	
Approach LOS		C			F			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.0	49.0		46.0	5.7	68.3		46.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	20.5	43.0		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	22.5	45.0		4.8	2.3	43.1		43.0				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	6.2		0.0				

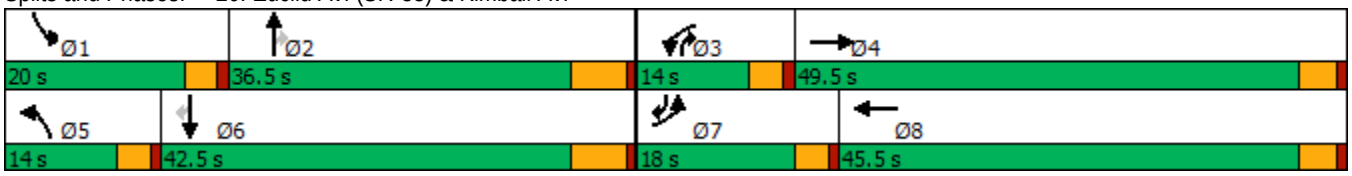
Intersection Summary												
HCM 6th Ctrl Delay			79.6									
HCM 6th LOS			E									

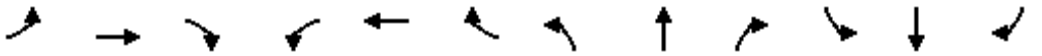
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	368	805	76	346	73	937	44	446	893	245
Future Volume (vph)	368	805	76	346	73	937	44	446	893	245
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	18.0	49.5	14.0	45.5	14.0	36.5	14.0	20.0	42.5	18.0
Total Split (%)	15.0%	41.3%	11.7%	37.9%	11.7%	30.4%	11.7%	16.7%	35.4%	15.0%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	14.1	36.4	10.1	29.0	10.1	30.8	46.9	16.1	40.1	56.3
Actuated g/C Ratio	0.13	0.33	0.09	0.27	0.09	0.28	0.43	0.15	0.37	0.52
v/c Ratio	0.99	0.79	0.52	0.57	0.50	1.00	0.06	1.05	0.73	0.28
Control Delay	92.6	38.5	63.3	31.2	62.4	69.0	0.8	103.2	36.8	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.6	38.5	63.3	31.2	62.4	69.0	0.8	103.2	36.8	3.0
LOS	F	D	E	C	E	E	A	F	D	A
Approach Delay		54.6		35.4		65.7			50.3	
Approach LOS		D		D		E			D	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 108.7
Natural Cycle: 115
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 53.2 — Intersection LOS: D
Intersection Capacity Utilization 92.2% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	368	805	63	76	346	163	73	937	44	446	893	245
Future Volume (veh/h)	368	805	63	76	346	163	73	937	44	446	893	245
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	379	830	62	78	357	130	75	966	30	460	921	155
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	388	988	74	137	640	229	135	978	565	443	1205	737
Arrive On Green	0.13	0.31	0.31	0.08	0.26	0.26	0.08	0.29	0.29	0.15	0.35	0.35
Sat Flow, veh/h	2956	3225	241	1619	2466	884	1619	3420	1525	2956	3420	1524
Grp Volume(v), veh/h	379	440	452	78	246	241	75	966	30	460	921	155
Grp Sat Flow(s),veh/h/ln	1478	1710	1756	1619	1710	1641	1619	1710	1525	1478	1710	1524
Q Serve(g_s), s	13.6	25.6	25.6	4.9	13.3	13.6	4.7	30.0	1.3	16.0	25.5	6.2
Cycle Q Clear(g_c), s	13.6	25.6	25.6	4.9	13.3	13.6	4.7	30.0	1.3	16.0	25.5	6.2
Prop In Lane	1.00		0.14	1.00		0.54	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	388	524	538	137	444	426	135	978	565	443	1205	737
V/C Ratio(X)	0.98	0.84	0.84	0.57	0.55	0.57	0.55	0.99	0.05	1.04	0.76	0.21
Avail Cap(c_a), veh/h	388	721	741	152	657	631	152	978	565	443	1205	737
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.2	34.6	34.6	47.0	34.2	34.3	47.0	37.9	21.6	45.3	30.6	15.8
Incr Delay (d2), s/veh	39.3	6.5	6.3	1.8	0.4	0.4	1.3	25.7	0.0	52.7	3.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	11.0	11.3	2.0	5.3	5.2	1.9	15.0	0.5	8.8	10.1	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.4	41.0	40.9	48.8	34.6	34.7	48.3	63.6	21.6	98.1	33.6	16.0
LnGrp LOS	F	D	D	D	C	C	D	E	C	F	C	B
Approach Vol, veh/h		1271			565			1071			1536	
Approach Delay, s/veh		54.2			36.6			61.4			51.1	
Approach LOS		D			D			E			D	

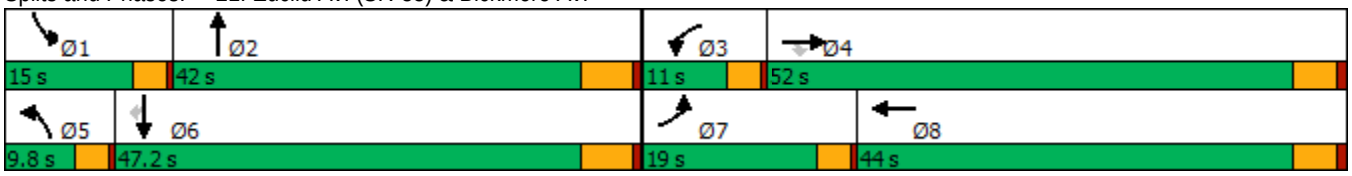
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	36.5	13.0	37.2	12.9	43.6	18.0	32.2
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	16.0	30.5	10.0	45.0	10.0	36.5	14.0	41.0
Max Q Clear Time (g_c+I1), s	18.0	32.0	6.9	27.6	6.7	27.5	15.6	15.6
Green Ext Time (p_c), s	0.0	0.0	0.0	4.8	0.0	4.0	0.0	1.6

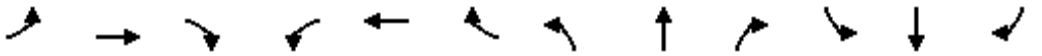
Intersection Summary	
HCM 6th Ctrl Delay	52.6
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	156	111	89	49	27	36	707	104	781	156
Future Volume (vph)	156	111	89	49	27	36	707	104	781	156
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	19.0	52.0	52.0	11.0	44.0	9.8	42.0	15.0	47.2	47.2
Total Split (%)	15.8%	43.3%	43.3%	9.2%	36.7%	8.2%	35.0%	12.5%	39.3%	39.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	13.9	16.8	16.8	7.1	10.6	6.4	25.4	10.4	34.5	34.5
Actuated g/C Ratio	0.18	0.22	0.22	0.09	0.14	0.08	0.33	0.14	0.45	0.45
v/c Ratio	0.58	0.30	0.23	0.35	0.36	0.29	0.77	0.52	0.55	0.22
Control Delay	43.8	27.9	4.4	48.1	16.1	48.2	30.4	47.1	21.3	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.8	27.9	4.4	48.1	16.1	48.2	30.4	47.1	21.3	4.7
LOS	D	C	A	D	B	D	C	D	C	A
Approach Delay		29.0			27.1		31.2		21.4	
Approach LOS		C			C		C		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 76.2	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 26.3	Intersection LOS: C
Intersection Capacity Utilization 58.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	111	89	49	27	67	36	707	93	104	781	156
Future Volume (veh/h)	156	111	89	49	27	67	36	707	93	104	781	156
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	170	121	82	53	29	45	39	768	78	113	849	138
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	212	325	276	85	65	101	68	998	101	140	1242	554
Arrive On Green	0.13	0.18	0.18	0.05	0.10	0.10	0.04	0.32	0.32	0.09	0.36	0.36
Sat Flow, veh/h	1619	1800	1525	1619	636	987	1619	3134	318	1619	3420	1525
Grp Volume(v), veh/h	170	121	82	53	0	74	39	419	427	113	849	138
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1622	1619	1710	1743	1619	1710	1525
Q Serve(g_s), s	4.9	2.9	2.3	1.6	0.0	2.1	1.1	10.7	10.7	3.3	10.2	3.1
Cycle Q Clear(g_c), s	4.9	2.9	2.3	1.6	0.0	2.1	1.1	10.7	10.7	3.3	10.2	3.1
Prop In Lane	1.00		1.00	1.00		0.61	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	212	325	276	85	0	166	68	545	555	140	1242	554
V/C Ratio(X)	0.80	0.37	0.30	0.62	0.00	0.45	0.57	0.77	0.77	0.80	0.68	0.25
Avail Cap(c_a), veh/h	518	1748	1481	251	0	1307	211	1289	1314	385	2946	1314
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.4	17.4	17.2	22.5	0.0	20.4	22.8	14.9	14.9	21.7	13.1	10.8
Incr Delay (d2), s/veh	2.6	0.3	0.2	2.7	0.0	0.7	2.8	0.9	0.9	4.1	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	1.0	0.7	0.6	0.0	0.7	0.4	3.0	3.0	1.2	2.6	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.1	17.7	17.4	25.2	0.0	21.1	25.5	15.8	15.8	25.8	13.3	10.9
LnGrp LOS	C	B	B	C	A	C	C	B	B	C	B	B
Approach Vol, veh/h		373			127			885			1100	
Approach Delay, s/veh		20.1			22.8			16.2			14.3	
Approach LOS		C			C			B			B	

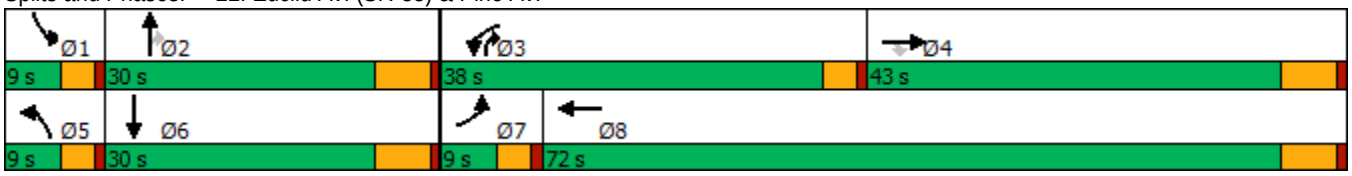
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	20.9	6.0	13.7	5.5	23.1	9.9	9.9
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	11.5	36.5	7.5	47.0	6.3	41.7	15.5	39.0
Max Q Clear Time (g_c+I1), s	5.3	12.7	3.6	4.9	3.1	12.2	6.9	4.1
Green Ext Time (p_c), s	0.1	2.7	0.0	0.5	0.0	3.6	0.1	0.2

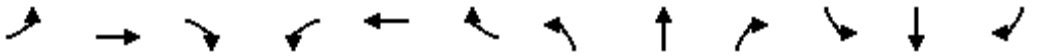
Intersection Summary	
HCM 6th Ctrl Delay	16.3
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	5	459	99	575	72	58	753	1167	105	835
Future Volume (vph)	5	459	99	575	72	58	753	1167	105	835
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	38.0	72.0	9.0	30.0	38.0	9.0	30.0
Total Split (%)	7.5%	35.8%	35.8%	31.7%	60.0%	7.5%	25.0%	31.7%	7.5%	25.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.0	34.1	34.1	34.1	70.4	5.0	24.0	64.1	5.0	24.0
Actuated g/C Ratio	0.04	0.29	0.29	0.29	0.60	0.04	0.20	0.55	0.04	0.20
v/c Ratio	0.07	0.89	0.19	0.69	0.12	0.86	1.10	1.33	1.55	1.22
Control Delay	57.6	60.7	2.9	42.2	7.0	130.9	106.8	179.1	346.4	152.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.6	60.7	2.9	42.2	7.0	130.9	106.8	179.1	346.4	152.6
LOS	E	E	A	D	A	F	F	F	F	F
Approach Delay		50.5			36.0		150.2			174.1
Approach LOS		D			D		F			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.2	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.55	
Intersection Signal Delay: 123.1	Intersection LOS: F
Intersection Capacity Utilization 119.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	459	99	575	72	51	58	753	1167	105	835	4
Future Volume (veh/h)	5	459	99	575	72	51	58	753	1167	105	835	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	5	468	0	587	73	50	59	768	774	107	852	4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	10	528		656	506	347	73	812	701	80	844	4
Arrive On Green	0.01	0.29	0.00	0.22	0.51	0.51	0.05	0.24	0.24	0.05	0.24	0.24
Sat Flow, veh/h	1619	1800	1525	2956	995	682	1619	3420	1525	1619	3491	16
Grp Volume(v), veh/h	5	468	0	587	0	123	59	768	774	107	417	439
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1677	1619	1710	1525	1619	1710	1797
Q Serve(g_s), s	0.3	25.1	0.0	19.5	0.0	3.9	3.6	22.3	24.0	5.0	24.4	24.4
Cycle Q Clear(g_c), s	0.3	25.1	0.0	19.5	0.0	3.9	3.6	22.3	24.0	5.0	24.4	24.4
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	10	528		656	0	853	73	812	701	80	413	434
V/C Ratio(X)	0.48	0.89		0.90	0.00	0.14	0.81	0.95	1.10	1.34	1.01	1.01
Avail Cap(c_a), veh/h	80	659		995	0	1096	80	812	701	80	413	434
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.0	34.1	0.0	38.2	0.0	13.2	47.8	37.9	27.3	48.0	38.3	38.3
Incr Delay (d2), s/veh	11.9	12.8	0.0	5.2	0.0	0.1	36.9	19.3	66.3	214.1	46.7	45.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	12.2	0.0	7.1	0.0	1.4	2.1	10.8	27.7	6.7	14.8	15.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.0	46.9	0.0	43.4	0.0	13.3	84.7	57.2	93.6	262.1	85.0	83.9
LnGrp LOS	E	D		D	A	B	F	E	F	F	F	F
Approach Vol, veh/h		473	A		710			1601			963	
Approach Delay, s/veh		47.0			38.1			75.8			104.2	
Approach LOS		D			D			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	30.0	26.4	35.6	8.6	30.4	4.7	57.4
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.0	24.0	34.0	37.0	5.0	24.0	5.0	66.0
Max Q Clear Time (g_c+I1), s	7.0	26.0	21.5	27.1	5.6	26.4	2.3	5.9
Green Ext Time (p_c), s	0.0	0.0	0.9	2.5	0.0	0.0	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	72.3
HCM 6th LOS	E

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	34.7
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	72	507	23	6	319	6	13	94	11	18	84	49
Future Vol, veh/h	72	507	23	6	319	6	13	94	11	18	84	49
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	76	534	24	6	336	6	14	99	12	19	88	52
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	54.3	17	12.4	12.8
HCM LOS	F	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	12%	2%	12%
Vol Thru, %	80%	84%	96%	56%
Vol Right, %	9%	4%	2%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	118	602	331	151
LT Vol	13	72	6	18
Through Vol	94	507	319	84
RT Vol	11	23	6	49
Lane Flow Rate	124	634	348	159
Geometry Grp	1	1	1	1
Degree of Util (X)	0.244	0.982	0.579	0.301
Departure Headway (Hd)	7.08	5.579	5.979	6.826
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	506	653	603	525
Service Time	5.152	3.579	4.031	4.893
HCM Lane V/C Ratio	0.245	0.971	0.577	0.303
HCM Control Delay	12.4	54.3	17	12.8
HCM Lane LOS	B	F	C	B
HCM 95th-tile Q	0.9	14.7	3.7	1.3

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	250	4	2	68	9	5	86	7	21	67	14
Future Vol, veh/h	17	250	4	2	68	9	5	86	7	21	67	14
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	20	287	5	2	78	10	6	99	8	24	77	16
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.6	8.5	8.9	9
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	6%	3%	21%
Vol Thru, %	88%	92%	86%	66%
Vol Right, %	7%	1%	11%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	98	271	79	102
LT Vol	5	17	2	21
Through Vol	86	250	68	67
RT Vol	7	4	9	14
Lane Flow Rate	113	311	91	117
Geometry Grp	1	1	1	1
Degree of Util (X)	0.155	0.396	0.12	0.161
Departure Headway (Hd)	4.964	4.582	4.775	4.95
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	719	782	746	721
Service Time	3.023	2.625	2.832	3.008
HCM Lane V/C Ratio	0.157	0.398	0.122	0.162
HCM Control Delay	8.9	10.6	8.5	9
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.5	1.9	0.4	0.6

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	88	703	529	35	52	55
Future Vol, veh/h	88	703	529	35	52	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	94	748	563	37	55	59

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	600	0	-	0	1518	582
Stage 1	-	-	-	-	582	-
Stage 2	-	-	-	-	936	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	987	-	-	-	202	588
Stage 1	-	-	-	-	563	-
Stage 2	-	-	-	-	385	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	987	-	-	-	169	588
Mov Cap-2 Maneuver	-	-	-	-	169	-
Stage 1	-	-	-	-	471	-
Stage 2	-	-	-	-	385	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	28.1
HCM LOS			D

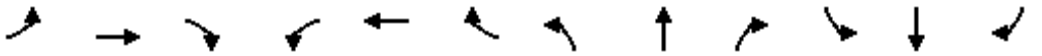
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	987	-	-	-	267
HCM Lane V/C Ratio	0.095	-	-	-	0.426
HCM Control Delay (s)	9	0	-	-	28.1
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.3	-	-	-	2

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	348	216	894	1012	674
Future Volume (vph)	0	348	216	894	1012	674
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	38.0	38.0	28.0	82.0	54.0	54.0
Total Split (%)	31.7%	31.7%	23.3%	68.3%	45.0%	45.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	299	0	348	216	894	0	0	1012	674
Future Volume (veh/h)	0	0	0	299	0	348	216	894	0	0	1012	674
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				311	0	182	225	931	0	0	1054	527
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				357	0	318	250	2549	0	0	1912	835
Arrive On Green				0.20	0.00	0.20	0.28	1.00	0.00	0.00	0.53	0.53
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1575
Grp Volume(v), veh/h				311	0	182	225	931	0	0	1054	527
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1575
Q Serve(g_s), s				20.0	0.0	12.3	14.4	0.0	0.0	0.0	23.3	28.4
Cycle Q Clear(g_c), s				20.0	0.0	12.3	14.4	0.0	0.0	0.0	23.3	28.4
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				357	0	318	250	2549	0	0	1912	835
V/C Ratio(X)				0.87	0.00	0.57	0.90	0.37	0.00	0.00	0.55	0.63
Avail Cap(c_a), veh/h				486	0	432	353	2549	0	0	1912	835
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.25	0.25	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				46.7	0.0	43.6	42.7	0.0	0.0	0.0	18.7	19.9
Incr Delay (d2), s/veh				12.3	0.0	1.6	5.0	0.1	0.0	0.0	1.1	3.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				9.9	0.0	4.9	5.7	0.0	0.0	0.0	9.3	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				58.9	0.0	45.2	47.6	0.1	0.0	0.0	19.9	23.6
LnGrp LOS				E	A	D	D	A	A	A	B	C
Approach Vol, veh/h					493			1156			1581	
Approach Delay, s/veh					53.9			9.4			21.1	
Approach LOS					D			A			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		90.5			21.1	69.4		29.5				
Change Period (Y+Rc), s		5.8			4.6	5.8		5.8				
Max Green Setting (Gmax), s		76.2			23.4	48.2		32.2				
Max Q Clear Time (g_c+I1), s		2.0			16.4	30.4		22.0				
Green Ext Time (p_c), s		7.3			0.2	8.7		1.7				

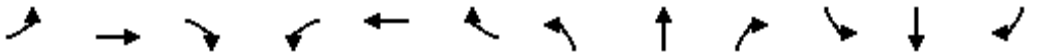
Intersection Summary												
HCM 6th Ctrl Delay			21.9									
HCM 6th LOS			C									

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	343	681	443	867
Future Volume (vph)	0	343	681	443	867
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	38.0	38.0	44.0	38.0	82.0
Total Split (%)	31.7%	31.7%	36.7%	31.7%	68.3%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	431	0	343	0	0	0	0	681	321	443	867	0
Future Volume (veh/h)	431	0	343	0	0	0	0	681	321	443	867	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	463	0	282				0	732	262	476	932	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	485	0	432				0	840	301	491	2292	0
Arrive On Green	0.27	0.00	0.27				0.00	0.33	0.33	0.54	1.00	0.00
Sat Flow, veh/h	1810	0	1610				0	2678	924	1810	3705	0
Grp Volume(v), veh/h	463	0	282				0	512	482	476	932	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1702	1810	1805	0
Q Serve(g_s), s	30.2	0.0	18.6				0.0	32.0	32.0	30.5	0.0	0.0
Cycle Q Clear(g_c), s	30.2	0.0	18.6				0.0	32.0	32.0	30.5	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.54	1.00		0.00
Lane Grp Cap(c), veh/h	485	0	432				0	587	554	491	2292	0
V/C Ratio(X)	0.95	0.00	0.65				0.00	0.87	0.87	0.97	0.41	0.00
Avail Cap(c_a), veh/h	486	0	432				0	587	554	504	2292	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.78	0.78	0.77	0.77	0.00
Uniform Delay (d), s/veh	43.2	0.0	38.9				0.0	38.1	38.1	27.0	0.0	0.0
Incr Delay (d2), s/veh	29.4	0.0	3.5				0.0	13.2	13.8	27.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.9	0.0	7.5				0.0	15.7	14.9	11.8	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.5	0.0	42.4				0.0	51.3	51.9	54.0	0.4	0.0
LnGrp LOS	E	A	D				A	D	D	D	A	A
Approach Vol, veh/h		745						994			1408	
Approach Delay, s/veh		61.1						51.6			18.5	
Approach LOS		E						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	37.2	44.8		38.0		82.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	33.4	38.2		32.2		76.2
Max Q Clear Time (g_c+I1), s	32.5	34.0		32.2		2.0
Green Ext Time (p_c), s	0.1	2.2		0.0		7.4

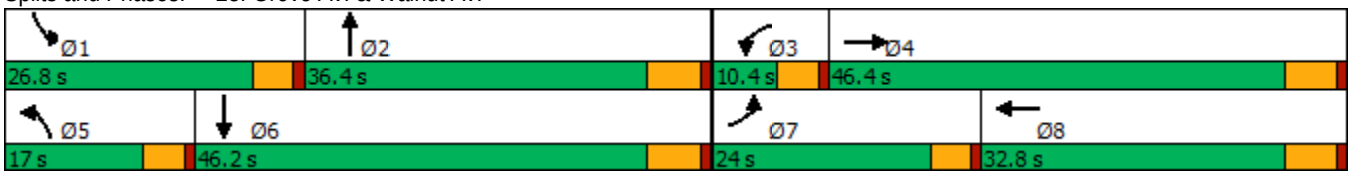
Intersection Summary			
HCM 6th Ctrl Delay			39.1
HCM 6th LOS			D

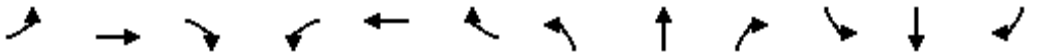
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	154	300	18	162	84	611	178	717
Future Volume (vph)	154	300	18	162	84	611	178	717
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	24.0	46.4	10.4	32.8	17.0	36.4	26.8	46.2
Total Split (%)	20.0%	38.7%	8.7%	27.3%	14.2%	30.3%	22.3%	38.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 97.3
Natural Cycle: 85
Control Type: Actuated-Uncoordinated

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	300	82	18	162	128	84	611	24	178	717	175
Future Volume (veh/h)	154	300	82	18	162	128	84	611	24	178	717	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	160	312	70	19	169	98	88	636	15	185	747	114
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	192	606	134	34	255	139	110	1335	31	218	1362	208
Arrive On Green	0.12	0.22	0.22	0.02	0.12	0.12	0.07	0.39	0.39	0.13	0.46	0.46
Sat Flow, veh/h	1619	2783	616	1619	2117	1159	1619	3415	81	1619	2975	454
Grp Volume(v), veh/h	160	190	192	19	135	132	88	318	333	185	429	432
Grp Sat Flow(s),veh/h/ln	1619	1710	1689	1619	1710	1566	1619	1710	1785	1619	1710	1718
Q Serve(g_s), s	8.5	8.6	8.9	1.0	6.6	7.2	4.7	12.3	12.3	9.9	16.0	16.1
Cycle Q Clear(g_c), s	8.5	8.6	8.9	1.0	6.6	7.2	4.7	12.3	12.3	9.9	16.0	16.1
Prop In Lane	1.00		0.36	1.00		0.74	1.00		0.05	1.00		0.26
Lane Grp Cap(c), veh/h	192	372	368	34	206	188	110	668	698	218	783	787
V/C Ratio(X)	0.83	0.51	0.52	0.56	0.65	0.70	0.80	0.48	0.48	0.85	0.55	0.55
Avail Cap(c_a), veh/h	356	787	777	106	523	479	228	668	698	407	783	787
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.1	30.4	30.5	42.8	37.1	37.3	40.5	20.1	20.1	37.3	17.3	17.3
Incr Delay (d2), s/veh	3.6	1.1	1.2	5.2	3.5	4.7	5.0	2.4	2.3	3.5	2.8	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	3.4	3.5	0.4	2.8	2.8	1.9	4.9	5.1	3.9	6.2	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.7	31.5	31.6	47.9	40.6	42.0	45.6	22.5	22.4	40.8	20.1	20.1
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		542			286			739			1046	
Approach Delay, s/veh		34.5			41.7			25.2			23.7	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	40.3	6.5	25.0	10.6	46.2	15.0	16.4
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	22.2	30.6	5.8	40.6	12.4	40.4	19.4	27.0
Max Q Clear Time (g_c+I1), s	11.9	14.3	3.0	10.9	6.7	18.1	10.5	9.2
Green Ext Time (p_c), s	0.2	3.2	0.0	2.1	0.0	5.1	0.1	1.2

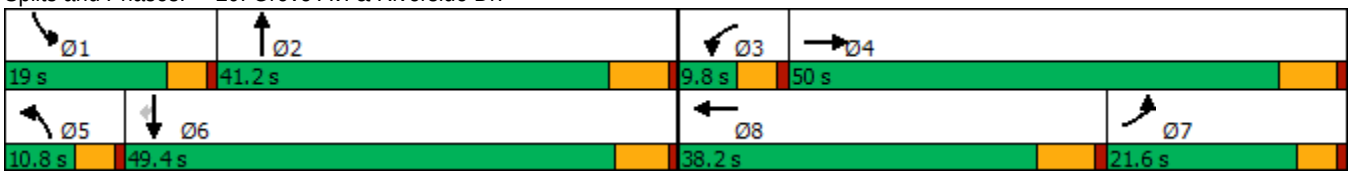
Intersection Summary	
HCM 6th Ctrl Delay	28.4
HCM 6th LOS	C

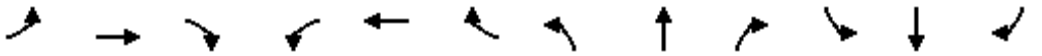
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	169	599	40	563	24	413	159	364	178
Future Volume (vph)	169	599	40	563	24	413	159	364	178
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	21.6	50.0	9.8	38.2	10.8	41.2	19.0	49.4	49.4
Total Split (%)	18.0%	41.7%	8.2%	31.8%	9.0%	34.3%	15.8%	41.2%	41.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 117
Natural Cycle: 110
Control Type: Actuated-Uncoordinated

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	599	21	40	563	109	24	413	74	159	364	178
Future Volume (veh/h)	169	599	21	40	563	109	24	413	74	159	364	178
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	176	624	21	42	586	68	25	430	60	166	379	128
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	275	642	22	52	678	78	38	458	64	190	702	595
Arrive On Green	0.17	0.37	0.37	0.03	0.22	0.22	0.02	0.30	0.30	0.12	0.39	0.39
Sat Flow, veh/h	1619	1730	58	1619	3088	358	1619	1546	216	1619	1800	1525
Grp Volume(v), veh/h	176	0	645	42	324	330	25	0	490	166	379	128
Grp Sat Flow(s),veh/h/ln	1619	0	1788	1619	1710	1735	1619	0	1761	1619	1800	1525
Q Serve(g_s), s	11.9	0.0	41.9	3.0	21.5	21.6	1.8	0.0	32.0	11.9	19.2	3.6
Cycle Q Clear(g_c), s	11.9	0.0	41.9	3.0	21.5	21.6	1.8	0.0	32.0	11.9	19.2	3.6
Prop In Lane	1.00		0.03	1.00		0.21	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	275	0	664	52	375	381	38	0	522	190	702	595
V/C Ratio(X)	0.64	0.00	0.97	0.81	0.86	0.87	0.65	0.00	0.94	0.87	0.54	0.22
Avail Cap(c_a), veh/h	275	0	664	71	464	470	85	0	522	198	702	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	0.0	36.5	56.8	44.4	44.4	57.1	0.0	40.5	51.2	27.8	7.2
Incr Delay (d2), s/veh	3.8	0.0	28.0	27.6	13.2	13.4	6.7	0.0	26.7	30.2	3.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	0.0	22.1	1.6	10.1	10.3	0.8	0.0	17.0	6.3	8.5	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.4	0.0	64.5	84.4	57.5	57.8	63.9	0.0	67.1	81.4	30.8	8.0
LnGrp LOS	D	A	E	F	E	E	E	A	E	F	C	A
Approach Vol, veh/h		821			696			515			673	
Approach Delay, s/veh		61.3			59.3			67.0			38.9	
Approach LOS		E			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.5	41.2	8.4	50.0	7.4	52.3	26.3	32.1
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	14.4	35.0	5.2	43.8	6.2	* 44	17.0	* 32
Max Q Clear Time (g_c+I1), s	13.9	34.0	5.0	43.9	3.8	21.2	13.9	23.6
Green Ext Time (p_c), s	0.0	0.3	0.0	0.0	0.0	2.4	0.1	2.3

Intersection Summary	
HCM 6th Ctrl Delay	56.3
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	29.1
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	78	187	27	9	40	40	37	425	20	37	360	22
Future Vol, veh/h	78	187	27	9	40	40	37	425	20	37	360	22
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	81	195	28	9	42	42	39	443	21	39	375	23
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	19.9	12.6	38.5	28.3
HCM LOS	C	B	E	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	27%	10%	9%
Vol Thru, %	88%	64%	45%	86%
Vol Right, %	4%	9%	45%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	482	292	89	419
LT Vol	37	78	9	37
Through Vol	425	187	40	360
RT Vol	20	27	40	22
Lane Flow Rate	502	304	93	436
Geometry Grp	1	1	1	1
Degree of Util (X)	0.874	0.592	0.199	0.775
Departure Headway (Hd)	6.269	7.003	7.709	6.389
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	572	511	468	563
Service Time	4.36	5.1	5.709	4.483
HCM Lane V/C Ratio	0.878	0.595	0.199	0.774
HCM Control Delay	38.5	19.9	12.6	28.3
HCM Lane LOS	E	C	B	D
HCM 95th-tile Q	9.9	3.8	0.7	7.1

Intersection	
Intersection Delay, s/veh	24.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	101	146	91	2	47	38	22	361	32	55	268	56
Future Vol, veh/h	101	146	91	2	47	38	22	361	32	55	268	56
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	109	157	98	2	51	41	24	388	34	59	288	60
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	22.7	12.4	29.4	24.9
HCM LOS	C	B	D	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	30%	2%	15%
Vol Thru, %	87%	43%	54%	71%
Vol Right, %	8%	27%	44%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	415	338	87	379
LT Vol	22	101	2	55
Through Vol	361	146	47	268
RT Vol	32	91	38	56
Lane Flow Rate	446	363	94	408
Geometry Grp	1	1	1	1
Degree of Util (X)	0.789	0.675	0.197	0.727
Departure Headway (Hd)	6.364	6.682	7.588	6.42
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	562	538	476	558
Service Time	4.456	4.773	5.588	4.514
HCM Lane V/C Ratio	0.794	0.675	0.197	0.731
HCM Control Delay	29.4	22.7	12.4	24.9
HCM Lane LOS	D	C	B	C
HCM 95th-tile Q	7.4	5	0.7	6

Intersection	
Intersection Delay, s/veh	231
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	45	456	16	98	282	53	35	316	226	135	213	23
Future Vol, veh/h	45	456	16	98	282	53	35	316	226	135	213	23
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	48	490	17	105	303	57	38	340	243	145	229	25
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	265.2	171	319.5	115.8
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	9%	23%	36%
Vol Thru, %	55%	88%	65%	57%
Vol Right, %	39%	3%	12%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	577	517	433	371
LT Vol	35	45	98	135
Through Vol	316	456	282	213
RT Vol	226	16	53	23
Lane Flow Rate	620	556	466	399
Geometry Grp	1	1	1	1
Degree of Util (X)	1.615	1.481	1.237	1.067
Departure Headway (Hd)	11.749	12.481	13.342	14.088
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	316	295	275	263
Service Time	9.749	10.481	11.342	12.088
HCM Lane V/C Ratio	1.962	1.885	1.695	1.517
HCM Control Delay	319.5	265.2	171	115.8
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	29.8	24	15.9	11.2

Intersection	
Int Delay, s/veh	816.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	126	88	72	5	18	27	14	465	4	18	265	41
Future Vol, veh/h	126	88	72	5	18	27	14	465	4	18	265	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	25	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	140	98	80	6	20	30	16	1860	4	20	294	46

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2276	2253	317	2340	2274	1862	340	0	0	1864	0	0
Stage 1	357	357	-	1894	1894	-	-	-	-	-	-	-
Stage 2	1919	1896	-	446	380	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 29	~ 42	728	26	41	92	1230	-	-	328	-	-
Stage 1	665	632	-	91	119	-	-	-	-	-	-	-
Stage 2	~ 88	119	-	595	617	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 11	~ 39	728	-	38	92	1230	-	-	328	-	-
Mov Cap-2 Maneuver	~ 11	~ 39	-	-	38	-	-	-	-	-	-	-
Stage 1	665	584	-	91	119	-	-	-	-	-	-	-
Stage 2	~ 49	119	-	407	570	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, $	6714.5		0.1	0.9
HCM LOS	F	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1230	-	-	21	-	328	-	-
HCM Lane V/C Ratio	0.013	-	-	15.132	-	0.061	-	-
HCM Control Delay (s)	8	0	-	$ 6714.5	-	16.7	0	-
HCM Lane LOS	A	A	-	F	-	C	A	-
HCM 95th %tile Q(veh)	0	-	-	40.1	-	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	164.2
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	187	576	461	296	243	99
Future Vol, veh/h	187	576	461	296	243	99
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	195	600	480	308	253	103
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	210.7	179.5	26.7
HCM LOS	F	F	D

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	0%	71%
Vol Thru, %	75%	61%	0%
Vol Right, %	0%	39%	29%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	763	757	342
LT Vol	187	0	243
Through Vol	576	461	0
RT Vol	0	296	99
Lane Flow Rate	795	789	356
Geometry Grp	1	1	1
Degree of Util (X)	1.399	1.326	0.689
Departure Headway (Hd)	6.803	6.593	7.921
Convergence, Y/N	Yes	Yes	Yes
Cap	540	560	460
Service Time	4.803	4.593	5.921
HCM Lane V/C Ratio	1.472	1.409	0.774
HCM Control Delay	210.7	179.5	26.7
HCM Lane LOS	F	F	D
HCM 95th-tile Q	34.5	31	5.1

Intersection	
Int Delay, s/veh	10.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	21	782	1	15	406	31	3	21	51	67	14	10
Future Vol, veh/h	21	782	1	15	406	31	3	21	51	67	14	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	22	823	1	16	427	33	3	22	54	71	15	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	460	0	0	824	0	0	1357	1360	824	1382	1344	444
Stage 1	-	-	-	-	-	-	868	868	-	476	476	-
Stage 2	-	-	-	-	-	-	489	492	-	906	868	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1112	-	-	815	-	-	127	150	376	122	153	618
Stage 1	-	-	-	-	-	-	350	372	-	574	560	-
Stage 2	-	-	-	-	-	-	564	551	-	333	372	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1112	-	-	815	-	-	110	141	376	88	143	618
Mov Cap-2 Maneuver	-	-	-	-	-	-	110	141	-	88	143	-
Stage 1	-	-	-	-	-	-	337	358	-	553	545	-
Stage 2	-	-	-	-	-	-	525	536	-	258	358	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	27	142.9
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	241	1112	-	-	815	-	-	104
HCM Lane V/C Ratio	0.328	0.02	-	-	0.019	-	-	0.921
HCM Control Delay (s)	27	8.3	0	-	9.5	0	-	142.9
HCM Lane LOS	D	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	1.4	0.1	-	-	0.1	-	-	5.5

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	42	71	0	0	48	32	0	0	0	22	0	3
Future Vol, veh/h	42	71	0	0	48	32	0	0	0	22	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16965	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	46	77	0	0	52	35	0	0	0	24	0	3

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	87	0	-	-	-	0			239	239	70
Stage 1	-	-	-	-	-	-			70	70	-
Stage 2	-	-	-	-	-	-			169	169	-
Critical Hdwy	4.1	-	-	-	-	-			6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-			5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.4	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-			3.5	4	3.3
Pot Cap-1 Maneuver	1522	-	0	0	-	-			754	666	998
Stage 1	-	-	0	0	-	-			958	841	-
Stage 2	-	-	0	0	-	-			866	763	-
Platoon blocked, %		-			-	-					
Mov Cap-1 Maneuver	1522	-	-	-	-	-			730	0	998
Mov Cap-2 Maneuver	-	-	-	-	-	-			730	0	-
Stage 1	-	-	-	-	-	-			927	0	-
Stage 2	-	-	-	-	-	-			866	0	-

Approach	EB	WB	SB
HCM Control Delay, s	2.8	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1522	-	-	-	754
HCM Lane V/C Ratio	0.03	-	-	-	0.036
HCM Control Delay (s)	7.4	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑			↕				
Traffic Vol, veh/h	0	703	117	93	647	0	94	0	131	0	0	0
Future Vol, veh/h	0	703	117	93	647	0	94	0	131	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	25	91	91	91	91	91	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	773	129	102	711	0	103	0	144	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	902	0	0	1688	1688	773
Stage 1	-	-	-	-	-	-	773	773	-
Stage 2	-	-	-	-	-	-	915	915	-
Critical Hdwy	-	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	762	-	0	104	95	402
Stage 1	0	-	-	-	-	0	459	412	-
Stage 2	0	-	-	-	-	0	394	354	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	762	-	-	~ 90	0	402
Mov Cap-2 Maneuver	-	-	-	-	-	-	219	0	-
Stage 1	-	-	-	-	-	-	459	0	-
Stage 2	-	-	-	-	-	-	341	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	56.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	298	-	-	762	-
HCM Lane V/C Ratio	0.83	-	-	0.134	-
HCM Control Delay (s)	56.1	-	-	10.5	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	7	-	-	0.5	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	766	13	11	568	14	28	0	19	36	0	144
Future Vol, veh/h	55	766	13	11	568	14	28	0	19	36	0	144
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	63	870	15	13	645	16	32	0	22	41	0	164

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	661	0	0	886	0	0	1766	1692	444	1240	1691	653
Stage 1	-	-	-	-	-	-	1005	1005	-	679	679	-
Stage 2	-	-	-	-	-	-	761	687	-	561	1012	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	937	-	-	773	-	-	60	94	567	143	94	471
Stage 1	-	-	-	-	-	-	263	322	-	445	454	-
Stage 2	-	-	-	-	-	-	401	450	-	485	319	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	937	-	-	772	-	-	37	86	566	129	86	471
Mov Cap-2 Maneuver	-	-	-	-	-	-	115	191	-	250	195	-
Stage 1	-	-	-	-	-	-	245	300	-	415	446	-
Stage 2	-	-	-	-	-	-	257	442	-	435	297	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.2	35.6	23
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	170	937	-	-	772	-	-	400
HCM Lane V/C Ratio	0.314	0.067	-	-	0.016	-	-	0.511
HCM Control Delay (s)	35.6	9.1	-	-	9.7	-	-	23
HCM Lane LOS	E	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.3	0.2	-	-	0	-	-	2.8

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	793	0	40	472	18	51	2	47	47	4	69
Future Vol, veh/h	27	793	0	40	472	18	51	2	47	47	4	69
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	200	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	30	881	0	44	524	20	57	2	52	52	4	77

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	544	0	0	882	0	0	1605	1574	442	1124	1564	534
Stage 1	-	-	-	-	-	-	942	942	-	622	622	-
Stage 2	-	-	-	-	-	-	663	632	-	502	942	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1035	-	-	775	-	-	78	111	569	173	113	550
Stage 1	-	-	-	-	-	-	287	344	-	478	482	-
Stage 2	-	-	-	-	-	-	454	477	-	525	344	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1035	-	-	774	-	-	62	102	568	146	103	550
Mov Cap-2 Maneuver	-	-	-	-	-	-	167	216	-	267	205	-
Stage 1	-	-	-	-	-	-	278	334	-	464	455	-
Stage 2	-	-	-	-	-	-	365	450	-	460	334	-

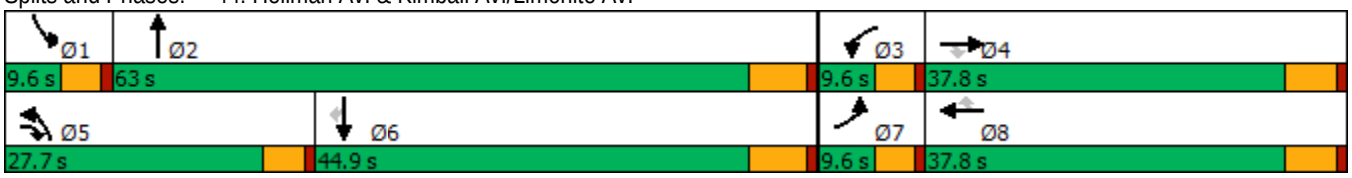
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.7	25.1	16.7
HCM LOS			D	C

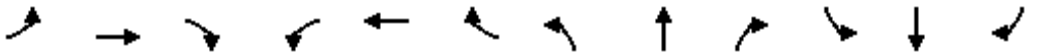
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	167	533	1035	-	-	774	-	-	267	504
HCM Lane V/C Ratio	0.339	0.102	0.029	-	-	0.057	-	-	0.196	0.161
HCM Control Delay (s)	37.2	12.5	8.6	-	-	9.9	-	-	21.7	13.5
HCM Lane LOS	E	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1.4	0.3	0.1	-	-	0.2	-	-	0.7	0.6

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	20	2	787	4	5	268	70	60	111	
Future Volume (vph)	20	2	787	4	5	268	70	60	111	
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	NA	Perm	
Protected Phases	7	4	5	3	8	5	2	6		1
Permitted Phases			4						6	
Detector Phase	7	4	5	3	8	5	2	6	6	
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	10.0	5.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	9.6	43.2	43.2	43.2	9.6
Total Split (s)	9.6	37.8	27.7	9.6	37.8	27.7	63.0	44.9	44.9	9.6
Total Split (%)	8.0%	31.5%	23.1%	8.0%	31.5%	23.1%	52.5%	37.4%	37.4%	8%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	5.2	5.2	5.2	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-2.2	-2.2	-2.2	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	None	None	Max	Max	Min	Min	None
Act Effct Green (s)	6.0	15.3	30.0	6.0	15.3	25.3	67.7	34.4	34.4	
Actuated g/C Ratio	0.08	0.21	0.40	0.08	0.21	0.34	0.91	0.46	0.46	
v/c Ratio	0.16	0.01	0.74	0.02	0.01	0.51	0.02	0.04	0.15	
Control Delay	42.5	26.0	5.9	41.0	25.8	28.4	4.4	15.6	2.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	42.5	26.0	5.9	41.0	25.8	28.4	4.4	15.6	2.6	
LOS	D	C	A	D	C	C	A	B	A	
Approach Delay		6.9			32.6		23.4	7.1		
Approach LOS		A			C		C	A		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 74.1	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 11.3	Intersection LOS: B
Intersection Capacity Utilization 73.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	2	787	4	5	0	268	70	1	0	60	111
Future Volume (veh/h)	20	2	787	4	5	0	268	70	1	0	60	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	21	2	828	4	5	0	282	74	1	0	63	117
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	44	574	811	32	1035	461	362	1924	26	2	1010	451
Arrive On Green	0.03	0.32	0.31	0.01	0.30	0.00	0.22	0.56	0.54	0.00	0.30	0.30
Sat Flow, veh/h	1619	1800	1525	2956	3420	1525	1619	3455	47	1619	3420	1525
Grp Volume(v), veh/h	21	2	828	4	5	0	282	37	38	0	63	117
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	1710	1525	1619	1710	1792	1619	1710	1525
Q Serve(g_s), s	1.4	0.1	32.6	0.1	0.1	0.0	17.3	1.0	1.0	0.0	1.4	6.2
Cycle Q Clear(g_c), s	1.4	0.1	32.6	0.1	0.1	0.0	17.3	1.0	1.0	0.0	1.4	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	44	574	811	32	1035	461	362	952	998	2	1010	451
V/C Ratio(X)	0.47	0.00	1.02	0.12	0.00	0.00	0.78	0.04	0.04	0.00	0.06	0.26
Avail Cap(c_a), veh/h	86	574	811	156	1091	487	362	952	998	86	1320	589
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	24.6	24.8	51.9	25.8	0.0	38.7	10.6	10.6	0.0	26.8	28.5
Incr Delay (d2), s/veh	2.9	0.0	37.2	0.6	0.0	0.0	15.2	0.1	0.1	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	26.1	0.1	0.0	0.0	8.0	0.4	0.4	0.0	0.5	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.7	24.6	62.0	52.5	25.8	0.0	53.8	10.7	10.7	0.0	26.8	28.8
LnGrp LOS	D	C	F	D	C	A	D	B	B	A	C	C
Approach Vol, veh/h		851			9			357			180	
Approach Delay, s/veh		61.7			37.7			44.8			28.1	
Approach LOS		E			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	63.0	5.2	37.8	27.7	35.3	6.9	36.1
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	5.0	56.8	5.0	32.0	23.1	38.7	5.0	32.0
Max Q Clear Time (g_c+I1), s	0.0	3.0	2.1	34.6	19.3	8.2	3.4	2.1
Green Ext Time (p_c), s	0.0	0.3	0.0	0.0	0.2	0.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	52.9
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	214.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	860	23	35	487	7	41	4	126	55	5	2
Future Vol, veh/h	4	860	23	35	487	7	41	4	126	55	5	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	4	956	26	39	541	8	46	4	140	61	6	2
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

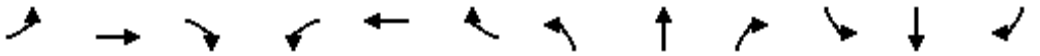
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	338.4	95.1	17.2	15.1
HCM LOS	F	F	C	C

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	24%	100%	0%	0%	100%	0%	89%
Vol Thru, %	2%	0%	100%	0%	0%	99%	8%
Vol Right, %	74%	0%	0%	100%	0%	1%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	171	4	860	23	35	494	62
LT Vol	41	4	0	0	35	0	55
Through Vol	4	0	860	0	0	487	5
RT Vol	126	0	0	23	0	7	2
Lane Flow Rate	190	4	956	26	39	549	69
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.399	0.009	1.72	0.041	0.083	1.097	0.169
Departure Headway (Hd)	8.79	7.205	6.693	5.976	8.944	8.418	10.334
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	412	500	554	603	403	434	349
Service Time	6.49	4.905	4.393	3.676	6.644	6.118	8.034
HCM Lane V/C Ratio	0.461	0.008	1.726	0.043	0.097	1.265	0.198
HCM Control Delay	17.2	10	348.7	8.9	12.5	101	15.1
HCM Lane LOS	C	A	F	A	B	F	C
HCM 95th-tile Q	1.9	0	54.7	0.1	0.3	16.1	0.6

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	5	268	416	511	1112
Future Volume (vph)	5	268	416	511	1112
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (%)	32.2%	32.2%	31.1%	67.8%	36.7%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	23.8	23.8	23.2	54.4	27.2
Actuated g/C Ratio	0.26	0.26	0.26	0.60	0.30
v/c Ratio	0.94	0.44	0.93	0.17	0.84
Control Delay	63.0	5.9	71.6	21.2	31.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.0	5.9	71.6	21.2	31.7
LOS	E	A	E	C	C
Approach Delay	41.1			43.8	31.7
Approach LOS	D			D	C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 37.3	Intersection LOS: D
Intersection Capacity Utilization 83.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	426	5	268	416	511	0	0	1112	461
Future Volume (veh/h)	0	0	0	426	5	268	416	511	0	0	1112	461
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				444	5	134	433	532	0	0	1158	345
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				458	5	411	480	3181	0	0	1422	420
Arrive On Green				0.26	0.26	0.26	0.53	1.00	0.00	0.00	0.28	0.28
Sat Flow, veh/h				1790	20	1610	1810	5358	0	0	5281	1482
Grp Volume(v), veh/h				449	0	134	433	532	0	0	1132	371
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1729	0	0	1634	1595
Q Serve(g_s), s				22.1	0.0	6.1	19.4	0.0	0.0	0.0	19.4	19.6
Cycle Q Clear(g_c), s				22.1	0.0	6.1	19.4	0.0	0.0	0.0	19.4	19.6
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.93
Lane Grp Cap(c), veh/h				463	0	411	480	3181	0	0	1390	452
V/C Ratio(X)				0.97	0.00	0.33	0.90	0.17	0.00	0.00	0.81	0.82
Avail Cap(c_a), veh/h				463	0	411	483	3181	0	0	1481	482
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.62	0.62	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.2	0.0	27.2	20.1	0.0	0.0	0.0	30.0	30.1
Incr Delay (d2), s/veh				34.4	0.0	1.0	13.3	0.1	0.0	0.0	5.3	15.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				13.4	0.0	6.0	6.6	0.0	0.0	0.0	7.7	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				67.6	0.0	28.2	33.4	0.1	0.0	0.0	35.4	45.4
LnGrp LOS				E	A	C	C	A	A	A	D	D
Approach Vol, veh/h					583			965			1503	
Approach Delay, s/veh					58.5			15.0			37.8	
Approach LOS					E			B			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	61.0	29.0	29.7	31.3
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	55.2	23.0	24.0	* 27
Max Q Clear Time (g_c+I1), s	2.0	24.1	21.4	21.6
Green Ext Time (p_c), s	3.6	0.0	0.2	4.0

Intersection Summary	
HCM 6th Ctrl Delay	34.6
HCM 6th LOS	C

Notes

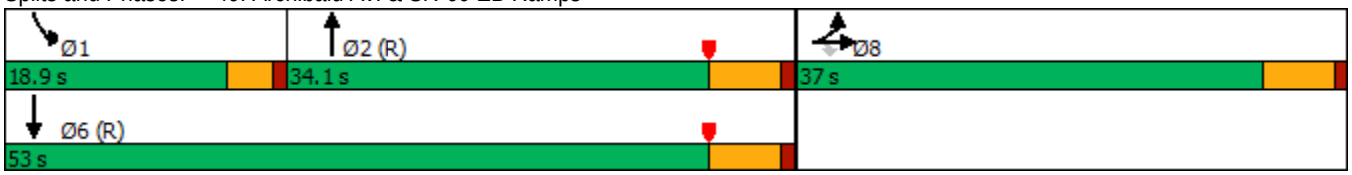
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

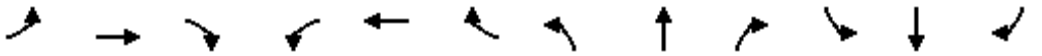
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	572	819	392	1147
Future Volume (vph)	0	572	819	392	1147
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	10.8	10.8	25.8	9.0	25.8
Total Split (s)	37.0	37.0	34.1	18.9	53.0
Total Split (%)	41.1%	41.1%	37.9%	21.0%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	31.2	31.2	28.3	14.9	47.2
Actuated g/C Ratio	0.35	0.35	0.31	0.17	0.52
v/c Ratio	0.18	0.97	0.95dr	1.36	0.44
Control Delay	21.5	57.2	25.5	200.4	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.5	57.2	25.5	200.4	20.9
LOS	C	E	C	F	C
Approach Delay	51.6		25.5		66.6
Approach LOS	D		C		E

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.36	
Intersection Signal Delay: 47.8	Intersection LOS: D
Intersection Capacity Utilization 83.9%	ICU Level of Service E
Analysis Period (min) 15	

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	0	572	0	0	0	0	819	602	392	1147	0
Future Volume (veh/h)	107	0	572	0	0	0	0	819	602	392	1147	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	111	0	346				0	853	452	408	1195	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	441	0	393				0	2045	670	300	3254	0
Arrive On Green	0.24	0.00	0.24				0.00	0.42	0.42	0.05	0.21	0.00
Sat Flow, veh/h	1810	0	1610				0	5168	1606	1810	5358	0
Grp Volume(v), veh/h	111	0	346				0	853	452	408	1195	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1606	1810	1729	0
Q Serve(g_s), s	4.4	0.0	18.6				0.0	11.0	20.5	14.9	17.8	0.0
Cycle Q Clear(g_c), s	4.4	0.0	18.6				0.0	11.0	20.5	14.9	17.8	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	441	0	393				0	2045	670	300	3254	0
V/C Ratio(X)	0.25	0.00	0.88				0.00	0.42	0.67	1.36	0.37	0.00
Avail Cap(c_a), veh/h	627	0	558				0	2045	670	300	3254	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.55	0.55	0.44	0.44	0.00
Uniform Delay (d), s/veh	27.4	0.0	32.8				0.0	18.5	21.3	42.5	20.4	0.0
Incr Delay (d2), s/veh	0.3	0.0	11.3				0.0	0.3	3.0	172.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	8.0				0.0	3.8	7.3	21.4	8.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.7	0.0	44.1				0.0	18.8	24.3	214.8	20.5	0.0
LnGrp LOS	C	A	D				A	B	C	F	C	A
Approach Vol, veh/h		457						1305			1603	
Approach Delay, s/veh		40.1						20.7			70.0	
Approach LOS		D						C			E	

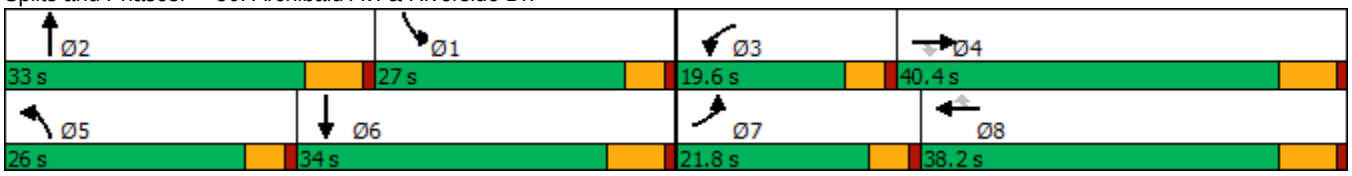
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	18.9	43.4				62.3		27.7				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	14.9	28.3				47.2		31.2				
Max Q Clear Time (g_c+I1), s	16.9	22.5				19.8		20.6				
Green Ext Time (p_c), s	0.0	3.6				8.6		1.3				

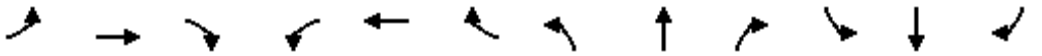
Intersection Summary			
HCM 6th Ctrl Delay			46.8
HCM 6th LOS			D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	227	634	354	152	452	118	291	694	289	928
Future Volume (vph)	227	634	354	152	452	118	291	694	289	928
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.8	40.4	40.4	19.6	38.2	38.2	26.0	33.0	27.0	34.0
Total Split (%)	18.2%	33.7%	33.7%	16.3%	31.8%	31.8%	21.7%	27.5%	22.5%	28.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	17.3	29.2	29.2	13.8	25.7	25.7	21.5	23.8	25.6	27.9
Actuated g/C Ratio	0.15	0.26	0.26	0.12	0.23	0.23	0.19	0.21	0.22	0.24
v/c Ratio	0.99	0.77	0.57	0.83	0.62	0.27	1.02	0.78	0.85	1.05
Control Delay	104.5	45.9	7.0	82.5	43.2	3.3	103.8	48.4	66.6	79.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	104.5	45.9	7.0	82.5	43.2	3.3	103.8	48.4	66.6	79.3
LOS	F	D	A	F	D	A	F	D	E	E
Approach Delay		45.5			44.9			63.8		76.8
Approach LOS		D			D			E		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 60.0	Intersection LOS: E
Intersection Capacity Utilization 90.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	634	354	152	452	118	291	694	59	289	928	249
Future Volume (veh/h)	227	634	354	152	452	118	291	694	59	289	928	249
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	241	674	220	162	481	67	310	738	54	307	987	201
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	251	837	365	188	703	312	313	938	68	370	1026	208
Arrive On Green	0.16	0.24	0.24	0.12	0.21	0.21	0.19	0.20	0.20	0.23	0.25	0.25
Sat Flow, veh/h	1619	3420	1490	1619	3420	1519	1619	4668	340	1619	4087	830
Grp Volume(v), veh/h	241	674	220	162	481	67	310	517	275	307	791	397
Grp Sat Flow(s),veh/h/ln	1619	1710	1490	1619	1710	1519	1619	1638	1732	1619	1638	1641
Q Serve(g_s), s	16.4	20.5	14.5	10.9	14.4	2.3	21.2	16.6	16.7	20.0	26.4	26.5
Cycle Q Clear(g_c), s	16.4	20.5	14.5	10.9	14.4	2.3	21.2	16.6	16.7	20.0	26.4	26.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		0.51
Lane Grp Cap(c), veh/h	251	837	365	188	703	312	313	658	348	370	822	412
V/C Ratio(X)	0.96	0.80	0.60	0.86	0.68	0.21	0.99	0.78	0.79	0.83	0.96	0.96
Avail Cap(c_a), veh/h	251	1056	460	219	988	439	313	793	419	370	822	412
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.4	39.3	37.1	48.1	40.7	11.9	44.6	42.0	42.0	40.6	40.9	41.0
Incr Delay (d2), s/veh	44.9	3.7	1.6	22.9	1.2	0.3	48.2	4.3	8.3	13.7	22.4	35.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	8.6	5.2	5.4	5.9	1.4	12.3	6.8	7.6	9.0	12.6	14.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	91.3	43.0	38.7	71.0	41.9	12.3	92.8	46.3	50.4	54.3	63.4	76.1
LnGrp LOS	F	D	D	E	D	B	F	D	D	D	E	E
Approach Vol, veh/h		1135			710			1102			1495	
Approach Delay, s/veh		52.4			45.7			60.4			64.9	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.5	28.5	17.4	33.3	26.0	34.0	21.8	29.0
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	22.4	* 27	15.0	34.2	21.4	27.8	17.2	32.0
Max Q Clear Time (g_c+I1), s	22.0	18.7	12.9	22.5	23.2	28.5	18.4	16.4
Green Ext Time (p_c), s	0.0	2.8	0.0	3.8	0.0	0.0	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	57.5
HCM 6th LOS	E

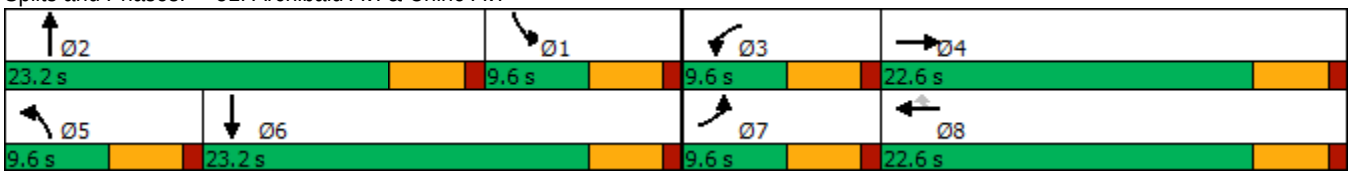
Notes

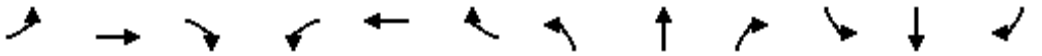
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	21	1	22	113	20	859	145	1141
Future Volume (vph)	21	1	22	113	20	859	145	1141
Turn Type	Prot	NA	Prot	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3		5	2	1	6
Permitted Phases				8				
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	9.6	22.6	9.6	22.6	9.6	23.2	9.6	23.2
Total Split (%)	14.8%	34.8%	14.8%	34.8%	14.8%	35.7%	14.8%	35.7%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	5.6	7.8	5.6	7.8	5.6	15.5	5.6	26.6
Actuated g/C Ratio	0.13	0.19	0.13	0.19	0.13	0.37	0.13	0.64
v/c Ratio	0.11	0.03	0.11	0.21	0.10	0.55	0.75	0.59
Control Delay	23.8	11.6	23.9	0.8	23.8	13.4	51.3	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	11.6	23.9	0.8	23.8	13.4	51.3	13.6
LOS	C	B	C	A	C	B	D	B
Approach Delay		20.7				13.6		17.8
Approach LOS		C				B		B

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 41.8	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 15.4	Intersection LOS: B
Intersection Capacity Utilization 57.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	1	6	22	0	113	20	859	42	145	1141	13
Future Volume (veh/h)	21	1	6	22	0	113	20	859	42	145	1141	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	23	1	5	24	0	42	22	954	38	161	1268	13
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	45	18	88	47	124	105	44	1519	60	229	1484	15
Arrive On Green	0.03	0.07	0.07	0.03	0.00	0.07	0.03	0.31	0.31	0.14	0.43	0.43
Sat Flow, veh/h	1619	261	1304	1619	1800	1525	1619	4848	193	1619	3468	36
Grp Volume(v), veh/h	23	0	6	24	0	42	22	644	348	161	625	656
Grp Sat Flow(s),veh/h/ln	1619	0	1565	1619	1800	1525	1619	1638	1765	1619	1710	1794
Q Serve(g_s), s	0.6	0.0	0.1	0.6	0.0	0.7	0.6	6.9	6.9	3.9	13.5	13.5
Cycle Q Clear(g_c), s	0.6	0.0	0.1	0.6	0.0	0.7	0.6	6.9	6.9	3.9	13.5	13.5
Prop In Lane	1.00		0.83	1.00		1.00	1.00		0.11	1.00		0.02
Lane Grp Cap(c), veh/h	45	0	106	47	124	105	44	1026	553	229	732	767
V/C Ratio(X)	0.51	0.00	0.06	0.51	0.00	0.40	0.50	0.63	0.63	0.70	0.85	0.85
Avail Cap(c_a), veh/h	197	0	686	197	789	669	197	1485	800	229	775	813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.7	0.0	17.9	19.6	0.0	6.7	19.7	12.0	12.1	16.8	10.6	10.6
Incr Delay (d2), s/veh	8.4	0.0	0.2	8.2	0.0	2.5	8.7	0.6	1.2	9.2	8.9	8.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.1	0.3	0.0	0.4	0.3	1.6	1.8	1.7	4.5	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.1	0.0	18.1	27.8	0.0	9.2	28.3	12.7	13.2	26.0	19.4	19.1
LnGrp LOS	C	A	B	C	A	A	C	B	B	C	B	B
Approach Vol, veh/h		29			66			1014			1442	
Approach Delay, s/veh		26.0			16.0			13.2			20.0	
Approach LOS		C			B			B			C	

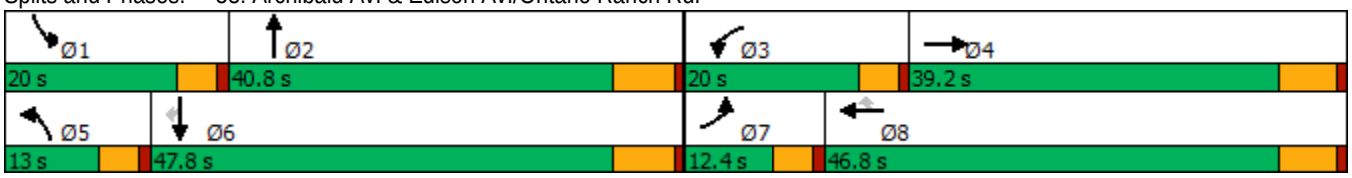
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	17.5	5.8	7.4	5.7	22.2	5.8	7.4
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	5.0	18.6	5.0	18.0	5.0	18.6	5.0	18.0
Max Q Clear Time (g_c+I1), s	5.9	8.9	2.6	2.1	2.6	15.5	2.6	2.7
Green Ext Time (p_c), s	0.0	3.9	0.0	0.0	0.0	2.0	0.0	0.1

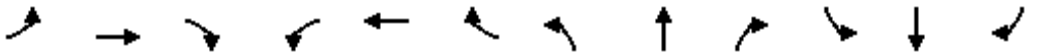
Intersection Summary	
HCM 6th Ctrl Delay	17.3
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	626	127	317	235	75	72	639	358	139	848	82
Future Volume (vph)	115	626	127	317	235	75	72	639	358	139	848	82
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	12.4	39.2		20.0	46.8	46.8	13.0	40.8		20.0	47.8	47.8
Total Split (%)	10.3%	32.7%		16.7%	39.0%	39.0%	10.8%	34.0%		16.7%	39.8%	39.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	7.4	25.1	101.7	14.5	32.2	32.2	7.7	26.8	101.7	12.7	34.6	34.6
Actuated g/C Ratio	0.07	0.25	1.00	0.14	0.32	0.32	0.08	0.26	1.00	0.12	0.34	0.34
v/c Ratio	0.56	0.76	0.09	0.78	0.42	0.13	0.60	0.73	0.24	0.71	0.75	0.14
Control Delay	60.3	43.1	0.1	58.4	31.3	0.5	71.3	40.4	0.4	65.7	36.2	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.3	43.1	0.1	58.4	31.3	0.5	71.3	40.4	0.4	65.7	36.2	0.5
LOS	E	D	A	E	C	A	E	D	A	E	D	A
Approach Delay		39.1			41.3			29.1			37.3	
Approach LOS		D			D			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 101.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 36.0	Intersection LOS: D
Intersection Capacity Utilization 76.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	626	127	317	235	75	72	639	358	139	848	82
Future Volume (veh/h)	115	626	127	317	235	75	72	639	358	139	848	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	119	645	0	327	242	43	74	659	0	143	874	63
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	175	816		394	563	477	92	928		173	1099	479
Arrive On Green	0.06	0.24	0.00	0.13	0.31	0.31	0.06	0.27	0.00	0.11	0.32	0.32
Sat Flow, veh/h	2956	3420	1525	2956	1800	1525	1619	3420	1525	1619	3420	1491
Grp Volume(v), veh/h	119	645	0	327	242	43	74	659	0	143	874	63
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1800	1525	1619	1710	1525	1619	1710	1491
Q Serve(g_s), s	3.5	15.5	0.0	9.4	9.4	1.7	4.0	15.2	0.0	7.6	20.4	2.6
Cycle Q Clear(g_c), s	3.5	15.5	0.0	9.4	9.4	1.7	4.0	15.2	0.0	7.6	20.4	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	816		394	563	477	92	928		173	1099	479
V/C Ratio(X)	0.68	0.79		0.83	0.43	0.09	0.80	0.71		0.83	0.80	0.13
Avail Cap(c_a), veh/h	263	1288		519	834	707	155	1338		284	1612	703
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	31.3	0.0	37.0	23.9	21.3	40.8	28.8	0.0	38.3	27.1	21.1
Incr Delay (d2), s/veh	1.7	1.8	0.0	6.5	0.5	0.1	6.0	1.0	0.0	4.0	1.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	6.1	0.0	3.5	3.7	0.6	1.6	5.7	0.0	3.0	7.6	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.1	33.1	0.0	43.5	24.4	21.4	46.8	29.8	0.0	42.4	28.9	21.2
LnGrp LOS	D	C		D	C	C	D	C		D	C	C
Approach Vol, veh/h		764	A		612			733	A		1080	
Approach Delay, s/veh		34.5			34.4			31.6			30.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	30.3	16.3	27.1	9.6	34.7	9.8	33.6
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	15.4	34.3	15.4	33.0	8.4	41.3	7.8	40.6
Max Q Clear Time (g_c+I1), s	9.6	17.2	11.4	17.5	6.0	22.4	5.5	11.4
Green Ext Time (p_c), s	0.1	3.5	0.2	3.4	0.0	5.3	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	32.4
HCM 6th LOS	C

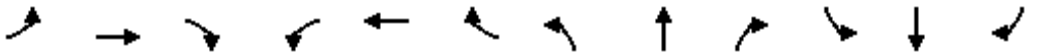
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	11	1058	1	10	1283
Future Volume (vph)	2	11	1058	1	10	1283
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.5	9.5	32.5	32.5	9.6	16.5
Total Split (s)	10.0	10.0	40.0	40.0	10.0	50.0
Total Split (%)	14.3%	14.3%	57.1%	57.1%	14.3%	71.4%
Yellow Time (s)	3.5	3.5	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	6.5	6.5	4.6	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max
Act Effct Green (s)	5.6	5.6	56.7	56.7	5.2	58.5
Actuated g/C Ratio	0.09	0.09	0.90	0.90	0.08	0.92
v/c Ratio	0.01	0.03	0.37	0.00	0.08	0.43
Control Delay	26.5	0.1	4.5	6.0	28.3	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	0.1	4.5	6.0	28.3	2.9
LOS	C	A	A	A	C	A
Approach Delay			4.5			3.1
Approach LOS			A			A

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 63.3	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.43	
Intersection Signal Delay: 3.8	Intersection LOS: A
Intersection Capacity Utilization 49.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	2	0	11	0	1058	1	10	1283	0
Future Volume (veh/h)	0	0	0	2	0	11	0	1058	1	10	1283	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1700	0	1800	0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h				2	0	3	0	1126	1	11	1365	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				21	0	18	0	2377	1059	23	2711	0
Arrive On Green				0.01	0.00	0.01	0.00	0.69	0.69	0.01	0.79	0.00
Sat Flow, veh/h				3141	0	2685	0	3510	1524	1619	3510	0
Grp Volume(v), veh/h				2	0	3	0	1126	1	11	1365	0
Grp Sat Flow(s),veh/h/ln				1570	0	1342	0	1710	1524	1619	1710	0
Q Serve(g_s), s				0.0	0.0	0.1	0.0	8.2	0.0	0.4	7.6	0.0
Cycle Q Clear(g_c), s				0.0	0.0	0.1	0.0	8.2	0.0	0.4	7.6	0.0
Prop In Lane				1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				21	0	18	0	2377	1059	23	2711	0
V/C Ratio(X)				0.10	0.00	0.17	0.00	0.47	0.00	0.48	0.50	0.00
Avail Cap(c_a), veh/h				315	0	269	0	2377	1059	159	2711	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				27.1	0.0	27.1	0.0	3.8	2.6	26.8	2.0	0.0
Incr Delay (d2), s/veh				1.9	0.0	4.3	0.0	0.7	0.0	5.8	0.7	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.0	0.0	0.0	0.0	0.8	0.0	0.2	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				29.0	0.0	31.4	0.0	4.5	2.6	32.6	2.6	0.0
LnGrp LOS				C	A	C	A	A	A	C	A	A
Approach Vol, veh/h					5			1127			1376	
Approach Delay, s/veh					30.4			4.5			2.9	
Approach LOS					C			A			A	

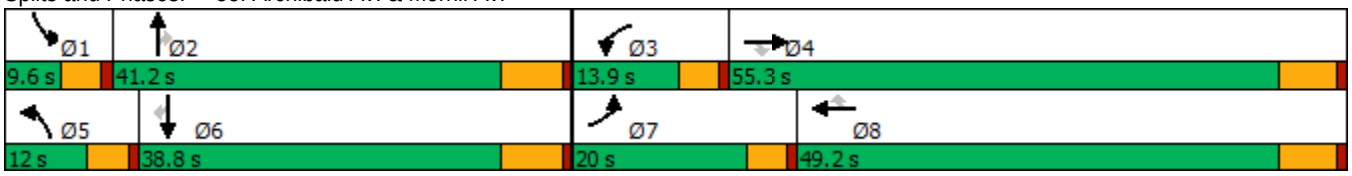
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	5.4	44.6				50.0		4.9				
Change Period (Y+Rc), s	4.6	6.5				6.5		4.5				
Max Green Setting (Gmax), s	5.4	33.5				43.5		5.5				
Max Q Clear Time (g_c+I1), s	2.4	10.2				9.6		2.1				
Green Ext Time (p_c), s	0.0	7.5				11.1		0.0				

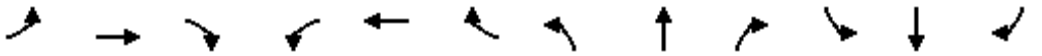
Intersection Summary		
HCM 6th Ctrl Delay		3.7
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	363	75	525	47	25	56	163	640	40	74	997	215
Future Volume (vph)	363	75	525	47	25	56	163	640	40	74	997	215
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	20.0	55.3	55.3	13.9	49.2	49.2	12.0	41.2	41.2	9.6	38.8	38.8
Total Split (%)	16.7%	46.1%	46.1%	11.6%	41.0%	41.0%	10.0%	34.3%	34.3%	8.0%	32.3%	32.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	15.9	31.0	31.0	7.2	21.7	21.7	7.6	38.5	38.5	5.2	33.4	33.4
Actuated g/C Ratio	0.16	0.32	0.32	0.07	0.22	0.22	0.08	0.40	0.40	0.05	0.34	0.34
v/c Ratio	1.41	0.13	0.85	0.40	0.06	0.12	1.32	0.49	0.06	0.48	0.87	0.35
Control Delay	239.9	23.7	31.2	58.1	28.1	0.6	229.1	28.2	0.2	61.2	42.5	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	239.9	23.7	31.2	58.1	28.1	0.6	229.1	28.2	0.2	61.2	42.5	12.2
LOS	F	C	C	E	C	A	F	C	A	E	D	B
Approach Delay		109.3			26.9			65.7			38.5	
Approach LOS		F			C			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.41	
Intersection Signal Delay: 66.3	Intersection LOS: E
Intersection Capacity Utilization 82.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	363	75	525	47	25	56	163	640	40	74	997	215
Future Volume (veh/h)	363	75	525	47	25	56	163	640	40	74	997	215
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	374	77	356	48	26	19	168	660	27	76	1028	164
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	296	478	405	65	222	188	142	1317	580	146	1186	529
Arrive On Green	0.18	0.27	0.27	0.04	0.12	0.12	0.09	0.39	0.39	0.05	0.35	0.35
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	1619	3420	1506	2956	3420	1525
Grp Volume(v), veh/h	374	77	356	48	26	19	168	660	27	76	1028	164
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1710	1506	1478	1710	1525
Q Serve(g_s), s	15.4	2.8	18.8	2.5	1.1	0.9	7.4	12.4	0.9	2.1	23.7	6.6
Cycle Q Clear(g_c), s	15.4	2.8	18.8	2.5	1.1	0.9	7.4	12.4	0.9	2.1	23.7	6.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	296	478	405	65	222	188	142	1317	580	146	1186	529
V/C Ratio(X)	1.26	0.16	0.88	0.74	0.12	0.10	1.18	0.50	0.05	0.52	0.87	0.31
Avail Cap(c_a), veh/h	296	1048	888	179	918	778	142	1408	620	175	1310	584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.5	23.7	29.6	40.0	32.9	32.8	38.5	19.7	16.2	39.1	25.7	20.2
Incr Delay (d2), s/veh	143.3	0.2	6.2	6.0	0.2	0.2	132.8	0.3	0.0	1.1	6.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.3	1.1	7.2	1.1	0.5	0.3	7.9	4.3	0.3	0.7	9.3	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	177.7	23.9	35.9	46.1	33.1	33.1	171.2	20.0	16.3	40.2	31.7	20.5
LnGrp LOS	F	C	D	D	C	C	F	C	B	D	C	C
Approach Vol, veh/h		807			93			855			1268	
Approach Delay, s/veh		100.5			39.8			49.6			30.7	
Approach LOS		F			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	39.0	8.0	28.6	12.0	35.7	20.0	16.6
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	34.7	9.3	49.1	7.4	32.3	15.4	43.0
Max Q Clear Time (g_c+I1), s	4.1	14.4	4.5	20.8	9.4	25.7	17.4	3.1
Green Ext Time (p_c), s	0.0	3.8	0.0	1.6	0.0	3.6	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	55.0
HCM 6th LOS	D

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	402	275	567	393	640	931
Future Volume (vph)	402	275	567	393	640	931
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	37.0	46.7	36.3	37.0	83.7
Total Split (%)	30.3%	30.8%	38.9%	30.3%	30.8%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min
Act Effct Green (s)	28.1	65.7	38.0	66.0	32.2	75.5
Actuated g/C Ratio	0.25	0.58	0.33	0.58	0.28	0.66
v/c Ratio	0.92	0.29	0.92	0.42	1.28	0.75
Control Delay	70.0	8.0	57.6	10.8	176.0	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.0	8.0	57.6	10.8	176.0	18.4
LOS	E	A	E	B	F	B
Approach Delay	44.8		38.4			82.6
Approach LOS	D		D			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.28	
Intersection Signal Delay: 61.4	Intersection LOS: E
Intersection Capacity Utilization 100.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	402	275	567	393	640	931
Future Volume (veh/h)	402	275	567	393	640	931
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	410	231	579	380	653	950
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	439	847	638	920	513	1261
Arrive On Green	0.24	0.24	0.34	0.34	0.28	0.66
Sat Flow, veh/h	1810	1610	1900	1576	1810	1900
Grp Volume(v), veh/h	410	231	579	380	653	950
Grp Sat Flow(s),veh/h/ln	1810	1610	1900	1576	1810	1900
Q Serve(g_s), s	25.0	9.0	32.9	15.1	32.0	38.0
Cycle Q Clear(g_c), s	25.0	9.0	32.9	15.1	32.0	38.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	439	847	638	920	513	1261
V/C Ratio(X)	0.93	0.27	0.91	0.41	1.27	0.75
Avail Cap(c_a), veh/h	497	899	697	969	513	1325
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.9	14.8	35.8	13.2	40.4	12.8
Incr Delay (d2), s/veh	22.5	0.1	15.2	0.4	137.4	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.3	3.0	16.9	8.6	32.8	13.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	64.4	14.9	51.0	13.6	177.8	14.8
LnGrp LOS	E	B	D	B	F	B
Approach Vol, veh/h	641		959			1603
Approach Delay, s/veh	46.5		36.2			81.2
Approach LOS	D		D			F

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	37.0	43.2			80.2	32.7
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	32.0	41.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	34.0	34.9			40.0	27.0
Green Ext Time (p_c), s	0.0	3.0			4.1	0.3

Intersection Summary	
HCM 6th Ctrl Delay	60.8
HCM 6th LOS	E

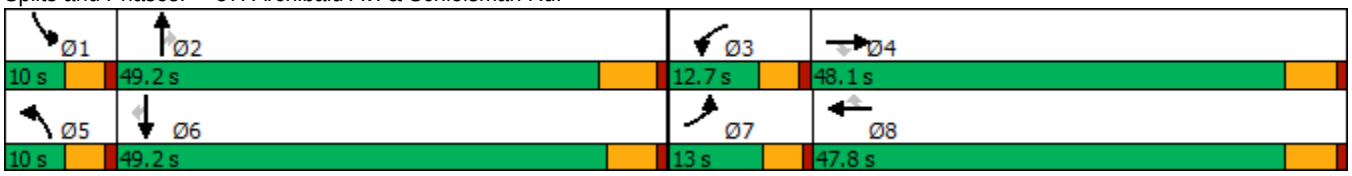
Notes

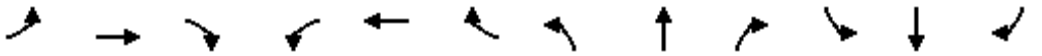
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	440	1064	197	114	339	61	204	638	115	174	699	371
Future Volume (vph)	440	1064	197	114	339	61	204	638	115	174	699	371
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	48.1	48.1	12.7	47.8	47.8	10.0	49.2	49.2	10.0	49.2	49.2
Total Split (%)	10.8%	40.1%	40.1%	10.6%	39.8%	39.8%	8.3%	41.0%	41.0%	8.3%	41.0%	41.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	8.5	43.6	43.6	7.2	42.3	42.3	5.4	23.2	23.2	5.4	24.0	24.0
Actuated g/C Ratio	0.08	0.43	0.43	0.07	0.42	0.42	0.05	0.23	0.23	0.05	0.24	0.24
v/c Ratio	1.53	0.48	0.25	0.47	0.16	0.08	1.11	0.55	0.25	0.95	0.58	0.57
Control Delay	288.0	22.9	5.5	53.2	19.8	0.6	141.9	35.2	6.6	102.4	35.2	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	288.0	22.9	5.5	53.2	19.8	0.6	141.9	35.2	6.6	102.4	35.2	6.5
LOS	F	C	A	D	B	A	F	D	A	F	D	A
Approach Delay		89.4			25.0			54.5			36.1	
Approach LOS		F			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 100.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.53	
Intersection Signal Delay: 59.3	Intersection LOS: E
Intersection Capacity Utilization 85.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	440	1064	197	114	339	61	204	638	115	174	699	371
Future Volume (veh/h)	440	1064	197	114	339	61	204	638	115	174	699	371
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	449	1086	119	116	346	36	208	651	80	178	713	265
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	293	2335	725	178	2165	671	188	1218	378	188	1218	377
Arrive On Green	0.08	0.45	0.45	0.05	0.42	0.42	0.05	0.23	0.23	0.05	0.23	0.23
Sat Flow, veh/h	3510	5187	1610	3510	5187	1608	3510	5187	1610	3510	5187	1604
Grp Volume(v), veh/h	449	1086	119	116	346	36	208	651	80	178	713	265
Grp Sat Flow(s),veh/h/ln	1755	1729	1610	1755	1729	1608	1755	1729	1610	1755	1729	1604
Q Serve(g_s), s	8.4	14.7	4.4	3.3	4.2	1.3	5.4	11.1	4.0	5.1	12.3	15.2
Cycle Q Clear(g_c), s	8.4	14.7	4.4	3.3	4.2	1.3	5.4	11.1	4.0	5.1	12.3	15.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	293	2335	725	178	2165	671	188	1218	378	188	1218	377
V/C Ratio(X)	1.53	0.47	0.16	0.65	0.16	0.05	1.10	0.53	0.21	0.94	0.59	0.70
Avail Cap(c_a), veh/h	293	2335	725	283	2165	671	188	2217	688	188	2258	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.1	19.2	16.4	46.9	18.3	17.5	47.6	33.7	31.0	47.5	34.2	35.3
Incr Delay (d2), s/veh	256.0	0.7	0.5	1.5	0.2	0.2	96.2	0.4	0.3	49.3	0.4	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.9	5.5	1.6	1.4	1.6	0.5	4.8	4.4	1.5	3.4	4.9	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	302.1	19.9	16.9	48.4	18.5	17.6	143.8	34.1	31.3	96.7	34.6	37.7
LnGrp LOS	F	B	B	D	B	B	F	C	C	F	C	D
Approach Vol, veh/h		1654			498			939			1156	
Approach Delay, s/veh		96.3			25.4			58.1			44.9	
Approach LOS		F			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	29.8	9.7	51.1	10.0	29.8	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.4	43.0	8.1	42.3	5.4	* 44	8.4	42.0
Max Q Clear Time (g_c+I1), s	7.1	13.1	5.3	16.7	7.4	17.2	10.4	6.2
Green Ext Time (p_c), s	0.0	4.5	0.0	8.2	0.0	5.6	0.0	2.3

Intersection Summary	
HCM 6th Ctrl Delay	65.5
HCM 6th LOS	E

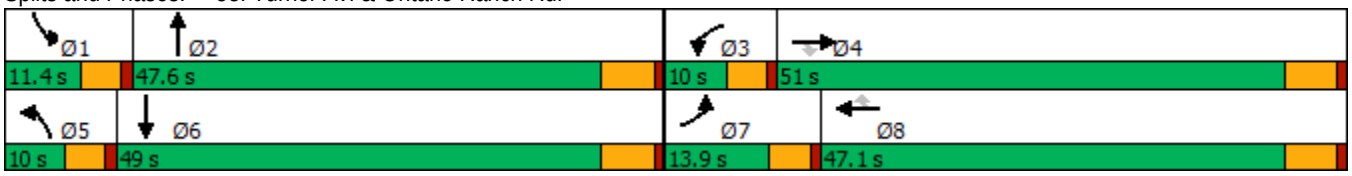
Notes

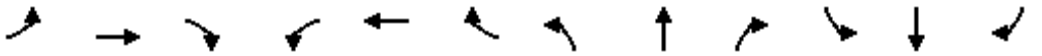
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	47	1188	40	32	649	13	27	7	28	7
Future Volume (vph)	47	1188	40	32	649	13	27	7	28	7
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	13.9	51.0	51.0	10.0	47.1	47.1	10.0	47.6	11.4	49.0
Total Split (%)	11.6%	42.5%	42.5%	8.3%	39.3%	39.3%	8.3%	39.7%	9.5%	40.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	7.1	57.8	57.8	5.5	56.3	56.3	5.5	14.9	6.1	15.5
Actuated g/C Ratio	0.08	0.68	0.68	0.06	0.66	0.66	0.06	0.18	0.07	0.18
v/c Ratio	0.39	0.56	0.04	0.33	0.31	0.01	0.29	0.17	0.27	0.11
Control Delay	51.6	18.2	0.1	54.6	15.7	0.0	53.4	12.9	50.9	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.6	18.2	0.1	54.6	15.7	0.0	53.4	12.9	50.9	15.1
LOS	D	B	A	D	B	A	D	B	D	B
Approach Delay		18.9			17.2			27.8		32.4
Approach LOS		B			B			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 84.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 19.0	Intersection LOS: B
Intersection Capacity Utilization 63.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	1188	40	32	649	13	27	7	40	28	7	23
Future Volume (veh/h)	47	1188	40	32	649	13	27	7	40	28	7	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	52	1305	32	35	713	11	30	8	25	31	8	11
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	69	1905	850	54	1874	836	49	47	145	50	84	116
Arrive On Green	0.04	0.56	0.56	0.03	0.55	0.55	0.03	0.12	0.12	0.03	0.12	0.12
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	381	1191	1619	686	944
Grp Volume(v), veh/h	52	1305	32	35	713	11	30	0	33	31	0	19
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	0	1572	1619	0	1630
Q Serve(g_s), s	2.6	22.2	0.8	1.7	9.7	0.3	1.5	0.0	1.5	1.5	0.0	0.8
Cycle Q Clear(g_c), s	2.6	22.2	0.8	1.7	9.7	0.3	1.5	0.0	1.5	1.5	0.0	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.76	1.00		0.58
Lane Grp Cap(c), veh/h	69	1905	850	54	1874	836	49	0	192	50	0	200
V/C Ratio(X)	0.76	0.69	0.04	0.64	0.38	0.01	0.61	0.00	0.17	0.62	0.00	0.09
Avail Cap(c_a), veh/h	186	1905	850	108	1874	836	108	0	810	136	0	868
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.4	12.9	8.1	38.7	10.5	8.3	38.9	0.0	31.9	38.8	0.0	31.6
Incr Delay (d2), s/veh	6.1	2.0	0.1	4.6	0.6	0.0	4.5	0.0	0.4	4.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	7.3	0.2	0.7	3.1	0.1	0.6	0.0	0.6	0.6	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.6	14.9	8.2	43.4	11.1	8.4	43.4	0.0	32.4	43.4	0.0	31.8
LnGrp LOS	D	B	A	D	B	A	D	A	C	D	A	C
Approach Vol, veh/h		1389			759			63			50	
Approach Delay, s/veh		15.9			12.5			37.6			39.0	
Approach LOS		B			B			D			D	

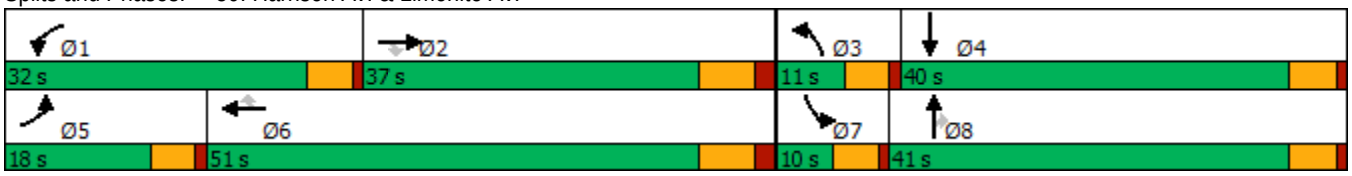
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	15.7	7.3	51.0	7.1	15.8	8.1	50.3
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	6.8	41.8	5.4	45.2	5.4	43.2	9.3	41.3
Max Q Clear Time (g_c+I1), s	3.5	3.5	3.7	24.2	3.5	2.8	4.6	11.7
Green Ext Time (p_c), s	0.0	0.1	0.0	9.3	0.0	0.1	0.0	4.9

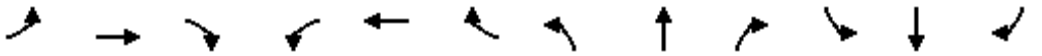
Intersection Summary	
HCM 6th Ctrl Delay	15.9
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	80	897	56	214	608	5	36	45	160	17	47
Future Volume (vph)	80	897	56	214	608	5	36	45	160	17	47
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	18.0	37.0	37.0	32.0	51.0	51.0	11.0	41.0	41.0	10.0	40.0
Total Split (%)	15.0%	30.8%	30.8%	26.7%	42.5%	42.5%	9.2%	34.2%	34.2%	8.3%	33.3%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	8.1	20.5	20.5	13.7	29.4	29.4	6.1	15.6	15.6	5.7	11.2
Actuated g/C Ratio	0.11	0.29	0.29	0.19	0.42	0.42	0.09	0.22	0.22	0.08	0.16
v/c Ratio	0.40	0.61	0.10	0.62	0.29	0.01	0.24	0.11	0.34	0.12	0.26
Control Delay	42.3	26.0	0.3	38.7	17.3	0.0	44.9	24.9	6.2	45.0	22.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.3	26.0	0.3	38.7	17.3	0.0	44.9	24.9	6.2	45.0	22.9
LOS	D	C	A	D	B	A	D	C	A	D	C
Approach Delay		25.9			22.8			15.5			26.8
Approach LOS		C			C			B			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 70.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 23.6	Intersection LOS: C
Intersection Capacity Utilization 52.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 59: Harrison Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	897	56	214	608	5	36	45	160	17	47	32
Future Volume (veh/h)	80	897	56	214	608	5	36	45	160	17	47	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	82	915	52	218	620	3	37	46	78	17	48	24
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	118	1521	472	271	1961	609	71	244	204	38	131	66
Arrive On Green	0.07	0.29	0.29	0.15	0.38	0.38	0.04	0.13	0.13	0.02	0.11	0.11
Sat Flow, veh/h	1810	5187	1610	1810	5187	1610	1810	1900	1588	1810	1195	597
Grp Volume(v), veh/h	82	915	52	218	620	3	37	46	78	17	0	72
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1610	1810	1900	1588	1810	0	1792
Q Serve(g_s), s	2.4	8.3	1.3	6.4	4.6	0.1	1.1	1.2	2.5	0.5	0.0	2.0
Cycle Q Clear(g_c), s	2.4	8.3	1.3	6.4	4.6	0.1	1.1	1.2	2.5	0.5	0.0	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	118	1521	472	271	1961	609	71	244	204	38	0	197
V/C Ratio(X)	0.70	0.60	0.11	0.80	0.32	0.00	0.52	0.19	0.38	0.45	0.00	0.37
Avail Cap(c_a), veh/h	430	2846	883	893	4174	1296	199	1240	1037	165	0	1137
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.0	16.6	14.1	22.5	12.0	10.6	25.8	21.3	21.9	26.5	0.0	22.6
Incr Delay (d2), s/veh	2.7	0.4	0.1	2.1	0.1	0.0	2.2	0.4	1.2	3.1	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.6	0.4	2.4	1.3	0.0	0.5	0.5	0.9	0.2	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.8	17.0	14.2	24.6	12.1	10.6	27.9	21.7	23.0	29.6	0.0	23.7
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	A	C
Approach Vol, veh/h		1049			841			161			89	
Approach Delay, s/veh		17.7			15.3			23.8			24.8	
Approach LOS		B			B			C			C	

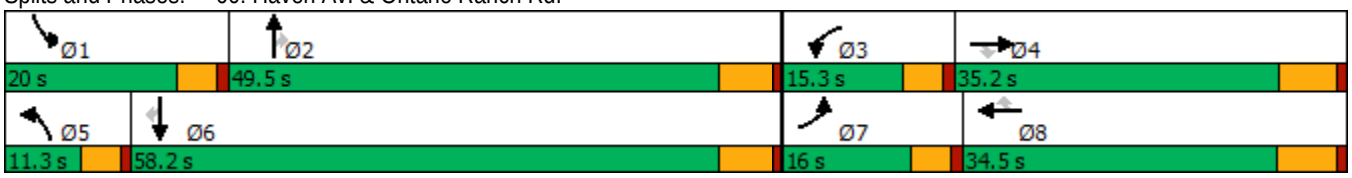
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.2	23.0	7.1	11.3	8.6	27.7	6.1	12.3
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	27.0	30.0	6.0	34.7	13.0	44.0	5.0	35.7
Max Q Clear Time (g_c+I1), s	8.4	10.3	3.1	4.0	4.4	6.6	2.5	4.5
Green Ext Time (p_c), s	0.1	5.8	0.0	0.3	0.0	4.1	0.0	0.4

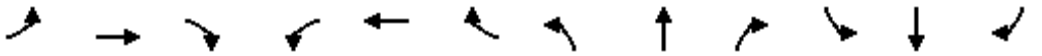
Intersection Summary	
HCM 6th Ctrl Delay	17.5
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	980	68	63	567	133	29	91	24	172	268	116
Future Volume (vph)	125	980	68	63	567	133	29	91	24	172	268	116
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	16.0	35.2	35.2	15.3	34.5	34.5	11.3	49.5	49.5	20.0	58.2	58.2
Total Split (%)	13.3%	29.3%	29.3%	12.8%	28.8%	28.8%	9.4%	41.3%	41.3%	16.7%	48.5%	48.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	10.9	35.1	35.1	7.8	29.1	29.1	6.0	15.6	15.6	14.7	26.8	26.8
Actuated g/C Ratio	0.12	0.40	0.40	0.09	0.33	0.33	0.07	0.18	0.18	0.17	0.30	0.30
v/c Ratio	0.65	0.52	0.10	0.46	0.52	0.23	0.27	0.30	0.06	0.67	0.51	0.22
Control Delay	57.7	26.3	0.3	53.9	29.6	5.6	51.7	34.5	0.3	51.5	28.5	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.7	26.3	0.3	53.9	29.6	5.6	51.7	34.5	0.3	51.5	28.5	5.4
LOS	E	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		28.1			27.4			32.3			30.8	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 88.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 28.7	Intersection LOS: C
Intersection Capacity Utilization 61.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	980	68	63	567	133	29	91	24	172	268	116
Future Volume (veh/h)	125	980	68	63	567	133	29	91	24	172	268	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	130	1021	40	66	591	65	30	95	11	179	279	48
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	160	2016	626	82	1238	552	50	233	197	214	415	352
Arrive On Green	0.10	0.41	0.41	0.05	0.36	0.36	0.03	0.13	0.13	0.13	0.23	0.23
Sat Flow, veh/h	1619	4914	1525	1619	3420	1525	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	130	1021	40	66	591	65	30	95	11	179	279	48
Grp Sat Flow(s),veh/h/ln	1619	1638	1525	1619	1710	1525	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	6.1	12.0	1.2	3.1	10.3	2.2	1.4	3.8	0.5	8.3	10.9	1.9
Cycle Q Clear(g_c), s	6.1	12.0	1.2	3.1	10.3	2.2	1.4	3.8	0.5	8.3	10.9	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	160	2016	626	82	1238	552	50	233	197	214	415	352
V/C Ratio(X)	0.81	0.51	0.06	0.81	0.48	0.12	0.60	0.41	0.06	0.84	0.67	0.14
Avail Cap(c_a), veh/h	239	2016	626	224	1238	552	140	1017	862	322	1219	1033
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.2	17.0	13.8	36.4	19.0	16.4	37.0	31.0	29.5	32.8	27.1	23.6
Incr Delay (d2), s/veh	7.4	0.9	0.2	6.9	1.3	0.4	4.3	1.1	0.1	7.2	1.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	4.0	0.4	1.3	3.7	0.7	0.6	1.6	0.2	3.5	4.5	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	17.9	14.0	43.3	20.4	16.9	41.3	32.1	29.7	39.9	29.0	23.8
LnGrp LOS	D	B	B	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1191			722			136			506	
Approach Delay, s/veh		20.3			22.1			33.9			32.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	15.8	8.5	38.2	7.0	23.6	12.2	34.5
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	15.4	43.7	10.7	* 29	6.7	52.4	11.4	28.0
Max Q Clear Time (g_c+I1), s	10.3	5.8	5.1	14.0	3.4	12.9	8.1	12.3
Green Ext Time (p_c), s	0.1	0.5	0.0	5.7	0.0	1.7	0.0	3.2

Intersection Summary	
HCM 6th Ctrl Delay	24.0
HCM 6th LOS	C

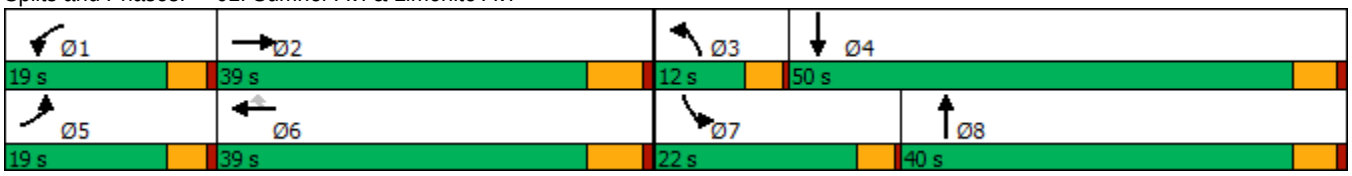
Notes

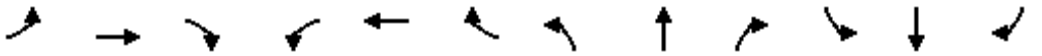
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	221	723	219	594	46	46	220	119	454
Future Volume (vph)	221	723	219	594	46	46	220	119	454
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	19.0	39.0	19.0	39.0	39.0	12.0	40.0	22.0	50.0
Total Split (%)	15.8%	32.5%	15.8%	32.5%	32.5%	10.0%	33.3%	18.3%	41.7%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	9.7	20.2	9.6	20.2	20.2	6.2	17.3	9.9	22.8
Actuated g/C Ratio	0.13	0.27	0.13	0.27	0.27	0.08	0.23	0.13	0.30
v/c Ratio	0.51	0.60	0.51	0.44	0.09	0.32	0.43	0.52	0.62
Control Delay	39.3	27.7	39.3	26.2	0.3	46.5	19.1	44.3	24.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.3	27.7	39.3	26.2	0.3	46.5	19.1	44.3	24.0
LOS	D	C	D	C	A	D	B	D	C
Approach Delay		30.2		28.2			22.1		27.1
Approach LOS		C		C			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 75.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 27.8	Intersection LOS: C
Intersection Capacity Utilization 60.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 61: Sumner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	221	723	85	219	594	46	46	220	144	119	454	201
Future Volume (veh/h)	221	723	85	219	594	46	46	220	144	119	454	201
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	228	745	76	226	612	39	47	227	77	123	468	109
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	348	1265	128	346	1368	425	68	504	166	160	701	162
Arrive On Green	0.10	0.26	0.26	0.10	0.26	0.26	0.04	0.19	0.19	0.09	0.24	0.24
Sat Flow, veh/h	3510	4785	485	3510	5187	1610	1810	2654	873	1810	2910	673
Grp Volume(v), veh/h	228	537	284	226	612	39	47	152	152	123	289	288
Grp Sat Flow(s),veh/h/ln	1755	1729	1812	1755	1729	1610	1810	1805	1723	1810	1805	1779
Q Serve(g_s), s	3.4	7.4	7.4	3.4	5.4	1.0	1.4	4.1	4.3	3.6	7.9	8.0
Cycle Q Clear(g_c), s	3.4	7.4	7.4	3.4	5.4	1.0	1.4	4.1	4.3	3.6	7.9	8.0
Prop In Lane	1.00		0.27	1.00		1.00	1.00		0.51	1.00		0.38
Lane Grp Cap(c), veh/h	348	915	479	346	1368	425	68	343	327	160	435	428
V/C Ratio(X)	0.65	0.59	0.59	0.65	0.45	0.09	0.69	0.44	0.46	0.77	0.67	0.67
Avail Cap(c_a), veh/h	936	2099	1100	936	3149	978	266	1162	1109	599	1494	1473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	17.4	17.4	23.6	16.7	15.1	25.9	19.5	19.6	24.2	18.7	18.7
Incr Delay (d2), s/veh	0.8	0.6	1.2	0.8	0.2	0.1	4.7	0.7	0.8	3.0	1.3	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.4	2.6	1.2	1.7	0.3	0.6	1.5	1.5	1.5	2.9	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.4	18.0	18.6	24.4	16.9	15.2	30.5	20.1	20.3	27.2	20.0	20.1
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	B	C
Approach Vol, veh/h		1049			877			351			700	
Approach Delay, s/veh		19.6			18.8			21.6			21.3	
Approach LOS		B			B			C			C	

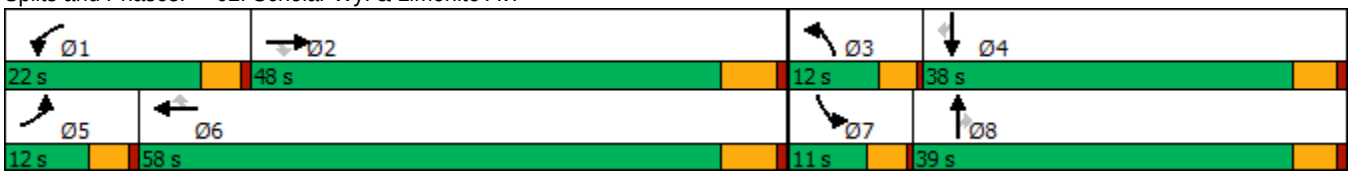
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	20.4	6.0	18.1	9.9	20.3	8.8	15.3
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	14.5	33.0	8.0	45.0	14.5	33.0	18.0	35.0
Max Q Clear Time (g_c+I1), s	5.4	9.4	3.4	10.0	5.4	7.4	5.6	6.3
Green Ext Time (p_c), s	0.2	4.9	0.0	2.7	0.2	3.9	0.1	1.3

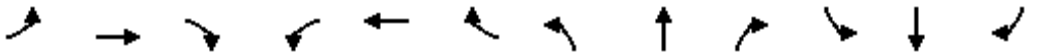
Intersection Summary	
HCM 6th Ctrl Delay	20.0
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	910	43	126	793	57	44	97	129	29	136	31
Future Volume (vph)	40	910	43	126	793	57	44	97	129	29	136	31
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	12.0	48.0	48.0	22.0	58.0	58.0	12.0	39.0	39.0	11.0	38.0	38.0
Total Split (%)	10.0%	40.0%	40.0%	18.3%	48.3%	48.3%	10.0%	32.5%	32.5%	9.2%	31.7%	31.7%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.2	27.9	27.9	10.6	37.9	37.9	6.4	12.3	12.3	5.8	11.8	11.8
Actuated g/C Ratio	0.08	0.38	0.38	0.14	0.51	0.51	0.09	0.17	0.17	0.08	0.16	0.16
v/c Ratio	0.28	0.71	0.07	0.52	0.45	0.07	0.30	0.32	0.35	0.22	0.25	0.09
Control Delay	46.5	25.0	0.2	43.2	15.9	1.6	46.4	33.4	8.0	46.4	31.4	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.5	25.0	0.2	43.2	15.9	1.6	46.4	33.4	8.0	46.4	31.4	0.5
LOS	D	C	A	D	B	A	D	C	A	D	C	A
Approach Delay		24.8			18.6			23.4			28.8	
Approach LOS		C			B			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 73.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 22.5	Intersection LOS: C
Intersection Capacity Utilization 58.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	910	43	126	793	57	44	97	129	29	136	31
Future Volume (veh/h)	40	910	43	126	793	57	44	97	129	29	136	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	43	968	32	134	844	37	47	103	57	31	145	26
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	64	1408	628	173	1627	725	68	227	193	50	396	172
Arrive On Green	0.04	0.39	0.39	0.10	0.45	0.45	0.04	0.12	0.12	0.03	0.11	0.11
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	1900	1610	1810	3610	1570
Grp Volume(v), veh/h	43	968	32	134	844	37	47	103	57	31	145	26
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1900	1610	1810	1805	1570
Q Serve(g_s), s	1.2	11.9	0.7	3.8	8.9	0.7	1.4	2.7	1.7	0.9	2.0	0.8
Cycle Q Clear(g_c), s	1.2	11.9	0.7	3.8	8.9	0.7	1.4	2.7	1.7	0.9	2.0	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	64	1408	628	173	1627	725	68	227	193	50	396	172
V/C Ratio(X)	0.67	0.69	0.05	0.77	0.52	0.05	0.69	0.45	0.30	0.62	0.37	0.15
Avail Cap(c_a), veh/h	255	2852	1272	596	3531	1575	272	1215	1030	238	2241	975
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.3	13.5	10.1	23.5	10.5	8.2	25.3	21.8	21.4	25.6	22.0	21.4
Incr Delay (d2), s/veh	4.5	0.6	0.0	2.8	0.3	0.0	4.6	1.0	0.6	4.6	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.6	0.2	1.5	2.4	0.2	0.6	1.1	0.6	0.4	0.8	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.8	14.1	10.1	26.2	10.7	8.2	29.8	22.8	22.0	30.1	22.4	21.7
LnGrp LOS	C	B	B	C	B	A	C	C	C	C	C	C
Approach Vol, veh/h		1043			1015			207			202	
Approach Delay, s/veh		14.6			12.7			24.2			23.5	
Approach LOS		B			B			C			C	

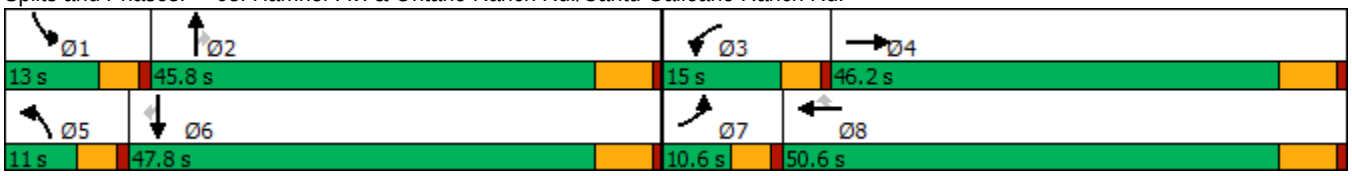
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	26.7	6.0	10.8	6.4	30.0	5.5	11.4
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	17.5	42.0	8.0	33.0	7.5	52.0	7.0	34.0
Max Q Clear Time (g_c+I1), s	5.8	13.9	3.4	4.0	3.2	10.9	2.9	4.7
Green Ext Time (p_c), s	0.1	6.9	0.0	0.8	0.0	6.1	0.0	0.5

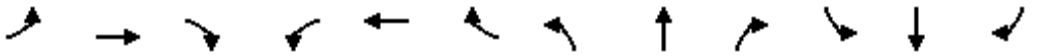
Intersection Summary	
HCM 6th Ctrl Delay	15.4
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	96	890	615	489	114	206	397	247	478	841	115
Future Volume (vph)	96	890	615	489	114	206	397	247	478	841	115
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	10.6	46.2	15.0	50.6	50.6	11.0	45.8	45.8	13.0	47.8	47.8
Total Split (%)	8.8%	38.5%	12.5%	42.2%	42.2%	9.2%	38.2%	38.2%	10.8%	39.8%	39.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.0	28.2	10.6	32.8	32.8	6.5	30.0	30.0	8.6	32.0	32.0
Actuated g/C Ratio	0.06	0.28	0.11	0.33	0.33	0.07	0.30	0.30	0.09	0.32	0.32
v/c Ratio	0.56	0.70	2.04	0.45	0.20	1.11	0.28	0.46	1.96	0.80	0.21
Control Delay	62.2	32.3	504.4	28.1	5.6	143.5	27.2	15.5	474.2	37.2	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.2	32.3	504.4	28.1	5.6	143.5	27.2	15.5	474.2	37.2	6.6
LOS	E	C	F	C	A	F	C	B	F	D	A
Approach Delay		34.6		266.6			52.0			180.4	
Approach LOS		C		F			D			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.04	
Intersection Signal Delay: 140.8	Intersection LOS: F
Intersection Capacity Utilization 89.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	890	279	615	489	114	206	397	247	478	841	115
Future Volume (veh/h)	96	890	279	615	489	114	206	397	247	478	841	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	100	927	234	641	509	85	215	414	178	498	876	65
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	150	1344	333	331	1131	505	204	1452	450	267	1084	483
Arrive On Green	0.05	0.27	0.27	0.11	0.33	0.33	0.07	0.30	0.30	0.09	0.32	0.32
Sat Flow, veh/h	2956	4987	1235	2956	3420	1525	2956	4914	1524	2956	3420	1524
Grp Volume(v), veh/h	100	862	299	641	509	85	215	414	178	498	876	65
Grp Sat Flow(s),veh/h/ln	1478	1548	1578	1478	1710	1525	1478	1638	1524	1478	1710	1524
Q Serve(g_s), s	3.1	15.5	15.9	10.4	10.9	3.7	6.4	6.0	8.7	8.4	21.8	2.8
Cycle Q Clear(g_c), s	3.1	15.5	15.9	10.4	10.9	3.7	6.4	6.0	8.7	8.4	21.8	2.8
Prop In Lane	1.00		0.78	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	150	1252	425	331	1131	505	204	1452	450	267	1084	483
V/C Ratio(X)	0.67	0.69	0.70	1.94	0.45	0.17	1.06	0.29	0.40	1.86	0.81	0.13
Avail Cap(c_a), veh/h	191	2000	680	331	1635	729	204	2095	650	267	1532	683
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	30.4	30.6	41.2	24.4	22.0	43.2	25.2	26.1	42.2	29.1	22.6
Incr Delay (d2), s/veh	2.9	0.7	2.1	432.3	0.3	0.2	78.4	0.1	0.6	402.1	2.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	5.3	5.7	23.4	4.1	1.2	4.4	2.2	3.0	17.8	8.5	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.2	31.1	32.7	473.5	24.7	22.2	121.6	25.3	26.7	444.4	31.4	22.8
LnGrp LOS	D	C	C	F	C	C	F	C	C	F	C	C
Approach Vol, veh/h		1261			1235			807			1439	
Approach Delay, s/veh		32.7			257.5			51.3			173.9	
Approach LOS		C			F			D			F	

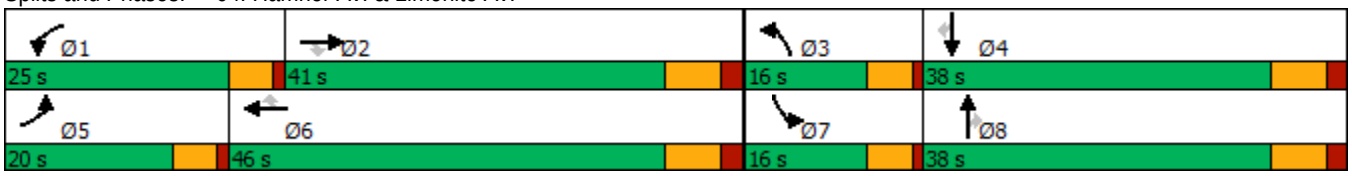
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	33.6	15.0	31.2	11.0	35.6	9.3	36.9
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	8.4	39.6	10.4	40.0	6.4	41.6	6.0	44.4
Max Q Clear Time (g_c+I1), s	10.4	10.7	12.4	17.9	8.4	23.8	5.1	12.9
Green Ext Time (p_c), s	0.0	3.1	0.0	7.2	0.0	5.3	0.0	3.4

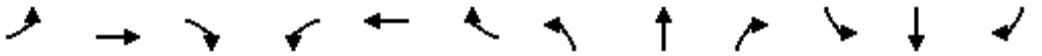
Intersection Summary	
HCM 6th Ctrl Delay	137.2
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	294	622	84	378	480	153	204	594	184	193	642	225
Future Volume (vph)	294	622	84	378	480	153	204	594	184	193	642	225
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	20.0	41.0	41.0	25.0	46.0	46.0	16.0	38.0	38.0	16.0	38.0	38.0
Total Split (%)	16.7%	34.2%	34.2%	20.8%	38.3%	38.3%	13.3%	31.7%	31.7%	13.3%	31.7%	31.7%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	12.1	22.7	22.7	14.7	25.3	25.3	9.3	24.3	24.3	9.1	24.1	24.1
Actuated g/C Ratio	0.13	0.24	0.24	0.15	0.26	0.26	0.10	0.25	0.25	0.10	0.25	0.25
v/c Ratio	0.69	0.52	0.18	0.72	0.52	0.29	0.62	0.46	0.35	0.60	0.51	0.40
Control Delay	50.7	34.2	2.9	48.6	32.8	6.4	52.9	32.3	6.8	52.4	33.0	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.7	34.2	2.9	48.6	32.8	6.4	52.9	32.3	6.8	52.4	33.0	6.6
LOS	D	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		36.4			34.7			31.8			30.9	
Approach LOS		D			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 95.5	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 33.4	Intersection LOS: C
Intersection Capacity Utilization 63.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 64: Hamner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	294	622	84	378	480	153	204	594	184	193	642	225
Future Volume (veh/h)	294	622	84	378	480	153	204	594	184	193	642	225
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	303	641	66	390	495	113	210	612	106	199	662	169
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	389	1220	378	480	942	414	292	1318	401	281	1301	396
Arrive On Green	0.11	0.24	0.24	0.14	0.26	0.26	0.08	0.25	0.25	0.08	0.25	0.25
Sat Flow, veh/h	3510	5187	1606	3510	3610	1586	3510	5187	1577	3510	5187	1580
Grp Volume(v), veh/h	303	641	66	390	495	113	210	612	106	199	662	169
Grp Sat Flow(s),veh/h/ln	1755	1729	1606	1755	1805	1586	1755	1729	1577	1755	1729	1580
Q Serve(g_s), s	6.9	8.8	2.7	8.8	9.6	4.6	4.8	8.1	4.4	4.5	8.9	7.3
Cycle Q Clear(g_c), s	6.9	8.8	2.7	8.8	9.6	4.6	4.8	8.1	4.4	4.5	8.9	7.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	389	1220	378	480	942	414	292	1318	401	281	1301	396
V/C Ratio(X)	0.78	0.53	0.17	0.81	0.53	0.27	0.72	0.46	0.26	0.71	0.51	0.43
Avail Cap(c_a), veh/h	645	2161	669	860	1725	758	473	1970	599	473	1970	600
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.3	27.2	24.9	34.2	25.8	24.0	36.5	25.7	24.3	36.6	26.3	25.6
Incr Delay (d2), s/veh	1.3	0.8	0.5	1.3	1.0	0.8	1.2	0.5	0.7	1.2	0.7	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	3.4	1.0	3.6	3.9	1.7	2.0	3.1	1.6	1.9	3.5	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.6	28.0	25.4	35.5	26.8	24.8	37.7	26.3	25.1	37.9	26.9	27.2
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1010			998			928			1030	
Approach Delay, s/veh		30.4			30.0			28.7			29.1	
Approach LOS		C			C			C			C	

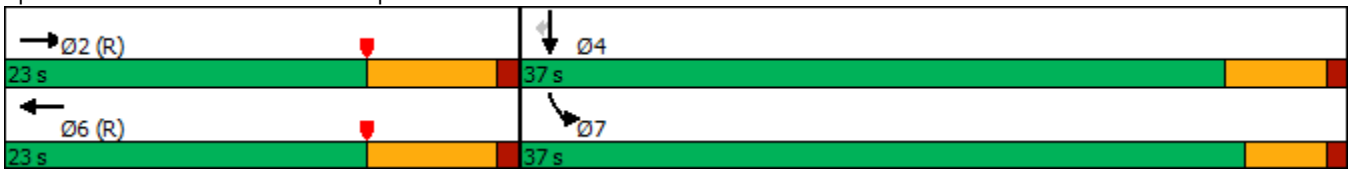
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	26.2	11.8	27.5	14.1	28.3	11.5	27.7
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	20.0	34.0	11.0	31.0	15.0	39.0	11.0	31.0
Max Q Clear Time (g_c+I1), s	10.8	10.8	6.8	10.9	8.9	11.6	6.5	10.1
Green Ext Time (p_c), s	0.3	7.9	0.1	8.4	0.2	6.9	0.1	7.5

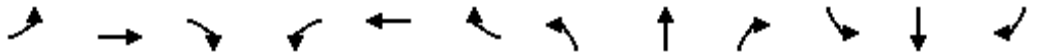
Intersection Summary	
HCM 6th Ctrl Delay	29.6
HCM 6th LOS	C

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1192	521	473	443	307	0	1035
Future Volume (vph)	1192	521	473	443	307	0	1035
Turn Type	NA	Free	NA	Free	Prot	NA	Perm
Protected Phases	2		6		7	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		7	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		9.6	10.5	10.5
Total Split (s)	23.0		23.0		37.0	37.0	37.0
Total Split (%)	38.3%		38.3%		61.7%	61.7%	61.7%
Yellow Time (s)	5.8		5.8		3.6	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8		6.8		4.6	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Min		None	Min	Min
Act Effct Green (s)	16.2	60.0	16.2	60.0	32.4	31.5	31.5
Actuated g/C Ratio	0.27	1.00	0.27	1.00	0.54	0.52	0.52
v/c Ratio	0.88	0.33	0.50	0.28	0.31	0.67	0.64
Control Delay	30.1	0.6	16.5	1.0	8.7	13.5	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	0.6	16.5	1.0	8.7	13.5	12.4
LOS	C	A	B	A	A	B	B
Approach Delay	21.1		9.0			12.1	
Approach LOS	C		A			B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 53 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 15.3	Intersection LOS: B
Intersection Capacity Utilization 66.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	✣	↱
Traffic Volume (veh/h)	0	1192	521	0	473	443	0	0	0	307	0	1035
Future Volume (veh/h)	0	1192	521	0	473	443	0	0	0	307	0	1035
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1229	0	0	488	0				211	0	848
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2456		0	1710					609	0	1083
Arrive On Green	0.00	0.47	0.00	0.00	0.47	0.00				0.34	0.00	0.34
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1229	0	0	488	0				211	0	848
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	9.8	0.0	0.0	4.9	0.0				5.3	0.0	14.2
Cycle Q Clear(g_c), s	0.0	9.8	0.0	0.0	4.9	0.0				5.3	0.0	14.2
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2456		0	1710					609	0	1083
V/C Ratio(X)	0.00	0.50		0.00	0.29					0.35	0.00	0.78
Avail Cap(c_a), veh/h	0	2456		0	1710					977	0	1739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.12	0.00	0.00	0.96	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.9	0.0	0.0	9.6	0.0				15.0	0.0	17.9
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.4	0.0				0.3	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.7	0.0	0.0	1.5	0.0				1.8	0.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	11.0	0.0	0.0	10.0	0.0				15.3	0.0	19.2
LnGrp LOS	A	B		A	B					B	A	B
Approach Vol, veh/h		1229	A		488	A					1059	
Approach Delay, s/veh		11.0			10.0						18.4	
Approach LOS		B			B						B	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		35.2		24.8		35.2						
Change Period (Y+Rc), s		6.8		4.6		6.8						
Max Green Setting (Gmax), s		16.2		32.4		16.2						
Max Q Clear Time (g_c+I1), s		11.8		16.2		6.9						
Green Ext Time (p_c), s		2.8		4.0		1.9						

Intersection Summary		
HCM 6th Ctrl Delay		13.7
HCM 6th LOS		B

Notes

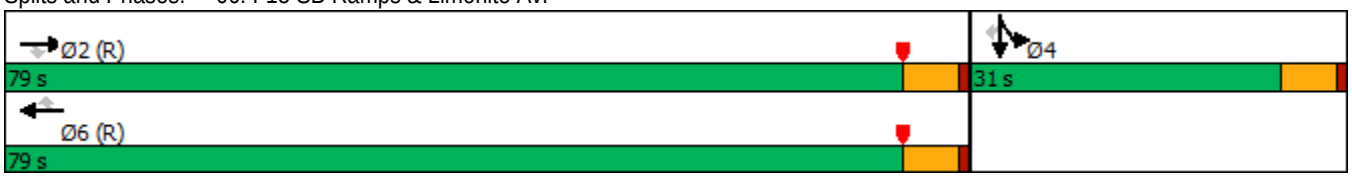
User approved volume balancing among the lanes for turning movement.

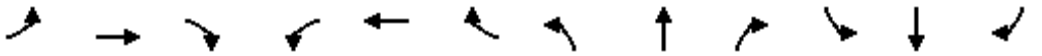
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1200	606	1038	544	137	1	441
Future Volume (vph)	1200	606	1038	544	137	1	441
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		4	4	
Permitted Phases		2		6			4
Detector Phase	2	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	36.5	36.5	23.5	23.5	23.5
Total Split (s)	79.0	79.0	79.0	79.0	31.0	31.0	31.0
Total Split (%)	71.8%	71.8%	71.8%	71.8%	28.2%	28.2%	28.2%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	Min	Min
Act Effct Green (s)	85.5	85.5	85.5	85.5	13.5	13.5	13.5
Actuated g/C Ratio	0.78	0.78	0.78	0.78	0.12	0.12	0.12
v/c Ratio	0.30	0.44	0.26	0.40	0.33	0.34	0.81
Control Delay	4.2	1.4	5.6	5.0	46.5	46.6	33.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.2	1.4	5.6	5.0	46.5	46.6	33.1
LOS	A	A	A	A	D	D	C
Approach Delay	3.3		5.4			36.3	
Approach LOS	A		A			D	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 8.9	Intersection LOS: A
Intersection Capacity Utilization 50.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	↰	↱↱
Traffic Volume (veh/h)	0	1200	606	0	1038	544	0	0	0	137	1	441
Future Volume (veh/h)	0	1200	606	0	1038	544	0	0	0	137	1	441
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1224	472	0	1059	555				141	0	216
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	4205	1305	0	4205	1305				323	0	288
Arrive On Green	0.00	0.81	0.81	0.00	1.00	1.00				0.09	0.00	0.09
Sat Flow, veh/h	0	5358	1610	0	5358	1610				3619	0	3220
Grp Volume(v), veh/h	0	1224	472	0	1059	555				141	0	216
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1610				1810	0	1610
Q Serve(g_s), s	0.0	6.4	8.6	0.0	0.0	0.0				4.1	0.0	7.2
Cycle Q Clear(g_c), s	0.0	6.4	8.6	0.0	0.0	0.0				4.1	0.0	7.2
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	4205	1305	0	4205	1305				323	0	288
V/C Ratio(X)	0.00	0.29	0.36	0.00	0.25	0.43				0.44	0.00	0.75
Avail Cap(c_a), veh/h	0	4205	1305	0	4205	1305				839	0	747
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.92	0.92				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	2.6	2.8	0.0	0.0	0.0				47.5	0.0	48.9
Incr Delay (d2), s/veh	0.0	0.2	0.8	0.0	0.1	0.9				0.3	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.3	1.8	0.0	0.1	0.3				1.8	0.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	2.8	3.6	0.0	0.1	0.9				47.8	0.0	50.4
LnGrp LOS	A	A	A	A	A	A				D	A	D
Approach Vol, veh/h		1696			1614						357	
Approach Delay, s/veh		3.0			0.4						49.4	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		94.7		15.3		94.7						
Change Period (Y+Rc), s		5.5		5.5		5.5						
Max Green Setting (Gmax), s		73.5		25.5		73.5						
Max Q Clear Time (g_c+I1), s		10.6		9.2		2.0						
Green Ext Time (p_c), s		7.5		0.6		6.5						

Intersection Summary	
HCM 6th Ctrl Delay	6.4
HCM 6th LOS	A

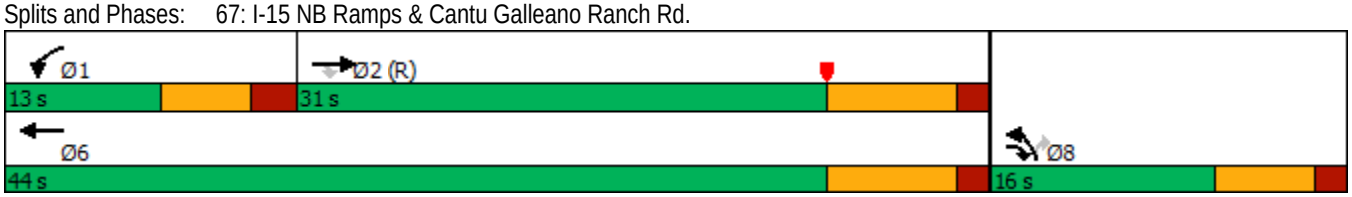
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	679	853	309	717	203	242
Future Volume (vph)	679	853	309	717	203	242
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	31.0	16.0	13.0	44.0	16.0	16.0
Total Split (%)	51.7%	26.7%	21.7%	73.3%	26.7%	26.7%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.0	6.0	7.3	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max
Act Effct Green (s)	23.7	41.0	7.0	36.7	10.0	10.0
Actuated g/C Ratio	0.40	0.68	0.12	0.61	0.17	0.17
v/c Ratio	0.35	0.81	0.80	0.24	0.49	0.40
Control Delay	10.0	13.1	42.8	5.5	17.8	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	13.1	42.8	5.5	17.8	8.4
LOS	B	B	D	A	B	A
Approach Delay	11.7			16.7	14.9	
Approach LOS	B			B	B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 13.9	Intersection LOS: B
Intersection Capacity Utilization 71.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	679	853	309	717	203	242
Future Volume (veh/h)	679	853	309	717	203	242
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	715	682	325	755	242	122
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2049	904	410	3173	603	268
Arrive On Green	0.66	0.66	0.12	0.61	0.17	0.17
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	715	682	325	755	242	122
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	3.7	21.4	5.4	4.0	3.6	4.1
Cycle Q Clear(g_c), s	3.7	21.4	5.4	4.0	3.6	4.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2049	904	410	3173	603	268
V/C Ratio(X)	0.35	0.75	0.79	0.24	0.40	0.45
Avail Cap(c_a), veh/h	2049	904	410	3173	603	268
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.55	0.55	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.8	5.9	25.8	5.3	22.3	22.5
Incr Delay (d2), s/veh	0.3	3.3	14.6	0.0	2.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	4.0	2.8	0.8	1.5	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.1	9.1	40.4	5.3	24.3	28.0
LnGrp LOS	A	A	D	A	C	C
Approach Vol, veh/h	1397			1080	364	
Approach Delay, s/veh	8.1			15.9	25.6	
Approach LOS	A			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.0	31.0				44.0	16.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	7.0	23.7				36.7	10.0
Max Q Clear Time (g_c+I1), s	7.4	23.4				6.0	6.1
Green Ext Time (p_c), s	0.0	0.2				5.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	13.3
HCM 6th LOS	B

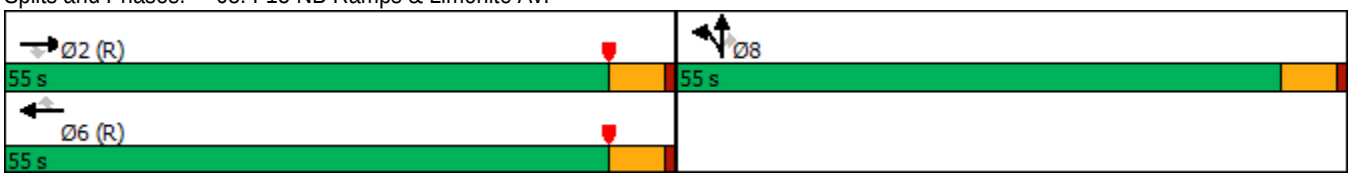
Notes

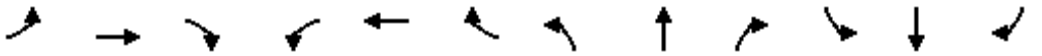
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	843	492	1168	197	415	2	803
Future Volume (vph)	843	492	1168	197	415	2	803
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		8	8	
Permitted Phases		2		6			8
Detector Phase	2	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	55.0	55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None
Act Effct Green (s)	62.0	62.0	62.0	62.0	37.0	37.0	37.0
Actuated g/C Ratio	0.56	0.56	0.56	0.56	0.34	0.34	0.34
v/c Ratio	0.29	0.44	0.40	0.20	0.36	0.37	0.77
Control Delay	12.2	2.8	15.2	2.8	27.9	28.0	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	2.8	15.2	2.8	27.9	28.0	30.9
LOS	B	A	B	A	C	C	C
Approach Delay	8.8		13.4			29.9	
Approach LOS	A		B			C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 17.0	Intersection LOS: B
Intersection Capacity Utilization 53.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱	↰	↰	↱↱			
Traffic Volume (veh/h)	0	843	492	0	1168	197	415	2	803	0	0	0
Future Volume (veh/h)	0	843	492	0	1168	197	415	2	803	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	0	852	497	0	1180	108	420	0	518			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	0	3593	1115	0	3593	1114	750	0	658			
Arrive On Green	0.00	1.00	1.00	0.00	0.69	0.69	0.21	0.00	0.21			
Sat Flow, veh/h	0	5358	1610	0	5358	1609	3619	0	3175			
Grp Volume(v), veh/h	0	852	497	0	1180	108	420	0	518			
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1609	1810	0	1587			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	10.0	2.4	11.4	0.0	17.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	10.0	2.4	11.4	0.0	17.0			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3593	1115	0	3593	1114	750	0	658			
V/C Ratio(X)	0.00	0.24	0.45	0.00	0.33	0.10	0.56	0.00	0.79			
Avail Cap(c_a), veh/h	0	3593	1115	0	3593	1114	1629	0	1429			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.96	0.96	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	6.7	5.6	39.1	0.0	41.3			
Incr Delay (d2), s/veh	0.0	0.1	1.2	0.0	0.2	0.2	0.7	0.0	2.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.4	0.0	3.1	0.7	5.0	0.0	6.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.1	1.2	0.0	7.0	5.7	39.8	0.0	43.4			
LnGrp LOS	A	A	A	A	A	A	D	A	D			
Approach Vol, veh/h		1349			1288			938				
Approach Delay, s/veh		0.6			6.9			41.8				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		81.7				81.7		28.3				
Change Period (Y+Rc), s		5.5				5.5		5.5				
Max Green Setting (Gmax), s		49.5				49.5		49.5				
Max Q Clear Time (g_c+I1), s		2.0				12.0		19.0				
Green Ext Time (p_c), s		4.9				6.0		3.8				
Intersection Summary												
HCM 6th Ctrl Delay			13.6									
HCM 6th LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.

APPENDIX 6.3:

OPENING YEAR CUMULATIVE (2022) WITHOUT PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

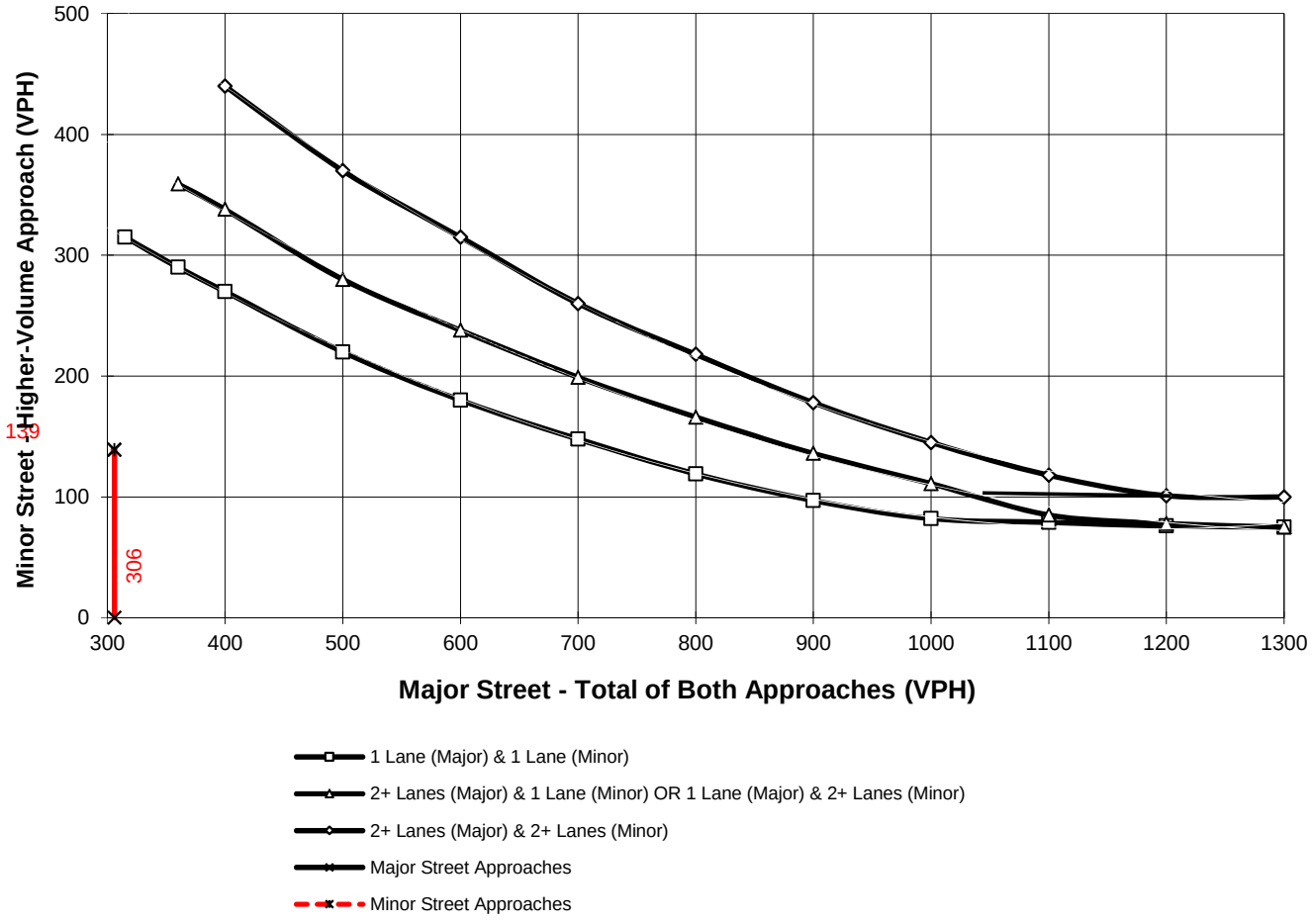
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Cumulative (2022) Without Project Conditions - Weekday AM Peak Hou**

Major Street Name = **Eucalyptus Av.** Total of Both Approaches (VPH) = **306**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Bon View Av.** High Volume Approach (VPH) = **139**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

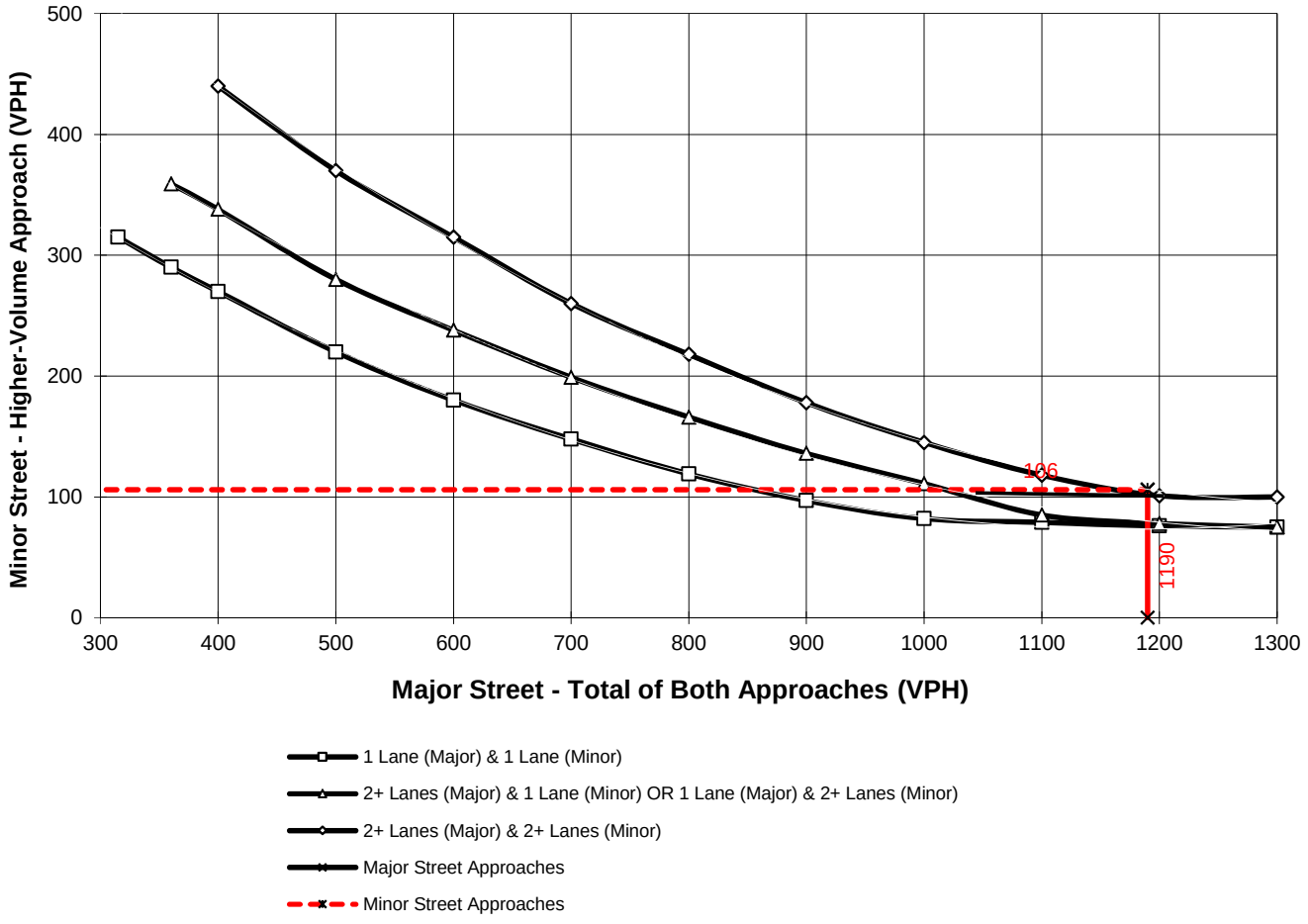
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Cumulative (2022) Without Project Conditions - Weekday PM Peak Hou**

Major Street Name = **Merrill Av.**
Total of Both Approaches (VPH) = **1190**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Bon View Av.**
High Volume Approach (VPH) = **106**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

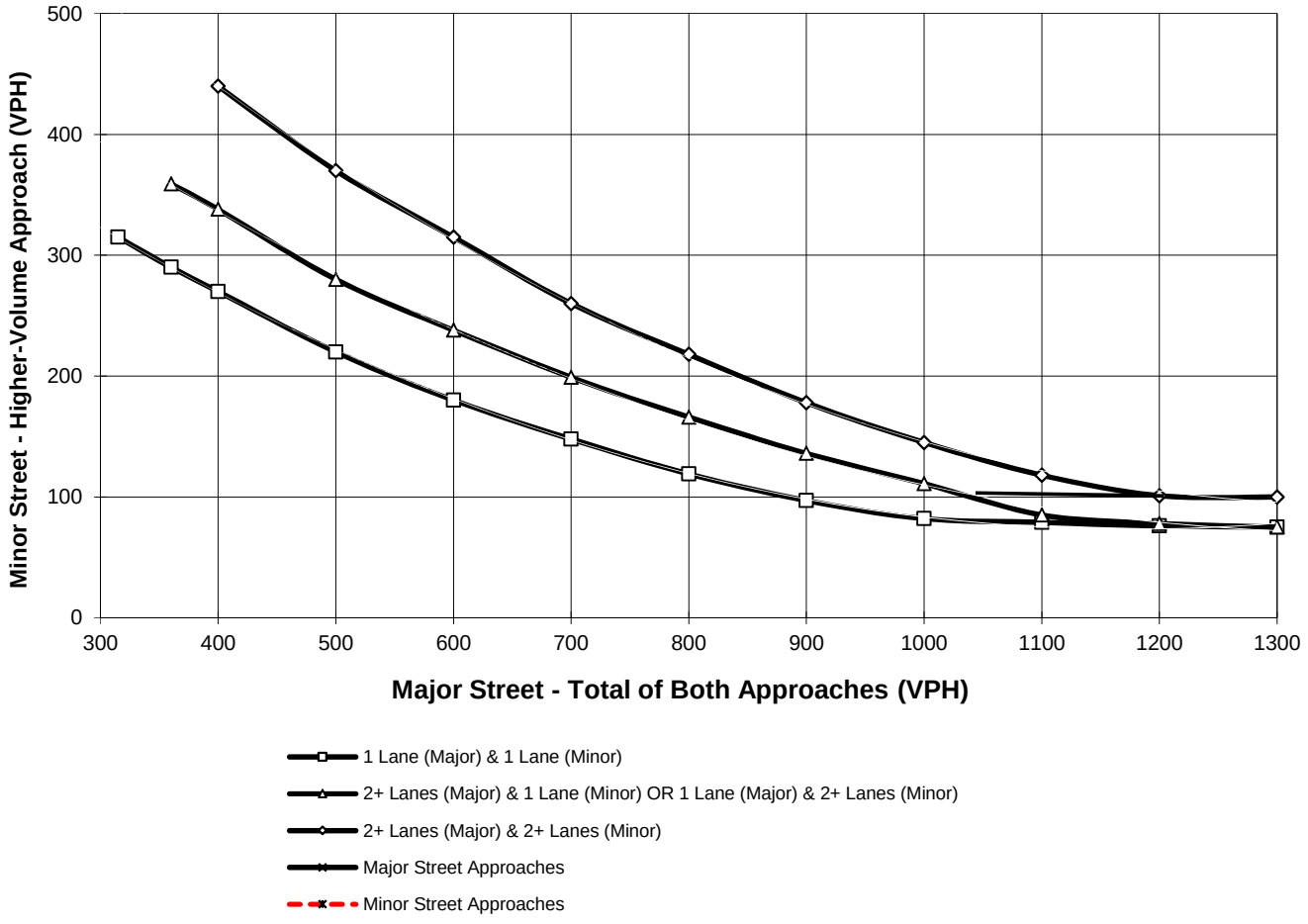
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Cumulative (2022) Without Project Conditions - Weekday AM Peak Hou**

Major Street Name = **Walker Av.** Total of Both Approaches (VPH) = **181**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Eucalyptus Av.** High Volume Approach (VPH) = **167**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

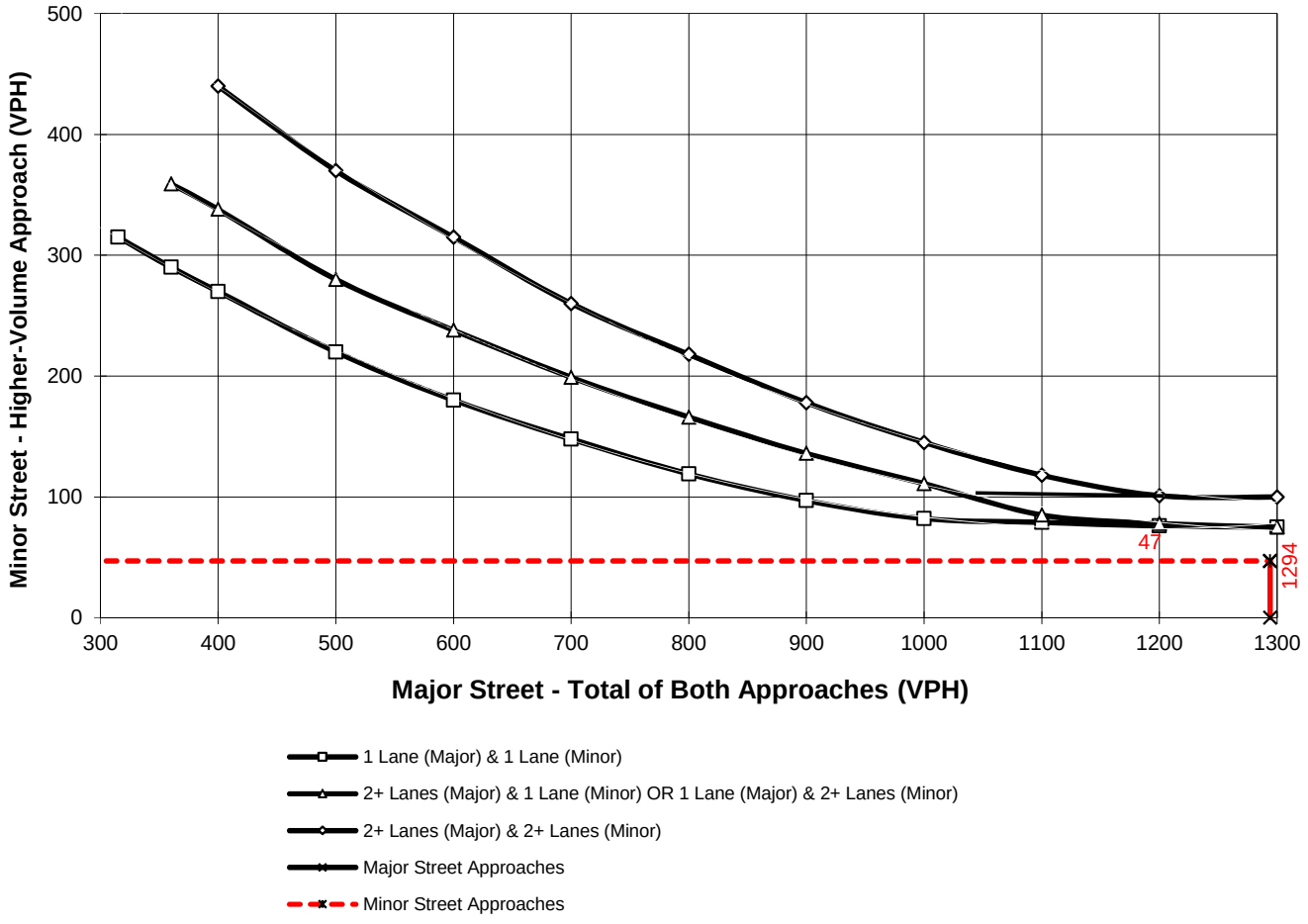
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Cumulative (2022) Without Project Conditions - Weekday AM Peak Hou**

Major Street Name = **Merrill Av.**
Total of Both Approaches (VPH) = **1294**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Baker Av.**
High Volume Approach (VPH) = **47**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

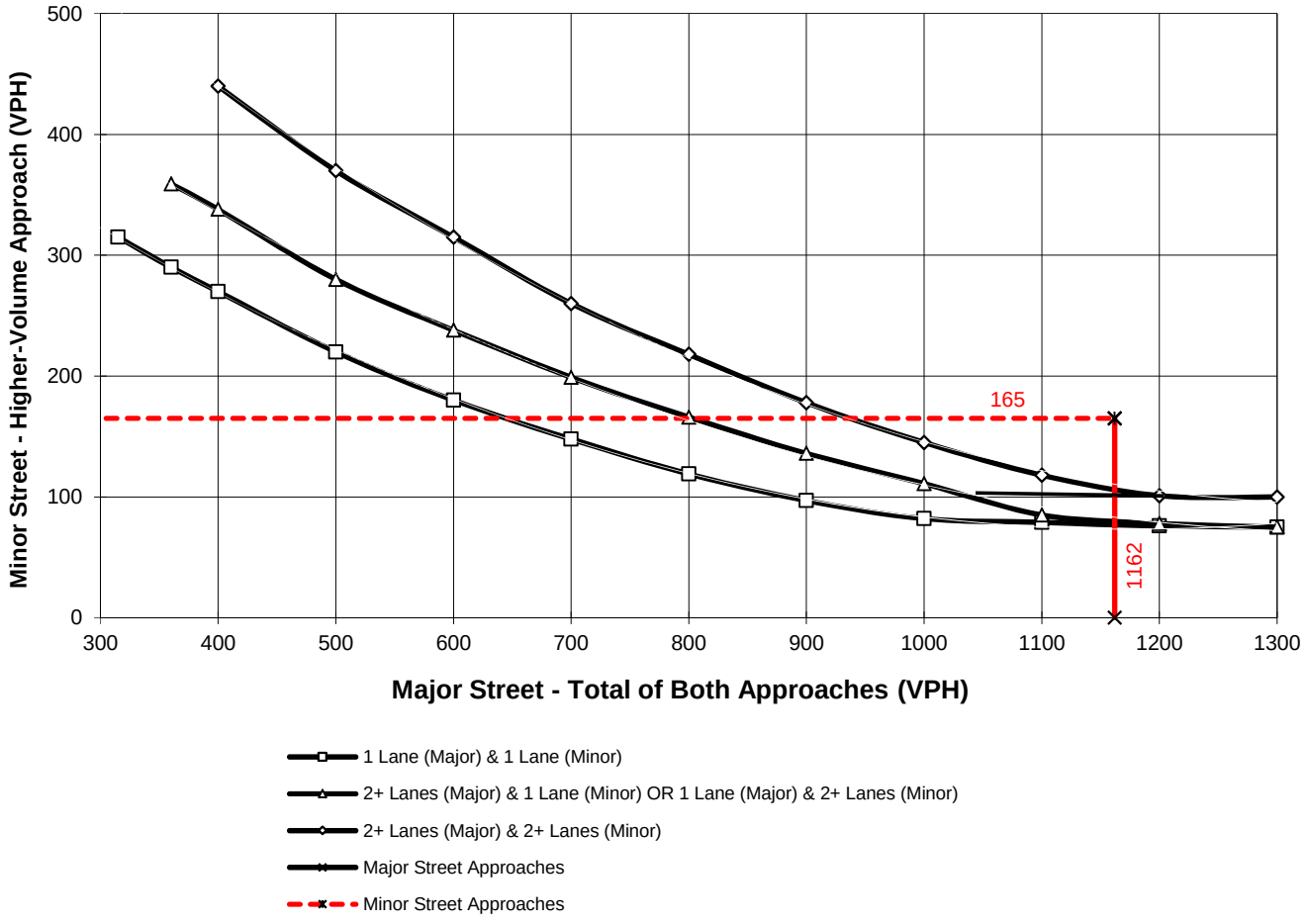
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Cumulative (2022) Without Project Conditions - Weekday PM Peak Hou**

Major Street Name = **Merrill Av.**
Total of Both Approaches (VPH) = **1162**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Hellman Av.**
High Volume Approach (VPH) = **165**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

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APPENDIX 6.4:

OPENING YEAR CUMULATIVE (2022) WITH PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

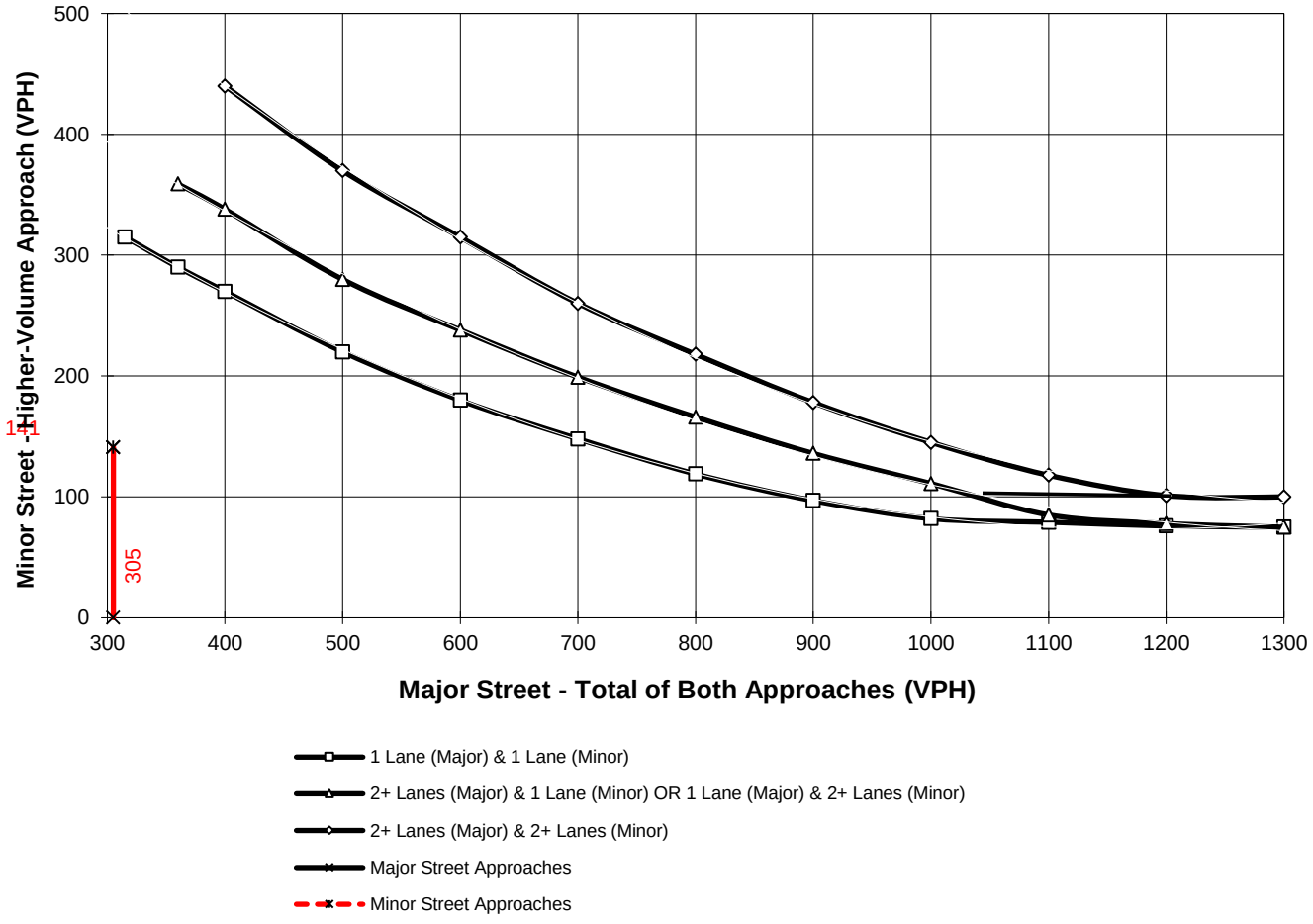
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Cumulative (2022) With Project Conditions - Weekday AM Peak Hour**

Major Street Name = **Eucalyptus Av.** Total of Both Approaches (VPH) = **305**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Bon View Av.** High Volume Approach (VPH) = **141**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

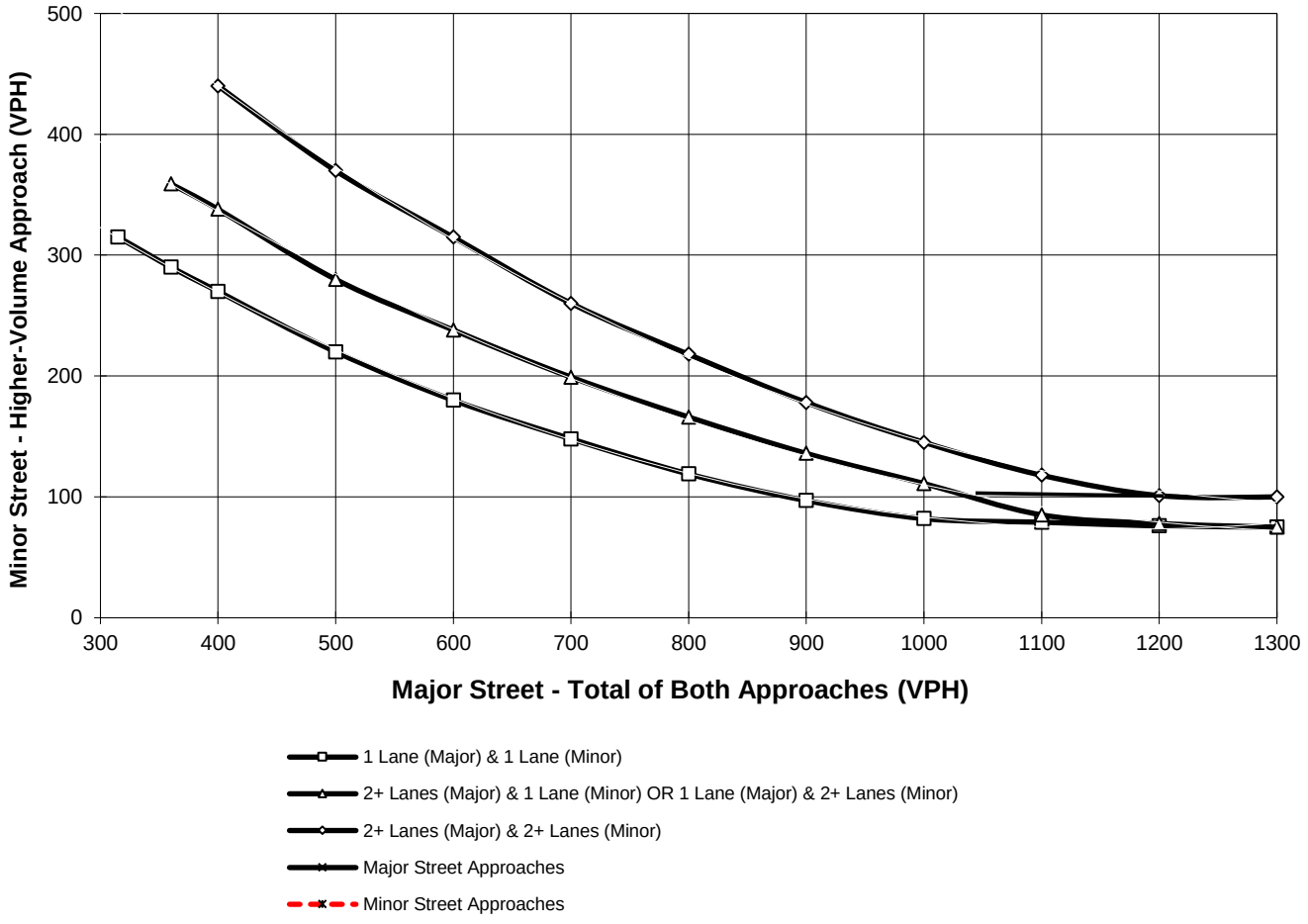
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Cumulative (2022) With Project Conditions - Weekday AM Peak Hour**

Major Street Name = **Walker Av.** Total of Both Approaches (VPH) = **181**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Eucalyptus Av.** High Volume Approach (VPH) = **167**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

APPENDIX 6.5:

OPENING YEAR CUMULATIVE (2022) WITHOUT PROJECT CONDITIONS OFF-RAMP QUEUING ANALYSIS WORKSHEETS

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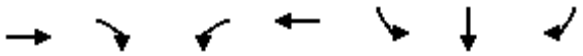


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	919	249	79	1654	502	509	384
v/c Ratio	0.41	0.30	0.35	0.61	0.73	0.74	0.55
Control Delay	22.0	4.0	43.0	27.5	31.6	31.9	20.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.0	4.0	43.0	27.5	31.6	31.9	20.1
Queue Length 50th (ft)	155	0	25	307	273	277	141
Queue Length 95th (ft)	194	41	m32	345	329	334	187
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	2256	843	228	2698	806	808	801
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.30	0.35	0.61	0.62	0.63	0.48

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	783	210	304	20	311	356	358	43
v/c Ratio	0.93	0.65	0.18	0.12	0.93	0.73	0.73	0.08
Control Delay	48.5	43.7	18.1	36.5	51.0	34.3	34.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.5	43.7	18.1	36.5	51.0	34.3	34.2	0.3
Queue Length 50th (ft)	200	99	52	10	51	166	166	0
Queue Length 95th (ft)	#309	#261	88	30	#210	232	233	0
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	857	323	1698	160	334	640	645	693
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.65	0.18	0.13	0.93	0.56	0.56	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	367	1210	200	1244	308	312	75	48	774
v/c Ratio	0.97	0.51	0.12	0.91	0.55	0.55	0.12	0.28	0.90
Control Delay	82.4	18.9	0.1	49.2	32.9	32.8	1.2	45.5	22.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.4	18.9	0.1	49.2	32.9	32.8	1.2	45.5	22.9
Queue Length 50th (ft)	251	181	0	225	173	175	0	28	42
Queue Length 95th (ft)	#432	207	0	#289	267	269	6	63	#148
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	379	2386	1615	1371	558	566	613	202	896
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.51	0.12	0.91	0.55	0.55	0.12	0.24	0.86

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	755	326	851	1093	48	781
v/c Ratio	0.72	0.53	1.06	0.39	0.11	1.03
Control Delay	27.1	9.6	74.6	3.1	34.7	52.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.1	9.6	74.6	3.1	34.7	52.4
Queue Length 50th (ft)	165	51	~476	64	11	~117
Queue Length 95th (ft)	m192	m83	#692	53	28	#342
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1263	701	800	3023	422	755
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.47	1.06	0.36	0.11	1.03

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	405	404	369	415	1022	1076	530
v/c Ratio	0.86	0.89	0.74	0.92	0.46	0.97	0.61
Control Delay	50.0	53.1	30.3	40.8	19.8	53.3	6.0
Queue Delay	0.0	0.0	0.0	0.0	1.3	0.0	0.0
Total Delay	50.0	53.1	30.3	40.8	21.1	53.3	6.0
Queue Length 50th (ft)	221	224	137	213	294	~367	0
Queue Length 95th (ft)	#372	#393	246	m#310	m364	#493	80
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)	400		400	285			
Base Capacity (vph)	514	494	535	471	2199	1115	865
Starvation Cap Reductn	0	0	0	0	902	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.82	0.69	0.88	0.79	0.97	0.61

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

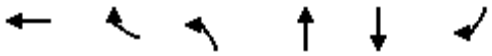
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	406	431	972	751	405	1362
v/c Ratio	0.89	0.95	0.83	0.80	0.92	0.61
Control Delay	54.2	60.7	36.0	13.3	51.7	5.2
Queue Delay	3.8	8.2	0.0	0.0	0.0	0.8
Total Delay	58.0	68.9	36.0	13.3	51.7	6.0
Queue Length 50th (ft)	229	222	274	52	179	67
Queue Length 95th (ft)	#396	#413	#386	#259	m201	m97
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	476	470	1178	933	461	2223
Starvation Cap Reductn	0	0	0	0	0	494
Spillback Cap Reductn	30	28	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.98	0.83	0.80	0.88	0.79

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	273	627	292	1196	774	639
v/c Ratio	0.40	0.95	0.90	0.63	0.71	0.70
Control Delay	28.7	58.1	60.4	23.7	42.3	7.3
Queue Delay	0.0	0.0	0.0	1.3	0.0	0.0
Total Delay	28.7	58.1	60.4	25.0	42.3	7.3
Queue Length 50th (ft)	149	420	243	315	291	0
Queue Length 95th (ft)	223	#662	m223	m288	366	105
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	709	675	351	1884	1091	919
Starvation Cap Reductn	0	0	0	442	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.93	0.83	0.83	0.71	0.70

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	713	213	1177	399	647
v/c Ratio	1.12	0.31	1.06	1.09	0.32
Control Delay	110.7	6.8	83.0	129.3	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	110.7	6.8	83.0	129.3	12.8
Queue Length 50th (ft)	~637	13	~505	~359	83
Queue Length 95th (ft)	#872	66	#644	#564	141
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	636	681	1107	367	1991
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.12	0.31	1.06	1.09	0.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	501	554	747	1186	675
v/c Ratio	1.08	1.13	1.04	0.37	0.58
Control Delay	100.5	109.3	73.0	17.6	28.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	100.5	109.3	73.0	17.6	28.8
Queue Length 50th (ft)	~322	~323	~386	206	82
Queue Length 95th (ft)	#513	#524	m#631	m252	107
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	462	490	718	3181	1963
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.08	1.13	1.04	0.37	0.34

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	404	545	2114	171	740
v/c Ratio	0.73	0.89	0.94dr	0.70	0.25
Control Delay	35.4	37.3	30.6	42.6	22.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	35.4	37.3	30.6	42.6	22.5
Queue Length 50th (ft)	191	196	323	106	139
Queue Length 95th (ft)	291	#377	#443	m133	m152
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	627	671	2452	300	2922
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.64	0.81	0.86	0.57	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1128	374	604	207	329	670	658
v/c Ratio	0.81	0.23	0.62	0.13	0.36	0.83	0.79
Control Delay	26.1	0.3	19.5	0.2	9.2	22.2	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.1	0.3	19.5	0.2	9.2	22.2	19.1
Queue Length 50th (ft)	138	0	108	0	64	183	164
Queue Length 95th (ft)	184	0	158	m0	112	#410	#370
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1400	1615	974	1615	926	809	838
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.23	0.62	0.13	0.36	0.83	0.79

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1186	597	733	716	81	81	453
v/c Ratio	0.28	0.43	0.17	0.50	0.52	0.52	0.68
Control Delay	3.0	1.2	2.9	3.8	58.7	58.7	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.0	1.2	2.9	3.8	58.7	58.7	9.8
Queue Length 50th (ft)	57	0	26	23	58	58	0
Queue Length 95th (ft)	92	22	73	154	106	106	50
Internal Link Dist (ft)	1166		735			976	
Turn Bay Length (ft)		250					250
Base Capacity (vph)	4197	1404	4197	1443	397	397	998
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.43	0.17	0.50	0.20	0.20	0.45

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	562	915	411	519	425	195
v/c Ratio	0.26	0.83	1.01	0.16	0.69	0.51
Control Delay	8.8	14.7	77.1	4.7	23.4	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.8	14.7	77.1	4.7	23.4	9.5
Queue Length 50th (ft)	25	153	~78	23	52	0
Queue Length 95th (ft)	m46	m#258	#159	35	#93	53
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2135	1106	408	3259	617	386
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.83	1.01	0.16	0.69	0.51

Intersection Summary

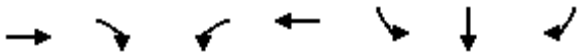
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	547	774	1181	418	118	118	340
v/c Ratio	0.14	0.54	0.29	0.31	0.55	0.55	0.52
Control Delay	3.1	3.1	4.2	1.1	53.9	53.9	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.1	3.1	4.2	1.1	53.9	53.9	7.4
Queue Length 50th (ft)	25	11	73	0	83	83	0
Queue Length 95th (ft)	43	118	116	25	136	136	42
Internal Link Dist (ft)	735		1069			1143	
Turn Bay Length (ft)				250			250
Base Capacity (vph)	4019	1425	4019	1345	771	771	1449
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.54	0.29	0.31	0.15	0.15	0.23

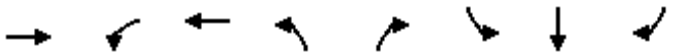
Intersection Summary



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1642	652	349	1582	512	513	549
v/c Ratio	0.86	0.65	0.82	0.58	0.76	0.76	0.81
Control Delay	36.3	5.8	51.0	21.0	34.3	34.3	32.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.3	5.8	51.0	21.0	34.3	34.3	32.6
Queue Length 50th (ft)	371	4	122	245	273	273	247
Queue Length 95th (ft)	#408	57	m128	m254	368	368	346
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	1903	999	432	2745	734	735	737
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.65	0.81	0.58	0.70	0.70	0.74

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1003	133	289	19	163	393	394	74
v/c Ratio	0.94	0.60	0.17	0.17	0.64	0.75	0.74	0.12
Control Delay	47.2	45.5	24.6	39.0	19.3	33.8	33.3	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.2	45.5	24.6	39.0	19.3	33.8	33.3	0.6
Queue Length 50th (ft)	~293	67	65	9	0	182	182	0
Queue Length 95th (ft)	#415	m#168	108	30	#70	255	255	3
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	1064	220	1714	115	255	662	670	711
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.60	0.17	0.17	0.64	0.59	0.59	0.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	399	1722	343	1830	235	326	233	176	868
v/c Ratio	1.00	0.62	0.21	1.00	0.71	0.95	0.56	0.81	0.95
Control Delay	81.3	20.4	0.2	57.3	50.9	80.2	22.3	70.2	30.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.3	20.4	0.2	57.3	50.9	80.2	22.3	70.2	30.6
Queue Length 50th (ft)	~277	286	0	337	150	221	58	110	76
Queue Length 95th (ft)	m#405	327	m0	#431	#262	#406	138	#213	#213
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	399	2782	1615	1831	333	342	417	232	935
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.62	0.21	1.00	0.71	0.95	0.56	0.76	0.93

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1023	185	450	1262	157	1185
v/c Ratio	0.85	0.30	1.38	0.63	0.13	1.47
Control Delay	26.8	7.8	217.1	13.6	19.1	236.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.8	7.8	217.1	13.6	19.1	236.8
Queue Length 50th (ft)	198	18	~303	198	28	~703
Queue Length 95th (ft)	m257	m26	#448	240	46	#878
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1263	642	327	2075	1201	807
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.29	1.38	0.61	0.13	1.47

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	378	377	346	325	1151	1074	523
v/c Ratio	0.81	0.84	0.73	0.85	0.52	0.85	0.58
Control Delay	44.2	46.1	31.1	38.1	22.2	38.1	5.5
Queue Delay	0.0	0.0	0.0	0.0	2.5	0.0	0.0
Total Delay	44.2	46.1	31.1	38.1	24.7	38.1	5.5
Queue Length 50th (ft)	204	206	137	163	358	313	0
Queue Length 95th (ft)	302	312	231	m215	m441	#492	79
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)				285			400
Base Capacity (vph)	552	528	545	431	2206	1258	903
Starvation Cap Reductn	0	0	0	0	891	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.71	0.63	0.75	0.88	0.85	0.58

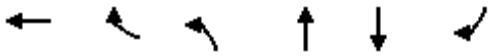
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	390	420	1013	642	391	1311
v/c Ratio	0.89	0.94	0.82	0.68	0.90	0.58
Control Delay	56.1	60.0	34.7	6.8	52.7	4.8
Queue Delay	26.8	39.8	0.0	0.0	0.0	0.6
Total Delay	82.8	99.8	34.7	6.8	52.7	5.4
Queue Length 50th (ft)	222	210	285	9	164	54
Queue Length 95th (ft)	#386	#398	#401	103	m#293	101
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	457	461	1238	946	461	2265
Starvation Cap Reductn	0	0	0	0	0	509
Spillback Cap Reductn	78	72	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.03	1.08	0.82	0.68	0.85	0.75

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	309	363	219	925	1051	702
v/c Ratio	0.79	0.76	0.79	0.37	0.59	0.62
Control Delay	58.6	34.4	52.2	11.3	25.1	4.5
Queue Delay	2.2	0.0	0.0	0.4	0.0	0.0
Total Delay	60.8	34.4	52.2	11.8	25.1	4.5
Queue Length 50th (ft)	226	150	182	198	302	1
Queue Length 95th (ft)	311	250	m195	m227	437	83
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	484	551	351	2477	1785	1133
Starvation Cap Reductn	0	0	0	977	0	0
Spillback Cap Reductn	80	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.66	0.62	0.62	0.59	0.62

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	463	367	1059	476	928
v/c Ratio	0.97	0.67	0.92	0.97	0.40
Control Delay	77.4	28.4	49.8	84.7	8.1
Queue Delay	0.0	0.0	0.0	3.7	0.1
Total Delay	77.4	28.4	49.8	88.4	8.2
Queue Length 50th (ft)	354	144	395	328	114
Queue Length 95th (ft)	#562	255	#533	#591	133
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	484	550	1155	502	2301
Starvation Cap Reductn	0	0	0	12	461
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.96	0.67	0.92	0.97	0.50

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	436	279	433	530	1637
v/c Ratio	0.93	0.45	0.93	0.17	0.82
Control Delay	61.6	6.0	72.2	21.0	31.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	61.6	6.0	72.2	21.0	31.0
Queue Length 50th (ft)	243	0	212	93	234
Queue Length 95th (ft)	#426	60	#381	128	281
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	469	625	481	3181	1992
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.93	0.45	0.90	0.17	0.82

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	111	596	1445	408	1181
v/c Ratio	0.18	0.97	0.92dr	1.36	0.43
Control Delay	21.5	57.2	25.4	197.1	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.5	57.2	25.4	197.1	20.9
Queue Length 50th (ft)	43	293	180	~322	245
Queue Length 95th (ft)	82	#518	221	m#412	m284
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	625	613	2041	301	2722
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.18	0.97	0.71	1.36	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1171	537	487	457	284	545	533
v/c Ratio	0.84	0.33	0.50	0.28	0.31	0.66	0.63
Control Delay	27.6	0.6	16.5	1.0	8.7	13.0	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.6	0.6	16.5	1.0	8.7	13.0	12.0
Queue Length 50th (ft)	145	0	47	0	53	114	102
Queue Length 95th (ft)	#201	0	99	0	95	223	197
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1400	1615	974	1615	926	825	852
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.33	0.50	0.28	0.31	0.66	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1217	596	1048	555	70	71	450
v/c Ratio	0.30	0.43	0.26	0.40	0.34	0.34	0.81
Control Delay	4.1	1.4	5.5	5.0	46.8	46.9	32.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.1	1.4	5.5	5.0	46.8	46.9	32.7
Queue Length 50th (ft)	73	0	133	142	48	49	81
Queue Length 95th (ft)	123	29	138	272	88	89	134
Internal Link Dist (ft)	1166		735			975	
Turn Bay Length (ft)		250					250
Base Capacity (vph)	4042	1389	4042	1380	397	398	845
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.43	0.26	0.40	0.18	0.18	0.53

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	713	841	325	754	321	148
v/c Ratio	0.35	0.76	0.80	0.24	0.49	0.40
Control Delay	9.6	10.6	42.8	5.5	17.8	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	10.6	42.8	5.5	17.8	8.4
Queue Length 50th (ft)	34	127	60	38	36	0
Queue Length 95th (ft)	m56	m154	#118	54	68	46
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2048	1111	408	3172	654	368
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.76	0.80	0.24	0.49	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	845	497	1177	199	205	207	811
v/c Ratio	0.29	0.44	0.40	0.20	0.36	0.36	0.78
Control Delay	12.1	2.7	15.0	2.7	28.0	28.0	31.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	2.7	15.0	2.7	28.0	28.0	31.0
Queue Length 50th (ft)	95	3	163	0	113	114	236
Queue Length 95th (ft)	143	36	244	39	153	154	271
Internal Link Dist (ft)	735		1069			1151	
Turn Bay Length (ft)				250			250
Base Capacity (vph)	2933	1129	2933	986	771	774	1349
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.44	0.40	0.20	0.27	0.27	0.60

Intersection Summary

APPENDIX 6.6:

OPENING YEAR CUMULATIVE (2022) WITH PROJECT CONDITIONS OFF-RAMP QUEUING ANALYSIS WORKSHEETS

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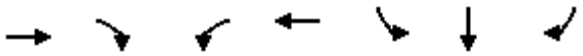
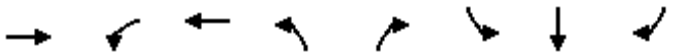


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	921	249	79	1654	511	517	384
v/c Ratio	0.41	0.30	0.36	0.62	0.74	0.74	0.55
Control Delay	22.3	4.0	43.6	28.0	31.3	31.6	19.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.3	4.0	43.6	28.0	31.3	31.6	19.7
Queue Length 50th (ft)	158	0	26	308	274	278	138
Queue Length 95th (ft)	194	41	m32	345	336	342	187
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	2231	836	225	2669	806	808	801
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.30	0.35	0.62	0.63	0.64	0.48

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	785	210	304	20	311	356	358	43
v/c Ratio	0.93	0.65	0.18	0.12	0.93	0.73	0.73	0.08
Control Delay	48.9	43.7	18.2	36.5	51.0	34.3	34.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	43.7	18.2	36.5	51.0	34.3	34.2	0.3
Queue Length 50th (ft)	200	99	52	10	51	166	166	0
Queue Length 95th (ft)	#310	#261	88	30	#210	232	233	0
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	857	323	1698	160	334	640	645	693
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.65	0.18	0.13	0.93	0.56	0.56	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	367	1228	200	1249	308	312	75	48	774
v/c Ratio	0.97	0.51	0.12	0.91	0.54	0.54	0.12	0.30	0.91
Control Delay	82.7	19.0	0.1	49.5	32.1	32.0	1.1	47.0	24.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.7	19.0	0.1	49.5	32.1	32.0	1.1	47.0	24.7
Queue Length 50th (ft)	255	184	0	226	170	172	0	29	43
Queue Length 95th (ft)	#433	212	0	#291	262	264	6	64	#156
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	379	2386	1615	1371	566	574	620	180	869
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.51	0.12	0.91	0.54	0.54	0.12	0.27	0.89

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	757	326	851	1102	48	812
v/c Ratio	0.72	0.53	1.07	0.39	0.11	1.08
Control Delay	27.1	9.6	75.6	3.1	34.7	66.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.1	9.6	75.6	3.1	34.7	66.9
Queue Length 50th (ft)	166	51	~477	65	11	~152
Queue Length 95th (ft)	m192	m84	#694	53	28	#380
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1268	702	798	3023	425	754
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.46	1.07	0.36	0.11	1.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	405	404	369	427	1022	1078	530
v/c Ratio	0.86	0.89	0.74	0.93	0.46	0.98	0.62
Control Delay	50.0	53.1	30.3	40.7	19.8	57.0	6.1
Queue Delay	0.0	0.0	0.0	0.0	1.3	0.0	0.0
Total Delay	50.0	53.1	30.3	40.7	21.2	57.0	6.1
Queue Length 50th (ft)	221	224	137	223	294	~368	0
Queue Length 95th (ft)	#372	#393	246	m#311	m352	#494	80
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)	400		400	285			
Base Capacity (vph)	514	494	535	475	2199	1098	860
Starvation Cap Reductn	0	0	0	0	903	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.82	0.69	0.90	0.79	0.98	0.62

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

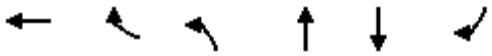
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	406	470	984	751	405	1364
v/c Ratio	0.85	1.00	0.86	0.81	0.92	0.62
Control Delay	49.6	73.0	38.7	13.7	51.7	5.3
Queue Delay	3.8	19.0	0.0	0.0	0.0	0.9
Total Delay	53.4	92.1	38.7	13.7	51.7	6.2
Queue Length 50th (ft)	229	~254	279	52	179	67
Queue Length 95th (ft)	#396	#471	#394	#259	m199	m96
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	476	469	1141	924	461	2186
Starvation Cap Reductn	0	0	0	0	0	493
Spillback Cap Reductn	30	27	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.91	1.06	0.86	0.81	0.88	0.81

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	276	627	293	1197	779	639
v/c Ratio	0.40	0.95	0.90	0.64	0.71	0.70
Control Delay	28.8	58.1	60.8	23.4	42.6	7.3
Queue Delay	0.0	0.0	0.0	1.3	0.0	0.0
Total Delay	28.8	58.1	60.8	24.7	42.6	7.3
Queue Length 50th (ft)	151	420	243	313	293	0
Queue Length 95th (ft)	226	#662	m226	m291	368	105
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	709	675	351	1884	1090	919
Starvation Cap Reductn	0	0	0	442	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.93	0.83	0.83	0.71	0.70

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	713	218	1181	399	655
v/c Ratio	1.12	0.32	1.04	1.14	0.33
Control Delay	110.7	6.8	75.4	144.4	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	110.7	6.8	75.4	144.4	12.9
Queue Length 50th (ft)	~637	13	~496	~372	84
Queue Length 95th (ft)	#872	67	#635	#576	144
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	636	683	1135	351	1991
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.12	0.32	1.04	1.14	0.33

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	534	554	747	1186	678
v/c Ratio	1.16	1.13	1.04	0.37	0.58
Control Delay	124.9	109.3	73.3	17.7	28.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	124.9	109.3	73.3	17.7	28.9
Queue Length 50th (ft)	~362	~323	~387	206	83
Queue Length 95th (ft)	#557	#524	m#623	m248	108
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	462	490	717	3181	1962
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.16	1.13	1.04	0.37	0.35

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	404	545	2123	171	773
v/c Ratio	0.72	0.89	0.96dr	0.70	0.27
Control Delay	34.8	38.9	31.3	41.9	23.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	34.8	38.9	31.3	41.9	23.1
Queue Length 50th (ft)	191	205	325	106	145
Queue Length 95th (ft)	291	#389	#447	m129	m153
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	627	662	2427	300	2902
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.64	0.82	0.87	0.57	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1143	374	607	207	329	695	684
v/c Ratio	0.82	0.23	0.62	0.13	0.36	0.86	0.82
Control Delay	26.6	0.3	19.5	0.2	9.2	24.8	21.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.6	0.3	19.5	0.2	9.2	24.8	21.1
Queue Length 50th (ft)	141	0	109	0	64	196	177
Queue Length 95th (ft)	#190	0	159	m0	112	#436	#394
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1400	1615	974	1615	926	809	838
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.23	0.62	0.13	0.36	0.86	0.82

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1188	603	761	716	81	81	453
v/c Ratio	0.28	0.43	0.18	0.50	0.52	0.52	0.70
Control Delay	3.0	1.2	3.1	3.9	58.7	58.7	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.0	1.2	3.1	3.9	58.7	58.7	11.5
Queue Length 50th (ft)	57	0	26	25	58	58	6
Queue Length 95th (ft)	92	22	82	163	106	106	56
Internal Link Dist (ft)	1166		735			976	
Turn Bay Length (ft)		250					250
Base Capacity (vph)	4197	1405	4197	1443	397	397	984
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.43	0.18	0.50	0.20	0.20	0.46

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	562	931	411	521	425	195
v/c Ratio	0.26	0.84	1.02	0.16	0.69	0.51
Control Delay	8.8	15.5	81.3	4.8	23.4	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.8	15.5	81.3	4.8	23.4	9.5
Queue Length 50th (ft)	25	156	~80	24	52	0
Queue Length 95th (ft)	m45	m#270	#160	35	#93	53
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2143	1108	402	3259	617	386
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.84	1.02	0.16	0.69	0.51

Intersection Summary

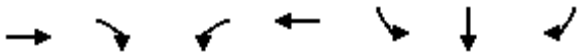
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	548	773	1188	418	129	129	340
v/c Ratio	0.14	0.54	0.30	0.31	0.57	0.57	0.51
Control Delay	3.3	3.1	4.4	1.1	53.8	53.8	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.3	3.1	4.4	1.1	53.8	53.8	7.1
Queue Length 50th (ft)	26	10	77	0	90	90	0
Queue Length 95th (ft)	45	117	121	26	147	147	42
Internal Link Dist (ft)	735		1069			1143	
Turn Bay Length (ft)				250			250
Base Capacity (vph)	3984	1419	3984	1337	771	771	1449
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.54	0.30	0.31	0.17	0.17	0.23

Intersection Summary



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1644	652	349	1585	516	518	549
v/c Ratio	0.87	0.65	0.82	0.58	0.77	0.77	0.81
Control Delay	36.5	5.9	50.8	21.1	34.5	34.6	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	5.9	50.8	21.1	34.5	34.6	32.5
Queue Length 50th (ft)	372	4	122	246	275	277	247
Queue Length 95th (ft)	#409	58	m127	m253	372	373	346
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	1898	998	432	2740	734	735	737
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.65	0.81	0.58	0.70	0.70	0.74

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1004	133	291	19	163	393	394	74
v/c Ratio	0.94	0.60	0.17	0.17	0.64	0.75	0.74	0.12
Control Delay	47.3	45.2	24.6	39.0	19.3	33.8	33.3	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.3	45.2	24.6	39.0	19.3	33.8	33.3	0.6
Queue Length 50th (ft)	~294	68	66	9	0	182	182	0
Queue Length 95th (ft)	#416	m#160	110	30	#70	255	255	3
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	1064	220	1714	115	255	662	670	711
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.60	0.17	0.17	0.64	0.59	0.59	0.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	399	1730	343	1852	235	326	233	176	868
v/c Ratio	1.00	0.62	0.21	1.01	0.71	0.95	0.56	0.81	0.95
Control Delay	81.0	20.4	0.2	60.3	50.9	80.2	22.3	70.2	30.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.0	20.4	0.2	60.3	50.9	80.2	22.3	70.2	30.6
Queue Length 50th (ft)	~278	289	0	~349	150	221	58	110	76
Queue Length 95th (ft)	m#404	329	m0	#440	#262	#406	138	#213	#213
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	399	2782	1615	1829	333	342	417	232	935
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.62	0.21	1.01	0.71	0.95	0.56	0.76	0.93

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1024	185	450	1301	157	1199
v/c Ratio	0.85	0.30	1.39	0.65	0.13	1.49
Control Delay	26.5	7.7	222.5	13.8	19.2	247.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	7.7	222.5	13.8	19.2	247.4
Queue Length 50th (ft)	196	18	~304	208	28	~721
Queue Length 95th (ft)	m256	m26	#449	251	46	#895
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1268	644	324	2075	1196	804
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.29	1.39	0.63	0.13	1.49

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	378	377	346	365	1153	1075	523
v/c Ratio	0.81	0.84	0.73	0.88	0.52	0.90	0.59
Control Delay	44.2	46.1	31.1	38.3	22.6	42.9	5.7
Queue Delay	0.0	0.0	0.0	0.0	2.5	0.0	0.0
Total Delay	44.2	46.1	31.1	38.3	25.1	42.9	5.7
Queue Length 50th (ft)	204	206	137	181	360	~359	0
Queue Length 95th (ft)	302	312	231	m239	m436	#492	79
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)				285			400
Base Capacity (vph)	552	528	545	439	2206	1195	884
Starvation Cap Reductn	0	0	0	0	891	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.71	0.63	0.83	0.88	0.90	0.59

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

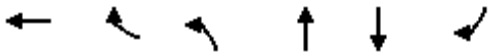
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	390	435	1054	642	391	1312
v/c Ratio	0.87	0.96	0.86	0.68	0.90	0.58
Control Delay	53.5	63.6	37.6	6.9	53.2	4.7
Queue Delay	29.3	44.1	0.0	0.0	0.0	0.6
Total Delay	82.8	107.7	37.6	6.9	53.2	5.4
Queue Length 50th (ft)	222	222	302	9	175	54
Queue Length 95th (ft)	#386	#421	#428	103	m#223	m98
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	457	461	1220	941	461	2248
Starvation Cap Reductn	0	0	0	0	0	509
Spillback Cap Reductn	81	74	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.04	1.12	0.86	0.68	0.85	0.75

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	311	363	225	931	1054	702
v/c Ratio	0.79	0.76	0.80	0.38	0.59	0.62
Control Delay	58.8	34.7	52.4	11.4	25.5	4.6
Queue Delay	2.3	0.0	0.0	0.5	0.0	0.0
Total Delay	61.1	34.7	52.4	11.8	25.5	4.6
Queue Length 50th (ft)	228	151	187	201	305	2
Queue Length 95th (ft)	314	252	m199	m224	438	85
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	484	549	351	2474	1774	1129
Starvation Cap Reductn	0	0	0	976	0	0
Spillback Cap Reductn	80	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.66	0.64	0.62	0.59	0.62

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	463	369	1077	476	932
v/c Ratio	0.97	0.68	0.93	0.97	0.41
Control Delay	77.4	29.0	51.8	85.2	8.1
Queue Delay	0.0	0.0	0.0	3.7	0.1
Total Delay	77.4	29.0	51.8	88.9	8.2
Queue Length 50th (ft)	354	147	406	333	114
Queue Length 95th (ft)	#562	259	#550	#590	133
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	484	548	1155	502	2301
Starvation Cap Reductn	0	0	0	12	460
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.96	0.67	0.93	0.97	0.51

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	449	279	433	532	1638
v/c Ratio	0.94	0.44	0.93	0.17	0.84
Control Delay	63.0	5.9	71.6	21.2	31.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.0	5.9	71.6	21.2	31.7
Queue Length 50th (ft)	253	0	213	93	234
Queue Length 95th (ft)	#443	60	#382	128	281
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	479	632	481	3181	1960
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.94	0.44	0.90	0.17	0.84

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	111	596	1480	408	1195
v/c Ratio	0.18	0.97	0.95dr	1.36	0.44
Control Delay	21.5	57.2	25.5	200.4	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.5	57.2	25.5	200.4	20.9
Queue Length 50th (ft)	43	293	184	~322	248
Queue Length 95th (ft)	82	#518	226	m#405	m286
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	625	613	2051	299	2722
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.18	0.97	0.72	1.36	0.44

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1229	537	488	457	284	555	544
v/c Ratio	0.88	0.33	0.50	0.28	0.31	0.67	0.64
Control Delay	30.1	0.6	16.5	1.0	8.7	13.5	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	0.6	16.5	1.0	8.7	13.5	12.4
Queue Length 50th (ft)	154	0	47	0	53	118	106
Queue Length 95th (ft)	#230	0	102	0	95	230	205
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1400	1615	974	1615	926	824	852
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.33	0.50	0.28	0.31	0.67	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1224	618	1059	555	70	71	450
v/c Ratio	0.30	0.44	0.26	0.40	0.33	0.34	0.81
Control Delay	4.2	1.4	5.6	5.0	46.5	46.6	33.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.2	1.4	5.6	5.0	46.5	46.6	33.1
Queue Length 50th (ft)	74	0	134	140	48	49	83
Queue Length 95th (ft)	124	29	143	272	88	89	136
Internal Link Dist (ft)	1166		735			975	
Turn Bay Length (ft)		250					250
Base Capacity (vph)	4032	1393	4032	1378	397	398	841
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.44	0.26	0.40	0.18	0.18	0.54

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	715	898	325	755	321	148
v/c Ratio	0.35	0.81	0.80	0.24	0.49	0.40
Control Delay	10.0	13.1	42.8	5.5	17.8	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	13.1	42.8	5.5	17.8	8.4
Queue Length 50th (ft)	37	138	60	38	36	0
Queue Length 95th (ft)	m54	m178	#118	54	68	46
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2048	1111	408	3172	654	368
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.81	0.80	0.24	0.49	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	852	497	1180	199	209	212	811
v/c Ratio	0.29	0.44	0.40	0.20	0.36	0.37	0.77
Control Delay	12.2	2.8	15.2	2.8	27.9	28.0	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	2.8	15.2	2.8	27.9	28.0	30.9
Queue Length 50th (ft)	96	4	164	0	116	117	238
Queue Length 95th (ft)	144	39	245	39	156	157	272
Internal Link Dist (ft)	735		1069			1151	
Turn Bay Length (ft)				250			250
Base Capacity (vph)	2922	1126	2922	983	771	774	1347
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.44	0.40	0.20	0.27	0.27	0.60

Intersection Summary

APPENDIX 6.7:

OPENING YEAR CUMULATIVE (2022) WITHOUT PROJECT CONDITIONS FREEWAY FACILITY ANALYSIS WORKSHEETS

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2699	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	792
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.33
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	11.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2699	1016
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	8.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.926	0.893
Flow Rate (vi),pc/h	3168	1237
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.33	0.29

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	5.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.409
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	715
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	58.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	1739	Ramp Junction Speed (S), mi/h	65.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	12.1
Level of Service (LOS)	A		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	424	497
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.893
Flow Rate (vi),pc/h	489	605
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.23	0.32

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	10.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.307
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	489	Ramp Junction Speed (S), mi/h	61.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	1094	Average Density (D), pc/mi/ln	8.9
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1582	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	938
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.39
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4392	Heavy Vehicle Adjustment Factor (f_{HV})	0.787
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1516
Total Trucks, %	27.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.63
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3710	682
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	29.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.775	0.855
Flow Rate (vi),pc/h	5203	867
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.84	0.41

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	27.7
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.420
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1977
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	58.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	3226	Ramp Junction Speed (S), mi/h	60.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	4093	Average Density (D), pc/mi/ln	33.6
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1458	682
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	30.00	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.769	0.901
Flow Rate (vi),pc/h	2061	823
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.29	0.20

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	15.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.372
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	681
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.6
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	1380	Ramp Junction Speed (S), mi/h	64.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	10.7
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1458	Heavy Vehicle Adjustment Factor (f_{HV})	0.769
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	687
Total Trucks, %	30.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.29
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	9.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7694	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2196
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.92
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6933	761
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.855
Flow Rate (vi),pc/h	7761	967
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.91	0.46

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	30.2
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.454
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2329
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	57.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.097	Outer Lanes Freeway Speed (SO), mi/h	63.3
Flow in Lanes 1 and 2 (v12), pc/h	3104	Ramp Junction Speed (S), mi/h	60.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	4071	Average Density (D), pc/mi/ln	36.1
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.952	8873	9548	0.93	57.4	38.6	E

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.952	0.833	8873	894	9600	2100	0.92	0.43	65.1	59.4	34.1	37.5	E

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	8006	9548	0.84	61.9	32.3	D

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.826	8915	909	9600	2100	0.93	0.43	60.1	57.1	37.1	30.4	D

Segment 5: Basic

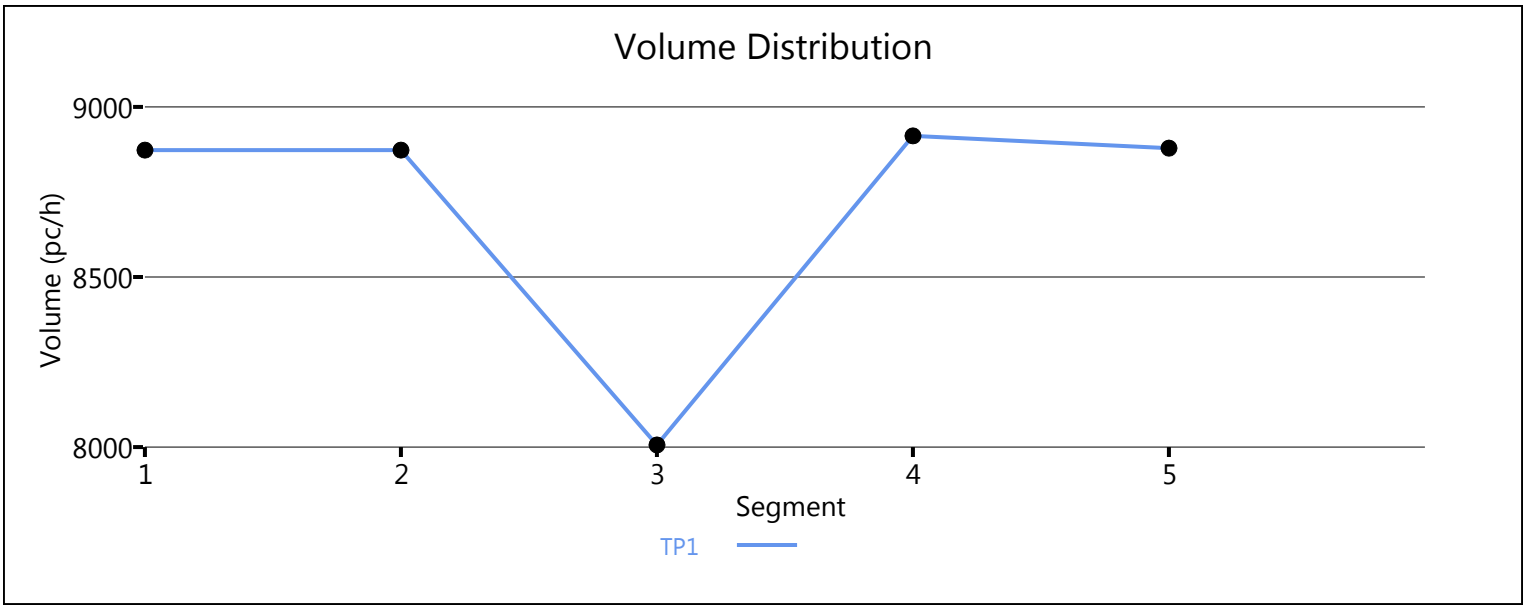
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.952	8879	9548	0.93	57.3	38.7	E

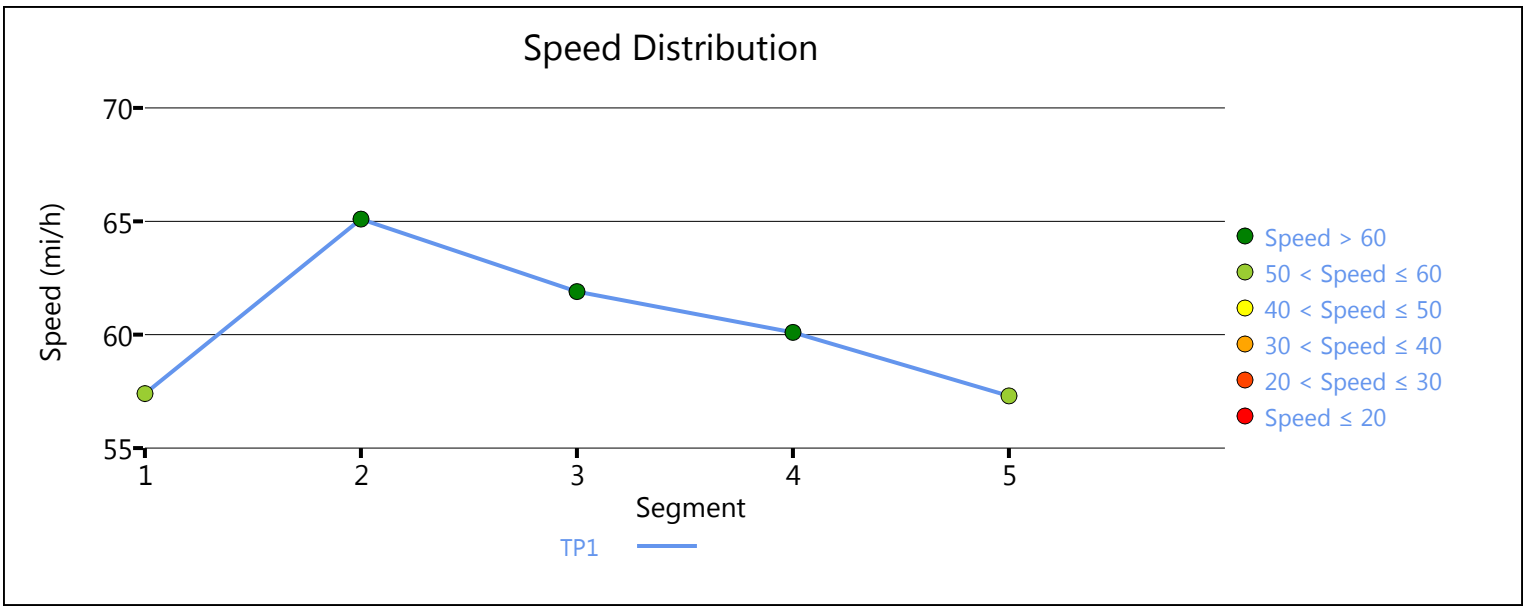
Facility Time Period Results

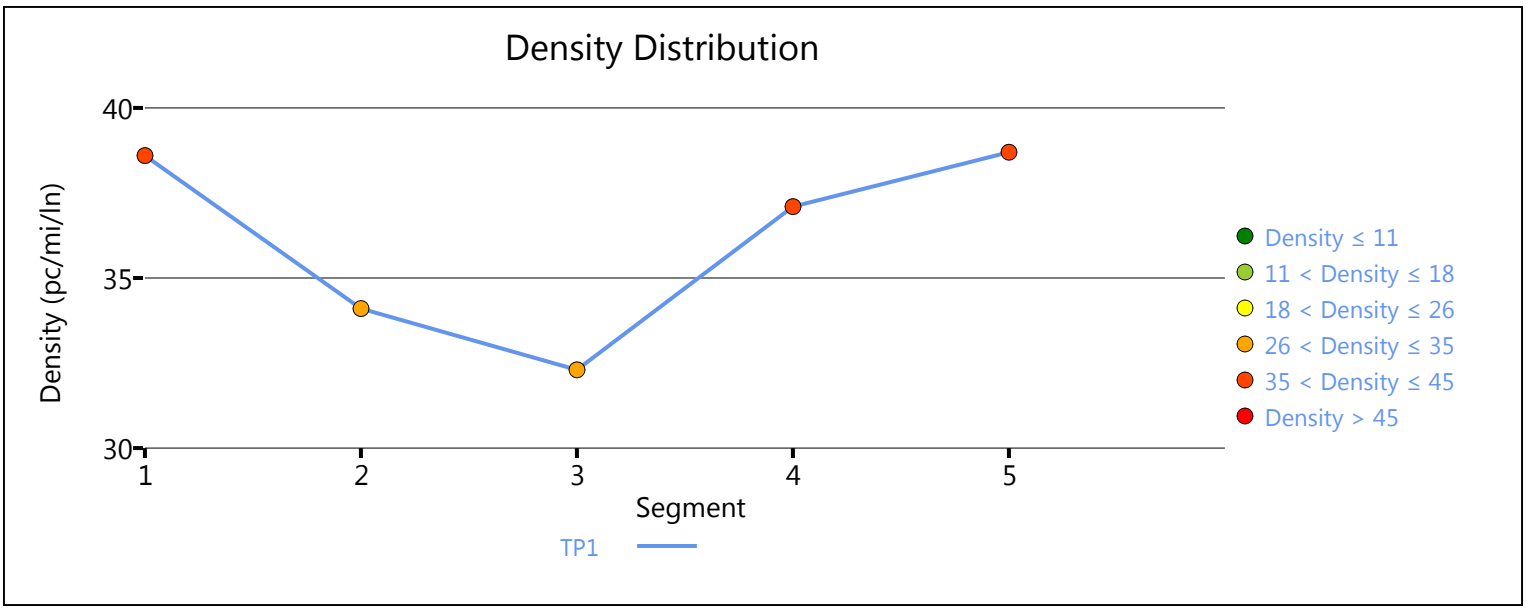
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	59.7	36.4	34.8	1.9	E

Facility Overall Results

Space Mean Speed, mi/h	59.7	Density, veh/mi/ln	34.8
Average Travel Time, min	1.9	Density, pc/mi/ln	36.4







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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	5621	788
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	7.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.862
Flow Rate (vi),pc/h	6535	994
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.54	0.47

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	29.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.387
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1286
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.2
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	75.7
Flow in Lanes 1 and 2 (v12), pc/h	2982	Ramp Junction Speed (S), mi/h	65.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	19.9
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5621	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1307
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.54
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7524	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2086
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7524	656
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	18.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.847
Flow Rate (vi),pc/h	8345	842
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.70	0.40

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	28.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.374
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1645
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	74.3
Flow in Lanes 1 and 2 (v12), pc/h	3386	Ramp Junction Speed (S), mi/h	66.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	25.3
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.952	8868	9548	0.93	57.4	38.6	E

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.980	0.885	8615	903	9600	2100	0.90	0.43	65.2	59.4	33.0	36.2	E

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.990	7721	9548	0.81	63.1	30.6	D

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.990	0.806	8503	782	9600	2100	0.89	0.37	61.2	58.7	34.7	28.2	D

Segment 5: Basic

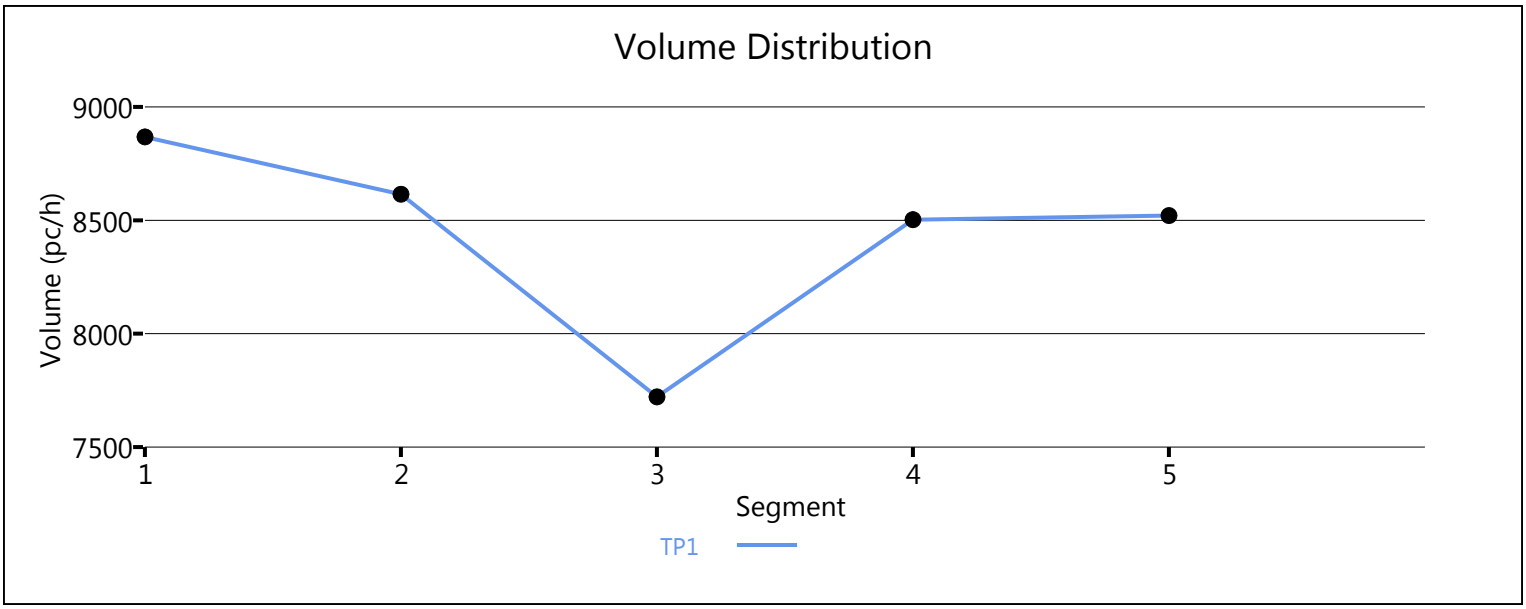
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	8521	9548	0.89	59.3	35.9	E

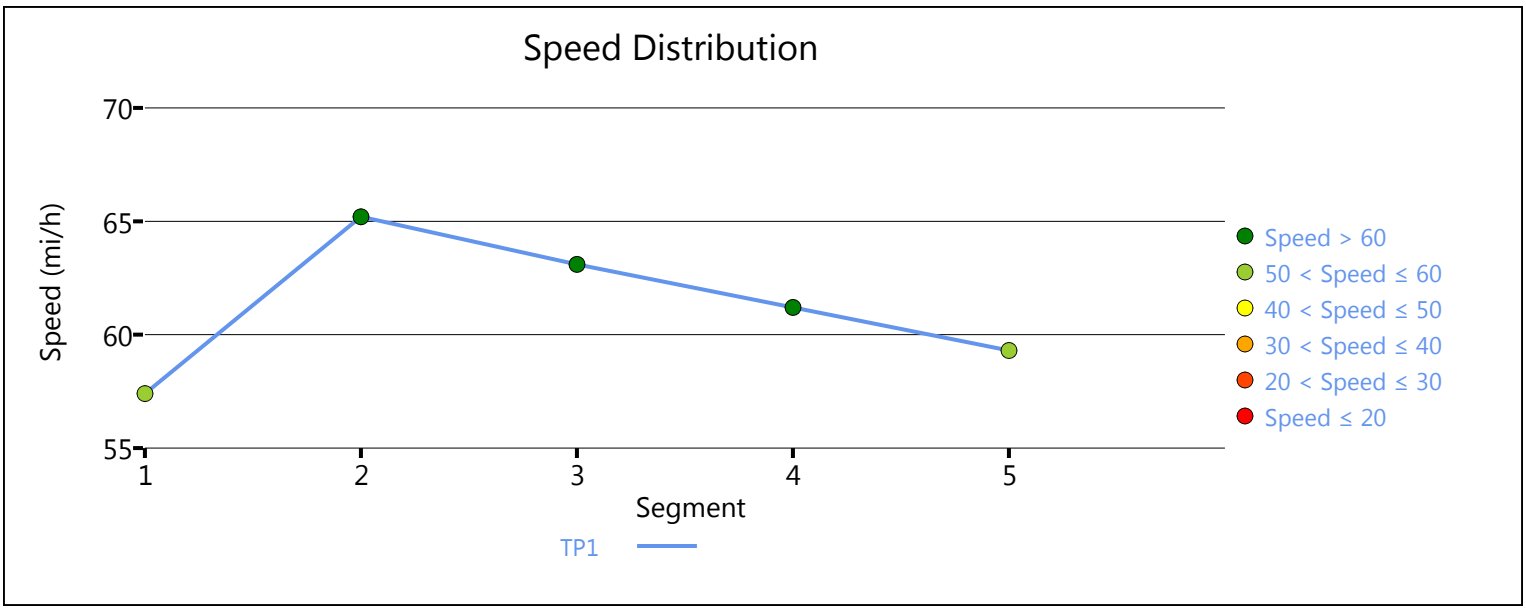
Facility Time Period Results

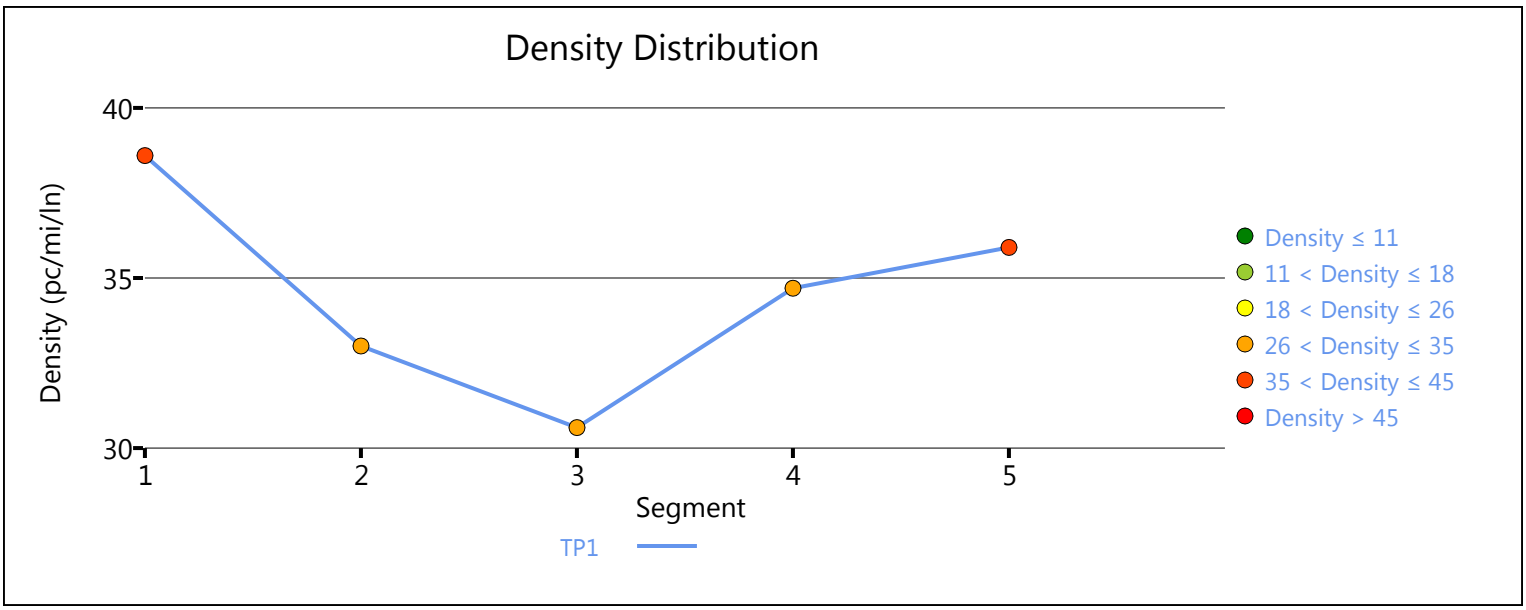
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	61.0	34.5	33.7	1.8	D

Facility Overall Results

Space Mean Speed, mi/h	61.0	Density, veh/mi/ln	33.7
Average Travel Time, min	1.8	Density, pc/mi/ln	34.5







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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4631	653
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.855
Flow Rate (vi),pc/h	5085	830
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.62	0.40

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	20.9
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.294
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1526
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.8
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.114	Outer Lanes Freeway Speed (SO), mi/h	66.3
Flow in Lanes 1 and 2 (v12), pc/h	2034	Ramp Junction Speed (S), mi/h	64.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	2864	Average Density (D), pc/mi/ln	23.1
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5285	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1479
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.62
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4854	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1386
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4854	1233
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.862
Flow Rate (vi),pc/h	5542	1555
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.58	0.74

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	29.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.438
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1125
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	57.7
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.3
Flow in Lanes 1 and 2 (v12), pc/h	3293	Ramp Junction Speed (S), mi/h	64.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	21.6
Level of Service (LOS)	D		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4115	536
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.952
Flow Rate (vi),pc/h	4606	612
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.72	0.29

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	25.2
Distance to Upstream Ramp (LUP), ft	1000	Speed Index (M)	0.343
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1810
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	60.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	65.3
Flow in Lanes 1 and 2 (v12), pc/h	2796	Ramp Junction Speed (S), mi/h	62.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	3408	Average Density (D), pc/mi/ln	28.1
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4652	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1736
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.72
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5443	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1207
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.50
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 NB, On-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4370	1073
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	0.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	1.000	0.909
Flow Rate (vi),pc/h	4750	1283
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.84	0.68

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	196.1	Density in Ramp Influence Area (DR), pc/mi/ln	36.4
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.540
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2004
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	54.9
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	64.6
Flow in Lanes 1 and 2 (v12), pc/h	2746	Ramp Junction Speed (S), mi/h	57.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	4029	Average Density (D), pc/mi/ln	34.8
Level of Service (LOS)	E		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4268	527
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	4.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.962
Flow Rate (vi),pc/h	4686	595
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.65	0.28

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	27.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.352
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1575
Distance to Downstream Ramp (LDOWN), ft	1000	Off-Ramp Influenece Area Speed (SR), mi/h	60.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.615	Outer Lanes Freeway Speed (SO), mi/h	74.5
Flow in Lanes 1 and 2 (v12), pc/h	3111	Ramp Junction Speed (S), mi/h	64.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	24.3
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4268	Heavy Vehicle Adjustment Factor (f_{HV})	0.990
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1562
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.65
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4394	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1254
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.52
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4394	1205
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.926
Flow Rate (vi),pc/h	5017	1414
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.52	0.34

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	11.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.425
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1333
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	58.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	75.5
Flow in Lanes 1 and 2 (v12), pc/h	2351	Ramp Junction Speed (S), mi/h	66.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	18.9
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	307	746
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	11.00	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.901	0.935
Flow Rate (vi),pc/h	370	867
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.26	0.46

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	11.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.309
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	370	Ramp Junction Speed (S), mi/h	61.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	1237	Average Density (D), pc/mi/ln	10.1
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1742	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1004
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.42
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	E+P (Phase B)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3863	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1113
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.46
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2804	1058
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	3232	1220
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.62	0.58

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	20.7
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.284
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1228
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	62.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	67.4
Flow in Lanes 1 and 2 (v12), pc/h	2004	Ramp Junction Speed (S), mi/h	63.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	3224	Average Density (D), pc/mi/ln	23.4
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2874	1081
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	14.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.877	0.943
Flow Rate (vi),pc/h	3562	1246
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.49	0.30

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	22.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.410
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1274
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	75.7
Flow in Lanes 1 and 2 (v12), pc/h	2288	Ramp Junction Speed (S), mi/h	63.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	18.6
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2874	Heavy Vehicle Adjustment Factor (f_{HV})	0.877
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1187
Total Trucks, %	14.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.49
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7513	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2122
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6795	718
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	13.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.885
Flow Rate (vi),pc/h	7606	882
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.88	0.42

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	29.1
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.423
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2282
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	58.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.108	Outer Lanes Freeway Speed (SO), mi/h	63.6
Flow in Lanes 1 and 2 (v12), pc/h	3042	Ramp Junction Speed (S), mi/h	61.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	3924	Average Density (D), pc/mi/ln	34.8
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	8393	9548	0.88	60.0	35.0	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.855	8393	680	9600	2100	0.87	0.32	65.7	59.9	31.9	34.7	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	7716	9548	0.81	63.1	30.6	D

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.971	0.917	8660	944	9600	2100	0.90	0.45	60.6	57.6	35.7	29.7	D

Segment 5: Basic

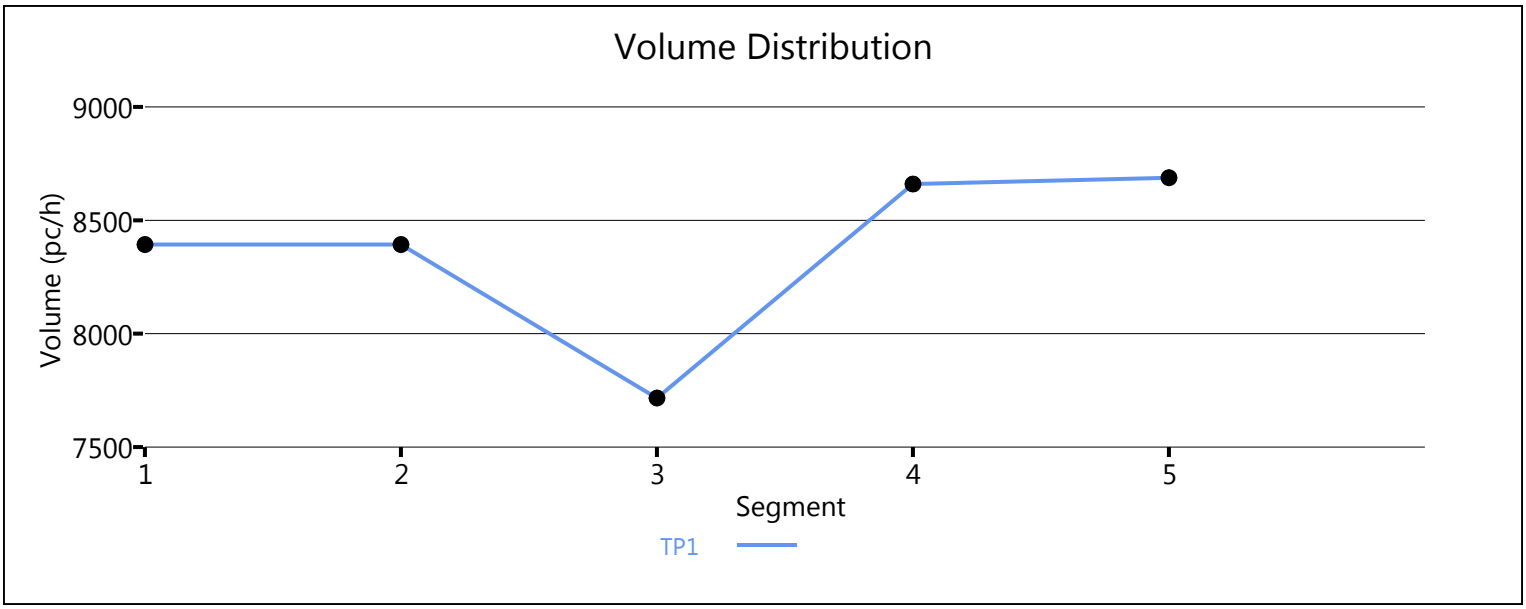
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	8688	9548	0.91	58.4	37.2	E

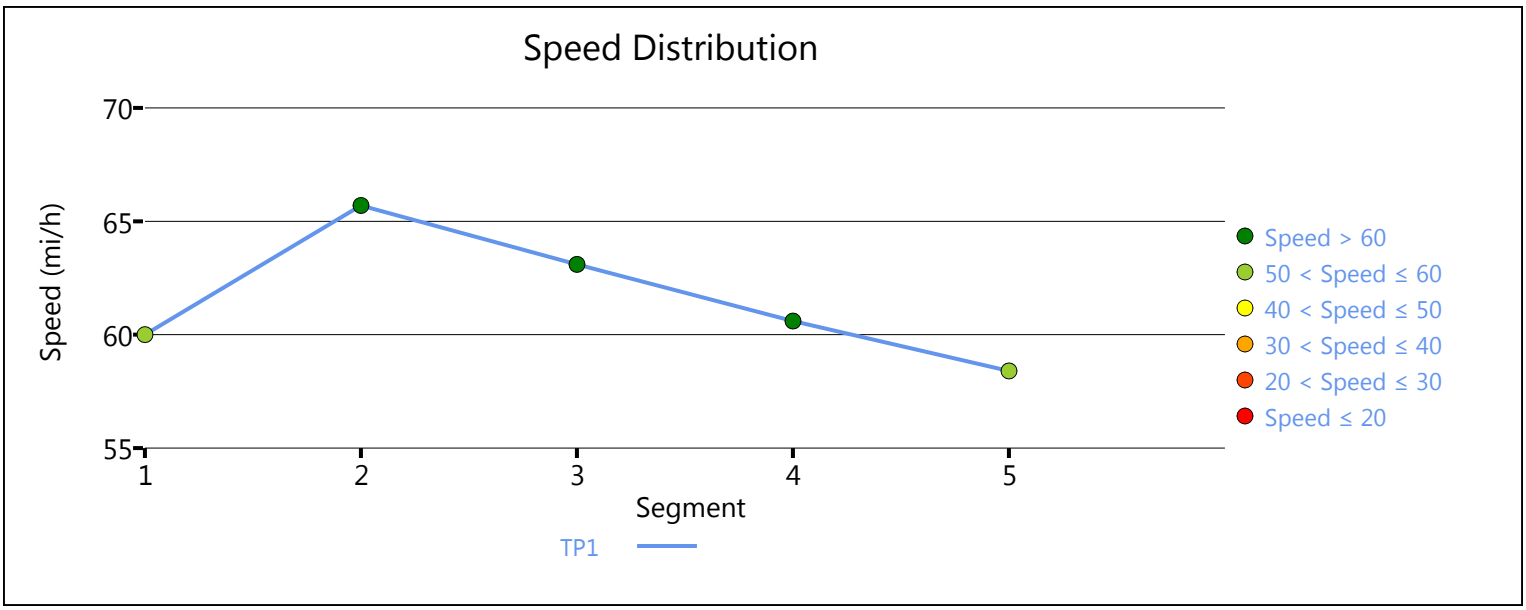
Facility Time Period Results

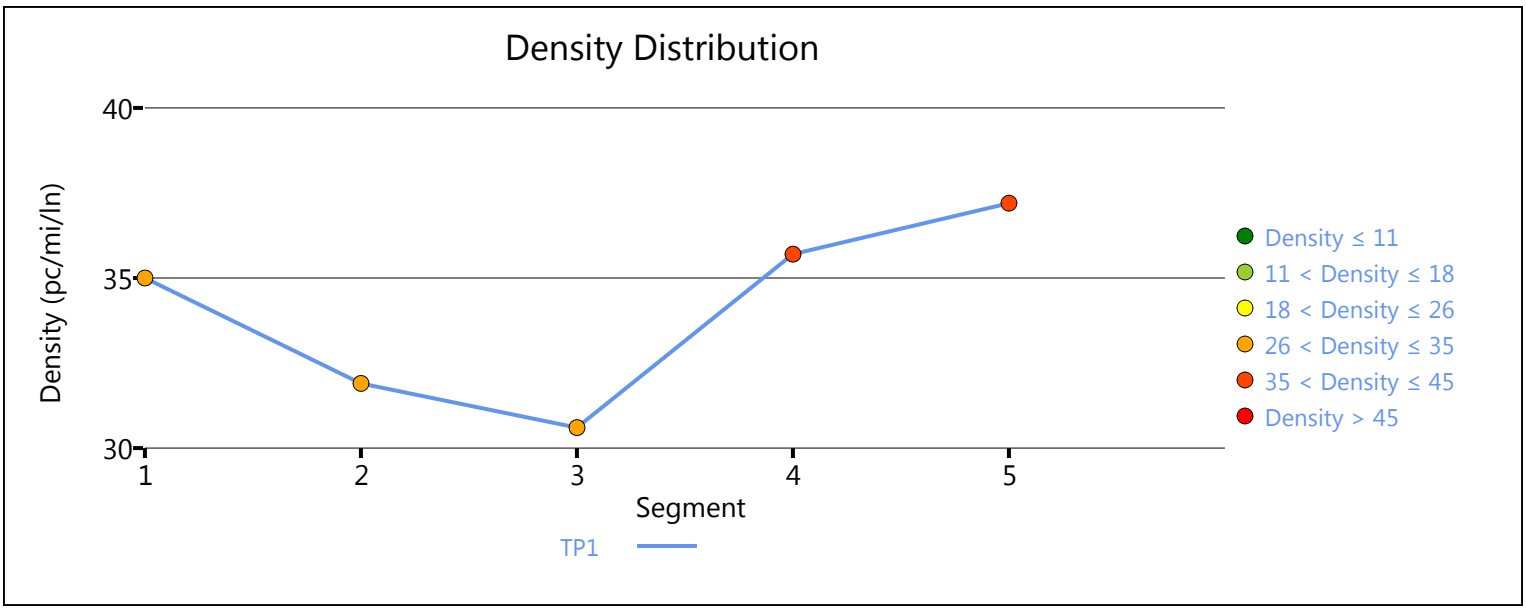
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	60.9	34.4	33.2	1.8	D

Facility Overall Results

Space Mean Speed, mi/h	60.9	Density, veh/mi/ln	33.2
Average Travel Time, min	1.8	Density, pc/mi/ln	34.4







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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4676	602
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	7.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.893
Flow Rate (vi),pc/h	5436	733
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.45	0.35

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	26.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.364
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1173
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.8
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.1
Flow in Lanes 1 and 2 (v12), pc/h	2546	Ramp Junction Speed (S), mi/h	66.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	16.3
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5277	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1239
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.52
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6556	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1818
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	65.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6556	678
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.862
Flow Rate (vi),pc/h	7272	855
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.61	0.41

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	25.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.375
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1399
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	75.2
Flow in Lanes 1 and 2 (v12), pc/h	3019	Ramp Junction Speed (S), mi/h	66.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	22.0
Level of Service (LOS)	C		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.980	7425	9548	0.78	64.3	28.9	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.980	0.840	7425	811	9600	2100	0.77	0.39	65.8	59.6	28.2	31.3	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	1.000	6595	9548	0.69	66.8	24.7	C

Segment 4: Merge

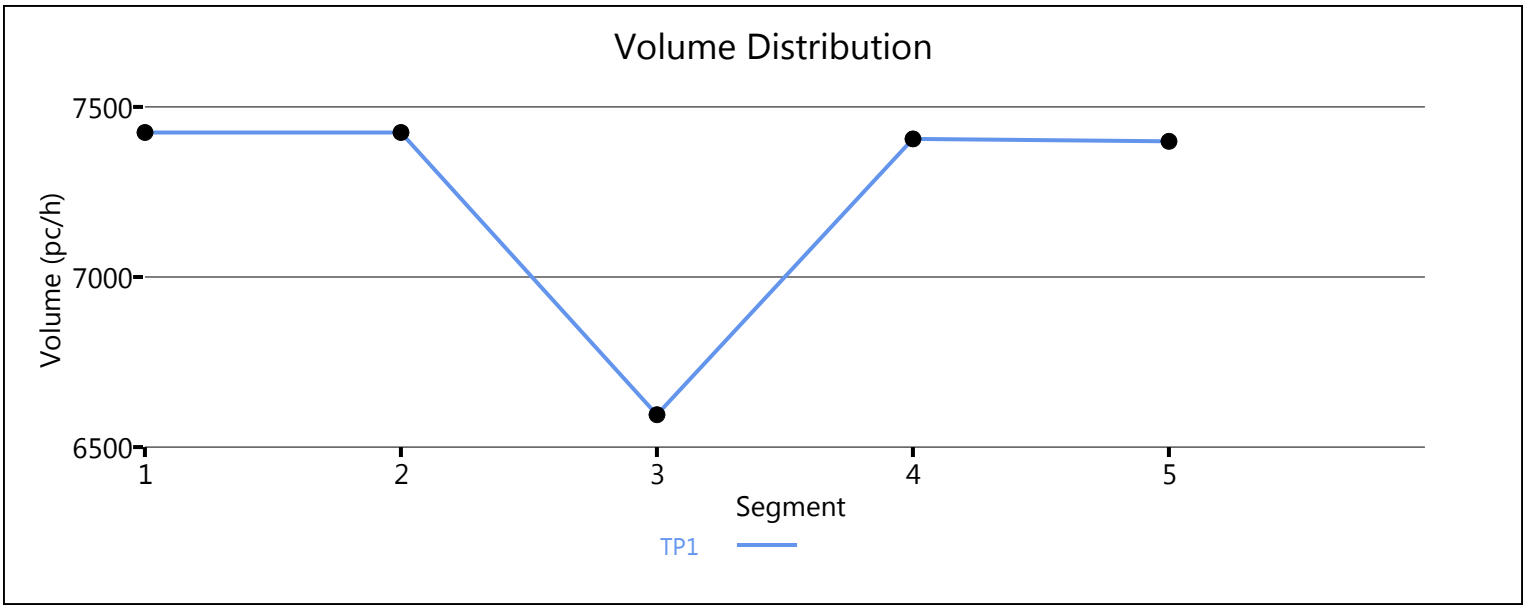
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	1.000	0.901	7406	811	9600	2100	0.77	0.39	62.7	60.5	29.5	24.9	C

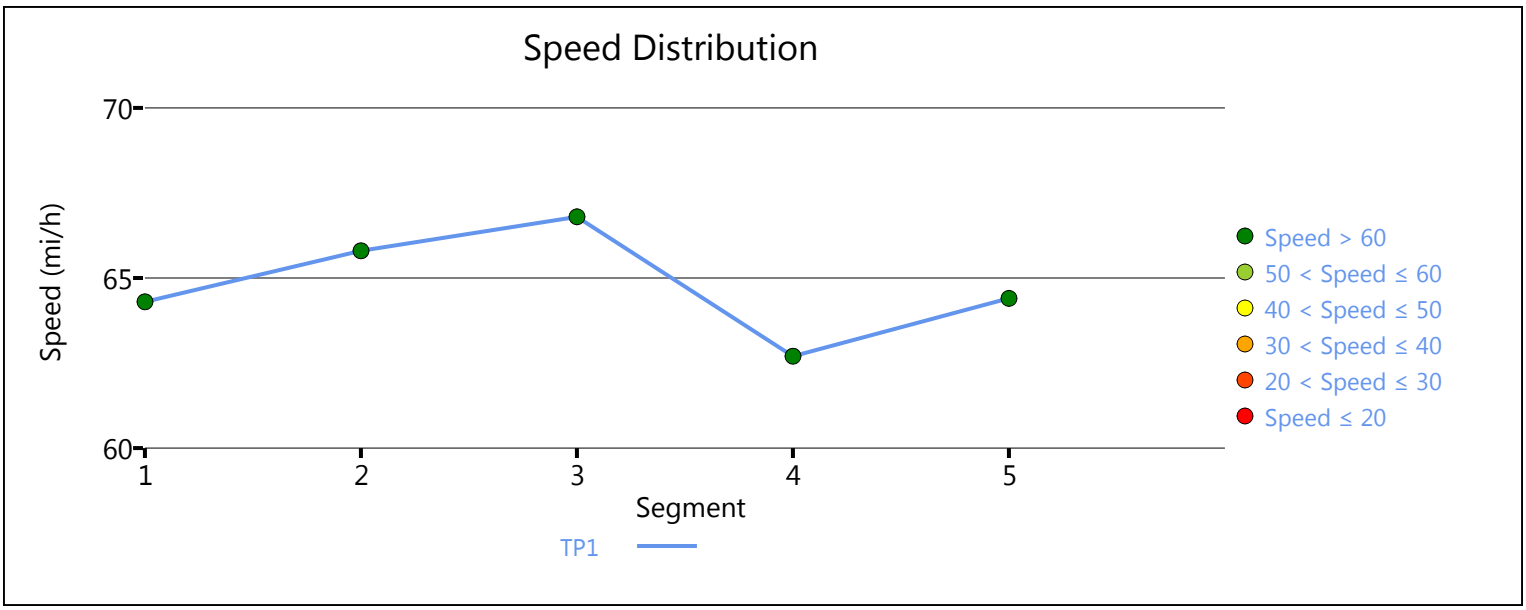
Segment 5: Basic

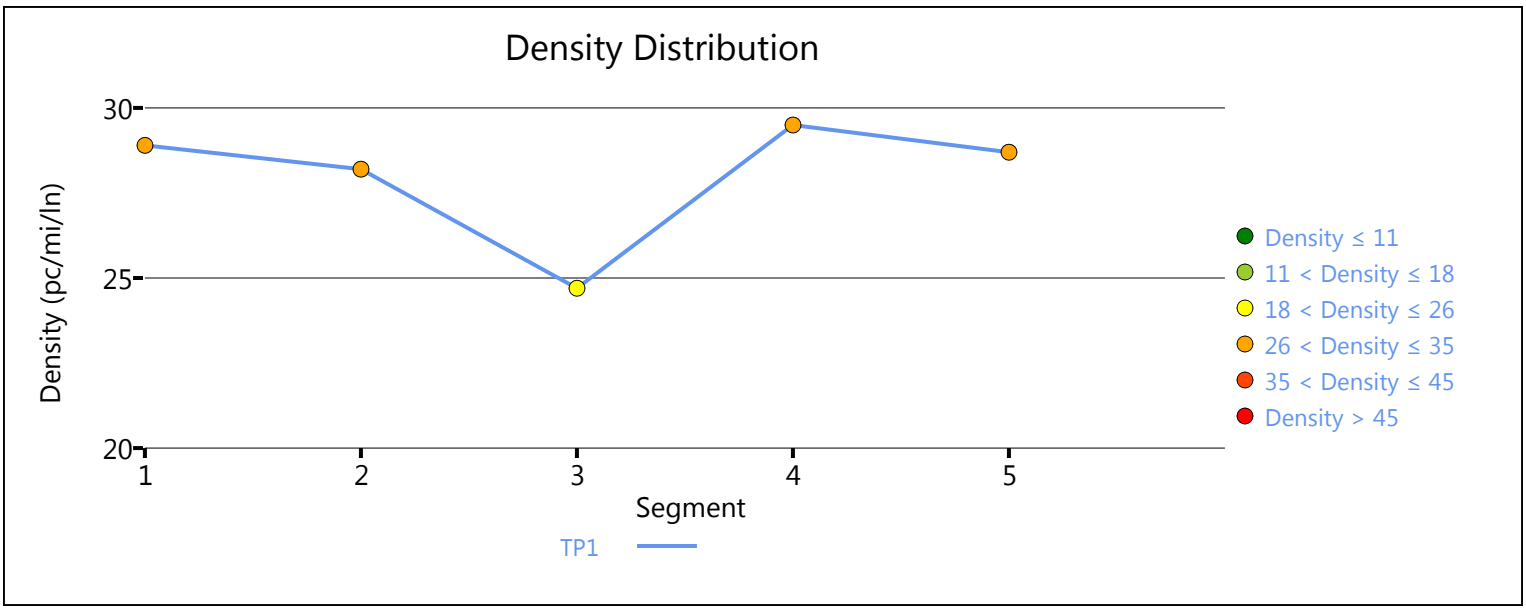
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.990	7399	9548	0.77	64.4	28.7	D

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	64.8	27.9	27.6	1.7	D

Facility Overall Results			
Space Mean Speed, mi/h	64.8	Density, veh/mi/ln	27.6
Average Travel Time, min	1.7	Density, pc/mi/ln	27.9







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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4412	873
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.926
Flow Rate (vi),pc/h	4894	1025
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.62	0.49

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	21.7
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.303
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1468
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.5
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.090	Outer Lanes Freeway Speed (SO), mi/h	66.5
Flow in Lanes 1 and 2 (v12), pc/h	1958	Ramp Junction Speed (S), mi/h	63.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	2983	Average Density (D), pc/mi/ln	23.2
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5285	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1479
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.62
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3835	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1105
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.46
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3835	1184
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.909
Flow Rate (vi),pc/h	4420	1416
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.46	0.67

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	24.4
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.425
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	847
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	2726	Ramp Junction Speed (S), mi/h	64.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	17.2
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3524	571
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.980
Flow Rate (vi),pc/h	4024	633
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.65	0.30

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	22.6
Distance to Upstream Ramp (LUP), ft	1000	Speed Index (M)	0.310
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1581
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	66.1
Flow in Lanes 1 and 2 (v12), pc/h	2443	Ramp Junction Speed (S), mi/h	62.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	3076	Average Density (D), pc/mi/ln	24.7
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4095	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1542
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.64
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4726	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1058
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.44
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 NB, On-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3741	984
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.909
Flow Rate (vi),pc/h	4107	1177
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.73	0.62

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	35.8	Density in Ramp Influence Area (DR), pc/mi/ln	32.7
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.457
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1733
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	57.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	65.6
Flow in Lanes 1 and 2 (v12), pc/h	2374	Ramp Junction Speed (S), mi/h	59.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	3551	Average Density (D), pc/mi/ln	29.5
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4631	1174
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.971
Flow Rate (vi),pc/h	5184	1314
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.72	0.63

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	30.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.416
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1664
Distance to Downstream Ramp (LDOWN), ft	1000	Off-Ramp Influenece Area Speed (SR), mi/h	58.4
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.570	Outer Lanes Freeway Speed (SO), mi/h	74.2
Flow in Lanes 1 and 2 (v12), pc/h	3520	Ramp Junction Speed (S), mi/h	62.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	27.6
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4631	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1728
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.72
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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APPENDIX 6.8:

OPENING YEAR CUMULATIVE (2022) WITH PROJECT CONDITIONS FREEWAY FACILITY ANALYSIS WORKSHEETS

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2714	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	796
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.33
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	11.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2714	1031
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	8.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.926	0.893
Flow Rate (vi),pc/h	3186	1255
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.33	0.30

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	5.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.411
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	715
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	58.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	1757	Ramp Junction Speed (S), mi/h	65.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	12.2
Level of Service (LOS)	A		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	424	502
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	13.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.885
Flow Rate (vi),pc/h	489	617
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.23	0.32

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	10.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.307
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	489	Ramp Junction Speed (S), mi/h	61.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	1106	Average Density (D), pc/mi/ln	9.0
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1587	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	940
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.39
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4396	Heavy Vehicle Adjustment Factor (f_{HV})	0.787
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1518
Total Trucks, %	27.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.63
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3710	686
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	29.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.775	0.855
Flow Rate (vi),pc/h	5203	872
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.84	0.42

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	27.7
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.421
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1977
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	58.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	3226	Ramp Junction Speed (S), mi/h	60.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	4098	Average Density (D), pc/mi/ln	33.6
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1477	701
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	30.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.769	0.893
Flow Rate (vi),pc/h	2088	853
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.29	0.20

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	15.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.375
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	679
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	1409	Ramp Junction Speed (S), mi/h	64.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	10.8
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1477	Heavy Vehicle Adjustment Factor (f_{HV})	0.769
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	696
Total Trucks, %	30.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.29
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	9.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7701	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2198
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.92
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.6
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6934	767
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	18.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.847
Flow Rate (vi),pc/h	7762	984
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.91	0.47

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	30.3
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.458
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2329
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	57.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.095	Outer Lanes Freeway Speed (SO), mi/h	63.3
Flow in Lanes 1 and 2 (v12), pc/h	3105	Ramp Junction Speed (S), mi/h	60.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	4089	Average Density (D), pc/mi/ln	36.3
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.952	8879	9548	0.93	57.3	38.7	E

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.952	0.826	8879	911	9600	2100	0.92	0.43	65.1	59.4	34.1	37.6	E

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	8005	9548	0.84	61.9	32.3	D

Segment 4: Merge

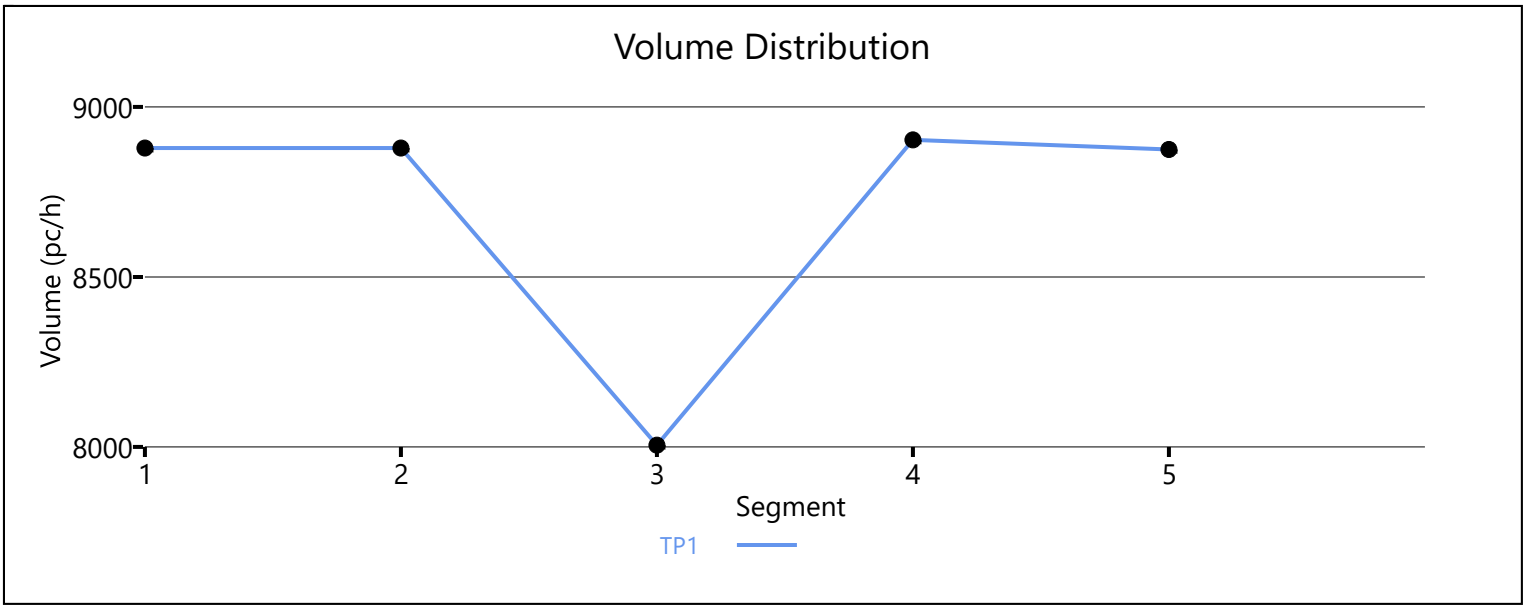
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.833	8903	898	9600	2100	0.93	0.43	60.1	57.2	37.0	30.3	D

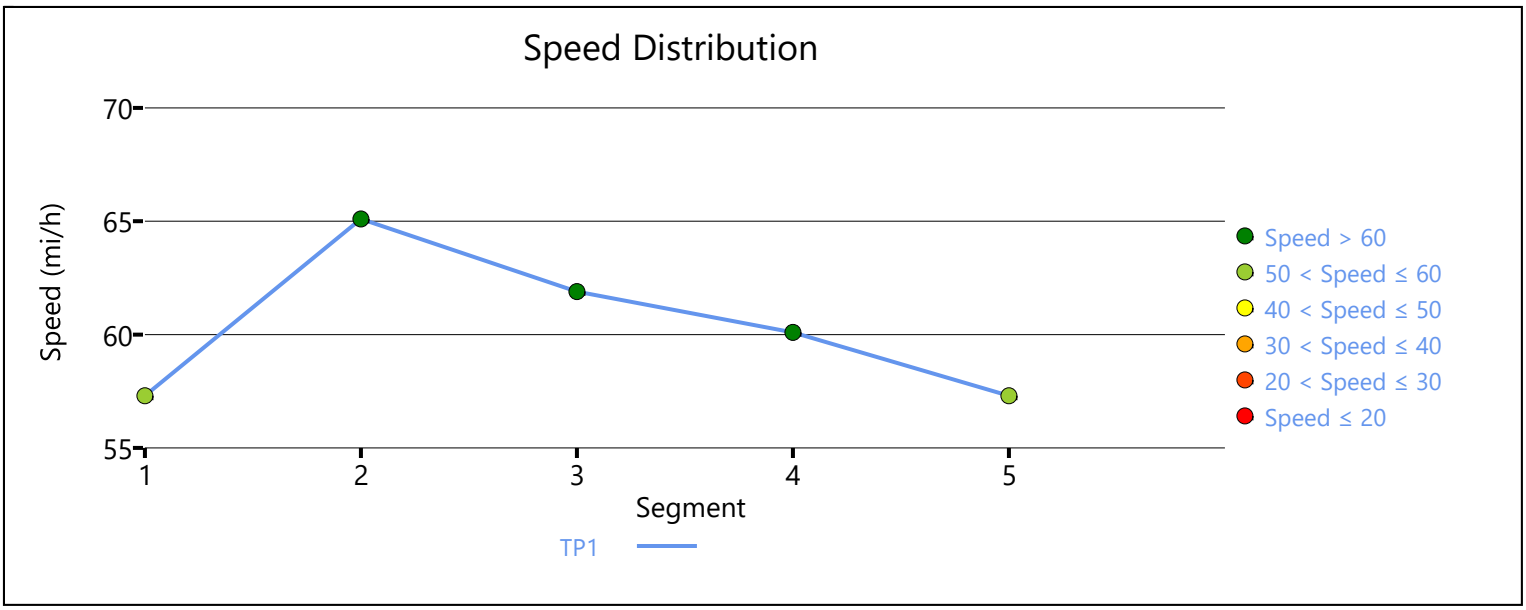
Segment 5: Basic

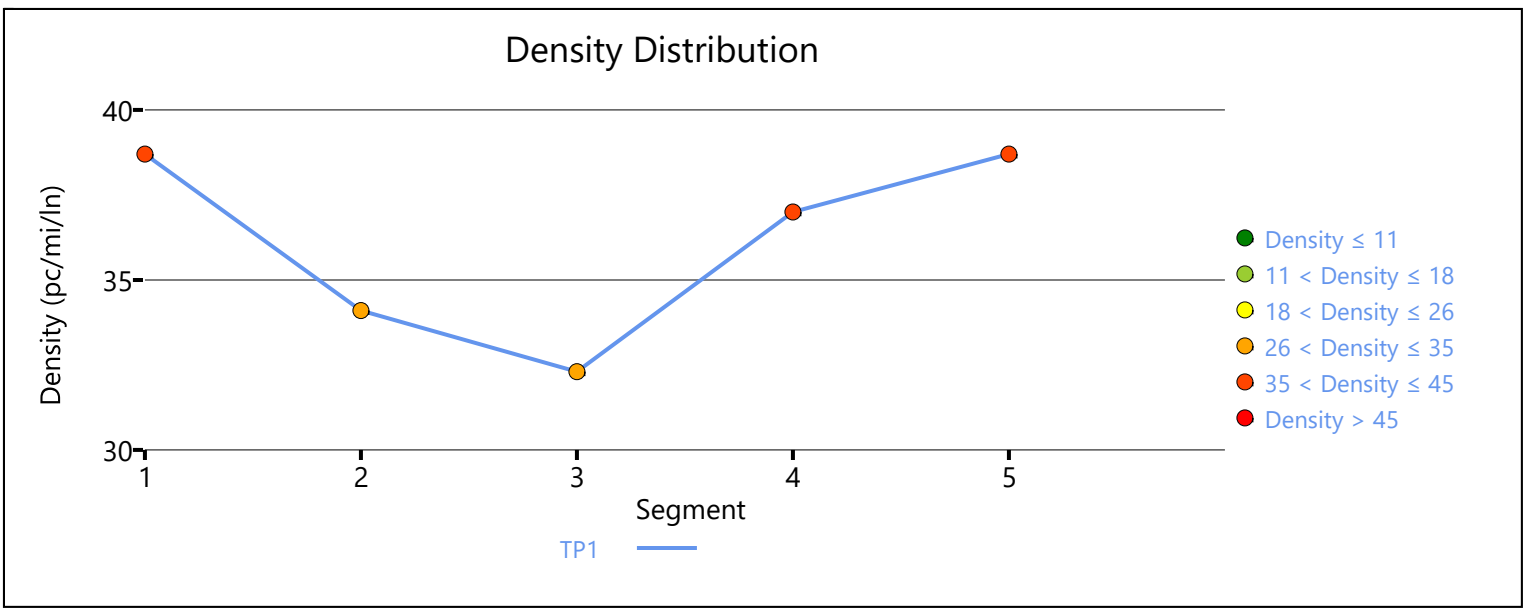
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.952	8875	9548	0.93	57.3	38.7	E

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	59.7	36.4	34.8	1.9	E

Facility Overall Results			
Space Mean Speed, mi/h	59.7	Density, veh/mi/ln	34.8
Average Travel Time, min	1.9	Density, pc/mi/ln	36.4







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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	5643	807
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	7.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.862
Flow Rate (vi),pc/h	6560	1018
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.55	0.48

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	30.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.390
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1286
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	75.7
Flow in Lanes 1 and 2 (v12), pc/h	3005	Ramp Junction Speed (S), mi/h	65.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	20.0
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5643	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1312
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.55
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7550	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2094
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7550	677
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	19.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.840
Flow Rate (vi),pc/h	8374	876
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.70	0.42

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	29.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.377
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1642
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.4
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	74.3
Flow in Lanes 1 and 2 (v12), pc/h	3415	Ramp Junction Speed (S), mi/h	65.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	25.4
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.980	8620	9548	0.90	58.8	36.6	E

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.980	0.885	8620	909	9600	2100	0.90	0.43	65.2	59.4	33.1	36.2	E

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.990	7721	9548	0.81	63.1	30.6	D

Segment 4: Merge

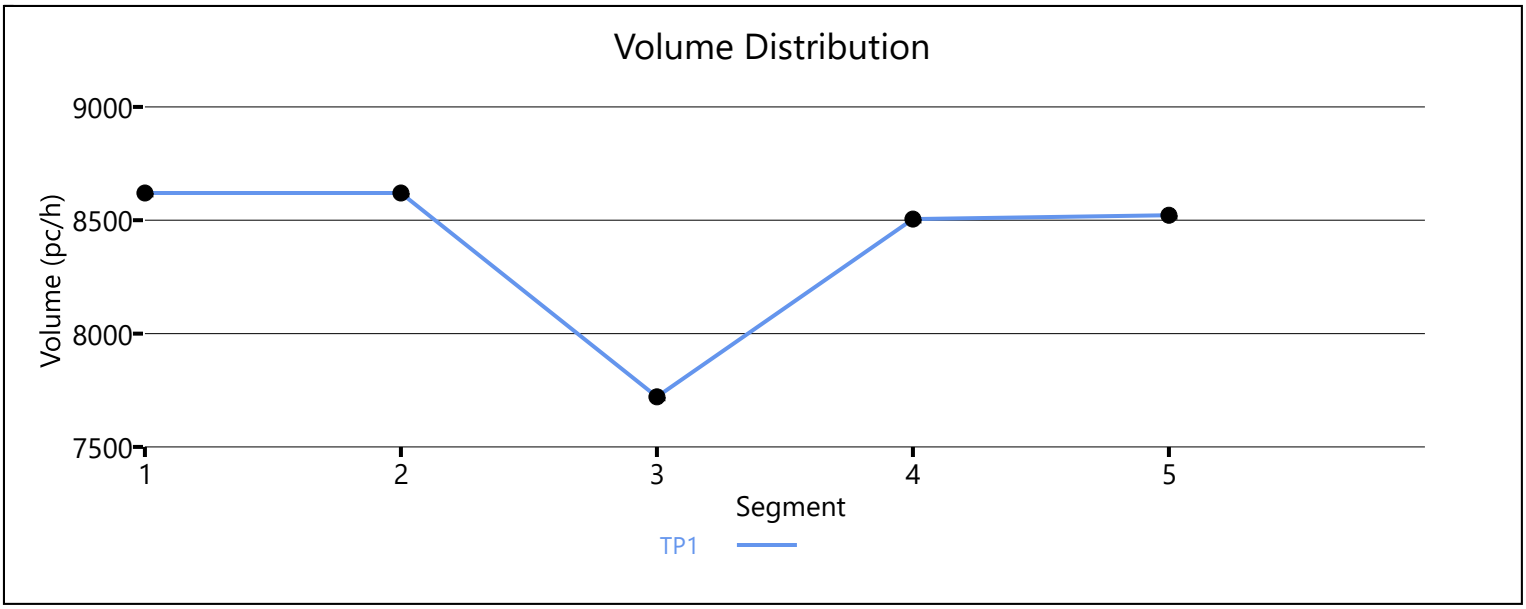
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.990	0.806	8505	784	9600	2100	0.89	0.37	61.2	58.7	34.7	28.2	D

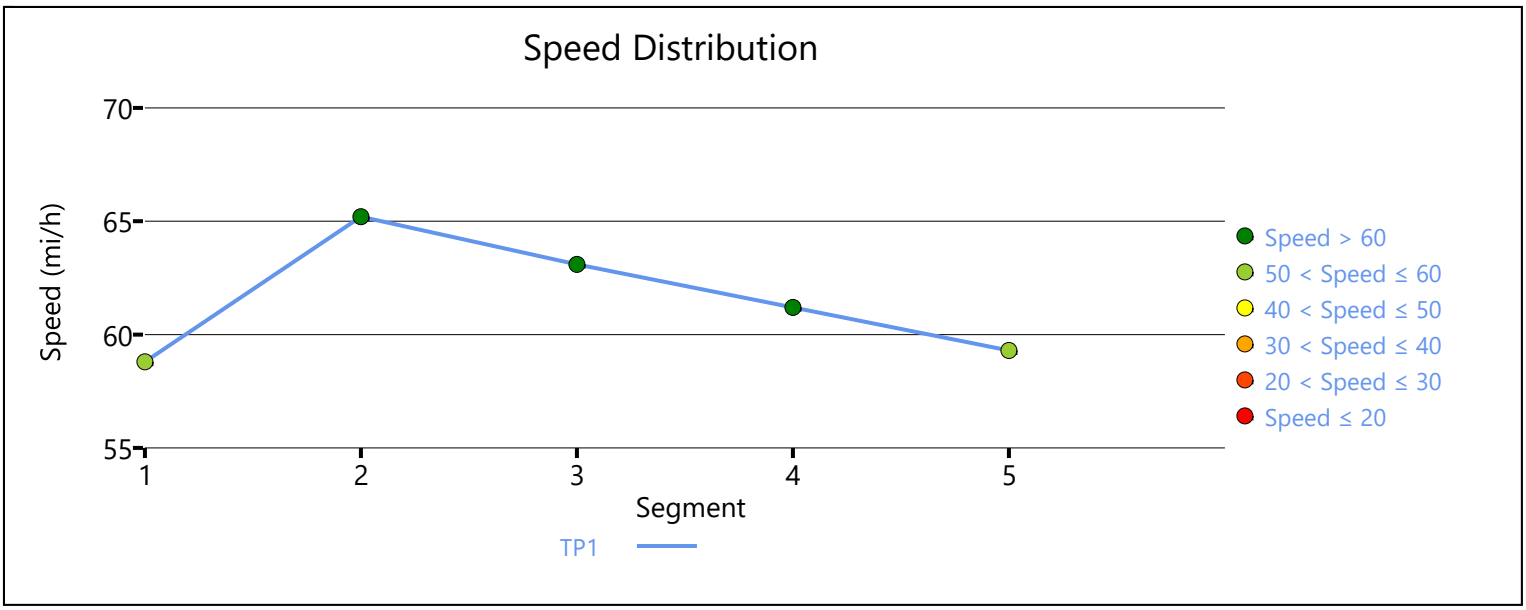
Segment 5: Basic

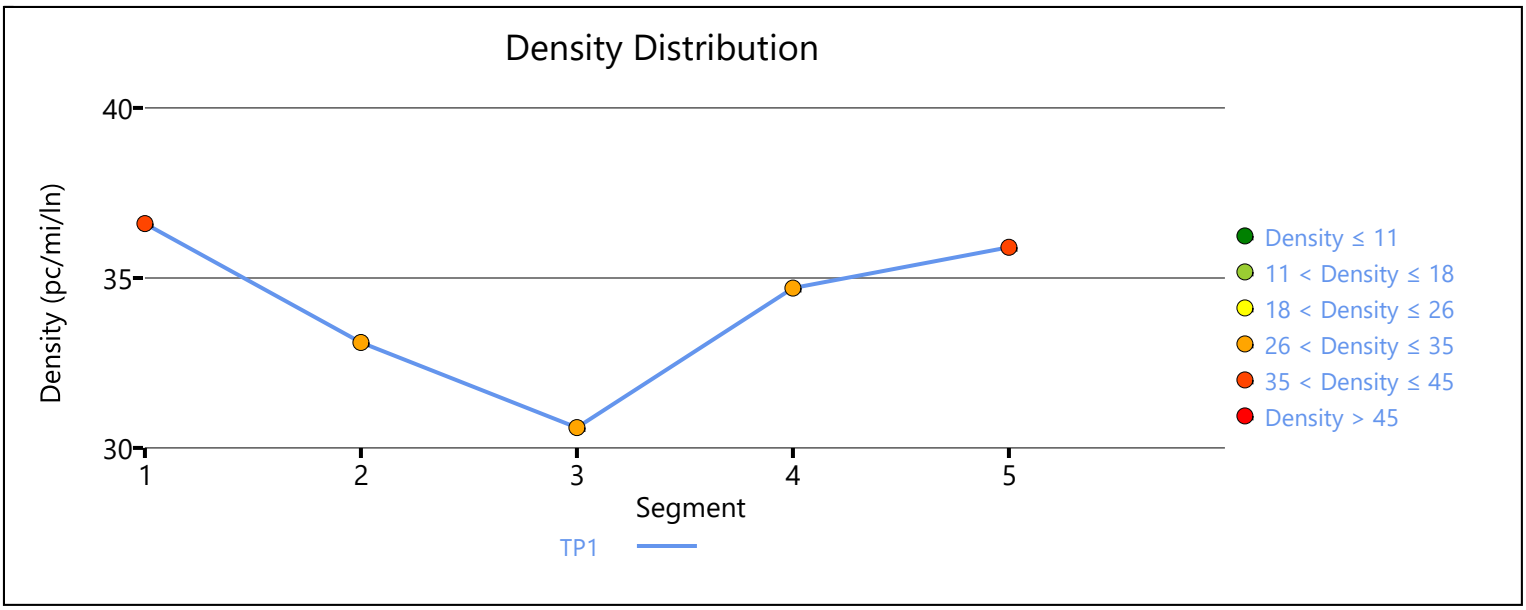
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	8522	9548	0.89	59.3	35.9	E

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	61.2	34.2	33.6	1.8	D

Facility Overall Results			
Space Mean Speed, mi/h	61.2	Density, veh/mi/ln	33.6
Average Travel Time, min	1.8	Density, pc/mi/ln	34.2







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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4632	658
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.855
Flow Rate (vi),pc/h	5086	837
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.62	0.40

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	20.9
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.294
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1526
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.8
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.113	Outer Lanes Freeway Speed (SO), mi/h	66.3
Flow in Lanes 1 and 2 (v12), pc/h	2034	Ramp Junction Speed (S), mi/h	64.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	2871	Average Density (D), pc/mi/ln	23.1
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5291	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1481
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.62
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4889	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1396
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4889	1268
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.862
Flow Rate (vi),pc/h	5582	1599
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.58	0.76

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	29.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.442
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1123
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	57.6
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.3
Flow in Lanes 1 and 2 (v12), pc/h	3336	Ramp Junction Speed (S), mi/h	63.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	21.8
Level of Service (LOS)	D		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4115	541
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.952
Flow Rate (vi),pc/h	4606	618
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.73	0.29

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	25.2
Distance to Upstream Ramp (LUP), ft	1000	Speed Index (M)	0.344
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1810
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	60.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	65.3
Flow in Lanes 1 and 2 (v12), pc/h	2796	Ramp Junction Speed (S), mi/h	62.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	3414	Average Density (D), pc/mi/ln	28.1
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4656	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1737
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.72
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5453	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1210
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.50
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 NB, On-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4370	1083
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	0.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	1.000	0.909
Flow Rate (vi),pc/h	4750	1295
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.84	0.68

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	198.6	Density in Ramp Influence Area (DR), pc/mi/ln	36.5
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.543
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2004
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	54.8
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	64.6
Flow in Lanes 1 and 2 (v12), pc/h	2746	Ramp Junction Speed (S), mi/h	57.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	4041	Average Density (D), pc/mi/ln	34.9
Level of Service (LOS)	E		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4283	542
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.952
Flow Rate (vi),pc/h	4750	619
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.66	0.29

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	27.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.354
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1599
Distance to Downstream Ramp (LDOWN), ft	1000	Off-Ramp Influenece Area Speed (SR), mi/h	60.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.613	Outer Lanes Freeway Speed (SO), mi/h	74.5
Flow in Lanes 1 and 2 (v12), pc/h	3151	Ramp Junction Speed (S), mi/h	64.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	24.6
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4283	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1583
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.66
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4402	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1256
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.52
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4402	1213
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.926
Flow Rate (vi),pc/h	5026	1424
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.52	0.34

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	11.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.426
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1333
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	58.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	75.5
Flow in Lanes 1 and 2 (v12), pc/h	2361	Ramp Junction Speed (S), mi/h	66.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	19.0
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	307	768
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	11.00	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.901	0.935
Flow Rate (vi),pc/h	370	893
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.26	0.47

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	11.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.309
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	370	Ramp Junction Speed (S), mi/h	61.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	1263	Average Density (D), pc/mi/ln	10.3
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1764	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1016
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.42
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3882	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1119
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.47
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2804	1077
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	3232	1241
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.62	0.59

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	20.9
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.286
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1228
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	62.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	67.4
Flow in Lanes 1 and 2 (v12), pc/h	2004	Ramp Junction Speed (S), mi/h	63.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	3245	Average Density (D), pc/mi/ln	23.5
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2882	1089
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	14.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.877	0.943
Flow Rate (vi),pc/h	3572	1255
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.50	0.30

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	22.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.411
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1274
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	75.7
Flow in Lanes 1 and 2 (v12), pc/h	2298	Ramp Junction Speed (S), mi/h	63.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	18.7
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2882	Heavy Vehicle Adjustment Factor (f_{HV})	0.877
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1191
Total Trucks, %	14.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.50
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7543	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2131
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6801	742
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	14.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.877
Flow Rate (vi),pc/h	7613	920
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.89	0.44

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	29.4
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.431
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2284
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	57.9
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.103	Outer Lanes Freeway Speed (SO), mi/h	63.6
Flow in Lanes 1 and 2 (v12), pc/h	3045	Ramp Junction Speed (S), mi/h	60.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	3965	Average Density (D), pc/mi/ln	35.1
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	8395	9548	0.88	60.0	35.0	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.855	8395	683	9600	2100	0.87	0.33	65.7	59.9	31.9	34.7	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	7716	9548	0.81	63.1	30.6	D

Segment 4: Merge

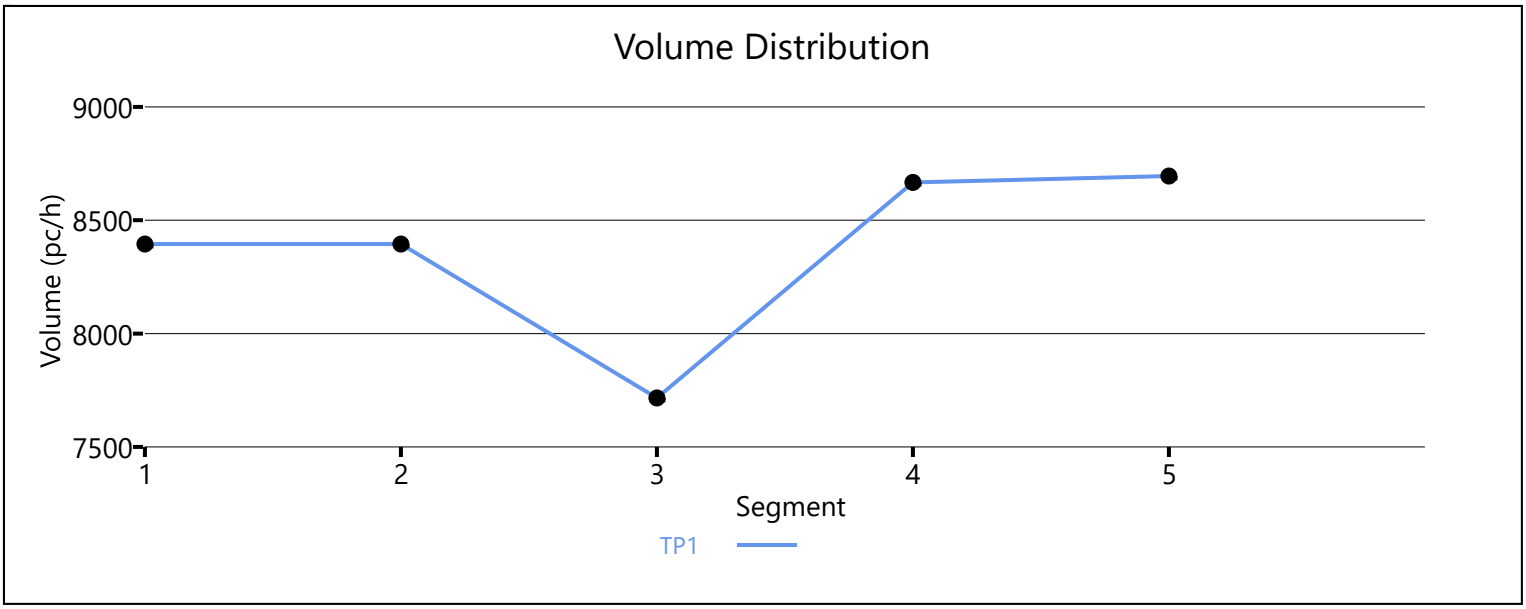
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.971	0.917	8667	951	9600	2100	0.90	0.45	60.6	57.6	35.8	29.8	D

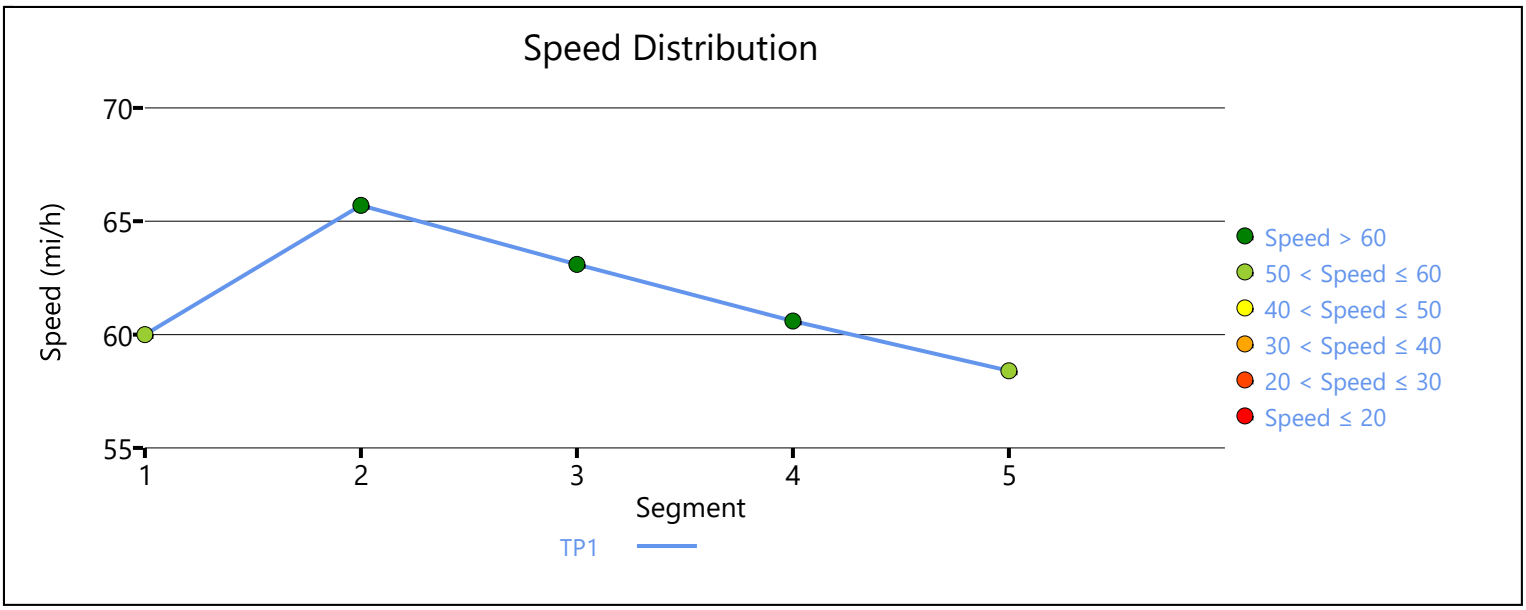
Segment 5: Basic

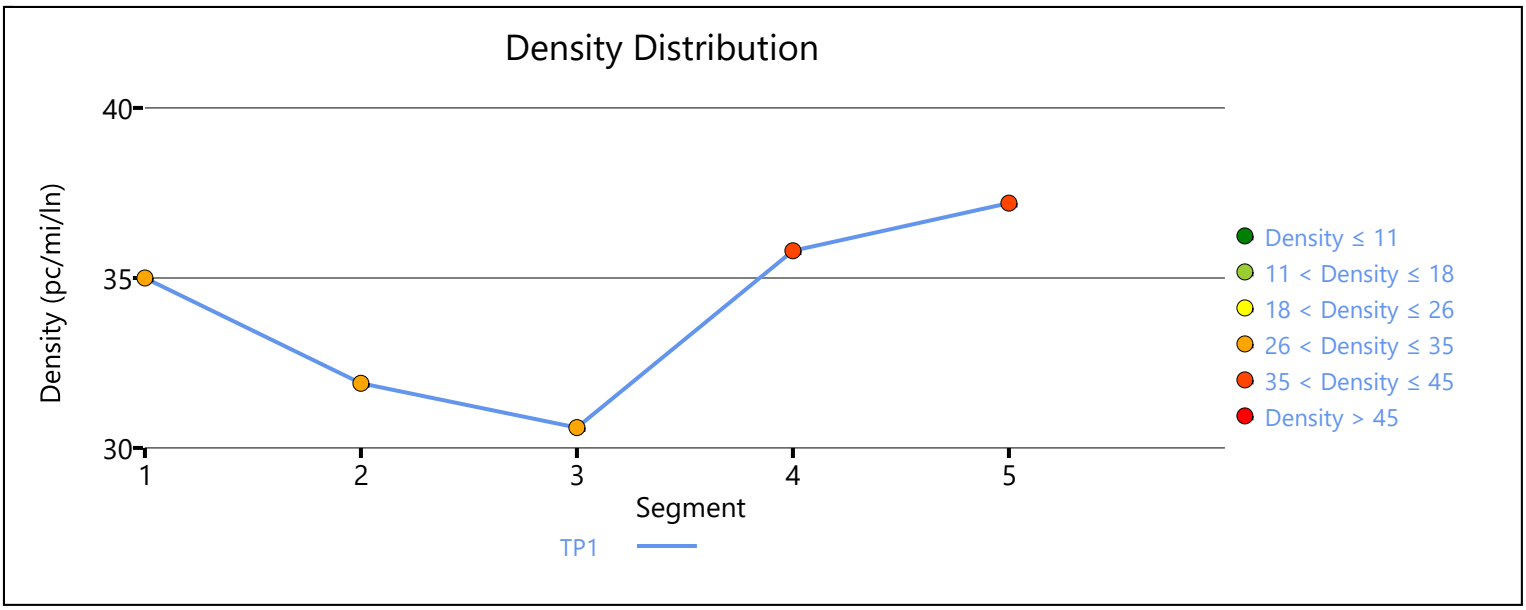
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	8695	9548	0.91	58.4	37.2	E

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	60.9	34.4	33.2	1.8	D

Facility Overall Results			
Space Mean Speed, mi/h	60.9	Density, veh/mi/ln	33.2
Average Travel Time, min	1.8	Density, pc/mi/ln	34.4







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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4678	610
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	7.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.893
Flow Rate (vi),pc/h	5438	742
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.45	0.35

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	26.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.365
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1171
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.8
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.1
Flow in Lanes 1 and 2 (v12), pc/h	2552	Ramp Junction Speed (S), mi/h	66.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	16.3
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5287	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1241
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.52
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6567	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1821
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	65.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6567	687
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.862
Flow Rate (vi),pc/h	7284	866
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.61	0.41

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	25.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.376
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1399
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	75.2
Flow in Lanes 1 and 2 (v12), pc/h	3029	Ramp Junction Speed (S), mi/h	66.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	22.0
Level of Service (LOS)	C		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.980	7427	9548	0.78	64.3	28.9	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.980	0.840	7427	814	9600	2100	0.77	0.39	65.8	59.6	28.2	31.3	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	1.000	6595	9548	0.69	66.8	24.7	C

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	1.000	0.901	7411	816	9600	2100	0.77	0.39	62.7	60.5	29.5	24.9	C

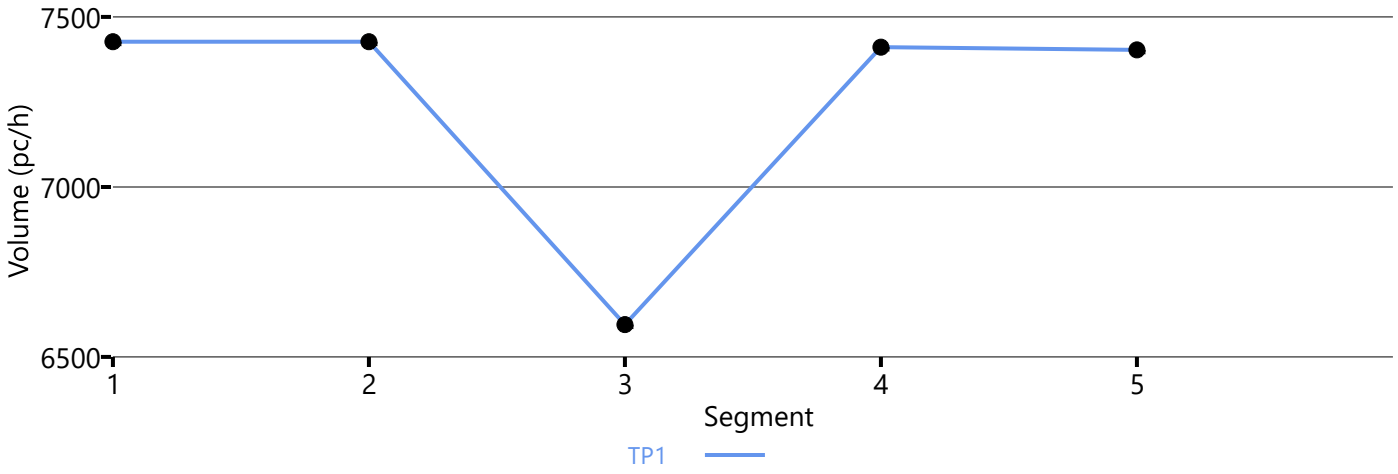
Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.990	7403	9548	0.78	64.3	28.8	D

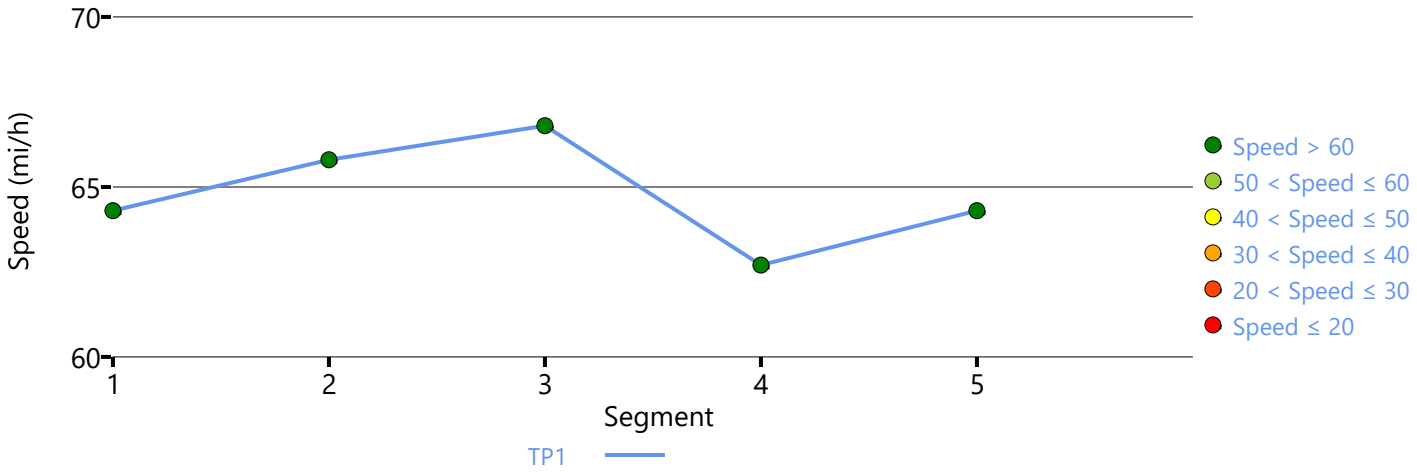
Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	64.8	27.9	27.6	1.7	D

Facility Overall Results			
Space Mean Speed, mi/h	64.8	Density, veh/mi/ln	27.6
Average Travel Time, min	1.7	Density, pc/mi/ln	27.9

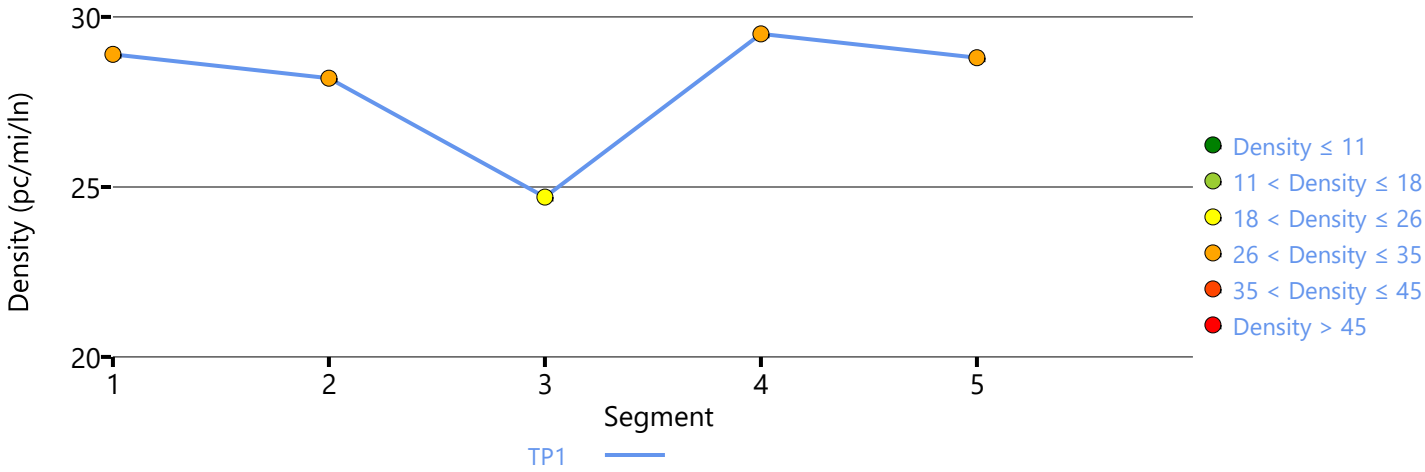
Volume Distribution



Speed Distribution



Density Distribution



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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4416	895
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	9.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.917
Flow Rate (vi),pc/h	4898	1061
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.62	0.51

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	22.0
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.306
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1470
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.085	Outer Lanes Freeway Speed (SO), mi/h	66.5
Flow in Lanes 1 and 2 (v12), pc/h	1959	Ramp Junction Speed (S), mi/h	63.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	3020	Average Density (D), pc/mi/ln	23.4
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5311	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1486
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.62
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3852	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1110
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.46
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3852	1201
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.909
Flow Rate (vi),pc/h	4440	1436
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.46	0.68

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	24.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.427
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	847
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	2746	Ramp Junction Speed (S), mi/h	64.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	17.3
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3524	590
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.980
Flow Rate (vi),pc/h	4024	654
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.65	0.31

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	22.8
Distance to Upstream Ramp (LUP), ft	1000	Speed Index (M)	0.312
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1581
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	66.1
Flow in Lanes 1 and 2 (v12), pc/h	2443	Ramp Junction Speed (S), mi/h	62.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	3097	Average Density (D), pc/mi/ln	24.8
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4114	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1549
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.65
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.6
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4770	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1068
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.45
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 NB, On-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3741	1028
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.909
Flow Rate (vi),pc/h	4107	1229
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.74	0.65

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	46.9	Density in Ramp Influence Area (DR), pc/mi/ln	33.1
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.464
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1733
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	57.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	65.6
Flow in Lanes 1 and 2 (v12), pc/h	2374	Ramp Junction Speed (S), mi/h	59.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	3603	Average Density (D), pc/mi/ln	29.9
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4638	1181
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.971
Flow Rate (vi),pc/h	5192	1322
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.72	0.63

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	30.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.417
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1668
Distance to Downstream Ramp (LDOWN), ft	1000	Off-Ramp Influenece Area Speed (SR), mi/h	58.3
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.569	Outer Lanes Freeway Speed (SO), mi/h	74.2
Flow in Lanes 1 and 2 (v12), pc/h	3524	Ramp Junction Speed (S), mi/h	62.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	27.6
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4638	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1731
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.72
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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APPENDIX 6.9:

OPENING YEAR CUMULATIVE (2022) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

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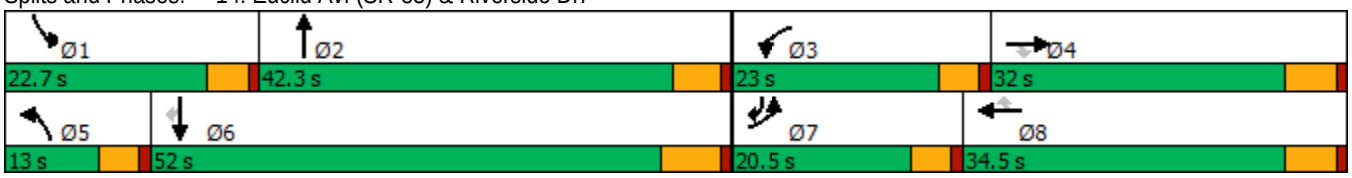
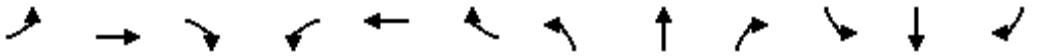
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	162	330	60	200	517	122	74	1023	184	1108	161
Future Volume (vph)	162	330	60	200	517	122	74	1023	184	1108	161
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2	1	6	7
Permitted Phases			4			8					6
Detector Phase	7	4	4	3	8	8	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	9.6	34.5	9.6
Total Split (s)	20.5	32.0	32.0	23.0	34.5	34.5	13.0	42.3	22.7	52.0	20.5
Total Split (%)	17.1%	26.7%	26.7%	19.2%	28.8%	28.8%	10.8%	35.3%	18.9%	43.3%	17.1%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	Max	None
Act Effct Green (s)	14.7	24.9	24.9	17.3	27.5	27.5	7.9	37.3	16.5	47.2	63.8
Actuated g/C Ratio	0.13	0.21	0.21	0.15	0.24	0.24	0.07	0.32	0.14	0.41	0.55
v/c Ratio	0.84	0.90	0.14	0.88	0.67	0.27	0.72	0.80	0.85	0.59	0.19
Control Delay	83.6	72.5	0.7	83.9	45.5	4.4	88.0	40.9	81.1	29.7	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.6	72.5	0.7	83.9	45.5	4.4	88.0	40.9	81.1	29.7	5.9
LOS	F	E	A	F	D	A	F	D	F	C	A
Approach Delay		68.0			48.7			43.6		33.6	
Approach LOS		E			D			D		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 44.4	Intersection LOS: D
Intersection Capacity Utilization 83.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	330	60	200	517	122	74	1023	166	184	1108	161
Future Volume (veh/h)	162	330	60	200	517	122	74	1023	166	184	1108	161
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	171	347	47	211	544	99	78	1077	135	194	1166	110
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	196	379	321	236	804	359	97	1421	178	219	1951	790
Arrive On Green	0.12	0.21	0.21	0.15	0.24	0.24	0.06	0.32	0.32	0.14	0.40	0.40
Sat Flow, veh/h	1619	1800	1525	1619	3420	1525	1619	4423	554	1619	4914	1524
Grp Volume(v), veh/h	171	347	47	211	544	99	78	797	415	194	1166	110
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	1525	1619	1638	1700	1619	1638	1524
Q Serve(g_s), s	11.9	21.7	2.9	14.7	16.6	6.1	5.5	25.1	25.1	13.5	21.5	4.3
Cycle Q Clear(g_c), s	11.9	21.7	2.9	14.7	16.6	6.1	5.5	25.1	25.1	13.5	21.5	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.33	1.00		1.00
Lane Grp Cap(c), veh/h	196	379	321	236	804	359	97	1053	546	219	1951	790
V/C Ratio(X)	0.87	0.92	0.15	0.89	0.68	0.28	0.81	0.76	0.76	0.88	0.60	0.14
Avail Cap(c_a), veh/h	224	411	348	259	855	381	118	1053	546	255	1951	790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.6	44.4	36.9	48.2	40.0	35.9	53.4	35.0	35.0	48.8	27.4	14.4
Incr Delay (d2), s/veh	24.7	24.0	0.2	27.1	2.0	0.4	23.0	5.1	9.5	24.1	1.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	11.8	1.1	7.5	7.0	2.2	2.7	10.0	11.1	6.8	8.3	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.4	68.4	37.2	75.2	41.9	36.3	76.4	40.1	44.5	72.8	28.7	14.7
LnGrp LOS	E	E	D	E	D	D	E	D	D	E	C	B
Approach Vol, veh/h		565			854			1290			1470	
Approach Delay, s/veh		67.6			49.5			43.7			33.5	
Approach LOS		E			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.2	43.4	21.3	30.0	11.5	52.1	18.5	32.8
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	18.1	* 37	18.4	26.2	8.4	45.5	15.9	28.7
Max Q Clear Time (g_c+I1), s	15.5	27.1	16.7	23.7	7.5	23.5	13.9	18.6
Green Ext Time (p_c), s	0.1	4.8	0.1	0.5	0.0	8.7	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	44.5
HCM 6th LOS	D

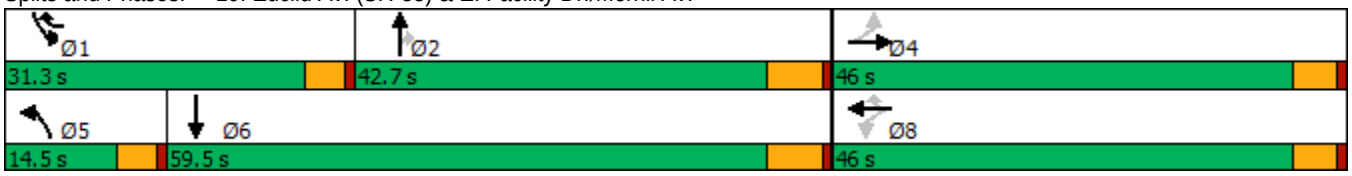
Notes

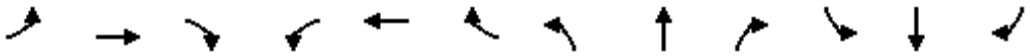
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	4	8	248	50	346	11	1041	179	164	1108
Future Volume (vph)	4	8	248	50	346	11	1041	179	164	1108
Turn Type	Perm	NA	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	1	5	2		1	6
Permitted Phases	4		8		8			2		
Detector Phase	4	4	8	8	1	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	31.3	14.5	42.7	42.7	31.3	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	26.1%	12.1%	35.6%	35.6%	26.1%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	4.5	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		19.9	19.9	19.9	39.2	10.3	38.2	38.2	14.2	54.8
Actuated g/C Ratio		0.23	0.23	0.23	0.44	0.12	0.43	0.43	0.16	0.62
v/c Ratio		0.08	0.57	0.51	0.51	0.06	0.72	0.26	0.65	0.56
Control Delay		16.0	39.5	36.3	18.2	42.9	26.6	10.9	48.6	13.9
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		16.0	39.5	36.3	18.2	42.9	26.6	10.9	48.6	13.9
LOS		B	D	D	B	D	C	B	D	B
Approach Delay		16.0		27.3			24.5			18.2
Approach LOS		B		C			C			B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 88.2	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 22.4	Intersection LOS: C
Intersection Capacity Utilization 70.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	8	18	248	50	346	11	1041	179	164	1108	41
Future Volume (veh/h)	4	8	18	248	50	346	11	1041	179	164	1108	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	4	8	18	293	0	330	11	1073	142	169	1142	28
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	80	122	211	819	0	560	45	1372	612	231	1761	43
Arrive On Green	0.22	0.22	0.22	0.22	0.00	0.22	0.03	0.40	0.40	0.14	0.52	0.52
Sat Flow, veh/h	86	543	943	2657	0	1525	1619	3420	1525	1619	3409	84
Grp Volume(v), veh/h	30	0	0	293	0	330	11	1073	142	169	573	597
Grp Sat Flow(s),veh/h/ln	1571	0	0	1328	0	1525	1619	1710	1525	1619	1710	1783
Q Serve(g_s), s	0.0	0.0	0.0	5.2	0.0	11.7	0.4	18.3	4.1	6.7	16.3	16.3
Cycle Q Clear(g_c), s	1.0	0.0	0.0	6.2	0.0	11.7	0.4	18.3	4.1	6.7	16.3	16.3
Prop In Lane	0.13		0.60	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	413	0	0	819	0	560	45	1372	612	231	883	921
V/C Ratio(X)	0.07	0.00	0.00	0.36	0.00	0.59	0.25	0.78	0.23	0.73	0.65	0.65
Avail Cap(c_a), veh/h	996	0	0	1851	0	1153	242	1876	837	648	1367	1425
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.5	0.0	0.0	22.5	0.0	17.1	31.9	17.5	13.2	27.4	11.8	11.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	0.4	1.0	1.5	0.2	1.7	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	1.8	0.0	3.4	0.2	5.8	1.1	2.4	4.5	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.5	0.0	0.0	22.6	0.0	17.5	32.9	19.0	13.4	29.1	12.6	12.5
LnGrp LOS	C	A	A	C	A	B	C	B	B	C	B	B
Approach Vol, veh/h		30			623			1226			1339	
Approach Delay, s/veh		20.5			19.9			18.5			14.6	
Approach LOS		C			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.1	32.9		20.0	6.3	40.6		20.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	26.8	36.7		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	8.7	20.3		3.0	2.4	18.3		13.7				
Green Ext Time (p_c), s	0.2	6.5		0.1	0.0	7.8		1.1				

Intersection Summary			
HCM 6th Ctrl Delay		17.2	
HCM 6th LOS		B	

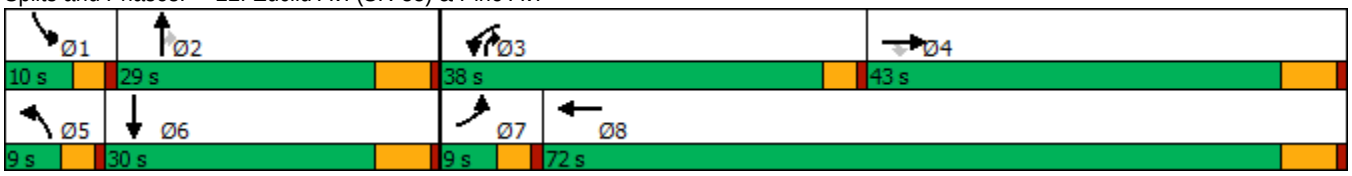
Notes

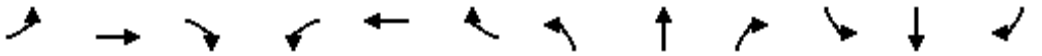
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	8	186	50	1077	332	57	713	705	52	688
Future Volume (vph)	8	186	50	1077	332	57	713	705	52	688
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	38.0	72.0	9.0	29.0	38.0	10.0	30.0
Total Split (%)	7.5%	35.8%	35.8%	31.7%	60.0%	7.5%	24.2%	31.7%	8.3%	25.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.1	18.7	18.7	34.5	55.8	5.1	20.5	57.1	5.9	19.2
Actuated g/C Ratio	0.05	0.19	0.19	0.35	0.57	0.05	0.21	0.58	0.06	0.20
v/c Ratio	0.10	0.56	0.13	1.07	0.41	0.70	0.71	0.39	0.56	0.75
Control Delay	53.1	42.0	0.7	80.3	13.7	90.3	41.9	1.6	70.9	43.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.1	42.0	0.7	80.3	13.7	90.3	41.9	1.6	70.9	43.2
LOS	D	D	A	F	B	F	D	A	E	D
Approach Delay		33.8			62.1		24.5			45.2
Approach LOS		C			E		C			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 43.1	Intersection LOS: D
Intersection Capacity Utilization 82.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	186	50	1077	332	72	57	713	705	52	688	17
Future Volume (veh/h)	8	186	50	1077	332	72	57	713	705	52	688	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	8	192	0	1110	342	72	59	735	471	54	709	14
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	16	254		1153	751	158	73	968	1565	68	962	19
Arrive On Green	0.01	0.14	0.00	0.39	0.52	0.52	0.04	0.20	0.20	0.04	0.19	0.19
Sat Flow, veh/h	1619	1800	1525	2956	1442	304	1619	4914	2626	1619	4961	98
Grp Volume(v), veh/h	8	192	0	1110	0	414	59	735	471	54	468	255
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1745	1619	1638	1313	1619	1638	1782
Q Serve(g_s), s	0.4	8.9	0.0	31.9	0.0	13.0	3.1	12.3	7.9	2.9	11.7	11.7
Cycle Q Clear(g_c), s	0.4	8.9	0.0	31.9	0.0	13.0	3.1	12.3	7.9	2.9	11.7	11.7
Prop In Lane	1.00		1.00	1.00		0.17	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	16	254		1153	0	910	73	968	1565	68	635	346
V/C Ratio(X)	0.49	0.76		0.96	0.00	0.46	0.81	0.76	0.30	0.80	0.74	0.74
Avail Cap(c_a), veh/h	93	765		1155	0	1324	93	1299	1741	112	904	492
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	35.9	0.0	25.9	0.0	13.1	41.2	33.0	9.0	41.3	33.0	33.0
Incr Delay (d2), s/veh	8.2	6.4	0.0	18.0	0.0	0.5	26.6	1.2	0.0	7.7	0.9	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.1	0.0	12.6	0.0	4.3	1.7	4.5	1.8	1.2	4.3	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.0	42.3	0.0	43.9	0.0	13.6	67.7	34.2	9.1	49.0	33.9	34.7
LnGrp LOS	D	D		D	A	B	E	C	A	D	C	C
Approach Vol, veh/h		200	A		1524			1265			777	
Approach Delay, s/veh		42.6			35.7			26.4			35.2	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	23.1	37.9	18.3	7.9	22.9	4.9	51.4
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	6.0	23.0	34.0	37.0	5.0	24.0	5.0	66.0
Max Q Clear Time (g_c+I1), s	4.9	14.3	33.9	10.9	5.1	13.7	2.4	15.0
Green Ext Time (p_c), s	0.0	2.9	0.0	1.4	0.0	1.9	0.0	3.8

Intersection Summary	
HCM 6th Ctrl Delay	32.8
HCM 6th LOS	C

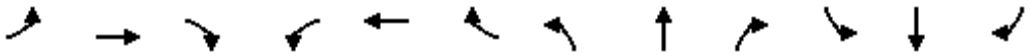
Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	34	213	87	525	26	205	61	213
Future Volume (vph)	34	213	87	525	26	205	61	213
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Total Split (s)	59.0	59.0	59.0	59.0	31.0	31.0	31.0	31.0
Total Split (%)	65.6%	65.6%	65.6%	65.6%	34.4%	34.4%	34.4%	34.4%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		52.8		52.8		22.9		22.9
Actuated g/C Ratio		0.60		0.60		0.26		0.26
v/c Ratio		0.32		0.73		0.67		0.91
Control Delay		10.0		18.6		37.1		62.7
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		10.0		18.6		37.1		62.7
LOS		A		B		D		E
Approach Delay		10.0		18.6		37.1		62.7
Approach LOS		A		B		D		E

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 88.2	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 29.3	Intersection LOS: C
Intersection Capacity Utilization 90.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	213	28	87	525	32	26	205	31	61	213	29
Future Volume (veh/h)	34	213	28	87	525	32	26	205	31	61	213	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	37	234	31	96	577	35	29	225	34	67	234	32
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	133	801	101	159	872	51	69	331	47	107	281	36
Arrive On Green	0.62	0.62	0.62	0.62	0.62	0.62	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	140	1300	165	180	1416	83	96	1384	198	237	1175	150
Grp Volume(v), veh/h	302	0	0	708	0	0	288	0	0	333	0	0
Grp Sat Flow(s),veh/h/ln	1605	0	0	1679	0	0	1678	0	0	1562	0	0
Q Serve(g_s), s	0.0	0.0	0.0	12.8	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0
Cycle Q Clear(g_c), s	6.8	0.0	0.0	23.2	0.0	0.0	13.3	0.0	0.0	17.7	0.0	0.0
Prop In Lane	0.12		0.10	0.14		0.05	0.10		0.12	0.20		0.10
Lane Grp Cap(c), veh/h	1036	0	0	1082	0	0	448	0	0	424	0	0
V/C Ratio(X)	0.29	0.00	0.00	0.65	0.00	0.00	0.64	0.00	0.00	0.79	0.00	0.00
Avail Cap(c_a), veh/h	1036	0	0	1082	0	0	531	0	0	504	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.6	0.0	0.0	10.6	0.0	0.0	29.7	0.0	0.0	31.4	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	3.1	0.0	0.0	2.0	0.0	0.0	6.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.0	7.3	0.0	0.0	5.2	0.0	0.0	6.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.3	0.0	0.0	13.7	0.0	0.0	31.7	0.0	0.0	38.1	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	C	A	A	D	A	A
Approach Vol, veh/h		302			708			288			333	
Approach Delay, s/veh		8.3			13.7			31.7			38.1	
Approach LOS		A			B			C			D	

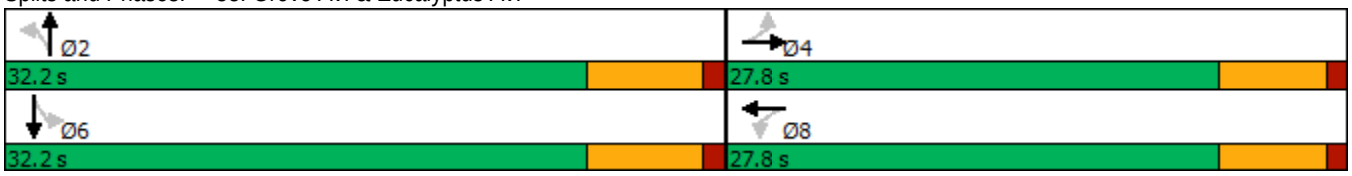
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.7		59.0		26.7		59.0				
Change Period (Y+Rc), s		6.2		6.2		6.2		6.2				
Max Green Setting (Gmax), s		24.8		52.8		24.8		52.8				
Max Q Clear Time (g_c+I1), s		15.3		8.8		19.7		25.2				
Green Ext Time (p_c), s		1.0		1.8		0.8		4.8				

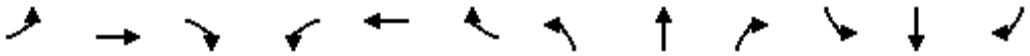
Intersection Summary												
HCM 6th Ctrl Delay			20.9									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	33	34	12	86	64	294	29	237
Future Volume (vph)	33	34	12	86	64	294	29	237
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	27.8	27.8	27.8	27.8	32.2	32.2	32.2	32.2
Total Split (%)	46.3%	46.3%	46.3%	46.3%	53.7%	53.7%	53.7%	53.7%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.8		5.8		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		12.1		12.1		31.7		31.7
Actuated g/C Ratio		0.24		0.24		0.62		0.62
v/c Ratio		0.24		0.31		0.23		0.37
Control Delay		14.7		15.8		7.4		8.7
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		14.7		15.8		7.4		8.7
LOS		B		B		A		A
Approach Delay		14.7		15.8		7.4		8.7
Approach LOS		B		B		A		A

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 51.2	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.37	
Intersection Signal Delay: 9.6	Intersection LOS: A
Intersection Capacity Utilization 57.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	34	14	12	86	17	64	294	12	29	237	79
Future Volume (veh/h)	33	34	14	12	86	17	64	294	12	29	237	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	36	37	15	13	95	19	70	323	13	32	260	87
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	196	172	54	100	276	51	337	1433	58	118	676	212
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.55	0.55	0.55	0.55	0.55	0.55
Sat Flow, veh/h	449	869	271	80	1390	259	429	2612	105	65	1233	387
Grp Volume(v), veh/h	88	0	0	127	0	0	206	0	200	379	0	0
Grp Sat Flow(s),veh/h/ln	1588	0	0	1729	0	0	1527	0	1619	1685	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.0	0.0	0.0	3.0	0.0	0.0	2.8	0.0	3.0	6.0	0.0	0.0
Prop In Lane	0.41		0.17	0.10		0.15	0.34		0.06	0.08		0.23
Lane Grp Cap(c), veh/h	422	0	0	427	0	0	939	0	888	1006	0	0
V/C Ratio(X)	0.21	0.00	0.00	0.30	0.00	0.00	0.22	0.00	0.23	0.38	0.00	0.00
Avail Cap(c_a), veh/h	824	0	0	878	0	0	939	0	888	1006	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.0	0.0	0.0	16.4	0.0	0.0	5.5	0.0	5.5	6.2	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.4	0.0	0.0	0.5	0.0	0.6	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	1.0	0.0	0.0	0.6	0.0	0.6	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.3	0.0	0.0	16.8	0.0	0.0	6.0	0.0	6.1	7.3	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		88			127			406			379	
Approach Delay, s/veh		16.3			16.8			6.1			7.3	
Approach LOS		B			B			A			A	

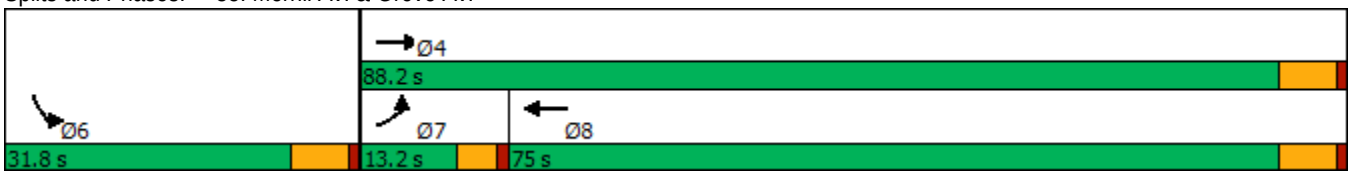
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.2		15.2		32.2		15.2				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		26.0		22.0		26.0		22.0				
Max Q Clear Time (g_c+I1), s		5.0		4.0		8.0		5.0				
Green Ext Time (p_c), s		2.1		0.3		1.9		0.5				

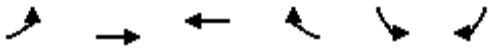
Intersection Summary												
HCM 6th Ctrl Delay			8.8									
HCM 6th LOS			A									

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	88	262	635	165
Future Volume (vph)	88	262	635	165
Turn Type	Prot	NA	NA	Prot
Protected Phases	7	4	8	6
Permitted Phases				
Detector Phase	7	4	8	6
Switch Phase				
Minimum Initial (s)	5.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	28.2
Total Split (s)	13.2	88.2	75.0	31.8
Total Split (%)	11.0%	73.5%	62.5%	26.5%
Yellow Time (s)	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	6.2
Lead/Lag	Lead		Lag	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	Max	Max	None
Act Effct Green (s)	8.3	82.1	69.2	22.3
Actuated g/C Ratio	0.07	0.70	0.59	0.19
v/c Ratio	0.80	0.21	0.91	0.85
Control Delay	97.2	7.0	36.0	66.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	97.2	7.0	36.0	66.3
LOS	F	A	D	E
Approach Delay		29.7	36.0	66.3
Approach LOS		C	D	E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.8	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 39.8	Intersection LOS: D
Intersection Capacity Utilization 89.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	88	262	635	281	165	98
Future Volume (veh/h)	88	262	635	281	165	98
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	91	270	655	290	170	101
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	111	1264	702	311	185	110
Arrive On Green	0.07	0.70	0.59	0.59	0.19	0.19
Sat Flow, veh/h	1619	1800	1182	523	968	575
Grp Volume(v), veh/h	91	270	0	945	272	0
Grp Sat Flow(s),veh/h/ln	1619	1800	0	1706	1548	0
Q Serve(g_s), s	6.5	6.1	0.0	58.9	20.1	0.0
Cycle Q Clear(g_c), s	6.5	6.1	0.0	58.9	20.1	0.0
Prop In Lane	1.00			0.31	0.62	0.37
Lane Grp Cap(c), veh/h	111	1264	0	1013	297	0
V/C Ratio(X)	0.82	0.21	0.00	0.93	0.92	0.00
Avail Cap(c_a), veh/h	119	1264	0	1013	339	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	53.7	6.1	0.0	21.6	46.3	0.0
Incr Delay (d2), s/veh	29.9	0.4	0.0	16.1	26.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	2.0	0.0	24.5	9.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	83.5	6.5	0.0	37.7	73.1	0.0
LnGrp LOS	F	A	A	D	E	A
Approach Vol, veh/h		361	945		272	
Approach Delay, s/veh		25.9	37.7		73.1	
Approach LOS		C	D		E	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			88.2		28.6	12.6	75.6
Change Period (Y+Rc), s			6.2		6.2	4.6	6.2
Max Green Setting (Gmax), s			82.0		25.6	8.6	68.8
Max Q Clear Time (g_c+I1), s			8.1		22.1	8.5	60.9
Green Ext Time (p_c), s			1.5		0.3	0.0	3.9

Intersection Summary	
HCM 6th Ctrl Delay	41.1
HCM 6th LOS	D

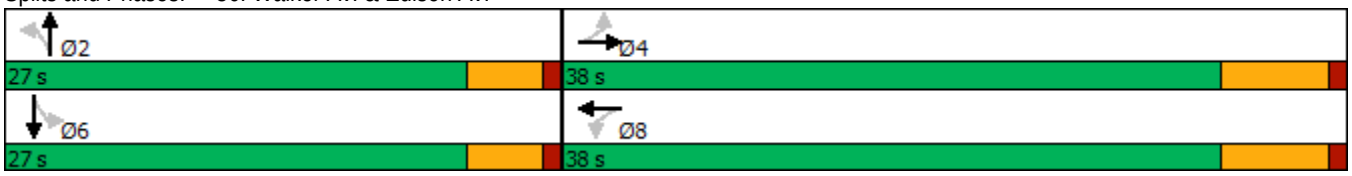
Notes

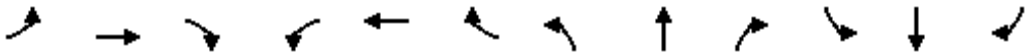
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	18	249	117	435	4	19	27	18
Future Volume (vph)	18	249	117	435	4	19	27	18
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	26.7	26.7	26.7	26.7
Total Split (s)	38.0	38.0	38.0	38.0	27.0	27.0	27.0	27.0
Total Split (%)	58.5%	58.5%	58.5%	58.5%	41.5%	41.5%	41.5%	41.5%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		4.7		4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		44.7		44.7		12.3		12.3
Actuated g/C Ratio		0.76		0.76		0.21		0.21
v/c Ratio		0.22		0.60		0.09		0.19
Control Delay		5.9		11.9		15.2		17.0
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		5.9		11.9		15.2		17.0
LOS		A		B		B		B
Approach Delay		5.9		11.9		15.2		17.0
Approach LOS		A		B		B		B

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 58.7	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 10.7	Intersection LOS: B
Intersection Capacity Utilization 82.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	249	10	117	435	147	4	19	8	27	18	12
Future Volume (veh/h)	18	249	10	117	435	147	4	19	8	27	18	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	18	254	10	119	444	150	4	19	8	28	18	12
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	104	1045	39	212	690	218	94	166	62	184	103	47
Arrive On Green	0.64	0.64	0.64	0.64	0.64	0.64	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	43	1635	62	199	1081	341	88	1170	438	538	722	329
Grp Volume(v), veh/h	282	0	0	713	0	0	31	0	0	58	0	0
Grp Sat Flow(s),veh/h/ln	1740	0	0	1621	0	0	1696	0	0	1590	0	0
Q Serve(g_s), s	0.0	0.0	0.0	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.4	0.0	0.0	13.4	0.0	0.0	0.8	0.0	0.0	1.5	0.0	0.0
Prop In Lane	0.06		0.04	0.17		0.21	0.13		0.26	0.48		0.21
Lane Grp Cap(c), veh/h	1188	0	0	1120	0	0	323	0	0	333	0	0
V/C Ratio(X)	0.24	0.00	0.00	0.64	0.00	0.00	0.10	0.00	0.00	0.17	0.00	0.00
Avail Cap(c_a), veh/h	1188	0	0	1120	0	0	831	0	0	803	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.9	0.0	0.0	5.6	0.0	0.0	18.7	0.0	0.0	18.9	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	2.8	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	2.3	0.0	0.0	0.3	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.3	0.0	0.0	8.3	0.0	0.0	18.8	0.0	0.0	19.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		282			713			31			58	
Approach Delay, s/veh		4.3			8.3			18.8			19.2	
Approach LOS		A			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		11.8		38.0		11.8		38.0				
Change Period (Y+Rc), s		* 4.7		6.2		* 4.7		6.2				
Max Green Setting (Gmax), s		* 22		31.8		* 22		31.8				
Max Q Clear Time (g_c+I1), s		2.8		5.4		3.5		15.4				
Green Ext Time (p_c), s		0.1		1.5		0.2		4.3				

Intersection Summary		
HCM 6th Ctrl Delay		8.2
HCM 6th LOS		A

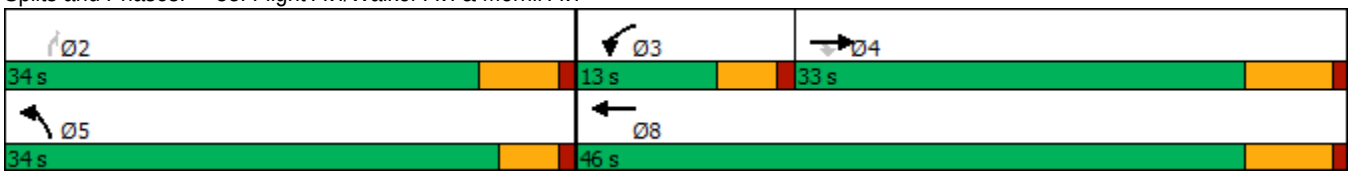
Notes

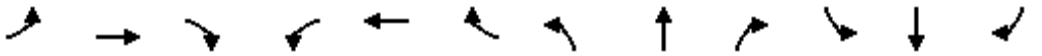
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	324	103	122	735	134	101
Future Volume (vph)	324	103	122	735	134	101
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	5	
Permitted Phases		4				2
Detector Phase	4	4	3	8	5	2
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	23.2	23.2	9.6	23.2	9.6	32.8
Total Split (s)	33.0	33.0	13.0	46.0	34.0	34.0
Total Split (%)	41.3%	41.3%	16.3%	57.5%	42.5%	42.5%
Yellow Time (s)	5.2	5.2	3.6	5.2	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	4.6	6.2	4.6	5.8
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	Min
Act Effct Green (s)	15.9	15.9	8.1	28.8	12.6	12.8
Actuated g/C Ratio	0.29	0.29	0.15	0.53	0.23	0.24
v/c Ratio	0.63	0.20	0.52	0.79	0.37	0.24
Control Delay	23.2	5.5	35.2	18.9	20.5	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.2	5.5	35.2	18.9	20.5	5.9
LOS	C	A	D	B	C	A
Approach Delay	18.9			21.3		
Approach LOS	B			C		

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 54.2	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 19.5	Intersection LOS: B
Intersection Capacity Utilization 57.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 38: Flight Av./Walker Av. & Merrill Av.



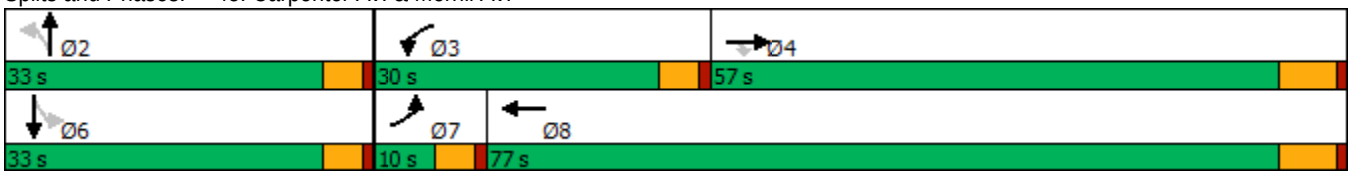


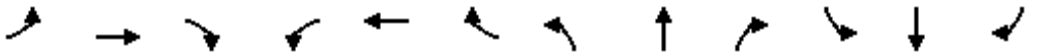
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	324	103	122	735	0	134	0	101	0	0	0
Future Volume (veh/h)	0	324	103	122	735	0	134	0	101	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1800	1800	1700	1800	0	1700	0	1800			
Adj Flow Rate, veh/h	0	334	106	126	758	0	138	0	104			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	0	545	461	167	977	0	217	0	205			
Arrive On Green	0.00	0.30	0.30	0.10	0.54	0.00	0.13	0.00	0.13			
Sat Flow, veh/h	0	1800	1525	1619	1800	0	1619	0	1525			
Grp Volume(v), veh/h	0	334	106	126	758	0	138	0	104			
Grp Sat Flow(s),veh/h/ln	0	1800	1525	1619	1800	0	1619	0	1525			
Q Serve(g_s), s	0.0	5.3	1.7	2.5	11.1	0.0	2.7	0.0	2.1			
Cycle Q Clear(g_c), s	0.0	5.3	1.7	2.5	11.1	0.0	2.7	0.0	2.1			
Prop In Lane	0.00		1.00	1.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	545	461	167	977	0	217	0	205			
V/C Ratio(X)	0.00	0.61	0.23	0.75	0.78	0.00	0.63	0.00	0.51			
Avail Cap(c_a), veh/h	0	1441	1221	406	2140	0	1422	0	1340			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	10.0	8.7	14.6	6.0	0.0	13.7	0.0	13.5			
Incr Delay (d2), s/veh	0.0	1.1	0.3	2.6	1.4	0.0	1.1	0.0	0.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	1.3	0.3	0.7	1.0	0.0	0.7	0.0	0.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	11.1	9.0	17.2	7.4	0.0	14.9	0.0	14.2			
LnGrp LOS	A	B	A	B	A	A	B	A	B			
Approach Vol, veh/h		440			884			242				
Approach Delay, s/veh		10.6			8.8			14.6				
Approach LOS		B			A			B				
Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		9.1	8.1	16.3				24.4				
Change Period (Y+Rc), s		4.6	4.6	6.2				6.2				
Max Green Setting (Gmax), s		29.4	8.4	26.8				39.8				
Max Q Clear Time (g_c+I1), s		4.7	4.5	7.3				13.1				
Green Ext Time (p_c), s		0.3	0.0	1.9				5.0				
Intersection Summary												
HCM 6th Ctrl Delay			10.2									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	10	392	30	212	721	21	0	120	0
Future Volume (vph)	10	392	30	212	721	21	0	120	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	26.6	26.6
Total Split (s)	10.0	57.0	57.0	30.0	77.0	33.0	33.0	33.0	33.0
Total Split (%)	8.3%	47.5%	47.5%	25.0%	64.2%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2		4.6		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.2	52.5	52.5	17.0	72.3		12.6		12.6
Actuated g/C Ratio	0.05	0.54	0.54	0.17	0.74		0.13		0.13
v/c Ratio	0.12	0.43	0.04	0.76	0.61		0.49		0.71
Control Delay	50.8	17.2	0.1	55.4	10.1		15.7		31.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	50.8	17.2	0.1	55.4	10.1		15.7		31.7
LOS	D	B	A	E	B		B		C
Approach Delay		16.8			19.9		15.7		31.7
Approach LOS		B			B		B		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.5	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 19.7	Intersection LOS: B
Intersection Capacity Utilization 74.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 45: Carpenter Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	392	30	212	721	42	21	0	120	120	0	10
Future Volume (veh/h)	10	392	30	212	721	42	21	0	120	120	0	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	11	417	32	226	767	45	22	0	128	128	0	11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	22	980	831	257	1147	67	63	14	221	218	3	13
Arrive On Green	0.01	0.54	0.54	0.15	0.68	0.68	0.16	0.00	0.16	0.16	0.00	0.16
Sat Flow, veh/h	1714	1800	1525	1714	1683	99	150	92	1407	967	17	85
Grp Volume(v), veh/h	11	417	32	226	0	812	150	0	0	139	0	0
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	0	1782	1649	0	0	1068	0	0
Q Serve(g_s), s	0.7	14.3	1.0	13.4	0.0	27.7	0.0	0.0	0.0	4.8	0.0	0.0
Cycle Q Clear(g_c), s	0.7	14.3	1.0	13.4	0.0	27.7	8.9	0.0	0.0	13.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.06	0.15		0.85	0.92		0.08
Lane Grp Cap(c), veh/h	22	980	831	257	0	1215	299	0	0	234	0	0
V/C Ratio(X)	0.49	0.43	0.04	0.88	0.00	0.67	0.50	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	89	980	831	419	0	1215	474	0	0	385	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	50.9	14.0	11.0	43.2	0.0	9.7	40.8	0.0	0.0	43.3	0.0	0.0
Incr Delay (d2), s/veh	6.0	1.4	0.1	6.8	0.0	2.9	1.3	0.0	0.0	2.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.5	0.3	5.9	0.0	9.1	3.7	0.0	0.0	3.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.9	15.4	11.1	50.1	0.0	12.6	42.1	0.0	0.0	45.7	0.0	0.0
LnGrp LOS	E	B	B	D	A	B	D	A	A	D	A	A
Approach Vol, veh/h		460			1038			150			139	
Approach Delay, s/veh		16.1			20.8			42.1			45.7	
Approach LOS		B			C			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		20.9	20.2	62.8		20.9	6.0	77.0				
Change Period (Y+Rc), s		4.6	4.6	6.2		4.6	4.6	6.2				
Max Green Setting (Gmax), s		28.4	25.4	50.8		28.4	5.4	70.8				
Max Q Clear Time (g_c+I1), s		10.9	15.4	16.3		15.7	2.7	29.7				
Green Ext Time (p_c), s		0.8	0.2	2.4		0.6	0.0	6.1				

Intersection Summary		
HCM 6th Ctrl Delay		23.3
HCM 6th LOS		C

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	316	826	861	334	206	507
Future Volume (vph)	316	826	861	334	206	507
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	16.0	67.7	36.3	16.0	83.7
Total Split (%)	30.3%	13.3%	56.4%	30.3%	13.3%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 103.6
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	316	826	861	334	206	507
Future Volume (veh/h)	316	826	861	334	206	507
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1976	1976
Adj Flow Rate, veh/h	329	804	897	301	215	528
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	497	997	968	1263	281	1247
Arrive On Green	0.27	0.27	0.51	0.51	0.08	0.63
Sat Flow, veh/h	1810	2834	1900	1610	3651	1976
Grp Volume(v), veh/h	329	804	897	301	215	528
Grp Sat Flow(s),veh/h/ln	1810	1417	1900	1610	1825	1976
Q Serve(g_s), s	18.1	28.9	49.4	5.6	6.5	15.1
Cycle Q Clear(g_c), s	18.1	28.9	49.4	5.6	6.5	15.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	497	997	968	1263	281	1247
V/C Ratio(X)	0.66	0.81	0.93	0.24	0.77	0.42
Avail Cap(c_a), veh/h	498	998	1053	1335	357	1382
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.2	33.0	25.6	3.2	51.0	10.5
Incr Delay (d2), s/veh	2.6	4.6	13.1	0.1	7.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	9.9	23.1	4.3	3.1	5.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	38.8	37.6	38.7	3.3	58.4	10.5
LnGrp LOS	D	D	D	A	E	B
Approach Vol, veh/h	1133		1198			743
Approach Delay, s/veh	38.0		29.8			24.4
Approach LOS	D		C			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	13.6	62.7			76.3	36.2
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	11.0	62.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	8.5	51.4			17.1	30.9
Green Ext Time (p_c), s	0.2	6.0			1.7	0.0

Intersection Summary	
HCM 6th Ctrl Delay	31.5
HCM 6th LOS	C

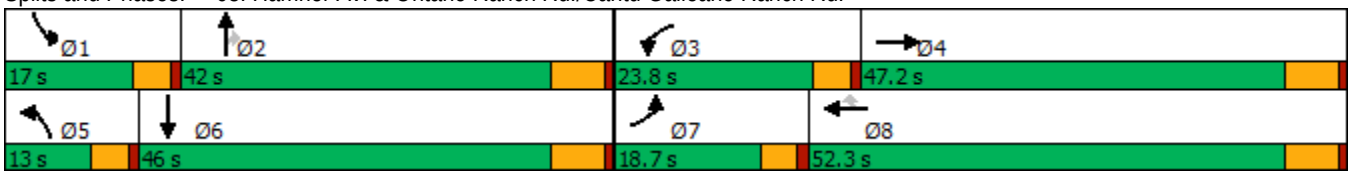
Notes

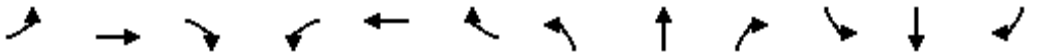
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	99	569	280	856	207	175	717	514	157	214
Future Volume (vph)	99	569	280	856	207	175	717	514	157	214
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2
Total Split (s)	18.7	47.2	23.8	52.3	52.3	13.0	42.0	42.0	17.0	46.0
Total Split (%)	14.4%	36.3%	18.3%	40.2%	40.2%	10.0%	32.3%	32.3%	13.1%	35.4%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	9.5	33.7	16.5	40.7	40.7	9.3	33.0	33.0	11.2	34.9
Actuated g/C Ratio	0.09	0.30	0.15	0.37	0.37	0.08	0.30	0.30	0.10	0.31
v/c Ratio	0.45	0.40	0.72	0.78	0.34	0.81	0.56	0.86	0.60	0.22
Control Delay	58.0	30.7	57.6	36.9	5.6	77.6	35.4	31.8	60.0	21.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.0	30.7	57.6	36.9	5.6	77.6	35.4	31.8	60.0	21.8
LOS	E	C	E	D	A	E	D	C	E	C
Approach Delay		34.3		36.4			39.4			34.9
Approach LOS		C		D			D			C

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 111	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 36.9	Intersection LOS: D
Intersection Capacity Utilization 62.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	569	84	280	856	207	175	717	514	157	214	85
Future Volume (veh/h)	99	569	84	280	856	207	175	717	514	157	214	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	112	647	95	318	973	235	199	815	577	178	243	97
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	177	1561	223	389	1213	541	247	1735	539	247	1246	462
Arrive On Green	0.06	0.28	0.26	0.13	0.35	0.35	0.08	0.35	0.35	0.08	0.35	0.33
Sat Flow, veh/h	2956	5513	789	2956	3420	1525	2956	4914	1525	2956	3531	1308
Grp Volume(v), veh/h	112	542	200	318	973	235	199	815	577	178	224	116
Grp Sat Flow(s),veh/h/ln	1478	1548	1658	1478	1710	1525	1478	1638	1525	1478	1638	1563
Q Serve(g_s), s	4.0	10.2	10.7	11.3	27.6	12.6	7.1	13.8	38.0	6.3	5.1	5.7
Cycle Q Clear(g_c), s	4.0	10.2	10.7	11.3	27.6	12.6	7.1	13.8	38.0	6.3	5.1	5.7
Prop In Lane	1.00		0.48	1.00		1.00	1.00		1.00	1.00		0.84
Lane Grp Cap(c), veh/h	177	1315	469	389	1213	541	247	1735	539	247	1156	552
V/C Ratio(X)	0.63	0.41	0.43	0.82	0.80	0.43	0.81	0.47	1.07	0.72	0.19	0.21
Avail Cap(c_a), veh/h	404	1864	665	544	1535	685	247	1735	539	357	1278	610
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.4	31.3	31.9	45.5	31.3	26.5	48.5	27.0	34.8	48.1	24.2	25.0
Incr Delay (d2), s/veh	1.4	0.2	0.6	4.6	2.5	0.6	16.3	0.2	59.3	1.5	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.6	4.1	4.2	11.0	4.4	3.1	5.1	21.8	2.3	1.9	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.8	31.5	32.5	50.1	33.8	27.0	64.7	27.2	94.1	49.6	24.3	25.2
LnGrp LOS	D	C	C	D	C	C	E	C	F	D	C	C
Approach Vol, veh/h		854			1526			1591			518	
Approach Delay, s/veh		34.3			36.1			56.2			33.2	
Approach LOS		C			D			E			C	

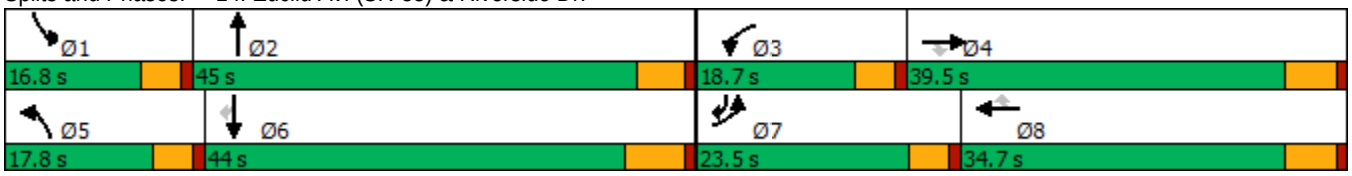
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	42.0	18.2	34.5	13.0	42.0	10.5	42.2
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	12.4	35.8	19.2	41.0	8.4	39.8	14.1	46.1
Max Q Clear Time (g_c+I1), s	8.3	40.0	13.3	12.7	9.1	7.7	6.0	29.6
Green Ext Time (p_c), s	0.1	0.0	0.3	4.5	0.0	1.9	0.1	6.4

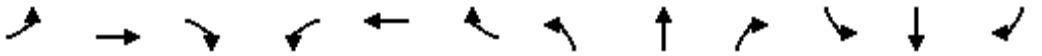
Intersection Summary	
HCM 6th Ctrl Delay	42.5
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	154	467	80	190	417	65	76	1154	142	1003	196
Future Volume (vph)	154	467	80	190	417	65	76	1154	142	1003	196
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2	1	6	7
Permitted Phases			4			8					6
Detector Phase	7	4	4	3	8	8	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	9.6	34.5	9.6
Total Split (s)	23.5	39.5	39.5	18.7	34.7	34.7	17.8	45.0	16.8	44.0	23.5
Total Split (%)	19.6%	32.9%	32.9%	15.6%	28.9%	28.9%	14.8%	37.5%	14.0%	36.7%	19.6%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	Max	None
Act Effct Green (s)	15.4	33.3	33.3	14.1	32.1	32.1	9.9	39.6	12.1	42.8	60.1
Actuated g/C Ratio	0.13	0.28	0.28	0.12	0.27	0.27	0.08	0.33	0.10	0.36	0.50
v/c Ratio	0.77	0.97	0.16	1.04	0.47	0.13	0.59	0.90	0.91	0.59	0.24
Control Delay	73.8	76.3	3.1	128.4	39.5	0.5	70.5	46.2	103.4	34.1	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.8	76.3	3.1	128.4	39.5	0.5	70.5	46.2	103.4	34.1	2.9
LOS	E	E	A	F	D	A	E	D	F	C	A
Approach Delay		67.4			60.9			47.4		36.9	
Approach LOS		E			E			D		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.5	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 49.6	Intersection LOS: D
Intersection Capacity Utilization 92.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	467	80	190	417	65	76	1154	246	142	1003	196
Future Volume (veh/h)	154	467	80	190	417	65	76	1154	246	142	1003	196
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	160	486	58	198	434	52	79	1202	202	148	1045	113
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	184	501	424	189	960	428	98	1385	233	163	1805	727
Arrive On Green	0.11	0.28	0.28	0.12	0.28	0.28	0.06	0.33	0.33	0.10	0.37	0.37
Sat Flow, veh/h	1619	1800	1525	1619	3420	1524	1619	4236	712	1619	4914	1506
Grp Volume(v), veh/h	160	486	58	198	434	52	79	930	474	148	1045	113
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	1524	1619	1638	1672	1619	1638	1506
Q Serve(g_s), s	11.8	32.3	3.5	14.1	12.7	3.1	5.8	32.3	32.3	11.0	20.7	5.1
Cycle Q Clear(g_c), s	11.8	32.3	3.5	14.1	12.7	3.1	5.8	32.3	32.3	11.0	20.7	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.43	1.00		1.00
Lane Grp Cap(c), veh/h	184	501	424	189	960	428	98	1071	547	163	1805	727
V/C Ratio(X)	0.87	0.97	0.14	1.05	0.45	0.12	0.81	0.87	0.87	0.91	0.58	0.16
Avail Cap(c_a), veh/h	253	501	424	189	960	428	176	1071	547	163	1805	727
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	43.2	32.8	53.5	35.9	32.4	56.2	38.3	38.3	53.9	30.8	17.6
Incr Delay (d2), s/veh	16.4	32.6	0.1	79.5	0.3	0.1	5.8	9.5	16.8	43.8	1.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	18.3	1.3	9.7	5.2	1.1	2.4	13.5	14.9	6.4	8.2	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.1	75.8	32.9	133.0	36.2	32.5	62.0	47.8	55.1	97.6	32.1	18.1
LnGrp LOS	E	E	C	F	D	C	E	D	E	F	C	B
Approach Vol, veh/h		704			684			1483			1306	
Approach Delay, s/veh		70.7			63.9			50.9			38.3	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.8	46.1	18.7	39.5	11.9	51.0	18.4	39.8
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	12.2	* 40	14.1	33.7	13.2	37.5	18.9	28.9
Max Q Clear Time (g_c+I1), s	13.0	34.3	16.1	34.3	7.8	22.7	13.8	14.7
Green Ext Time (p_c), s	0.0	3.5	0.0	0.0	0.0	6.4	0.1	2.3

Intersection Summary	
HCM 6th Ctrl Delay	52.4
HCM 6th LOS	D

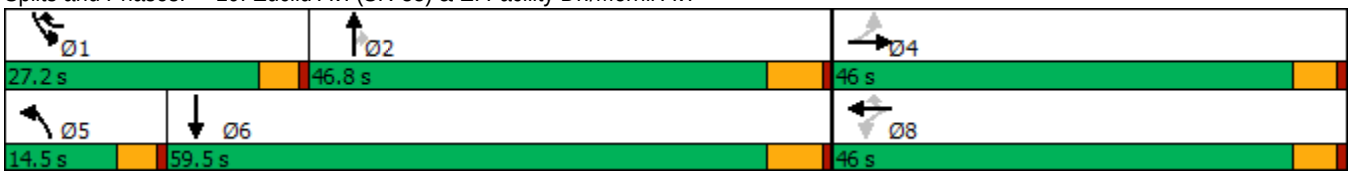
Notes

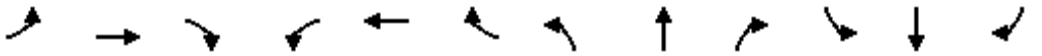
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	12	31	226	2	213	4	1255	251	280	1293
Future Volume (vph)	12	31	226	2	213	4	1255	251	280	1293
Turn Type	Perm	NA	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	1	5	2		1	6
Permitted Phases	4		8		8			2		
Detector Phase	4	4	8	8	1	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	27.2	14.5	46.8	46.8	27.2	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	22.7%	12.1%	39.0%	39.0%	22.7%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	4.5	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		19.8	19.8	19.8	47.7	10.1	41.2	41.2	22.9	66.2
Actuated g/C Ratio		0.20	0.20	0.20	0.48	0.10	0.41	0.41	0.23	0.67
v/c Ratio		0.18	0.50	0.50	0.31	0.02	0.97	0.40	0.83	0.62
Control Delay		26.8	41.8	41.7	14.7	45.8	48.5	16.1	57.5	14.6
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		26.8	41.8	41.7	14.7	45.8	48.5	16.1	57.5	14.6
LOS		C	D	D	B	D	D	B	E	B
Approach Delay		26.8		28.6			43.1			22.2
Approach LOS		C		C			D			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 31.9	Intersection LOS: C
Intersection Capacity Utilization 80.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	31	13	226	2	213	4	1255	251	280	1293	1
Future Volume (veh/h)	12	31	13	226	2	213	4	1255	251	280	1293	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	13	34	13	249	0	224	4	1379	211	308	1421	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	84	183	60	626	0	580	17	1518	677	340	2201	0
Arrive On Green	0.17	0.17	0.17	0.17	0.00	0.17	0.01	0.44	0.44	0.21	0.64	0.00
Sat Flow, veh/h	201	1075	353	2607	0	1525	1619	3420	1525	1619	3510	0
Grp Volume(v), veh/h	60	0	0	249	0	224	4	1379	211	308	1421	0
Grp Sat Flow(s),veh/h/ln	1630	0	0	1303	0	1525	1619	1710	1525	1619	1710	0
Q Serve(g_s), s	0.0	0.0	0.0	4.4	0.0	9.4	0.2	33.1	7.9	16.4	22.3	0.0
Cycle Q Clear(g_c), s	2.6	0.0	0.0	7.0	0.0	9.4	0.2	33.1	7.9	16.4	22.3	0.0
Prop In Lane	0.22		0.22	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	327	0	0	626	0	580	17	1518	677	340	2201	0
V/C Ratio(X)	0.18	0.00	0.00	0.40	0.00	0.39	0.23	0.91	0.31	0.90	0.65	0.00
Avail Cap(c_a), veh/h	787	0	0	1395	0	1030	184	1583	706	417	2201	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.4	0.0	0.0	33.1	0.0	19.8	43.3	22.9	15.8	34.0	9.6	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.2	0.0	0.2	2.5	7.9	0.3	18.3	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	2.3	0.0	3.0	0.1	12.8	2.4	7.6	5.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.5	0.0	0.0	33.3	0.0	20.0	45.8	30.7	16.1	52.3	10.2	0.0
LnGrp LOS	C	A	A	C	A	B	D	C	B	D	B	A
Approach Vol, veh/h		60			473			1594			1729	
Approach Delay, s/veh		31.5			27.0			28.8			17.7	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.0	45.1		20.0	5.4	62.7		20.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	22.7	40.8		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	18.4	35.1		4.6	2.2	24.3		11.4				
Green Ext Time (p_c), s	0.2	4.0		0.2	0.0	11.2		0.8				

Intersection Summary	
HCM 6th Ctrl Delay	23.7
HCM 6th LOS	C

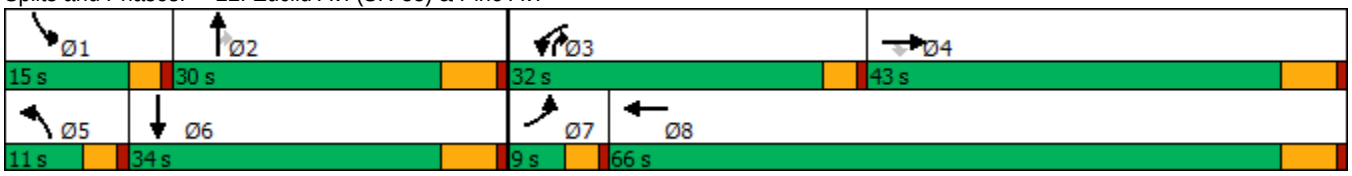
Notes

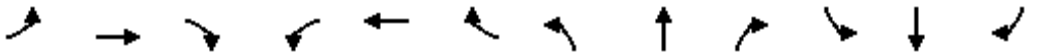
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	5	459	99	575	72	58	740	1167	105	801
Future Volume (vph)	5	459	99	575	72	58	740	1167	105	801
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	32.0	66.0	11.0	30.0	32.0	15.0	34.0
Total Split (%)	7.5%	35.8%	35.8%	26.7%	55.0%	9.2%	25.0%	26.7%	12.5%	28.3%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.1	33.0	33.0	25.6	61.0	6.6	20.7	52.4	10.0	26.5
Actuated g/C Ratio	0.05	0.30	0.30	0.23	0.56	0.06	0.19	0.48	0.09	0.24
v/c Ratio	0.07	0.87	0.18	0.85	0.13	0.61	0.81	0.83	0.73	0.69
Control Delay	57.2	54.6	2.9	54.7	9.1	80.0	51.4	24.9	79.2	43.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.2	54.6	2.9	54.7	9.1	80.0	51.4	24.9	79.2	43.1
LOS	E	D	A	D	A	F	D	C	E	D
Approach Delay		45.5			46.7		36.5			47.2
Approach LOS		D			D		D			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.7	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 41.8	Intersection LOS: D
Intersection Capacity Utilization 86.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	459	99	575	72	51	58	740	1167	105	801	4
Future Volume (veh/h)	5	459	99	575	72	51	58	740	1167	105	801	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	5	468	0	587	73	50	59	755	774	107	817	4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	10	521		646	499	342	73	1103	1189	130	1311	6
Arrive On Green	0.01	0.29	0.00	0.22	0.50	0.50	0.05	0.22	0.22	0.08	0.26	0.26
Sat Flow, veh/h	1619	1800	1525	2956	995	682	1619	4914	2685	1619	5047	25
Grp Volume(v), veh/h	5	468	0	587	0	123	59	755	774	107	530	291
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1677	1619	1638	1342	1619	1638	1796
Q Serve(g_s), s	0.3	26.7	0.0	20.7	0.0	4.2	3.9	15.0	24.0	7.0	15.3	15.3
Cycle Q Clear(g_c), s	0.3	26.7	0.0	20.7	0.0	4.2	3.9	15.0	24.0	7.0	15.3	15.3
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	10	521		646	0	841	73	1103	1189	130	851	466
V/C Ratio(X)	0.48	0.90		0.91	0.00	0.15	0.80	0.68	0.65	0.82	0.62	0.62
Avail Cap(c_a), veh/h	76	623		774	0	942	106	1103	1189	167	858	470
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.9	36.5	0.0	40.7	0.0	14.3	50.5	38.0	23.3	48.4	34.9	34.9
Incr Delay (d2), s/veh	12.1	15.0	0.0	12.0	0.0	0.1	15.7	1.5	1.0	17.8	1.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	13.3	0.0	8.2	0.0	1.5	1.8	5.8	7.1	3.3	5.8	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.0	51.5	0.0	52.7	0.0	14.4	66.2	39.4	24.3	66.1	36.0	36.8
LnGrp LOS	E	D		D	A	B	E	D	C	E	D	D
Approach Vol, veh/h		473	A		710			1588			928	
Approach Delay, s/veh		51.6			46.1			33.1			39.7	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	30.0	27.3	36.9	8.8	33.8	4.7	59.6
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	11.0	24.0	28.0	37.0	7.0	28.0	5.0	60.0
Max Q Clear Time (g_c+I1), s	9.0	26.0	22.7	28.7	5.9	17.3	2.3	6.2
Green Ext Time (p_c), s	0.0	0.0	0.6	2.3	0.0	2.2	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	39.6
HCM 6th LOS	D

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	45	456	72	282	35	294	135	205
Future Volume (vph)	45	456	72	282	35	294	135	205
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Total Split (s)	29.0	29.0	29.0	29.0	41.0	41.0	41.0	41.0
Total Split (%)	41.4%	41.4%	41.4%	41.4%	58.6%	58.6%	58.6%	58.6%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		23.2		23.2		24.0		24.0
Actuated g/C Ratio		0.39		0.39		0.40		0.40
v/c Ratio		0.85		0.80		0.77		0.90
Control Delay		35.5		32.6		21.7		41.3
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		35.5		32.6		21.7		41.3
LOS		D		C		C		D
Approach Delay		35.5		32.6		21.7		41.3
Approach LOS		D		C		C		D

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 59.8	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 32.2	Intersection LOS: C
Intersection Capacity Utilization 104.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	456	16	72	282	53	35	294	159	135	205	23
Future Volume (veh/h)	45	456	16	72	282	53	35	294	159	135	205	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	48	490	17	77	303	57	38	316	171	145	220	25
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	104	640	21	148	468	81	94	410	211	221	294	29
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	89	1601	53	185	1170	203	68	1073	551	351	770	77
Grp Volume(v), veh/h	555	0	0	437	0	0	525	0	0	390	0	0
Grp Sat Flow(s),veh/h/ln	1743	0	0	1559	0	0	1692	0	0	1197	0	0
Q Serve(g_s), s	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Cycle Q Clear(g_c), s	15.6	0.0	0.0	12.7	0.0	0.0	15.7	0.0	0.0	17.6	0.0	0.0
Prop In Lane	0.09		0.03	0.18		0.13	0.07		0.33	0.37		0.06
Lane Grp Cap(c), veh/h	766	0	0	698	0	0	715	0	0	544	0	0
V/C Ratio(X)	0.72	0.00	0.00	0.63	0.00	0.00	0.73	0.00	0.00	0.72	0.00	0.00
Avail Cap(c_a), veh/h	766	0	0	698	0	0	1088	0	0	845	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	13.8	0.0	0.0	15.7	0.0	0.0	15.7	0.0	0.0
Incr Delay (d2), s/veh	5.9	0.0	0.0	4.2	0.0	0.0	1.5	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	0.0	0.0	4.2	0.0	0.0	4.8	0.0	0.0	3.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.8	0.0	0.0	18.0	0.0	0.0	17.2	0.0	0.0	17.5	0.0	0.0
LnGrp LOS	C	A	A	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h		555			437			525			390	
Approach Delay, s/veh		20.8			18.0			17.2			17.5	
Approach LOS		C			B			B			B	

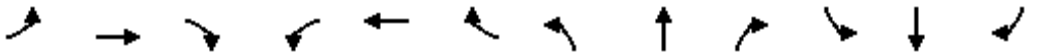
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		28.0		29.0		28.0		29.0				
Change Period (Y+Rc), s		6.2		6.2		6.2		6.2				
Max Green Setting (Gmax), s		34.8		22.8		34.8		22.8				
Max Q Clear Time (g_c+I1), s		17.7		17.6		19.6		14.7				
Green Ext Time (p_c), s		2.9		1.5		2.2		1.6				

Intersection Summary												
HCM 6th Ctrl Delay			18.5									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	126	88	5	18	14	376	18	231
Future Volume (vph)	126	88	5	18	14	376	18	231
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	36.0	36.0	36.0	36.0	84.0	84.0	84.0	84.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	70.0%	70.0%	70.0%	70.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.8		5.8		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		27.7		27.7		77.9		77.9
Actuated g/C Ratio		0.24		0.24		0.66		0.66
v/c Ratio		0.91		0.14		0.71		0.32
Control Delay		71.7		20.4		15.4		9.5
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		71.7		20.4		15.4		9.5
LOS		E		C		B		A
Approach Delay		71.7		20.4		15.4		9.5
Approach LOS		E		C		B		A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 22.7	Intersection LOS: C
Intersection Capacity Utilization 64.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	88	72	5	18	27	14	376	4	18	231	41
Future Volume (veh/h)	126	88	72	5	18	27	14	376	4	18	231	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	140	98	80	6	20	30	16	1504	4	20	257	46
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.25	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	192	112	87	54	150	196	42	2288	6	69	822	142
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.67	0.67	0.67	0.67	0.67	0.67
Sat Flow, veh/h	659	503	390	88	672	878	16	3401	9	53	1221	212
Grp Volume(v), veh/h	318	0	0	56	0	0	797	0	727	323	0	0
Grp Sat Flow(s),veh/h/ln	1552	0	0	1638	0	0	1790	0	1636	1486	0	0
Q Serve(g_s), s	19.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.3	0.7	0.0	0.0
Cycle Q Clear(g_c), s	23.1	0.0	0.0	3.2	0.0	0.0	30.1	0.0	30.3	31.0	0.0	0.0
Prop In Lane	0.44		0.25	0.11		0.54	0.02		0.01	0.06		0.14
Lane Grp Cap(c), veh/h	392	0	0	400	0	0	1236	0	1101	1033	0	0
V/C Ratio(X)	0.81	0.00	0.00	0.14	0.00	0.00	0.64	0.00	0.66	0.31	0.00	0.00
Avail Cap(c_a), veh/h	449	0	0	460	0	0	1236	0	1101	1033	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	43.6	0.0	0.0	36.1	0.0	0.0	11.1	0.0	11.1	7.6	0.0	0.0
Incr Delay (d2), s/veh	9.7	0.0	0.0	0.2	0.0	0.0	2.6	0.0	3.1	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.0	0.0	1.3	0.0	0.0	10.5	0.0	9.8	2.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.3	0.0	0.0	36.3	0.0	0.0	13.7	0.0	14.3	8.4	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	B	A	B	A	A	A
Approach Vol, veh/h		318			56			1524			323	
Approach Delay, s/veh		53.3			36.3			14.0			8.4	
Approach LOS		D			D			B			A	

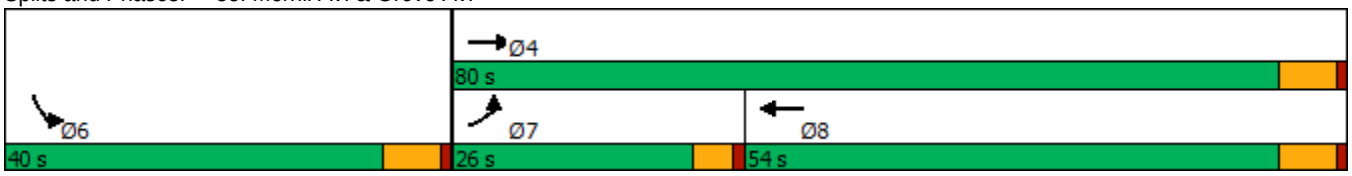
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		84.0		31.6		84.0		31.6				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		77.8		30.2		77.8		30.2				
Max Q Clear Time (g_c+I1), s		32.3		25.1		33.0		5.2				
Green Ext Time (p_c), s		13.4		0.8		2.2		0.2				

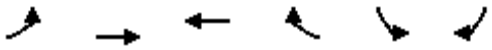
Intersection Summary												
HCM 6th Ctrl Delay			19.4									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	187	530	341	209
Future Volume (vph)	187	530	341	209
Turn Type	Prot	NA	NA	Prot
Protected Phases	7	4	8	6
Permitted Phases				
Detector Phase	7	4	8	6
Switch Phase				
Minimum Initial (s)	5.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	28.2
Total Split (s)	26.0	80.0	54.0	40.0
Total Split (%)	21.7%	66.7%	45.0%	33.3%
Yellow Time (s)	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	6.2
Lead/Lag	Lead		Lag	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	Max	Max	None
Act Effct Green (s)	17.0	74.0	52.4	26.0
Actuated g/C Ratio	0.15	0.66	0.47	0.23
v/c Ratio	0.80	0.47	0.70	0.85
Control Delay	69.9	12.0	30.8	59.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	69.9	12.0	30.8	59.1
LOS	E	B	C	E
Approach Delay		27.1	30.8	59.1
Approach LOS		C	C	E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.4	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 34.7	Intersection LOS: C
Intersection Capacity Utilization 77.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	187	530	341	207	209	99
Future Volume (veh/h)	187	530	341	207	209	99
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	195	552	355	216	218	103
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	222	1193	508	309	238	112
Arrive On Green	0.14	0.66	0.48	0.48	0.23	0.23
Sat Flow, veh/h	1619	1800	1048	638	1055	498
Grp Volume(v), veh/h	195	552	0	571	322	0
Grp Sat Flow(s),veh/h/ln	1619	1800	0	1685	1558	0
Q Serve(g_s), s	13.2	16.6	0.0	29.4	22.5	0.0
Cycle Q Clear(g_c), s	13.2	16.6	0.0	29.4	22.5	0.0
Prop In Lane	1.00			0.38	0.68	0.32
Lane Grp Cap(c), veh/h	222	1193	0	817	352	0
V/C Ratio(X)	0.88	0.46	0.00	0.70	0.92	0.00
Avail Cap(c_a), veh/h	311	1193	0	817	473	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.1	9.1	0.0	22.4	42.1	0.0
Incr Delay (d2), s/veh	14.6	1.3	0.0	4.9	18.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	5.7	0.0	11.6	10.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	61.7	10.4	0.0	27.3	60.7	0.0
LnGrp LOS	E	B	A	C	E	A
Approach Vol, veh/h		747	571		322	
Approach Delay, s/veh		23.8	27.3		60.7	
Approach LOS		C	C		E	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	80.0	31.3	19.8	60.2
Change Period (Y+Rc), s	6.2	6.2	4.6	6.2
Max Green Setting (Gmax), s	73.8	33.8	21.4	47.8
Max Q Clear Time (g_c+I1), s	18.6	24.5	15.2	31.4
Green Ext Time (p_c), s	3.4	0.7	0.1	3.1

Intersection Summary	
HCM 6th Ctrl Delay	32.3
HCM 6th LOS	C

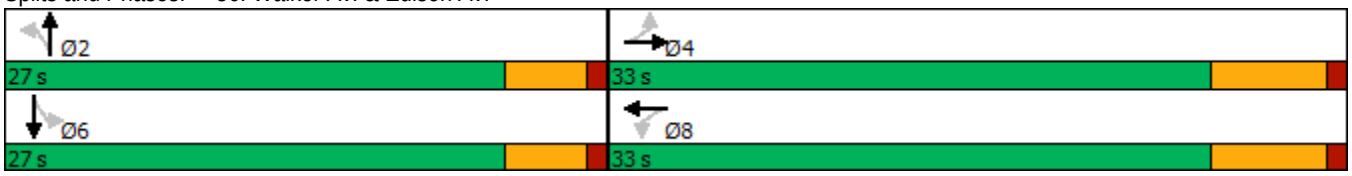
Notes

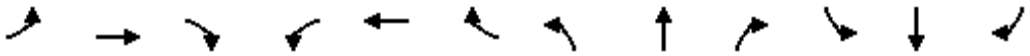
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	21	715	15	380	3	21	67	14
Future Volume (vph)	21	715	15	380	3	21	67	14
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	26.7	26.7	26.7	26.7
Total Split (s)	33.0	33.0	33.0	33.0	27.0	27.0	27.0	27.0
Total Split (%)	55.0%	55.0%	55.0%	55.0%	45.0%	45.0%	45.0%	45.0%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		4.7		4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		35.9		35.9		12.1		12.1
Actuated g/C Ratio		0.72		0.72		0.24		0.24
v/c Ratio		0.61		0.36		0.18		0.30
Control Delay		13.5		7.9		8.0		16.3
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		13.5		7.9		8.0		16.3
LOS		B		A		A		B
Approach Delay		13.5		7.9		8.0		16.3
Approach LOS		B		A		A		B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 50.2	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 11.6	Intersection LOS: B
Intersection Capacity Utilization 69.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	715	1	15	380	31	3	21	51	67	14	10
Future Volume (veh/h)	21	715	1	15	380	31	3	21	51	67	14	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	22	753	1	16	400	33	3	22	54	71	15	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	91	1011	1	92	916	74	84	93	210	323	65	33
Arrive On Green	0.57	0.57	0.57	0.57	0.57	0.57	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	20	1761	2	21	1596	128	20	486	1092	986	335	169
Grp Volume(v), veh/h	776	0	0	449	0	0	79	0	0	97	0	0
Grp Sat Flow(s),veh/h/ln	1783	0	0	1746	0	0	1598	0	0	1490	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Cycle Q Clear(g_c), s	15.1	0.0	0.0	6.7	0.0	0.0	2.0	0.0	0.0	2.3	0.0	0.0
Prop In Lane	0.03		0.00	0.04		0.07	0.04		0.68	0.73		0.11
Lane Grp Cap(c), veh/h	1103	0	0	1082	0	0	387	0	0	420	0	0
V/C Ratio(X)	0.70	0.00	0.00	0.41	0.00	0.00	0.20	0.00	0.00	0.23	0.00	0.00
Avail Cap(c_a), veh/h	1103	0	0	1082	0	0	841	0	0	825	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.4	0.0	0.0	5.7	0.0	0.0	16.0	0.0	0.0	16.1	0.0	0.0
Incr Delay (d2), s/veh	3.8	0.0	0.0	1.2	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	0.0	1.4	0.0	0.0	0.7	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.2	0.0	0.0	6.8	0.0	0.0	16.3	0.0	0.0	16.4	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		776			449			79			97	
Approach Delay, s/veh		11.2			6.8			16.3			16.4	
Approach LOS		B			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.7		33.0		13.7		33.0				
Change Period (Y+Rc), s		* 4.7		6.2		* 4.7		6.2				
Max Green Setting (Gmax), s		* 22		26.8		* 22		26.8				
Max Q Clear Time (g_c+I1), s		4.0		17.1		4.3		8.7				
Green Ext Time (p_c), s		0.3		3.4		0.4		2.3				

Intersection Summary												
HCM 6th Ctrl Delay			10.5									
HCM 6th LOS			B									

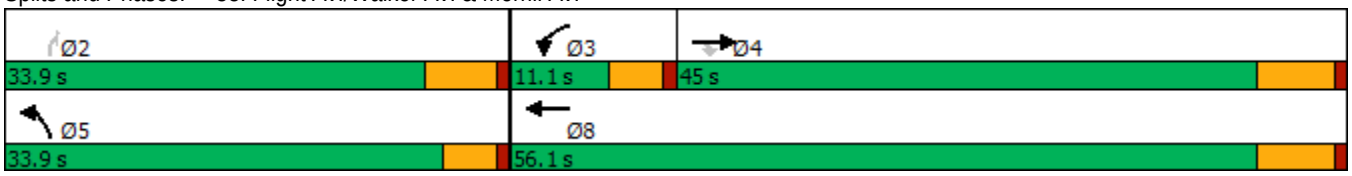
Notes

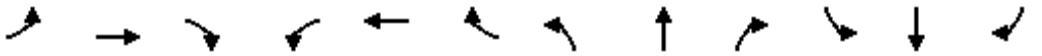
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	623	117	89	439	94	129
Future Volume (vph)	623	117	89	439	94	129
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	5	
Permitted Phases		4				2
Detector Phase	4	4	3	8	5	2
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	23.2	23.2	9.6	23.2	9.6	32.8
Total Split (s)	45.0	45.0	11.1	56.1	33.9	33.9
Total Split (%)	50.0%	50.0%	12.3%	62.3%	37.7%	37.7%
Yellow Time (s)	5.2	5.2	3.6	5.2	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	4.6	6.2	4.6	5.8
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	Min
Act Effct Green (s)	31.1	31.1	6.7	42.5	12.6	12.9
Actuated g/C Ratio	0.46	0.46	0.10	0.63	0.19	0.19
v/c Ratio	0.83	0.17	0.62	0.43	0.34	0.35
Control Delay	27.3	5.5	52.6	8.6	27.4	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.3	5.5	52.6	8.6	27.4	7.4
LOS	C	A	D	A	C	A
Approach Delay	23.8			16.1		
Approach LOS	C			B		

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 67.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 19.9	Intersection LOS: B
Intersection Capacity Utilization 58.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 38: Flight Av./Walker Av. & Merrill Av.



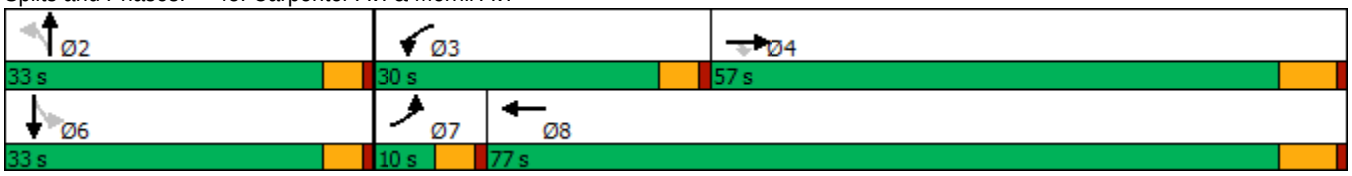


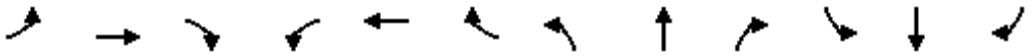
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	623	117	89	439	0	94	0	129	0	0	0
Future Volume (veh/h)	0	623	117	89	439	0	94	0	129	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1800	1800	1700	1800	0	1700	0	1800			
Adj Flow Rate, veh/h	0	685	129	98	482	0	103	0	142			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.25	0.91	0.91	0.91			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	0	839	711	124	1151	0	215	0	203			
Arrive On Green	0.00	0.47	0.47	0.08	0.64	0.00	0.13	0.00	0.13			
Sat Flow, veh/h	0	1800	1525	1619	1800	0	1619	0	1525			
Grp Volume(v), veh/h	0	685	129	98	482	0	103	0	142			
Grp Sat Flow(s),veh/h/ln	0	1800	1525	1619	1800	0	1619	0	1525			
Q Serve(g_s), s	0.0	15.6	2.3	2.8	6.3	0.0	2.8	0.0	4.2			
Cycle Q Clear(g_c), s	0.0	15.6	2.3	2.8	6.3	0.0	2.8	0.0	4.2			
Prop In Lane	0.00		1.00	1.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	839	711	124	1151	0	215	0	203			
V/C Ratio(X)	0.00	0.82	0.18	0.79	0.42	0.00	0.48	0.00	0.70			
Avail Cap(c_a), veh/h	0	1473	1248	222	1894	0	1000	0	942			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	10.9	7.4	21.5	4.2	0.0	19.0	0.0	19.7			
Incr Delay (d2), s/veh	0.0	2.0	0.1	4.2	0.2	0.0	0.6	0.0	1.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	4.1	0.5	1.0	0.7	0.0	0.9	0.0	1.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.9	7.5	25.8	4.5	0.0	19.7	0.0	21.3			
LnGrp LOS	A	B	A	C	A	A	B	A	C			
Approach Vol, veh/h		814			580			245				
Approach Delay, s/veh		12.1			8.1			20.6				
Approach LOS		B			A			C				
Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		10.9	8.2	28.3				36.5				
Change Period (Y+Rc), s		4.6	4.6	6.2				6.2				
Max Green Setting (Gmax), s		29.3	6.5	38.8				49.9				
Max Q Clear Time (g_c+I1), s		6.2	4.8	17.6				8.3				
Green Ext Time (p_c), s		0.3	0.0	4.5				2.8				
Intersection Summary												
HCM 6th Ctrl Delay			11.9									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	4	777	23	35	456	41	4	55	5
Future Volume (vph)	4	777	23	35	456	41	4	55	5
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	26.6	26.6
Total Split (s)	10.0	57.0	57.0	30.0	77.0	33.0	33.0	33.0	33.0
Total Split (%)	8.3%	47.5%	47.5%	25.0%	64.2%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2		4.6		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.1	67.4	67.4	6.9	73.1		13.1		13.1
Actuated g/C Ratio	0.05	0.68	0.68	0.07	0.74		0.13		0.13
v/c Ratio	0.05	0.70	0.02	0.33	0.39		0.65		0.75
Control Delay	48.8	16.3	0.0	52.2	6.9		28.6		83.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	48.8	16.3	0.0	52.2	6.9		28.6		83.3
LOS	D	B	A	D	A		C		F
Approach Delay		16.0			10.1		28.6		83.3
Approach LOS		B			B		C		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 98.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 18.2	Intersection LOS: B
Intersection Capacity Utilization 62.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 45: Carpenter Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	777	23	35	456	7	41	4	126	55	5	2
Future Volume (veh/h)	4	777	23	35	456	7	41	4	126	55	5	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	4	863	26	39	507	8	46	4	140	61	6	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	9	1211	1026	56	1238	20	87	17	168	180	16	4
Arrive On Green	0.01	0.67	0.67	0.03	0.70	0.70	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1714	1800	1525	1714	1767	28	303	120	1186	794	110	27
Grp Volume(v), veh/h	4	863	26	39	0	515	190	0	0	69	0	0
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	0	1795	1609	0	0	931	0	0
Q Serve(g_s), s	0.2	30.5	0.6	2.3	0.0	12.2	3.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	30.5	0.6	2.3	0.0	12.2	11.4	0.0	0.0	7.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.24		0.74	0.88		0.03
Lane Grp Cap(c), veh/h	9	1211	1026	56	0	1257	273	0	0	199	0	0
V/C Ratio(X)	0.44	0.71	0.03	0.69	0.00	0.41	0.70	0.00	0.00	0.35	0.00	0.00
Avail Cap(c_a), veh/h	92	1211	1026	431	0	1257	482	0	0	381	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	50.1	10.4	5.5	48.4	0.0	6.4	42.0	0.0	0.0	40.4	0.0	0.0
Incr Delay (d2), s/veh	12.2	3.6	0.0	5.5	0.0	1.0	3.2	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	10.2	0.2	1.0	0.0	3.7	4.8	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.3	14.0	5.6	53.9	0.0	7.4	45.2	0.0	0.0	41.4	0.0	0.0
LnGrp LOS	E	B	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		893			554			190			69	
Approach Delay, s/veh		14.0			10.6			45.2			41.4	
Approach LOS		B			B			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		19.0	7.9	74.2		19.0	5.1	77.0				
Change Period (Y+Rc), s		4.6	4.6	6.2		4.6	4.6	6.2				
Max Green Setting (Gmax), s		28.4	25.4	50.8		28.4	5.4	70.8				
Max Q Clear Time (g_c+I1), s		13.4	4.3	32.5		9.7	2.2	14.2				
Green Ext Time (p_c), s		1.0	0.0	5.5		0.3	0.0	3.1				

Intersection Summary												
HCM 6th Ctrl Delay			17.5									
HCM 6th LOS			B									

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	402	262	564	393	606	922
Future Volume (vph)	402	262	564	393	606	922
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	39.0	30.0	51.0	39.0	30.0	81.0
Total Split (%)	32.5%	25.0%	42.5%	32.5%	25.0%	67.5%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 102.3
Natural Cycle: 105
Control Type: Actuated-Uncoordinated

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	402	262	564	393	606	922
Future Volume (veh/h)	402	262	564	393	606	922
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1976	1976
Adj Flow Rate, veh/h	410	217	576	380	618	941
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	451	1284	695	978	744	1240
Arrive On Green	0.25	0.25	0.37	0.37	0.20	0.63
Sat Flow, veh/h	1810	2834	1900	1576	3651	1976
Grp Volume(v), veh/h	410	217	576	380	618	941
Grp Sat Flow(s),veh/h/ln	1810	1417	1900	1576	1825	1976
Q Serve(g_s), s	18.9	3.9	23.8	10.5	14.0	29.2
Cycle Q Clear(g_c), s	18.9	3.9	23.8	10.5	14.0	29.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	451	1284	695	978	744	1240
V/C Ratio(X)	0.91	0.17	0.83	0.39	0.83	0.76
Avail Cap(c_a), veh/h	708	1686	1008	1238	1060	1744
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	13.9	24.9	8.4	32.9	11.4
Incr Delay (d2), s/veh	7.5	0.0	4.4	0.3	3.9	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	1.1	10.2	5.8	6.0	9.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	38.9	14.0	29.2	8.7	36.8	12.1
LnGrp LOS	D	B	C	A	D	B
Approach Vol, veh/h	627		956			1559
Approach Delay, s/veh	30.3		21.1			21.9
Approach LOS	C		C			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	22.5	36.8			59.3	26.8
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	25.0	45.7			* 76	33.7
Max Q Clear Time (g_c+I1), s	16.0	25.8			31.2	20.9
Green Ext Time (p_c), s	1.6	5.7			4.1	0.6

Intersection Summary	
HCM 6th Ctrl Delay	23.3
HCM 6th LOS	C

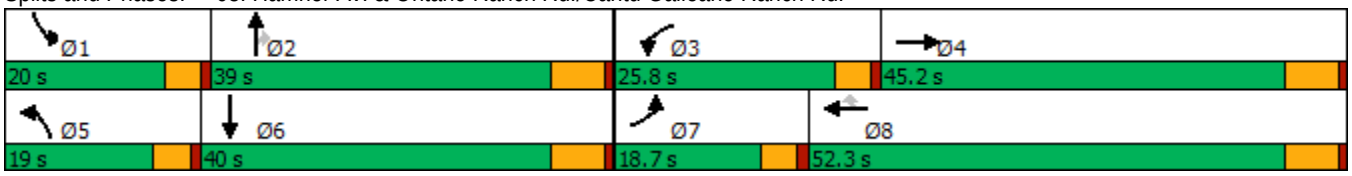
Notes

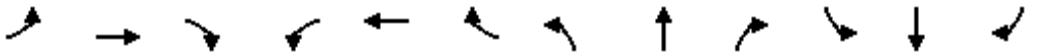
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	94	834	615	468	114	206	397	247	478	841
Future Volume (vph)	94	834	615	468	114	206	397	247	478	841
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	38.2	38.2	9.6	38.2
Total Split (s)	18.7	45.2	25.8	52.3	52.3	19.0	39.0	39.0	20.0	40.0
Total Split (%)	14.4%	34.8%	19.8%	40.2%	40.2%	14.6%	30.0%	30.0%	15.4%	30.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	8.3	29.5	21.5	42.6	42.6	12.1	25.9	25.9	15.6	29.4
Actuated g/C Ratio	0.07	0.26	0.19	0.37	0.37	0.11	0.23	0.23	0.14	0.26
v/c Ratio	0.46	0.73	1.16	0.38	0.18	0.69	0.37	0.48	1.24	0.79
Control Delay	60.4	39.8	132.4	28.3	5.5	63.0	38.3	7.6	168.9	44.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.4	39.8	132.4	28.3	5.5	63.0	38.3	7.6	168.9	44.8
LOS	E	D	F	C	A	E	D	A	F	D
Approach Delay		41.4		79.6			35.4			86.2
Approach LOS		D		E			D			F

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 114.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.24	
Intersection Signal Delay: 63.7	Intersection LOS: E
Intersection Capacity Utilization 83.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	834	279	615	468	114	206	397	247	478	841	114
Future Volume (veh/h)	94	834	279	615	468	114	206	397	247	478	841	114
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	98	869	182	641	488	85	215	414	178	498	876	64
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	147	1240	254	622	1367	610	273	900	279	452	1138	83
Arrive On Green	0.05	0.24	0.24	0.21	0.40	0.40	0.09	0.18	0.18	0.15	0.24	0.24
Sat Flow, veh/h	2956	5188	1065	2956	3420	1525	2956	4914	1523	2956	4674	340
Grp Volume(v), veh/h	98	776	275	641	488	85	215	414	178	498	613	327
Grp Sat Flow(s),veh/h/ln	1478	1548	1608	1478	1710	1525	1478	1638	1523	1478	1638	1738
Q Serve(g_s), s	3.3	15.4	15.8	21.2	10.1	3.6	7.2	7.6	10.9	15.4	17.5	17.6
Cycle Q Clear(g_c), s	3.3	15.4	15.8	21.2	10.1	3.6	7.2	7.6	10.9	15.4	17.5	17.6
Prop In Lane	1.00		0.66	1.00		1.00	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	147	1110	384	622	1367	610	273	900	279	452	798	423
V/C Ratio(X)	0.67	0.70	0.72	1.03	0.36	0.14	0.79	0.46	0.64	1.10	0.77	0.77
Avail Cap(c_a), veh/h	414	1798	623	622	1566	698	423	1600	496	452	1100	583
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.0	35.0	35.2	39.8	21.2	19.2	44.7	36.7	38.1	42.7	35.5	35.5
Incr Delay (d2), s/veh	1.9	0.8	2.5	44.0	0.2	0.1	2.3	0.4	2.4	72.8	2.2	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	5.4	6.0	11.0	3.7	1.2	2.6	2.9	4.0	9.9	6.8	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.0	35.8	37.7	83.7	21.3	19.3	47.0	37.1	40.5	115.5	37.7	39.8
LnGrp LOS	D	D	D	F	C	B	D	D	D	F	D	D
Approach Vol, veh/h		1149			1214			807			1438	
Approach Delay, s/veh		37.4			54.1			40.5			65.1	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	24.6	25.8	30.3	13.9	30.7	9.6	46.5
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	15.4	32.8	21.2	39.0	14.4	33.8	14.1	46.1
Max Q Clear Time (g_c+I1), s	17.4	12.9	23.2	17.8	9.2	19.6	5.3	12.1
Green Ext Time (p_c), s	0.0	2.9	0.0	6.3	0.2	4.7	0.1	3.3

Intersection Summary	
HCM 6th Ctrl Delay	51.0
HCM 6th LOS	D

APPENDIX 6.10:

OPENING YEAR CUMULATIVE (2022) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

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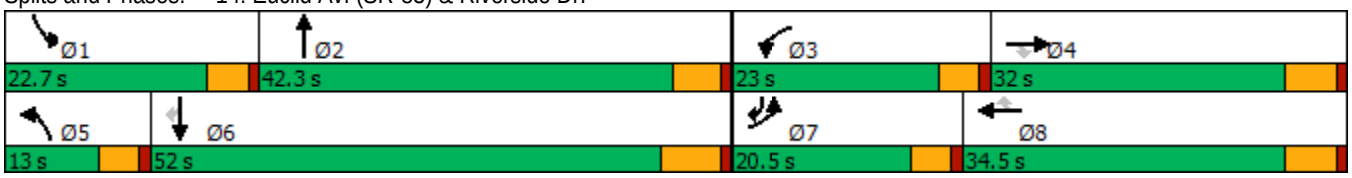
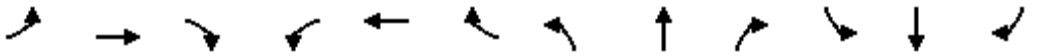
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	162	330	65	200	517	122	75	1035	184	1146	161
Future Volume (vph)	162	330	65	200	517	122	75	1035	184	1146	161
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2	1	6	7
Permitted Phases			4			8					6
Detector Phase	7	4	4	3	8	8	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	9.6	34.5	9.6
Total Split (s)	20.5	32.0	32.0	23.0	34.5	34.5	13.0	42.3	22.7	52.0	20.5
Total Split (%)	17.1%	26.7%	26.7%	19.2%	28.8%	28.8%	10.8%	35.3%	18.9%	43.3%	17.1%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	Max	None
Act Effct Green (s)	14.7	24.9	24.9	17.3	27.5	27.5	7.9	38.2	16.5	45.6	62.2
Actuated g/C Ratio	0.13	0.21	0.21	0.15	0.23	0.23	0.07	0.33	0.14	0.39	0.53
v/c Ratio	0.85	0.91	0.15	0.89	0.68	0.27	0.72	0.80	0.86	0.63	0.20
Control Delay	84.8	73.8	0.7	84.9	45.9	4.4	89.5	40.7	82.2	31.4	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.8	73.8	0.7	84.9	45.9	4.4	89.5	40.7	82.2	31.4	6.0
LOS	F	E	A	F	D	A	F	D	F	C	A
Approach Delay		68.5			49.2			43.6		34.9	
Approach LOS		E			D			D		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 45.0	Intersection LOS: D
Intersection Capacity Utilization 84.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	330	65	200	517	122	75	1035	166	184	1146	161
Future Volume (veh/h)	162	330	65	200	517	122	75	1035	166	184	1146	161
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	171	347	52	211	544	99	79	1089	135	194	1206	110
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	196	379	321	236	804	359	98	1423	176	219	1947	789
Arrive On Green	0.12	0.21	0.21	0.15	0.24	0.24	0.06	0.32	0.32	0.14	0.40	0.40
Sat Flow, veh/h	1619	1800	1525	1619	3420	1525	1619	4429	548	1619	4914	1524
Grp Volume(v), veh/h	171	347	52	211	544	99	79	805	419	194	1206	110
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	1525	1619	1638	1701	1619	1638	1524
Q Serve(g_s), s	11.9	21.7	3.2	14.7	16.6	6.1	5.5	25.4	25.5	13.5	22.6	4.3
Cycle Q Clear(g_c), s	11.9	21.7	3.2	14.7	16.6	6.1	5.5	25.4	25.5	13.5	22.6	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	196	379	321	236	804	359	98	1052	547	219	1947	789
V/C Ratio(X)	0.87	0.92	0.16	0.89	0.68	0.28	0.81	0.77	0.77	0.88	0.62	0.14
Avail Cap(c_a), veh/h	224	411	348	259	855	381	118	1052	547	255	1947	789
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.6	44.4	37.1	48.2	40.0	35.9	53.3	35.1	35.1	48.8	27.7	14.4
Incr Delay (d2), s/veh	24.8	24.0	0.2	27.1	2.0	0.4	23.6	5.3	9.9	24.1	1.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	11.8	1.2	7.5	7.0	2.2	2.8	10.2	11.3	6.8	8.8	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.4	68.4	37.3	75.3	41.9	36.3	76.9	40.4	45.0	72.9	29.2	14.8
LnGrp LOS	E	E	D	E	D	D	E	D	D	E	C	B
Approach Vol, veh/h		570			854			1303			1510	
Approach Delay, s/veh		67.3			49.5			44.1			33.8	
Approach LOS		E			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.2	43.4	21.3	30.0	11.5	52.0	18.5	32.8
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	18.1	* 37	18.4	26.2	8.4	45.5	15.9	28.7
Max Q Clear Time (g_c+I1), s	15.5	27.5	16.7	23.7	7.5	24.6	13.9	18.6
Green Ext Time (p_c), s	0.1	4.7	0.1	0.5	0.0	8.8	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	44.6
HCM 6th LOS	D

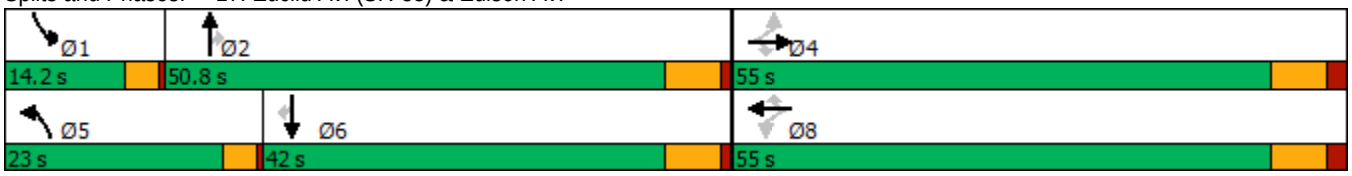
Notes

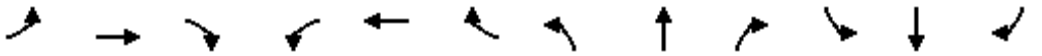
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	165	269	141	36	447	68	236	1005	40	71	1020	177
Future Volume (vph)	165	269	141	36	447	68	236	1005	40	71	1020	177
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	55.0	55.0	55.0	55.0	55.0	55.0	23.0	50.8	50.8	14.2	42.0	42.0
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	19.2%	42.3%	42.3%	11.8%	35.0%	35.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	40.3	40.3	40.3	40.3	40.3	40.3	18.9	48.6	48.6	8.7	36.4	36.4
Actuated g/C Ratio	0.36	0.36	0.36	0.36	0.36	0.36	0.17	0.43	0.43	0.08	0.32	0.32
v/c Ratio	1.05	0.43	0.23	0.13	0.72	0.12	0.91	0.71	0.06	0.59	0.96	0.32
Control Delay	119.5	29.0	4.6	24.3	37.7	3.2	83.4	32.3	2.4	71.4	57.8	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	119.5	29.0	4.6	24.3	37.7	3.2	83.4	32.3	2.4	71.4	57.8	12.8
LOS	F	C	A	C	D	A	F	C	A	E	E	B
Approach Delay		49.0			32.6			40.7			52.3	
Approach LOS		D			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.2	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 44.8	Intersection LOS: D
Intersection Capacity Utilization 99.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	269	141	36	447	68	236	1005	40	71	1020	177
Future Volume (veh/h)	165	269	141	36	447	68	236	1005	40	71	1020	177
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	172	280	92	38	466	66	246	1047	34	74	1062	133
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	219	720	610	341	720	610	263	1388	619	92	1026	447
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.16	0.41	0.41	0.06	0.30	0.30
Sat Flow, veh/h	836	1800	1524	969	1800	1524	1619	3420	1525	1619	3420	1489
Grp Volume(v), veh/h	172	280	92	38	466	66	246	1047	34	74	1062	133
Grp Sat Flow(s),veh/h/ln	836	1800	1524	969	1800	1524	1619	1710	1525	1619	1710	1489
Q Serve(g_s), s	22.8	13.3	4.6	3.5	25.2	3.3	18.0	31.5	1.6	5.4	36.0	8.2
Cycle Q Clear(g_c), s	48.0	13.3	4.6	16.7	25.2	3.3	18.0	31.5	1.6	5.4	36.0	8.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	219	720	610	341	720	610	263	1388	619	92	1026	447
V/C Ratio(X)	0.78	0.39	0.15	0.11	0.65	0.11	0.94	0.75	0.05	0.81	1.04	0.30
Avail Cap(c_a), veh/h	219	720	610	341	720	610	263	1388	619	144	1026	447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.4	25.6	23.0	31.5	29.1	22.6	49.6	30.5	21.7	55.9	42.0	32.3
Incr Delay (d2), s/veh	16.9	0.3	0.1	0.1	2.0	0.1	37.8	2.4	0.0	7.7	37.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	5.5	1.6	0.8	10.7	1.1	9.7	12.4	0.6	2.3	19.5	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.3	25.9	23.1	31.7	31.2	22.7	87.4	32.9	21.7	63.7	79.6	32.7
LnGrp LOS	E	C	C	C	C	C	F	C	C	E	F	C
Approach Vol, veh/h		544			570			1327			1269	
Approach Delay, s/veh		38.2			30.2			42.7			73.7	
Approach LOS		D			C			D			E	

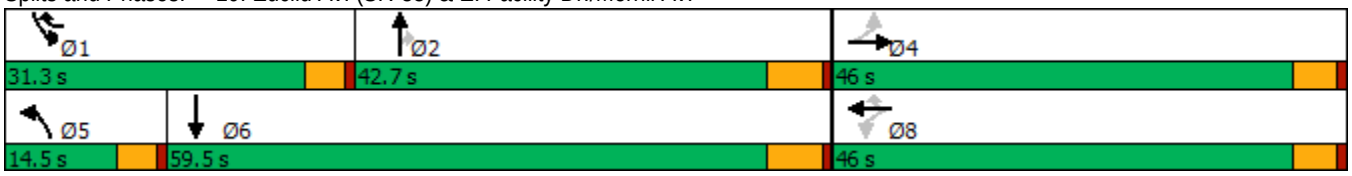
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.3	54.7		55.0	23.0	42.0		55.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	10.7	44.8		48.0	19.5	36.0		48.0				
Max Q Clear Time (g_c+I1), s	7.4	33.5		50.0	20.0	38.0		27.2				
Green Ext Time (p_c), s	0.0	4.9		0.0	0.0	0.0		3.0				

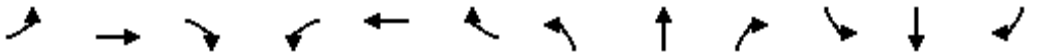
Intersection Summary												
HCM 6th Ctrl Delay			50.7									
HCM 6th LOS			D									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	4	8	258	50	367	11	1041	212	234	1108
Future Volume (vph)	4	8	258	50	367	11	1041	212	234	1108
Turn Type	Perm	NA	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	1	5	2		1	6
Permitted Phases	4		8		8			2		
Detector Phase	4	4	8	8	1	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	31.3	14.5	42.7	42.7	31.3	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	26.1%	12.1%	35.6%	35.6%	26.1%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	4.5	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		20.5	20.5	20.5	43.1	10.2	37.6	37.6	17.5	57.4
Actuated g/C Ratio		0.22	0.22	0.22	0.47	0.11	0.41	0.41	0.19	0.63
v/c Ratio		0.08	0.59	0.54	0.51	0.06	0.76	0.32	0.78	0.55
Control Delay		16.4	41.5	38.6	17.3	44.5	30.1	13.9	54.3	13.9
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		16.4	41.5	38.6	17.3	44.5	30.1	13.9	54.3	13.9
LOS		B	D	D	B	D	C	B	D	B
Approach Delay		16.4		27.7			27.5			20.7
Approach LOS		B		C			C			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 91.4	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 24.6	Intersection LOS: C
Intersection Capacity Utilization 73.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	8	18	258	50	367	11	1041	212	234	1108	41
Future Volume (veh/h)	4	8	18	258	50	367	11	1041	212	234	1108	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	4	8	18	303	0	351	11	1073	176	241	1142	28
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	76	120	210	799	0	606	44	1336	596	282	1832	45
Arrive On Green	0.22	0.22	0.22	0.22	0.00	0.22	0.03	0.39	0.39	0.17	0.54	0.54
Sat Flow, veh/h	90	537	940	2657	0	1525	1619	3420	1525	1619	3409	84
Grp Volume(v), veh/h	30	0	0	303	0	351	11	1073	176	241	573	597
Grp Sat Flow(s),veh/h/ln	1566	0	0	1328	0	1525	1619	1710	1525	1619	1710	1783
Q Serve(g_s), s	0.0	0.0	0.0	6.0	0.0	13.2	0.5	20.4	5.8	10.6	17.0	17.0
Cycle Q Clear(g_c), s	1.1	0.0	0.0	7.0	0.0	13.2	0.5	20.4	5.8	10.6	17.0	17.0
Prop In Lane	0.13		0.60	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	405	0	0	799	0	606	44	1336	596	282	919	958
V/C Ratio(X)	0.07	0.00	0.00	0.38	0.00	0.58	0.25	0.80	0.30	0.86	0.62	0.62
Avail Cap(c_a), veh/h	910	0	0	1696	0	1121	221	1717	766	594	1252	1305
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.5	0.0	0.0	24.7	0.0	17.2	34.8	19.8	15.3	29.3	11.8	11.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	0.3	1.1	2.2	0.3	2.9	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	2.0	0.0	3.9	0.2	7.0	1.7	3.8	4.8	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.5	0.0	0.0	24.8	0.0	17.6	35.9	22.0	15.6	32.2	12.5	12.4
LnGrp LOS	C	A	A	C	A	B	D	C	B	C	B	B
Approach Vol, veh/h		30			654			1260			1411	
Approach Delay, s/veh		22.5			20.9			21.2			15.8	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.2	34.6		21.3	6.5	45.3		21.3				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	26.8	36.7		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	12.6	22.4		3.1	2.5	19.0		15.2				
Green Ext Time (p_c), s	0.3	6.2		0.1	0.0	7.8		1.1				

Intersection Summary			
HCM 6th Ctrl Delay		18.9	
HCM 6th LOS		B	

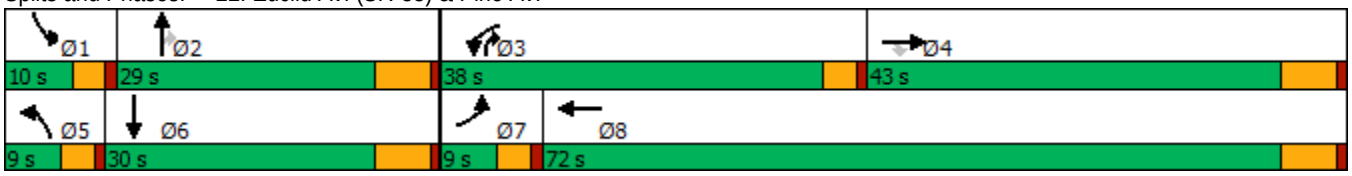
Notes

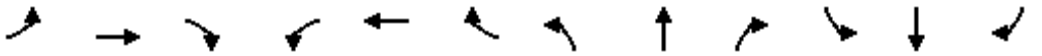
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	8	186	50	1077	332	57	744	705	52	697
Future Volume (vph)	8	186	50	1077	332	57	744	705	52	697
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	38.0	72.0	9.0	29.0	38.0	10.0	30.0
Total Split (%)	7.5%	35.8%	35.8%	31.7%	60.0%	7.5%	24.2%	31.7%	8.3%	25.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.1	18.8	18.8	34.5	55.9	5.1	21.1	57.6	5.9	19.7
Actuated g/C Ratio	0.05	0.19	0.19	0.35	0.57	0.05	0.21	0.59	0.06	0.20
v/c Ratio	0.10	0.56	0.13	1.07	0.42	0.71	0.73	0.39	0.56	0.75
Control Delay	53.4	42.3	0.7	82.9	13.9	91.9	42.2	1.6	71.6	42.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.4	42.3	0.7	82.9	13.9	91.9	42.2	1.6	71.6	42.9
LOS	D	D	A	F	B	F	D	A	E	D
Approach Delay		34.1			64.1		25.1			44.9
Approach LOS		C			E		C			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 98.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 43.9	Intersection LOS: D
Intersection Capacity Utilization 82.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	186	50	1077	332	72	57	744	705	52	697	17
Future Volume (veh/h)	8	186	50	1077	332	72	57	744	705	52	697	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	8	192	0	1110	342	72	59	767	471	54	719	14
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	16	254		1145	747	157	73	994	1571	67	988	19
Arrive On Green	0.01	0.14	0.00	0.39	0.52	0.52	0.04	0.20	0.20	0.04	0.20	0.20
Sat Flow, veh/h	1619	1800	1525	2956	1442	304	1619	4914	2626	1619	4962	96
Grp Volume(v), veh/h	8	192	0	1110	0	414	59	767	471	54	474	259
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1745	1619	1638	1313	1619	1638	1783
Q Serve(g_s), s	0.4	9.0	0.0	32.3	0.0	13.2	3.2	13.0	7.9	2.9	11.9	11.9
Cycle Q Clear(g_c), s	0.4	9.0	0.0	32.3	0.0	13.2	3.2	13.0	7.9	2.9	11.9	11.9
Prop In Lane	1.00		1.00	1.00		0.17	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	16	254		1145	0	904	73	994	1571	67	652	355
V/C Ratio(X)	0.49	0.76		0.97	0.00	0.46	0.81	0.77	0.30	0.80	0.73	0.73
Avail Cap(c_a), veh/h	92	759		1145	0	1312	92	1287	1728	111	896	487
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	36.3	0.0	26.4	0.0	13.4	41.6	33.1	9.0	41.7	32.9	32.9
Incr Delay (d2), s/veh	8.2	6.4	0.0	19.5	0.0	0.5	27.2	1.5	0.0	7.9	1.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.2	0.0	13.0	0.0	4.5	1.7	4.8	1.8	1.2	4.4	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.4	42.7	0.0	45.9	0.0	13.9	68.7	34.6	9.0	49.6	33.9	34.8
LnGrp LOS	D	D		D	A	B	E	C	A	D	C	C
Approach Vol, veh/h		200	A		1524			1297			787	
Approach Delay, s/veh		43.1			37.2			26.9			35.3	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	23.8	38.0	18.4	7.9	23.5	4.9	51.5
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	6.0	23.0	34.0	37.0	5.0	24.0	5.0	66.0
Max Q Clear Time (g_c+I1), s	4.9	15.0	34.3	11.0	5.2	13.9	2.4	15.2
Green Ext Time (p_c), s	0.0	2.8	0.0	1.4	0.0	1.9	0.0	3.8

Intersection Summary	
HCM 6th Ctrl Delay	33.6
HCM 6th LOS	C

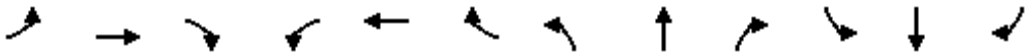
Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	34	213	139	525	26	210	61	230
Future Volume (vph)	34	213	139	525	26	210	61	230
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Total Split (s)	59.0	59.0	59.0	59.0	31.0	31.0	31.0	31.0
Total Split (%)	65.6%	65.6%	65.6%	65.6%	34.4%	34.4%	34.4%	34.4%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		52.8		52.8		23.9		23.9
Actuated g/C Ratio		0.59		0.59		0.27		0.27
v/c Ratio		0.33		0.84		0.70		0.94
Control Delay		10.2		25.5		37.9		67.3
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		10.2		25.5		37.9		67.3
LOS		B		C		D		E
Approach Delay		10.2		25.5		37.9		67.3
Approach LOS		B		C		D		E

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 89.1	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 33.6	Intersection LOS: C
Intersection Capacity Utilization 102.0%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	213	28	139	525	32	26	210	46	61	230	29
Future Volume (veh/h)	34	213	28	139	525	32	26	210	46	61	230	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	37	234	31	153	577	35	29	231	51	67	253	32
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	128	770	97	224	764	45	67	329	69	104	298	35
Arrive On Green	0.61	0.61	0.61	0.61	0.61	0.61	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	135	1271	161	288	1261	74	88	1303	273	219	1183	140
Grp Volume(v), veh/h	302	0	0	765	0	0	311	0	0	352	0	0
Grp Sat Flow(s),veh/h/ln	1567	0	0	1623	0	0	1665	0	0	1542	0	0
Q Serve(g_s), s	0.0	0.0	0.0	22.9	0.0	0.0	0.0	0.0	0.0	4.7	0.0	0.0
Cycle Q Clear(g_c), s	7.1	0.0	0.0	30.0	0.0	0.0	14.7	0.0	0.0	19.4	0.0	0.0
Prop In Lane	0.12		0.10	0.20		0.05	0.09		0.16	0.19		0.09
Lane Grp Cap(c), veh/h	995	0	0	1032	0	0	465	0	0	438	0	0
V/C Ratio(X)	0.30	0.00	0.00	0.74	0.00	0.00	0.67	0.00	0.00	0.80	0.00	0.00
Avail Cap(c_a), veh/h	995	0	0	1032	0	0	518	0	0	489	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.2	0.0	0.0	12.5	0.0	0.0	29.7	0.0	0.0	31.4	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	4.8	0.0	0.0	2.9	0.0	0.0	8.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.0	9.5	0.0	0.0	5.8	0.0	0.0	7.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	0.0	0.0	17.3	0.0	0.0	32.6	0.0	0.0	40.0	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	C	A	A	D	A	A
Approach Vol, veh/h		302			765			311			352	
Approach Delay, s/veh		9.0			17.3			32.6			40.0	
Approach LOS		A			B			C			D	

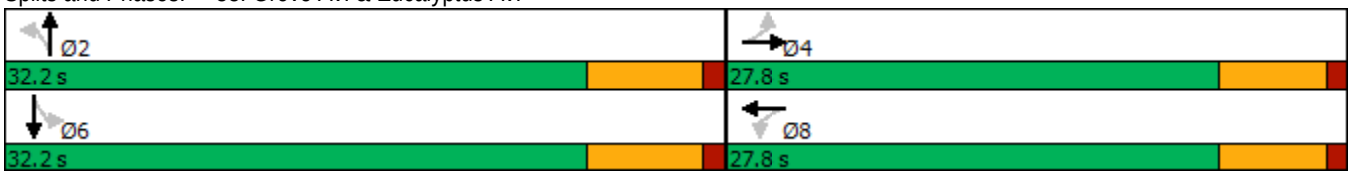
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		28.2		59.0		28.2		59.0				
Change Period (Y+Rc), s		6.2		6.2		6.2		6.2				
Max Green Setting (Gmax), s		24.8		52.8		24.8		52.8				
Max Q Clear Time (g_c+I1), s		16.7		9.1		21.4		32.0				
Green Ext Time (p_c), s		1.0		1.8		0.6		5.1				

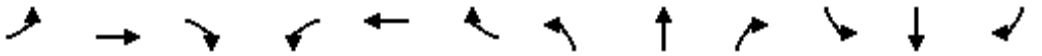
Intersection Summary												
HCM 6th Ctrl Delay			23.2									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	33	34	12	86	64	314	29	305
Future Volume (vph)	33	34	12	86	64	314	29	305
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	27.8	27.8	27.8	27.8	32.2	32.2	32.2	32.2
Total Split (%)	46.3%	46.3%	46.3%	46.3%	53.7%	53.7%	53.7%	53.7%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.8		5.8		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		12.1		12.1		31.7		31.7
Actuated g/C Ratio		0.24		0.24		0.62		0.62
v/c Ratio		0.24		0.31		0.25		0.44
Control Delay		14.7		15.8		7.5		9.7
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		14.7		15.8		7.5		9.7
LOS		B		B		A		A
Approach Delay		14.7		15.8		7.5		9.7
Approach LOS		B		B		A		A

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 51.2	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.44	
Intersection Signal Delay: 10.0	Intersection LOS: A
Intersection Capacity Utilization 61.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	34	14	12	86	17	64	314	12	29	305	79
Future Volume (veh/h)	33	34	14	12	86	17	64	314	12	29	305	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	36	37	15	13	95	19	70	345	13	32	335	87
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	196	172	54	100	276	51	320	1450	54	111	724	179
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.55	0.55	0.55	0.55	0.55	0.55
Sat Flow, veh/h	449	869	271	80	1390	259	401	2644	99	55	1320	326
Grp Volume(v), veh/h	88	0	0	127	0	0	216	0	212	454	0	0
Grp Sat Flow(s),veh/h/ln	1588	0	0	1729	0	0	1524	0	1620	1701	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.0	0.0	0.0	3.0	0.0	0.0	2.9	0.0	3.2	7.6	0.0	0.0
Prop In Lane	0.41		0.17	0.10		0.15	0.32		0.06	0.07		0.19
Lane Grp Cap(c), veh/h	422	0	0	427	0	0	936	0	888	1014	0	0
V/C Ratio(X)	0.21	0.00	0.00	0.30	0.00	0.00	0.23	0.00	0.24	0.45	0.00	0.00
Avail Cap(c_a), veh/h	824	0	0	878	0	0	936	0	888	1014	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.0	0.0	0.0	16.4	0.0	0.0	5.5	0.0	5.6	6.5	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.4	0.0	0.0	0.6	0.0	0.6	1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	1.0	0.0	0.0	0.7	0.0	0.7	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.3	0.0	0.0	16.8	0.0	0.0	6.1	0.0	6.2	8.0	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		88			127			428			454	
Approach Delay, s/veh		16.3			16.8			6.1			8.0	
Approach LOS		B			B			A			A	

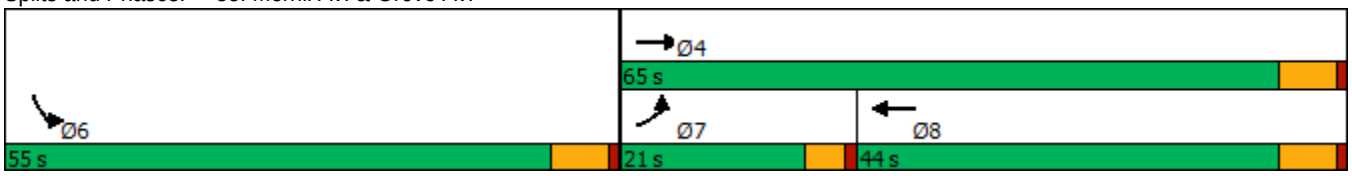
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.2		15.2		32.2		15.2				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		26.0		22.0		26.0		22.0				
Max Q Clear Time (g_c+I1), s		5.2		4.0		9.6		5.0				
Green Ext Time (p_c), s		2.2		0.3		2.3		0.5				

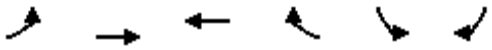
Intersection Summary												
HCM 6th Ctrl Delay			8.9									
HCM 6th LOS			A									

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	88	367	666	233
Future Volume (vph)	88	367	666	233
Turn Type	Prot	NA	NA	Prot
Protected Phases	7	4	8	6
Permitted Phases				
Detector Phase	7	4	8	6
Switch Phase				
Minimum Initial (s)	5.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	28.2
Total Split (s)	21.0	65.0	44.0	55.0
Total Split (%)	17.5%	54.2%	36.7%	45.8%
Yellow Time (s)	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	6.2
Lead/Lag	Lead		Lag	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	Max	Max	None
Act Effct Green (s)	9.7	59.1	47.0	24.7
Actuated g/C Ratio	0.10	0.61	0.49	0.26
v/c Ratio	0.56	0.34	0.61	0.81
Control Delay	55.5	11.3	21.6	47.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	55.5	11.3	21.6	47.0
LOS	E	B	C	D
Approach Delay		19.9	21.6	47.0
Approach LOS		B	C	D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.2	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 25.9	Intersection LOS: C
Intersection Capacity Utilization 70.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	88	367	666	301	233	98
Future Volume (veh/h)	88	367	666	301	233	98
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	91	378	687	310	240	101
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	113	1124	1158	522	267	113
Arrive On Green	0.07	0.62	0.51	0.51	0.24	0.24
Sat Flow, veh/h	1619	1800	2380	1033	1096	461
Grp Volume(v), veh/h	91	378	513	484	342	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1710	1614	1562	0
Q Serve(g_s), s	5.2	9.4	19.9	20.0	20.0	0.0
Cycle Q Clear(g_c), s	5.2	9.4	19.9	20.0	20.0	0.0
Prop In Lane	1.00			0.64	0.70	0.30
Lane Grp Cap(c), veh/h	113	1124	864	816	381	0
V/C Ratio(X)	0.80	0.34	0.59	0.59	0.90	0.00
Avail Cap(c_a), veh/h	282	1124	864	816	810	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.1	8.4	16.4	16.4	34.5	0.0
Incr Delay (d2), s/veh	4.9	0.8	3.0	3.2	7.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	3.1	7.4	7.0	7.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	48.0	9.2	19.4	19.6	42.1	0.0
LnGrp LOS	D	A	B	B	D	A
Approach Vol, veh/h		469	997		342	
Approach Delay, s/veh		16.7	19.5		42.1	
Approach LOS		B	B		D	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			65.0		29.2	11.2	53.8
Change Period (Y+Rc), s			6.2		6.2	4.6	6.2
Max Green Setting (Gmax), s			58.8		48.8	16.4	37.8
Max Q Clear Time (g_c+I1), s			11.4		22.0	7.2	22.0
Green Ext Time (p_c), s			2.1		1.0	0.1	5.3

Intersection Summary	
HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

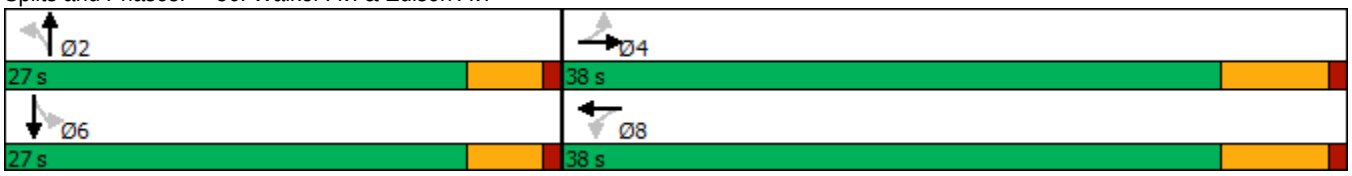
Notes

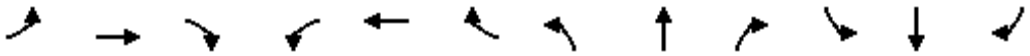
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	18	264	117	487	4	19	27	18
Future Volume (vph)	18	264	117	487	4	19	27	18
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	26.7	26.7	26.7	26.7
Total Split (s)	38.0	38.0	38.0	38.0	27.0	27.0	27.0	27.0
Total Split (%)	58.5%	58.5%	58.5%	58.5%	41.5%	41.5%	41.5%	41.5%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		4.7		4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		44.7		44.7		12.3		12.3
Actuated g/C Ratio		0.76		0.76		0.21		0.21
v/c Ratio		0.23		0.64		0.09		0.19
Control Delay		6.0		13.0		15.2		17.0
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		6.0		13.0		15.2		17.0
LOS		A		B		B		B
Approach Delay		6.0		13.0		15.2		17.0
Approach LOS		A		B		B		B

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 58.7	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 11.5	Intersection LOS: B
Intersection Capacity Utilization 84.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	264	10	117	487	147	4	19	8	27	18	12
Future Volume (veh/h)	18	264	10	117	487	147	4	19	8	27	18	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	18	269	10	119	497	150	4	19	8	28	18	12
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	102	1050	37	203	717	204	94	166	62	184	103	47
Arrive On Green	0.64	0.64	0.64	0.64	0.64	0.64	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	39	1643	59	187	1123	319	88	1170	438	538	722	329
Grp Volume(v), veh/h	297	0	0	766	0	0	31	0	0	58	0	0
Grp Sat Flow(s),veh/h/ln	1740	0	0	1628	0	0	1696	0	0	1590	0	0
Q Serve(g_s), s	0.0	0.0	0.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.6	0.0	0.0	15.3	0.0	0.0	0.8	0.0	0.0	1.5	0.0	0.0
Prop In Lane	0.06		0.03	0.16		0.20	0.13		0.26	0.48		0.21
Lane Grp Cap(c), veh/h	1188	0	0	1124	0	0	323	0	0	333	0	0
V/C Ratio(X)	0.25	0.00	0.00	0.68	0.00	0.00	0.10	0.00	0.00	0.17	0.00	0.00
Avail Cap(c_a), veh/h	1188	0	0	1124	0	0	831	0	0	803	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.9	0.0	0.0	5.9	0.0	0.0	18.7	0.0	0.0	18.9	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	3.3	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	2.7	0.0	0.0	0.3	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.4	0.0	0.0	9.2	0.0	0.0	18.8	0.0	0.0	19.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		297			766			31			58	
Approach Delay, s/veh		4.4			9.2			18.8			19.2	
Approach LOS		A			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		11.8		38.0		11.8		38.0				
Change Period (Y+Rc), s		* 4.7		6.2		* 4.7		6.2				
Max Green Setting (Gmax), s		* 22		31.8		* 22		31.8				
Max Q Clear Time (g_c+I1), s		2.8		5.6		3.5		17.3				
Green Ext Time (p_c), s		0.1		1.6		0.2		4.4				

Intersection Summary												
HCM 6th Ctrl Delay			8.8									
HCM 6th LOS			A									

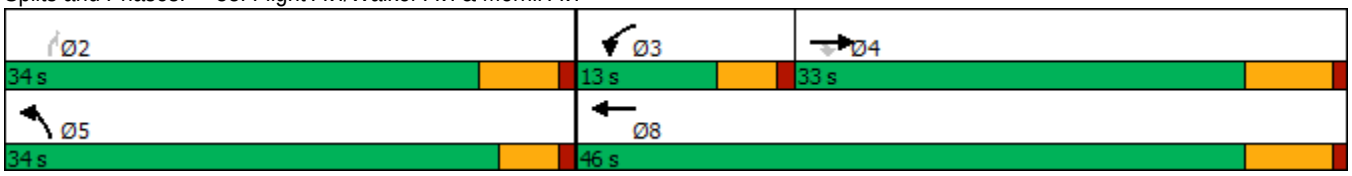
Notes

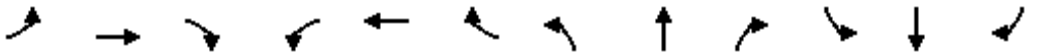
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	497	103	123	786	134	104
Future Volume (vph)	497	103	123	786	134	104
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	5	
Permitted Phases		4				2
Detector Phase	4	4	3	8	5	2
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	23.2	23.2	9.6	23.2	9.6	32.8
Total Split (s)	33.0	33.0	13.0	46.0	34.0	34.0
Total Split (%)	41.3%	41.3%	16.3%	57.5%	42.5%	42.5%
Yellow Time (s)	5.2	5.2	3.6	5.2	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	4.6	6.2	4.6	5.8
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	Min
Act Effct Green (s)	22.0	22.0	8.1	34.9	12.7	12.9
Actuated g/C Ratio	0.37	0.37	0.13	0.58	0.21	0.21
v/c Ratio	0.78	0.17	0.59	0.41	0.40	0.26
Control Delay	27.8	5.0	41.1	8.4	24.0	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	5.0	41.1	8.4	24.0	6.5
LOS	C	A	D	A	C	A
Approach Delay	23.9			12.8		
Approach LOS	C			B		

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 60.1	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 17.1	Intersection LOS: B
Intersection Capacity Utilization 55.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 38: Flight Av./Walker Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	497	103	123	786	0	134	0	104	0	0	0
Future Volume (veh/h)	0	497	103	123	786	0	134	0	104	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1800	1800	1700	1800	0	1700	0	1800			
Adj Flow Rate, veh/h	0	512	106	127	810	0	138	0	107			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	0	672	570	156	2015	0	212	0	200			
Arrive On Green	0.00	0.37	0.37	0.10	0.59	0.00	0.13	0.00	0.13			
Sat Flow, veh/h	0	1800	1525	1619	3510	0	1619	0	1525			
Grp Volume(v), veh/h	0	512	106	127	810	0	138	0	107			
Grp Sat Flow(s),veh/h/ln	0	1800	1525	1619	1710	0	1619	0	1525			
Q Serve(g_s), s	0.0	9.6	1.8	3.0	4.9	0.0	3.1	0.0	2.5			
Cycle Q Clear(g_c), s	0.0	9.6	1.8	3.0	4.9	0.0	3.1	0.0	2.5			
Prop In Lane	0.00		1.00	1.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	672	570	156	2015	0	212	0	200			
V/C Ratio(X)	0.00	0.76	0.19	0.81	0.40	0.00	0.65	0.00	0.54			
Avail Cap(c_a), veh/h	0	1249	1059	352	3525	0	1233	0	1162			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	10.6	8.1	17.1	4.3	0.0	15.9	0.0	15.7			
Incr Delay (d2), s/veh	0.0	1.8	0.2	3.8	0.1	0.0	1.3	0.0	0.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	2.4	0.4	1.0	0.4	0.0	0.9	0.0	0.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.4	8.3	20.9	4.4	0.0	17.2	0.0	16.5			
LnGrp LOS	A	B	A	C	A	A	B	A	B			
Approach Vol, veh/h		618			937			245				
Approach Delay, s/veh		11.7			6.6			16.9				
Approach LOS		B			A			B				
Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		9.7	8.3	20.6				28.9				
Change Period (Y+Rc), s		4.6	4.6	6.2				6.2				
Max Green Setting (Gmax), s		29.4	8.4	26.8				39.8				
Max Q Clear Time (g_c+I1), s		5.1	5.0	11.6				6.9				
Green Ext Time (p_c), s		0.3	0.0	2.8				5.5				
Intersection Summary												
HCM 6th Ctrl Delay			9.8									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	121	432	48	26	859	33	14	0	33	10	0	36
Future Vol, veh/h	121	432	48	26	859	33	14	0	33	10	0	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	133	475	53	29	944	36	15	0	36	11	0	40

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	980	0	0	528	0	0	1298	1806	264	1524	1814	490
Stage 1	-	-	-	-	-	-	768	768	-	1020	1020	-
Stage 2	-	-	-	-	-	-	530	1038	-	504	794	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	712	-	-	1049	-	-	121	80	741	82	79	529
Stage 1	-	-	-	-	-	-	365	414	-	257	317	-
Stage 2	-	-	-	-	-	-	506	311	-	524	403	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	712	-	-	1049	-	-	94	63	741	65	62	529
Mov Cap-2 Maneuver	-	-	-	-	-	-	184	127	-	149	167	-
Stage 1	-	-	-	-	-	-	297	337	-	209	308	-
Stage 2	-	-	-	-	-	-	455	302	-	405	328	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.3	0.2	15.6	17.4
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	390	712	-	-	1049	-	-	340
HCM Lane V/C Ratio	0.132	0.187	-	-	0.027	-	-	0.149
HCM Control Delay (s)	15.6	11.2	-	-	8.5	-	-	17.4
HCM Lane LOS	C	B	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.5	0.7	-	-	0.1	-	-	0.5

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	419	1	25	760	44	142	3	23	13	1	16
Future Vol, veh/h	55	419	1	25	760	44	142	3	23	13	1	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	200	-	0	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	59	451	1	27	817	47	153	3	25	14	1	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	864	0	0	452	0	0	1033	1488	226	1240	1465	432
Stage 1	-	-	-	-	-	-	570	570	-	895	895	-
Stage 2	-	-	-	-	-	-	463	918	-	345	570	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	787	-	-	1119	-	-	189	125	783	134	129	577
Stage 1	-	-	-	-	-	-	479	509	-	306	362	-
Stage 2	-	-	-	-	-	-	554	353	-	649	509	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	787	-	-	1119	-	-	169	113	783	119	116	577
Mov Cap-2 Maneuver	-	-	-	-	-	-	284	210	-	217	231	-
Stage 1	-	-	-	-	-	-	443	471	-	283	353	-
Stage 2	-	-	-	-	-	-	523	345	-	577	471	-

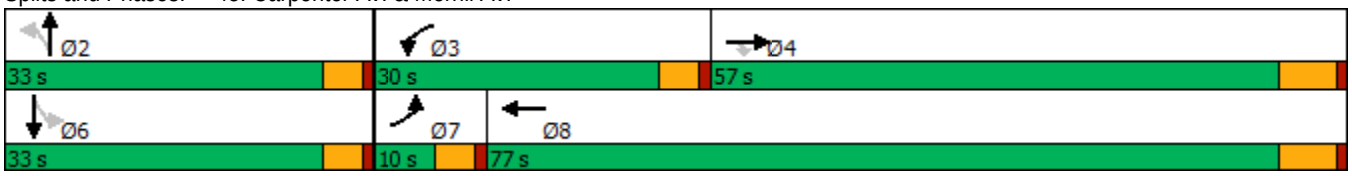
Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.3	28.4	16.6
HCM LOS			D	C

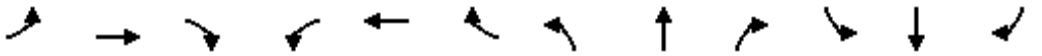
Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	284	210	783	787	-	-	1119	-	-	217	231	577
HCM Lane V/C Ratio	0.538	0.015	0.032	0.075	-	-	0.024	-	-	0.064	0.005	0.03
HCM Control Delay (s)	31.5	22.4	9.7	9.9	-	-	8.3	-	-	22.7	20.7	11.4
HCM Lane LOS	D	C	A	A	-	-	A	-	-	C	C	B
HCM 95th %tile Q(veh)	3	0	0.1	0.2	-	-	0.1	-	-	0.2	0	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	10	415	30	212	797	21	0	120	0
Future Volume (vph)	10	415	30	212	797	21	0	120	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	26.6	26.6
Total Split (s)	10.0	57.0	57.0	30.0	77.0	33.0	33.0	33.0	33.0
Total Split (%)	8.3%	47.5%	47.5%	25.0%	64.2%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2		4.6		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.2	52.5	52.5	17.0	72.3		12.6		12.6
Actuated g/C Ratio	0.05	0.54	0.54	0.17	0.74		0.13		0.13
v/c Ratio	0.12	0.46	0.04	0.76	0.67		0.49		0.71
Control Delay	50.8	17.6	0.1	55.4	11.6		15.7		31.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	50.8	17.6	0.1	55.4	11.6		15.7		31.7
LOS	D	B	A	E	B		B		C
Approach Delay		17.2			20.4		15.7		31.7
Approach LOS		B			C		B		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 20.1	Intersection LOS: C
Intersection Capacity Utilization 78.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 45: Carpenter Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	415	30	212	797	42	21	0	120	120	0	10
Future Volume (veh/h)	10	415	30	212	797	42	21	0	120	120	0	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	11	441	32	226	848	45	22	0	128	128	0	11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	22	980	831	257	1154	61	63	14	221	218	3	13
Arrive On Green	0.01	0.54	0.54	0.15	0.68	0.68	0.16	0.00	0.16	0.16	0.00	0.16
Sat Flow, veh/h	1714	1800	1525	1714	1694	90	150	92	1407	967	17	85
Grp Volume(v), veh/h	11	441	32	226	0	893	150	0	0	139	0	0
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	0	1784	1649	0	0	1068	0	0
Q Serve(g_s), s	0.7	15.4	1.0	13.4	0.0	33.2	0.0	0.0	0.0	4.8	0.0	0.0
Cycle Q Clear(g_c), s	0.7	15.4	1.0	13.4	0.0	33.2	8.9	0.0	0.0	13.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.05	0.15		0.85	0.92		0.08
Lane Grp Cap(c), veh/h	22	980	831	257	0	1216	299	0	0	234	0	0
V/C Ratio(X)	0.49	0.45	0.04	0.88	0.00	0.73	0.50	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	89	980	831	419	0	1216	474	0	0	385	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	50.9	14.3	11.0	43.2	0.0	10.5	40.8	0.0	0.0	43.3	0.0	0.0
Incr Delay (d2), s/veh	6.0	1.5	0.1	6.8	0.0	4.0	1.3	0.0	0.0	2.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.9	0.3	5.9	0.0	11.0	3.7	0.0	0.0	3.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.9	15.8	11.1	50.1	0.0	14.5	42.1	0.0	0.0	45.7	0.0	0.0
LnGrp LOS	E	B	B	D	A	B	D	A	A	D	A	A
Approach Vol, veh/h		484			1119			150			139	
Approach Delay, s/veh		16.4			21.7			42.1			45.7	
Approach LOS		B			C			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		20.9	20.2	62.8		20.9	6.0	77.0				
Change Period (Y+Rc), s		4.6	4.6	6.2		4.6	4.6	6.2				
Max Green Setting (Gmax), s		28.4	25.4	50.8		28.4	5.4	70.8				
Max Q Clear Time (g_c+I1), s		10.9	15.4	17.4		15.7	2.7	35.2				
Green Ext Time (p_c), s		0.8	0.2	2.6		0.6	0.0	7.1				

Intersection Summary												
HCM 6th Ctrl Delay			23.7									
HCM 6th LOS			C									

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	316	855	868	334	215	509
Future Volume (vph)	316	855	868	334	215	509
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	16.0	67.7	36.3	16.0	83.7
Total Split (%)	30.3%	13.3%	56.4%	30.3%	13.3%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 104.6
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	316	855	868	334	215	509
Future Volume (veh/h)	316	855	868	334	215	509
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1976	1976
Adj Flow Rate, veh/h	329	835	904	301	224	530
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	494	997	971	1262	288	1253
Arrive On Green	0.27	0.27	0.51	0.51	0.08	0.63
Sat Flow, veh/h	1810	2834	1900	1610	3651	1976
Grp Volume(v), veh/h	329	835	904	301	224	530
Grp Sat Flow(s),veh/h/ln	1810	1417	1900	1610	1825	1976
Q Serve(g_s), s	18.4	30.8	50.4	5.7	6.8	15.2
Cycle Q Clear(g_c), s	18.4	30.8	50.4	5.7	6.8	15.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	494	997	971	1262	288	1253
V/C Ratio(X)	0.67	0.84	0.93	0.24	0.78	0.42
Avail Cap(c_a), veh/h	494	997	1043	1323	353	1368
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	33.9	25.9	3.3	51.4	10.4
Incr Delay (d2), s/veh	2.8	6.0	13.9	0.1	8.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	10.7	23.8	4.3	3.3	5.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	39.5	39.9	39.8	3.4	59.9	10.5
LnGrp LOS	D	D	D	A	E	B
Approach Vol, veh/h	1164		1205			754
Approach Delay, s/veh	39.8		30.7			25.2
Approach LOS	D		C			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	14.0	63.4			77.4	36.3
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	11.0	62.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	8.8	52.4			17.2	32.8
Green Ext Time (p_c), s	0.1	5.6			1.7	0.0

Intersection Summary	
HCM 6th Ctrl Delay	32.8
HCM 6th LOS	C

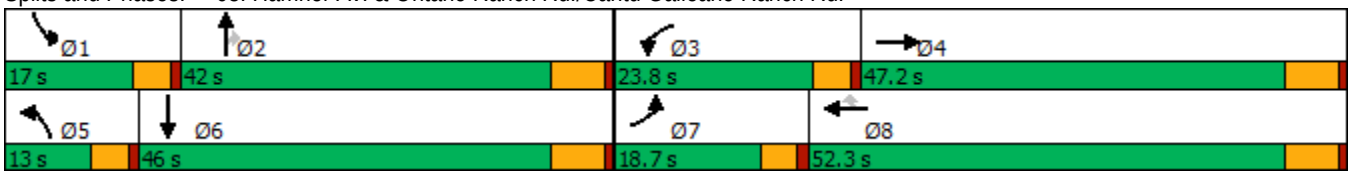
Notes

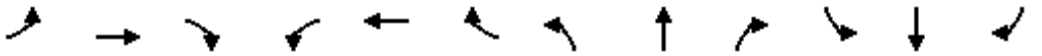
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	99	583	280	904	207	175	717	514	157	214
Future Volume (vph)	99	583	280	904	207	175	717	514	157	214
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2
Total Split (s)	18.7	47.2	23.8	52.3	52.3	13.0	42.0	42.0	17.0	46.0
Total Split (%)	14.4%	36.3%	18.3%	40.2%	40.2%	10.0%	32.3%	32.3%	13.1%	35.4%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	9.6	35.2	16.7	42.4	42.4	9.3	33.3	33.3	11.3	35.3
Actuated g/C Ratio	0.08	0.31	0.15	0.37	0.37	0.08	0.29	0.29	0.10	0.31
v/c Ratio	0.45	0.40	0.73	0.80	0.33	0.82	0.56	0.87	0.61	0.23
Control Delay	58.9	30.7	58.6	38.1	6.4	80.8	36.2	33.2	61.2	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.9	30.7	58.6	38.1	6.4	80.8	36.2	33.2	61.2	22.2
LOS	E	C	E	D	A	F	D	C	E	C
Approach Delay		34.4		37.5			40.7			35.5
Approach LOS		C		D			D			D

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 113.1	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 37.8	Intersection LOS: D
Intersection Capacity Utilization 63.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	583	84	280	904	207	175	717	514	157	214	87
Future Volume (veh/h)	99	583	84	280	904	207	175	717	514	157	214	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	112	662	95	318	1027	235	199	815	577	178	243	99
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	176	1632	229	388	1254	559	242	1697	527	245	1216	459
Arrive On Green	0.06	0.30	0.28	0.13	0.37	0.37	0.08	0.35	0.35	0.08	0.35	0.33
Sat Flow, veh/h	2956	5530	774	2956	3420	1525	2956	4914	1525	2956	3510	1326
Grp Volume(v), veh/h	112	553	204	318	1027	235	199	815	577	178	226	116
Grp Sat Flow(s),veh/h/ln	1478	1548	1661	1478	1710	1525	1478	1638	1525	1478	1638	1560
Q Serve(g_s), s	4.1	10.5	10.9	11.5	29.9	12.7	7.3	14.3	38.0	6.5	5.3	5.9
Cycle Q Clear(g_c), s	4.1	10.5	10.9	11.5	29.9	12.7	7.3	14.3	38.0	6.5	5.3	5.9
Prop In Lane	1.00		0.47	1.00		1.00	1.00		1.00	1.00		0.85
Lane Grp Cap(c), veh/h	176	1371	490	388	1254	559	242	1697	527	245	1135	541
V/C Ratio(X)	0.64	0.40	0.42	0.82	0.82	0.42	0.82	0.48	1.10	0.73	0.20	0.22
Avail Cap(c_a), veh/h	395	1823	652	532	1501	670	242	1697	527	349	1251	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.6	31.0	31.6	46.5	31.5	26.1	49.7	28.3	36.0	49.2	25.2	26.1
Incr Delay (d2), s/veh	1.4	0.2	0.6	5.2	3.2	0.5	18.9	0.2	67.7	1.9	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	3.7	4.2	4.3	12.0	4.4	3.2	5.3	23.0	2.4	2.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.0	31.2	32.2	51.7	34.7	26.6	68.6	28.5	103.7	51.1	25.3	26.3
LnGrp LOS	D	C	C	D	C	C	E	C	F	D	C	C
Approach Vol, veh/h		869			1580			1591			520	
Approach Delay, s/veh		34.1			36.9			60.8			34.4	
Approach LOS		C			D			E			C	

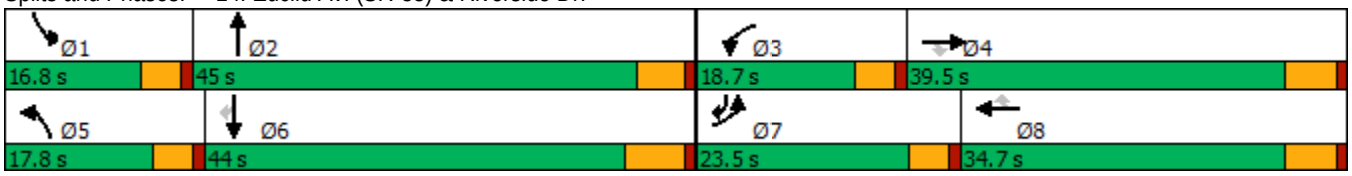
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	42.0	18.4	36.5	13.0	42.1	10.6	44.3
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	12.4	35.8	19.2	41.0	8.4	39.8	14.1	46.1
Max Q Clear Time (g_c+I1), s	8.5	40.0	13.5	12.9	9.3	7.9	6.1	31.9
Green Ext Time (p_c), s	0.1	0.0	0.3	4.6	0.0	2.0	0.1	6.2

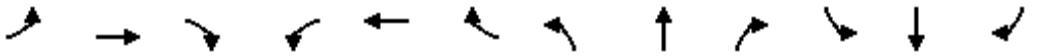
Intersection Summary	
HCM 6th Ctrl Delay	44.4
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	154	467	83	190	417	65	82	1194	142	1018	196
Future Volume (vph)	154	467	83	190	417	65	82	1194	142	1018	196
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2	1	6	7
Permitted Phases			4			8					6
Detector Phase	7	4	4	3	8	8	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	9.6	34.5	9.6
Total Split (s)	23.5	39.5	39.5	18.7	34.7	34.7	17.8	45.0	16.8	44.0	23.5
Total Split (%)	19.6%	32.9%	32.9%	15.6%	28.9%	28.9%	14.8%	37.5%	14.0%	36.7%	19.6%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	Max	None
Act Effct Green (s)	15.4	33.3	33.3	14.1	32.1	32.1	10.2	39.6	12.1	42.5	59.8
Actuated g/C Ratio	0.13	0.28	0.28	0.12	0.27	0.27	0.09	0.33	0.10	0.36	0.50
v/c Ratio	0.77	0.97	0.17	1.04	0.47	0.13	0.62	0.93	0.91	0.61	0.24
Control Delay	73.8	76.3	3.4	128.4	39.5	0.5	71.5	49.1	103.4	34.6	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.8	76.3	3.4	128.4	39.5	0.5	71.5	49.1	103.4	34.6	3.4
LOS	E	E	A	F	D	A	E	D	F	C	A
Approach Delay		67.2			60.9			50.3		37.3	
Approach LOS		E			E			D		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.5	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 50.6	Intersection LOS: D
Intersection Capacity Utilization 93.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	467	83	190	417	65	82	1194	246	142	1018	196
Future Volume (veh/h)	154	467	83	190	417	65	82	1194	246	142	1018	196
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	160	486	61	198	434	52	85	1244	202	148	1060	113
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	184	501	424	189	960	428	105	1393	226	163	1784	721
Arrive On Green	0.11	0.28	0.28	0.12	0.28	0.28	0.06	0.33	0.33	0.10	0.36	0.36
Sat Flow, veh/h	1619	1800	1525	1619	3420	1524	1619	4260	692	1619	4914	1506
Grp Volume(v), veh/h	160	486	61	198	434	52	85	957	489	148	1060	113
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	1524	1619	1638	1675	1619	1638	1506
Q Serve(g_s), s	11.8	32.3	3.6	14.1	12.7	3.1	6.3	33.6	33.6	11.0	21.2	5.1
Cycle Q Clear(g_c), s	11.8	32.3	3.6	14.1	12.7	3.1	6.3	33.6	33.6	11.0	21.2	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.41	1.00		1.00
Lane Grp Cap(c), veh/h	184	501	424	189	960	428	105	1071	548	163	1784	721
V/C Ratio(X)	0.87	0.97	0.14	1.05	0.45	0.12	0.81	0.89	0.89	0.91	0.59	0.16
Avail Cap(c_a), veh/h	253	501	424	189	960	428	176	1071	548	163	1784	721
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	43.2	32.9	53.5	35.9	32.4	55.9	38.7	38.7	53.9	31.3	17.9
Incr Delay (d2), s/veh	16.4	32.6	0.2	79.5	0.3	0.1	5.6	11.4	19.5	43.8	1.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	18.3	1.3	9.7	5.2	1.1	2.6	14.3	15.8	6.4	8.4	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.1	75.8	33.0	133.0	36.2	32.5	61.5	50.1	58.3	97.6	32.8	18.4
LnGrp LOS	E	E	C	F	D	C	E	D	E	F	C	B
Approach Vol, veh/h		707			684			1531			1321	
Approach Delay, s/veh		70.6			63.9			53.3			38.8	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.8	46.1	18.7	39.5	12.4	50.5	18.4	39.8
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	12.2	* 40	14.1	33.7	13.2	37.5	18.9	28.9
Max Q Clear Time (g_c+I1), s	13.0	35.6	16.1	34.3	8.3	23.2	13.8	14.7
Green Ext Time (p_c), s	0.0	2.8	0.0	0.0	0.0	6.3	0.1	2.3

Intersection Summary	
HCM 6th Ctrl Delay	53.4
HCM 6th LOS	D

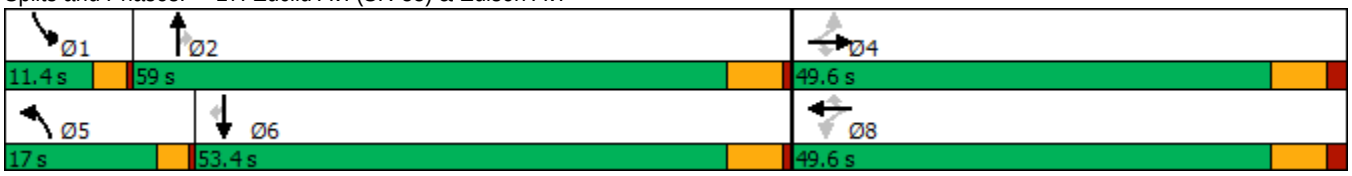
Notes

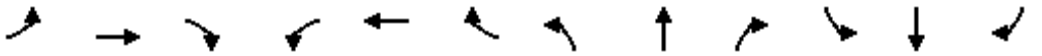
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	281	498	317	43	284	40	195	1296	75	88	1260	185
Future Volume (vph)	281	498	317	43	284	40	195	1296	75	88	1260	185
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	49.6	49.6	49.6	49.6	49.6	49.6	17.0	59.0	59.0	11.4	53.4	53.4
Total Split (%)	41.3%	41.3%	41.3%	41.3%	41.3%	41.3%	14.2%	49.2%	49.2%	9.5%	44.5%	44.5%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	42.6	42.6	42.6	42.6	42.6	42.6	13.5	53.0	53.0	7.9	47.4	47.4
Actuated g/C Ratio	0.36	0.36	0.36	0.36	0.36	0.36	0.11	0.44	0.44	0.07	0.40	0.40
v/c Ratio	1.06	0.82	0.50	0.38	0.47	0.07	1.13	0.90	0.11	0.88	0.98	0.29
Control Delay	109.2	47.3	14.5	40.6	32.9	0.2	154.9	40.8	6.3	115.0	56.8	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	109.2	47.3	14.5	40.6	32.9	0.2	154.9	40.8	6.3	115.0	56.8	10.4
LOS	F	D	B	D	C	A	F	D	A	F	E	B
Approach Delay		53.7			30.3			53.4			54.6	
Approach LOS		D			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 52.0	Intersection LOS: D
Intersection Capacity Utilization 102.0%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	281	498	317	43	284	40	195	1296	75	88	1260	185
Future Volume (veh/h)	281	498	317	43	284	40	195	1296	75	88	1260	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	296	524	252	45	299	36	205	1364	71	93	1326	163
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	287	639	542	120	639	535	182	1510	672	107	1351	603
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.11	0.44	0.44	0.07	0.40	0.40
Sat Flow, veh/h	1003	1800	1525	667	1800	1506	1619	3420	1522	1619	3420	1525
Grp Volume(v), veh/h	296	524	252	45	299	36	205	1364	71	93	1326	163
Grp Sat Flow(s),veh/h/ln	1003	1800	1525	667	1800	1506	1619	1710	1522	1619	1710	1525
Q Serve(g_s), s	27.2	31.8	15.3	7.9	15.4	1.9	13.5	44.4	3.3	6.8	46.0	8.7
Cycle Q Clear(g_c), s	42.6	31.8	15.3	39.7	15.4	1.9	13.5	44.4	3.3	6.8	46.0	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	287	639	542	120	639	535	182	1511	672	107	1351	603
V/C Ratio(X)	1.03	0.82	0.47	0.37	0.47	0.07	1.13	0.90	0.11	0.87	0.98	0.27
Avail Cap(c_a), veh/h	287	639	542	120	639	535	182	1511	672	107	1351	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	35.2	29.9	53.3	29.9	25.6	53.3	31.1	19.6	55.6	35.9	24.6
Incr Delay (d2), s/veh	61.3	8.4	0.6	1.9	0.5	0.1	104.4	8.0	0.1	48.1	20.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.4	14.7	5.5	1.4	6.5	0.7	10.5	18.2	1.1	4.1	21.3	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	110.6	43.6	30.5	55.2	30.5	25.6	157.7	39.1	19.7	103.7	56.0	24.8
LnGrp LOS	F	D	C	E	C	C	F	D	B	F	E	C
Approach Vol, veh/h		1072			380			1640			1582	
Approach Delay, s/veh		59.0			32.9			53.1			55.6	
Approach LOS		E			C			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.4	59.0		49.6	17.0	53.4		49.6				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	7.9	53.0		42.6	13.5	47.4		42.6				
Max Q Clear Time (g_c+I1), s	8.8	46.4		44.6	15.5	48.0		41.7				
Green Ext Time (p_c), s	0.0	4.3		0.0	0.0	0.0		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		53.6
HCM 6th LOS		D

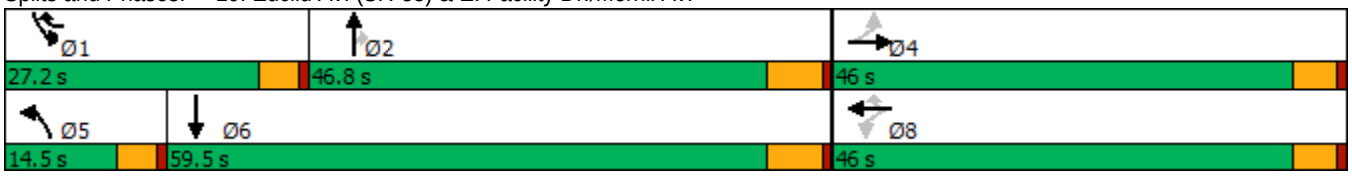
Notes

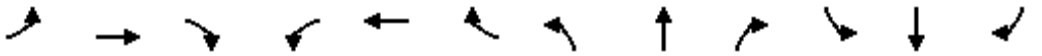
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	12	31	262	2	294	4	1255	265	311	1293
Future Volume (vph)	12	31	262	2	294	4	1255	265	311	1293
Turn Type	Perm	NA	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	1	5	2		1	6
Permitted Phases	4		8		8			2		
Detector Phase	4	4	8	8	1	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	27.2	14.5	46.8	46.8	27.2	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	22.7%	12.1%	39.0%	39.0%	22.7%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	4.5	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		20.3	20.3	20.3	48.2	10.1	41.2	41.2	22.9	66.2
Actuated g/C Ratio		0.20	0.20	0.20	0.48	0.10	0.41	0.41	0.23	0.66
v/c Ratio		0.18	0.57	0.57	0.43	0.02	0.98	0.42	0.92	0.63
Control Delay		26.5	44.2	44.0	16.9	46.0	49.9	17.0	71.0	14.8
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		26.5	44.2	44.0	16.9	46.0	49.9	17.0	71.0	14.8
LOS		C	D	D	B	D	D	B	E	B
Approach Delay		26.5		29.8			44.2			25.7
Approach LOS		C		C			D			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 33.9	Intersection LOS: C
Intersection Capacity Utilization 83.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	31	13	262	2	294	4	1255	265	311	1293	1
Future Volume (veh/h)	12	31	13	262	2	294	4	1255	265	311	1293	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	13	34	13	289	0	313	4	1379	226	342	1421	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	85	192	64	649	0	629	17	1453	648	370	2198	0
Arrive On Green	0.18	0.18	0.18	0.18	0.00	0.18	0.01	0.42	0.42	0.23	0.64	0.00
Sat Flow, veh/h	210	1043	346	2607	0	1525	1619	3420	1525	1619	3510	0
Grp Volume(v), veh/h	60	0	0	289	0	313	4	1379	226	342	1421	0
Grp Sat Flow(s),veh/h/ln	1599	0	0	1303	0	1525	1619	1710	1525	1619	1710	0
Q Serve(g_s), s	0.0	0.0	0.0	6.1	0.0	14.4	0.2	37.0	9.5	19.7	24.2	0.0
Cycle Q Clear(g_c), s	2.8	0.0	0.0	8.9	0.0	14.4	0.2	37.0	9.5	19.7	24.2	0.0
Prop In Lane	0.22		0.22	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	340	0	0	649	0	629	17	1453	648	370	2198	0
V/C Ratio(X)	0.18	0.00	0.00	0.45	0.00	0.50	0.23	0.95	0.35	0.93	0.65	0.00
Avail Cap(c_a), veh/h	716	0	0	1293	0	1006	170	1467	654	386	2198	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.8	0.0	0.0	35.1	0.0	20.7	46.7	26.4	18.5	35.9	10.4	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.2	0.0	0.2	2.6	13.3	0.3	26.5	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	2.9	0.0	4.7	0.1	15.6	3.0	9.8	6.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.9	0.0	0.0	35.3	0.0	20.9	49.3	39.7	18.8	62.4	11.1	0.0
LnGrp LOS	C	A	A	D	A	C	D	D	B	E	B	A
Approach Vol, veh/h		60			602			1609			1763	
Approach Delay, s/veh		32.9			27.8			36.8			21.0	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.2	46.4		22.5	5.5	67.1		22.5				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	22.7	40.8		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	21.7	39.0		4.8	2.2	26.2		16.4				
Green Ext Time (p_c), s	0.1	1.4		0.2	0.0	10.9		1.1				

Intersection Summary			
HCM 6th Ctrl Delay		28.5	
HCM 6th LOS		C	

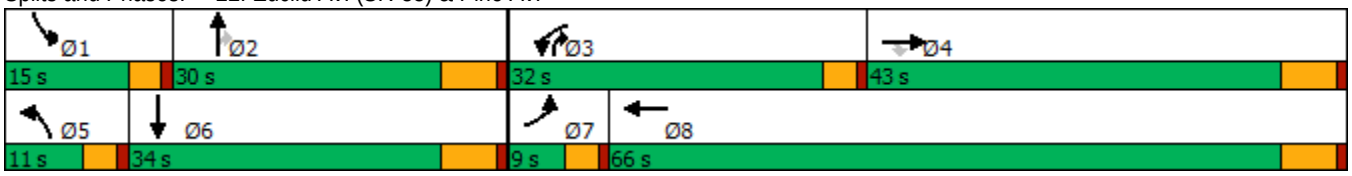
Notes

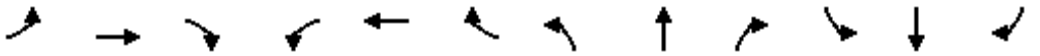
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	5	459	99	575	72	58	753	1167	105	835
Future Volume (vph)	5	459	99	575	72	58	753	1167	105	835
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	32.0	66.0	11.0	30.0	32.0	15.0	34.0
Total Split (%)	7.5%	35.8%	35.8%	26.7%	55.0%	9.2%	25.0%	26.7%	12.5%	28.3%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.1	33.0	33.0	25.6	61.0	6.6	20.9	52.6	10.0	26.7
Actuated g/C Ratio	0.05	0.30	0.30	0.23	0.56	0.06	0.19	0.48	0.09	0.24
v/c Ratio	0.07	0.87	0.18	0.86	0.13	0.61	0.82	0.83	0.73	0.72
Control Delay	57.2	54.8	2.9	54.9	9.1	80.2	51.8	24.8	79.5	43.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.2	54.8	2.9	54.9	9.1	80.2	51.8	24.8	79.5	43.8
LOS	E	D	A	D	A	F	D	C	E	D
Approach Delay		45.7			46.8		36.7			47.8
Approach LOS		D			D		D			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.9	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 42.1	Intersection LOS: D
Intersection Capacity Utilization 86.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	459	99	575	72	51	58	753	1167	105	835	4
Future Volume (veh/h)	5	459	99	575	72	51	58	753	1167	105	835	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	5	468	0	587	73	50	59	768	774	107	852	4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	10	521		646	499	342	73	1103	1189	130	1311	6
Arrive On Green	0.01	0.29	0.00	0.22	0.50	0.50	0.05	0.22	0.22	0.08	0.26	0.26
Sat Flow, veh/h	1619	1800	1525	2956	995	682	1619	4914	2685	1619	5048	24
Grp Volume(v), veh/h	5	468	0	587	0	123	59	768	774	107	553	303
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1677	1619	1638	1342	1619	1638	1796
Q Serve(g_s), s	0.3	26.7	0.0	20.7	0.0	4.2	3.9	15.4	24.0	7.0	16.1	16.1
Cycle Q Clear(g_c), s	0.3	26.7	0.0	20.7	0.0	4.2	3.9	15.4	24.0	7.0	16.1	16.1
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	10	521		646	0	841	73	1103	1189	130	851	466
V/C Ratio(X)	0.48	0.90		0.91	0.00	0.15	0.80	0.70	0.65	0.82	0.65	0.65
Avail Cap(c_a), veh/h	76	623		774	0	942	106	1103	1189	167	858	470
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.9	36.5	0.0	40.7	0.0	14.3	50.5	38.1	23.3	48.4	35.2	35.2
Incr Delay (d2), s/veh	12.1	15.0	0.0	12.0	0.0	0.1	15.7	1.6	1.0	17.8	1.3	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	13.3	0.0	8.2	0.0	1.5	1.8	5.9	7.1	3.3	6.1	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.0	51.5	0.0	52.7	0.0	14.4	66.2	39.7	24.3	66.1	36.6	37.7
LnGrp LOS	E	D		D	A	B	E	D	C	E	D	D
Approach Vol, veh/h		473	A		710			1601			963	
Approach Delay, s/veh		51.6			46.1			33.2			40.2	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	30.0	27.3	36.9	8.8	33.8	4.7	59.6
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	11.0	24.0	28.0	37.0	7.0	28.0	5.0	60.0
Max Q Clear Time (g_c+I1), s	9.0	26.0	22.7	28.7	5.9	18.1	2.3	6.2
Green Ext Time (p_c), s	0.0	0.0	0.6	2.3	0.0	2.3	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	39.8
HCM 6th LOS	D

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	45	456	98	282	35	316	135	213
Future Volume (vph)	45	456	98	282	35	316	135	213
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Total Split (s)	29.0	29.0	29.0	29.0	41.0	41.0	41.0	41.0
Total Split (%)	41.4%	41.4%	41.4%	41.4%	58.6%	58.6%	58.6%	58.6%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		23.1		23.1		27.0		27.0
Actuated g/C Ratio		0.37		0.37		0.43		0.43
v/c Ratio		0.90		1.04		0.84		0.92
Control Delay		43.0		78.9		25.3		45.9
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		43.0		78.9		25.3		45.9
LOS		D		E		C		D
Approach Delay		43.0		78.9		25.3		45.9
Approach LOS		D		E		C		D

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 62.7	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 46.4	Intersection LOS: D
Intersection Capacity Utilization 119.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	456	16	98	282	53	35	316	226	135	213	23
Future Volume (veh/h)	45	456	16	98	282	53	35	316	226	135	213	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	48	490	17	105	303	57	38	340	243	145	229	25
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	95	562	19	151	343	59	86	415	282	208	297	28
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	85	1524	51	215	930	160	57	964	656	298	690	66
Grp Volume(v), veh/h	555	0	0	465	0	0	621	0	0	399	0	0
Grp Sat Flow(s),veh/h/ln	1660	0	0	1306	0	0	1678	0	0	1053	0	0
Q Serve(g_s), s	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0
Cycle Q Clear(g_c), s	19.4	0.0	0.0	21.7	0.0	0.0	20.5	0.0	0.0	22.7	0.0	0.0
Prop In Lane	0.09		0.03	0.23		0.12	0.06		0.39	0.36		0.06
Lane Grp Cap(c), veh/h	676	0	0	553	0	0	784	0	0	533	0	0
V/C Ratio(X)	0.82	0.00	0.00	0.84	0.00	0.00	0.79	0.00	0.00	0.75	0.00	0.00
Avail Cap(c_a), veh/h	676	0	0	553	0	0	1000	0	0	701	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.1	0.0	0.0	18.5	0.0	0.0	15.9	0.0	0.0	15.6	0.0	0.0
Incr Delay (d2), s/veh	10.8	0.0	0.0	14.3	0.0	0.0	3.4	0.0	0.0	3.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	0.0	7.2	0.0	0.0	6.6	0.0	0.0	4.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.9	0.0	0.0	32.8	0.0	0.0	19.3	0.0	0.0	18.8	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	B	A	A	B	A	A
Approach Vol, veh/h		555			465			621			399	
Approach Delay, s/veh		28.9			32.8			19.3			18.8	
Approach LOS		C			C			B			B	

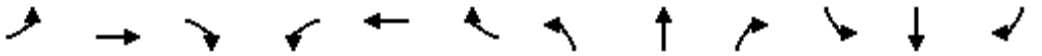
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.8		29.0		32.8		29.0				
Change Period (Y+Rc), s		6.2		6.2		6.2		6.2				
Max Green Setting (Gmax), s		34.8		22.8		34.8		22.8				
Max Q Clear Time (g_c+I1), s		22.5		21.4		24.7		23.7				
Green Ext Time (p_c), s		3.1		0.5		1.9		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			24.9									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	126	88	5	18	14	465	18	265
Future Volume (vph)	126	88	5	18	14	465	18	265
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	36.0	36.0	36.0	36.0	84.0	84.0	84.0	84.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	70.0%	70.0%	70.0%	70.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.8		5.8		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		27.7		27.7		77.9		77.9
Actuated g/C Ratio		0.24		0.24		0.66		0.66
v/c Ratio		0.91		0.14		0.87		0.41
Control Delay		71.7		24.6		22.4		11.0
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		71.7		24.6		22.4		11.0
LOS		E		C		C		B
Approach Delay		71.7		24.6		22.4		11.0
Approach LOS		E		C		C		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 26.9	Intersection LOS: C
Intersection Capacity Utilization 66.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	88	72	5	18	27	14	465	4	18	265	41
Future Volume (veh/h)	126	88	72	5	18	27	14	465	4	18	265	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	140	98	80	6	20	30	16	1860	4	20	294	46
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.25	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	192	112	87	54	150	196	40	2291	5	53	700	106
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.67	0.67	0.67	0.67	0.67	0.67
Sat Flow, veh/h	659	503	390	88	672	878	13	3406	7	30	1041	157
Grp Volume(v), veh/h	318	0	0	56	0	0	984	0	896	360	0	0
Grp Sat Flow(s),veh/h/ln	1552	0	0	1638	0	0	1789	0	1637	1228	0	0
Q Serve(g_s), s	19.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.7	5.8	0.0	0.0
Cycle Q Clear(g_c), s	23.1	0.0	0.0	3.2	0.0	0.0	45.8	0.0	45.7	51.6	0.0	0.0
Prop In Lane	0.44		0.25	0.11		0.54	0.02		0.00	0.06		0.13
Lane Grp Cap(c), veh/h	392	0	0	400	0	0	1235	0	1101	859	0	0
V/C Ratio(X)	0.81	0.00	0.00	0.14	0.00	0.00	0.80	0.00	0.81	0.42	0.00	0.00
Avail Cap(c_a), veh/h	449	0	0	460	0	0	1235	0	1101	859	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	43.6	0.0	0.0	36.1	0.0	0.0	13.7	0.0	13.7	9.2	0.0	0.0
Incr Delay (d2), s/veh	9.7	0.0	0.0	0.2	0.0	0.0	5.4	0.0	6.6	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.0	0.0	1.3	0.0	0.0	16.5	0.0	15.3	3.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.3	0.0	0.0	36.3	0.0	0.0	19.0	0.0	20.3	10.7	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	B	A	C	B	A	A
Approach Vol, veh/h		318			56			1880			360	
Approach Delay, s/veh		53.3			36.3			19.6			10.7	
Approach LOS		D			D			B			B	

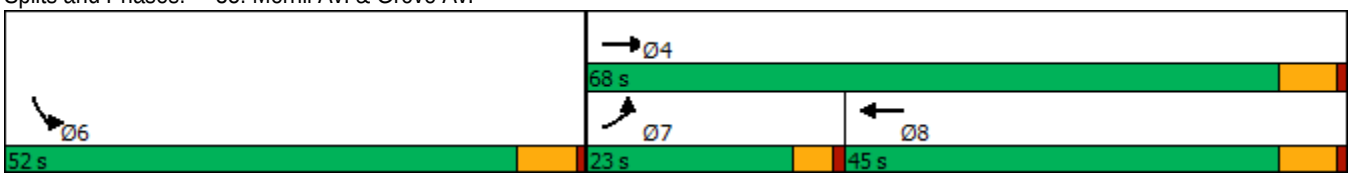
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		84.0		31.6		84.0		31.6				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		77.8		30.2		77.8		30.2				
Max Q Clear Time (g_c+I1), s		47.8		25.1		53.6		5.2				
Green Ext Time (p_c), s		16.7		0.8		2.5		0.2				

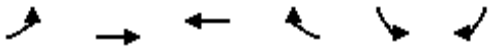
Intersection Summary												
HCM 6th Ctrl Delay			22.9									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	187	576	461	243
Future Volume (vph)	187	576	461	243
Turn Type	Prot	NA	NA	Prot
Protected Phases	7	4	8	6
Permitted Phases				
Detector Phase	7	4	8	6
Switch Phase				
Minimum Initial (s)	5.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	28.2
Total Split (s)	23.0	68.0	45.0	52.0
Total Split (%)	19.2%	56.7%	37.5%	43.3%
Yellow Time (s)	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	6.2
Lead/Lag	Lead		Lag	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	Max	Max	None
Act Effct Green (s)	15.6	62.1	41.9	26.7
Actuated g/C Ratio	0.15	0.61	0.41	0.26
v/c Ratio	0.78	0.54	0.56	0.83
Control Delay	64.1	15.1	22.3	49.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	64.1	15.1	22.3	49.4
LOS	E	B	C	D
Approach Delay		27.1	22.3	49.4
Approach LOS		C	C	D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 101.3	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 29.2	Intersection LOS: C
Intersection Capacity Utilization 71.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	187	576	461	296	243	99
Future Volume (veh/h)	187	576	461	296	243	99
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	195	600	480	308	253	103
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	224	1122	877	560	279	114
Arrive On Green	0.14	0.62	0.44	0.44	0.25	0.25
Sat Flow, veh/h	1619	1800	2091	1279	1108	451
Grp Volume(v), veh/h	195	600	410	378	357	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1710	1570	1563	0
Q Serve(g_s), s	11.7	18.7	17.6	17.7	22.0	0.0
Cycle Q Clear(g_c), s	11.7	18.7	17.6	17.7	22.0	0.0
Prop In Lane	1.00			0.81	0.71	0.29
Lane Grp Cap(c), veh/h	224	1122	749	688	394	0
V/C Ratio(X)	0.87	0.53	0.55	0.55	0.91	0.00
Avail Cap(c_a), veh/h	300	1122	749	688	722	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	41.8	10.6	20.6	20.6	36.0	0.0
Incr Delay (d2), s/veh	15.1	1.8	2.9	3.1	8.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	6.5	6.9	6.4	8.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	56.9	12.4	23.5	23.8	44.0	0.0
LnGrp LOS	E	B	C	C	D	A
Approach Vol, veh/h		795	788		357	
Approach Delay, s/veh		23.3	23.6		44.0	
Approach LOS		C	C		D	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	68.0	31.2	18.3	49.7
Change Period (Y+Rc), s	6.2	6.2	4.6	6.2
Max Green Setting (Gmax), s	61.8	45.8	18.4	38.8
Max Q Clear Time (g_c+I1), s	20.7	24.0	13.7	19.7
Green Ext Time (p_c), s	3.8	1.0	0.1	4.3

Intersection Summary	
HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

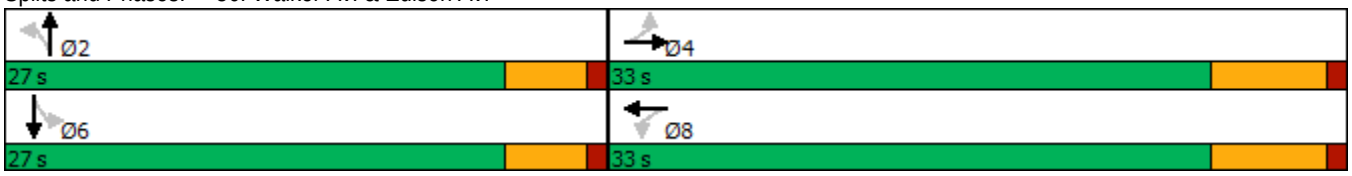
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	21	782	15	406	3	21	67	14
Future Volume (vph)	21	782	15	406	3	21	67	14
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	26.7	26.7	26.7	26.7
Total Split (s)	33.0	33.0	33.0	33.0	27.0	27.0	27.0	27.0
Total Split (%)	55.0%	55.0%	55.0%	55.0%	45.0%	45.0%	45.0%	45.0%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		4.7		4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		35.9		35.9		12.1		12.1
Actuated g/C Ratio		0.72		0.72		0.24		0.24
v/c Ratio		0.67		0.39		0.18		0.30
Control Delay		15.0		8.2		8.0		16.3
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		15.0		8.2		8.0		16.3
LOS		B		A		A		B
Approach Delay		15.0		8.2		8.0		16.3
Approach LOS		B		A		A		B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 50.2	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 12.5	Intersection LOS: B
Intersection Capacity Utilization 73.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	782	1	15	406	31	3	21	51	67	14	10
Future Volume (veh/h)	21	782	1	15	406	31	3	21	51	67	14	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	22	823	1	16	427	33	3	22	54	71	15	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	90	1012	1	91	922	70	84	93	210	323	65	33
Arrive On Green	0.57	0.57	0.57	0.57	0.57	0.57	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	18	1763	2	20	1606	121	20	486	1092	986	335	169
Grp Volume(v), veh/h	846	0	0	476	0	0	79	0	0	97	0	0
Grp Sat Flow(s),veh/h/ln	1783	0	0	1746	0	0	1598	0	0	1490	0	0
Q Serve(g_s), s	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Cycle Q Clear(g_c), s	17.7	0.0	0.0	7.3	0.0	0.0	2.0	0.0	0.0	2.3	0.0	0.0
Prop In Lane	0.03		0.00	0.03		0.07	0.04		0.68	0.73		0.11
Lane Grp Cap(c), veh/h	1103	0	0	1082	0	0	387	0	0	420	0	0
V/C Ratio(X)	0.77	0.00	0.00	0.44	0.00	0.00	0.20	0.00	0.00	0.23	0.00	0.00
Avail Cap(c_a), veh/h	1103	0	0	1082	0	0	841	0	0	825	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.0	0.0	0.0	5.8	0.0	0.0	16.0	0.0	0.0	16.1	0.0	0.0
Incr Delay (d2), s/veh	5.1	0.0	0.0	1.3	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	0.0	1.5	0.0	0.0	0.7	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.1	0.0	0.0	7.1	0.0	0.0	16.3	0.0	0.0	16.4	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		846			476			79			97	
Approach Delay, s/veh		13.1			7.1			16.3			16.4	
Approach LOS		B			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.7		33.0		13.7		33.0				
Change Period (Y+Rc), s		* 4.7		6.2		* 4.7		6.2				
Max Green Setting (Gmax), s		* 22		26.8		* 22		26.8				
Max Q Clear Time (g_c+I1), s		4.0		19.7		4.3		9.3				
Green Ext Time (p_c), s		0.3		3.1		0.4		2.5				

Intersection Summary		
HCM 6th Ctrl Delay		11.6
HCM 6th LOS		B

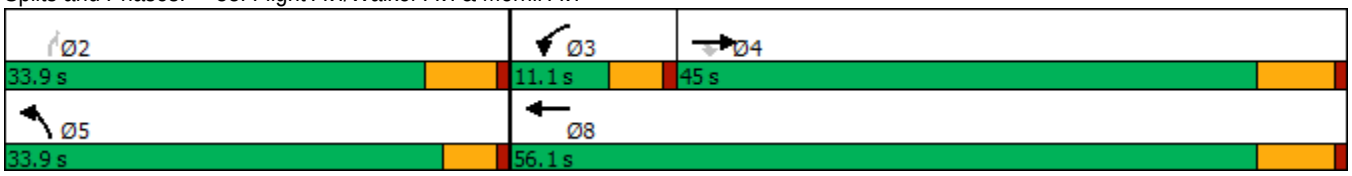
Notes

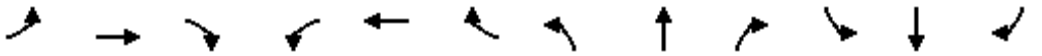
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	703	117	93	647	94	131
Future Volume (vph)	703	117	93	647	94	131
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	5	
Permitted Phases		4				2
Detector Phase	4	4	3	8	5	2
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	23.2	23.2	9.6	23.2	9.6	32.8
Total Split (s)	45.0	45.0	11.1	56.1	33.9	33.9
Total Split (%)	50.0%	50.0%	12.3%	62.3%	37.7%	37.7%
Yellow Time (s)	5.2	5.2	3.6	5.2	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	4.6	6.2	4.6	5.8
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	Min
Act Effct Green (s)	38.8	38.8	6.5	50.0	12.9	12.9
Actuated g/C Ratio	0.52	0.52	0.09	0.67	0.17	0.17
v/c Ratio	0.83	0.15	0.72	0.31	0.37	0.38
Control Delay	26.7	5.1	65.2	6.5	29.9	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.7	5.1	65.2	6.5	29.9	7.8
LOS	C	A	E	A	C	A
Approach Delay	23.6			13.9		
Approach LOS	C			B		

Intersection Summary			
Cycle Length: 90			
Actuated Cycle Length: 75			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 18.8		Intersection LOS: B	
Intersection Capacity Utilization 63.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 38: Flight Av./Walker Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	703	117	93	647	0	94	0	131	0	0	0
Future Volume (veh/h)	0	703	117	93	647	0	94	0	131	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1800	1800	1700	1800	0	1700	0	1800			
Adj Flow Rate, veh/h	0	773	129	102	711	0	103	0	144			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.25	0.91	0.91	0.91			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	0	905	767	126	2281	0	212	0	200			
Arrive On Green	0.00	0.50	0.50	0.08	0.67	0.00	0.13	0.00	0.13			
Sat Flow, veh/h	0	1800	1525	1619	3510	0	1619	0	1525			
Grp Volume(v), veh/h	0	773	129	102	711	0	103	0	144			
Grp Sat Flow(s),veh/h/ln	0	1800	1525	1619	1710	0	1619	0	1525			
Q Serve(g_s), s	0.0	20.0	2.5	3.3	4.7	0.0	3.2	0.0	4.8			
Cycle Q Clear(g_c), s	0.0	20.0	2.5	3.3	4.7	0.0	3.2	0.0	4.8			
Prop In Lane	0.00		1.00	1.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	905	767	126	2281	0	212	0	200			
V/C Ratio(X)	0.00	0.85	0.17	0.81	0.31	0.00	0.49	0.00	0.72			
Avail Cap(c_a), veh/h	0	1307	1108	197	3195	0	888	0	837			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	11.6	7.2	24.2	3.7	0.0	21.5	0.0	22.3			
Incr Delay (d2), s/veh	0.0	3.9	0.1	6.4	0.1	0.0	0.6	0.0	1.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	5.8	0.5	1.3	0.5	0.0	1.1	0.0	1.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	15.5	7.3	30.7	3.8	0.0	22.2	0.0	24.1			
LnGrp LOS	A	B	A	C	A	A	C	A	C			
Approach Vol, veh/h		902			813			247				
Approach Delay, s/veh		14.3			7.2			23.3				
Approach LOS		B			A			C				
Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		11.6	8.8	33.1				41.8				
Change Period (Y+Rc), s		4.6	4.6	6.2				6.2				
Max Green Setting (Gmax), s		29.3	6.5	38.8				49.9				
Max Q Clear Time (g_c+I1), s		6.8	5.3	22.0				6.7				
Green Ext Time (p_c), s		0.3	0.0	4.9				4.8				
Intersection Summary												
HCM 6th Ctrl Delay			12.5									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	766	13	11	568	14	28	0	19	36	0	144
Future Vol, veh/h	55	766	13	11	568	14	28	0	19	36	0	144
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	63	870	15	13	645	16	32	0	22	41	0	164

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	661	0	0	886	0	0	1354	1692	444	1240	1691	331
Stage 1	-	-	-	-	-	-	1005	1005	-	679	679	-
Stage 2	-	-	-	-	-	-	349	687	-	561	1012	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	937	-	-	773	-	-	110	94	567	134	94	671
Stage 1	-	-	-	-	-	-	263	322	-	412	454	-
Stage 2	-	-	-	-	-	-	646	450	-	485	319	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	937	-	-	772	-	-	78	86	566	121	86	671
Mov Cap-2 Maneuver	-	-	-	-	-	-	173	191	-	239	195	-
Stage 1	-	-	-	-	-	-	245	300	-	384	446	-
Stage 2	-	-	-	-	-	-	480	442	-	435	297	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.2	24.1	17.4
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	241	937	-	-	772	-	-	493
HCM Lane V/C Ratio	0.222	0.067	-	-	0.016	-	-	0.415
HCM Control Delay (s)	24.1	9.1	-	-	9.7	-	-	17.4
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.8	0.2	-	-	0	-	-	2

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	793	0	40	472	18	51	2	47	47	4	69
Future Vol, veh/h	27	793	0	40	472	18	51	2	47	47	4	69
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	200	-	0	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	30	881	0	44	524	20	57	2	52	52	4	77

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	544	0	0	882	0	0	1294	1574	442	1124	1564	272
Stage 1	-	-	-	-	-	-	942	942	-	622	622	-
Stage 2	-	-	-	-	-	-	352	632	-	502	942	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1035	-	-	775	-	-	122	111	569	163	113	732
Stage 1	-	-	-	-	-	-	287	344	-	446	482	-
Stage 2	-	-	-	-	-	-	643	477	-	525	344	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1035	-	-	774	-	-	100	102	568	137	103	732
Mov Cap-2 Maneuver	-	-	-	-	-	-	204	216	-	256	205	-
Stage 1	-	-	-	-	-	-	278	334	-	433	455	-
Stage 2	-	-	-	-	-	-	538	450	-	460	334	-

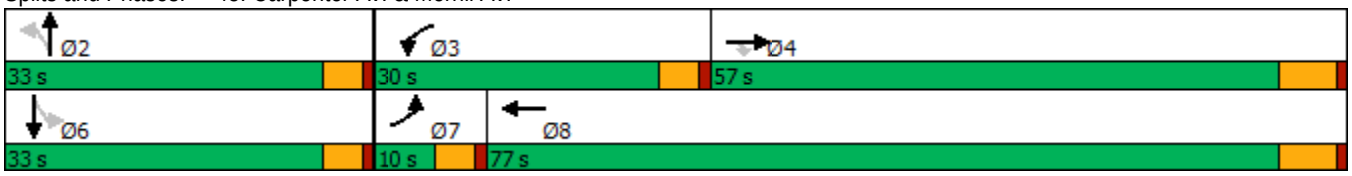
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.7	21	15.7
HCM LOS			C	C

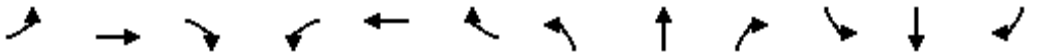
Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	204	216	568	1035	-	-	774	-	-	256	205	732
HCM Lane V/C Ratio	0.278	0.01	0.092	0.029	-	-	0.057	-	-	0.204	0.022	0.105
HCM Control Delay (s)	29.3	21.8	12	8.6	-	-	9.9	-	-	22.6	23	10.5
HCM Lane LOS	D	C	B	A	-	-	A	-	-	C	C	B
HCM 95th %tile Q(veh)	1.1	0	0.3	0.1	-	-	0.2	-	-	0.7	0.1	0.3

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	4	860	23	35	487	41	4	55	5
Future Volume (vph)	4	860	23	35	487	41	4	55	5
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	26.6	26.6
Total Split (s)	10.0	57.0	57.0	30.0	77.0	33.0	33.0	33.0	33.0
Total Split (%)	8.3%	47.5%	47.5%	25.0%	64.2%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2		4.6		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.1	67.4	67.4	6.9	73.1		13.1		13.1
Actuated g/C Ratio	0.05	0.68	0.68	0.07	0.74		0.13		0.13
v/c Ratio	0.05	0.78	0.02	0.33	0.41		0.65		0.75
Control Delay	48.8	19.4	0.0	52.2	7.2		28.6		83.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	48.8	19.4	0.0	52.2	7.2		28.6		83.3
LOS	D	B	A	D	A		C		F
Approach Delay		19.0			10.2		28.6		83.3
Approach LOS		B			B		C		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 98.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 19.6	Intersection LOS: B
Intersection Capacity Utilization 67.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 45: Carpenter Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	860	23	35	487	7	41	4	126	55	5	2
Future Volume (veh/h)	4	860	23	35	487	7	41	4	126	55	5	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	4	956	26	39	541	8	46	4	140	61	6	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	9	1211	1026	56	1239	18	87	17	168	180	16	4
Arrive On Green	0.01	0.67	0.67	0.03	0.70	0.70	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1714	1800	1525	1714	1769	26	303	120	1186	794	110	27
Grp Volume(v), veh/h	4	956	26	39	0	549	190	0	0	69	0	0
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	0	1795	1609	0	0	931	0	0
Q Serve(g_s), s	0.2	37.5	0.6	2.3	0.0	13.3	3.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	37.5	0.6	2.3	0.0	13.3	11.4	0.0	0.0	7.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	0.24		0.74	0.88		0.03
Lane Grp Cap(c), veh/h	9	1211	1026	56	0	1257	273	0	0	199	0	0
V/C Ratio(X)	0.44	0.79	0.03	0.69	0.00	0.44	0.70	0.00	0.00	0.35	0.00	0.00
Avail Cap(c_a), veh/h	92	1211	1026	431	0	1257	482	0	0	381	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	50.1	11.5	5.5	48.4	0.0	6.5	42.0	0.0	0.0	40.4	0.0	0.0
Incr Delay (d2), s/veh	12.2	5.3	0.0	5.5	0.0	1.1	3.2	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	12.8	0.2	1.0	0.0	4.0	4.8	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.3	16.8	5.6	53.9	0.0	7.6	45.2	0.0	0.0	41.4	0.0	0.0
LnGrp LOS	E	B	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		986			588			190			69	
Approach Delay, s/veh		16.7			10.7			45.2			41.4	
Approach LOS		B			B			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		19.0	7.9	74.2		19.0	5.1	77.0				
Change Period (Y+Rc), s		4.6	4.6	6.2		4.6	4.6	6.2				
Max Green Setting (Gmax), s		28.4	25.4	50.8		28.4	5.4	70.8				
Max Q Clear Time (g_c+I1), s		13.4	4.3	39.5		9.7	2.2	15.3				
Green Ext Time (p_c), s		1.0	0.0	5.0		0.3	0.0	3.4				

Intersection Summary												
HCM 6th Ctrl Delay			18.7									
HCM 6th LOS			B									

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	402	275	567	393	640	931
Future Volume (vph)	402	275	567	393	640	931
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	39.0	30.0	51.0	39.0	30.0	81.0
Total Split (%)	32.5%	25.0%	42.5%	32.5%	25.0%	67.5%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 103.3
Natural Cycle: 105
Control Type: Actuated-Uncoordinated

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	402	275	567	393	640	931
Future Volume (veh/h)	402	275	567	393	640	931
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1976	1976
Adj Flow Rate, veh/h	410	231	579	380	653	950
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	450	1304	692	975	772	1249
Arrive On Green	0.25	0.25	0.36	0.36	0.21	0.63
Sat Flow, veh/h	1810	2834	1900	1576	3651	1976
Grp Volume(v), veh/h	410	231	579	380	653	950
Grp Sat Flow(s),veh/h/ln	1810	1417	1900	1576	1825	1976
Q Serve(g_s), s	19.6	4.3	24.8	10.9	15.3	30.3
Cycle Q Clear(g_c), s	19.6	4.3	24.8	10.9	15.3	30.3
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	450	1304	692	975	772	1249
V/C Ratio(X)	0.91	0.18	0.84	0.39	0.85	0.76
Avail Cap(c_a), veh/h	685	1672	976	1210	1026	1687
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.5	14.1	25.9	8.8	33.7	11.6
Incr Delay (d2), s/veh	8.7	0.0	5.0	0.3	5.1	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	1.2	10.9	6.0	6.7	9.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.2	14.1	30.8	9.1	38.8	12.5
LnGrp LOS	D	B	C	A	D	B
Approach Vol, veh/h	641		959			1603
Approach Delay, s/veh	31.4		22.2			23.2
Approach LOS	C		C			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	23.8	37.7			61.6	27.4
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	25.0	45.7			* 76	33.7
Max Q Clear Time (g_c+I1), s	17.3	26.8			32.3	21.6
Green Ext Time (p_c), s	1.5	5.6			4.1	0.6

Intersection Summary	
HCM 6th Ctrl Delay	24.6
HCM 6th LOS	C

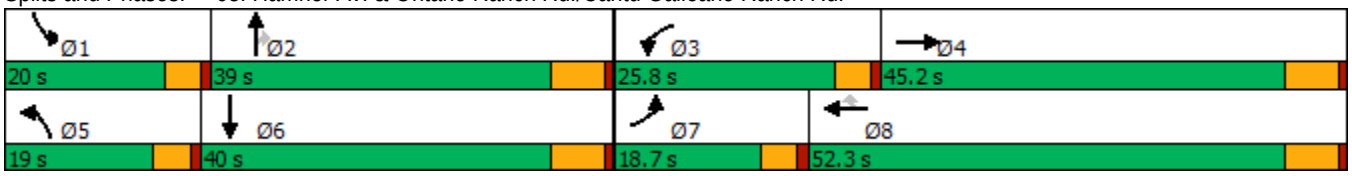
Notes

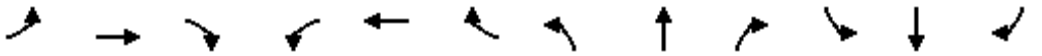
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	96	890	615	489	114	206	397	247	478	841
Future Volume (vph)	96	890	615	489	114	206	397	247	478	841
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	38.2	38.2	9.6	38.2
Total Split (s)	18.7	45.2	25.8	52.3	52.3	19.0	39.0	39.0	20.0	40.0
Total Split (%)	14.4%	34.8%	19.8%	40.2%	40.2%	14.6%	30.0%	30.0%	15.4%	30.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	8.5	31.0	21.5	44.0	44.0	12.2	26.2	26.2	15.6	29.7
Actuated g/C Ratio	0.07	0.27	0.19	0.38	0.38	0.10	0.23	0.23	0.13	0.26
v/c Ratio	0.47	0.74	1.18	0.39	0.18	0.70	0.37	0.48	1.26	0.80
Control Delay	61.4	40.2	140.3	28.4	5.4	64.5	39.1	7.7	177.8	46.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.4	40.2	140.3	28.4	5.4	64.5	39.1	7.7	177.8	46.0
LOS	E	D	F	C	A	E	D	A	F	D
Approach Delay		41.8		82.8			36.1			89.9
Approach LOS		D		F			D			F

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 116.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.26	
Intersection Signal Delay: 65.7	Intersection LOS: E
Intersection Capacity Utilization 84.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	890	279	615	489	114	206	397	247	478	841	115
Future Volume (veh/h)	96	890	279	615	489	114	206	397	247	478	841	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	100	927	182	641	509	85	215	414	178	498	876	65
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	149	1301	251	612	1383	617	272	905	280	444	1131	84
Arrive On Green	0.05	0.25	0.25	0.21	0.40	0.40	0.09	0.18	0.18	0.15	0.24	0.24
Sat Flow, veh/h	2956	5248	1013	2956	3420	1525	2956	4914	1523	2956	4668	345
Grp Volume(v), veh/h	100	818	291	641	509	85	215	414	178	498	614	327
Grp Sat Flow(s),veh/h/ln	1478	1548	1618	1478	1710	1525	1478	1638	1523	1478	1638	1737
Q Serve(g_s), s	3.4	16.5	16.9	21.2	10.7	3.6	7.3	7.7	11.1	15.4	17.9	18.0
Cycle Q Clear(g_c), s	3.4	16.5	16.9	21.2	10.7	3.6	7.3	7.7	11.1	15.4	17.9	18.0
Prop In Lane	1.00		0.63	1.00		1.00	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	149	1151	401	612	1383	617	272	905	280	444	794	421
V/C Ratio(X)	0.67	0.71	0.72	1.05	0.37	0.14	0.79	0.46	0.63	1.12	0.77	0.78
Avail Cap(c_a), veh/h	407	1767	616	612	1538	686	415	1573	487	444	1081	573
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.8	35.2	35.3	40.6	21.4	19.3	45.5	37.2	38.6	43.5	36.2	36.2
Incr Delay (d2), s/veh	2.0	0.8	2.5	49.6	0.2	0.1	2.7	0.4	2.4	80.0	2.4	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	5.8	6.4	11.5	4.0	1.2	2.7	3.0	4.1	10.3	7.0	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.8	36.0	37.8	90.3	21.5	19.4	48.3	37.6	41.0	123.5	38.6	40.9
LnGrp LOS	D	D	D	F	C	B	D	D	D	F	D	D
Approach Vol, veh/h		1209			1235			807			1439	
Approach Delay, s/veh		37.6			57.1			41.2			68.5	
Approach LOS		D			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	25.1	25.8	31.6	14.0	31.0	9.8	47.6
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	15.4	32.8	21.2	39.0	14.4	33.8	14.1	46.1
Max Q Clear Time (g_c+I1), s	17.4	13.1	23.2	18.9	9.3	20.0	5.4	12.7
Green Ext Time (p_c), s	0.0	2.9	0.0	6.5	0.2	4.6	0.1	3.4

Intersection Summary	
HCM 6th Ctrl Delay	52.8
HCM 6th LOS	D

APPENDIX 7.1:

OPENING YEAR CUMULATIVE (2025) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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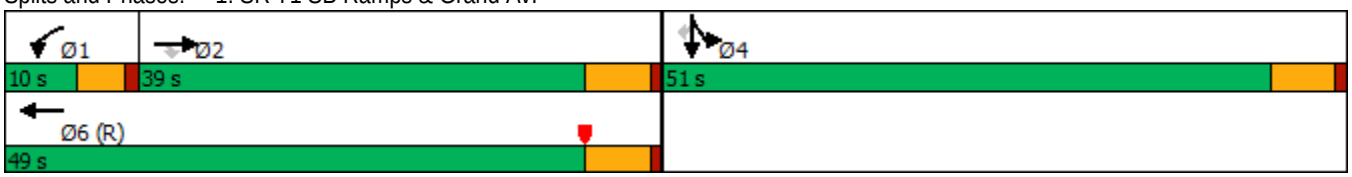
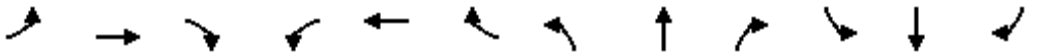
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	830	225	71	1492	914	5	346
Future Volume (vph)	830	225	71	1492	914	5	346
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	39.0	39.0	10.0	49.0	51.0	51.0	51.0
Total Split (%)	39.0%	39.0%	10.0%	49.0%	51.0%	51.0%	51.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None
Act Effct Green (s)	41.9	41.9	6.3	50.3	41.7	41.7	41.7
Actuated g/C Ratio	0.42	0.42	0.06	0.50	0.42	0.42	0.42
v/c Ratio	0.45	0.32	0.38	0.67	0.75	0.76	0.57
Control Delay	23.3	4.1	43.2	29.6	31.5	31.8	19.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.3	4.1	43.2	29.6	31.5	31.8	19.9
LOS	C	A	D	C	C	C	B
Approach Delay	19.2			30.3		28.4	
Approach LOS	B			C		C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 26.7	Intersection LOS: C
Intersection Capacity Utilization 60.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	830	225	71	1492	0	0	0	0	914	5	346
Future Volume (veh/h)	0	830	225	71	1492	0	0	0	0	914	5	346
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	976	176	84	1755	0				1079	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85				0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1861	578	180	2334	0				1275	0	
Arrive On Green	0.00	0.36	0.36	0.05	0.45	0.00				0.35	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	976	176	84	1755	0				1079	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	14.9	7.9	2.3	28.1	0.0				27.5	0.0	0.0
Cycle Q Clear(g_c), s	0.0	14.9	7.9	2.3	28.1	0.0				27.5	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1861	578	180	2334	0				1275	0	
V/C Ratio(X)	0.00	0.52	0.30	0.47	0.75	0.00				0.85	0.00	
Avail Cap(c_a), veh/h	0	1861	578	211	2334	0				1701	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.29	0.29	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	25.3	23.1	46.1	22.9	0.0				29.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	1.4	0.2	0.7	0.0				3.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.9	3.0	1.0	10.5	0.0				11.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	26.4	24.4	46.3	23.5	0.0				33.0	0.0	0.0
LnGrp LOS	A	C	C	D	C	A				C	A	
Approach Vol, veh/h		1152			1839						1079	A
Approach Delay, s/veh		26.1			24.6						33.0	
Approach LOS		C			C						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.1	39.9		39.2		49.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	5.4	33.2		45.2		43.2
Max Q Clear Time (g_c+I1), s	4.3	16.9		29.5		30.1
Green Ext Time (p_c), s	0.0	6.3		3.9		9.0

Intersection Summary		
HCM 6th Ctrl Delay		27.2
HCM 6th LOS		C

Notes

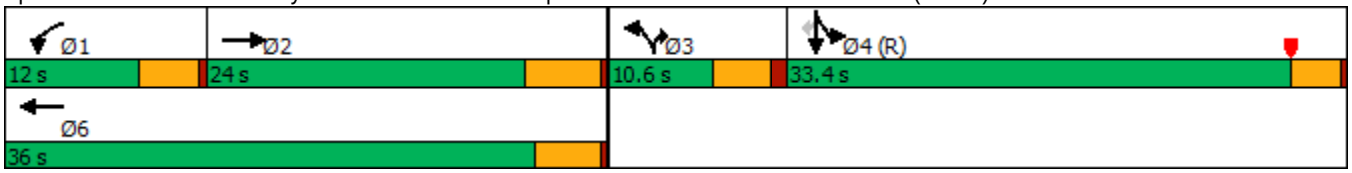
User approved volume balancing among the lanes for turning movement.

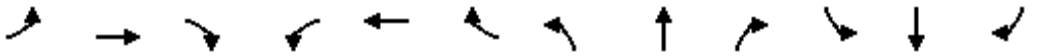
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	783	219	320	21	324	716	29	44
Future Volume (vph)	783	219	320	21	324	716	29	44
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	24.0	12.0	36.0	10.6	10.6	33.4	33.4	33.4
Total Split (%)	30.0%	15.0%	45.0%	13.3%	13.3%	41.8%	41.8%	41.8%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	19.0	14.2	37.7	6.1	6.1	23.7	23.7	23.7
Actuated g/C Ratio	0.24	0.18	0.47	0.08	0.08	0.30	0.30	0.30
v/c Ratio	0.98	0.70	0.19	0.15	1.08	0.75	0.75	0.08
Control Delay	57.4	47.7	18.2	37.3	92.8	34.4	34.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.4	47.7	18.2	37.3	92.8	34.4	34.1	0.3
LOS	E	D	B	D	F	C	C	A
Approach Delay	57.4		30.2				32.4	
Approach LOS	E		C				C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 48.0	Intersection LOS: D
Intersection Capacity Utilization 74.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	783	35	219	320	0	21	0	324	716	29	44
Future Volume (veh/h)	0	783	35	219	320	0	21	0	324	716	29	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	799	27	223	327	0	21	0	262	752	0	29
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	846	29	181	1399		0	0	0	1832	0	815
Arrive On Green	0.00	0.24	0.24	0.03	0.13	0.00	0.00	0.00	0.00	0.51	0.00	0.51
Sat Flow, veh/h	0	3658	120	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	405	421	223	327	0		0.0		752	0	29
Grp Sat Flow(s),veh/h/ln	0	1805	1878	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	17.6	17.6	8.0	6.5	0.0				10.4	0.0	0.7
Cycle Q Clear(g_c), s	0.0	17.6	17.6	8.0	6.5	0.0				10.4	0.0	0.7
Prop In Lane	0.00		0.06	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	429	446	181	1399					1832	0	815
V/C Ratio(X)	0.00	0.94	0.94	1.23	0.23					0.41	0.00	0.04
Avail Cap(c_a), veh/h	0	429	446	181	1421					1832	0	815
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.92	0.92	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	30.0	30.0	38.7	24.2	0.0				12.3	0.0	9.9
Incr Delay (d2), s/veh	0.0	29.4	28.7	140.6	0.1	0.0				0.7	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.5	10.8	10.7	2.7	0.0				3.7	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	59.3	58.6	179.3	24.3	0.0				13.0	0.0	10.0
LnGrp LOS	A	E	E	F	C					B	A	B
Approach Vol, veh/h		826			550	A					781	
Approach Delay, s/veh		59.0			87.1						12.9	
Approach LOS		E			F						B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	12.0	24.0		44.0		36.0						
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5						
Max Green Setting (Gmax), s	8.0	19.0		29.9		* 32						
Max Q Clear Time (g_c+I1), s	10.0	19.6		12.4		8.5						
Green Ext Time (p_c), s	0.0	0.0		2.7		1.5						

Intersection Summary												
HCM 6th Ctrl Delay			49.5									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

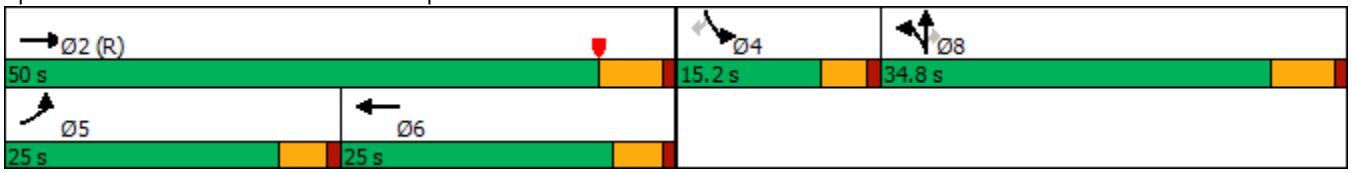
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

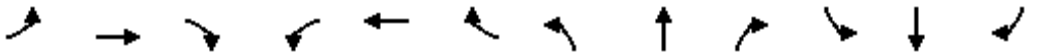
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	359	1191	195	1189	527	78	73	46	755
Future Volume (vph)	359	1191	195	1189	527	78	73	46	755
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.6	34.8		14.7	34.8	34.8	34.8	9.5	9.5
Total Split (s)	25.0	50.0		25.0	34.8	34.8	34.8	15.2	15.2
Total Split (%)	25.0%	50.0%		25.0%	34.8%	34.8%	34.8%	15.2%	15.2%
Yellow Time (s)	3.6	4.8		3.7	4.8	4.8	4.8	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8		-0.7	-1.8	-1.8	-1.8	-0.5	-0.5
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	Max	Max	Max	None	None
Act Effct Green (s)	21.0	46.0	100.0	21.0	31.5	31.5	31.5	10.5	10.5
Actuated g/C Ratio	0.21	0.46	1.00	0.21	0.32	0.32	0.32	0.10	0.10
v/c Ratio	1.03	0.54	0.13	0.96	0.61	0.60	0.13	0.26	0.94
Control Delay	96.1	18.8	0.1	56.8	35.0	34.8	1.5	44.5	30.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.1	18.8	0.1	56.8	35.0	34.8	1.5	44.5	30.3
LOS	F	B	A	E	C	C	A	D	C
Approach Delay		32.6		56.8		31.3			
Approach LOS		C		E		C			

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 38.8	Intersection LOS: D
Intersection Capacity Utilization 70.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	359	1191	195	0	1189	28	527	78	73	46	0	755
Future Volume (veh/h)	359	1191	195	0	1189	28	527	78	73	46	0	755
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	390	1295	0	0	1292	30	634	0	39	50	0	545
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	380	3174		0	2324	54	1115	0	496	0	0	0
Arrive On Green	0.21	0.61	0.00	0.00	0.35	0.34	0.31	0.00	0.31	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6887	154	3619	0	1610		0	
Grp Volume(v), veh/h	390	1295	0	0	956	366	634	0	39		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1872	1810	0	1610			
Q Serve(g_s), s	21.0	12.9	0.0	0.0	15.7	15.8	14.7	0.0	1.7			
Cycle Q Clear(g_c), s	21.0	12.9	0.0	0.0	15.7	15.8	14.7	0.0	1.7			
Prop In Lane	1.00		1.00	0.00		0.08	1.00		1.00			
Lane Grp Cap(c), veh/h	380	3174		0	1721	657	1115	0	496			
V/C Ratio(X)	1.03	0.41		0.00	0.56	0.56	0.57	0.00	0.08			
Avail Cap(c_a), veh/h	380	3174		0	1721	657	1115	0	496			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.81	0.81	0.00	0.00	0.88	0.88	1.00	0.00	1.00			
Uniform Delay (d), s/veh	39.5	10.0	0.0	0.0	26.2	26.2	29.0	0.0	24.5			
Incr Delay (d2), s/veh	48.4	0.3	0.0	0.0	0.3	0.9	2.1	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	13.9	4.2	0.0	0.0	6.0	7.0	6.3	0.0	0.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.9	10.3	0.0	0.0	26.5	27.1	31.1	0.0	24.8			
LnGrp LOS	F	B		A	C	C	C	A	C			
Approach Vol, veh/h		1685	A		1322			673				
Approach Delay, s/veh		28.3			26.7			30.8				
Approach LOS		C			C			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		65.2			25.0	40.2		34.8				
Change Period (Y+Rc), s		5.8			4.6	* 5.8		5.8				
Max Green Setting (Gmax), s		44.2			20.4	* 20		29.0				
Max Q Clear Time (g_c+I1), s		14.9			23.0	17.8		16.7				
Green Ext Time (p_c), s		10.1			0.0	1.8		2.0				

Intersection Summary	
HCM 6th Ctrl Delay	28.2
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

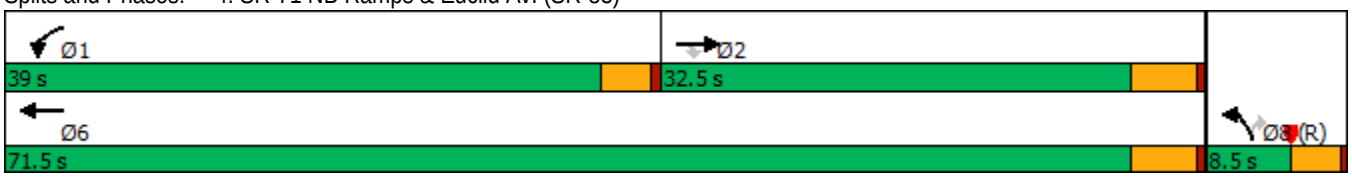
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	762	325	860	1127	48	827
Future Volume (vph)	762	325	860	1127	48	827
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	32.5	32.5	39.0	71.5	8.5	8.5
Total Split (%)	40.6%	40.6%	48.8%	89.4%	10.6%	10.6%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max
Act Effct Green (s)	24.2	24.2	35.5	63.2	8.8	8.8
Actuated g/C Ratio	0.30	0.30	0.44	0.79	0.11	0.11
v/c Ratio	0.74	0.55	1.14	0.42	0.13	1.19
Control Delay	25.7	10.2	103.6	3.0	35.5	112.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	10.2	103.6	3.0	35.5	112.1
LOS	C	B	F	A	D	F
Approach Delay	21.1			46.5	107.9	
Approach LOS	C			D	F	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.19	
Intersection Signal Delay: 53.1	Intersection LOS: D
Intersection Capacity Utilization 83.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	762	325	860	1127	48	827
Future Volume (veh/h)	762	325	860	1127	48	827
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	811	0	915	1199	51	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1010		803	2770	466	
Arrive On Green	0.09	0.00	0.44	0.77	0.13	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	811	0	915	1199	51	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	17.6	0.0	35.5	9.3	1.0	0.0
Cycle Q Clear(g_c), s	17.6	0.0	35.5	9.3	1.0	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1010		803	2770	466	
V/C Ratio(X)	0.80		1.14	0.43	0.11	
Avail Cap(c_a), veh/h	1264		803	3023	466	
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.22	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.1	0.0	22.3	3.2	30.5	0.0
Incr Delay (d2), s/veh	0.6	0.0	77.6	0.1	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	0.0	29.4	1.1	0.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.8	0.0	99.8	3.4	31.0	0.0
LnGrp LOS	C		F	A	C	
Approach Vol, veh/h	811	A		2114	51	A
Approach Delay, s/veh	34.8			45.1	31.0	
Approach LOS	C			D	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	39.0	26.9				65.9	14.1
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	35.5	28.0				67.0	5.0
Max Q Clear Time (g_c+I1), s	37.5	19.6				11.3	3.0
Green Ext Time (p_c), s	0.0	2.8				9.8	0.0

Intersection Summary		
HCM 6th Ctrl Delay	42.1	
HCM 6th LOS	D	

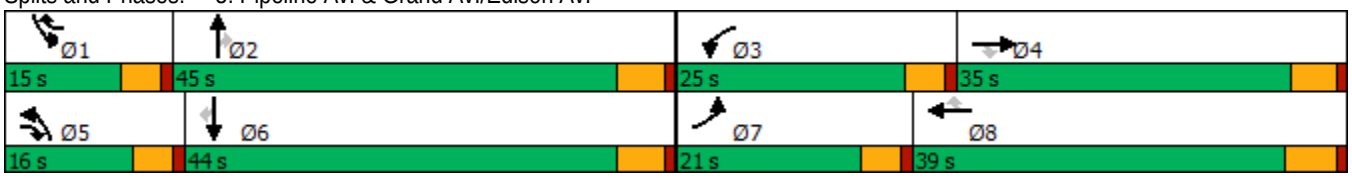
Notes

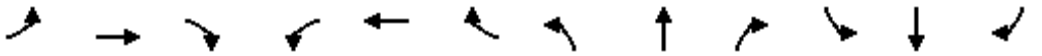
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	903	159	168	900	48	160	220	110	67	356	75
Future Volume (vph)	119	903	159	168	900	48	160	220	110	67	356	75
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	21.0	35.0	16.0	25.0	39.0	15.0	16.0	45.0	45.0	15.0	44.0	44.0
Total Split (%)	17.5%	29.2%	13.3%	20.8%	32.5%	12.5%	13.3%	37.5%	37.5%	12.5%	36.7%	36.7%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None
Act Effct Green (s)	8.6	34.2	43.9	10.0	35.6	44.1	9.7	22.1	22.1	8.5	18.7	18.7
Actuated g/C Ratio	0.10	0.38	0.49	0.11	0.40	0.50	0.11	0.25	0.25	0.10	0.21	0.21
v/c Ratio	0.41	0.49	0.20	0.49	0.47	0.06	0.51	0.27	0.25	0.45	0.51	0.19
Control Delay	44.2	23.9	3.3	43.7	22.6	3.1	45.5	28.5	6.7	50.7	33.3	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.2	23.9	3.3	43.7	22.6	3.1	45.5	28.5	6.7	50.7	33.3	3.3
LOS	D	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		23.2			24.9			29.2			31.1	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 88.9	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 25.9	Intersection LOS: C
Intersection Capacity Utilization 60.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	903	159	168	900	48	160	220	110	67	356	75
Future Volume (veh/h)	119	903	159	168	900	48	160	220	110	67	356	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	123	931	121	173	928	34	165	227	44	69	367	43
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	215	2065	755	275	2203	751	256	746	331	98	656	287
Arrive On Green	0.07	0.42	0.41	0.09	0.45	0.43	0.09	0.22	0.22	0.06	0.19	0.19
Sat Flow, veh/h	3141	4914	1505	3141	4914	1522	2956	3420	1519	1619	3420	1498
Grp Volume(v), veh/h	123	931	121	173	928	34	165	227	44	69	367	43
Grp Sat Flow(s),veh/h/ln	1570	1638	1505	1570	1638	1522	1478	1710	1519	1619	1710	1498
Q Serve(g_s), s	3.0	10.6	3.4	4.2	10.0	0.9	4.2	4.3	1.8	3.3	7.6	1.9
Cycle Q Clear(g_c), s	3.0	10.6	3.4	4.2	10.0	0.9	4.2	4.3	1.8	3.3	7.6	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	215	2065	755	275	2203	751	256	746	331	98	656	287
V/C Ratio(X)	0.57	0.45	0.16	0.63	0.42	0.05	0.64	0.30	0.13	0.71	0.56	0.15
Avail Cap(c_a), veh/h	684	2065	755	845	2203	751	454	1796	798	228	1752	768
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.3	16.2	10.6	34.4	14.7	10.3	34.5	25.6	24.6	36.0	28.6	26.3
Incr Delay (d2), s/veh	0.9	0.7	0.5	0.9	0.6	0.1	1.0	0.2	0.2	3.5	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.8	1.0	1.5	3.3	0.3	1.5	1.7	0.6	1.3	3.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.2	16.9	11.1	35.3	15.2	10.4	35.5	25.8	24.8	39.5	29.3	26.5
LnGrp LOS	D	B	B	D	B	B	D	C	C	D	C	C
Approach Vol, veh/h		1175			1135			436			479	
Approach Delay, s/veh		18.3			18.2			29.4			30.5	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	21.0	10.8	37.5	10.8	19.0	9.3	39.0
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	10.4	39.6	20.4	* 30	11.4	38.6	16.4	33.2
Max Q Clear Time (g_c+I1), s	5.3	6.3	6.2	12.6	6.2	9.6	5.0	12.0
Green Ext Time (p_c), s	0.0	1.5	0.2	6.4	0.1	2.5	0.1	6.1

Intersection Summary	
HCM 6th Ctrl Delay	21.6
HCM 6th LOS	C

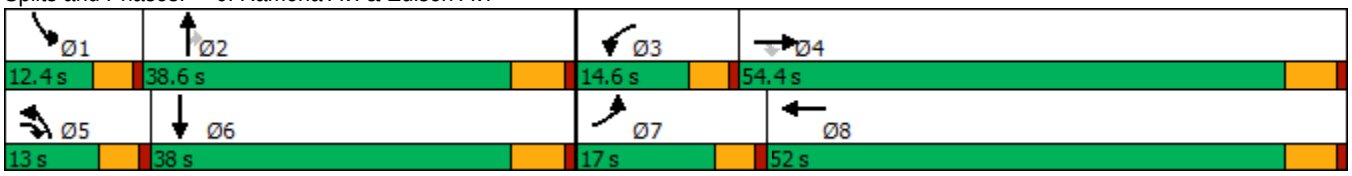
Notes

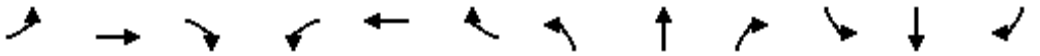
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	102	855	62	54	1039	46	320	61	52	472
Future Volume (vph)	102	855	62	54	1039	46	320	61	52	472
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	17.0	54.4	13.0	14.6	52.0	13.0	38.6	38.6	12.4	38.0
Total Split (%)	14.2%	45.3%	10.8%	12.2%	43.3%	10.8%	32.2%	32.2%	10.3%	31.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None
Act Effct Green (s)	11.3	53.9	61.7	8.6	48.7	7.8	27.5	27.5	7.6	27.3
Actuated g/C Ratio	0.10	0.49	0.57	0.08	0.45	0.07	0.25	0.25	0.07	0.25
v/c Ratio	0.68	0.56	0.05	0.47	0.81	0.44	0.41	0.15	0.52	0.74
Control Delay	70.0	24.1	3.4	63.6	33.6	64.3	35.9	2.3	69.0	42.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.0	24.1	3.4	63.6	33.6	64.3	35.9	2.3	69.0	42.7
LOS	E	C	A	E	C	E	D	A	E	D
Approach Delay		27.4			35.0		34.1			44.9
Approach LOS		C			D		C			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108.9	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 34.4	Intersection LOS: C
Intersection Capacity Utilization 73.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	855	62	54	1039	72	46	320	61	52	472	96
Future Volume (veh/h)	102	855	62	54	1039	72	46	320	61	52	472	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1700	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	113	950	65	60	1154	76	51	356	37	58	524	95
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	147	1742	1347	84	1532	101	72	792	353	81	685	124
Arrive On Green	0.09	0.51	0.50	0.05	0.47	0.45	0.04	0.23	0.23	0.05	0.24	0.22
Sat Flow, veh/h	1619	3420	2480	1619	3254	214	1619	3420	1521	1619	2887	521
Grp Volume(v), veh/h	113	950	65	60	606	624	51	356	37	58	309	310
Grp Sat Flow(s),veh/h/ln	1619	1710	1240	1619	1710	1758	1619	1710	1521	1619	1710	1698
Q Serve(g_s), s	7.0	19.2	1.3	3.7	29.6	29.7	3.2	9.1	2.0	3.6	17.2	17.4
Cycle Q Clear(g_c), s	7.0	19.2	1.3	3.7	29.6	29.7	3.2	9.1	2.0	3.6	17.2	17.4
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	147	1742	1347	84	805	828	72	792	353	81	406	403
V/C Ratio(X)	0.77	0.55	0.05	0.71	0.75	0.75	0.70	0.45	0.10	0.71	0.76	0.77
Avail Cap(c_a), veh/h	206	1742	1347	168	805	828	143	1160	516	133	570	566
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.3	17.0	11.0	47.6	22.1	22.2	48.0	33.6	30.8	47.7	36.2	36.6
Incr Delay (d2), s/veh	6.5	1.2	0.1	4.2	6.4	6.3	4.6	0.4	0.1	4.3	3.9	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	7.1	0.3	1.5	12.2	12.6	1.3	3.7	0.7	1.5	7.3	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.9	18.2	11.0	51.8	28.6	28.6	52.7	34.0	31.0	52.0	40.1	40.7
LnGrp LOS	D	B	B	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		1128			1290			444			677	
Approach Delay, s/veh		21.2			29.6			35.9			41.4	
Approach LOS		C			C			D			D	

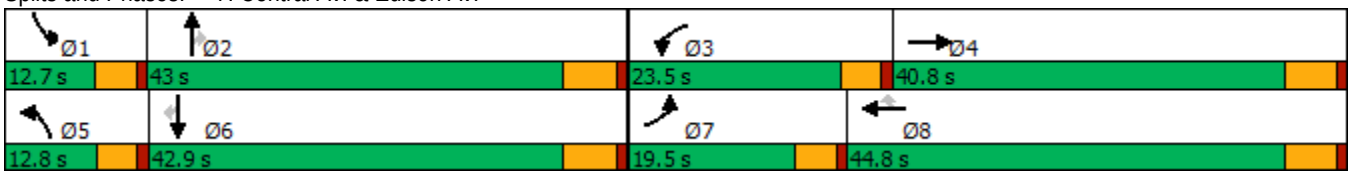
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	27.6	9.3	55.9	8.6	28.2	13.2	52.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	7.8	32.8	10.0	48.6	8.4	32.2	12.4	46.2
Max Q Clear Time (g_c+I1), s	5.6	11.1	5.7	21.2	5.2	19.4	9.0	31.7
Green Ext Time (p_c), s	0.0	2.1	0.0	7.1	0.0	2.8	0.0	6.5

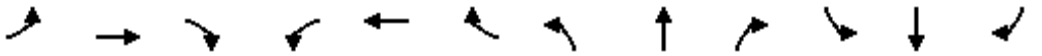
Intersection Summary	
HCM 6th Ctrl Delay	30.0
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	158	510	337	1064	123	81	839	328	89	989	267
Future Volume (vph)	158	510	337	1064	123	81	839	328	89	989	267
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	19.5	40.8	23.5	44.8	44.8	12.8	43.0	43.0	12.7	42.9	42.9
Total Split (%)	16.3%	34.0%	19.6%	37.3%	37.3%	10.7%	35.8%	35.8%	10.6%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	14.6	38.2	17.2	40.8	40.8	8.4	38.4	38.4	8.6	38.6	38.6
Actuated g/C Ratio	0.12	0.32	0.15	0.34	0.34	0.07	0.32	0.32	0.07	0.33	0.33
v/c Ratio	0.83	0.54	0.77	0.94	0.21	0.74	0.79	0.54	0.79	0.93	0.49
Control Delay	82.9	35.1	60.7	53.7	6.4	88.9	42.5	15.0	97.0	53.3	21.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.9	35.1	60.7	53.7	6.4	88.9	42.5	15.0	97.0	53.3	21.9
LOS	F	D	E	D	A	F	D	B	F	D	C
Approach Delay		45.5		51.4			38.3			49.9	
Approach LOS		D		D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 46.7	Intersection LOS: D
Intersection Capacity Utilization 88.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	510	61	337	1064	123	81	839	328	89	989	267
Future Volume (veh/h)	158	510	61	337	1064	123	81	839	328	89	989	267
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	165	531	58	351	1108	100	84	874	160	93	1030	220
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	197	1040	113	419	1184	521	111	1103	485	120	1121	493
Arrive On Green	0.12	0.33	0.32	0.13	0.35	0.35	0.07	0.32	0.32	0.07	0.33	0.33
Sat Flow, veh/h	1619	3110	339	3141	3420	1505	1619	3420	1503	1619	3420	1504
Grp Volume(v), veh/h	165	291	298	351	1108	100	84	874	160	93	1030	220
Grp Sat Flow(s),veh/h/ln	1619	1710	1739	1570	1710	1505	1619	1710	1503	1619	1710	1504
Q Serve(g_s), s	11.7	16.1	16.2	12.8	36.9	5.5	6.0	27.4	9.5	6.6	34.1	13.6
Cycle Q Clear(g_c), s	11.7	16.1	16.2	12.8	36.9	5.5	6.0	27.4	9.5	6.6	34.1	13.6
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	197	572	581	419	1184	521	111	1103	485	120	1121	493
V/C Ratio(X)	0.84	0.51	0.51	0.84	0.94	0.19	0.76	0.79	0.33	0.78	0.92	0.45
Avail Cap(c_a), veh/h	213	572	581	520	1184	521	121	1132	498	120	1129	497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.6	31.5	31.7	49.8	37.2	27.0	53.9	36.3	30.3	53.6	38.1	31.2
Incr Delay (d2), s/veh	21.5	3.2	3.2	8.0	14.6	0.8	18.7	3.8	0.4	24.9	11.9	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	6.9	7.1	5.4	17.0	2.0	3.0	11.5	3.4	3.5	15.4	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.2	34.7	34.9	57.8	51.9	27.8	72.6	40.2	30.6	78.5	49.9	31.8
LnGrp LOS	E	C	C	E	D	C	E	D	C	E	D	C
Approach Vol, veh/h		754			1559			1118			1343	
Approach Delay, s/veh		43.0			51.7			41.2			49.0	
Approach LOS		D			D			D			D	

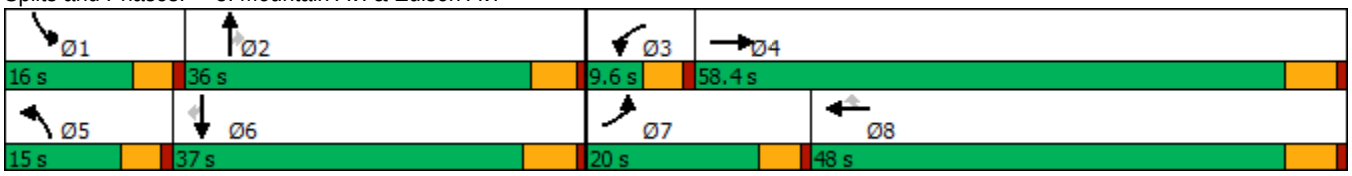
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	42.0	19.7	43.4	12.1	42.6	18.3	44.8
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	8.1	37.2	18.9	35.0	8.2	37.1	14.9	39.0
Max Q Clear Time (g_c+I1), s	8.6	29.4	14.8	18.2	8.0	36.1	13.7	38.9
Green Ext Time (p_c), s	0.0	3.6	0.3	2.9	0.0	0.7	0.0	0.1

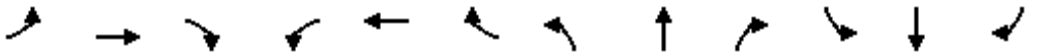
Intersection Summary	
HCM 6th Ctrl Delay	47.1
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	150	569	11	1087	114	90	164	44	109	84	281
Future Volume (vph)	150	569	11	1087	114	90	164	44	109	84	281
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	20.0	58.4	9.6	48.0	48.0	15.0	36.0	36.0	16.0	37.0	37.0
Total Split (%)	16.7%	48.7%	8.0%	40.0%	40.0%	12.5%	30.0%	30.0%	13.3%	30.8%	30.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	14.1	60.9	5.6	44.4	44.4	9.9	17.8	17.8	11.0	18.9	18.9
Actuated g/C Ratio	0.14	0.59	0.05	0.43	0.43	0.10	0.17	0.17	0.11	0.18	0.18
v/c Ratio	0.74	0.23	0.14	0.81	0.17	0.64	0.58	0.12	0.69	0.28	0.65
Control Delay	64.9	11.7	54.7	32.7	2.8	66.3	47.1	0.7	67.8	38.7	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.9	11.7	54.7	32.7	2.8	66.3	47.1	0.7	67.8	38.7	16.6
LOS	E	B	D	C	A	E	D	A	E	D	B
Approach Delay		22.2		30.1			46.1			32.3	
Approach LOS		C		C			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.4	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 30.0	Intersection LOS: C
Intersection Capacity Utilization 70.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	569	43	11	1087	114	90	164	44	109	84	281
Future Volume (veh/h)	150	569	43	11	1087	114	90	164	44	109	84	281
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	163	618	43	12	1182	113	98	178	18	118	91	167
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	202	2681	185	33	1602	714	131	246	209	153	285	237
Arrive On Green	0.12	0.57	0.55	0.02	0.47	0.47	0.08	0.14	0.14	0.09	0.16	0.16
Sat Flow, veh/h	1619	4686	324	1619	3420	1524	1619	1800	1525	1619	1800	1496
Grp Volume(v), veh/h	163	431	230	12	1182	113	98	178	18	118	91	167
Grp Sat Flow(s),veh/h/ln	1619	1638	1733	1619	1710	1524	1619	1800	1525	1619	1800	1496
Q Serve(g_s), s	9.3	6.2	6.3	0.7	26.7	4.0	5.6	9.0	1.0	6.8	4.3	10.1
Cycle Q Clear(g_c), s	9.3	6.2	6.3	0.7	26.7	4.0	5.6	9.0	1.0	6.8	4.3	10.1
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	202	1875	992	33	1602	714	131	246	209	153	285	237
V/C Ratio(X)	0.81	0.23	0.23	0.36	0.74	0.16	0.75	0.72	0.09	0.77	0.32	0.71
Avail Cap(c_a), veh/h	272	1875	992	95	1602	714	187	606	513	204	625	519
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	10.0	10.1	45.9	20.5	14.5	42.8	39.3	35.8	42.0	35.5	37.9
Incr Delay (d2), s/veh	8.9	0.3	0.5	2.4	3.1	0.5	4.8	4.0	0.2	8.1	0.6	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	2.0	2.2	0.3	10.2	1.4	2.4	4.2	0.4	2.9	1.8	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.4	10.3	10.7	48.4	23.6	15.0	47.6	43.3	36.0	50.1	36.1	41.8
LnGrp LOS	D	B	B	D	C	B	D	D	D	D	D	D
Approach Vol, veh/h		824			1307			294			376	
Approach Delay, s/veh		18.1			23.1			44.3			43.0	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	17.7	6.0	58.4	11.7	19.0	15.8	48.5
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	11.4	* 31	5.0	52.6	10.4	31.2	15.4	42.2
Max Q Clear Time (g_c+I1), s	8.8	11.0	2.7	8.3	7.6	12.1	11.3	28.7
Green Ext Time (p_c), s	0.0	0.9	0.0	4.3	0.0	0.9	0.1	6.7

Intersection Summary	
HCM 6th Ctrl Delay	26.5
HCM 6th LOS	C

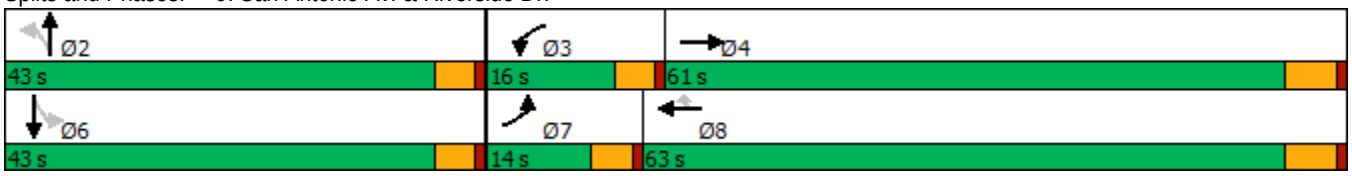
Notes

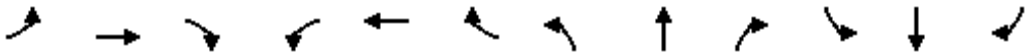
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	18	518	38	898	6	124	2	21	6
Future Volume (vph)	18	518	38	898	6	124	2	21	6
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	14.0	61.0	16.0	63.0	63.0	43.0	43.0	43.0	43.0
Total Split (%)	11.7%	50.8%	13.3%	52.5%	52.5%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	6.5	61.5	7.6	64.6	64.6	17.1	17.1	17.1	17.1
Actuated g/C Ratio	0.07	0.65	0.08	0.69	0.69	0.18	0.18	0.18	0.18
v/c Ratio	0.17	0.28	0.31	0.41	0.01	0.60	0.17	0.10	0.19
Control Delay	47.7	9.1	49.0	9.0	0.0	46.8	10.9	32.3	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.7	9.1	49.0	9.0	0.0	46.8	10.9	32.3	11.6
LOS	D	A	D	A	A	D	B	C	B
Approach Delay		10.2		10.6			36.5		17.1
Approach LOS		B		B			D		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 94	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 13.3	Intersection LOS: B
Intersection Capacity Utilization 55.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	518	62	38	898	6	124	2	47	21	6	53
Future Volume (veh/h)	18	518	62	38	898	6	124	2	47	21	6	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	19	557	63	41	966	5	133	2	28	23	6	40
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	45	2040	230	69	2303	1005	259	17	232	273	33	219
Arrive On Green	0.03	0.66	0.64	0.04	0.67	0.67	0.16	0.16	0.15	0.16	0.16	0.15
Sat Flow, veh/h	1619	3098	349	1619	3420	1492	1305	103	1436	1321	203	1353
Grp Volume(v), veh/h	19	307	313	41	966	5	133	0	30	23	0	46
Grp Sat Flow(s),veh/h/ln	1619	1710	1737	1619	1710	1492	1305	0	1538	1321	0	1556
Q Serve(g_s), s	1.0	6.5	6.6	2.2	11.3	0.1	8.6	0.0	1.5	1.3	0.0	2.3
Cycle Q Clear(g_c), s	1.0	6.5	6.6	2.2	11.3	0.1	10.8	0.0	1.5	2.8	0.0	2.3
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.93	1.00		0.87
Lane Grp Cap(c), veh/h	45	1126	1144	69	2303	1005	259	0	248	273	0	251
V/C Ratio(X)	0.42	0.27	0.27	0.59	0.42	0.00	0.51	0.00	0.12	0.08	0.00	0.18
Avail Cap(c_a), veh/h	185	1126	1144	222	2303	1005	630	0	685	648	0	693
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.9	6.2	6.3	41.2	6.5	4.7	36.4	0.0	31.7	32.6	0.0	32.0
Incr Delay (d2), s/veh	2.3	0.6	0.6	3.0	0.6	0.0	1.6	0.0	0.2	0.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.0	2.0	0.9	3.1	0.0	2.8	0.0	0.6	0.4	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.2	6.8	6.9	44.1	7.1	4.7	38.0	0.0	31.9	32.7	0.0	32.3
LnGrp LOS	D	A	A	D	A	A	D	A	C	C	A	C
Approach Vol, veh/h		639			1012			163			69	
Approach Delay, s/veh		8.0			8.6			36.9			32.5	
Approach LOS		A			A			D			C	

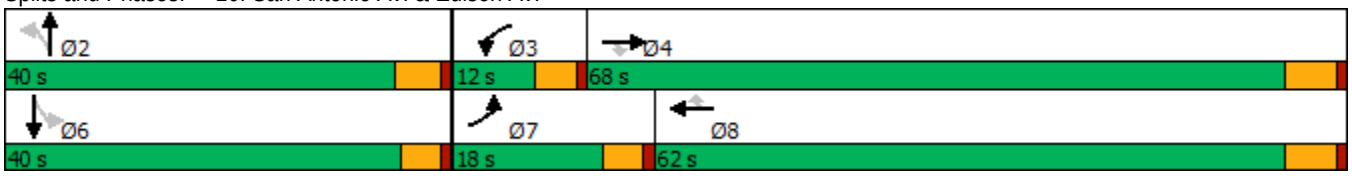
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.1	7.8	61.7		18.1	6.5	63.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		38.4	11.4	55.2		38.4	9.4	57.2				
Max Q Clear Time (g_c+I1), s		12.8	4.2	8.6		4.8	3.0	13.3				
Green Ext Time (p_c), s		0.6	0.0	3.7		0.3	0.0	7.6				

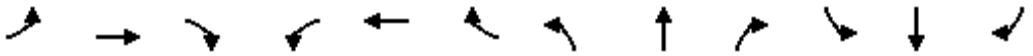
Intersection Summary												
HCM 6th Ctrl Delay			11.7									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	50	645	29	3	970	22	45	79	18	41
Future Volume (vph)	50	645	29	3	970	22	45	79	18	41
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	18.0	68.0	68.0	12.0	62.0	62.0	40.0	40.0	40.0	40.0
Total Split (%)	15.0%	56.7%	56.7%	10.0%	51.7%	51.7%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	8.3	68.9	68.9	5.9	60.5	60.5		16.8		16.8
Actuated g/C Ratio	0.09	0.72	0.72	0.06	0.63	0.63		0.18		0.18
v/c Ratio	0.39	0.28	0.03	0.05	0.49	0.02		0.66		0.52
Control Delay	51.2	6.5	0.8	48.7	12.2	0.0		49.8		26.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	51.2	6.5	0.8	48.7	12.2	0.0		49.8		26.5
LOS	D	A	A	D	B	A		D		C
Approach Delay		9.3			12.1			49.8		26.5
Approach LOS		A			B			D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 95.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 14.8	Intersection LOS: B
Intersection Capacity Utilization 60.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	645	29	3	970	22	45	79	15	18	41	100
Future Volume (veh/h)	50	645	29	3	970	22	45	79	15	18	41	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1000	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	54	701	24	3	1054	24	49	86	7	20	45	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	78	2438	1086	10	2310	1031	119	159	12	66	87	115
Arrive On Green	0.05	0.71	0.71	0.01	0.68	0.68	0.14	0.14	0.13	0.14	0.14	0.13
Sat Flow, veh/h	1619	3420	1523	952	3420	1525	452	1114	81	148	632	839
Grp Volume(v), veh/h	54	701	24	3	1054	24	142	0	0	135	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1523	952	1710	1525	1647	0	0	1618	0	0
Q Serve(g_s), s	2.9	6.6	0.4	0.3	13.0	0.5	0.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.9	6.6	0.4	0.3	13.0	0.5	7.0	0.0	0.0	6.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.35		0.05	0.15		0.52
Lane Grp Cap(c), veh/h	78	2438	1086	10	2310	1031	289	0	0	268	0	0
V/C Ratio(X)	0.70	0.29	0.02	0.29	0.46	0.02	0.49	0.00	0.00	0.50	0.00	0.00
Avail Cap(c_a), veh/h	252	2438	1086	85	2310	1031	694	0	0	676	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.1	4.7	3.8	44.1	6.8	4.8	35.9	0.0	0.0	36.6	0.0	0.0
Incr Delay (d2), s/veh	4.1	0.3	0.0	5.8	0.7	0.0	1.3	0.0	0.0	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.7	0.1	0.1	3.7	0.1	2.9	0.0	0.0	2.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.3	5.0	3.8	49.9	7.5	4.8	37.2	0.0	0.0	38.0	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		779			1081			142			135	
Approach Delay, s/veh		7.8			7.5			37.2			38.0	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.8	5.0	68.0		16.8	8.3	64.7				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		34.9	7.4	62.2		* 35	13.4	56.2				
Max Q Clear Time (g_c+I1), s		9.0	2.3	8.6		8.8	4.9	15.0				
Green Ext Time (p_c), s		0.7	0.0	5.1		0.8	0.0	8.6				

Intersection Summary	
HCM 6th Ctrl Delay	11.5
HCM 6th LOS	B

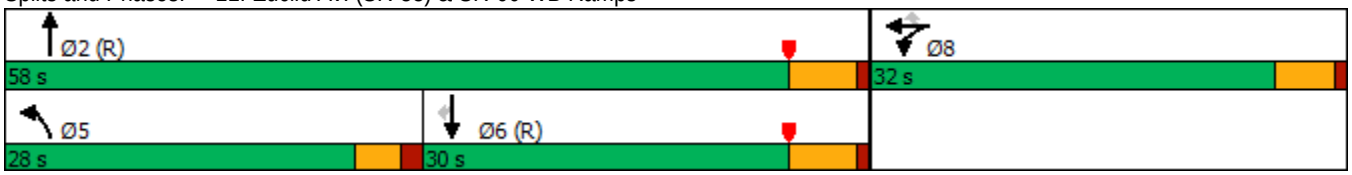
Notes

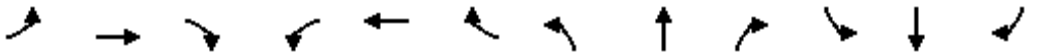
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	737	6	459	439	1022	1078	529
Future Volume (vph)	737	6	459	439	1022	1078	529
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	32.0	32.0	32.0	28.0	58.0	30.0	30.0
Total Split (%)	35.6%	35.6%	35.6%	31.1%	64.4%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	26.0	26.0	26.0	24.1	53.5	24.9	24.9
Actuated g/C Ratio	0.29	0.29	0.29	0.27	0.59	0.28	0.28
v/c Ratio	0.89	0.92	0.79	0.97	0.51	1.15	0.66
Control Delay	52.0	57.4	34.8	43.1	21.0	110.9	6.7
Queue Delay	0.0	0.0	0.0	0.0	2.6	0.0	0.0
Total Delay	52.0	57.4	34.8	43.1	23.7	110.9	6.7
LOS	D	E	C	D	C	F	A
Approach Delay		48.4			29.5	76.6	
Approach LOS		D			C	E	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.15	
Intersection Signal Delay: 52.6	Intersection LOS: D
Intersection Capacity Utilization 108.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	737	6	459	439	1022	0	0	1078	529
Future Volume (veh/h)	0	0	0	737	6	459	439	1022	0	0	1078	529
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				870	0	181	467	1087	0	0	1147	335
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				964	0	429	472	2227	0	0	1104	492
Arrive On Green				0.27	0.00	0.27	0.52	1.00	0.00	0.00	0.31	0.31
Sat Flow, veh/h				3619	0	1610	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				870	0	181	467	1087	0	0	1147	335
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1610
Q Serve(g_s), s				20.9	0.0	8.4	22.9	0.0	0.0	0.0	27.5	16.4
Cycle Q Clear(g_c), s				20.9	0.0	8.4	22.9	0.0	0.0	0.0	27.5	16.4
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				964	0	429	472	2227	0	0	1104	492
V/C Ratio(X)				0.90	0.00	0.42	0.99	0.49	0.00	0.00	1.04	0.68
Avail Cap(c_a), veh/h				1086	0	483	472	2227	0	0	1104	492
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.24	0.24	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.9	0.0	27.3	21.4	0.0	0.0	0.0	31.2	27.4
Incr Delay (d2), s/veh				9.1	0.0	0.2	17.5	0.2	0.0	0.0	37.7	7.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				9.7	0.0	3.0	7.8	0.1	0.0	0.0	16.9	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				41.0	0.0	27.5	38.9	0.2	0.0	0.0	69.0	34.8
LnGrp LOS				D	A	C	D	A	A	A	F	C
Approach Vol, veh/h					1051			1554			1482	
Approach Delay, s/veh					38.6			11.8			61.2	
Approach LOS					D			B			E	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	61.0		28.0	33.0		29.0						
Change Period (Y+Rc), s	5.5		4.5	5.5		5.0						
Max Green Setting (Gmax), s	52.5		23.5	24.5		27.0						
Max Q Clear Time (g_c+I1), s	2.0		24.9	29.5		22.9						
Green Ext Time (p_c), s	14.5		0.0	0.0		1.1						

Intersection Summary		
HCM 6th Ctrl Delay	36.6	
HCM 6th LOS	D	

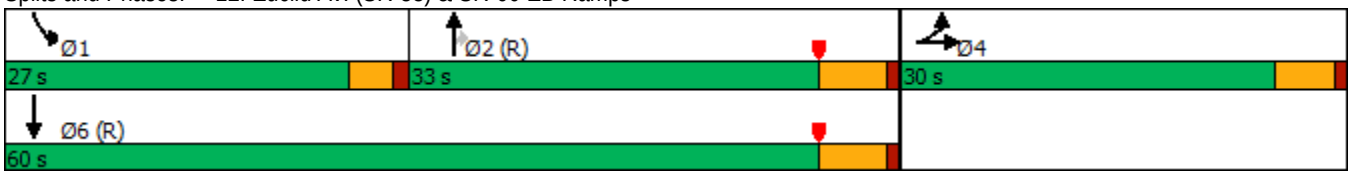
Notes

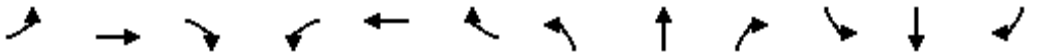
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	454	2	1008	769	409	1406
Future Volume (vph)	454	2	1008	769	409	1406
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	30.0	30.0	33.0	33.0	27.0	60.0
Total Split (%)	33.3%	33.3%	36.7%	36.7%	30.0%	66.7%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	25.0	25.0	27.9	27.9	22.6	54.5
Actuated g/C Ratio	0.28	0.28	0.31	0.31	0.25	0.61
v/c Ratio	0.90	1.09	0.95	0.89	0.95	0.68
Control Delay	56.1	98.8	48.6	20.7	58.9	6.8
Queue Delay	22.2	5.3	0.0	0.0	0.0	1.1
Total Delay	78.3	104.1	48.6	20.7	58.9	7.9
LOS	E	F	D	C	E	A
Approach Delay		92.2	36.6			19.4
Approach LOS		F	D			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 40.6	Intersection LOS: D
Intersection Capacity Utilization 108.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	454	2	429	0	0	0	0	1008	769	409	1406	0
Future Volume (veh/h)	454	2	429	0	0	0	0	1008	769	409	1406	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	439	57	397				0	1061	610	431	1480	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	503	57	399				0	1110	482	459	2186	0
Arrive On Green	0.28	0.28	0.28				0.00	0.31	0.31	0.34	0.81	0.00
Sat Flow, veh/h	1810	206	1436				0	3705	1566	1810	3705	0
Grp Volume(v), veh/h	439	0	454				0	1061	610	431	1480	0
Grp Sat Flow(s),veh/h/ln	1810	0	1642				0	1805	1566	1810	1805	0
Q Serve(g_s), s	20.8	0.0	24.8				0.0	25.9	27.7	20.8	15.8	0.0
Cycle Q Clear(g_c), s	20.8	0.0	24.8				0.0	25.9	27.7	20.8	15.8	0.0
Prop In Lane	1.00		0.87				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	503	0	456				0	1110	482	459	2186	0
V/C Ratio(X)	0.87	0.00	1.00				0.00	0.96	1.27	0.94	0.68	0.00
Avail Cap(c_a), veh/h	503	0	456				0	1110	482	462	2186	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.33	1.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.63	0.63	0.45	0.45	0.00
Uniform Delay (d), s/veh	31.0	0.0	32.4				0.0	30.6	31.2	29.2	5.0	0.0
Incr Delay (d2), s/veh	15.0	0.0	40.9				0.0	13.2	130.3	15.3	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.5	0.0	14.3				0.0	12.5	27.1	9.6	3.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.0	0.0	73.4				0.0	43.8	161.4	44.5	5.8	0.0
LnGrp LOS	D	A	E				A	D	F	D	A	A
Approach Vol, veh/h		893						1671			1911	
Approach Delay, s/veh		59.9						86.7			14.5	
Approach LOS		E						F			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	26.8	33.2		30.0		60.0
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	23.0	27.5		25.0		54.5
Max Q Clear Time (g_c+I1), s	22.8	29.7		26.8		17.8
Green Ext Time (p_c), s	0.0	0.0		0.0		20.1

Intersection Summary	
HCM 6th Ctrl Delay	50.5
HCM 6th LOS	D

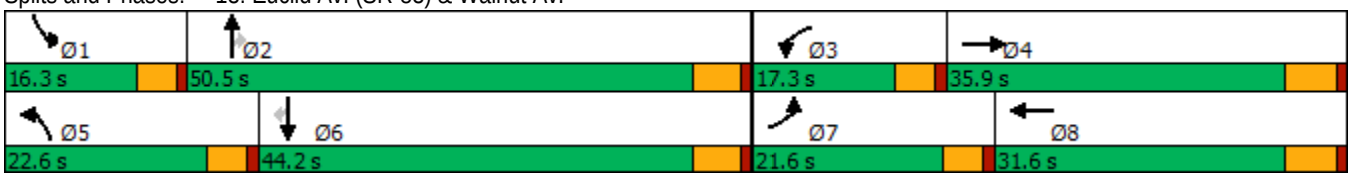
Notes

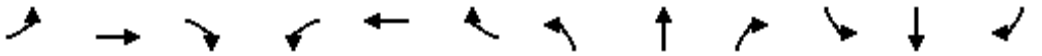
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	127	325	81	346	141	1366	51	168	1457	66
Future Volume (vph)	127	325	81	346	141	1366	51	168	1457	66
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	21.6	35.9	17.3	31.6	22.6	50.5	50.5	16.3	44.2	44.2
Total Split (%)	18.0%	29.9%	14.4%	26.3%	18.8%	42.1%	42.1%	13.6%	36.8%	36.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	13.0	27.4	9.7	21.8	13.9	45.5	45.5	10.2	41.7	41.7
Actuated g/C Ratio	0.12	0.25	0.09	0.20	0.13	0.41	0.41	0.09	0.38	0.38
v/c Ratio	0.71	0.56	0.60	0.84	0.73	0.71	0.08	0.66	0.83	0.10
Control Delay	68.8	36.7	68.2	45.9	68.8	31.1	0.2	62.1	38.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.8	36.7	68.2	45.9	68.8	31.1	0.2	62.1	38.1	0.3
LOS	E	D	E	D	E	C	A	E	D	A
Approach Delay		43.8		48.6		33.5			39.0	
Approach LOS		D		D		C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 39.1	Intersection LOS: D
Intersection Capacity Utilization 81.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	325	126	81	346	230	141	1366	51	168	1457	66
Future Volume (veh/h)	127	325	126	81	346	230	141	1366	51	168	1457	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	134	342	97	85	364	202	148	1438	36	177	1534	48
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	160	624	175	106	432	236	175	2098	651	231	1951	605
Arrive On Green	0.10	0.24	0.24	0.07	0.20	0.20	0.11	0.43	0.43	0.08	0.40	0.40
Sat Flow, veh/h	1619	2639	738	1619	2133	1164	1619	4914	1524	2956	4914	1524
Grp Volume(v), veh/h	134	220	219	85	291	275	148	1438	36	177	1534	48
Grp Sat Flow(s),veh/h/ln	1619	1710	1667	1619	1710	1586	1619	1638	1524	1478	1638	1524
Q Serve(g_s), s	8.6	11.9	12.2	5.5	17.2	17.7	9.5	25.0	1.5	6.2	28.9	2.1
Cycle Q Clear(g_c), s	8.6	11.9	12.2	5.5	17.2	17.7	9.5	25.0	1.5	6.2	28.9	2.1
Prop In Lane	1.00		0.44	1.00		0.73	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	160	405	394	106	347	322	175	2098	651	231	1951	605
V/C Ratio(X)	0.84	0.54	0.56	0.81	0.84	0.86	0.85	0.69	0.06	0.77	0.79	0.08
Avail Cap(c_a), veh/h	261	487	475	195	418	388	276	2098	651	327	1951	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.7	35.3	35.4	48.7	40.4	40.6	46.2	24.5	17.8	47.7	27.9	19.8
Incr Delay (d2), s/veh	5.7	1.1	1.2	5.3	12.1	14.8	7.5	1.8	0.2	3.8	3.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	4.9	4.9	2.3	8.1	7.9	4.1	9.5	0.5	2.4	11.2	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.4	36.5	36.7	54.1	52.5	55.4	53.7	26.4	17.9	51.6	31.2	20.1
LnGrp LOS	D	D	D	D	D	E	D	C	B	D	C	C
Approach Vol, veh/h		573			651			1622			1759	
Approach Delay, s/veh		40.3			53.9			28.7			32.9	
Approach LOS		D			D			C			C	

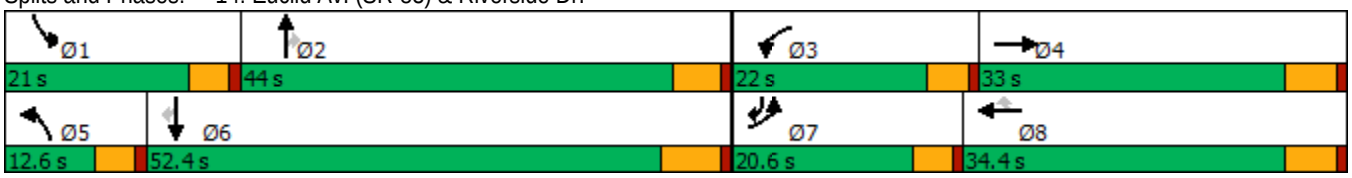
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.9	50.5	11.5	30.8	16.0	47.3	15.1	27.2
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	11.7	45.1	12.7	30.1	18.0	38.8	17.0	25.8
Max Q Clear Time (g_c+I1), s	8.2	27.0	7.5	14.2	11.5	30.9	10.6	19.7
Green Ext Time (p_c), s	0.1	9.6	0.0	2.1	0.1	5.6	0.1	1.7

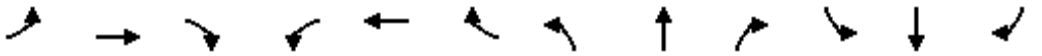
Intersection Summary	
HCM 6th Ctrl Delay	35.3
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	172	350	214	549	130	81	1127	177	195	1251	171
Future Volume (vph)	172	350	214	549	130	81	1127	177	195	1251	171
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	20.6	33.0	22.0	34.4	34.4	12.6	44.0	44.0	21.0	52.4	20.6
Total Split (%)	17.2%	27.5%	18.3%	28.7%	28.7%	10.5%	36.7%	36.7%	17.5%	43.7%	17.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None
Act Effct Green (s)	15.3	27.2	17.4	29.3	29.3	7.8	38.6	38.6	16.2	45.9	63.1
Actuated g/C Ratio	0.13	0.23	0.15	0.24	0.24	0.07	0.32	0.32	0.14	0.38	0.53
v/c Ratio	0.88	1.09	0.96	0.69	0.28	0.81	1.08	0.31	0.94	1.01	0.22
Control Delay	89.6	115.0	100.9	46.4	5.4	103.2	89.4	9.1	98.9	63.3	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.6	115.0	100.9	46.4	5.4	103.2	89.4	9.1	98.9	63.3	7.6
LOS	F	F	F	D	A	F	F	A	F	E	A
Approach Delay		107.6		53.5			79.9			61.7	
Approach LOS		F		D			E			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.8	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 71.7	Intersection LOS: E
Intersection Capacity Utilization 99.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	350	69	214	549	130	81	1127	177	195	1251	171
Future Volume (veh/h)	172	350	69	214	549	130	81	1127	177	195	1251	171
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	181	368	57	225	578	108	85	1186	146	205	1317	121
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	205	342	53	233	827	369	104	1090	486	219	1333	787
Arrive On Green	0.13	0.22	0.22	0.14	0.24	0.24	0.06	0.32	0.32	0.14	0.39	0.39
Sat Flow, veh/h	1619	1522	236	1619	3420	1525	1619	3420	1525	1619	3420	1524
Grp Volume(v), veh/h	181	0	425	225	578	108	85	1186	146	205	1317	121
Grp Sat Flow(s),veh/h/ln	1619	0	1758	1619	1710	1525	1619	1710	1525	1619	1710	1524
Q Serve(g_s), s	13.3	0.0	27.2	16.7	18.7	7.0	6.3	38.6	8.7	15.2	46.3	5.1
Cycle Q Clear(g_c), s	13.3	0.0	27.2	16.7	18.7	7.0	6.3	38.6	8.7	15.2	46.3	5.1
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	205	0	395	233	827	369	104	1090	486	219	1333	787
V/C Ratio(X)	0.88	0.00	1.08	0.97	0.70	0.29	0.81	1.09	0.30	0.93	0.99	0.15
Avail Cap(c_a), veh/h	214	0	395	233	827	369	107	1090	486	219	1333	787
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	0.0	47.0	51.6	41.9	37.4	55.9	41.2	31.1	51.8	36.7	15.4
Incr Delay (d2), s/veh	30.5	0.0	67.3	49.4	2.6	0.4	33.6	54.4	1.6	42.4	22.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.0	18.8	9.8	7.9	2.6	3.4	23.4	3.3	8.6	22.5	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.6	0.0	114.2	100.9	44.5	37.9	89.6	95.7	32.7	94.2	58.6	15.8
LnGrp LOS	F	A	F	F	D	D	F	F	C	F	E	B
Approach Vol, veh/h		606			911			1417			1643	
Approach Delay, s/veh		104.8			57.6			88.8			59.9	
Approach LOS		F			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	45.1	22.0	33.0	12.4	53.7	19.9	35.1
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	16.4	* 39	17.4	27.2	8.0	45.9	16.0	28.6
Max Q Clear Time (g_c+I1), s	17.2	40.6	18.7	29.2	8.3	48.3	15.3	20.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	74.4
HCM 6th LOS	E

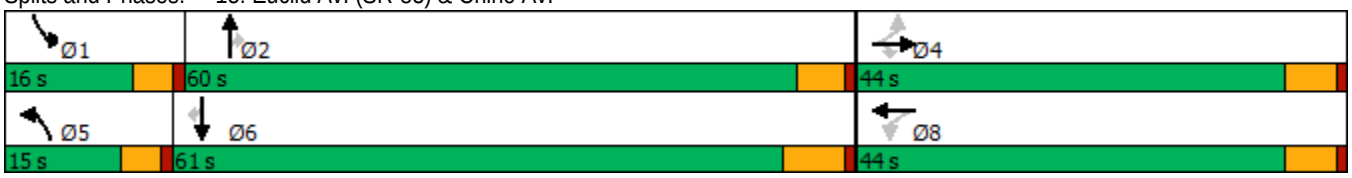
Notes

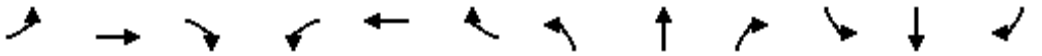
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	117	186	47	81	170	56	1207	145	63	1343	104
Future Volume (vph)	117	186	47	81	170	56	1207	145	63	1343	104
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	44.0	44.0	44.0	44.0	44.0	15.0	60.0	60.0	16.0	61.0	61.0
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	12.5%	50.0%	50.0%	13.3%	50.8%	50.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	29.1	29.1	29.1		29.1	8.1	56.3	56.3	8.6	55.5	55.5
Actuated g/C Ratio	0.27	0.27	0.27		0.27	0.08	0.52	0.52	0.08	0.52	0.52
v/c Ratio	0.63	0.41	0.11		0.92	0.50	0.72	0.18	0.52	0.81	0.14
Control Delay	50.0	34.8	3.4		68.0	65.1	25.1	10.6	65.4	29.0	6.1
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.0	34.8	3.4		68.0	65.1	25.1	10.6	65.4	29.0	6.1
LOS	D	C	A		E	E	C	B	E	C	A
Approach Delay		35.7			68.0		25.2			28.9	
Approach LOS		D			E		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 31.5	Intersection LOS: C
Intersection Capacity Utilization 90.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	186	47	81	170	57	56	1207	145	63	1343	104
Future Volume (veh/h)	117	186	47	81	170	57	56	1207	145	63	1343	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	124	198	34	86	181	49	60	1284	130	67	1429	80
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	227	495	419	120	221	55	75	1760	785	84	1778	777
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.05	0.51	0.51	0.05	0.52	0.52
Sat Flow, veh/h	1104	1800	1524	280	803	199	1619	3420	1525	1619	3420	1494
Grp Volume(v), veh/h	124	198	34	316	0	0	60	1284	130	67	1429	80
Grp Sat Flow(s),veh/h/ln	1104	1800	1524	1283	0	0	1619	1710	1525	1619	1710	1494
Q Serve(g_s), s	0.0	9.5	1.8	16.5	0.0	0.0	3.9	31.1	4.8	4.4	36.7	2.9
Cycle Q Clear(g_c), s	24.5	9.5	1.8	26.1	0.0	0.0	3.9	31.1	4.8	4.4	36.7	2.9
Prop In Lane	1.00		1.00	0.27		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	227	495	419	396	0	0	75	1760	785	84	1778	777
V/C Ratio(X)	0.55	0.40	0.08	0.80	0.00	0.00	0.80	0.73	0.17	0.80	0.80	0.10
Avail Cap(c_a), veh/h	319	646	547	524	0	0	158	1760	785	173	1778	777
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.9	31.4	28.6	38.6	0.0	0.0	50.3	20.1	13.7	50.0	21.1	13.0
Incr Delay (d2), s/veh	2.0	0.5	0.1	6.4	0.0	0.0	7.2	2.7	0.5	6.5	4.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	4.1	0.6	8.4	0.0	0.0	1.7	11.3	1.6	1.8	13.5	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.9	32.0	28.7	45.0	0.0	0.0	57.5	22.8	14.2	56.4	25.0	13.2
LnGrp LOS	D	C	C	D	A	A	E	C	B	E	C	B
Approach Vol, veh/h		356			316			1474			1576	
Approach Delay, s/veh		34.1			45.0			23.4			25.8	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.1	61.3		35.1	9.5	61.9		35.1				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	11.4	* 55		38.2	10.4	54.5		38.2				
Max Q Clear Time (g_c+I1), s	6.4	33.1		26.5	5.9	38.7		28.1				
Green Ext Time (p_c), s	0.0	9.1		1.2	0.0	8.5		1.2				

Intersection Summary			
HCM 6th Ctrl Delay		27.3	
HCM 6th LOS		C	

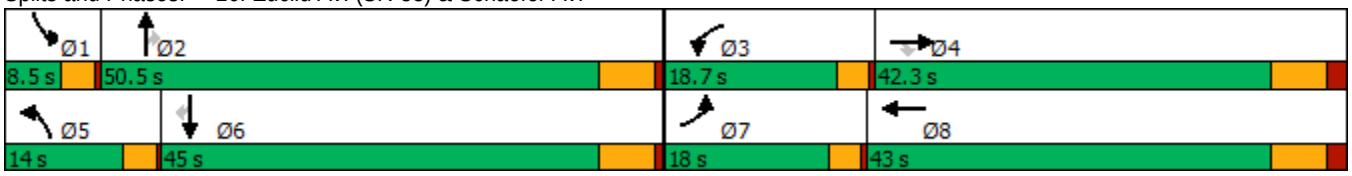
Notes

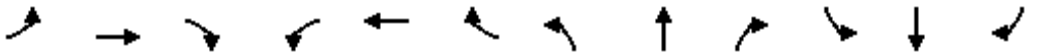
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	172	82	73	158	199	119	1170	39	33	1246	137
Future Volume (vph)	172	82	73	158	199	119	1170	39	33	1246	137
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	18.0	42.3	42.3	18.7	43.0	14.0	50.5	50.5	8.5	45.0	45.0
Total Split (%)	15.0%	35.3%	35.3%	15.6%	35.8%	11.7%	42.1%	42.1%	7.1%	37.5%	37.5%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	14.4	19.8	19.8	13.9	19.3	10.5	48.3	48.3	5.0	39.3	39.3
Actuated g/C Ratio	0.14	0.19	0.19	0.13	0.19	0.10	0.47	0.47	0.05	0.38	0.38
v/c Ratio	0.83	0.26	0.20	0.78	0.68	0.79	0.79	0.05	0.45	1.03	0.23
Control Delay	73.8	37.0	2.5	69.4	48.7	79.2	30.2	0.1	69.4	67.3	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.8	37.0	2.5	69.4	48.7	79.2	30.2	0.1	69.4	67.3	6.8
LOS	E	D	A	E	D	E	C	A	E	E	A
Approach Delay		48.7			57.6		33.7			61.5	
Approach LOS		D			E		C			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.6	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 49.1	Intersection LOS: D
Intersection Capacity Utilization 85.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	82	73	158	199	12	119	1170	39	33	1246	137
Future Volume (veh/h)	172	82	73	158	199	12	119	1170	39	33	1246	137
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	185	88	59	170	214	11	128	1258	32	35	1340	113
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	214	304	258	199	271	14	154	1603	715	51	1385	616
Arrive On Green	0.13	0.17	0.17	0.12	0.16	0.16	0.10	0.47	0.47	0.03	0.40	0.40
Sat Flow, veh/h	1619	1800	1525	1619	1697	87	1619	3420	1525	1619	3420	1522
Grp Volume(v), veh/h	185	88	59	170	0	225	128	1258	32	35	1340	113
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1784	1619	1710	1525	1619	1710	1522
Q Serve(g_s), s	10.8	4.1	3.2	9.9	0.0	11.7	7.5	29.8	1.1	2.1	36.9	4.6
Cycle Q Clear(g_c), s	10.8	4.1	3.2	9.9	0.0	11.7	7.5	29.8	1.1	2.1	36.9	4.6
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	214	304	258	199	0	285	154	1603	715	51	1385	616
V/C Ratio(X)	0.86	0.29	0.23	0.85	0.00	0.79	0.83	0.78	0.04	0.68	0.97	0.18
Avail Cap(c_a), veh/h	244	660	559	256	0	667	177	1603	715	84	1385	616
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	35.0	34.6	41.4	0.0	38.9	42.8	21.5	13.9	46.2	28.0	18.4
Incr Delay (d2), s/veh	21.9	0.4	0.3	16.2	0.0	3.6	21.8	2.6	0.0	5.9	17.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	1.8	1.2	4.7	0.0	5.2	3.7	10.8	0.4	0.9	16.4	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.9	35.3	34.9	57.6	0.0	42.5	64.6	24.1	13.9	52.1	45.1	18.6
LnGrp LOS	E	D	C	E	A	D	E	C	B	D	D	B
Approach Vol, veh/h		332			395			1418			1488	
Approach Delay, s/veh		50.6			49.0			27.6			43.2	
Approach LOS		D			D			C			D	

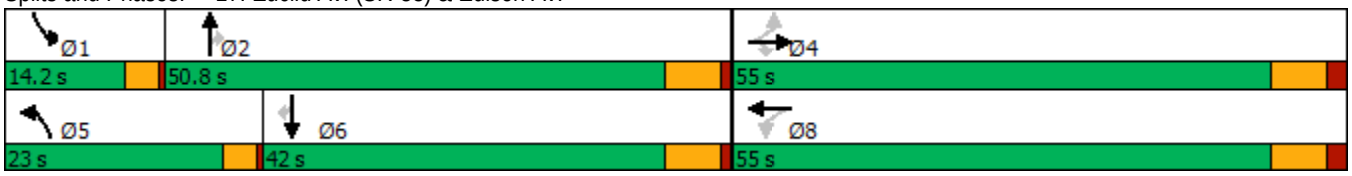
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	51.1	15.3	23.3	12.7	45.0	16.2	22.4
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	44.5	15.2	35.3	10.5	39.0	14.5	36.0
Max Q Clear Time (g_c+I1), s	4.1	31.8	11.9	6.1	9.5	38.9	12.8	13.7
Green Ext Time (p_c), s	0.0	6.4	0.1	0.4	0.0	0.1	0.0	0.9

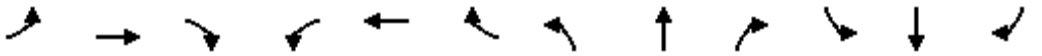
Intersection Summary	
HCM 6th Ctrl Delay	38.4
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	175	297	141	39	478	250	1100	44	78	1118	188
Future Volume (vph)	175	297	141	39	478	250	1100	44	78	1118	188
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	55.0	55.0	55.0	55.0	55.0	23.0	50.8	50.8	14.2	42.0	42.0
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	19.2%	42.3%	42.3%	11.8%	35.0%	35.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	48.0	48.0	48.0	48.0	48.0	19.5	48.1	48.1	9.2	36.0	36.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.16	0.40	0.40	0.08	0.30	0.30
v/c Ratio	1.36	0.43	0.21	0.13	0.81	0.99	0.84	0.07	0.65	1.14	0.37
Control Delay	233.5	28.4	4.4	24.2	41.9	104.3	39.9	2.9	77.6	112.1	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	233.5	28.4	4.4	24.2	41.9	104.3	39.9	2.9	77.6	112.1	14.8
LOS	F	C	A	C	D	F	D	A	E	F	B
Approach Delay		81.4			40.8		50.3			97.0	
Approach LOS		F			D		D			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.36	
Intersection Signal Delay: 69.9	Intersection LOS: E
Intersection Capacity Utilization 110.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	297	141	39	478	72	250	1100	44	78	1118	188
Future Volume (veh/h)	175	297	141	39	478	72	250	1100	44	78	1118	188
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	182	309	92	41	498	70	260	1146	38	81	1165	145
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	152	720	610	320	618	87	263	1371	611	100	1026	447
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.16	0.40	0.40	0.06	0.30	0.30
Sat Flow, veh/h	809	1800	1524	944	1544	217	1619	3420	1525	1619	3420	1489
Grp Volume(v), veh/h	182	309	92	41	0	568	260	1146	38	81	1165	145
Grp Sat Flow(s),veh/h/ln	809	1800	1524	944	0	1761	1619	1710	1525	1619	1710	1489
Q Serve(g_s), s	13.7	14.9	4.6	3.9	0.0	34.3	19.2	36.2	1.8	5.9	36.0	9.1
Cycle Q Clear(g_c), s	48.0	14.9	4.6	18.9	0.0	34.3	19.2	36.2	1.8	5.9	36.0	9.1
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	720	610	320	0	704	263	1371	611	100	1026	447
V/C Ratio(X)	1.19	0.43	0.15	0.13	0.00	0.81	0.99	0.84	0.06	0.81	1.14	0.32
Avail Cap(c_a), veh/h	152	720	610	320	0	704	263	1371	611	144	1026	447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.8	26.1	23.0	32.9	0.0	31.9	50.1	32.4	22.1	55.6	42.0	32.6
Incr Delay (d2), s/veh	134.4	0.4	0.1	0.2	0.0	6.9	52.0	4.7	0.0	12.8	73.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.2	6.2	1.6	0.9	0.0	15.1	11.2	14.7	0.6	2.7	24.6	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	190.2	26.5	23.1	33.1	0.0	38.8	102.1	37.1	22.1	68.4	115.2	33.0
LnGrp LOS	F	C	C	C	A	D	F	D	C	E	F	C
Approach Vol, veh/h		583			609			1444			1391	
Approach Delay, s/veh		77.1			38.4			48.4			103.9	
Approach LOS		E			D			D			F	

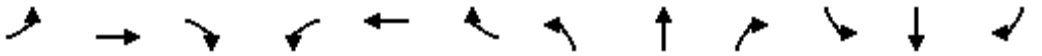
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.9	54.1		55.0	23.0	42.0		55.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	10.7	44.8		48.0	19.5	36.0		48.0				
Max Q Clear Time (g_c+I1), s	7.9	38.2		50.0	21.2	38.0		36.3				
Green Ext Time (p_c), s	0.0	3.7		0.0	0.0	0.0		2.8				

Intersection Summary												
HCM 6th Ctrl Delay			70.2									
HCM 6th LOS			E									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	75	28	181	36	170	196	1319	14	77	1274	45
Future Volume (vph)	75	28	181	36	170	196	1319	14	77	1274	45
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	46.8	46.8	46.8	46.8	46.8	24.0	63.5	63.5	9.7	49.2	49.2
Total Split (%)	39.0%	39.0%	39.0%	39.0%	39.0%	20.0%	52.9%	52.9%	8.1%	41.0%	41.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	19.0	19.0	19.0	19.0	19.0	15.8	53.9	53.9	6.3	44.5	44.5
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20	0.17	0.58	0.58	0.07	0.48	0.48
v/c Ratio	0.53	0.08	0.40	0.15	0.63	0.74	0.68	0.02	0.72	0.80	0.06
Control Delay	46.8	29.4	7.1	30.9	39.3	55.5	18.0	0.0	82.3	28.2	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.8	29.4	7.1	30.9	39.3	55.5	18.0	0.0	82.3	28.2	1.6
LOS	D	C	A	C	D	E	B	A	F	C	A
Approach Delay		19.8			38.1		22.7			30.4	
Approach LOS		B			D		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 93.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 26.7	Intersection LOS: C
Intersection Capacity Utilization 83.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	28	181	36	170	56	196	1319	14	77	1274	45
Future Volume (veh/h)	75	28	181	36	170	56	196	1319	14	77	1274	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	77	29	99	37	173	49	200	1346	13	79	1300	35
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	204	388	328	338	290	82	238	1858	829	98	1561	696
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.15	0.54	0.54	0.06	0.46	0.46
Sat Flow, veh/h	1112	1800	1525	1211	1349	382	1619	3420	1525	1619	3420	1524
Grp Volume(v), veh/h	77	29	99	37	0	222	200	1346	13	79	1300	35
Grp Sat Flow(s),veh/h/ln	1112	1800	1525	1211	0	1731	1619	1710	1525	1619	1710	1524
Q Serve(g_s), s	5.2	1.0	4.2	1.9	0.0	8.9	9.3	22.9	0.3	3.7	25.8	1.0
Cycle Q Clear(g_c), s	14.1	1.0	4.2	2.9	0.0	8.9	9.3	22.9	0.3	3.7	25.8	1.0
Prop In Lane	1.00		1.00	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	204	388	328	338	0	373	238	1858	829	98	1561	696
V/C Ratio(X)	0.38	0.07	0.30	0.11	0.00	0.60	0.84	0.72	0.02	0.81	0.83	0.05
Avail Cap(c_a), veh/h	569	977	828	735	0	940	429	2556	1140	130	1924	857
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.7	24.2	25.5	25.4	0.0	27.3	32.1	13.3	8.1	35.9	18.4	11.7
Incr Delay (d2), s/veh	0.9	0.1	0.4	0.1	0.0	1.1	5.9	0.7	0.0	21.1	2.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.4	1.4	0.5	0.0	3.5	3.6	6.6	0.1	1.9	8.6	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.5	24.3	25.8	25.5	0.0	28.4	37.9	14.0	8.1	57.0	21.1	11.7
LnGrp LOS	C	C	C	C	A	C	D	B	A	E	C	B
Approach Vol, veh/h		205			259			1559			1414	
Approach Delay, s/veh		28.9			28.0			17.0			22.9	
Approach LOS		C			C			B			C	

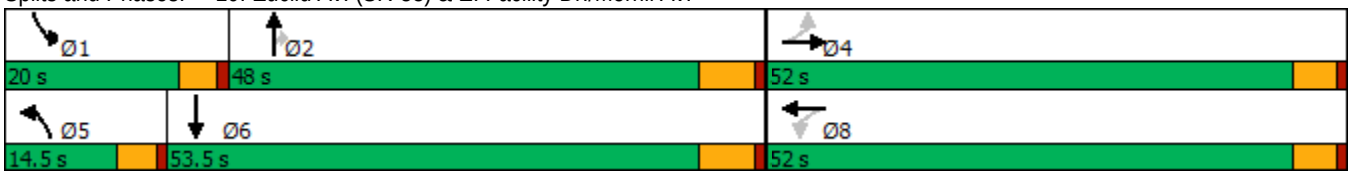
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	47.7		21.5	14.9	41.0		21.5				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	6.2	57.8		42.0	20.5	43.5		42.0				
Max Q Clear Time (g_c+I1), s	5.7	24.9		16.1	11.3	27.8		10.9				
Green Ext Time (p_c), s	0.0	10.8		0.5	0.2	7.5		1.0				

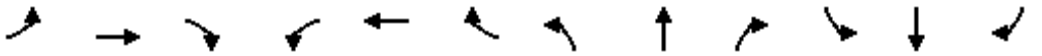
Intersection Summary			
HCM 6th Ctrl Delay		21.0	
HCM 6th LOS		C	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	4	9	270	53	11	1146	211	200	1222
Future Volume (vph)	4	9	270	53	11	1146	211	200	1222
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	52.0	52.0	52.0	52.0	14.5	48.0	48.0	20.0	53.5
Total Split (%)	43.3%	43.3%	43.3%	43.3%	12.1%	40.0%	40.0%	16.7%	44.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		47.0		47.0	10.0	42.0	42.0	15.5	59.1
Actuated g/C Ratio		0.39		0.39	0.08	0.35	0.35	0.13	0.49
v/c Ratio		0.05		1.21	0.08	0.99	0.36	0.99	0.78
Control Delay		12.9		139.3	52.4	62.0	17.2	112.6	29.9
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		12.9		139.3	52.4	62.0	17.2	112.6	29.9
LOS		B		F	D	E	B	F	C
Approach Delay		12.9		139.3		55.0			41.2
Approach LOS		B		F		E			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.21	
Intersection Signal Delay: 65.5	Intersection LOS: E
Intersection Capacity Utilization 108.3%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	9	19	270	53	374	11	1146	211	200	1222	43
Future Volume (veh/h)	4	9	19	270	53	374	11	1146	211	200	1222	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	4	9	19	278	55	359	11	1181	175	206	1260	30
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	87	194	361	278	47	305	41	1197	534	209	1548	37
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.03	0.35	0.35	0.13	0.45	0.45
Sat Flow, veh/h	136	494	921	603	119	778	1619	3420	1525	1619	3412	81
Grp Volume(v), veh/h	32	0	0	692	0	0	11	1181	175	206	631	659
Grp Sat Flow(s),veh/h/ln	1551	0	0	1500	0	0	1619	1710	1525	1619	1710	1783
Q Serve(g_s), s	0.0	0.0	0.0	45.5	0.0	0.0	0.8	41.1	10.1	15.2	38.4	38.4
Cycle Q Clear(g_c), s	1.5	0.0	0.0	47.0	0.0	0.0	0.8	41.1	10.1	15.2	38.4	38.4
Prop In Lane	0.12		0.59	0.40		0.52	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	641	0	0	630	0	0	41	1197	534	209	776	809
V/C Ratio(X)	0.05	0.00	0.00	1.10	0.00	0.00	0.27	0.99	0.33	0.99	0.81	0.81
Avail Cap(c_a), veh/h	641	0	0	630	0	0	135	1197	534	209	776	809
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.7	0.0	0.0	37.9	0.0	0.0	57.4	38.7	28.6	52.1	28.4	28.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	66.0	0.0	0.0	1.3	22.7	0.4	57.6	6.6	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	29.4	0.0	0.0	0.3	19.7	3.5	9.2	15.7	16.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.7	0.0	0.0	103.9	0.0	0.0	58.6	61.5	29.0	109.8	35.0	34.8
LnGrp LOS	C	A	A	F	A	A	E	E	C	F	D	C
Approach Vol, veh/h		32			692			1367			1496	
Approach Delay, s/veh		22.7			103.9			57.3			45.2	
Approach LOS		C			F			E			D	

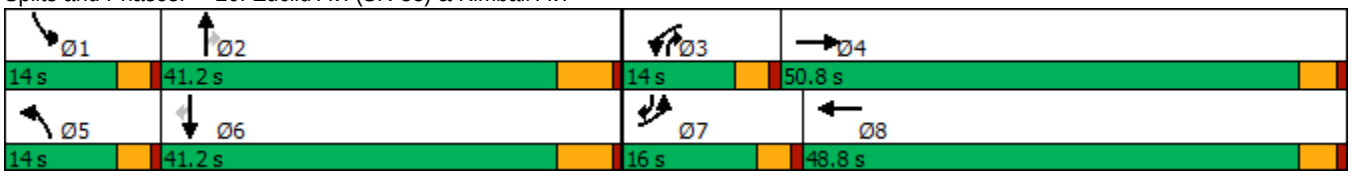
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.0	48.0		52.0	7.6	60.4		52.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	15.5	42.0		47.0	10.0	47.5		47.0				
Max Q Clear Time (g_c+I1), s	17.2	43.1		3.5	2.8	40.4		49.0				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	4.0		0.0				

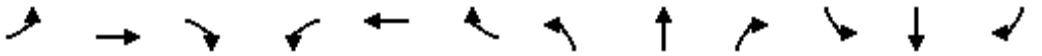
Intersection Summary												
HCM 6th Ctrl Delay			61.0									
HCM 6th LOS			E									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	142	283	59	836	119	936	58	245	759	428
Future Volume (vph)	142	283	59	836	119	936	58	245	759	428
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	16.0	50.8	14.0	48.8	14.0	41.2	14.0	14.0	41.2	16.0
Total Split (%)	13.3%	42.3%	11.7%	40.7%	11.7%	34.3%	11.7%	11.7%	34.3%	13.3%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	10.8	44.8	10.0	40.9	10.0	34.3	50.4	10.0	34.3	47.1
Actuated g/C Ratio	0.09	0.39	0.09	0.36	0.09	0.30	0.44	0.09	0.30	0.41
v/c Ratio	0.52	0.25	0.43	0.92	0.86	0.93	0.08	0.97	0.76	0.66
Control Delay	57.9	23.8	61.6	47.1	98.7	56.0	5.6	102.3	42.5	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.9	23.8	61.6	47.1	98.7	56.0	5.6	102.3	42.5	26.2
LOS	E	C	E	D	F	E	A	F	D	C
Approach Delay		34.1		47.8		57.9			47.9	
Approach LOS		C		D		E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 49.0	Intersection LOS: D
Intersection Capacity Utilization 92.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	283	44	59	836	247	119	936	58	245	759	428
Future Volume (veh/h)	142	283	44	59	836	247	119	936	58	245	759	428
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	145	289	36	60	853	216	121	955	47	250	774	308
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	265	1103	136	124	937	237	145	1042	581	268	1047	598
Arrive On Green	0.09	0.36	0.36	0.08	0.35	0.35	0.09	0.30	0.30	0.09	0.31	0.31
Sat Flow, veh/h	2956	3064	378	1619	2703	684	1619	3420	1525	2956	3420	1506
Grp Volume(v), veh/h	145	160	165	60	540	529	121	955	47	250	774	308
Grp Sat Flow(s),veh/h/ln	1478	1710	1732	1619	1710	1677	1619	1710	1525	1478	1710	1506
Q Serve(g_s), s	5.2	7.3	7.4	3.9	33.2	33.2	8.1	29.7	2.2	9.2	22.3	17.1
Cycle Q Clear(g_c), s	5.2	7.3	7.4	3.9	33.2	33.2	8.1	29.7	2.2	9.2	22.3	17.1
Prop In Lane	1.00		0.22	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	265	616	624	124	593	581	145	1042	581	268	1047	598
V/C Ratio(X)	0.55	0.26	0.26	0.49	0.91	0.91	0.84	0.92	0.08	0.93	0.74	0.52
Avail Cap(c_a), veh/h	322	719	728	147	688	675	147	1093	604	268	1093	618
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.0	24.9	24.9	48.8	34.3	34.3	49.3	36.9	21.8	49.7	34.3	25.3
Incr Delay (d2), s/veh	0.7	0.2	0.2	1.1	13.8	14.1	30.2	11.6	0.1	36.4	2.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	2.9	3.0	1.6	15.2	15.0	4.3	13.1	0.8	4.6	9.0	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.6	25.1	25.1	49.9	48.2	48.5	79.6	48.5	21.8	86.1	36.8	25.9
LnGrp LOS	D	C	C	D	D	D	E	D	C	F	D	C
Approach Vol, veh/h		470			1129			1123			1332	
Approach Delay, s/veh		32.4			48.4			50.7			43.6	
Approach LOS		C			D			D			D	

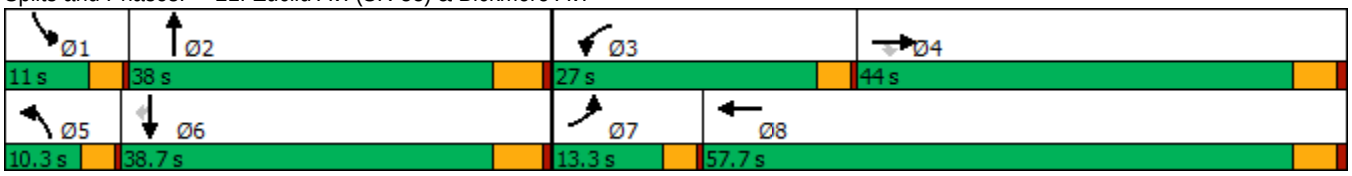
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	39.6	12.4	44.1	13.8	39.7	13.9	42.7
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	10.0	35.2	10.0	46.3	10.0	35.2	12.0	44.3
Max Q Clear Time (g_c+I1), s	11.2	31.7	5.9	9.4	10.1	24.3	7.2	35.2
Green Ext Time (p_c), s	0.0	1.9	0.0	1.8	0.0	4.2	0.1	3.0

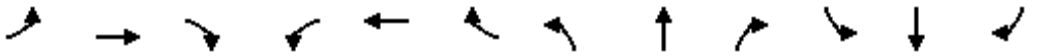
Intersection Summary	
HCM 6th Ctrl Delay	45.6
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	70	14	40	211	234	77	748	52	694	212
Future Volume (vph)	70	14	40	211	234	77	748	52	694	212
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	13.3	44.0	44.0	27.0	57.7	10.3	38.0	11.0	38.7	38.7
Total Split (%)	11.1%	36.7%	36.7%	22.5%	48.1%	8.6%	31.7%	9.2%	32.3%	32.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	8.5	19.5	19.5	19.1	29.6	7.5	30.9	7.1	27.4	27.4
Actuated g/C Ratio	0.10	0.22	0.22	0.21	0.33	0.08	0.35	0.08	0.31	0.31
v/c Ratio	0.51	0.04	0.10	0.68	0.80	0.63	0.74	0.45	0.73	0.37
Control Delay	58.0	29.4	0.5	49.0	36.4	69.4	34.3	58.8	34.4	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.0	29.4	0.5	49.0	36.4	69.4	34.3	58.8	34.4	6.0
LOS	E	C	A	D	D	E	C	E	C	A
Approach Delay		36.4			40.6		37.5		29.4	
Approach LOS		D			D		D		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 89	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 35.2	Intersection LOS: D
Intersection Capacity Utilization 72.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	14	40	211	234	187	77	748	35	52	694	212
Future Volume (veh/h)	70	14	40	211	234	187	77	748	35	52	694	212
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	78	16	40	234	260	169	86	831	32	58	771	188
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	97	337	285	280	306	199	106	1020	39	83	989	441
Arrive On Green	0.06	0.19	0.19	0.17	0.30	0.30	0.07	0.30	0.30	0.05	0.29	0.29
Sat Flow, veh/h	1619	1800	1525	1619	1019	662	1619	3357	129	1619	3420	1525
Grp Volume(v), veh/h	78	16	40	234	0	429	86	423	440	58	771	188
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1681	1619	1710	1777	1619	1710	1525
Q Serve(g_s), s	2.9	0.4	1.3	8.6	0.0	14.7	3.2	14.1	14.1	2.2	12.7	6.1
Cycle Q Clear(g_c), s	2.9	0.4	1.3	8.6	0.0	14.7	3.2	14.1	14.1	2.2	12.7	6.1
Prop In Lane	1.00		1.00	1.00		0.39	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	97	337	285	280	0	505	106	519	540	83	989	441
V/C Ratio(X)	0.80	0.05	0.14	0.83	0.00	0.85	0.81	0.82	0.82	0.70	0.78	0.43
Avail Cap(c_a), veh/h	258	1143	969	620	0	1443	179	905	940	198	1849	825
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.5	20.5	20.8	24.5	0.0	20.2	28.3	19.8	19.8	28.7	20.0	17.7
Incr Delay (d2), s/veh	5.7	0.0	0.1	2.5	0.0	1.6	5.5	1.2	1.2	4.0	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.2	0.4	3.1	0.0	5.2	1.2	4.6	4.8	0.8	4.1	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.3	20.5	20.9	27.1	0.0	21.8	33.8	21.0	20.9	32.6	20.5	17.9
LnGrp LOS	C	C	C	C	A	C	C	C	C	C	C	B
Approach Vol, veh/h		134			663			949			1017	
Approach Delay, s/veh		28.6			23.6			22.1			20.7	
Approach LOS		C			C			C			C	

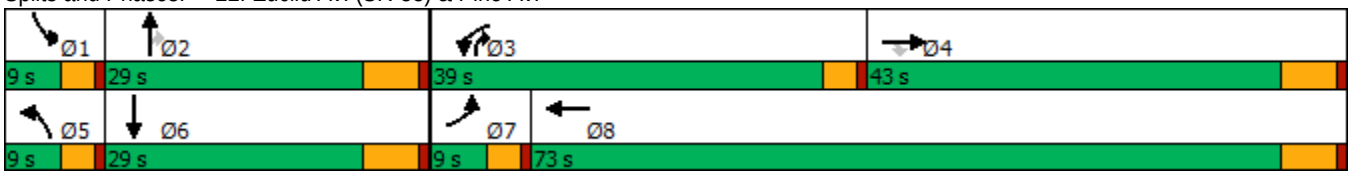
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	24.1	14.1	16.5	7.5	23.3	7.2	23.4
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	7.5	32.5	23.5	39.0	6.8	33.2	9.8	52.7
Max Q Clear Time (g_c+I1), s	4.2	16.1	10.6	3.3	5.2	14.7	4.9	16.7
Green Ext Time (p_c), s	0.0	2.6	0.3	0.1	0.0	3.1	0.0	1.7

Intersection Summary	
HCM 6th Ctrl Delay	22.3
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	9	199	54	1168	358	63	801	758	66	752
Future Volume (vph)	9	199	54	1168	358	63	801	758	66	752
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	39.0	73.0	9.0	29.0	39.0	9.0	29.0
Total Split (%)	7.5%	35.8%	35.8%	32.5%	60.8%	7.5%	24.2%	32.5%	7.5%	24.2%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.0	19.7	19.7	35.2	57.4	5.0	23.2	60.4	5.0	23.2
Actuated g/C Ratio	0.05	0.19	0.19	0.34	0.56	0.05	0.22	0.59	0.05	0.22
v/c Ratio	0.12	0.60	0.14	1.20	0.49	0.83	1.08	0.74	0.87	1.04
Control Delay	54.6	44.9	0.7	130.2	15.6	114.0	94.6	11.8	121.7	82.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.6	44.9	0.7	130.2	15.6	114.0	94.6	11.8	121.7	82.9
LOS	D	D	A	F	B	F	F	B	F	F
Approach Delay		36.1			97.6		56.7			85.9
Approach LOS		D			F		E			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.2	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay: 76.4	Intersection LOS: E
Intersection Capacity Utilization 94.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	199	54	1168	358	108	63	801	758	66	752	18
Future Volume (veh/h)	9	199	54	1168	358	108	63	801	758	66	752	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	9	205	0	1204	369	109	65	826	525	68	775	15
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	18	261		1065	660	195	81	810	903	83	818	16
Arrive On Green	0.01	0.15	0.00	0.36	0.49	0.49	0.05	0.24	0.24	0.05	0.24	0.24
Sat Flow, veh/h	1619	1800	1525	2956	1335	394	1619	3420	1493	1619	3432	66
Grp Volume(v), veh/h	9	205	0	1204	0	478	65	826	525	68	386	404
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1729	1619	1710	1493	1619	1710	1788
Q Serve(g_s), s	0.5	10.7	0.0	35.0	0.0	18.8	3.9	23.0	21.2	4.0	21.6	21.6
Cycle Q Clear(g_c), s	0.5	10.7	0.0	35.0	0.0	18.8	3.9	23.0	21.2	4.0	21.6	21.6
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	18	261		1065	0	855	81	810	903	83	408	426
V/C Ratio(X)	0.50	0.78		1.13	0.00	0.56	0.80	1.02	0.58	0.82	0.95	0.95
Avail Cap(c_a), veh/h	83	686		1065	0	1193	83	810	903	83	408	426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.7	40.0	0.0	31.1	0.0	17.1	45.7	37.1	12.1	45.6	36.4	36.4
Incr Delay (d2), s/veh	7.8	7.2	0.0	70.7	0.0	0.8	38.1	36.7	0.6	41.9	31.0	30.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.0	0.0	21.7	0.0	6.7	2.3	12.9	5.9	2.5	11.7	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.5	47.2	0.0	101.7	0.0	18.0	83.8	73.7	12.8	87.5	67.3	66.5
LnGrp LOS	E	D		F	A	B	F	F	B	F	E	E
Approach Vol, veh/h		214	A		1682			1416			858	
Approach Delay, s/veh		47.5			77.9			51.6			68.6	
Approach LOS		D			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	29.0	39.0	20.1	8.8	29.2	5.1	54.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.0	23.0	35.0	37.0	5.0	23.0	5.0	67.0
Max Q Clear Time (g_c+I1), s	6.0	25.0	37.0	12.7	5.9	23.6	2.5	20.8
Green Ext Time (p_c), s	0.0	0.0	0.0	1.4	0.0	0.0	0.0	4.5

Intersection Summary	
HCM 6th Ctrl Delay	65.5
HCM 6th LOS	E

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	46.6
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	54	274	15	21	569	17	19	82	15	20	110	49
Future Vol, veh/h	54	274	15	21	569	17	19	82	15	20	110	49
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	59	301	16	23	625	19	21	90	16	22	121	54
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	20	77.4	13.1	14.5
HCM LOS	C	F	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	16%	3%	11%
Vol Thru, %	71%	80%	94%	61%
Vol Right, %	13%	4%	3%	27%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	116	343	607	179
LT Vol	19	54	21	20
Through Vol	82	274	569	110
RT Vol	15	15	17	49
Lane Flow Rate	127	377	667	197
Geometry Grp	1	1	1	1
Degree of Util (X)	0.256	0.641	1.062	0.376
Departure Headway (Hd)	7.559	6.353	5.733	7.192
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	478	573	627	504
Service Time	5.559	4.353	3.832	5.192
HCM Lane V/C Ratio	0.266	0.658	1.064	0.391
HCM Control Delay	13.1	20	77.4	14.5
HCM Lane LOS	B	C	F	B
HCM 95th-tile Q	1	4.5	18.3	1.7

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	59	3	1	244	21	19	61	3	32	61	55
Future Vol, veh/h	20	59	3	1	244	21	19	61	3	32	61	55
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	22	63	3	1	262	23	20	66	3	34	66	59
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.6	10.2	8.8	9
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	24%	0%	22%
Vol Thru, %	73%	72%	92%	41%
Vol Right, %	4%	4%	8%	37%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	83	82	266	148
LT Vol	19	20	1	32
Through Vol	61	59	244	61
RT Vol	3	3	21	55
Lane Flow Rate	89	88	286	159
Geometry Grp	1	1	1	1
Degree of Util (X)	0.124	0.119	0.362	0.208
Departure Headway (Hd)	5.005	4.868	4.562	4.715
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	712	733	787	758
Service Time	3.063	2.923	2.605	2.766
HCM Lane V/C Ratio	0.125	0.12	0.363	0.21
HCM Control Delay	8.8	8.6	10.2	9
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.4	0.4	1.7	0.8

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	63	340	753	76	28	51
Future Vol, veh/h	63	340	753	76	28	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	67	362	801	81	30	54

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	882	0	-	0	1338	842
Stage 1	-	-	-	-	842	-
Stage 2	-	-	-	-	496	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	775	-	-	-	247	443
Stage 1	-	-	-	-	426	-
Stage 2	-	-	-	-	616	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	775	-	-	-	220	443
Mov Cap-2 Maneuver	-	-	-	-	220	-
Stage 1	-	-	-	-	380	-
Stage 2	-	-	-	-	616	-

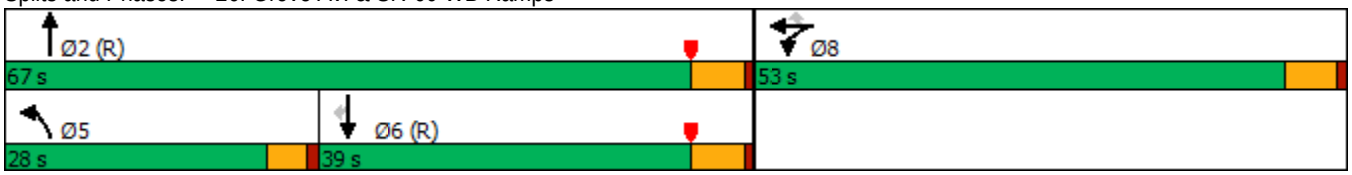
Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	19.8
HCM LOS			C

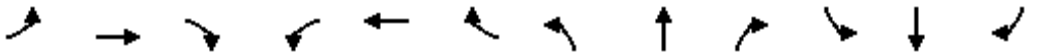
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	775	-	-	-	326
HCM Lane V/C Ratio	0.086	-	-	-	0.258
HCM Control Delay (s)	10.1	0	-	-	19.8
HCM Lane LOS	B	A	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	1

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	613	285	1169	759	624
Future Volume (vph)	0	613	285	1169	759	624
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	53.0	53.0	28.0	67.0	39.0	39.0
Total Split (%)	44.2%	44.2%	23.3%	55.8%	32.5%	32.5%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	47.2	47.2	22.5	61.2	34.1	34.1
Actuated g/C Ratio	0.39	0.39	0.19	0.51	0.28	0.28
v/c Ratio	0.41	0.99	0.92	0.69	0.80	0.73
Control Delay	28.6	64.6	62.4	25.1	47.2	7.9
Queue Delay	0.0	0.0	0.0	2.9	0.0	0.0
Total Delay	28.6	64.6	62.4	28.0	47.2	7.9
LOS	C	E	E	C	D	A
Approach Delay	53.6			34.8	29.5	
Approach LOS	D			C	C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 37.3	Intersection LOS: D
Intersection Capacity Utilization 107.3%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	269	0	613	285	1169	0	0	759	624
Future Volume (veh/h)	0	0	0	269	0	613	285	1169	0	0	759	624
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				292	0	537	310	1271	0	0	825	567
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				645	0	574	331	1975	0	0	1177	522
Arrive On Green				0.36	0.00	0.36	0.37	1.00	0.00	0.00	0.33	0.33
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1603
Grp Volume(v), veh/h				292	0	537	310	1271	0	0	825	567
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1603
Q Serve(g_s), s				14.9	0.0	38.6	19.8	0.0	0.0	0.0	24.0	39.1
Cycle Q Clear(g_c), s				14.9	0.0	38.6	19.8	0.0	0.0	0.0	24.0	39.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				645	0	574	331	1975	0	0	1177	522
V/C Ratio(X)				0.45	0.00	0.94	0.94	0.64	0.00	0.00	0.70	1.09
Avail Cap(c_a), veh/h				712	0	633	353	1975	0	0	1177	522
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				29.6	0.0	37.3	37.4	0.0	0.0	0.0	35.3	40.4
Incr Delay (d2), s/veh				0.5	0.0	20.4	4.9	0.1	0.0	0.0	3.5	64.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.3	0.0	17.7	7.1	0.0	0.0	0.0	10.7	24.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				30.1	0.0	57.7	42.3	0.1	0.0	0.0	38.8	105.0
LnGrp LOS				C	A	E	D	A	A	A	D	F
Approach Vol, veh/h					829			1581			1392	
Approach Delay, s/veh					48.0			8.4			65.8	
Approach LOS					D			A			E	

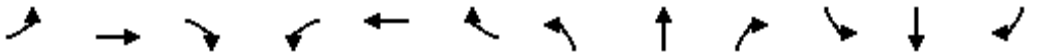
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		71.4			26.5	44.9		48.6				
Change Period (Y+Rc), s		5.8			4.6	5.8		5.8				
Max Green Setting (Gmax), s		61.2			23.4	33.2		47.2				
Max Q Clear Time (g_c+I1), s		2.0			21.8	41.1		40.6				
Green Ext Time (p_c), s		11.9			0.1	0.0		2.1				

Intersection Summary												
HCM 6th Ctrl Delay			38.0									
HCM 6th LOS			D									

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	1	208	760	390	639
Future Volume (vph)	1	208	760	390	639
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	48.0	48.0	43.0	29.0	72.0
Total Split (%)	40.0%	40.0%	35.8%	24.2%	60.0%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	42.2	42.2	37.2	24.4	66.2
Actuated g/C Ratio	0.35	0.35	0.31	0.20	0.55
v/c Ratio	1.19	0.33	1.13	1.16	0.35
Control Delay	135.6	7.7	106.9	147.1	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	135.6	7.7	106.9	147.1	13.5
LOS	F	A	F	F	B
Approach Delay	106.2		106.9		64.1
Approach LOS	F		F		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.19	
Intersection Signal Delay: 92.4	Intersection LOS: F
Intersection Capacity Utilization 107.3%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	695	1	208	0	0	0	0	760	392	390	639	0
Future Volume (veh/h)	695	1	208	0	0	0	0	760	392	390	639	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	755	1	151				0	826	317	424	695	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	636	1	565				0	790	303	368	1992	0
Arrive On Green	0.35	0.35	0.35				0.00	0.31	0.31	0.41	1.00	0.00
Sat Flow, veh/h	1807	2	1607				0	2644	976	1810	3705	0
Grp Volume(v), veh/h	756	0	151				0	584	559	424	695	0
Grp Sat Flow(s),veh/h/ln	1810	0	1607				0	1805	1721	1810	1805	0
Q Serve(g_s), s	42.2	0.0	8.1				0.0	37.2	37.2	24.4	0.0	0.0
Cycle Q Clear(g_c), s	42.2	0.0	8.1				0.0	37.2	37.2	24.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.57	1.00		0.00
Lane Grp Cap(c), veh/h	636	0	565				0	560	533	368	1992	0
V/C Ratio(X)	1.19	0.00	0.27				0.00	1.04	1.05	1.15	0.35	0.00
Avail Cap(c_a), veh/h	636	0	565				0	560	533	368	1992	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.64	0.64	0.49	0.49	0.00
Uniform Delay (d), s/veh	38.9	0.0	27.8				0.0	41.4	41.4	35.6	0.0	0.0
Incr Delay (d2), s/veh	99.7	0.0	0.3				0.0	42.6	44.3	83.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	35.3	0.0	3.0				0.0	22.4	21.6	16.4	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	138.6	0.0	28.1				0.0	84.0	85.7	119.1	0.2	0.0
LnGrp LOS	F	A	C				A	F	F	F	A	A
Approach Vol, veh/h		907						1143			1119	
Approach Delay, s/veh		120.2						84.9			45.3	
Approach LOS		F						F			D	

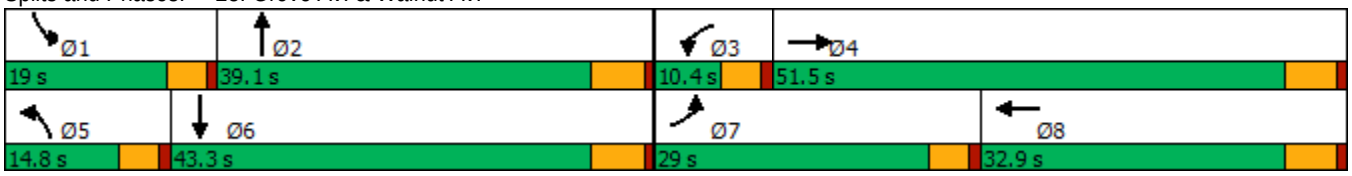
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	29.0	43.0		48.0		72.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	24.4	37.2		42.2		66.2
Max Q Clear Time (g_c+I1), s	26.4	39.2		44.2		2.0
Green Ext Time (p_c), s	0.0	0.0		0.0		5.0

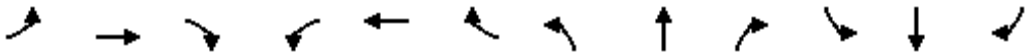
Intersection Summary	
HCM 6th Ctrl Delay	81.0
HCM 6th LOS	F

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	199	212	19	211	54	654	100	583
Future Volume (vph)	199	212	19	211	54	654	100	583
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	29.0	51.5	10.4	32.9	14.8	39.1	19.0	43.3
Total Split (%)	24.2%	42.9%	8.7%	27.4%	12.3%	32.6%	15.8%	36.1%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	18.4	35.9	5.5	16.4	8.0	34.4	11.2	39.9
Actuated g/C Ratio	0.18	0.35	0.05	0.16	0.08	0.34	0.11	0.39
v/c Ratio	0.80	0.27	0.25	0.73	0.50	0.68	0.67	0.62
Control Delay	61.6	21.9	58.6	31.7	62.5	34.8	64.5	29.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.6	21.9	58.6	31.7	62.5	34.8	64.5	29.9
LOS	E	C	E	C	E	C	E	C
Approach Delay		38.6		32.9		36.9		34.3
Approach LOS		D		C		D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 101.6	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 35.7	Intersection LOS: D
Intersection Capacity Utilization 70.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	212	62	19	211	202	54	654	14	100	583	116
Future Volume (veh/h)	199	212	62	19	211	202	54	654	14	100	583	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	234	249	58	22	248	167	64	769	15	118	686	100
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	266	873	199	37	349	226	80	1211	24	144	1177	171
Arrive On Green	0.16	0.32	0.32	0.02	0.18	0.18	0.05	0.35	0.35	0.09	0.39	0.39
Sat Flow, veh/h	1619	2756	629	1619	1982	1284	1619	3431	67	1619	2995	436
Grp Volume(v), veh/h	234	153	154	22	213	202	64	383	401	118	391	395
Grp Sat Flow(s),veh/h/ln	1619	1710	1675	1619	1710	1556	1619	1710	1788	1619	1710	1721
Q Serve(g_s), s	13.5	6.4	6.6	1.3	11.2	11.8	3.7	17.8	17.8	6.8	17.2	17.2
Cycle Q Clear(g_c), s	13.5	6.4	6.6	1.3	11.2	11.8	3.7	17.8	17.8	6.8	17.2	17.2
Prop In Lane	1.00		0.38	1.00		0.82	1.00		0.04	1.00		0.25
Lane Grp Cap(c), veh/h	266	542	530	37	301	274	80	604	631	144	672	676
V/C Ratio(X)	0.88	0.28	0.29	0.59	0.71	0.74	0.80	0.63	0.63	0.82	0.58	0.58
Avail Cap(c_a), veh/h	414	819	802	98	486	442	173	604	631	244	672	676
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	24.5	24.5	46.2	37.0	37.3	44.9	25.7	25.7	42.7	22.8	22.8
Incr Delay (d2), s/veh	8.7	0.3	0.3	5.3	3.0	3.9	6.9	5.0	4.8	4.3	3.7	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	2.5	2.5	0.6	4.7	4.5	1.6	7.5	7.9	2.8	7.0	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.6	24.7	24.8	51.5	40.1	41.2	51.8	30.8	30.6	47.0	26.5	26.5
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		541			437			848			904	
Approach Delay, s/veh		34.7			41.2			32.3			29.2	
Approach LOS		C			D			C			C	

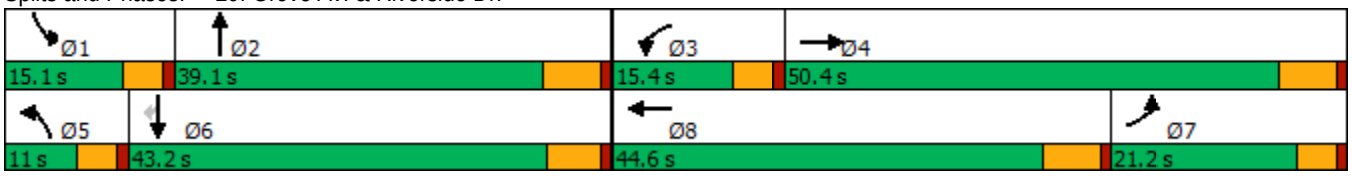
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	39.5	6.8	36.0	9.3	43.3	20.3	22.6
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	33.3	5.8	45.7	10.2	37.5	24.4	27.1
Max Q Clear Time (g_c+I1), s	8.8	19.8	3.3	8.6	5.7	19.2	15.5	13.8
Green Ext Time (p_c), s	0.1	3.7	0.0	1.7	0.0	4.3	0.2	1.9

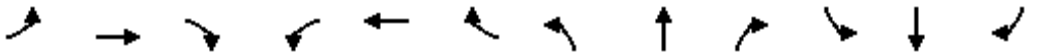
Intersection Summary	
HCM 6th Ctrl Delay	33.1
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	162	418	68	829	24	357	92	346	184
Future Volume (vph)	162	418	68	829	24	357	92	346	184
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	21.2	50.4	15.4	44.6	11.0	39.1	15.1	43.2	43.2
Total Split (%)	17.7%	42.0%	12.8%	37.2%	9.2%	32.6%	12.6%	36.0%	36.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	15.4	46.9	9.0	38.4	5.9	32.9	9.8	41.2	41.2
Actuated g/C Ratio	0.13	0.40	0.08	0.33	0.05	0.28	0.08	0.35	0.35
v/c Ratio	0.86	0.71	0.62	0.97	0.34	0.93	0.77	0.61	0.31
Control Delay	84.8	37.6	74.6	60.1	66.4	67.5	87.5	38.5	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.8	37.6	74.6	60.1	66.4	67.5	87.5	38.5	5.4
LOS	F	D	E	E	E	E	F	D	A
Approach Delay		50.1		61.0		67.5		36.0	
Approach LOS		D		E		E		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.1	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 53.8	Intersection LOS: D
Intersection Capacity Utilization 85.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	418	33	68	829	129	24	357	54	92	346	184
Future Volume (veh/h)	162	418	33	68	829	129	24	357	54	92	346	184
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	180	464	30	76	921	117	27	397	38	102	384	118
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	204	672	43	94	976	124	40	451	43	124	596	505
Arrive On Green	0.13	0.40	0.40	0.06	0.32	0.32	0.02	0.28	0.28	0.08	0.33	0.33
Sat Flow, veh/h	1619	1672	108	1619	3046	387	1619	1614	154	1619	1800	1525
Grp Volume(v), veh/h	180	0	494	76	517	521	27	0	435	102	384	118
Grp Sat Flow(s),veh/h/ln	1619	0	1781	1619	1710	1723	1619	0	1768	1619	1800	1525
Q Serve(g_s), s	12.9	0.0	27.0	5.5	34.6	34.6	1.9	0.0	27.6	7.3	21.3	4.3
Cycle Q Clear(g_c), s	12.9	0.0	27.0	5.5	34.6	34.6	1.9	0.0	27.6	7.3	21.3	4.3
Prop In Lane	1.00		0.06	1.00		0.22	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	204	0	716	94	548	552	40	0	495	124	596	505
V/C Ratio(X)	0.88	0.00	0.69	0.81	0.94	0.94	0.67	0.00	0.88	0.82	0.64	0.23
Avail Cap(c_a), veh/h	229	0	716	149	558	563	88	0	495	145	596	505
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.5	0.0	29.1	54.7	38.9	38.9	56.9	0.0	40.5	53.5	33.4	12.2
Incr Delay (d2), s/veh	26.5	0.0	2.8	7.4	24.7	24.6	6.9	0.0	19.5	24.1	5.3	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	0.0	11.3	2.3	17.4	17.5	0.8	0.0	14.1	3.7	9.8	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.0	0.0	31.9	62.1	63.6	63.5	63.8	0.0	60.0	77.6	38.7	13.3
LnGrp LOS	E	A	C	E	E	E	E	A	E	E	D	B
Approach Vol, veh/h		674			1114			462			604	
Approach Delay, s/veh		44.0			63.5			60.2			40.3	
Approach LOS		D			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	39.1	11.4	53.5	7.5	45.2	21.1	43.9
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	10.5	32.9	10.8	44.2	6.4	* 37	16.6	* 38
Max Q Clear Time (g_c+I1), s	9.3	29.6	7.5	29.0	3.9	23.3	14.9	36.6
Green Ext Time (p_c), s	0.0	0.7	0.0	2.4	0.0	2.1	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	53.4
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	29
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	97	30	11	87	32	39	343	15	50	385	34
Future Vol, veh/h	68	97	30	11	87	32	39	343	15	50	385	34
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	76	108	33	12	97	36	43	381	17	56	428	38
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	16	13.7	27.7	39.8
HCM LOS	C	B	D	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	35%	8%	11%
Vol Thru, %	86%	50%	67%	82%
Vol Right, %	4%	15%	25%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	397	195	130	469
LT Vol	39	68	11	50
Through Vol	343	97	87	385
RT Vol	15	30	32	34
Lane Flow Rate	441	217	144	521
Geometry Grp	1	1	1	1
Degree of Util (X)	0.771	0.441	0.301	0.887
Departure Headway (Hd)	6.398	7.32	7.502	6.23
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	569	494	481	584
Service Time	4.398	5.32	5.517	4.23
HCM Lane V/C Ratio	0.775	0.439	0.299	0.892
HCM Control Delay	27.7	16	13.7	39.8
HCM Lane LOS	D	C	B	E
HCM 95th-tile Q	7	2.2	1.3	10.4

Intersection	
Intersection Delay, s/veh	17.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	47	50	24	38	109	43	38	281	11	45	300	46
Future Vol, veh/h	47	50	24	38	109	43	38	281	11	45	300	46
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	52	56	27	42	121	48	42	312	12	50	333	51
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12	13.4	17.3	20.5
HCM LOS	B	B	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	39%	20%	12%
Vol Thru, %	85%	41%	57%	77%
Vol Right, %	3%	20%	23%	12%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	330	121	190	391
LT Vol	38	47	38	45
Through Vol	281	50	109	300
RT Vol	11	24	43	46
Lane Flow Rate	367	134	211	434
Geometry Grp	1	1	1	1
Degree of Util (X)	0.599	0.251	0.377	0.69
Departure Headway (Hd)	5.877	6.708	6.434	5.719
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	616	534	557	634
Service Time	3.895	4.774	4.493	3.734
HCM Lane V/C Ratio	0.596	0.251	0.379	0.685
HCM Control Delay	17.3	12	13.4	20.5
HCM Lane LOS	C	B	B	C
HCM 95th-tile Q	4	1	1.7	5.5

Intersection	
Intersection Delay, s/veh	186.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	226	44	106	557	34	31	221	36	65	238	31
Future Vol, veh/h	37	226	44	106	557	34	31	221	36	65	238	31
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	41	248	48	116	612	37	34	243	40	71	262	34
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	44.2	372.2	40.9	53.2
HCM LOS	E	F	E	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	12%	15%	19%
Vol Thru, %	77%	74%	80%	71%
Vol Right, %	12%	14%	5%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	288	307	697	334
LT Vol	31	37	106	65
Through Vol	221	226	557	238
RT Vol	36	44	34	31
Lane Flow Rate	316	337	766	367
Geometry Grp	1	1	1	1
Degree of Util (X)	0.76	0.799	1.761	0.862
Departure Headway (Hd)	10.73	10.378	8.277	10.433
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	342	351	444	352
Service Time	8.73	8.378	6.36	8.433
HCM Lane V/C Ratio	0.924	0.96	1.725	1.043
HCM Control Delay	40.9	44.2	372.2	53.2
HCM Lane LOS	E	E	F	F
HCM 95th-tile Q	6	6.7	47	8

Intersection	
Int Delay, s/veh	9.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	40	37	15	13	92	21	68	315	12	39	263	103
Future Vol, veh/h	40	37	15	13	92	21	68	315	12	39	263	103
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	44	41	16	14	101	23	75	346	13	43	289	113

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	997	941	346	963	991	353	402	0	0	359	0	0
Stage 1	432	432	-	503	503	-	-	-	-	-	-	-
Stage 2	565	509	-	460	488	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	225	265	702	237	248	695	1168	-	-	1211	-	-
Stage 1	606	586	-	555	545	-	-	-	-	-	-	-
Stage 2	513	541	-	585	553	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	127	233	702	182	218	695	1168	-	-	1211	-	-
Mov Cap-2 Maneuver	127	233	-	182	218	-	-	-	-	-	-	-
Stage 1	558	559	-	511	501	-	-	-	-	-	-	-
Stage 2	364	498	-	505	528	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	45.3	38.3	1.4	0.8
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1168	-	-	186	241	1211	-	-
HCM Lane V/C Ratio	0.064	-	-	0.544	0.575	0.035	-	-
HCM Control Delay (s)	8.3	0	-	45.3	38.3	8.1	0	-
HCM Lane LOS	A	A	-	E	E	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	2.8	3.2	0.1	-	-

Intersection	
Intersection Delay, s/veh	175.7
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	93	305	702	301	186	104
Future Vol, veh/h	93	305	702	301	186	104
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	96	314	724	310	192	107
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	22.4	281.9	18.8
HCM LOS	C	F	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	0%	64%
Vol Thru, %	77%	70%	0%
Vol Right, %	0%	30%	36%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	398	1003	290
LT Vol	93	0	186
Through Vol	305	702	0
RT Vol	0	301	104
Lane Flow Rate	410	1034	299
Geometry Grp	1	1	1
Degree of Util (X)	0.674	1.576	0.535
Departure Headway (Hd)	6.675	5.487	7.478
Convergence, Y/N	Yes	Yes	Yes
Cap	546	672	487
Service Time	4.675	3.487	5.478
HCM Lane V/C Ratio	0.751	1.539	0.614
HCM Control Delay	22.4	281.9	18.8
HCM Lane LOS	C	F	C
HCM 95th-tile Q	5	54.4	3.1

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	19	268	10	124	475	156	5	20	8	28	19	13
Future Vol, veh/h	19	268	10	124	475	156	5	20	8	28	19	13
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	19	273	10	127	485	159	5	20	8	29	19	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	644	0	0	284	0	0	1152	1215	279	1149	1141	565
Stage 1	-	-	-	-	-	-	317	317	-	819	819	-
Stage 2	-	-	-	-	-	-	835	898	-	330	322	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	951	-	-	1290	-	-	176	183	765	177	202	528
Stage 1	-	-	-	-	-	-	698	658	-	372	392	-
Stage 2	-	-	-	-	-	-	365	361	-	687	655	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	951	-	-	1289	-	-	135	150	764	136	166	528
Mov Cap-2 Maneuver	-	-	-	-	-	-	135	150	-	136	166	-
Stage 1	-	-	-	-	-	-	681	642	-	363	330	-
Stage 2	-	-	-	-	-	-	282	304	-	642	639	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	1.3	29.2	36.5
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	182	951	-	-	1289	-	-	174
HCM Lane V/C Ratio	0.185	0.02	-	-	0.098	-	-	0.352
HCM Control Delay (s)	29.2	8.9	0	-	8.1	0	-	36.5
HCM Lane LOS	D	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	0.7	0.1	-	-	0.3	-	-	1.5

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	74	0	0	94	25	0	0	0	136	0	41
Future Vol, veh/h	11	74	0	0	94	25	0	0	0	136	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16965	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	13	90	0	0	115	30	0	0	0	166	0	50

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	145	0	-	-	-	0			246	246	130
Stage 1	-	-	-	-	-	-			130	130	-
Stage 2	-	-	-	-	-	-			116	116	-
Critical Hdwy	4.1	-	-	-	-	-			6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-			5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.4	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-			3.5	4	3.3
Pot Cap-1 Maneuver	1450	-	0	0	-	-			747	660	925
Stage 1	-	-	0	0	-	-			901	792	-
Stage 2	-	-	0	0	-	-			914	803	-
Platoon blocked, %		-			-	-					
Mov Cap-1 Maneuver	1450	-	-	-	-	-			740	0	925
Mov Cap-2 Maneuver	-	-	-	-	-	-			740	0	-
Stage 1	-	-	-	-	-	-			893	0	-
Stage 2	-	-	-	-	-	-			914	0	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1450	-	-	-	776
HCM Lane V/C Ratio	0.009	-	-	-	0.278
HCM Control Delay (s)	7.5	0	-	-	11.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	1.1

Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑			✣				
Traffic Vol, veh/h	0	381	110	131	812	0	142	0	108	0	0	0
Future Vol, veh/h	0	381	110	131	812	0	142	0	108	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	393	113	135	837	0	146	0	111	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	506	0	0	1500	1500	393
Stage 1	-	-	-	-	-	-	393	393	-
Stage 2	-	-	-	-	-	-	1107	1107	-
Critical Hdwy	-	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	1069	-	0	~ 136	123	660
Stage 1	0	-	-	-	-	0	686	609	-
Stage 2	0	-	-	-	-	0	319	288	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1069	-	-	~ 119	0	660
Mov Cap-2 Maneuver	-	-	-	-	-	-	223	0	-
Stage 1	-	-	-	-	-	-	686	0	-
Stage 2	-	-	-	-	-	-	279	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	53.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	312	-	-	1069	-
HCM Lane V/C Ratio	0.826	-	-	0.126	-
HCM Control Delay (s)	53.7	-	-	8.9	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	7	-	-	0.4	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	424	64	28	925	0	18	0	35	0	0	0
Future Vol, veh/h	0	424	64	28	925	0	18	0	35	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	466	70	31	1016	0	20	0	38	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	536	0	0	1579	1579	268
Stage 1	-	-	-	-	-	-	501	501	-
Stage 2	-	-	-	-	-	-	1078	1078	-
Critical Hdwy	-	-	-	4.1	-	-	6.6	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	1042	-	0	111	110	736
Stage 1	0	-	-	-	-	0	580	546	-
Stage 2	0	-	-	-	-	0	330	297	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1042	-	-	108	0	736
Mov Cap-2 Maneuver	-	-	-	-	-	-	232	0	-
Stage 1	-	-	-	-	-	-	580	0	-
Stage 2	-	-	-	-	-	-	320	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	14.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	424	-	-	1042	-
HCM Lane V/C Ratio	0.137	-	-	0.03	-
HCM Control Delay (s)	14.8	-	-	8.6	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	457	1	43	801	0	152	0	36	0	0	0
Future Vol, veh/h	0	457	1	43	801	0	152	0	36	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	200	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	491	1	46	861	0	163	0	39	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	492	0	0	1445	-	246
Stage 1	-	-	-	-	-	-	492	-	-
Stage 2	-	-	-	-	-	-	953	-	-
Critical Hdwy	-	-	-	4.1	-	-	6.6	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	-	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	-	3.3
Pot Cap-1 Maneuver	0	-	-	1082	-	0	~ 135	0	760
Stage 1	0	-	-	-	-	0	586	0	-
Stage 2	0	-	-	-	-	0	378	0	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1082	-	-	~ 129	0	760
Mov Cap-2 Maneuver	-	-	-	-	-	-	259	0	-
Stage 1	-	-	-	-	-	-	586	0	-
Stage 2	-	-	-	-	-	-	362	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	34.3
HCM LOS			D

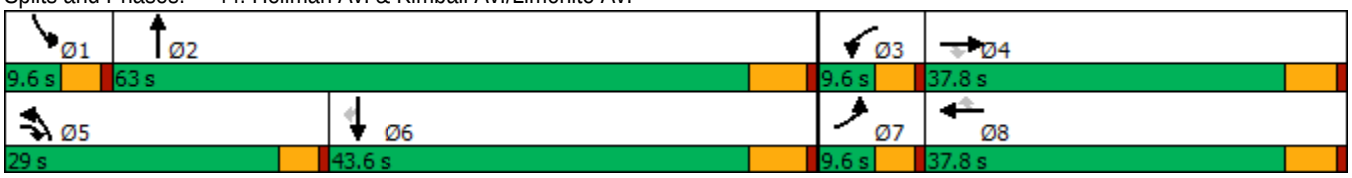
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	259	760	-	-	1082	-
HCM Lane V/C Ratio	0.631	0.051	-	-	0.043	-
HCM Control Delay (s)	40	10	-	-	8.5	-
HCM Lane LOS	E	B	-	-	A	-
HCM 95th %tile Q(veh)	3.9	0.2	-	-	0.1	-

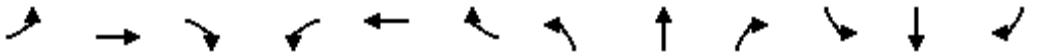
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	46	7	334	1	2	857	217	35	22	
Future Volume (vph)	46	7	334	1	2	857	217	35	22	
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	NA	Perm	
Protected Phases	7	4	5	3	8	5	2	6		1
Permitted Phases			4						6	
Detector Phase	7	4	5	3	8	5	2	6	6	
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	10.0	5.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	9.6	43.2	43.2	43.2	9.6
Total Split (s)	9.6	37.8	29.0	9.6	37.8	29.0	63.0	43.6	43.6	9.6
Total Split (%)	8.0%	31.5%	24.2%	8.0%	31.5%	24.2%	52.5%	36.3%	36.3%	8%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	5.2	5.2	5.2	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	4.6	6.2	6.2	6.2	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	None	None	Max	Max	None	None	None
Act Effct Green (s)	9.2	13.5	61.5	5.1	13.5	44.5	64.5	22.0	22.0	
Actuated g/C Ratio	0.11	0.16	0.71	0.06	0.16	0.51	0.74	0.25	0.25	
v/c Ratio	0.28	0.03	0.30	0.01	0.00	1.09	0.09	0.04	0.05	
Control Delay	45.4	31.6	2.2	46.0	31.5	89.1	6.0	23.1	0.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	45.4	31.6	2.2	46.0	31.5	89.1	6.0	23.1	0.2	
LOS	D	C	A	D	C	F	A	C	A	
Approach Delay		7.8			36.3		72.0	14.3		
Approach LOS		A			D		E	B		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 86.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 53.5	Intersection LOS: D
Intersection Capacity Utilization 83.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	7	334	1	2	0	857	217	5	0	35	22
Future Volume (veh/h)	46	7	334	1	2	0	857	217	5	0	35	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	48	7	352	1	2	0	902	228	5	0	37	23
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	62	351	705	4	540	241	433	2128	47	2	1041	464
Arrive On Green	0.04	0.19	0.19	0.00	0.16	0.00	0.27	0.62	0.62	0.00	0.30	0.30
Sat Flow, veh/h	1619	1800	1525	2956	3420	1525	1619	3422	75	1619	3420	1525
Grp Volume(v), veh/h	48	7	352	1	2	0	902	114	119	0	37	23
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	1710	1525	1619	1710	1787	1619	1710	1525
Q Serve(g_s), s	2.7	0.3	14.7	0.0	0.0	0.0	24.4	2.5	2.5	0.0	0.7	1.0
Cycle Q Clear(g_c), s	2.7	0.3	14.7	0.0	0.0	0.0	24.4	2.5	2.5	0.0	0.7	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	62	351	705	4	540	241	433	1063	1111	2	1041	464
V/C Ratio(X)	0.77	0.02	0.50	0.25	0.00	0.00	2.09	0.11	0.11	0.00	0.04	0.05
Avail Cap(c_a), veh/h	89	631	942	162	1198	534	433	1063	1111	89	1400	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	43.5	29.7	17.2	45.6	32.4	0.0	33.5	7.0	7.0	0.0	22.3	22.4
Incr Delay (d2), s/veh	13.3	0.0	0.5	11.3	0.0	0.0	496.3	0.2	0.2	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.1	4.7	0.0	0.0	0.0	68.4	0.8	0.8	0.0	0.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.8	29.7	17.7	56.8	32.4	0.0	529.7	7.2	7.2	0.0	22.4	22.5
LnGrp LOS	E	C	B	E	C	A	F	A	A	A	C	C
Approach Vol, veh/h		407			3			1135			60	
Approach Delay, s/veh		22.5			40.6			422.5			22.4	
Approach LOS		C			D			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	63.0	4.7	23.6	29.0	34.0	8.1	20.2
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	5.0	56.8	5.0	32.0	24.4	37.4	5.0	32.0
Max Q Clear Time (g_c+I1), s	0.0	4.5	2.0	16.7	26.4	3.0	4.7	2.0
Green Ext Time (p_c), s	0.0	1.2	0.0	1.1	0.0	0.2	0.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay		305.4
HCM 6th LOS		F

Intersection	
Intersection Delay, s/veh	215.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	449	34	243	810	45	23	0	132	128	0	11
Future Vol, veh/h	11	449	34	243	810	45	23	0	132	128	0	11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	12	478	36	259	862	48	24	0	140	136	0	12
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

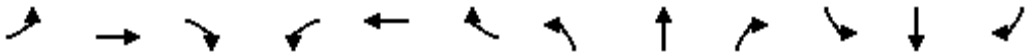
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	52.2	342.5	16.2	17.7
HCM LOS	F	F	C	C

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	15%	100%	0%	0%	100%	0%	92%
Vol Thru, %	0%	0%	100%	0%	0%	95%	0%
Vol Right, %	85%	0%	0%	100%	0%	5%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	155	11	449	34	243	855	139
LT Vol	23	11	0	0	243	0	128
Through Vol	0	0	449	0	0	810	0
RT Vol	132	0	0	34	0	45	11
Lane Flow Rate	165	12	478	36	259	910	148
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.356	0.025	0.938	0.064	0.582	1.907	0.357
Departure Headway (Hd)	8.743	8.49	7.974	7.252	8.1	7.548	9.71
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	414	424	459	497	447	491	373
Service Time	6.443	6.19	5.674	4.952	5.8	5.248	7.41
HCM Lane V/C Ratio	0.399	0.028	1.041	0.072	0.579	1.853	0.397
HCM Control Delay	16.2	11.4	56.4	10.4	21.5	433.7	17.7
HCM Lane LOS	C	B	F	B	C	F	C
HCM 95th-tile Q	1.6	0.1	11	0.2	3.6	59.8	1.6

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	4	530	716	1134	440
Future Volume (vph)	4	530	716	1134	440
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (%)	32.2%	32.2%	31.1%	67.8%	36.7%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	23.0	23.0	35.2	55.2	16.0
Actuated g/C Ratio	0.26	0.26	0.39	0.61	0.18
v/c Ratio	1.20	1.20	1.13	0.40	0.60
Control Delay	140.2	136.3	102.4	19.1	29.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	140.2	136.3	102.4	19.1	29.2
LOS	F	F	F	B	C
Approach Delay	138.2			51.3	29.2
Approach LOS	F			D	C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay: 72.6	Intersection LOS: E
Intersection Capacity Utilization 92.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	494	4	530	716	1134	0	0	440	211
Future Volume (veh/h)	0	0	0	494	4	530	716	1134	0	0	440	211
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				549	4	402	796	1260	0	0	489	224
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				459	3	411	643	3181	0	0	948	310
Arrive On Green				0.26	0.26	0.26	0.71	1.00	0.00	0.00	0.19	0.19
Sat Flow, veh/h				1797	13	1610	1810	5358	0	0	5168	1606
Grp Volume(v), veh/h				553	0	402	796	1260	0	0	489	224
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1729	0	0	1634	1606
Q Serve(g_s), s				23.0	0.0	22.3	32.0	0.0	0.0	0.0	8.0	11.8
Cycle Q Clear(g_c), s				23.0	0.0	22.3	32.0	0.0	0.0	0.0	8.0	11.8
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				463	0	411	643	3181	0	0	948	310
V/C Ratio(X)				1.20	0.00	0.98	1.24	0.40	0.00	0.00	0.52	0.72
Avail Cap(c_a), veh/h				463	0	411	643	3181	0	0	1481	485
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.12	0.12	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.5	0.0	33.2	13.0	0.0	0.0	0.0	32.5	34.0
Incr Delay (d2), s/veh				107.4	0.0	38.4	108.4	0.0	0.0	0.0	2.0	13.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				23.1	0.0	21.9	23.7	0.0	0.0	0.0	3.2	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				140.9	0.0	71.7	121.4	0.0	0.0	0.0	34.5	47.6
LnGrp LOS				F	A	E	F	A	A	A	C	D
Approach Vol, veh/h					955			2056			713	
Approach Delay, s/veh					111.8			47.0			38.6	
Approach LOS					F			D			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	61.0	29.0	37.8	23.2
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	55.2	23.0	24.0	* 27
Max Q Clear Time (g_c+I1), s	2.0	25.0	34.0	13.8
Green Ext Time (p_c), s	11.1	0.0	0.0	3.6

Intersection Summary	
HCM 6th Ctrl Delay	62.0
HCM 6th LOS	E

Notes

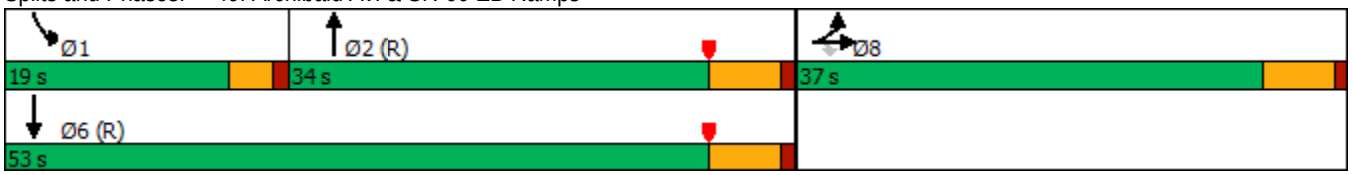
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

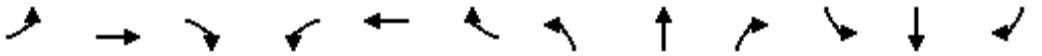
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	3	553	1450	171	763
Future Volume (vph)	3	553	1450	171	763
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (%)	41.1%	41.1%	37.8%	21.1%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	29.8	29.8	32.1	12.5	48.6
Actuated g/C Ratio	0.33	0.33	0.36	0.14	0.54
v/c Ratio	0.72	0.93	1.07dr	0.73	0.29
Control Delay	33.7	45.9	44.9	42.9	24.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	33.7	45.9	44.9	42.9	24.3
LOS	C	D	D	D	C
Approach Delay	40.8		44.9		27.7
Approach LOS	D		D		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 39.9	Intersection LOS: D
Intersection Capacity Utilization 92.2%	ICU Level of Service F
Analysis Period (min) 15	

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	400	3	553	0	0	0	0	1450	670	171	763	0
Future Volume (veh/h)	400	3	553	0	0	0	0	1450	670	171	763	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	426	3	371				0	1543	482	182	812	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	497	3	445				0	2118	661	220	3086	0
Arrive On Green	0.28	0.28	0.28				0.00	0.43	0.43	0.04	0.20	0.00
Sat Flow, veh/h	1797	13	1610				0	5206	1543	1810	5358	0
Grp Volume(v), veh/h	429	0	371				0	1531	494	182	812	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1581	1810	1729	0
Q Serve(g_s), s	20.2	0.0	19.5				0.0	23.3	23.4	9.0	11.9	0.0
Cycle Q Clear(g_c), s	20.2	0.0	19.5				0.0	23.3	23.4	9.0	11.9	0.0
Prop In Lane	0.99		1.00				0.00		0.98	1.00		0.00
Lane Grp Cap(c), veh/h	500	0	445				0	2102	678	220	3086	0
V/C Ratio(X)	0.86	0.00	0.83				0.00	0.73	0.73	0.83	0.26	0.00
Avail Cap(c_a), veh/h	628	0	558				0	2102	678	302	3086	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.39	0.39	0.77	0.77	0.00
Uniform Delay (d), s/veh	30.9	0.0	30.6				0.0	21.4	21.4	42.2	19.4	0.0
Incr Delay (d2), s/veh	9.5	0.0	8.6				0.0	0.9	2.7	7.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	0.0	8.1				0.0	8.0	8.1	4.5	5.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.4	0.0	39.3				0.0	22.2	24.1	49.7	19.6	0.0
LnGrp LOS	D	A	D				A	C	C	D	B	A
Approach Vol, veh/h		800						2025			994	
Approach Delay, s/veh		39.9						22.7			25.1	
Approach LOS		D						C			C	

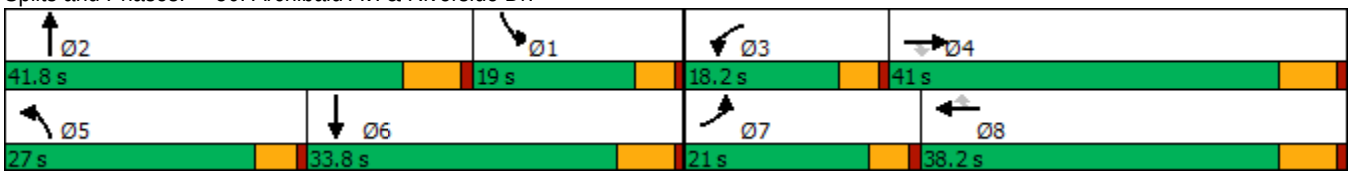
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	15.0	44.4				59.3		30.7				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	15.0	28.2				47.2		31.2				
Max Q Clear Time (g_c+I1), s	11.0	25.4				13.9		22.2				
Green Ext Time (p_c), s	0.1	2.5				5.5		2.6				

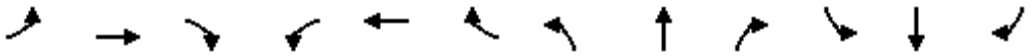
Intersection Summary			
HCM 6th Ctrl Delay			26.9
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	256	329	272	99	509	186	360	1198	144	630
Future Volume (vph)	256	329	272	99	509	186	360	1198	144	630
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.0	41.0	41.0	18.2	38.2	38.2	27.0	41.8	19.0	33.8
Total Split (%)	17.5%	34.2%	34.2%	15.2%	31.8%	31.8%	22.5%	34.8%	15.8%	28.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	16.5	29.3	29.3	10.8	23.6	23.6	22.5	34.2	14.0	25.7
Actuated g/C Ratio	0.15	0.27	0.27	0.10	0.21	0.21	0.20	0.31	0.13	0.23
v/c Ratio	1.13	0.38	0.47	0.66	0.74	0.42	1.16	0.87	0.75	0.82
Control Delay	140.3	35.0	6.6	69.6	46.9	7.6	141.1	43.8	70.4	43.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	140.3	35.0	6.6	69.6	46.9	7.6	141.1	43.8	70.4	43.7
LOS	F	C	A	E	D	A	F	D	E	D
Approach Delay		57.4			40.5			65.6		47.4
Approach LOS		E			D			E		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.1	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 54.9	Intersection LOS: D
Intersection Capacity Utilization 92.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	256	329	272	99	509	186	360	1198	53	144	630	262
Future Volume (veh/h)	256	329	272	99	509	186	360	1198	53	144	630	262
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	272	350	155	105	541	116	383	1274	53	153	670	201
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	250	975	427	128	720	315	341	1484	62	179	836	247
Arrive On Green	0.15	0.29	0.29	0.08	0.21	0.21	0.21	0.31	0.31	0.11	0.22	0.22
Sat Flow, veh/h	1619	3420	1498	1619	3420	1495	1619	4838	201	1619	3763	1111
Grp Volume(v), veh/h	272	350	155	105	541	116	383	863	464	153	582	289
Grp Sat Flow(s),veh/h/ln	1619	1710	1498	1619	1710	1495	1619	1638	1763	1619	1638	1598
Q Serve(g_s), s	16.4	8.7	8.8	6.8	15.8	5.0	22.4	26.4	26.4	9.9	17.9	18.3
Cycle Q Clear(g_c), s	16.4	8.7	8.8	6.8	15.8	5.0	22.4	26.4	26.4	9.9	17.9	18.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.11	1.00		0.70
Lane Grp Cap(c), veh/h	250	975	427	128	720	315	341	1005	541	179	727	355
V/C Ratio(X)	1.09	0.36	0.36	0.82	0.75	0.37	1.12	0.86	0.86	0.85	0.80	0.81
Avail Cap(c_a), veh/h	250	1118	490	207	1028	449	341	1096	590	219	850	415
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	30.3	30.3	48.2	39.4	18.2	42.0	34.7	34.7	46.5	39.2	39.3
Incr Delay (d2), s/veh	83.1	0.2	0.5	5.5	1.9	0.7	86.6	6.6	11.4	19.9	4.8	10.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.0	3.4	3.1	2.8	6.5	2.5	16.6	10.7	12.2	4.8	7.3	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	128.2	30.5	30.8	53.8	41.3	19.0	128.6	41.3	46.1	66.4	43.9	49.7
LnGrp LOS	F	C	C	D	D	B	F	D	D	E	D	D
Approach Vol, veh/h		777			762			1710			1024	
Approach Delay, s/veh		64.8			39.6			62.2			48.9	
Approach LOS		E			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	38.8	13.0	36.6	27.0	29.8	21.0	28.6
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	14.4	* 36	13.6	34.8	22.4	27.6	16.4	32.0
Max Q Clear Time (g_c+I1), s	11.9	28.4	8.8	10.8	24.4	20.3	18.4	17.8
Green Ext Time (p_c), s	0.0	4.3	0.0	2.5	0.0	3.0	0.0	3.0

Intersection Summary	
HCM 6th Ctrl Delay	55.4
HCM 6th LOS	E

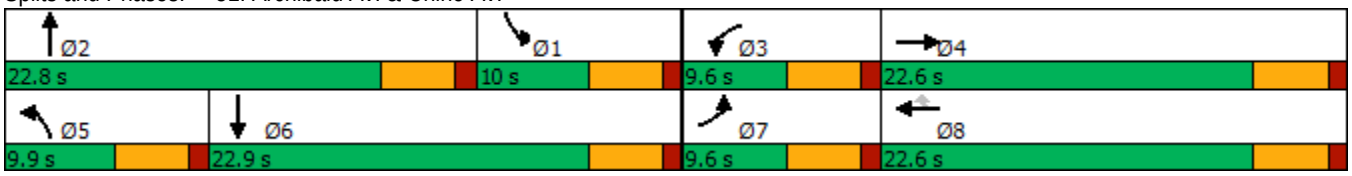
Notes

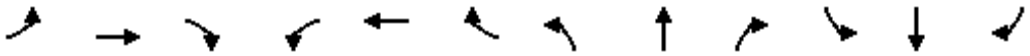
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	102	3	78	5	264	115	1182	124	842
Future Volume (vph)	102	3	78	5	264	115	1182	124	842
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	9.6	22.6	9.6	22.6	22.6	9.9	22.8	10.0	22.9
Total Split (%)	14.8%	34.8%	14.8%	34.8%	34.8%	15.2%	35.1%	15.4%	35.2%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	5.0	10.4	9.4	8.4	8.4	5.3	18.3	5.4	18.4
Actuated g/C Ratio	0.09	0.19	0.17	0.15	0.15	0.10	0.33	0.10	0.33
v/c Ratio	0.77	0.11	0.32	0.02	0.62	0.82	0.83	0.87	0.85
Control Delay	64.0	9.4	30.1	18.6	9.8	68.3	24.6	75.5	27.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.0	9.4	30.1	18.6	9.8	68.3	24.6	75.5	27.8
LOS	E	A	C	B	A	E	C	E	C
Approach Delay		51.3		14.5			28.4		33.8
Approach LOS		D		B			C		C

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 55.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 29.6	Intersection LOS: C
Intersection Capacity Utilization 60.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	3	28	78	5	264	115	1182	39	124	842	26
Future Volume (veh/h)	102	3	28	78	5	264	115	1182	39	124	842	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	112	3	13	86	5	153	126	1299	41	136	925	27
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	138	38	165	112	205	174	156	1628	51	168	1155	34
Arrive On Green	0.09	0.13	0.13	0.07	0.11	0.11	0.10	0.33	0.33	0.10	0.34	0.34
Sat Flow, veh/h	1619	293	1271	1619	1800	1525	1619	4893	154	1619	3393	99
Grp Volume(v), veh/h	112	0	16	86	5	153	126	870	470	136	466	486
Grp Sat Flow(s),veh/h/ln	1619	0	1564	1619	1800	1525	1619	1638	1772	1619	1710	1782
Q Serve(g_s), s	3.4	0.0	0.5	2.6	0.1	3.4	3.9	12.2	12.2	4.2	12.5	12.5
Cycle Q Clear(g_c), s	3.4	0.0	0.5	2.6	0.1	3.4	3.9	12.2	12.2	4.2	12.5	12.5
Prop In Lane	1.00		0.81	1.00		1.00	1.00		0.09	1.00		0.06
Lane Grp Cap(c), veh/h	138	0	203	112	205	174	156	1090	589	168	582	606
V/C Ratio(X)	0.81	0.00	0.08	0.77	0.02	0.88	0.81	0.80	0.80	0.81	0.80	0.80
Avail Cap(c_a), veh/h	160	0	558	160	642	544	170	1181	639	173	620	646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.7	0.0	19.3	23.1	19.9	10.1	22.4	15.3	15.3	22.1	15.1	15.1
Incr Delay (d2), s/veh	23.3	0.0	0.2	12.8	0.0	13.2	23.1	3.7	6.6	23.7	7.1	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.2	1.3	0.0	2.1	2.2	3.7	4.5	2.4	4.7	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.0	0.0	19.5	35.8	19.9	23.3	45.4	19.0	21.9	45.9	22.2	21.9
LnGrp LOS	D	A	B	D	B	C	D	B	C	D	C	C
Approach Vol, veh/h		128			244			1466			1088	
Approach Delay, s/veh		42.7			27.6			22.2			25.0	
Approach LOS		D			C			C			C	

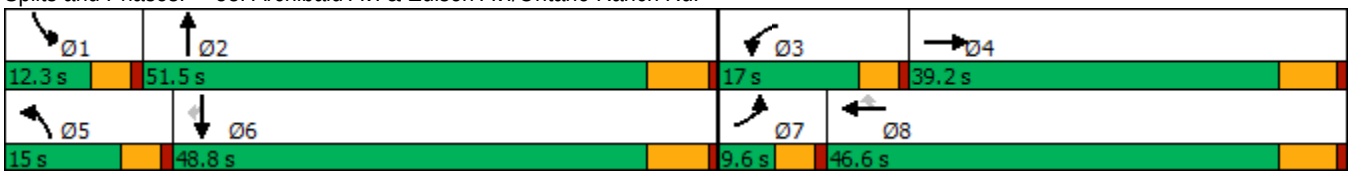
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	21.4	8.1	11.2	9.5	21.8	8.9	10.4
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	5.4	18.2	5.0	18.0	5.3	18.3	5.0	18.0
Max Q Clear Time (g_c+I1), s	6.2	14.2	4.6	2.5	5.9	14.5	5.4	5.4
Green Ext Time (p_c), s	0.0	2.6	0.0	0.0	0.0	1.9	0.0	0.4

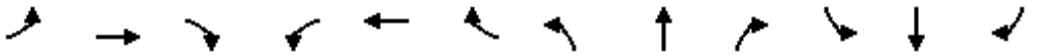
Intersection Summary	
HCM 6th Ctrl Delay	24.6
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	220	46	458	531	150	177	1108	439	70	501	108
Future Volume (vph)	27	220	46	458	531	150	177	1108	439	70	501	108
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	9.6	39.2		17.0	46.6	46.6	15.0	51.5		12.3	48.8	48.8
Total Split (%)	8.0%	32.7%		14.2%	38.8%	38.8%	12.5%	42.9%		10.3%	40.7%	40.7%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.3	24.5	105.4	13.0	37.3	37.3	10.9	40.6	105.4	7.4	33.9	33.9
Actuated g/C Ratio	0.05	0.23	1.00	0.12	0.35	0.35	0.10	0.39	1.00	0.07	0.32	0.32
v/c Ratio	0.19	0.29	0.03	1.30	0.86	0.25	1.09	0.87	0.30	0.64	0.47	0.19
Control Delay	58.1	34.6	0.0	191.4	49.1	7.1	144.8	39.9	0.5	78.6	29.9	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.1	34.6	0.0	191.4	49.1	7.1	144.8	39.9	0.5	78.6	29.9	2.1
LOS	E	C	A	F	D	A	F	D	A	E	C	A
Approach Delay		31.4			100.8			40.6			30.5	
Approach LOS		C			F			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 105.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.30	
Intersection Signal Delay: 56.0	Intersection LOS: E
Intersection Capacity Utilization 88.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	220	46	458	531	150	177	1108	439	70	501	108
Future Volume (veh/h)	27	220	46	458	531	150	177	1108	439	70	501	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	28	227	0	472	547	101	182	1142	0	72	516	78
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	79	819		349	596	505	160	1294		90	1144	510
Arrive On Green	0.03	0.24	0.00	0.12	0.33	0.33	0.10	0.38	0.00	0.06	0.33	0.33
Sat Flow, veh/h	2956	3420	1525	2956	1800	1525	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	28	227	0	472	547	101	182	1142	0	72	516	78
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1800	1525	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	1.0	5.7	0.0	12.4	30.6	5.0	10.4	32.7	0.0	4.6	12.4	3.8
Cycle Q Clear(g_c), s	1.0	5.7	0.0	12.4	30.6	5.0	10.4	32.7	0.0	4.6	12.4	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	79	819		349	596	505	160	1294		90	1144	510
V/C Ratio(X)	0.36	0.28		1.35	0.92	0.20	1.13	0.88		0.80	0.45	0.15
Avail Cap(c_a), veh/h	141	1075		349	693	587	160	1466		119	1378	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.2	32.5	0.0	46.3	33.7	25.1	47.3	30.5	0.0	49.0	27.4	24.5
Incr Delay (d2), s/veh	1.0	0.2	0.0	176.0	15.8	0.2	111.7	6.1	0.0	18.7	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.3	0.0	12.9	15.0	1.7	8.9	13.2	0.0	2.2	4.7	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.2	32.7	0.0	222.2	49.5	25.3	159.0	36.6	0.0	67.7	27.7	24.6
LnGrp LOS	D	C		F	D	C	F	D		E	C	C
Approach Vol, veh/h		255	A		1120			1324	A		666	
Approach Delay, s/veh		34.7			120.1			53.4			31.6	
Approach LOS		C			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	46.2	17.0	31.3	15.0	41.6	7.4	41.0
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	7.7	45.0	12.4	33.0	10.4	42.3	5.0	40.4
Max Q Clear Time (g_c+I1), s	6.6	34.7	14.4	7.7	12.4	14.4	3.0	32.6
Green Ext Time (p_c), s	0.0	5.0	0.0	1.2	0.0	3.3	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	69.9
HCM 6th LOS	E

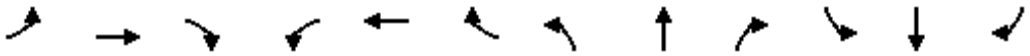
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	17	1707	9	26	979
Future Volume (vph)	12	17	1707	9	26	979
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.5	9.5	32.5	32.5	9.6	16.5
Total Split (s)	9.5	9.5	41.4	41.4	9.6	51.0
Total Split (%)	13.6%	13.6%	59.1%	59.1%	13.7%	72.9%
Yellow Time (s)	3.5	3.5	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	6.5	6.5	4.6	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max
Act Effct Green (s)	5.1	5.1	54.7	54.7	5.1	56.4
Actuated g/C Ratio	0.08	0.08	0.90	0.90	0.08	0.93
v/c Ratio	0.05	0.04	0.60	0.01	0.21	0.33
Control Delay	26.3	0.2	7.5	4.8	30.0	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.3	0.2	7.5	4.8	30.0	2.2
LOS	C	A	A	A	C	A
Approach Delay			7.5			3.0
Approach LOS			A			A

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 60.8	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 5.9	Intersection LOS: A
Intersection Capacity Utilization 63.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	12	0	17	0	1707	9	26	979	0
Future Volume (veh/h)	0	0	0	12	0	17	0	1707	9	26	979	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1700	0	1800	0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h				13	0	7	0	1835	7	28	1053	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				75	0	64	0	2293	1023	51	2677	0
Arrive On Green				0.02	0.00	0.02	0.00	0.67	0.67	0.03	0.78	0.00
Sat Flow, veh/h				3141	0	2685	0	3510	1525	1619	3510	0
Grp Volume(v), veh/h				13	0	7	0	1835	7	28	1053	0
Grp Sat Flow(s),veh/h/ln				1570	0	1342	0	1710	1525	1619	1710	0
Q Serve(g_s), s				0.2	0.0	0.1	0.0	21.7	0.1	1.0	5.5	0.0
Cycle Q Clear(g_c), s				0.2	0.0	0.1	0.0	21.7	0.1	1.0	5.5	0.0
Prop In Lane				1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				75	0	64	0	2293	1023	51	2677	0
V/C Ratio(X)				0.17	0.00	0.11	0.00	0.80	0.01	0.55	0.39	0.00
Avail Cap(c_a), veh/h				276	0	236	0	2293	1023	142	2677	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				27.2	0.0	27.2	0.0	6.7	3.1	27.1	1.9	0.0
Incr Delay (d2), s/veh				1.1	0.0	0.7	0.0	3.0	0.0	3.4	0.4	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.1	0.0	0.0	0.0	3.3	0.0	0.4	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.3	0.0	27.9	0.0	9.7	3.1	30.6	2.4	0.0
LnGrp LOS				C	A	C	A	A	A	C	A	A
Approach Vol, veh/h					20			1842			1081	
Approach Delay, s/veh					28.2			9.7			3.1	
Approach LOS					C			A			A	

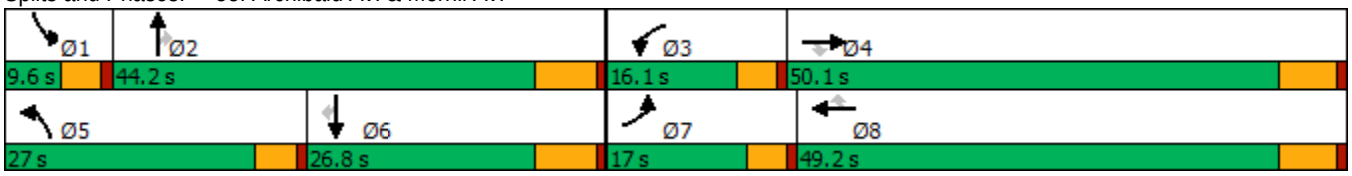
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	6.4	44.6				51.0		5.9				
Change Period (Y+Rc), s	4.6	6.5				6.5		4.5				
Max Green Setting (Gmax), s	5.0	34.9				44.5		5.0				
Max Q Clear Time (g_c+I1), s	3.0	23.7				7.5		2.2				
Green Ext Time (p_c), s	0.0	8.3				7.7		0.0				

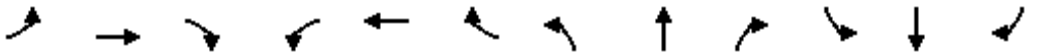
Intersection Summary		
HCM 6th Ctrl Delay		7.4
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	261	22	141	81	50	141	531	1314	41	43	590	359
Future Volume (vph)	261	22	141	81	50	141	531	1314	41	43	590	359
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	17.0	50.1	50.1	16.1	49.2	49.2	27.0	44.2	44.2	9.6	26.8	26.8
Total Split (%)	14.2%	41.8%	41.8%	13.4%	41.0%	41.0%	22.5%	36.8%	36.8%	8.0%	22.3%	22.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	12.6	21.4	21.4	8.7	15.3	15.3	22.8	42.5	42.5	5.1	20.6	20.6
Actuated g/C Ratio	0.13	0.23	0.23	0.09	0.16	0.16	0.24	0.45	0.45	0.05	0.22	0.22
v/c Ratio	1.24	0.06	0.31	0.56	0.18	0.38	1.40	0.87	0.06	0.28	0.81	0.74
Control Delay	176.6	29.1	5.6	57.5	32.9	7.0	222.8	33.2	0.1	50.7	45.4	25.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	176.6	29.1	5.6	57.5	32.9	7.0	222.8	33.2	0.1	50.7	45.4	25.8
LOS	F	C	A	E	C	A	F	C	A	D	D	C
Approach Delay		112.1			26.9			85.8			38.5	
Approach LOS		F			C			F			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 93.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.40	
Intersection Signal Delay: 71.3	Intersection LOS: E
Intersection Capacity Utilization 87.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	261	22	141	81	50	141	531	1314	41	43	590	359
Future Volume (veh/h)	261	22	141	81	50	141	531	1314	41	43	590	359
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	269	23	90	84	52	50	547	1355	23	44	608	304
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	233	351	298	105	209	177	421	1532	683	112	772	344
Arrive On Green	0.14	0.20	0.20	0.06	0.12	0.12	0.26	0.45	0.45	0.04	0.23	0.23
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	1619	3420	1525	2956	3420	1525
Grp Volume(v), veh/h	269	23	90	84	52	50	547	1355	23	44	608	304
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1710	1525	1478	1710	1525
Q Serve(g_s), s	12.4	0.9	4.3	4.4	2.3	2.6	22.4	31.2	0.7	1.3	14.4	16.6
Cycle Q Clear(g_c), s	12.4	0.9	4.3	4.4	2.3	2.6	22.4	31.2	0.7	1.3	14.4	16.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	233	351	298	105	209	177	421	1532	683	112	772	344
V/C Ratio(X)	1.15	0.07	0.30	0.80	0.25	0.28	1.30	0.88	0.03	0.39	0.79	0.88
Avail Cap(c_a), veh/h	233	918	778	216	899	762	421	1532	683	172	806	360
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.9	28.2	29.6	39.7	34.6	34.8	31.9	21.7	13.3	40.5	31.4	32.3
Incr Delay (d2), s/veh	106.8	0.1	0.6	5.2	0.6	0.9	151.1	6.5	0.0	0.8	5.1	21.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.5	0.4	1.6	1.9	1.0	1.0	25.5	11.7	0.2	0.4	5.9	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	143.7	28.3	30.2	45.0	35.3	35.7	182.9	28.3	13.3	41.3	36.5	53.6
LnGrp LOS	F	C	C	D	D	D	F	C	B	D	D	D
Approach Vol, veh/h		382			186			1925			956	
Approach Delay, s/veh		110.0			39.7			72.0			42.1	
Approach LOS		F			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	45.1	10.2	23.0	27.0	25.9	17.0	16.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	37.7	11.5	43.9	22.4	20.3	12.4	43.0
Max Q Clear Time (g_c+I1), s	3.3	33.2	6.4	6.3	24.4	18.6	14.4	4.6
Green Ext Time (p_c), s	0.0	3.1	0.0	0.4	0.0	0.8	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	66.2
HCM 6th LOS	E

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	356	913	932	381	229	545
Future Volume (vph)	356	913	932	381	229	545
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	27.0	56.7	36.3	27.0	83.7
Total Split (%)	30.3%	22.5%	47.3%	30.3%	22.5%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min
Act Effct Green (s)	26.5	48.8	51.5	83.3	22.0	78.8
Actuated g/C Ratio	0.23	0.42	0.45	0.72	0.19	0.68
v/c Ratio	0.90	1.35	1.15	0.33	0.70	0.44
Control Delay	68.4	194.6	111.9	3.4	56.5	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.4	194.6	111.9	3.4	56.5	10.3
LOS	E	F	F	A	E	B
Approach Delay	159.2		80.4			23.9
Approach LOS	F		F			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.35	
Intersection Signal Delay: 97.2	Intersection LOS: F
Intersection Capacity Utilization 114.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	356	913	932	381	229	545
Future Volume (veh/h)	356	913	932	381	229	545
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	371	895	971	350	239	568
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	487	674	848	1152	270	1214
Arrive On Green	0.27	0.27	0.45	0.45	0.15	0.64
Sat Flow, veh/h	1810	1610	1900	1610	1810	1900
Grp Volume(v), veh/h	371	895	971	350	239	568
Grp Sat Flow(s),veh/h/ln	1810	1610	1900	1610	1810	1900
Q Serve(g_s), s	21.7	31.0	51.4	9.1	14.9	17.7
Cycle Q Clear(g_c), s	21.7	31.0	51.4	9.1	14.9	17.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	487	674	848	1152	270	1214
V/C Ratio(X)	0.76	1.33	1.15	0.30	0.89	0.47
Avail Cap(c_a), veh/h	487	674	848	1152	346	1298
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.7	33.5	31.9	6.0	48.0	10.7
Incr Delay (d2), s/veh	6.3	158.0	79.2	0.2	19.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	46.7	40.0	6.3	7.8	6.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	45.0	191.5	111.1	6.1	67.3	10.8
LnGrp LOS	D	F	F	A	E	B
Approach Vol, veh/h	1266		1321			807
Approach Delay, s/veh	148.6		83.3			27.6
Approach LOS	F		F			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	22.2	56.7			78.9	36.3
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	22.0	51.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	16.9	53.4			19.7	33.0
Green Ext Time (p_c), s	0.3	0.0			1.9	0.0

Intersection Summary	
HCM 6th Ctrl Delay	94.4
HCM 6th LOS	F

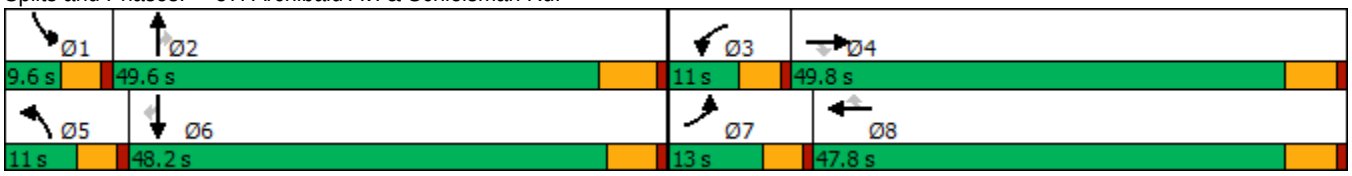
Notes

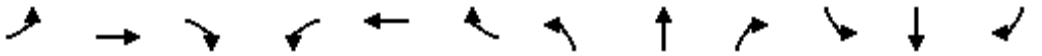
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	510	441	149	279	801	158	290	893	242	118	503	523
Future Volume (vph)	510	441	149	279	801	158	290	893	242	118	503	523
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	49.8	49.8	11.0	47.8	47.8	11.0	49.6	49.6	9.6	48.2	48.2
Total Split (%)	10.8%	41.5%	41.5%	9.2%	39.8%	39.8%	9.2%	41.3%	41.3%	8.0%	40.2%	40.2%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	8.4	44.1	44.1	6.4	42.1	42.1	6.4	38.7	38.7	5.0	38.1	38.1
Actuated g/C Ratio	0.07	0.38	0.38	0.06	0.36	0.36	0.06	0.34	0.34	0.04	0.33	0.33
v/c Ratio	2.22	0.25	0.23	1.60	0.47	0.27	1.66	0.57	0.37	0.87	0.33	0.92
Control Delay	588.0	25.5	4.7	328.1	29.8	10.5	353.6	32.8	4.7	100.9	29.3	47.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	588.0	25.5	4.7	328.1	29.8	10.5	353.6	32.8	4.7	100.9	29.3	47.9
LOS	F	C	A	F	C	B	F	C	A	F	C	D
Approach Delay		283.5			94.6			93.2			45.2	
Approach LOS		F			F			F			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.22	
Intersection Signal Delay: 125.0	Intersection LOS: F
Intersection Capacity Utilization 82.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	510	441	149	279	801	158	290	893	242	118	503	523
Future Volume (veh/h)	510	441	149	279	801	158	290	893	242	118	503	523
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	567	490	102	310	890	99	322	992	196	131	559	459
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	256	1980	605	195	1890	579	195	1739	540	152	1676	513
Arrive On Green	0.07	0.38	0.38	0.06	0.36	0.36	0.06	0.34	0.34	0.04	0.32	0.32
Sat Flow, veh/h	3510	5187	1584	3510	5187	1590	3510	5187	1610	3510	5187	1588
Grp Volume(v), veh/h	567	490	102	310	890	99	322	992	196	131	559	459
Grp Sat Flow(s),veh/h/ln	1755	1729	1584	1755	1729	1590	1755	1729	1610	1755	1729	1588
Q Serve(g_s), s	8.4	7.4	4.9	6.4	15.2	4.9	6.4	18.1	10.6	4.3	9.4	31.7
Cycle Q Clear(g_c), s	8.4	7.4	4.9	6.4	15.2	4.9	6.4	18.1	10.6	4.3	9.4	31.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	256	1980	605	195	1890	579	195	1739	540	152	1676	513
V/C Ratio(X)	2.22	0.25	0.17	1.59	0.47	0.17	1.65	0.57	0.36	0.86	0.33	0.89
Avail Cap(c_a), veh/h	256	1980	605	195	1890	579	195	1953	606	152	1926	590
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	24.3	23.5	54.4	28.1	24.8	54.4	31.5	29.0	54.8	29.6	37.1
Incr Delay (d2), s/veh	559.7	0.3	0.6	288.4	0.8	0.6	315.0	0.3	0.4	34.8	0.1	14.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.5	3.0	1.9	10.6	6.2	1.9	11.3	7.2	4.0	2.6	3.7	13.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	613.1	24.6	24.1	342.9	28.9	25.5	369.4	31.8	29.4	89.5	29.7	51.9
LnGrp LOS	F	C	C	F	C	C	F	C	C	F	C	D
Approach Vol, veh/h		1159			1299			1510			1149	
Approach Delay, s/veh		312.5			103.6			103.5			45.4	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	44.8	11.0	49.8	11.0	43.4	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.0	43.4	6.4	44.0	6.4	* 43	8.4	42.0
Max Q Clear Time (g_c+I1), s	6.3	20.1	8.4	9.4	8.4	33.7	10.4	17.2
Green Ext Time (p_c), s	0.0	7.3	0.0	3.6	0.0	3.5	0.0	6.4

Intersection Summary	
HCM 6th Ctrl Delay	137.8
HCM 6th LOS	F

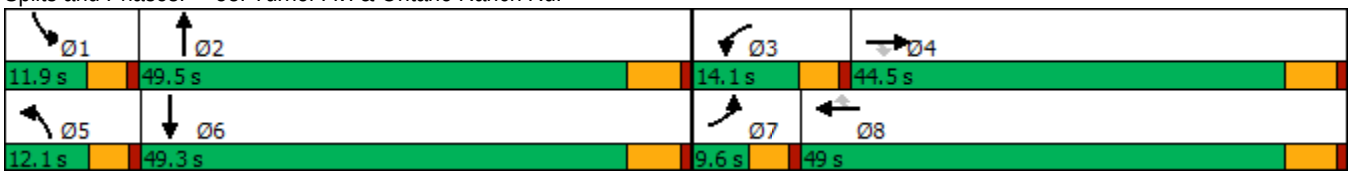
Notes

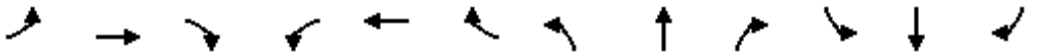
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	29	628	37	47	1196	20	63	26	37	17
Future Volume (vph)	29	628	37	47	1196	20	63	26	37	17
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	9.6	44.5	44.5	14.1	49.0	49.0	12.1	49.5	11.9	49.3
Total Split (%)	8.0%	37.1%	37.1%	11.8%	40.8%	40.8%	10.1%	41.3%	9.9%	41.1%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	5.2	48.9	48.9	7.1	50.6	50.6	7.2	18.0	6.5	15.1
Actuated g/C Ratio	0.06	0.57	0.57	0.08	0.59	0.59	0.08	0.21	0.08	0.17
v/c Ratio	0.33	0.36	0.04	0.39	0.66	0.02	0.52	0.20	0.34	0.27
Control Delay	55.4	18.3	0.1	51.8	21.9	0.1	58.1	16.1	52.1	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.4	18.3	0.1	51.8	21.9	0.1	58.1	16.1	52.1	12.9
LOS	E	B	A	D	C	A	E	B	D	B
Approach Delay		18.8			22.6			36.4		25.1
Approach LOS		B			C			D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 86.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 22.4	Intersection LOS: C
Intersection Capacity Utilization 63.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	628	37	47	1196	20	63	26	41	37	17	65
Future Volume (veh/h)	29	628	37	47	1196	20	63	26	41	37	17	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	32	698	30	52	1329	13	70	29	33	41	19	49
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	51	1794	800	69	1832	817	87	106	120	60	54	139
Arrive On Green	0.03	0.52	0.52	0.04	0.54	0.54	0.05	0.14	0.14	0.04	0.12	0.12
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	768	874	1619	445	1148
Grp Volume(v), veh/h	32	698	30	52	1329	13	70	0	62	41	0	68
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	0	1643	1619	0	1593
Q Serve(g_s), s	1.6	9.8	0.8	2.6	23.8	0.3	3.4	0.0	2.7	2.0	0.0	3.2
Cycle Q Clear(g_c), s	1.6	9.8	0.8	2.6	23.8	0.3	3.4	0.0	2.7	2.0	0.0	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.53	1.00		0.72
Lane Grp Cap(c), veh/h	51	1794	800	69	1832	817	87	0	226	60	0	193
V/C Ratio(X)	0.62	0.39	0.04	0.75	0.73	0.02	0.81	0.00	0.27	0.68	0.00	0.35
Avail Cap(c_a), veh/h	100	1794	800	191	1832	817	151	0	890	147	0	859
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.6	11.5	9.3	38.2	14.2	8.8	37.8	0.0	31.2	38.4	0.0	32.5
Incr Delay (d2), s/veh	4.5	0.6	0.1	6.0	2.5	0.0	6.5	0.0	0.6	4.9	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.3	0.2	1.1	8.1	0.1	1.4	0.0	1.1	0.8	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.1	12.1	9.4	44.2	16.8	8.8	44.2	0.0	31.8	43.3	0.0	33.6
LnGrp LOS	D	B	A	D	B	A	D	A	C	D	A	C
Approach Vol, veh/h		760			1394			132			109	
Approach Delay, s/veh		13.3			17.7			38.4			37.3	
Approach LOS		B			B			D			D	

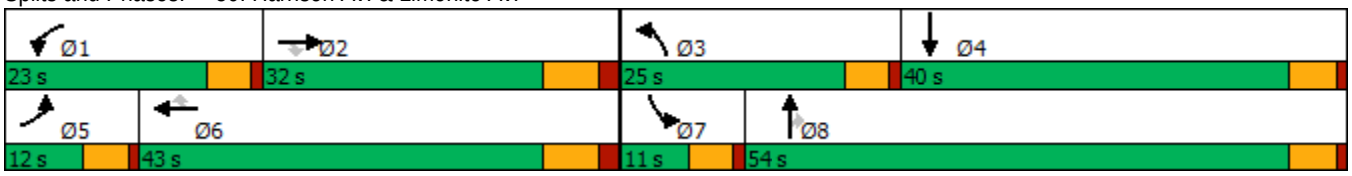
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	16.9	8.0	48.1	8.9	15.6	7.2	49.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	7.3	43.7	9.5	38.7	7.5	43.5	5.0	43.2
Max Q Clear Time (g_c+I1), s	4.0	4.7	4.6	11.8	5.4	5.2	3.6	25.8
Green Ext Time (p_c), s	0.0	0.3	0.0	4.7	0.0	0.3	0.0	8.6

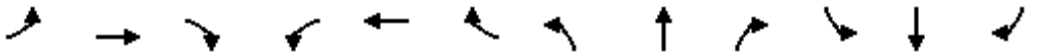
Intersection Summary	
HCM 6th Ctrl Delay	18.3
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	46	541	23	154	1023	23	162	115	229	29	122
Future Volume (vph)	46	541	23	154	1023	23	162	115	229	29	122
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	12.0	32.0	32.0	23.0	43.0	43.0	25.0	54.0	54.0	11.0	40.0
Total Split (%)	10.0%	26.7%	26.7%	19.2%	35.8%	35.8%	20.8%	45.0%	45.0%	9.2%	33.3%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	6.3	17.2	17.2	11.7	28.2	28.2	12.3	28.4	28.4	5.8	16.3
Actuated g/C Ratio	0.08	0.21	0.21	0.14	0.35	0.35	0.15	0.35	0.35	0.07	0.20
v/c Ratio	0.34	0.52	0.05	0.62	0.60	0.04	0.62	0.18	0.34	0.23	0.57
Control Delay	51.0	32.1	0.2	48.5	26.4	0.1	47.2	22.7	4.6	49.9	33.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.0	32.1	0.2	48.5	26.4	0.1	47.2	22.7	4.6	49.9	33.3
LOS	D	C	A	D	C	A	D	C	A	D	C
Approach Delay		32.4			28.7			22.3			35.3
Approach LOS		C			C			C			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 81.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 28.9	Intersection LOS: C
Intersection Capacity Utilization 63.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 59: Harrison Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	541	23	154	1023	23	162	115	229	29	122	84
Future Volume (veh/h)	46	541	23	154	1023	23	162	115	229	29	122	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	48	564	17	160	1066	22	169	120	121	30	127	59
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	82	1336	401	203	1682	509	213	452	382	59	187	87
Arrive On Green	0.05	0.26	0.26	0.11	0.32	0.32	0.12	0.24	0.24	0.03	0.15	0.15
Sat Flow, veh/h	1810	5187	1559	1810	5187	1571	1810	1900	1606	1810	1227	570
Grp Volume(v), veh/h	48	564	17	160	1066	22	169	120	121	30	0	186
Grp Sat Flow(s),veh/h/ln	1810	1729	1559	1810	1729	1571	1810	1900	1606	1810	0	1797
Q Serve(g_s), s	1.6	5.6	0.5	5.3	10.8	0.6	5.6	3.2	3.8	1.0	0.0	6.1
Cycle Q Clear(g_c), s	1.6	5.6	0.5	5.3	10.8	0.6	5.6	3.2	3.8	1.0	0.0	6.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	82	1336	401	203	1682	509	213	452	382	59	0	274
V/C Ratio(X)	0.58	0.42	0.04	0.79	0.63	0.04	0.79	0.27	0.32	0.51	0.00	0.68
Avail Cap(c_a), veh/h	205	2094	629	526	3016	913	584	1494	1263	175	0	1007
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.0	19.1	17.3	26.8	17.8	14.3	26.6	19.2	19.5	29.5	0.0	24.8
Incr Delay (d2), s/veh	2.4	0.2	0.0	2.6	0.4	0.0	2.5	0.3	0.5	2.5	0.0	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.9	0.2	2.2	3.6	0.2	2.3	1.3	1.3	0.4	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.4	19.4	17.3	29.4	18.2	14.4	29.1	19.5	19.9	32.0	0.0	27.8
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	A	C
Approach Vol, veh/h		629			1248			410			216	
Approach Delay, s/veh		20.2			19.6			23.6			28.3	
Approach LOS		C			B			C			C	

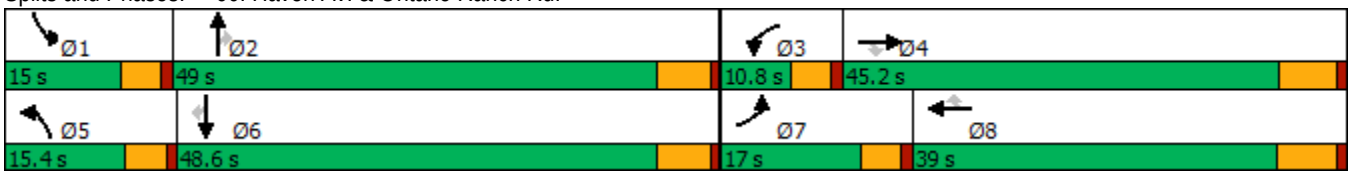
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	22.9	12.3	14.7	7.8	27.1	7.0	20.0
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	18.0	25.0	20.0	34.7	7.0	36.0	6.0	48.7
Max Q Clear Time (g_c+I1), s	7.3	7.6	7.6	8.1	3.6	12.8	3.0	5.8
Green Ext Time (p_c), s	0.1	3.2	0.1	0.9	0.0	7.2	0.0	1.0

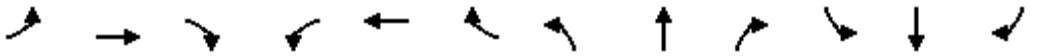
Intersection Summary	
HCM 6th Ctrl Delay	21.1
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	659	31	23	1005	89	68	207	86	129	63	77
Future Volume (vph)	148	659	31	23	1005	89	68	207	86	129	63	77
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	17.0	45.2	45.2	10.8	39.0	39.0	15.4	49.0	49.0	15.0	48.6	48.6
Total Split (%)	14.2%	37.7%	37.7%	9.0%	32.5%	32.5%	12.8%	40.8%	40.8%	12.5%	40.5%	40.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	12.5	46.3	46.3	5.7	32.9	32.9	8.2	19.6	19.6	10.5	24.1	24.1
Actuated g/C Ratio	0.13	0.48	0.48	0.06	0.34	0.34	0.08	0.20	0.20	0.11	0.25	0.25
v/c Ratio	0.76	0.30	0.04	0.26	0.92	0.15	0.53	0.61	0.21	0.79	0.15	0.17
Control Delay	66.9	18.8	0.1	54.7	46.3	1.4	59.3	41.6	1.2	74.5	30.4	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.9	18.8	0.1	54.7	46.3	1.4	59.3	41.6	1.2	74.5	30.4	0.7
LOS	E	B	A	D	D	A	E	D	A	E	C	A
Approach Delay		26.5			42.9			35.3			43.0	
Approach LOS		C			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.2	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 36.6	Intersection LOS: D
Intersection Capacity Utilization 75.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	659	31	23	1005	89	68	207	86	129	63	77
Future Volume (veh/h)	148	659	31	23	1005	89	68	207	86	129	63	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	157	701	20	24	1069	50	72	220	41	137	67	49
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	188	2297	713	41	1289	575	90	280	237	166	364	309
Arrive On Green	0.12	0.47	0.47	0.03	0.38	0.38	0.06	0.16	0.16	0.10	0.20	0.20
Sat Flow, veh/h	1619	4914	1525	1619	3420	1525	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	157	701	20	24	1069	50	72	220	41	137	67	49
Grp Sat Flow(s),veh/h/ln	1619	1638	1525	1619	1710	1525	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	8.2	7.6	0.6	1.3	24.4	1.8	3.8	10.1	2.0	7.2	2.7	2.3
Cycle Q Clear(g_c), s	8.2	7.6	0.6	1.3	24.4	1.8	3.8	10.1	2.0	7.2	2.7	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	2297	713	41	1289	575	90	280	237	166	364	309
V/C Ratio(X)	0.84	0.31	0.03	0.58	0.83	0.09	0.80	0.79	0.17	0.83	0.18	0.16
Avail Cap(c_a), veh/h	233	2297	713	116	1289	575	203	902	764	195	894	757
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.3	14.3	12.4	41.6	24.3	17.3	40.3	35.0	31.6	37.9	28.5	28.3
Incr Delay (d2), s/veh	16.2	0.3	0.1	4.8	6.3	0.3	6.1	4.9	0.3	18.8	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	2.5	0.2	0.5	9.6	0.6	1.6	4.6	0.7	3.5	1.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.5	14.6	12.5	46.4	30.6	17.6	46.4	39.9	31.9	56.7	28.7	28.6
LnGrp LOS	D	B	B	D	C	B	D	D	C	E	C	C
Approach Vol, veh/h		878			1143			333			253	
Approach Delay, s/veh		21.5			30.4			40.3			43.9	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	19.2	6.8	46.8	9.4	23.3	14.6	39.0
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	10.4	43.2	6.2	* 39	10.8	42.8	12.4	32.5
Max Q Clear Time (g_c+I1), s	9.2	12.1	3.3	9.6	5.8	4.7	10.2	26.4
Green Ext Time (p_c), s	0.0	1.3	0.0	4.6	0.0	0.5	0.0	3.3

Intersection Summary	
HCM 6th Ctrl Delay	30.0
HCM 6th LOS	C

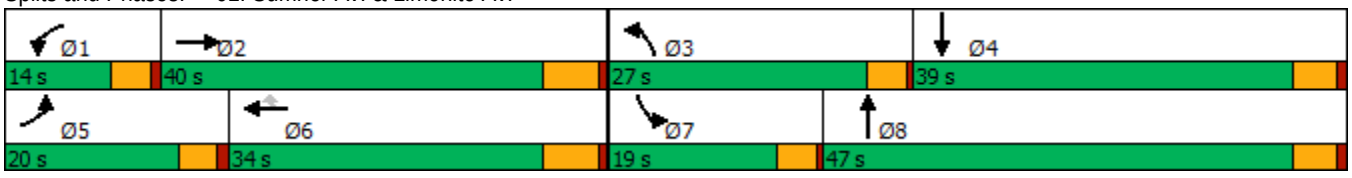
Notes

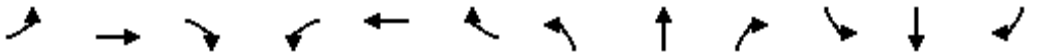
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	261	583	118	823	35	195	413	105	207
Future Volume (vph)	261	583	118	823	35	195	413	105	207
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	20.0	40.0	14.0	34.0	34.0	27.0	47.0	19.0	39.0
Total Split (%)	16.7%	33.3%	11.7%	28.3%	28.3%	22.5%	39.2%	15.8%	32.5%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	10.7	24.4	7.1	20.8	20.8	13.8	22.0	9.3	14.8
Actuated g/C Ratio	0.13	0.30	0.09	0.26	0.26	0.17	0.27	0.11	0.18
v/c Ratio	0.58	0.41	0.40	0.64	0.07	0.65	0.57	0.52	0.51
Control Delay	41.9	24.8	44.6	31.1	0.2	45.4	27.7	48.4	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	24.8	44.6	31.1	0.2	45.4	27.7	48.4	19.1
LOS	D	C	D	C	A	D	C	D	B
Approach Delay		29.9		31.7			32.4		25.5
Approach LOS		C		C			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 81	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 30.4	Intersection LOS: C
Intersection Capacity Utilization 61.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 61: Sumner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	261	583	33	118	823	35	195	413	120	105	207	169
Future Volume (veh/h)	261	583	33	118	823	35	195	413	120	105	207	169
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	269	601	28	122	848	32	201	426	50	108	213	77
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	390	1616	75	211	1386	425	252	653	76	140	364	128
Arrive On Green	0.11	0.32	0.32	0.06	0.27	0.27	0.14	0.20	0.20	0.08	0.14	0.14
Sat Flow, veh/h	3510	5080	236	3510	5187	1590	1810	3256	380	1810	2620	919
Grp Volume(v), veh/h	269	408	221	122	848	32	201	235	241	108	145	145
Grp Sat Flow(s),veh/h/ln	1755	1729	1858	1755	1729	1590	1810	1805	1831	1810	1805	1735
Q Serve(g_s), s	4.2	5.2	5.2	1.9	8.1	0.9	6.1	6.8	6.9	3.3	4.3	4.5
Cycle Q Clear(g_c), s	4.2	5.2	5.2	1.9	8.1	0.9	6.1	6.8	6.9	3.3	4.3	4.5
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.21	1.00		0.53
Lane Grp Cap(c), veh/h	390	1100	591	211	1386	425	252	362	367	140	251	241
V/C Ratio(X)	0.69	0.37	0.37	0.58	0.61	0.08	0.80	0.65	0.66	0.77	0.58	0.60
Avail Cap(c_a), veh/h	959	2073	1114	588	2561	785	734	1337	1356	479	1082	1040
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.3	14.9	15.0	25.9	18.2	15.5	23.7	20.8	20.9	25.7	22.9	23.0
Incr Delay (d2), s/veh	0.8	0.2	0.4	0.9	0.4	0.1	2.2	1.5	1.5	3.4	1.6	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.6	1.8	0.7	2.7	0.3	2.4	2.6	2.7	1.4	1.7	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.1	15.2	15.4	26.9	18.6	15.6	25.9	22.3	22.4	29.0	24.4	24.8
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		898			1002			677			398	
Approach Delay, s/veh		18.2			19.6			23.4			25.8	
Approach LOS		B			B			C			C	

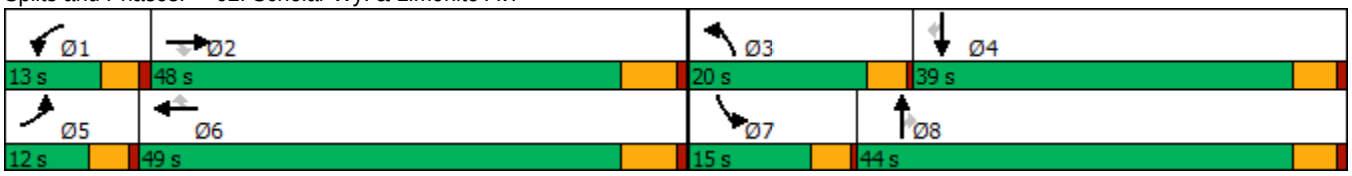
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	24.0	11.9	12.9	10.8	21.2	8.4	16.4
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	9.5	34.0	23.0	34.0	15.5	28.0	15.0	42.0
Max Q Clear Time (g_c+I1), s	3.9	7.2	8.1	6.5	6.2	10.1	5.3	8.9
Green Ext Time (p_c), s	0.1	3.6	0.1	1.2	0.2	5.0	0.0	2.1

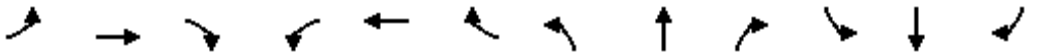
Intersection Summary	
HCM 6th Ctrl Delay	20.8
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	826	69	44	772	28	107	190	108	55	208	30
Future Volume (vph)	33	826	69	44	772	28	107	190	108	55	208	30
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	12.0	48.0	48.0	13.0	49.0	49.0	20.0	44.0	44.0	15.0	39.0	39.0
Total Split (%)	10.0%	40.0%	40.0%	10.8%	40.8%	40.8%	16.7%	36.7%	36.7%	12.5%	32.5%	32.5%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.2	27.3	27.3	6.7	27.7	27.7	10.0	16.5	16.5	7.4	14.3	14.3
Actuated g/C Ratio	0.09	0.38	0.38	0.09	0.39	0.39	0.14	0.23	0.23	0.10	0.20	0.20
v/c Ratio	0.23	0.65	0.11	0.29	0.60	0.04	0.46	0.47	0.26	0.32	0.31	0.08
Control Delay	45.5	23.9	0.6	45.3	22.5	0.1	42.6	31.2	7.4	44.2	29.5	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.5	23.9	0.6	45.3	22.5	0.1	42.6	31.2	7.4	44.2	29.5	0.4
LOS	D	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		22.9			23.0			27.9			29.2	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 71.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 24.5	Intersection LOS: C
Intersection Capacity Utilization 62.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	826	69	44	772	28	107	190	108	55	208	30
Future Volume (veh/h)	33	826	69	44	772	28	107	190	108	55	208	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	36	898	41	48	839	19	116	207	75	60	226	31
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	56	1304	581	68	1329	593	150	393	332	79	603	256
Arrive On Green	0.03	0.36	0.36	0.04	0.37	0.37	0.08	0.21	0.21	0.04	0.17	0.17
Sat Flow, veh/h	1810	3610	1609	1810	3610	1610	1810	1900	1608	1810	3610	1535
Grp Volume(v), veh/h	36	898	41	48	839	19	116	207	75	60	226	31
Grp Sat Flow(s),veh/h/ln	1810	1805	1609	1810	1805	1610	1810	1900	1608	1810	1805	1535
Q Serve(g_s), s	1.1	11.8	0.9	1.5	10.6	0.4	3.5	5.4	2.2	1.8	3.1	1.0
Cycle Q Clear(g_c), s	1.1	11.8	0.9	1.5	10.6	0.4	3.5	5.4	2.2	1.8	3.1	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	56	1304	581	68	1329	593	150	393	332	79	603	256
V/C Ratio(X)	0.65	0.69	0.07	0.70	0.63	0.03	0.77	0.53	0.23	0.76	0.37	0.12
Avail Cap(c_a), veh/h	244	2728	1216	277	2793	1246	521	1333	1128	358	2208	939
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	15.1	11.6	26.4	14.5	11.2	25.0	19.6	18.3	26.3	20.6	19.7
Incr Delay (d2), s/veh	4.6	0.7	0.1	4.9	0.5	0.0	3.1	0.8	0.3	5.6	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.8	0.3	0.6	3.4	0.1	1.5	2.2	0.7	0.8	1.2	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.3	15.7	11.7	31.3	14.9	11.2	28.1	20.4	18.6	31.9	20.9	19.8
LnGrp LOS	C	B	B	C	B	B	C	C	B	C	C	B
Approach Vol, veh/h		975			906			398			317	
Approach Delay, s/veh		16.2			15.7			22.3			22.8	
Approach LOS		B			B			C			C	

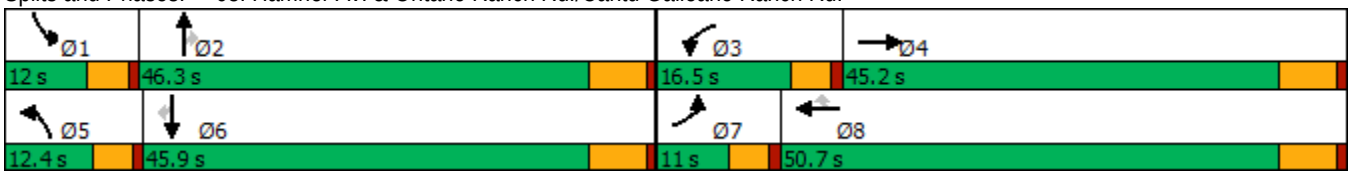
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	26.1	8.6	14.3	6.2	26.5	6.4	16.5
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	8.5	42.0	16.0	34.0	7.5	43.0	11.0	39.0
Max Q Clear Time (g_c+I1), s	3.5	13.8	5.5	5.1	3.1	12.6	3.8	7.4
Green Ext Time (p_c), s	0.0	6.3	0.1	1.2	0.0	5.8	0.0	1.1

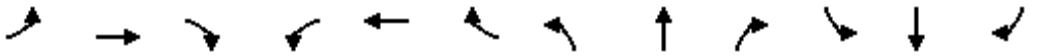
Intersection Summary	
HCM 6th Ctrl Delay	17.8
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	105	615	297	943	220	186	763	545	167	228	91
Future Volume (vph)	105	615	297	943	220	186	763	545	167	228	91
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	11.0	45.2	16.5	50.7	50.7	12.4	46.3	46.3	12.0	45.9	45.9
Total Split (%)	9.2%	37.7%	13.8%	42.3%	42.3%	10.3%	38.6%	38.6%	10.0%	38.3%	38.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.4	36.0	11.9	41.5	41.5	7.8	39.3	39.3	7.4	38.9	38.9
Actuated g/C Ratio	0.06	0.31	0.10	0.36	0.36	0.07	0.34	0.34	0.06	0.33	0.33
v/c Ratio	0.73	0.42	1.12	0.88	0.38	1.07	0.52	0.96	1.02	0.23	0.17
Control Delay	81.0	31.2	136.0	44.4	9.8	135.2	32.7	53.4	124.3	29.0	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.0	31.2	136.0	44.4	9.8	135.2	32.7	53.4	124.3	29.0	1.6
LOS	F	C	F	D	A	F	C	D	F	C	A
Approach Delay		37.6		57.8			53.0			56.7	
Approach LOS		D		E			D			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 52.2	Intersection LOS: D
Intersection Capacity Utilization 70.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	615	89	297	943	220	186	763	545	167	228	91
Future Volume (veh/h)	105	615	89	297	943	220	186	763	545	167	228	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	119	699	101	338	1072	250	211	867	612	190	259	103
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	162	1682	238	302	1203	537	198	1692	525	188	1166	520
Arrive On Green	0.05	0.30	0.30	0.10	0.35	0.35	0.07	0.34	0.34	0.06	0.34	0.34
Sat Flow, veh/h	2956	5524	780	2956	3420	1525	2956	4914	1525	2956	3420	1524
Grp Volume(v), veh/h	119	585	215	338	1072	250	211	867	612	190	259	103
Grp Sat Flow(s),veh/h/ln	1478	1548	1660	1478	1710	1525	1478	1638	1525	1478	1710	1524
Q Serve(g_s), s	4.6	11.7	12.0	11.9	34.5	14.8	7.8	16.4	40.1	7.4	6.3	5.6
Cycle Q Clear(g_c), s	4.6	11.7	12.0	11.9	34.5	14.8	7.8	16.4	40.1	7.4	6.3	5.6
Prop In Lane	1.00		0.47	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	162	1414	505	302	1203	537	198	1692	525	188	1166	520
V/C Ratio(X)	0.73	0.41	0.43	1.12	0.89	0.47	1.07	0.51	1.17	1.01	0.22	0.20
Avail Cap(c_a), veh/h	162	1555	556	302	1307	583	198	1692	525	188	1166	520
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.2	32.2	32.4	52.3	35.6	29.3	54.3	30.4	38.2	54.5	27.4	27.1
Incr Delay (d2), s/veh	13.8	0.2	0.6	87.8	7.6	0.6	82.5	0.3	93.6	68.7	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	4.1	4.6	7.9	14.7	5.2	5.1	6.2	27.6	4.4	2.5	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.0	32.4	32.9	140.0	43.3	29.9	136.8	30.7	131.7	123.2	27.5	27.3
LnGrp LOS	E	C	C	F	D	C	F	C	F	F	C	C
Approach Vol, veh/h		919			1660			1690			552	
Approach Delay, s/veh		37.1			61.0			80.5			60.4	
Approach LOS		D			E			F			E	

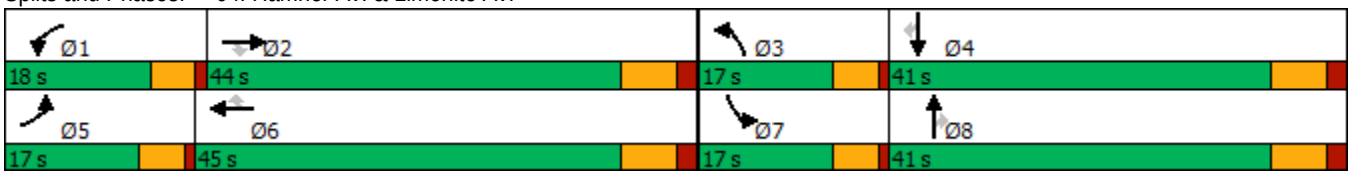
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	46.3	16.5	41.7	12.4	45.9	11.0	47.2
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	7.4	40.1	11.9	39.0	7.8	39.7	6.4	44.5
Max Q Clear Time (g_c+I1), s	9.4	42.1	13.9	14.0	9.8	8.3	6.6	36.5
Green Ext Time (p_c), s	0.0	0.0	0.0	4.8	0.0	1.8	0.0	4.5

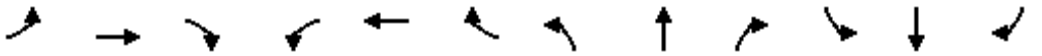
Intersection Summary	
HCM 6th Ctrl Delay	63.2
HCM 6th LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	617	51	190	521	92	188	752	275	171	404	125
Future Volume (vph)	188	617	51	190	521	92	188	752	275	171	404	125
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	17.0	44.0	44.0	18.0	45.0	45.0	17.0	41.0	41.0	17.0	41.0	41.0
Total Split (%)	14.2%	36.7%	36.7%	15.0%	37.5%	37.5%	14.2%	34.2%	34.2%	14.2%	34.2%	34.2%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	9.4	24.5	24.5	9.6	24.7	24.7	9.4	28.3	28.3	9.0	27.9	27.9
Actuated g/C Ratio	0.10	0.25	0.25	0.10	0.26	0.26	0.10	0.29	0.29	0.09	0.29	0.29
v/c Ratio	0.59	0.50	0.11	0.58	0.60	0.19	0.59	0.52	0.44	0.55	0.29	0.24
Control Delay	51.6	32.6	0.4	50.9	35.0	3.6	51.6	30.6	7.2	51.3	28.0	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.6	32.6	0.4	50.9	35.0	3.6	51.6	30.6	7.2	51.3	28.0	6.4
LOS	D	C	A	D	D	A	D	C	A	D	C	A
Approach Delay		34.9			35.2			28.5			29.8	
Approach LOS		C			D			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.1	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 31.8	Intersection LOS: C
Intersection Capacity Utilization 59.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 64: Hamner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	617	51	190	521	92	188	752	275	171	404	125
Future Volume (veh/h)	188	617	51	190	521	92	188	752	275	171	404	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	200	656	41	202	554	72	200	800	195	182	430	93
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	285	1303	404	287	910	406	285	1496	464	266	1467	456
Arrive On Green	0.08	0.25	0.25	0.08	0.25	0.25	0.08	0.29	0.29	0.08	0.28	0.28
Sat Flow, veh/h	3510	5187	1608	3510	3610	1610	3510	5187	1608	3510	5187	1610
Grp Volume(v), veh/h	200	656	41	202	554	72	200	800	195	182	430	93
Grp Sat Flow(s),veh/h/ln	1755	1729	1608	1755	1805	1610	1755	1729	1608	1755	1729	1610
Q Serve(g_s), s	4.4	8.6	1.6	4.4	10.7	2.8	4.4	10.3	7.8	4.0	5.1	3.5
Cycle Q Clear(g_c), s	4.4	8.6	1.6	4.4	10.7	2.8	4.4	10.3	7.8	4.0	5.1	3.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	285	1303	404	287	910	406	285	1496	464	266	1467	456
V/C Ratio(X)	0.70	0.50	0.10	0.70	0.61	0.18	0.70	0.53	0.42	0.69	0.29	0.20
Avail Cap(c_a), veh/h	532	2422	751	576	1731	772	532	2225	690	532	2225	691
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	25.4	22.8	35.4	26.2	23.2	35.5	23.7	22.8	35.7	22.2	21.6
Incr Delay (d2), s/veh	1.2	0.6	0.2	1.2	1.4	0.4	1.2	0.6	1.3	1.2	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.3	0.6	1.8	4.4	1.0	1.8	3.9	2.8	1.7	1.9	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.7	26.1	23.0	36.6	27.6	23.6	36.7	24.4	24.1	36.9	22.5	22.1
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		897			828			1195			705	
Approach Delay, s/veh		28.3			29.5			26.4			26.1	
Approach LOS		C			C			C			C	

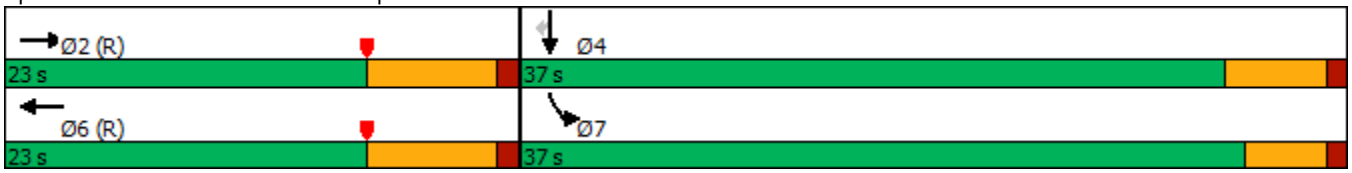
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	26.9	11.4	29.4	11.4	27.0	11.0	29.9
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	13.0	37.0	12.0	34.0	12.0	38.0	12.0	34.0
Max Q Clear Time (g_c+I1), s	6.4	10.6	6.4	7.1	6.4	12.7	6.0	12.3
Green Ext Time (p_c), s	0.1	8.3	0.1	5.8	0.1	7.1	0.1	10.5

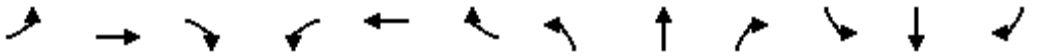
Intersection Summary	
HCM 6th Ctrl Delay	27.5
HCM 6th LOS	C

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1088	358	579	197	349	0	1266
Future Volume (vph)	1088	358	579	197	349	0	1266
Turn Type	NA	Free	NA	Free	Prot	NA	Perm
Protected Phases	2		6		7	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		7	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		9.6	10.5	10.5
Total Split (s)	23.0		23.0		37.0	37.0	37.0
Total Split (%)	38.3%		38.3%		61.7%	61.7%	61.7%
Yellow Time (s)	5.8		5.8		3.6	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8		6.8		4.6	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Min		None	Min	Min
Act Effct Green (s)	16.2	60.0	16.2	60.0	32.4	31.5	31.5
Actuated g/C Ratio	0.27	1.00	0.27	1.00	0.54	0.52	0.52
v/c Ratio	0.86	0.25	0.66	0.14	0.38	0.90	0.86
Control Delay	29.2	0.4	20.2	0.2	9.5	29.3	24.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	0.4	20.2	0.2	9.5	29.3	24.2
LOS	C	A	C	A	A	C	C
Approach Delay	22.0		15.1			23.4	
Approach LOS	C		B			C	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 53 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 21.2	Intersection LOS: C
Intersection Capacity Utilization 78.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1088	358	0	579	197	0	0	0	349	0	1266
Future Volume (veh/h)	0	1088	358	0	579	197	0	0	0	349	0	1266
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1209	0	0	643	0				259	0	1248
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1838		0	1279					825	0	1468
Arrive On Green	0.00	0.35	0.00	0.00	0.35	0.00				0.46	0.00	0.46
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1209	0	0	643	0				259	0	1248
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	11.8	0.0	0.0	8.4	0.0				5.5	0.0	20.7
Cycle Q Clear(g_c), s	0.0	11.8	0.0	0.0	8.4	0.0				5.5	0.0	20.7
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1838		0	1279					825	0	1468
V/C Ratio(X)	0.00	0.66		0.00	0.50					0.31	0.00	0.85
Avail Cap(c_a), veh/h	0	1838		0	1279					977	0	1739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.65	0.00	0.00	0.91	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	16.3	0.0	0.0	15.2	0.0				10.4	0.0	14.5
Incr Delay (d2), s/veh	0.0	1.2	0.0	0.0	1.3	0.0				0.2	0.0	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.9	0.0	0.0	3.0	0.0				1.7	0.0	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.5	0.0	0.0	16.5	0.0				10.6	0.0	18.2
LnGrp LOS	A	B		A	B					B	A	B
Approach Vol, veh/h		1209	A		643	A					1507	
Approach Delay, s/veh		17.5			16.5						16.9	
Approach LOS		B			B						B	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		28.1		31.9		28.1						
Change Period (Y+Rc), s		6.8		4.6		6.8						
Max Green Setting (Gmax), s		16.2		32.4		16.2						
Max Q Clear Time (g_c+I1), s		13.8		22.7		10.4						
Green Ext Time (p_c), s		1.6		4.7		1.9						

Intersection Summary		
HCM 6th Ctrl Delay		17.0
HCM 6th LOS		B

Notes

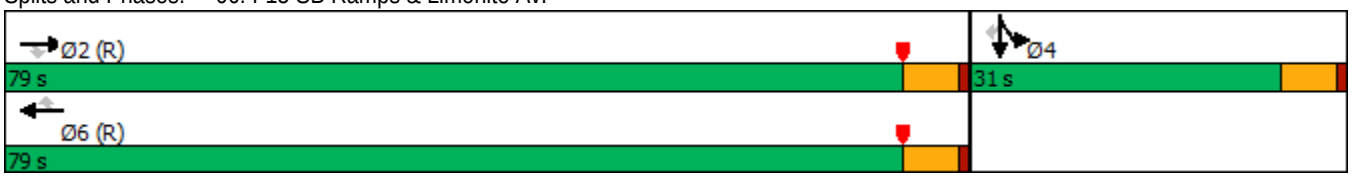
User approved volume balancing among the lanes for turning movement.

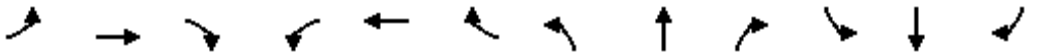
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1198	613	773	714	162	0	459
Future Volume (vph)	1198	613	773	714	162	0	459
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		4	4	
Permitted Phases		2		6			4
Detector Phase	2	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	36.5	36.5	23.5	23.5	23.5
Total Split (s)	79.0	79.0	79.0	79.0	31.0	31.0	31.0
Total Split (%)	71.8%	71.8%	71.8%	71.8%	28.2%	28.2%	28.2%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	Min	Min
Act Effct Green (s)	88.2	88.2	88.2	88.2	10.8	10.8	10.8
Actuated g/C Ratio	0.80	0.80	0.80	0.80	0.10	0.10	0.10
v/c Ratio	0.31	0.46	0.20	0.53	0.51	0.51	0.79
Control Delay	3.4	1.4	4.1	4.9	56.6	56.6	20.4
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	3.4	1.4	4.1	5.0	56.6	56.6	20.4
LOS	A	A	A	A	E	E	C
Approach Delay	2.7		4.5			29.9	
Approach LOS	A		A			C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 7.7	Intersection LOS: A
Intersection Capacity Utilization 51.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	↰	↱↱
Traffic Volume (veh/h)	0	1198	613	0	773	714	0	0	0	162	0	459
Future Volume (veh/h)	0	1198	613	0	773	714	0	0	0	162	0	459
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1274	530	0	822	760				172	0	190
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	4241	1316	0	4241	1316				298	0	262
Arrive On Green	0.00	0.82	0.82	0.00	1.00	1.00				0.08	0.00	0.08
Sat Flow, veh/h	0	5358	1610	0	5358	1610				3619	0	3173
Grp Volume(v), veh/h	0	1274	530	0	822	760				172	0	190
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1610				1810	0	1587
Q Serve(g_s), s	0.0	6.5	9.9	0.0	0.0	0.0				5.0	0.0	6.4
Cycle Q Clear(g_c), s	0.0	6.5	9.9	0.0	0.0	0.0				5.0	0.0	6.4
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	4241	1316	0	4241	1316				298	0	262
V/C Ratio(X)	0.00	0.30	0.40	0.00	0.19	0.58				0.58	0.00	0.73
Avail Cap(c_a), veh/h	0	4241	1316	0	4241	1316				839	0	736
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.95	0.95				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	2.4	2.7	0.0	0.0	0.0				48.6	0.0	49.3
Incr Delay (d2), s/veh	0.0	0.2	0.9	0.0	0.1	1.8				0.7	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	1.9	0.0	0.0	0.6				2.2	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	2.6	3.6	0.0	0.1	1.8				49.3	0.0	50.7
LnGrp LOS	A	A	A	A	A	A				D	A	D
Approach Vol, veh/h		1804			1582						362	
Approach Delay, s/veh		2.9			0.9						50.0	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		95.4		14.6		95.4						
Change Period (Y+Rc), s		5.5		5.5		5.5						
Max Green Setting (Gmax), s		73.5		25.5		73.5						
Max Q Clear Time (g_c+I1), s		11.9		8.4		2.0						
Green Ext Time (p_c), s		8.2		0.6		5.7						

Intersection Summary	
HCM 6th Ctrl Delay	6.6
HCM 6th LOS	A

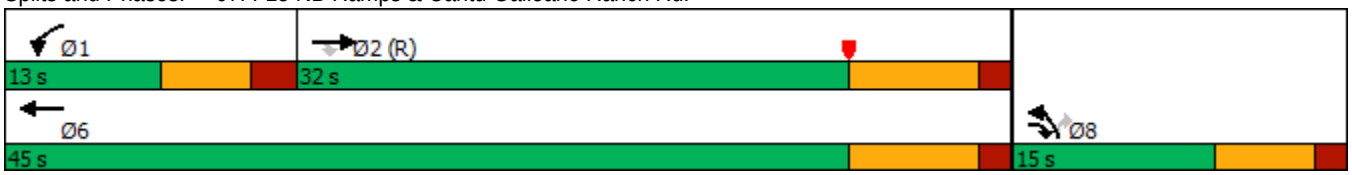
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	544	893	396	503	274	325
Future Volume (vph)	544	893	396	503	274	325
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	32.0	15.0	13.0	45.0	15.0	15.0
Total Split (%)	53.3%	25.0%	21.7%	75.0%	25.0%	25.0%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.0	6.0	7.3	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max
Act Effct Green (s)	24.7	41.0	7.0	37.7	9.0	9.0
Actuated g/C Ratio	0.41	0.68	0.12	0.63	0.15	0.15
v/c Ratio	0.28	0.89	1.07	0.17	0.73	0.52
Control Delay	9.4	18.4	93.2	4.8	25.6	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.4	18.4	93.2	4.8	25.6	9.5
LOS	A	B	F	A	C	A
Approach Delay	15.0			43.7	20.5	
Approach LOS	B			D	C	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 24.9	Intersection LOS: C
Intersection Capacity Utilization 76.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	544	893	396	503	274	325
Future Volume (veh/h)	544	893	396	503	274	325
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	598	647	435	553	338	170
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2135	904	410	3259	543	242
Arrive On Green	0.69	0.69	0.12	0.63	0.15	0.15
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	598	647	435	553	338	170
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	2.7	17.1	7.0	2.7	5.3	6.0
Cycle Q Clear(g_c), s	2.7	17.1	7.0	2.7	5.3	6.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2135	904	410	3259	543	242
V/C Ratio(X)	0.28	0.72	1.06	0.17	0.62	0.70
Avail Cap(c_a), veh/h	2135	904	410	3259	543	242
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.57	0.57	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.9	5.0	26.5	4.6	23.9	24.2
Incr Delay (d2), s/veh	0.2	2.8	61.9	0.0	5.3	15.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.3	6.1	0.5	2.4	3.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.1	7.8	88.4	4.7	29.2	40.1
LnGrp LOS	A	A	F	A	C	D
Approach Vol, veh/h	1245			988	508	
Approach Delay, s/veh	7.0			41.5	32.8	
Approach LOS	A			D	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.0	32.0				45.0	15.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	7.0	24.7				37.7	9.0
Max Q Clear Time (g_c+I1), s	9.0	19.1				4.7	8.0
Green Ext Time (p_c), s	0.0	3.0				3.5	0.2

Intersection Summary	
HCM 6th Ctrl Delay	24.2
HCM 6th LOS	C

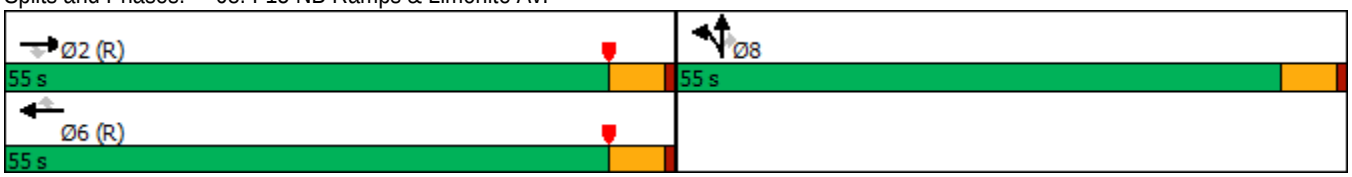
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	562	797	1211	426	275	0	346
Future Volume (vph)	562	797	1211	426	275	0	346
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		8	8	
Permitted Phases		2		6			8
Detector Phase	2	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	55.0	55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None
Act Effct Green (s)	83.3	83.3	83.3	83.3	15.7	15.7	15.7
Actuated g/C Ratio	0.76	0.76	0.76	0.76	0.14	0.14	0.14
v/c Ratio	0.15	0.58	0.32	0.33	0.58	0.58	0.51
Control Delay	3.6	4.3	5.0	1.2	52.6	52.6	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.6	4.3	5.0	1.2	52.6	52.6	7.4
LOS	A	A	A	A	D	D	A
Approach Delay	4.0		4.0			27.4	
Approach LOS	A		A			C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 8.0	Intersection LOS: A
Intersection Capacity Utilization 53.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱	↰	↕	↱↱			
Traffic Volume (veh/h)	0	562	797	0	1211	426	275	0	346	0	0	0
Future Volume (veh/h)	0	562	797	0	1211	426	275	0	346	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	0	585	830	0	1261	324	286	0	146			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	0	4104	1274	0	4104	1274	394	0	345			
Arrive On Green	0.00	1.00	1.00	0.00	0.79	0.79	0.11	0.00	0.11			
Sat Flow, veh/h	0	5358	1610	0	5358	1610	3619	0	3169			
Grp Volume(v), veh/h	0	585	830	0	1261	324	286	0	146			
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1610	1810	0	1584			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	7.4	5.8	8.4	0.0	4.7			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	7.4	5.8	8.4	0.0	4.7			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	4104	1274	0	4104	1274	394	0	345			
V/C Ratio(X)	0.00	0.14	0.65	0.00	0.31	0.25	0.73	0.00	0.42			
Avail Cap(c_a), veh/h	0	4104	1274	0	4104	1274	1629	0	1426			
HCM Platoon Ratio	1.00	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.96	0.96	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	3.2	3.0	47.4	0.0	45.8			
Incr Delay (d2), s/veh	0.0	0.1	2.5	0.0	0.2	0.5	2.6	0.0	0.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.9	0.0	1.6	1.3	3.8	0.0	1.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.1	2.5	0.0	3.4	3.5	50.0	0.0	46.6			
LnGrp LOS	A	A	A	A	A	A	D	A	D			
Approach Vol, veh/h		1415			1585			432				
Approach Delay, s/veh		1.5			3.4			48.8				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		92.5				92.5		17.5				
Change Period (Y+Rc), s		5.5				5.5		5.5				
Max Green Setting (Gmax), s		49.5				49.5		49.5				
Max Q Clear Time (g_c+I1), s		2.0				9.4		10.4				
Green Ext Time (p_c), s		4.5				7.2		1.6				

Intersection Summary	
HCM 6th Ctrl Delay	8.3
HCM 6th LOS	A

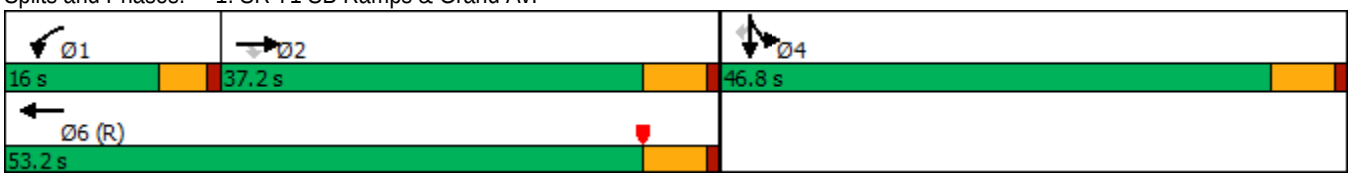
Notes

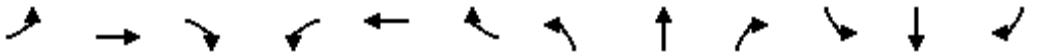
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1482	588	315	1429	927	1	496
Future Volume (vph)	1482	588	315	1429	927	1	496
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	37.2	37.2	16.0	53.2	46.8	46.8	46.8
Total Split (%)	37.2%	37.2%	16.0%	53.2%	46.8%	46.8%	46.8%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None
Act Effct Green (s)	35.3	35.3	12.6	51.9	40.1	40.1	40.1
Actuated g/C Ratio	0.35	0.35	0.13	0.52	0.40	0.40	0.40
v/c Ratio	0.95	0.70	0.85	0.62	0.79	0.79	0.84
Control Delay	45.3	7.7	47.9	22.1	35.4	35.5	34.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.3	7.7	47.9	22.1	35.4	35.5	34.9
LOS	D	A	D	C	D	D	C
Approach Delay	34.7			26.8		35.2	
Approach LOS	C			C		D	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 32.2	Intersection LOS: C
Intersection Capacity Utilization 81.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1482	588	315	1429	0	0	0	0	927	1	496
Future Volume (veh/h)	0	1482	588	315	1429	0	0	0	0	927	1	496
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1744	603	371	1681	0				1092	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85				0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1722	535	421	2552	0				1275	0	
Arrive On Green	0.00	0.33	0.33	0.12	0.49	0.00				0.35	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	1744	603	371	1681	0				1092	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	33.2	33.2	10.4	24.4	0.0				28.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	33.2	33.2	10.4	24.4	0.0				28.0	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1722	535	421	2552	0				1275	0	
V/C Ratio(X)	0.00	1.01	1.13	0.88	0.66	0.00				0.86	0.00	
Avail Cap(c_a), veh/h	0	1722	535	421	2552	0				1549	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	33.4	33.4	43.3	19.1	0.0				30.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	24.9	79.2	2.1	0.1	0.0				4.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	16.9	23.8	4.4	8.8	0.0				12.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	58.3	112.6	45.4	19.2	0.0				34.3	0.0	0.0
LnGrp LOS	A	F	F	D	B	A				C	A	
Approach Vol, veh/h		2347			2052						1092	A
Approach Delay, s/veh		72.2			24.0						34.3	
Approach LOS		E			C						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.0	37.2		39.2		53.2
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	11.4	31.4		41.0		47.4
Max Q Clear Time (g_c+I1), s	12.4	35.2		30.0		26.4
Green Ext Time (p_c), s	0.0	0.0		3.4		11.9

Intersection Summary	
HCM 6th Ctrl Delay	46.6
HCM 6th LOS	D

Notes

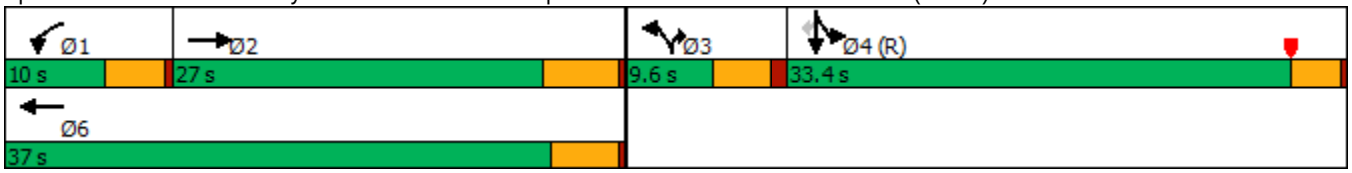
User approved volume balancing among the lanes for turning movement.

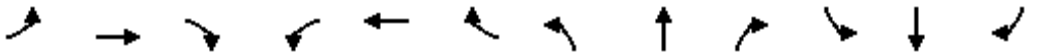
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	960	136	300	19	166	738	74	75
Future Volume (vph)	960	136	300	19	166	738	74	75
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	27.0	10.0	37.0	9.6	9.6	33.4	33.4	33.4
Total Split (%)	33.8%	12.5%	46.3%	12.0%	12.0%	41.8%	41.8%	41.8%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	23.2	9.4	37.2	5.1	5.1	25.3	25.3	25.3
Actuated g/C Ratio	0.29	0.12	0.46	0.06	0.06	0.32	0.32	0.32
v/c Ratio	1.02	0.67	0.19	0.18	0.71	0.78	0.77	0.13
Control Delay	64.5	50.3	24.5	39.3	26.5	35.0	34.3	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.5	50.3	24.5	39.3	26.5	35.0	34.3	0.9
LOS	E	D	C	D	C	D	C	A
Approach Delay	64.5		32.6				31.8	
Approach LOS	E		C				C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 44.9	Intersection LOS: D
Intersection Capacity Utilization 76.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	960	65	136	300	0	19	0	166	738	74	75
Future Volume (veh/h)	0	960	65	136	300	0	19	0	166	738	74	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	1000	56	142	312	0	20	0	114	824	0	51
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	956	54	136	1444		0	0	0	1787	0	795
Arrive On Green	0.00	0.28	0.28	0.02	0.13	0.00	0.00	0.00	0.00	0.49	0.00	0.49
Sat Flow, veh/h	0	3570	195	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	519	537	142	312	0		0.0		824	0	51
Grp Sat Flow(s),veh/h/ln	0	1805	1865	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	22.0	22.0	6.0	6.2	0.0				11.9	0.0	1.3
Cycle Q Clear(g_c), s	0.0	22.0	22.0	6.0	6.2	0.0				11.9	0.0	1.3
Prop In Lane	0.00		0.10	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	496	513	136	1444					1787	0	795
V/C Ratio(X)	0.00	1.05	1.05	1.05	0.22					0.46	0.00	0.06
Avail Cap(c_a), veh/h	0	496	513	136	1467					1787	0	795
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.73	0.73	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.0	29.0	39.0	23.5	0.0				13.3	0.0	10.6
Incr Delay (d2), s/veh	0.0	53.0	52.4	78.7	0.0	0.0				0.9	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	15.9	16.3	5.6	2.5	0.0				4.3	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	82.0	81.4	117.7	23.6	0.0				14.1	0.0	10.7
LnGrp LOS	A	F	F	F	C					B	A	B
Approach Vol, veh/h		1056			454	A					875	
Approach Delay, s/veh		81.7			53.0						13.9	
Approach LOS		F			D						B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	10.0	27.0		43.0		37.0						
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5						
Max Green Setting (Gmax), s	6.0	22.0		29.9		* 33						
Max Q Clear Time (g_c+I1), s	8.0	24.0		13.9		8.2						
Green Ext Time (p_c), s	0.0	0.0		3.0		1.4						

Intersection Summary												
HCM 6th Ctrl Delay			51.4									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

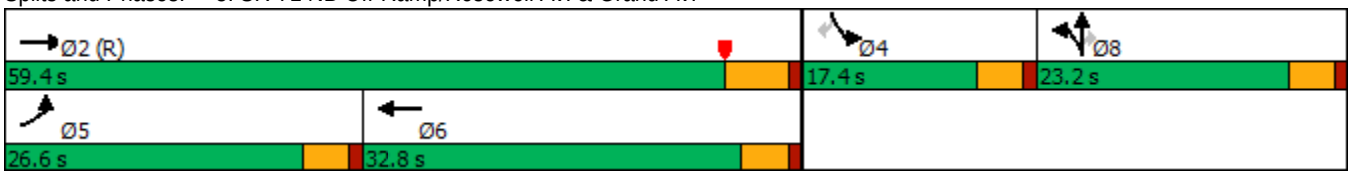
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

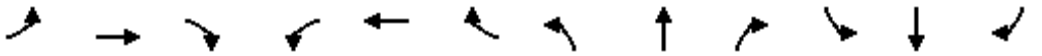
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	389	1684	336	1724	402	146	227	172	847
Future Volume (vph)	389	1684	336	1724	402	146	227	172	847
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	34.8		14.7	21.5	21.5	21.5	9.5	9.5
Total Split (s)	26.6	59.4		32.8	23.2	23.2	23.2	17.4	17.4
Total Split (%)	26.6%	59.4%		32.8%	23.2%	23.2%	23.2%	17.4%	17.4%
Yellow Time (s)	3.5	4.8		3.7	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.8		4.7	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	22.1	53.6	100.0	28.1	18.7	18.7	18.7	12.9	12.9
Actuated g/C Ratio	0.22	0.54	1.00	0.28	0.19	0.19	0.19	0.13	0.13
v/c Ratio	1.06	0.66	0.23	1.07	0.78	1.06	0.61	0.81	0.99
Control Delay	92.7	21.6	0.1	76.2	56.7	106.4	24.7	68.7	40.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.7	21.6	0.1	76.2	56.7	106.4	24.7	68.7	40.8
LOS	F	C	A	E	E	F	C	E	D
Approach Delay		30.1		76.2		67.8			
Approach LOS		C		E		E			

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 51.4	Intersection LOS: D
Intersection Capacity Utilization 87.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	389	1684	336	0	1724	71	402	146	227	172	0	847
Future Volume (veh/h)	389	1684	336	0	1724	71	402	146	227	172	0	847
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	423	1830	0	0	1874	77	298	354	106	187	0	603
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	400	3683		0	2880	118	338	355	301	0	0	0
Arrive On Green	0.22	0.71	0.00	0.00	0.44	0.44	0.19	0.19	0.19	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6753	267	1810	1900	1610		0	
Grp Volume(v), veh/h	423	1830	0	0	1416	535	298	354	106		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1852	1810	1900	1610			
Q Serve(g_s), s	22.1	15.8	0.0	0.0	22.6	22.6	16.0	18.6	5.7			
Cycle Q Clear(g_c), s	22.1	15.8	0.0	0.0	22.6	22.6	16.0	18.6	5.7			
Prop In Lane	1.00		1.00	0.00		0.14	1.00		1.00			
Lane Grp Cap(c), veh/h	400	3683		0	2176	822	338	355	301			
V/C Ratio(X)	1.06	0.50		0.00	0.65	0.65	0.88	1.00	0.35			
Avail Cap(c_a), veh/h	400	3683		0	2176	822	338	355	301			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.28	0.28	0.00	0.00	0.54	0.54	1.00	1.00	1.00			
Uniform Delay (d), s/veh	39.0	6.5	0.0	0.0	21.7	21.7	39.6	40.6	35.4			
Incr Delay (d2), s/veh	40.7	0.1	0.0	0.0	0.4	1.0	21.8	46.7	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	13.8	4.3	0.0	0.0	8.3	9.5	8.8	12.9	2.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.7	6.6	0.0	0.0	22.1	22.7	61.4	87.3	35.6			
LnGrp LOS	F	A		A	C	C	E	F	D			
Approach Vol, veh/h		2253	A		1951			758				
Approach Delay, s/veh		20.3			22.3			69.9				
Approach LOS		C			C			E				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		76.8			26.6	50.2		23.2				
Change Period (Y+Rc), s		5.8			4.5	* 5.8		4.5				
Max Green Setting (Gmax), s		53.6			22.1	* 28		18.7				
Max Q Clear Time (g_c+I1), s		17.8			24.1	24.6		20.6				
Green Ext Time (p_c), s		17.7			0.0	3.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	28.7	
HCM 6th LOS	C	

Notes

User approved volume balancing among the lanes for turning movement.

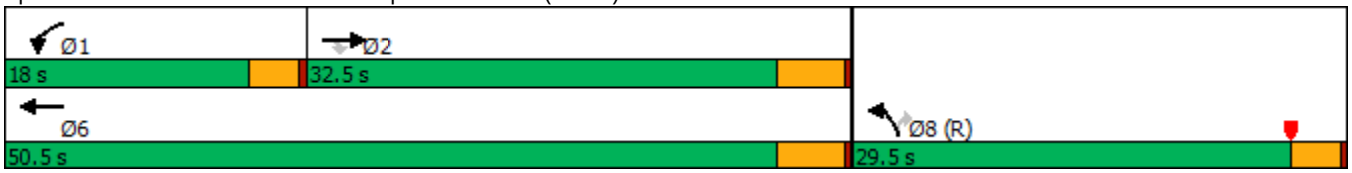
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	950	169	418	1214	143	1121
Future Volume (vph)	950	169	418	1214	143	1121
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	32.5	32.5	18.0	50.5	29.5	29.5
Total Split (%)	40.6%	40.6%	22.5%	63.1%	36.9%	36.9%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max
Act Effct Green (s)	27.4	27.4	14.5	45.4	26.6	26.6
Actuated g/C Ratio	0.34	0.34	0.18	0.57	0.33	0.33
v/c Ratio	0.89	0.31	1.49	0.69	0.14	1.65
Control Delay	27.8	7.8	262.7	14.4	19.5	316.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	7.8	262.7	14.4	19.5	316.3
LOS	C	A	F	B	B	F
Approach Delay	24.7			78.0	282.8	
Approach LOS	C			E	F	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.65	
Intersection Signal Delay: 127.6	Intersection LOS: F
Intersection Capacity Utilization 102.8%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	950	169	418	1214	143	1121
Future Volume (veh/h)	950	169	418	1214	143	1121
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	1105	0	486	1412	166	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1179		328	1991	1223	
Arrive On Green	0.65	0.00	0.18	0.55	0.35	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	1105	0	486	1412	166	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	21.9	0.0	14.5	23.0	2.6	0.0
Cycle Q Clear(g_c), s	21.9	0.0	14.5	23.0	2.6	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1179		328	1991	1223	
V/C Ratio(X)	0.94		1.48	0.71	0.14	
Avail Cap(c_a), veh/h	1264		328	2076	1223	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.22	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.1	0.0	32.8	13.2	17.8	0.0
Incr Delay (d2), s/veh	3.5	0.0	232.6	1.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	26.9	7.2	1.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.7	0.0	265.3	14.3	18.1	0.0
LnGrp LOS	B		F	B	B	
Approach Vol, veh/h	1105	A		1898	166	A
Approach Delay, s/veh	16.7			78.6	18.1	
Approach LOS	B			E	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	18.0	30.6				48.6	31.4
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	14.5	28.0				46.0	26.0
Max Q Clear Time (g_c+I1), s	16.5	23.9				25.0	4.6
Green Ext Time (p_c), s	0.0	2.2				9.6	0.3

Intersection Summary	
HCM 6th Ctrl Delay	53.8
HCM 6th LOS	D

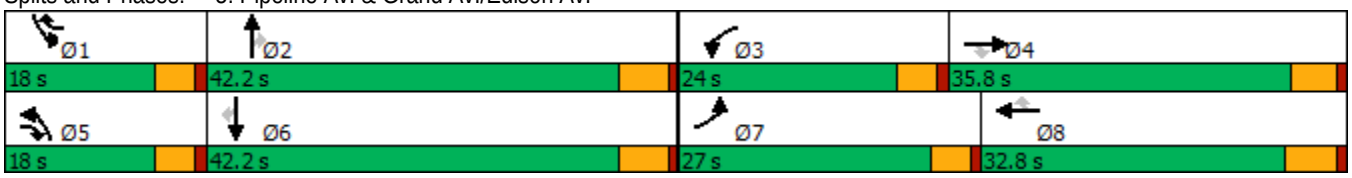
Notes

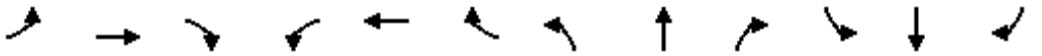
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	1113	253	248	949	91	302	463	181	140	583	167
Future Volume (vph)	280	1113	253	248	949	91	302	463	181	140	583	167
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	27.0	35.8	18.0	24.0	32.8	18.0	18.0	42.2	42.2	18.0	42.2	42.2
Total Split (%)	22.5%	29.8%	15.0%	20.0%	27.3%	15.0%	15.0%	35.2%	35.2%	15.0%	35.2%	35.2%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None
Act Effct Green (s)	15.2	32.1	46.2	14.1	30.9	44.1	14.1	28.6	28.6	13.1	27.7	27.7
Actuated g/C Ratio	0.15	0.31	0.44	0.14	0.30	0.42	0.14	0.27	0.27	0.13	0.27	0.27
v/c Ratio	0.67	0.81	0.39	0.64	0.71	0.14	0.83	0.54	0.35	0.75	0.71	0.35
Control Delay	50.5	39.5	14.7	50.9	37.4	4.7	63.9	34.7	6.0	69.2	39.2	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.5	39.5	14.7	50.9	37.4	4.7	63.9	34.7	6.0	69.2	39.2	6.3
LOS	D	D	B	D	D	A	E	C	A	E	D	A
Approach Delay		37.6			37.7			38.5			37.7	
Approach LOS		D			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 104.1	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 37.8	Intersection LOS: D
Intersection Capacity Utilization 75.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	1113	253	248	949	91	302	463	181	140	583	167
Future Volume (veh/h)	280	1113	253	248	949	91	302	463	181	140	583	167
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	308	1223	212	273	1043	62	332	509	112	154	641	108
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	395	1580	689	358	1556	644	402	951	424	191	888	386
Arrive On Green	0.13	0.32	0.32	0.11	0.32	0.30	0.14	0.28	0.28	0.12	0.26	0.26
Sat Flow, veh/h	3141	4914	1523	3141	4914	1524	2956	3420	1525	1619	3420	1487
Grp Volume(v), veh/h	308	1223	212	273	1043	62	332	509	112	154	641	108
Grp Sat Flow(s),veh/h/ln	1570	1638	1523	1570	1638	1524	1478	1710	1525	1619	1710	1487
Q Serve(g_s), s	9.4	22.2	8.8	8.3	18.2	2.4	10.8	12.5	5.7	9.2	16.9	5.7
Cycle Q Clear(g_c), s	9.4	22.2	8.8	8.3	18.2	2.4	10.8	12.5	5.7	9.2	16.9	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	395	1580	689	358	1556	644	402	951	424	191	888	386
V/C Ratio(X)	0.78	0.77	0.31	0.76	0.67	0.10	0.83	0.54	0.26	0.81	0.72	0.28
Avail Cap(c_a), veh/h	730	1580	689	635	1556	644	418	1321	589	229	1321	574
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.9	30.3	17.2	42.5	29.3	17.2	41.6	30.3	27.8	42.5	33.4	29.2
Incr Delay (d2), s/veh	1.3	3.8	1.2	1.3	2.3	0.3	11.5	0.5	0.3	13.6	1.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	9.0	3.0	3.2	7.0	0.8	4.4	5.0	2.0	4.3	6.8	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.2	34.1	18.4	43.8	31.6	17.5	53.0	30.8	28.2	56.1	34.5	29.6
LnGrp LOS	D	C	B	D	C	B	D	C	C	E	C	C
Approach Vol, veh/h		1743			1378			953			903	
Approach Delay, s/veh		33.8			33.4			38.2			37.6	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	31.5	15.3	36.5	17.5	29.7	16.4	35.3
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	13.4	36.8	19.4	* 31	13.4	36.8	22.4	27.0
Max Q Clear Time (g_c+I1), s	11.2	14.5	10.3	24.2	12.8	18.9	11.4	20.2
Green Ext Time (p_c), s	0.0	3.5	0.3	4.3	0.0	4.2	0.4	3.6

Intersection Summary	
HCM 6th Ctrl Delay	35.2
HCM 6th LOS	D

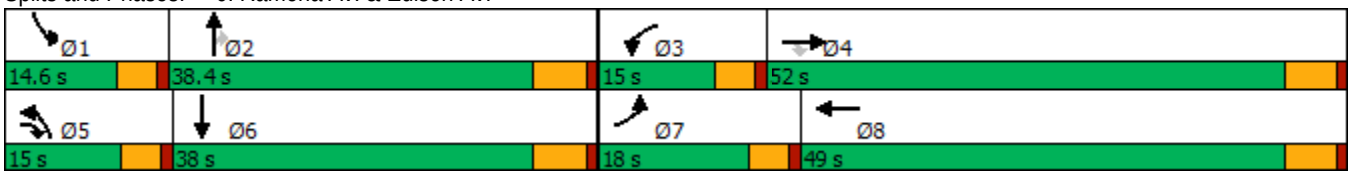
Notes

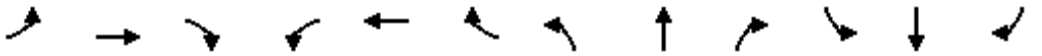
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	120	1200	120	92	975	97	458	77	66	424
Future Volume (vph)	120	1200	120	92	975	97	458	77	66	424
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	18.0	52.0	15.0	15.0	49.0	15.0	38.4	38.4	14.6	38.0
Total Split (%)	15.0%	43.3%	12.5%	12.5%	40.8%	12.5%	32.0%	32.0%	12.2%	31.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None
Act Effct Green (s)	12.5	48.2	62.6	10.1	45.8	10.3	30.1	30.1	9.0	26.5
Actuated g/C Ratio	0.11	0.43	0.56	0.09	0.41	0.09	0.27	0.27	0.08	0.24
v/c Ratio	0.75	0.91	0.09	0.70	0.84	0.73	0.56	0.18	0.57	0.74
Control Delay	73.5	40.9	2.6	75.7	37.3	78.0	38.4	4.3	68.0	43.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.5	40.9	2.6	75.7	37.3	78.0	38.4	4.3	68.0	43.4
LOS	E	D	A	E	D	E	D	A	E	D
Approach Delay		40.4			40.4		40.3			46.1
Approach LOS		D			D		D			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.3	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 41.3	Intersection LOS: D
Intersection Capacity Utilization 76.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	1200	120	92	975	69	97	458	77	66	424	108
Future Volume (veh/h)	120	1200	120	92	975	69	97	458	77	66	424	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1700	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	135	1348	111	103	1096	76	109	515	65	74	476	100
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	169	1561	1350	135	1411	98	141	841	375	101	622	130
Arrive On Green	0.10	0.46	0.45	0.08	0.43	0.42	0.09	0.25	0.25	0.06	0.22	0.20
Sat Flow, veh/h	1619	3420	2536	1619	3244	225	1619	3420	1525	1619	2816	588
Grp Volume(v), veh/h	135	1348	111	103	577	595	109	515	65	74	288	288
Grp Sat Flow(s),veh/h/ln	1619	1710	1268	1619	1710	1759	1619	1710	1525	1619	1710	1694
Q Serve(g_s), s	8.6	37.2	2.3	6.6	30.3	30.4	6.9	14.1	3.5	4.7	16.6	16.8
Cycle Q Clear(g_c), s	8.6	37.2	2.3	6.6	30.3	30.4	6.9	14.1	3.5	4.7	16.6	16.8
Prop In Lane	1.00		1.00	1.00		0.13	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	169	1561	1350	135	744	765	141	841	375	101	378	374
V/C Ratio(X)	0.80	0.86	0.08	0.76	0.78	0.78	0.77	0.61	0.17	0.73	0.76	0.77
Avail Cap(c_a), veh/h	216	1561	1350	169	744	765	169	1119	499	163	553	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	25.6	12.0	47.2	25.3	25.5	47.0	35.2	31.2	48.4	38.4	38.8
Incr Delay (d2), s/veh	11.6	6.6	0.1	11.0	7.8	7.6	13.2	0.7	0.2	3.8	3.7	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	15.1	0.6	3.0	12.9	13.3	3.2	5.7	1.3	2.0	7.0	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.6	32.2	12.2	58.2	33.1	33.1	60.1	35.9	31.5	52.2	42.0	42.7
LnGrp LOS	E	C	B	E	C	C	E	D	C	D	D	D
Approach Vol, veh/h		1594			1275			689			650	
Approach Delay, s/veh		33.0			35.1			39.3			43.5	
Approach LOS		C			D			D			D	

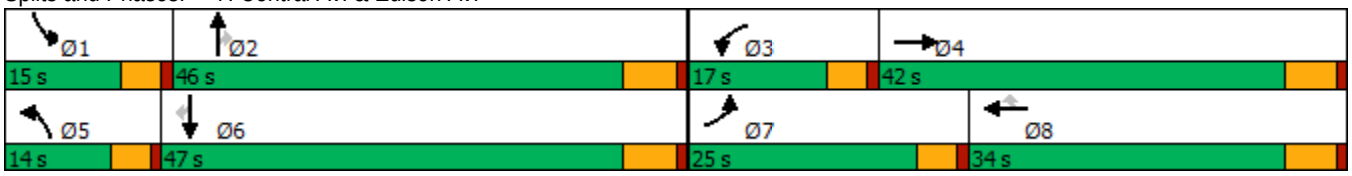
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	29.9	12.7	52.0	13.2	27.2	15.0	49.7
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.0	32.6	10.4	46.2	10.4	32.2	13.4	43.2
Max Q Clear Time (g_c+I1), s	6.7	16.1	8.6	39.2	8.9	18.8	10.6	32.4
Green Ext Time (p_c), s	0.0	3.0	0.0	4.7	0.0	2.6	0.0	5.2

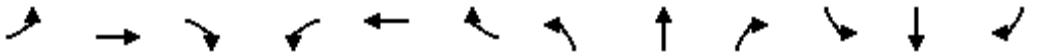
Intersection Summary	
HCM 6th Ctrl Delay	36.3
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	233	930	273	667	102	93	1071	440	120	858	145
Future Volume (vph)	233	930	273	667	102	93	1071	440	120	858	145
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	25.0	42.0	17.0	34.0	34.0	14.0	46.0	46.0	15.0	47.0	47.0
Total Split (%)	20.8%	35.0%	14.2%	28.3%	28.3%	11.7%	38.3%	38.3%	12.5%	39.2%	39.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	20.0	38.0	12.7	30.7	30.7	9.5	41.8	41.8	10.8	43.0	43.0
Actuated g/C Ratio	0.17	0.32	0.11	0.26	0.26	0.08	0.35	0.35	0.09	0.36	0.36
v/c Ratio	0.89	0.97	0.84	0.78	0.21	0.75	0.92	0.67	0.85	0.72	0.23
Control Delay	81.1	62.3	74.6	48.8	2.6	86.9	50.7	20.5	97.1	37.0	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.1	62.3	74.6	48.8	2.6	86.9	50.7	20.5	97.1	37.0	4.9
LOS	F	E	E	D	A	F	D	C	F	D	A
Approach Delay		65.8		51.0			44.5			39.3	
Approach LOS		E		D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.3	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 50.0	Intersection LOS: D
Intersection Capacity Utilization 90.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	233	930	91	273	667	102	93	1071	440	120	858	145
Future Volume (veh/h)	233	930	91	273	667	102	93	1071	440	120	858	145
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	240	959	90	281	688	94	96	1104	373	124	885	115
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	270	1001	94	341	885	395	124	1193	523	149	1244	554
Arrive On Green	0.17	0.32	0.30	0.11	0.26	0.26	0.08	0.35	0.35	0.09	0.36	0.36
Sat Flow, veh/h	1619	3156	296	3141	3420	1525	1619	3420	1499	1619	3420	1524
Grp Volume(v), veh/h	240	520	529	281	688	94	96	1104	373	124	885	115
Grp Sat Flow(s),veh/h/ln	1619	1710	1742	1570	1710	1525	1619	1710	1499	1619	1710	1524
Q Serve(g_s), s	17.4	35.7	35.7	10.5	22.4	5.8	7.0	37.2	25.8	9.0	26.6	6.2
Cycle Q Clear(g_c), s	17.4	35.7	35.7	10.5	22.4	5.8	7.0	37.2	25.8	9.0	26.6	6.2
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	270	543	553	341	885	395	124	1193	523	149	1244	554
V/C Ratio(X)	0.89	0.96	0.96	0.82	0.78	0.24	0.77	0.93	0.71	0.83	0.71	0.21
Avail Cap(c_a), veh/h	284	543	553	341	885	395	135	1199	526	149	1244	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.8	40.1	40.2	52.3	41.2	35.0	54.2	37.5	33.8	53.5	32.7	26.2
Incr Delay (d2), s/veh	25.2	29.5	29.2	14.2	6.6	1.4	19.2	12.1	4.5	30.1	1.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	18.7	19.1	4.7	9.9	2.3	3.4	16.8	9.6	4.8	10.8	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.9	69.5	69.4	66.5	47.8	36.5	73.5	49.6	38.3	83.6	34.6	26.4
LnGrp LOS	E	E	E	E	D	D	E	D	D	F	C	C
Approach Vol, veh/h		1289			1063			1573			1124	
Approach Delay, s/veh		70.3			51.7			48.4			39.2	
Approach LOS		E			D			D			D	

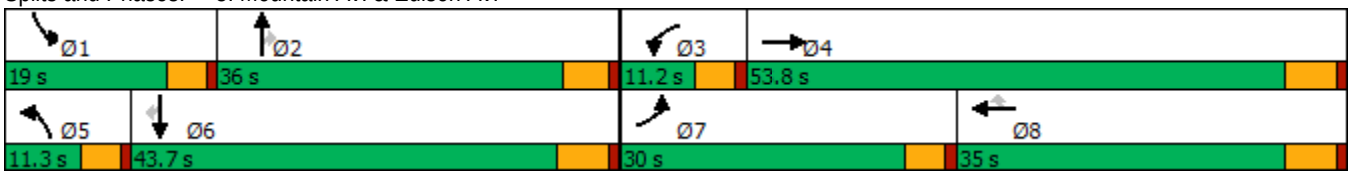
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	45.8	17.0	42.0	13.2	47.6	24.0	35.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.4	40.2	12.4	36.2	9.4	41.2	20.4	28.2
Max Q Clear Time (g_c+I1), s	11.0	39.2	12.5	37.7	9.0	28.6	19.4	24.4
Green Ext Time (p_c), s	0.0	0.8	0.0	0.0	0.0	4.8	0.0	1.6

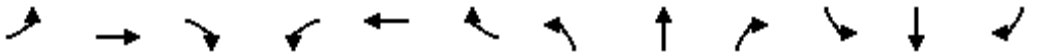
Intersection Summary	
HCM 6th Ctrl Delay	52.6
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	221	1209	38	726	96	41	99	30	118	182	230
Future Volume (vph)	221	1209	38	726	96	41	99	30	118	182	230
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	30.0	53.8	11.2	35.0	35.0	11.3	36.0	36.0	19.0	43.7	43.7
Total Split (%)	25.0%	44.8%	9.3%	29.2%	29.2%	9.4%	30.0%	30.0%	15.8%	36.4%	36.4%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	17.7	51.5	6.8	35.6	35.6	6.9	15.2	15.2	12.7	21.9	21.9
Actuated g/C Ratio	0.19	0.55	0.07	0.38	0.38	0.07	0.16	0.16	0.14	0.23	0.23
v/c Ratio	0.74	0.50	0.34	0.57	0.14	0.36	0.35	0.08	0.55	0.44	0.44
Control Delay	53.1	17.0	55.6	28.8	0.4	56.1	40.6	0.4	52.4	35.6	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.1	17.0	55.6	28.8	0.4	56.1	40.6	0.4	52.4	35.6	6.8
LOS	D	B	E	C	A	E	D	A	D	D	A
Approach Delay		22.2		26.8			37.2			26.8	
Approach LOS		C		C			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 93.7	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 25.1	Intersection LOS: C
Intersection Capacity Utilization 65.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	221	1209	87	38	726	96	41	99	30	118	182	230
Future Volume (veh/h)	221	1209	87	38	726	96	41	99	30	118	182	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	226	1234	87	39	741	86	42	101	16	120	186	170
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	269	2563	181	66	1448	646	69	234	194	157	346	293
Arrive On Green	0.17	0.55	0.53	0.04	0.42	0.42	0.04	0.13	0.13	0.10	0.19	0.19
Sat Flow, veh/h	1619	4676	330	1619	3420	1525	1619	1800	1492	1619	1800	1525
Grp Volume(v), veh/h	226	864	457	39	741	86	42	101	16	120	186	170
Grp Sat Flow(s),veh/h/ln	1619	1638	1730	1619	1710	1525	1619	1800	1492	1619	1800	1525
Q Serve(g_s), s	12.3	14.7	14.8	2.2	14.5	3.1	2.3	4.7	0.9	6.6	8.5	9.2
Cycle Q Clear(g_c), s	12.3	14.7	14.8	2.2	14.5	3.1	2.3	4.7	0.9	6.6	8.5	9.2
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	269	1795	948	66	1448	646	69	234	194	157	346	293
V/C Ratio(X)	0.84	0.48	0.48	0.59	0.51	0.13	0.61	0.43	0.08	0.76	0.54	0.58
Avail Cap(c_a), veh/h	463	1795	948	128	1448	646	130	634	525	267	786	666
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	12.6	12.7	42.8	19.3	16.0	42.8	36.4	34.8	40.0	33.1	33.4
Incr Delay (d2), s/veh	2.8	0.9	1.8	3.0	1.3	0.4	3.2	1.3	0.2	2.9	1.3	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	4.8	5.4	0.9	5.5	1.1	1.0	2.1	0.3	2.6	3.6	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.5	13.5	14.5	45.8	20.6	16.4	46.0	37.7	34.9	42.9	34.4	35.2
LnGrp LOS	D	B	B	D	C	B	D	D	C	D	C	D
Approach Vol, veh/h		1547			866			159			476	
Approach Delay, s/veh		17.6			21.3			39.6			36.8	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.8	16.5	7.7	53.8	7.9	21.5	19.1	42.5
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	* 31	6.6	48.0	6.7	37.9	25.4	29.2
Max Q Clear Time (g_c+I1), s	8.6	6.7	4.2	16.8	4.3	11.2	14.3	16.5
Green Ext Time (p_c), s	0.1	0.5	0.0	9.9	0.0	1.5	0.2	4.0

Intersection Summary	
HCM 6th Ctrl Delay	22.8
HCM 6th LOS	C

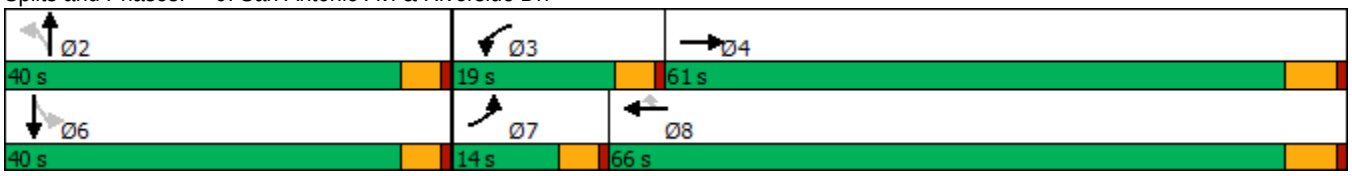
Notes

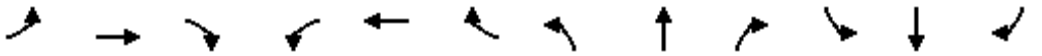
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	33	853	63	791	25	96	16	12	8
Future Volume (vph)	33	853	63	791	25	96	16	12	8
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	14.0	61.0	19.0	66.0	66.0	40.0	40.0	40.0	40.0
Total Split (%)	11.7%	50.8%	15.8%	55.0%	55.0%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	7.3	63.0	9.0	66.9	66.9	15.5	15.5	15.5	15.5
Actuated g/C Ratio	0.07	0.65	0.09	0.69	0.69	0.16	0.16	0.16	0.16
v/c Ratio	0.28	0.47	0.45	0.35	0.02	0.51	0.22	0.07	0.15
Control Delay	50.6	11.5	52.6	8.8	0.6	46.1	16.4	34.3	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.6	11.5	52.6	8.8	0.6	46.1	16.4	34.3	15.5
LOS	D	B	D	A	A	D	B	C	B
Approach Delay		12.8		11.7			34.7		20.0
Approach LOS		B		B			C		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 14.1	Intersection LOS: B
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	853	123	63	791	25	96	16	44	12	8	33
Future Volume (veh/h)	33	853	123	63	791	25	96	16	44	12	8	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	34	889	122	66	824	26	100	17	22	12	8	11
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	63	2058	282	93	2401	1070	233	88	113	215	85	116
Arrive On Green	0.04	0.68	0.66	0.06	0.70	0.70	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1619	3012	413	1619	3420	1524	1337	710	919	1307	686	944
Grp Volume(v), veh/h	34	505	506	66	824	26	100	0	39	12	0	19
Grp Sat Flow(s),veh/h/ln	1619	1710	1715	1619	1710	1524	1337	0	1629	1307	0	1630
Q Serve(g_s), s	1.8	11.7	11.9	3.5	8.4	0.5	6.3	0.0	1.9	0.7	0.0	0.9
Cycle Q Clear(g_c), s	1.8	11.7	11.9	3.5	8.4	0.5	7.3	0.0	1.9	2.6	0.0	0.9
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.56	1.00		0.58
Lane Grp Cap(c), veh/h	63	1169	1172	93	2401	1070	233	0	201	215	0	201
V/C Ratio(X)	0.54	0.43	0.43	0.71	0.34	0.02	0.43	0.00	0.19	0.06	0.00	0.09
Avail Cap(c_a), veh/h	183	1169	1172	275	2401	1070	613	0	664	586	0	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.7	6.3	6.4	40.9	5.2	4.0	37.6	0.0	34.9	36.0	0.0	34.5
Incr Delay (d2), s/veh	2.7	1.2	1.2	3.7	0.4	0.0	1.3	0.0	0.5	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.4	3.5	1.4	2.2	0.1	2.1	0.0	0.8	0.2	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.3	7.4	7.6	44.6	5.6	4.0	38.8	0.0	35.4	36.1	0.0	34.7
LnGrp LOS	D	A	A	D	A	A	D	A	D	D	A	C
Approach Vol, veh/h		1045			916			139			31	
Approach Delay, s/veh		8.7			8.3			37.9			35.2	
Approach LOS		A			A			D			D	

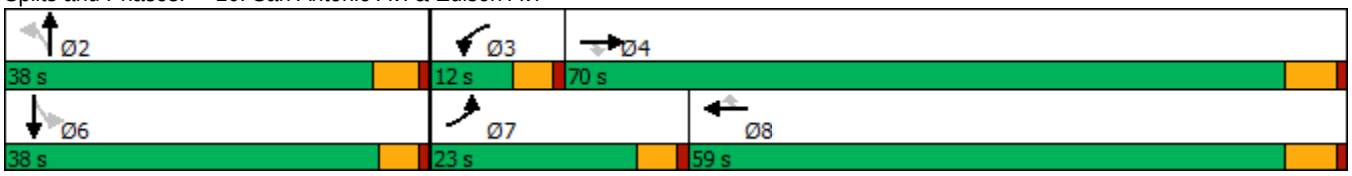
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.9	9.1	64.4		14.9	7.4	66.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		35.4	14.4	55.2		35.4	9.4	60.2				
Max Q Clear Time (g_c+I1), s		9.3	5.5	13.9		4.6	3.8	10.4				
Green Ext Time (p_c), s		0.5	0.0	7.1		0.1	0.0	6.2				

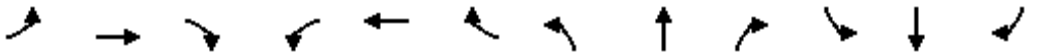
Intersection Summary												
HCM 6th Ctrl Delay			10.8									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	90	1159	41	7	780	18	23	33	13	44
Future Volume (vph)	90	1159	41	7	780	18	23	33	13	44
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	23.0	70.0	70.0	12.0	59.0	59.0	38.0	38.0	38.0	38.0
Total Split (%)	19.2%	58.3%	58.3%	10.0%	49.2%	49.2%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	10.7	71.7	71.7	6.3	61.0	61.0		14.5		14.5
Actuated g/C Ratio	0.11	0.74	0.74	0.07	0.63	0.63		0.15		0.15
v/c Ratio	0.54	0.48	0.04	0.11	0.38	0.02		0.30		0.42
Control Delay	51.9	7.6	1.6	49.6	11.2	0.1		34.2		29.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	51.9	7.6	1.6	49.6	11.2	0.1		34.2		29.0
LOS	D	A	A	D	B	A		C		C
Approach Delay		10.5			11.3			34.2		29.0
Approach LOS		B			B			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.3	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay: 12.4	Intersection LOS: B
Intersection Capacity Utilization 56.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	1159	41	7	780	18	23	33	11	13	44	53
Future Volume (veh/h)	90	1159	41	7	780	18	23	33	11	13	44	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1000	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	96	1233	43	7	830	16	24	35	8	14	47	26
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	130	2500	1115	15	2279	1016	103	127	24	64	116	57
Arrive On Green	0.08	0.73	0.73	0.02	0.67	0.67	0.12	0.12	0.11	0.12	0.12	0.11
Sat Flow, veh/h	1619	3420	1525	952	3420	1525	403	1050	197	155	1012	497
Grp Volume(v), veh/h	96	1233	43	7	830	16	67	0	0	87	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	952	1710	1525	1650	0	0	1664	0	0
Q Serve(g_s), s	5.2	13.7	0.7	0.7	9.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.2	13.7	0.7	0.7	9.7	0.3	3.1	0.0	0.0	4.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.36		0.12	0.16		0.30
Lane Grp Cap(c), veh/h	130	2500	1115	15	2279	1016	253	0	0	238	0	0
V/C Ratio(X)	0.74	0.49	0.04	0.47	0.36	0.02	0.26	0.00	0.00	0.37	0.00	0.00
Avail Cap(c_a), veh/h	341	2500	1115	84	2279	1016	657	0	0	665	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	40.6	5.1	3.4	44.1	6.6	5.1	36.4	0.0	0.0	37.3	0.0	0.0
Incr Delay (d2), s/veh	3.1	0.7	0.1	8.4	0.5	0.0	0.6	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	3.3	0.2	0.2	2.8	0.1	1.4	0.0	0.0	1.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.7	5.8	3.4	52.5	7.1	5.1	36.9	0.0	0.0	38.3	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1372			853			67			87	
Approach Delay, s/veh		8.4			7.4			36.9			38.3	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.9	5.4	70.0		14.9	11.2	64.2				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		32.9	7.4	64.2		* 33	18.4	53.2				
Max Q Clear Time (g_c+I1), s		5.1	2.7	15.7		6.3	7.2	11.7				
Green Ext Time (p_c), s		0.3	0.0	11.3		0.5	0.1	6.2				

Intersection Summary	
HCM 6th Ctrl Delay	9.9
HCM 6th LOS	A

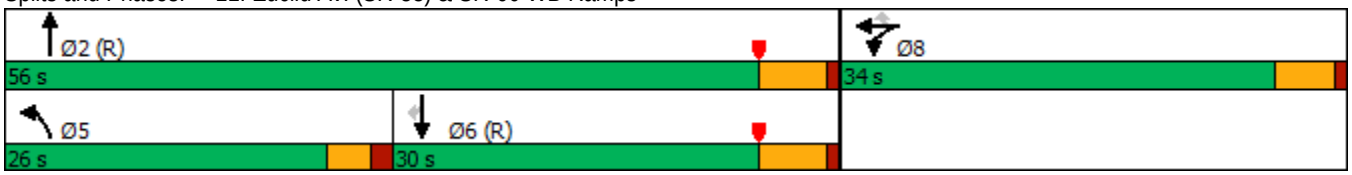
Notes

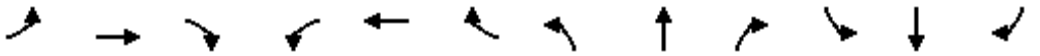
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	690	7	441	376	1178	1097	533
Future Volume (vph)	690	7	441	376	1178	1097	533
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	34.0	34.0	34.0	26.0	56.0	30.0	30.0
Total Split (%)	37.8%	37.8%	37.8%	28.9%	62.2%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	25.7	25.7	25.7	21.4	53.8	27.9	27.9
Actuated g/C Ratio	0.29	0.29	0.29	0.24	0.60	0.31	0.31
v/c Ratio	0.84	0.86	0.76	0.91	0.57	0.71	0.63
Control Delay	46.0	47.5	32.4	37.6	24.0	31.4	6.1
Queue Delay	0.0	0.0	0.0	0.0	4.7	0.0	0.0
Total Delay	46.0	47.5	32.4	37.6	28.7	31.4	6.1
LOS	D	D	C	D	C	C	A
Approach Delay		42.2			30.9	23.1	
Approach LOS		D			C	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 30.9	Intersection LOS: C
Intersection Capacity Utilization 103.4%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	690	7	441	376	1178	0	0	1097	533
Future Volume (veh/h)	0	0	0	690	7	441	376	1178	0	0	1097	533
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				808	0	188	392	1227	0	0	1143	350
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				915	0	407	416	2276	0	0	1819	565
Arrive On Green				0.25	0.00	0.25	0.46	1.00	0.00	0.00	0.35	0.35
Sat Flow, veh/h				3619	0	1608	1810	3705	0	0	5358	1610
Grp Volume(v), veh/h				808	0	188	392	1227	0	0	1143	350
Grp Sat Flow(s),veh/h/ln				1810	0	1608	1810	1805	0	0	1729	1610
Q Serve(g_s), s				19.3	0.0	8.9	18.6	0.0	0.0	0.0	16.5	16.2
Cycle Q Clear(g_c), s				19.3	0.0	8.9	18.6	0.0	0.0	0.0	16.5	16.2
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				915	0	407	416	2276	0	0	1819	565
V/C Ratio(X)				0.88	0.00	0.46	0.94	0.54	0.00	0.00	0.63	0.62
Avail Cap(c_a), veh/h				1166	0	518	432	2276	0	0	1819	565
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.22	0.22	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				32.3	0.0	28.4	23.8	0.0	0.0	0.0	24.3	24.2
Incr Delay (d2), s/veh				5.8	0.0	0.3	9.5	0.2	0.0	0.0	1.7	5.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.6	0.0	3.3	6.3	0.1	0.0	0.0	6.6	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				38.1	0.0	28.7	33.3	0.2	0.0	0.0	26.0	29.3
LnGrp LOS				D	A	C	C	A	A	A	C	C
Approach Vol, veh/h					996			1619			1493	
Approach Delay, s/veh					36.4			8.2			26.8	
Approach LOS					D			A			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		62.2			25.2	37.1		27.8				
Change Period (Y+Rc), s		5.5			4.5	5.5		5.0				
Max Green Setting (Gmax), s		50.5			21.5	24.5		29.0				
Max Q Clear Time (g_c+I1), s		2.0			20.6	18.5		21.3				
Green Ext Time (p_c), s		17.3			0.1	4.6		1.4				

Intersection Summary												
HCM 6th Ctrl Delay			21.8									
HCM 6th LOS			C									

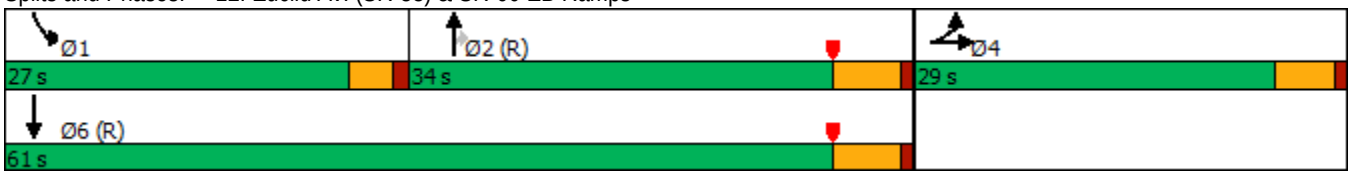
Notes

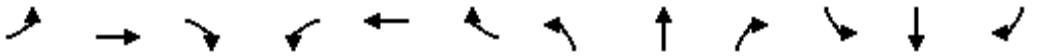
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	450	3	1104	698	406	1381
Future Volume (vph)	450	3	1104	698	406	1381
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	29.0	29.0	34.0	34.0	27.0	61.0
Total Split (%)	32.2%	32.2%	37.8%	37.8%	30.0%	67.8%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	24.0	24.0	29.3	29.3	22.2	55.5
Actuated g/C Ratio	0.27	0.27	0.33	0.33	0.25	0.62
v/c Ratio	0.90	1.06	0.96	0.77	0.93	0.63
Control Delay	57.5	88.5	49.3	11.1	55.5	5.8
Queue Delay	50.3	19.9	0.0	0.0	0.0	0.7
Total Delay	107.8	108.5	49.3	11.1	55.5	6.5
LOS	F	F	D	B	E	A
Approach Delay		108.2	34.5			17.6
Approach LOS		F	C			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 42.1	Intersection LOS: D
Intersection Capacity Utilization 103.4%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	450	3	418	0	0	0	0	1104	698	406	1381	0
Future Volume (veh/h)	450	3	418	0	0	0	0	1104	698	406	1381	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	411	70	360				0	1127	518	414	1409	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	483	72	369				0	1194	520	437	2226	0
Arrive On Green	0.27	0.27	0.27				0.00	0.33	0.33	0.48	1.00	0.00
Sat Flow, veh/h	1810	269	1382				0	3705	1571	1810	3705	0
Grp Volume(v), veh/h	411	0	430				0	1127	518	414	1409	0
Grp Sat Flow(s),veh/h/ln	1810	0	1651				0	1805	1571	1810	1805	0
Q Serve(g_s), s	19.4	0.0	23.2				0.0	27.3	29.6	19.6	0.0	0.0
Cycle Q Clear(g_c), s	19.4	0.0	23.2				0.0	27.3	29.6	19.6	0.0	0.0
Prop In Lane	1.00		0.84				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	483	0	440				0	1194	520	437	2226	0
V/C Ratio(X)	0.85	0.00	0.98				0.00	0.94	1.00	0.95	0.63	0.00
Avail Cap(c_a), veh/h	483	0	440				0	1194	520	462	2226	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.39	0.39	0.59	0.59	0.00
Uniform Delay (d), s/veh	31.3	0.0	32.7				0.0	29.3	30.1	22.7	0.0	0.0
Incr Delay (d2), s/veh	13.0	0.0	36.5				0.0	7.6	23.9	19.4	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.0	13.1				0.0	12.2	13.8	7.6	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.3	0.0	69.2				0.0	36.9	54.0	42.1	0.8	0.0
LnGrp LOS	D	A	E				A	D	D	D	A	A
Approach Vol, veh/h		841						1645			1823	
Approach Delay, s/veh		57.1						42.3			10.2	
Approach LOS		E						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	25.7	35.3		29.0		61.0
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	23.0	28.5		24.0		55.5
Max Q Clear Time (g_c+I1), s	21.6	31.6		25.2		2.0
Green Ext Time (p_c), s	0.1	0.0		0.0		22.3

Intersection Summary	
HCM 6th Ctrl Delay	31.6
HCM 6th LOS	C

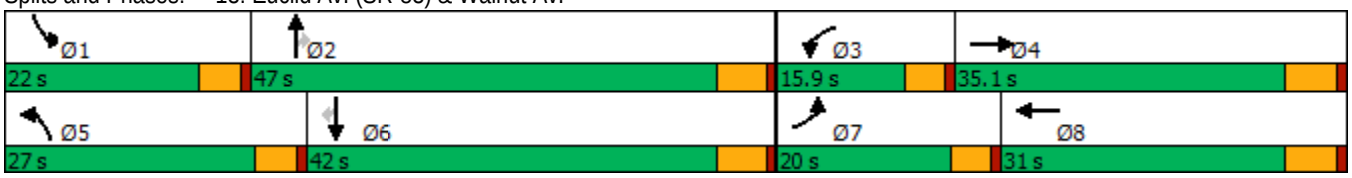
Notes

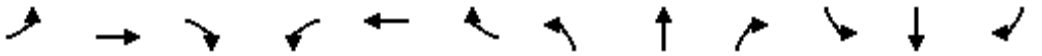
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	116	400	76	400	204	1508	80	285	1314	158
Future Volume (vph)	116	400	76	400	204	1508	80	285	1314	158
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	20.0	35.1	15.9	31.0	27.0	47.0	47.0	22.0	42.0	42.0
Total Split (%)	16.7%	29.3%	13.3%	25.8%	22.5%	39.2%	39.2%	18.3%	35.0%	35.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	12.2	28.0	9.1	22.6	18.4	41.9	41.9	14.9	38.4	38.4
Actuated g/C Ratio	0.11	0.25	0.08	0.20	0.16	0.37	0.37	0.13	0.34	0.34
v/c Ratio	0.70	0.69	0.61	0.85	0.82	0.87	0.13	0.77	0.83	0.27
Control Delay	70.9	41.3	71.6	53.2	70.4	40.3	3.2	61.9	40.7	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.9	41.3	71.6	53.2	70.4	40.3	3.2	61.9	40.7	7.1
LOS	E	D	E	D	E	D	A	E	D	A
Approach Delay		46.4		55.5		42.1			41.1	
Approach LOS		D		E		D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 44.1	Intersection LOS: D
Intersection Capacity Utilization 82.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	400	151	76	400	151	204	1508	80	285	1314	158
Future Volume (veh/h)	116	400	151	76	400	151	204	1508	80	285	1314	158
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	123	426	138	81	426	135	217	1604	58	303	1398	114
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	148	582	186	101	509	160	245	1935	600	360	1788	555
Arrive On Green	0.09	0.23	0.23	0.06	0.20	0.20	0.15	0.39	0.39	0.12	0.36	0.36
Sat Flow, veh/h	1619	2537	813	1619	2547	798	1619	4914	1523	2956	4914	1524
Grp Volume(v), veh/h	123	286	278	81	284	277	217	1604	58	303	1398	114
Grp Sat Flow(s),veh/h/ln	1619	1710	1640	1619	1710	1635	1619	1638	1523	1478	1638	1524
Q Serve(g_s), s	7.9	16.3	16.6	5.2	16.9	17.2	13.9	31.0	2.5	10.6	26.7	5.4
Cycle Q Clear(g_c), s	7.9	16.3	16.6	5.2	16.9	17.2	13.9	31.0	2.5	10.6	26.7	5.4
Prop In Lane	1.00		0.50	1.00		0.49	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	148	392	376	101	342	327	245	1935	600	360	1788	555
V/C Ratio(X)	0.83	0.73	0.74	0.80	0.83	0.85	0.88	0.83	0.10	0.84	0.78	0.21
Avail Cap(c_a), veh/h	236	474	455	173	408	390	343	1935	600	487	1788	555
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.2	37.7	37.8	48.9	40.6	40.7	43.9	28.8	20.2	45.4	29.9	23.1
Incr Delay (d2), s/veh	6.5	4.5	5.1	5.6	11.9	13.7	14.3	4.3	0.3	7.4	3.5	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	7.0	6.9	2.2	7.9	7.9	6.4	12.2	0.9	4.2	10.6	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.7	42.1	42.9	54.5	52.4	54.4	58.2	33.1	20.5	52.8	33.4	23.9
LnGrp LOS	D	D	D	D	D	D	E	C	C	D	C	C
Approach Vol, veh/h		687			642			1879			1815	
Approach Delay, s/veh		44.5			53.6			35.6			36.0	
Approach LOS		D			D			D			D	

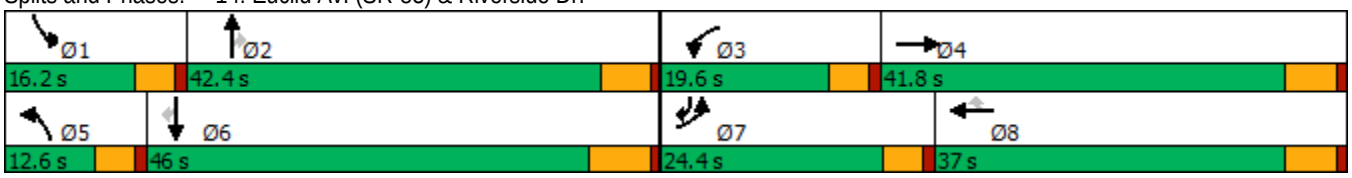
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.5	47.0	11.2	30.0	20.6	43.9	14.3	26.9
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	17.4	41.6	11.3	29.3	22.4	36.6	15.4	25.2
Max Q Clear Time (g_c+I1), s	12.6	33.0	7.2	18.6	15.9	28.7	9.9	19.2
Green Ext Time (p_c), s	0.3	6.2	0.0	2.3	0.2	5.3	0.1	1.6

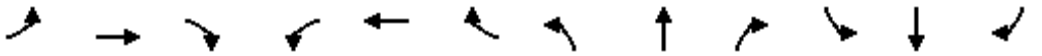
Intersection Summary	
HCM 6th Ctrl Delay	39.3
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	163	496	203	443	69	87	1307	263	150	1113	208
Future Volume (vph)	163	496	203	443	69	87	1307	263	150	1113	208
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	24.4	41.8	19.6	37.0	37.0	12.6	42.4	42.4	16.2	46.0	24.4
Total Split (%)	20.3%	34.8%	16.3%	30.8%	30.8%	10.5%	35.3%	35.3%	13.5%	38.3%	20.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None
Act Effct Green (s)	16.1	36.0	15.0	34.9	34.9	8.0	37.0	37.0	11.6	39.5	57.6
Actuated g/C Ratio	0.13	0.30	0.12	0.29	0.29	0.07	0.31	0.31	0.10	0.33	0.48
v/c Ratio	0.78	1.14	1.05	0.46	0.13	0.85	1.29	0.46	1.00	1.03	0.28
Control Delay	74.0	123.0	127.8	37.5	0.5	109.7	173.6	13.9	126.7	74.5	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.0	123.0	127.8	37.5	0.5	109.7	173.6	13.9	126.7	74.5	7.4
LOS	E	F	F	D	A	F	F	B	F	E	A
Approach Delay		112.3		59.6			144.9			70.3	
Approach LOS		F		E			F			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.29	
Intersection Signal Delay: 102.4	Intersection LOS: F
Intersection Capacity Utilization 110.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	496	88	203	443	69	87	1307	263	150	1113	208
Future Volume (veh/h)	163	496	88	203	443	69	87	1307	263	150	1113	208
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	170	517	67	211	461	56	91	1361	220	156	1159	126
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	195	464	60	201	1029	459	107	1045	466	155	1147	688
Arrive On Green	0.12	0.30	0.30	0.12	0.30	0.30	0.07	0.31	0.31	0.10	0.34	0.34
Sat Flow, veh/h	1619	1561	202	1619	3420	1524	1619	3420	1525	1619	3420	1506
Grp Volume(v), veh/h	170	0	584	211	461	56	91	1361	220	156	1159	126
Grp Sat Flow(s),veh/h/ln	1619	0	1764	1619	1710	1524	1619	1710	1525	1619	1710	1506
Q Serve(g_s), s	12.5	0.0	36.0	15.0	13.2	3.2	6.7	37.0	14.2	11.6	40.6	6.0
Cycle Q Clear(g_c), s	12.5	0.0	36.0	15.0	13.2	3.2	6.7	37.0	14.2	11.6	40.6	6.0
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	195	0	524	201	1029	459	107	1045	466	155	1147	688
V/C Ratio(X)	0.87	0.00	1.11	1.05	0.45	0.12	0.85	1.30	0.47	1.01	1.01	0.18
Avail Cap(c_a), veh/h	265	0	524	201	1029	459	107	1045	466	155	1147	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.4	0.0	42.6	53.1	34.2	30.7	56.0	42.0	34.1	54.8	40.2	19.6
Incr Delay (d2), s/veh	16.9	0.0	74.4	78.0	0.3	0.1	42.6	143.2	3.4	73.8	29.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	0.0	25.8	10.3	5.4	1.2	3.9	35.4	5.5	7.8	21.1	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.3	0.0	117.0	131.0	34.5	30.8	98.6	185.2	37.5	128.6	69.5	20.2
LnGrp LOS	E	A	F	F	C	C	F	F	D	F	F	C
Approach Vol, veh/h		754			728			1672			1441	
Approach Delay, s/veh		106.2			62.2			161.1			71.6	
Approach LOS		F			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	43.5	19.6	41.8	12.6	47.1	19.1	42.3
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	11.6	* 37	15.0	36.0	8.0	39.5	19.8	31.2
Max Q Clear Time (g_c+I1), s	13.6	39.0	17.0	38.0	8.7	42.6	14.5	15.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.6

Intersection Summary	
HCM 6th Ctrl Delay	108.3
HCM 6th LOS	F

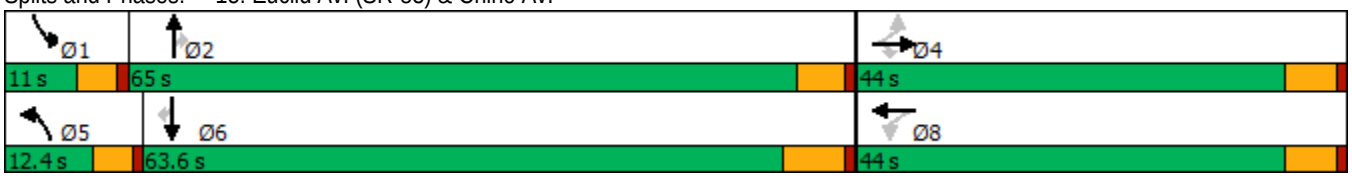
Notes

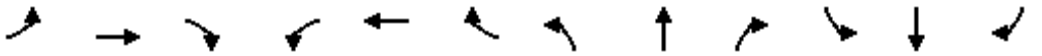
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	104	307	57	85	122	50	1539	248	27	1258	78
Future Volume (vph)	104	307	57	85	122	50	1539	248	27	1258	78
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	44.0	44.0	44.0	44.0	44.0	12.4	65.0	65.0	11.0	63.6	63.6
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	10.3%	54.2%	54.2%	9.2%	53.0%	53.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	31.3	31.3	31.3		31.3	7.0	62.6	62.6	5.9	58.2	58.2
Actuated g/C Ratio	0.28	0.28	0.28		0.28	0.06	0.56	0.56	0.05	0.52	0.52
v/c Ratio	0.43	0.65	0.13		1.04	0.53	0.86	0.31	0.34	0.76	0.10
Control Delay	38.1	41.7	5.4		111.1	73.2	29.2	12.6	65.1	26.7	5.3
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.1	41.7	5.4		111.1	73.2	29.2	12.6	65.1	26.7	5.3
LOS	D	D	A		F	E	C	B	E	C	A
Approach Delay		36.5			111.1		28.1			26.2	
Approach LOS		D			F		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.2	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 33.1	Intersection LOS: C
Intersection Capacity Utilization 89.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	307	57	85	122	10	50	1539	248	27	1258	78
Future Volume (veh/h)	104	307	57	85	122	10	50	1539	248	27	1258	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	112	330	38	91	131	7	54	1655	196	29	1353	51
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	282	549	465	126	164	8	67	1783	779	43	1731	756
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.04	0.52	0.52	0.03	0.51	0.51
Sat Flow, veh/h	1200	1800	1525	268	537	25	1619	3420	1494	1619	3420	1494
Grp Volume(v), veh/h	112	330	38	229	0	0	54	1655	196	29	1353	51
Grp Sat Flow(s),veh/h/ln	1200	1800	1525	830	0	0	1619	1710	1494	1619	1710	1494
Q Serve(g_s), s	0.0	17.9	2.0	14.7	0.0	0.0	3.8	51.5	8.3	2.0	37.1	2.0
Cycle Q Clear(g_c), s	15.6	17.9	2.0	32.6	0.0	0.0	3.8	51.5	8.3	2.0	37.1	2.0
Prop In Lane	1.00		1.00	0.40		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	282	549	465	297	0	0	67	1783	779	43	1731	756
V/C Ratio(X)	0.40	0.60	0.08	0.77	0.00	0.00	0.80	0.93	0.25	0.68	0.78	0.07
Avail Cap(c_a), veh/h	316	600	508	336	0	0	110	1783	779	90	1731	756
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.1	33.9	28.4	42.9	0.0	0.0	54.5	25.5	15.1	55.4	23.1	14.5
Incr Delay (d2), s/veh	0.9	1.4	0.1	9.4	0.0	0.0	8.0	10.0	0.8	6.9	3.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	7.7	0.7	6.9	0.0	0.0	1.6	20.5	2.7	0.9	14.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.0	35.4	28.5	52.3	0.0	0.0	62.5	35.4	15.9	62.3	26.7	14.6
LnGrp LOS	C	D	C	D	A	A	E	D	B	E	C	B
Approach Vol, veh/h		480			229			1905			1433	
Approach Delay, s/veh		34.5			52.3			34.2			27.0	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.6	66.3		40.8	9.4	64.6		40.8				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	6.4	* 60		38.2	7.8	57.1		38.2				
Max Q Clear Time (g_c+I1), s	4.0	53.5		19.9	5.8	39.1		34.6				
Green Ext Time (p_c), s	0.0	4.9		2.1	0.0	8.6		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		32.7	
HCM 6th LOS		C	

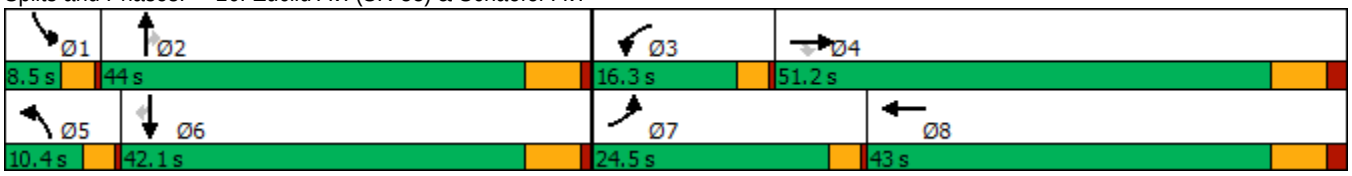
Notes

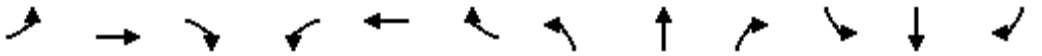
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	315	310	205	85	72	100	1465	90	32	1283	125
Future Volume (vph)	315	310	205	85	72	100	1465	90	32	1283	125
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	24.5	51.2	51.2	16.3	43.0	10.4	44.0	44.0	8.5	42.1	42.1
Total Split (%)	20.4%	42.7%	42.7%	13.6%	35.8%	8.7%	36.7%	36.7%	7.1%	35.1%	35.1%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	21.2	27.4	27.4	10.8	14.0	7.0	42.1	42.1	5.1	36.5	36.5
Actuated g/C Ratio	0.21	0.28	0.28	0.11	0.14	0.07	0.43	0.43	0.05	0.37	0.37
v/c Ratio	0.92	0.63	0.37	0.49	0.39	0.89	1.02	0.13	0.39	1.03	0.19
Control Delay	72.1	38.1	6.8	54.0	35.0	108.1	58.6	2.0	63.5	64.9	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.1	38.1	6.8	54.0	35.0	108.1	58.6	2.0	63.5	64.9	5.3
LOS	E	D	A	D	C	F	E	A	E	E	A
Approach Delay		43.3			43.7		58.5			59.7	
Approach LOS		D			D		E			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 98.9	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 55.2	Intersection LOS: E
Intersection Capacity Utilization 90.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	315	310	205	85	72	28	100	1465	90	32	1283	125
Future Volume (veh/h)	315	310	205	85	72	28	100	1465	90	32	1283	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	318	313	166	86	73	23	101	1480	73	32	1296	96
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	348	374	317	158	119	37	124	1514	675	49	1358	606
Arrive On Green	0.21	0.21	0.21	0.10	0.09	0.09	0.08	0.44	0.44	0.03	0.40	0.40
Sat Flow, veh/h	1619	1800	1525	1619	1312	413	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	318	313	166	86	0	96	101	1480	73	32	1296	96
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1726	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	17.4	15.1	8.7	4.6	0.0	4.8	5.6	38.5	2.5	1.8	33.3	3.7
Cycle Q Clear(g_c), s	17.4	15.1	8.7	4.6	0.0	4.8	5.6	38.5	2.5	1.8	33.3	3.7
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	348	374	317	158	0	156	124	1514	675	49	1358	606
V/C Ratio(X)	0.91	0.84	0.52	0.54	0.00	0.61	0.82	0.98	0.11	0.65	0.95	0.16
Avail Cap(c_a), veh/h	376	880	745	229	0	687	124	1514	675	90	1365	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.7	34.4	31.8	38.9	0.0	39.6	41.2	24.8	14.8	43.4	26.5	17.6
Incr Delay (d2), s/veh	24.2	3.8	1.0	1.1	0.0	2.9	31.4	18.0	0.1	5.2	14.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	6.6	3.1	1.8	0.0	2.1	3.1	16.8	0.8	0.7	14.4	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.9	38.1	32.8	40.0	0.0	42.5	72.6	42.7	14.8	48.5	41.4	17.7
LnGrp LOS	E	D	C	D	A	D	E	D	B	D	D	B
Approach Vol, veh/h		797			182			1654			1424	
Approach Delay, s/veh		45.3			41.3			43.3			39.9	
Approach LOS		D			D			D			D	

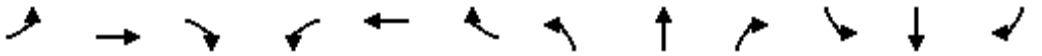
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	46.0	12.3	25.8	10.4	41.9	22.9	15.2
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	38.0	12.8	44.2	6.9	36.1	21.0	36.0
Max Q Clear Time (g_c+I1), s	3.8	40.5	6.6	17.1	7.6	35.3	19.4	6.8
Green Ext Time (p_c), s	0.0	0.0	0.0	1.7	0.0	0.6	0.1	0.3

Intersection Summary	
HCM 6th Ctrl Delay	42.4
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	298	533	333	47	314	194	1413	81	95	1372	197
Future Volume (vph)	298	533	333	47	314	194	1413	81	95	1372	197
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	17.0	54.8	54.8	13.2	51.0	51.0
Total Split (%)	43.3%	43.3%	43.3%	43.3%	43.3%	14.2%	45.7%	45.7%	11.0%	42.5%	42.5%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	45.0	45.0	45.0	45.0	45.0	13.5	49.2	49.2	9.3	45.0	45.0
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.11	0.41	0.41	0.08	0.38	0.38
v/c Ratio	1.29	0.83	0.50	0.43	0.57	1.13	1.06	0.13	0.81	1.13	0.32
Control Delay	189.6	46.3	14.3	42.0	33.3	153.3	76.8	7.8	95.5	103.0	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	189.6	46.3	14.3	42.0	33.3	153.3	76.8	7.8	95.5	103.0	12.8
LOS	F	D	B	D	C	F	E	A	F	F	B
Approach Delay		73.8			34.3		82.2			91.9	
Approach LOS		E			C		F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.29	
Intersection Signal Delay: 79.6	Intersection LOS: E
Intersection Capacity Utilization 110.8%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	298	533	333	47	314	45	194	1413	81	95	1372	197
Future Volume (veh/h)	298	533	333	47	314	45	194	1413	81	95	1372	197
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	314	561	269	49	331	41	204	1487	77	100	1444	175
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	261	675	572	118	588	73	182	1411	628	121	1282	572
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.11	0.41	0.41	0.07	0.38	0.38
Sat Flow, veh/h	969	1800	1525	634	1568	194	1619	3420	1522	1619	3420	1525
Grp Volume(v), veh/h	314	561	269	49	0	372	204	1487	77	100	1444	175
Grp Sat Flow(s),veh/h/ln	969	1800	1525	634	0	1762	1619	1710	1522	1619	1710	1525
Q Serve(g_s), s	24.9	34.0	16.1	9.1	0.0	20.1	13.5	49.5	3.8	7.3	45.0	9.7
Cycle Q Clear(g_c), s	45.0	34.0	16.1	43.1	0.0	20.1	13.5	49.5	3.8	7.3	45.0	9.7
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	261	675	572	118	0	661	182	1411	628	121	1283	572
V/C Ratio(X)	1.20	0.83	0.47	0.41	0.00	0.56	1.12	1.05	0.12	0.83	1.13	0.31
Avail Cap(c_a), veh/h	261	675	572	118	0	661	182	1411	628	131	1283	572
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.4	34.0	28.5	53.6	0.0	29.7	53.3	35.2	21.8	54.7	37.5	26.5
Incr Delay (d2), s/veh	121.3	8.7	0.6	2.3	0.0	1.1	102.6	39.5	0.1	29.0	67.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.6	15.7	5.7	1.5	0.0	8.3	10.4	26.5	1.3	3.8	29.2	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	171.7	42.7	29.1	55.9	0.0	30.8	155.8	74.7	21.9	83.8	104.7	26.8
LnGrp LOS	F	D	C	E	A	C	F	F	C	F	F	C
Approach Vol, veh/h		1144			421			1768			1719	
Approach Delay, s/veh		74.9			33.7			81.8			95.6	
Approach LOS		E			C			F			F	

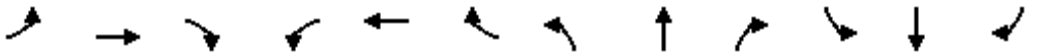
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.5	55.5		52.0	17.0	51.0		52.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	9.7	48.8		45.0	13.5	45.0		45.0				
Max Q Clear Time (g_c+I1), s	9.3	51.5		47.0	15.5	47.0		45.1				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		80.9	
HCM 6th LOS		F	

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	42	176	236	8	23	130	1436	19	68	1542	69
Future Volume (vph)	42	176	236	8	23	130	1436	19	68	1542	69
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	46.8	46.8	46.8	46.8	46.8	14.0	63.2	63.2	10.0	59.2	59.2
Total Split (%)	39.0%	39.0%	39.0%	39.0%	39.0%	11.7%	52.7%	52.7%	8.3%	49.3%	49.3%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	18.5	18.5	18.5	18.5	18.5	10.6	58.2	58.2	6.6	54.2	54.2
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19	0.11	0.60	0.60	0.07	0.56	0.56
v/c Ratio	0.21	0.58	0.67	0.06	0.28	0.83	0.79	0.02	0.70	0.91	0.09
Control Delay	33.5	41.7	25.7	30.1	12.9	80.4	20.8	0.7	80.0	29.9	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	41.7	25.7	30.1	12.9	80.4	20.8	0.7	80.0	29.9	3.9
LOS	C	D	C	C	B	F	C	A	E	C	A
Approach Delay		32.6			14.3		25.5			30.9	
Approach LOS		C			B		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 28.4	Intersection LOS: C
Intersection Capacity Utilization 77.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	176	236	8	23	67	130	1436	19	68	1542	69
Future Volume (veh/h)	42	176	236	8	23	67	130	1436	19	68	1542	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	47	198	149	9	26	72	146	1613	20	76	1733	66
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	197	262	222	126	61	170	176	2150	959	94	1978	864
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.11	0.63	0.63	0.06	0.58	0.58
Sat Flow, veh/h	1245	1800	1525	992	422	1168	1619	3420	1525	1619	3420	1494
Grp Volume(v), veh/h	47	198	149	9	0	98	146	1613	20	76	1733	66
Grp Sat Flow(s),veh/h/ln	1245	1800	1525	992	0	1590	1619	1710	1525	1619	1710	1494
Q Serve(g_s), s	3.0	8.8	7.7	0.7	0.0	4.7	7.4	27.7	0.4	3.9	36.2	1.6
Cycle Q Clear(g_c), s	7.7	8.8	7.7	9.6	0.0	4.7	7.4	27.7	0.4	3.9	36.2	1.6
Prop In Lane	1.00		1.00	1.00		0.73	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	197	262	222	126	0	231	176	2150	959	94	1978	864
V/C Ratio(X)	0.24	0.76	0.67	0.07	0.00	0.42	0.83	0.75	0.02	0.80	0.88	0.08
Avail Cap(c_a), veh/h	642	905	767	480	0	799	204	2354	1050	126	2191	957
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	34.3	33.8	38.9	0.0	32.5	36.5	10.9	5.8	38.9	15.1	7.8
Incr Delay (d2), s/veh	0.5	3.3	2.6	0.2	0.0	0.9	20.5	1.3	0.0	21.1	4.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	3.9	2.8	0.2	0.0	1.8	3.7	7.4	0.1	2.0	11.3	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.5	37.6	36.4	39.0	0.0	33.4	57.0	12.2	5.8	60.0	19.1	7.8
LnGrp LOS	D	D	D	D	A	C	E	B	A	E	B	A
Approach Vol, veh/h		394			107			1779			1875	
Approach Delay, s/veh		37.0			33.9			15.8			20.4	
Approach LOS		D			C			B			C	

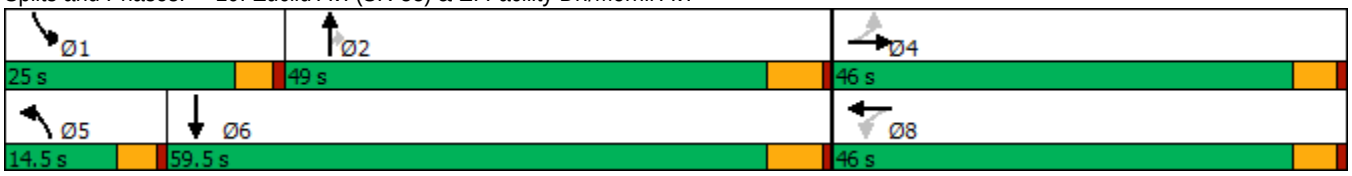
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.4	58.2		16.9	12.6	54.0		16.9				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	6.5	57.5		42.0	10.5	53.5		42.0				
Max Q Clear Time (g_c+I1), s	5.9	29.7		10.8	9.4	38.2		11.6				
Green Ext Time (p_c), s	0.0	13.2		1.3	0.0	10.1		0.4				

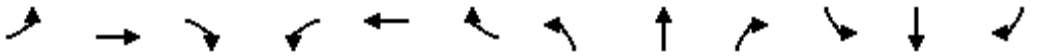
Intersection Summary			
HCM 6th Ctrl Delay		20.3	
HCM 6th LOS		C	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	12	33	262	2	5	1388	275	307	1419
Future Volume (vph)	12	33	262	2	5	1388	275	307	1419
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	14.5	49.0	49.0	25.0	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	12.1%	40.8%	40.8%	20.8%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		41.0		41.0	10.0	43.0	43.0	20.5	65.1
Actuated g/C Ratio		0.34		0.34	0.08	0.36	0.36	0.17	0.54
v/c Ratio		0.12		1.14	0.04	1.24	0.49	1.23	0.84
Control Delay		22.3		118.6	51.4	151.5	22.7	171.6	29.2
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		22.3		118.6	51.4	151.5	22.7	171.6	29.2
LOS		C		F	D	F	C	F	C
Approach Delay		22.3		118.6		130.0			54.5
Approach LOS		C		F		F			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.24	
Intersection Signal Delay: 94.1	Intersection LOS: F
Intersection Capacity Utilization 110.8%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	33	14	262	2	252	5	1388	275	307	1419	1
Future Volume (veh/h)	12	33	14	262	2	252	5	1388	275	307	1419	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	13	36	14	288	2	267	5	1525	237	337	1559	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	123	325	118	305	2	240	21	1226	547	277	1766	0
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.01	0.36	0.36	0.17	0.52	0.00
Sat Flow, veh/h	254	953	345	759	5	704	1619	3420	1525	1619	3510	0
Grp Volume(v), veh/h	63	0	0	557	0	0	5	1525	237	337	1559	0
Grp Sat Flow(s),veh/h/ln	1551	0	0	1468	0	0	1619	1710	1525	1619	1710	0
Q Serve(g_s), s	0.0	0.0	0.0	38.0	0.0	0.0	0.4	43.0	14.2	20.5	48.6	0.0
Cycle Q Clear(g_c), s	3.0	0.0	0.0	41.0	0.0	0.0	0.4	43.0	14.2	20.5	48.6	0.0
Prop In Lane	0.21		0.22	0.52		0.48	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	566	0	0	547	0	0	21	1226	547	277	1766	0
V/C Ratio(X)	0.11	0.00	0.00	1.02	0.00	0.00	0.24	1.24	0.43	1.22	0.88	0.00
Avail Cap(c_a), veh/h	566	0	0	547	0	0	135	1226	547	277	1766	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.0	0.0	0.0	40.9	0.0	0.0	58.7	38.5	29.2	49.7	25.8	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	43.2	0.0	0.0	2.2	117.0	0.5	126.5	5.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	22.4	0.0	0.0	0.2	36.5	5.0	17.6	18.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.0	0.0	0.0	84.1	0.0	0.0	60.9	155.5	29.8	176.2	31.4	0.0
LnGrp LOS	C	A	A	F	A	A	E	F	C	F	C	A
Approach Vol, veh/h		63			557			1767			1896	
Approach Delay, s/veh		27.0			84.1			138.4			57.2	
Approach LOS		C			F			F			E	

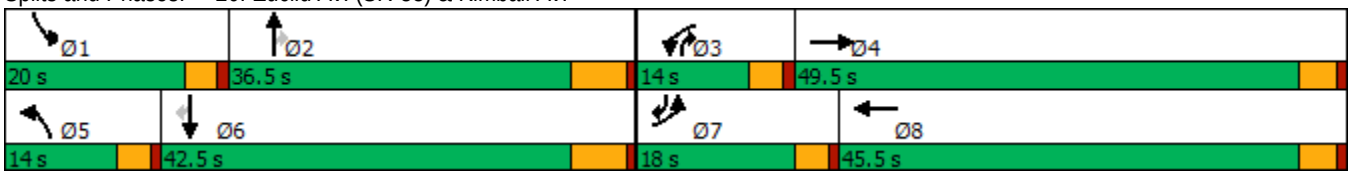
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.0	49.0		46.0	6.0	68.0		46.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	20.5	43.0		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	22.5	45.0		5.0	2.4	50.6		43.0				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	2.2		0.0				

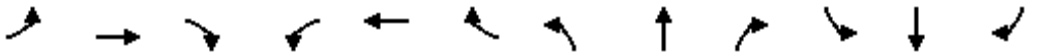
Intersection Summary												
HCM 6th Ctrl Delay			93.7									
HCM 6th LOS			F									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	390	866	91	383	84	1031	52	480	973	259
Future Volume (vph)	390	866	91	383	84	1031	52	480	973	259
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	18.0	49.5	14.0	45.5	14.0	36.5	14.0	20.0	42.5	18.0
Total Split (%)	15.0%	41.3%	11.7%	37.9%	11.7%	30.4%	11.7%	16.7%	35.4%	15.0%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	14.0	38.3	10.0	34.3	10.0	30.6	46.6	16.0	36.6	52.6
Actuated g/C Ratio	0.12	0.34	0.09	0.30	0.09	0.27	0.41	0.14	0.32	0.46
v/c Ratio	1.10	0.85	0.66	0.57	0.61	1.15	0.08	1.19	0.91	0.32
Control Delay	124.5	42.5	74.2	30.8	70.5	119.9	1.9	149.4	50.6	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	124.5	42.5	74.2	30.8	70.5	119.9	1.9	149.4	50.6	3.9
LOS	F	D	E	C	E	F	A	F	D	A
Approach Delay		66.5		36.8		111.1			71.3	
Approach LOS		E		D		F			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.19	
Intersection Signal Delay: 74.8	Intersection LOS: E
Intersection Capacity Utilization 98.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	390	866	78	91	383	186	84	1031	52	480	973	259
Future Volume (veh/h)	390	866	78	91	383	186	84	1031	52	480	973	259
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	402	893	77	94	395	154	87	1063	39	495	1003	169
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	375	1038	90	138	687	264	136	945	552	428	1152	707
Arrive On Green	0.13	0.33	0.33	0.09	0.28	0.28	0.08	0.28	0.28	0.14	0.34	0.34
Sat Flow, veh/h	2956	3186	275	1619	2414	929	1619	3420	1525	2956	3420	1524
Grp Volume(v), veh/h	402	479	491	94	278	271	87	1063	39	495	1003	169
Grp Sat Flow(s),veh/h/ln	1478	1710	1750	1619	1710	1633	1619	1710	1525	1478	1710	1524
Q Serve(g_s), s	14.0	29.0	29.0	6.2	15.4	15.7	5.7	30.5	1.8	16.0	30.4	7.4
Cycle Q Clear(g_c), s	14.0	29.0	29.0	6.2	15.4	15.7	5.7	30.5	1.8	16.0	30.4	7.4
Prop In Lane	1.00		0.16	1.00		0.57	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	375	557	570	138	487	465	136	945	552	428	1152	707
V/C Ratio(X)	1.07	0.86	0.86	0.68	0.57	0.58	0.64	1.13	0.07	1.16	0.87	0.24
Avail Cap(c_a), veh/h	375	697	713	147	635	606	147	945	552	428	1152	707
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.2	34.9	34.9	49.0	33.8	33.9	48.9	40.0	23.1	47.2	34.4	17.9
Incr Delay (d2), s/veh	67.2	8.9	8.7	8.8	0.4	0.4	5.7	70.2	0.1	93.4	7.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	12.8	13.0	2.8	6.2	6.0	2.4	21.1	0.6	11.1	12.8	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	115.4	43.8	43.6	57.8	34.2	34.3	54.6	110.1	23.1	140.6	41.8	18.0
LnGrp LOS	F	D	D	E	C	C	D	F	C	F	D	B
Approach Vol, veh/h		1372			643			1189			1667	
Approach Delay, s/veh		64.7			37.7			103.2			68.7	
Approach LOS		E			D			F			E	

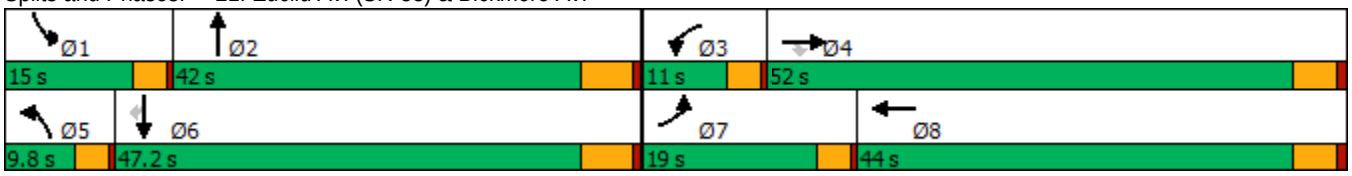
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	36.5	13.4	40.5	13.3	43.2	18.0	35.9
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	16.0	30.5	10.0	45.0	10.0	36.5	14.0	41.0
Max Q Clear Time (g_c+I1), s	18.0	32.5	8.2	31.0	7.7	32.4	16.0	17.7
Green Ext Time (p_c), s	0.0	0.0	0.0	4.8	0.0	2.4	0.0	1.9

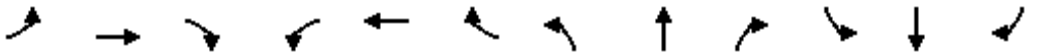
Intersection Summary	
HCM 6th Ctrl Delay	71.9
HCM 6th LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	188	125	117	60	32	46	763	128	847	175
Future Volume (vph)	188	125	117	60	32	46	763	128	847	175
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	19.0	52.0	52.0	11.0	44.0	9.8	42.0	15.0	47.2	47.2
Total Split (%)	15.8%	43.3%	43.3%	9.2%	36.7%	8.2%	35.0%	12.5%	39.3%	39.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	16.1	22.2	22.2	7.1	11.0	6.2	28.6	11.5	36.1	36.1
Actuated g/C Ratio	0.19	0.26	0.26	0.08	0.13	0.07	0.33	0.13	0.42	0.42
v/c Ratio	0.67	0.29	0.26	0.49	0.44	0.43	0.84	0.64	0.64	0.25
Control Delay	48.4	28.7	6.1	55.5	16.9	55.5	34.8	53.6	24.3	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.4	28.7	6.1	55.5	16.9	55.5	34.8	53.6	24.3	4.4
LOS	D	C	A	E	B	E	C	D	C	A
Approach Delay		31.1			30.2		35.8		24.5	
Approach LOS		C			C		D		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 85.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 29.8	Intersection LOS: C
Intersection Capacity Utilization 68.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	125	117	60	32	82	46	763	109	128	847	175
Future Volume (veh/h)	188	125	117	60	32	82	46	763	109	128	847	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	204	136	112	65	35	61	50	829	95	139	921	158
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	249	351	297	92	58	100	78	1028	118	173	1338	597
Arrive On Green	0.15	0.19	0.19	0.06	0.10	0.10	0.05	0.33	0.33	0.11	0.39	0.39
Sat Flow, veh/h	1619	1800	1525	1619	589	1026	1619	3092	354	1619	3420	1525
Grp Volume(v), veh/h	204	136	112	65	0	96	50	458	466	139	921	158
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1615	1619	1710	1736	1619	1710	1525
Q Serve(g_s), s	6.9	3.7	3.6	2.2	0.0	3.2	1.7	13.8	13.8	4.7	12.7	4.0
Cycle Q Clear(g_c), s	6.9	3.7	3.6	2.2	0.0	3.2	1.7	13.8	13.8	4.7	12.7	4.0
Prop In Lane	1.00		1.00	1.00		0.64	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	249	351	297	92	0	158	78	568	577	173	1338	597
V/C Ratio(X)	0.82	0.39	0.38	0.71	0.00	0.61	0.64	0.81	0.81	0.80	0.69	0.26
Avail Cap(c_a), veh/h	444	1496	1268	215	0	1114	180	1103	1120	329	2521	1125
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	19.8	19.8	26.2	0.0	24.5	26.4	17.2	17.2	24.7	14.3	11.7
Incr Delay (d2), s/veh	2.6	0.3	0.3	3.7	0.0	1.4	3.3	1.0	1.0	3.3	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	1.4	1.1	0.9	0.0	1.2	0.6	4.2	4.3	1.7	3.5	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.8	20.1	20.1	30.0	0.0	25.9	29.7	18.3	18.3	28.0	14.6	11.8
LnGrp LOS	C	C	C	C	A	C	C	B	B	C	B	B
Approach Vol, veh/h		452			161			974			1218	
Approach Delay, s/veh		22.6			27.5			18.8			15.8	
Approach LOS		C			C			B			B	

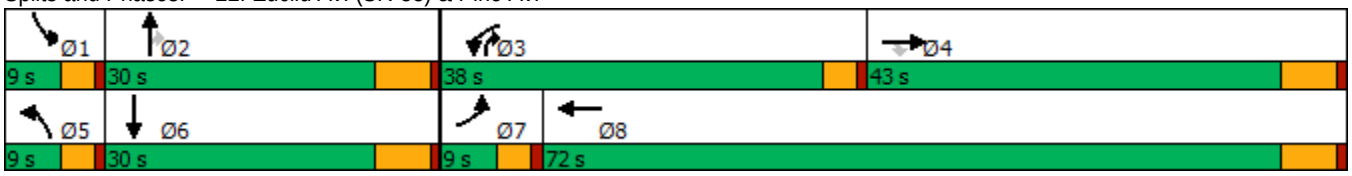
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	24.3	6.7	16.0	6.2	27.6	12.2	10.5
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	11.5	36.5	7.5	47.0	6.3	41.7	15.5	39.0
Max Q Clear Time (g_c+I1), s	6.7	15.8	4.2	5.7	3.7	14.7	8.9	5.2
Green Ext Time (p_c), s	0.1	3.0	0.0	0.6	0.0	3.9	0.1	0.3

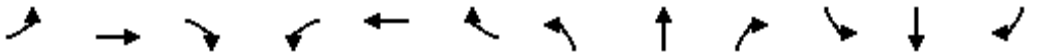
Intersection Summary	
HCM 6th Ctrl Delay	18.6
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	6	494	108	629	79	63	812	1267	148	898
Future Volume (vph)	6	494	108	629	79	63	812	1267	148	898
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	38.0	72.0	9.0	30.0	38.0	9.0	30.0
Total Split (%)	7.5%	35.8%	35.8%	31.7%	60.0%	7.5%	25.0%	31.7%	7.5%	25.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.0	35.6	35.6	34.0	71.8	5.0	24.0	64.0	5.0	24.0
Actuated g/C Ratio	0.04	0.30	0.30	0.29	0.61	0.04	0.20	0.54	0.04	0.20
v/c Ratio	0.09	0.93	0.20	0.76	0.15	0.94	1.20	1.47	2.22	1.33
Control Delay	58.3	66.3	3.6	45.7	6.8	152.1	143.9	243.5	623.1	197.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.3	66.3	3.6	45.7	6.8	152.1	143.9	243.5	623.1	197.1
LOS	E	E	A	D	A	F	F	F	F	F
Approach Delay		55.1			38.1		203.1			257.1
Approach LOS		E			D		F			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.22	
Intersection Signal Delay: 167.6	Intersection LOS: F
Intersection Capacity Utilization 131.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	494	108	629	79	74	63	812	1267	148	898	5
Future Volume (veh/h)	6	494	108	629	79	74	63	812	1267	148	898	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	6	504	0	642	81	74	64	829	876	151	916	5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	12	551		705	465	425	75	762	704	75	777	4
Arrive On Green	0.01	0.31	0.00	0.24	0.54	0.54	0.05	0.22	0.22	0.05	0.22	0.22
Sat Flow, veh/h	1619	1800	1525	2956	866	791	1619	3420	1525	1619	3488	19
Grp Volume(v), veh/h	6	504	0	642	0	155	64	829	876	151	449	472
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1658	1619	1710	1525	1619	1710	1797
Q Serve(g_s), s	0.4	29.0	0.0	22.7	0.0	5.1	4.2	24.0	24.0	5.0	24.0	24.0
Cycle Q Clear(g_c), s	0.4	29.0	0.0	22.7	0.0	5.1	4.2	24.0	24.0	5.0	24.0	24.0
Prop In Lane	1.00		1.00	1.00		0.48	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	12	551		705	0	890	75	762	704	75	381	401
V/C Ratio(X)	0.49	0.91		0.91	0.00	0.17	0.85	1.09	1.24	2.01	1.18	1.18
Avail Cap(c_a), veh/h	75	619		934	0	1016	75	762	704	75	381	401
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.2	36.0	0.0	39.9	0.0	12.7	51.0	41.8	29.0	51.3	41.8	41.8
Incr Delay (d2), s/veh	10.6	17.7	0.0	9.0	0.0	0.1	54.7	58.9	121.7	497.1	104.2	103.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	14.7	0.0	8.7	0.0	1.8	2.8	15.7	39.9	12.3	20.5	21.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.8	53.7	0.0	48.9	0.0	12.8	105.7	100.7	150.7	548.5	146.0	145.1
LnGrp LOS	E	D		D	A	B	F	F	F	F	F	F
Approach Vol, veh/h		510	A		797			1769			1072	
Approach Delay, s/veh		53.8			41.9			125.6			202.3	
Approach LOS		D			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	30.0	29.7	39.0	9.0	30.0	4.8	63.8
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.0	24.0	34.0	37.0	5.0	24.0	5.0	66.0
Max Q Clear Time (g_c+I1), s	7.0	26.0	24.7	31.0	6.2	26.0	2.4	7.1
Green Ext Time (p_c), s	0.0	0.0	0.9	1.9	0.0	0.0	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	120.5
HCM 6th LOS	F

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	47
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	77	544	24	7	354	7	14	98	11	19	88	52
Future Vol, veh/h	77	544	24	7	354	7	14	98	11	19	88	52
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	81	573	25	7	373	7	15	103	12	20	93	55
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	77.4	19.7	13	13.5
HCM LOS	F	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	12%	2%	12%
Vol Thru, %	80%	84%	96%	55%
Vol Right, %	9%	4%	2%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	123	645	368	159
LT Vol	14	77	7	19
Through Vol	98	544	354	88
RT Vol	11	24	7	52
Lane Flow Rate	129	679	387	167
Geometry Grp	1	1	1	1
Degree of Util (X)	0.257	1.064	0.644	0.32
Departure Headway (Hd)	7.458	5.643	6.204	7.171
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	484	638	585	504
Service Time	5.458	3.725	4.204	5.171
HCM Lane V/C Ratio	0.267	1.064	0.662	0.331
HCM Control Delay	13	77.4	19.7	13.5
HCM Lane LOS	B	F	C	B
HCM 95th-tile Q	1	18.6	4.6	1.4

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	19	287	5	2	79	10	6	89	8	23	70	15
Future Vol, veh/h	19	287	5	2	79	10	6	89	8	23	70	15
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	22	330	6	2	91	11	7	102	9	26	80	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.7	8.8	9.3	9.3
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	6%	2%	21%
Vol Thru, %	86%	92%	87%	65%
Vol Right, %	8%	2%	11%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	103	311	91	108
LT Vol	6	19	2	23
Through Vol	89	287	79	70
RT Vol	8	5	10	15
Lane Flow Rate	118	357	105	124
Geometry Grp	1	1	1	1
Degree of Util (X)	0.169	0.461	0.142	0.176
Departure Headway (Hd)	5.126	4.646	4.885	5.113
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	694	772	727	695
Service Time	3.205	2.702	2.96	3.191
HCM Lane V/C Ratio	0.17	0.462	0.144	0.178
HCM Control Delay	9.3	11.7	8.8	9.3
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.6	2.4	0.5	0.6

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	99	721	462	38	63	74
Future Vol, veh/h	99	721	462	38	63	74
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	105	767	491	40	67	79

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	531	0	-	0	1488	511
Stage 1	-	-	-	-	511	-
Stage 2	-	-	-	-	977	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1047	-	-	-	209	635
Stage 1	-	-	-	-	606	-
Stage 2	-	-	-	-	368	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1047	-	-	-	172	635
Mov Cap-2 Maneuver	-	-	-	-	172	-
Stage 1	-	-	-	-	500	-
Stage 2	-	-	-	-	368	-

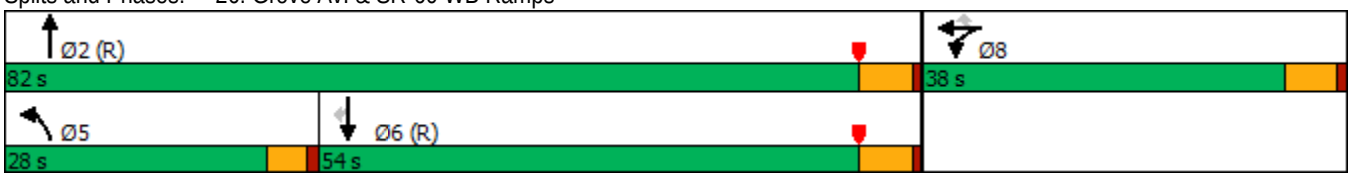
Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	30.3
HCM LOS			D

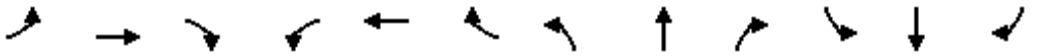
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1047	-	-	-	284
HCM Lane V/C Ratio	0.101	-	-	-	0.513
HCM Control Delay (s)	8.8	0	-	-	30.3
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.3	-	-	-	2.7

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	369	224	947	1072	716
Future Volume (vph)	0	369	224	947	1072	716
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	38.0	38.0	28.0	82.0	54.0	54.0
Total Split (%)	31.7%	31.7%	23.3%	68.3%	45.0%	45.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	27.0	27.0	19.1	81.4	57.7	57.7
Actuated g/C Ratio	0.22	0.22	0.16	0.68	0.48	0.48
v/c Ratio	0.81	0.81	0.81	0.40	0.64	0.67
Control Delay	59.5	41.2	47.0	12.3	27.4	6.0
Queue Delay	3.2	0.0	0.0	0.6	0.0	0.0
Total Delay	62.7	41.2	47.0	12.8	27.4	6.0
LOS	E	D	D	B	C	A
Approach Delay	51.1			19.3	18.9	
Approach LOS	D			B	B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 25.1	Intersection LOS: C
Intersection Capacity Utilization 95.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	316	0	369	224	947	0	0	1072	716
Future Volume (veh/h)	0	0	0	316	0	369	224	947	0	0	1072	716
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				329	0	204	233	986	0	0	1117	571
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				375	0	334	257	2513	0	0	1861	812
Arrive On Green				0.21	0.00	0.21	0.28	1.00	0.00	0.00	0.52	0.52
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1575
Grp Volume(v), veh/h				329	0	204	233	986	0	0	1117	571
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1575
Q Serve(g_s), s				21.1	0.0	13.8	14.9	0.0	0.0	0.0	26.0	33.0
Cycle Q Clear(g_c), s				21.1	0.0	13.8	14.9	0.0	0.0	0.0	26.0	33.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				375	0	334	257	2513	0	0	1861	812
V/C Ratio(X)				0.88	0.00	0.61	0.91	0.39	0.00	0.00	0.60	0.70
Avail Cap(c_a), veh/h				486	0	432	353	2513	0	0	1861	812
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				46.1	0.0	43.2	42.2	0.0	0.0	0.0	20.4	22.1
Incr Delay (d2), s/veh				13.6	0.0	1.8	2.2	0.0	0.0	0.0	1.4	5.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				10.6	0.0	5.5	5.6	0.0	0.0	0.0	10.5	12.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				59.7	0.0	45.0	44.3	0.0	0.0	0.0	21.8	27.1
LnGrp LOS				E	A	D	D	A	A	A	C	C
Approach Vol, veh/h					533			1219			1688	
Approach Delay, s/veh					54.1			8.5			23.6	
Approach LOS					D			A			C	

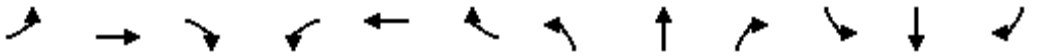
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		89.3			21.7	67.7		30.7				
Change Period (Y+Rc), s		5.8			4.6	5.8		5.8				
Max Green Setting (Gmax), s		76.2			23.4	48.2		32.2				
Max Q Clear Time (g_c+I1), s		2.0			16.9	35.0		23.1				
Green Ext Time (p_c), s		8.0			0.2	7.7		1.7				

Intersection Summary		
HCM 6th Ctrl Delay	23.0	
HCM 6th LOS	C	

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	362	714	470	918
Future Volume (vph)	0	362	714	470	918
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	38.0	38.0	44.0	38.0	82.0
Total Split (%)	31.7%	31.7%	36.7%	31.7%	68.3%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	32.2	32.2	38.2	33.4	76.2
Actuated g/C Ratio	0.27	0.27	0.32	0.28	0.64
v/c Ratio	1.01	0.73	1.00	1.01	0.43
Control Delay	88.5	33.8	66.0	93.6	8.4
Queue Delay	0.0	0.0	0.0	7.1	0.2
Total Delay	88.5	33.8	66.0	100.7	8.6
LOS	F	C	E	F	A
Approach Delay	64.3		66.0		39.8
Approach LOS	E		E		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 54.4	Intersection LOS: D
Intersection Capacity Utilization 95.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	457	0	362	0	0	0	0	714	339	470	918	0
Future Volume (veh/h)	457	0	362	0	0	0	0	714	339	470	918	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	491	0	302				0	768	282	505	987	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	486	0	432				0	816	299	504	2292	0
Arrive On Green	0.27	0.00	0.27				0.00	0.32	0.32	0.56	1.00	0.00
Sat Flow, veh/h	1810	0	1610				0	2658	941	1810	3705	0
Grp Volume(v), veh/h	491	0	302				0	541	509	505	987	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1699	1810	1805	0
Q Serve(g_s), s	32.2	0.0	20.3				0.0	35.0	35.0	33.4	0.0	0.0
Cycle Q Clear(g_c), s	32.2	0.0	20.3				0.0	35.0	35.0	33.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.55	1.00		0.00
Lane Grp Cap(c), veh/h	486	0	432				0	575	541	504	2292	0
V/C Ratio(X)	1.01	0.00	0.70				0.00	0.94	0.94	1.00	0.43	0.00
Avail Cap(c_a), veh/h	486	0	432				0	575	541	504	2292	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.74	0.74	0.72	0.72	0.00
Uniform Delay (d), s/veh	43.9	0.0	39.5				0.0	39.8	39.8	26.6	0.0	0.0
Incr Delay (d2), s/veh	43.7	0.0	4.9				0.0	20.8	21.8	34.7	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.7	0.0	8.3				0.0	18.1	17.2	13.6	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.6	0.0	44.5				0.0	60.6	61.6	61.3	0.4	0.0
LnGrp LOS	F	A	D				A	E	E	F	A	A
Approach Vol, veh/h		793						1050			1492	
Approach Delay, s/veh		71.2						61.1			21.0	
Approach LOS		E						E			C	

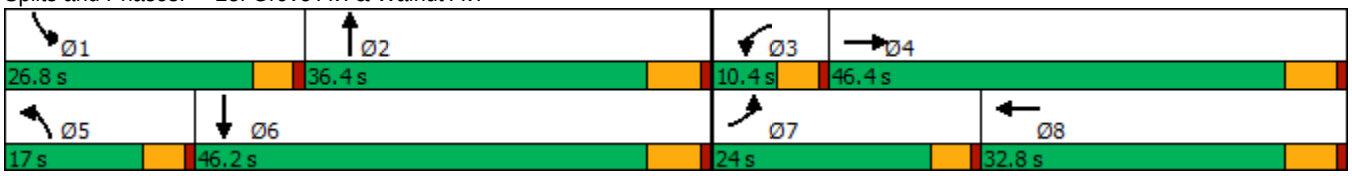
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	38.0	44.0		38.0		82.0						
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8						
Max Green Setting (Gmax), s	33.4	38.2		32.2		76.2						
Max Q Clear Time (g_c+I1), s	35.4	37.0		34.2		2.0						
Green Ext Time (p_c), s	0.0	0.7		0.0		8.0						

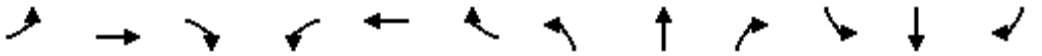
Intersection Summary												
HCM 6th Ctrl Delay			45.6									
HCM 6th LOS			D									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	164	319	19	172	90	638	189	756
Future Volume (vph)	164	319	19	172	90	638	189	756
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	24.0	46.4	10.4	32.8	17.0	36.4	26.8	46.2
Total Split (%)	20.0%	38.7%	8.7%	27.3%	14.2%	30.3%	22.3%	38.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	14.2	29.1	5.5	13.8	9.6	33.5	15.8	42.2
Actuated g/C Ratio	0.14	0.30	0.06	0.14	0.10	0.34	0.16	0.43
v/c Ratio	0.73	0.42	0.22	0.57	0.60	0.60	0.76	0.68
Control Delay	61.1	28.1	56.2	26.2	61.9	32.1	60.5	28.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.1	28.1	56.2	26.2	61.9	32.1	60.5	28.1
LOS	E	C	E	C	E	C	E	C
Approach Delay		37.6		27.9		35.6		33.6
Approach LOS		D		C		D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 98.5	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 34.3	Intersection LOS: C
Intersection Capacity Utilization 71.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	319	87	19	172	136	90	638	27	189	756	186
Future Volume (veh/h)	164	319	87	19	172	136	90	638	27	189	756	186
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	171	332	76	20	179	107	94	665	18	197	788	126
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	203	635	144	35	263	149	117	1282	35	230	1319	211
Arrive On Green	0.13	0.23	0.23	0.02	0.13	0.13	0.07	0.38	0.38	0.14	0.45	0.45
Sat Flow, veh/h	1619	2771	626	1619	2090	1182	1619	3401	92	1619	2953	472
Grp Volume(v), veh/h	171	203	205	20	145	141	94	334	349	197	456	458
Grp Sat Flow(s),veh/h/ln	1619	1710	1687	1619	1710	1562	1619	1710	1783	1619	1710	1715
Q Serve(g_s), s	9.3	9.4	9.6	1.1	7.3	7.9	5.2	13.7	13.7	10.8	18.2	18.2
Cycle Q Clear(g_c), s	9.3	9.4	9.6	1.1	7.3	7.9	5.2	13.7	13.7	10.8	18.2	18.2
Prop In Lane	1.00		0.37	1.00		0.76	1.00		0.05	1.00		0.28
Lane Grp Cap(c), veh/h	203	392	387	35	216	197	117	645	672	230	764	766
V/C Ratio(X)	0.84	0.52	0.53	0.57	0.67	0.72	0.80	0.52	0.52	0.86	0.60	0.60
Avail Cap(c_a), veh/h	347	768	757	104	510	466	222	645	672	397	764	766
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.7	30.5	30.6	43.8	37.7	38.0	41.3	21.8	21.8	37.9	18.9	18.9
Incr Delay (d2), s/veh	3.7	1.1	1.1	5.2	3.6	4.9	4.8	3.0	2.8	3.6	3.4	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	3.8	3.8	0.5	3.1	3.1	2.1	5.5	5.8	4.3	7.2	7.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.4	31.5	31.7	49.0	41.3	42.8	46.1	24.8	24.7	41.5	22.3	22.3
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		579			306			777			1111	
Approach Delay, s/veh		34.8			42.5			27.3			25.7	
Approach LOS		C			D			C			C	

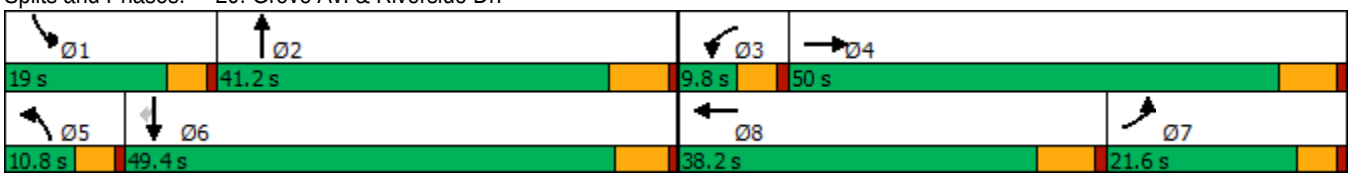
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	39.9	6.6	26.5	11.1	46.2	15.9	17.2
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	22.2	30.6	5.8	40.6	12.4	40.4	19.4	27.0
Max Q Clear Time (g_c+I1), s	12.8	15.7	3.1	11.6	7.2	20.2	11.3	9.9
Green Ext Time (p_c), s	0.2	3.3	0.0	2.2	0.0	5.3	0.1	1.3

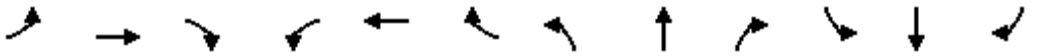
Intersection Summary	
HCM 6th Ctrl Delay	29.9
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	180	636	43	597	24	430	169	382	189
Future Volume (vph)	180	636	43	597	24	430	169	382	189
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	21.6	50.0	9.8	38.2	10.8	41.2	19.0	49.4	49.4
Total Split (%)	18.0%	41.7%	8.2%	31.8%	9.0%	34.3%	15.8%	41.2%	41.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	17.4	43.9	5.2	29.6	5.8	35.0	14.1	47.8	47.8
Actuated g/C Ratio	0.15	0.37	0.04	0.25	0.05	0.30	0.12	0.41	0.41
v/c Ratio	0.79	1.03	0.64	0.87	0.32	1.00	0.91	0.54	0.27
Control Delay	72.9	79.0	94.7	53.5	65.8	81.5	97.9	31.9	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.9	79.0	94.7	53.5	65.8	81.5	97.9	31.9	4.6
LOS	E	E	F	D	E	F	F	C	A
Approach Delay		77.7		55.8		80.8		40.0	
Approach LOS		E		E		F		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.7	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 62.8	Intersection LOS: E
Intersection Capacity Utilization 98.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	636	21	43	597	115	24	430	79	169	382	189
Future Volume (veh/h)	180	636	21	43	597	115	24	430	79	169	382	189
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	188	662	21	45	622	74	25	448	65	176	398	140
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	258	639	20	56	708	84	38	452	66	196	705	598
Arrive On Green	0.16	0.37	0.37	0.03	0.23	0.23	0.02	0.29	0.29	0.12	0.39	0.39
Sat Flow, veh/h	1619	1734	55	1619	3078	366	1619	1537	223	1619	1800	1525
Grp Volume(v), veh/h	188	0	683	45	345	351	25	0	513	176	398	140
Grp Sat Flow(s),veh/h/ln	1619	0	1789	1619	1710	1734	1619	0	1760	1619	1800	1525
Q Serve(g_s), s	13.1	0.0	43.8	3.3	23.1	23.2	1.8	0.0	34.5	12.7	20.5	4.1
Cycle Q Clear(g_c), s	13.1	0.0	43.8	3.3	23.1	23.2	1.8	0.0	34.5	12.7	20.5	4.1
Prop In Lane	1.00		0.03	1.00		0.21	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	258	0	659	56	393	399	38	0	518	196	705	598
V/C Ratio(X)	0.73	0.00	1.04	0.81	0.88	0.88	0.65	0.00	0.99	0.90	0.56	0.23
Avail Cap(c_a), veh/h	258	0	659	71	460	467	84	0	518	196	705	598
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.5	0.0	37.5	57.0	44.2	44.2	57.6	0.0	41.8	51.5	28.2	7.8
Incr Delay (d2), s/veh	8.8	0.0	44.8	32.6	15.5	15.7	6.8	0.0	37.2	36.4	3.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	26.0	1.8	11.1	11.3	0.8	0.0	19.5	7.0	9.1	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.3	0.0	82.4	89.6	59.7	59.9	64.4	0.0	79.0	87.9	31.5	8.7
LnGrp LOS	E	A	F	F	E	E	E	A	E	F	C	A
Approach Vol, veh/h		871			741			538			714	
Approach Delay, s/veh		76.7			61.6			78.3			40.9	
Approach LOS		E			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	41.2	8.7	50.0	7.4	52.8	25.1	33.5
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	14.4	35.0	5.2	43.8	6.2	* 44	17.0	* 32
Max Q Clear Time (g_c+I1), s	14.7	36.5	5.3	45.8	3.8	22.5	15.1	25.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.6	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	64.2
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	40.5
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	83	198	28	10	43	42	39	443	21	39	378	24
Future Vol, veh/h	83	198	28	10	43	42	39	443	21	39	378	24
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	86	206	29	10	45	44	41	461	22	41	394	25
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	23.8	13.7	56.8	39.3
HCM LOS	C	B	F	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	27%	11%	9%
Vol Thru, %	88%	64%	45%	86%
Vol Right, %	4%	9%	44%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	503	309	95	441
LT Vol	39	83	10	39
Through Vol	443	198	43	378
RT Vol	21	28	42	24
Lane Flow Rate	524	322	99	459
Geometry Grp	1	1	1	1
Degree of Util (X)	0.967	0.661	0.225	0.865
Departure Headway (Hd)	6.646	7.398	8.175	6.777
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	545	486	437	533
Service Time	4.702	5.46	6.267	4.836
HCM Lane V/C Ratio	0.961	0.663	0.227	0.861
HCM Control Delay	56.8	23.8	13.7	39.3
HCM Lane LOS	F	C	B	E
HCM 95th-tile Q	12.9	4.7	0.9	9.4

Intersection	
Intersection Delay, s/veh	32.1
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	108	155	95	2	50	41	21	374	34	58	280	59
Future Vol, veh/h	108	155	95	2	50	41	21	374	34	58	280	59
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	116	167	102	2	54	44	23	402	37	62	301	63
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	28.4	13.4	38.9	32.5
HCM LOS	D	B	E	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	30%	2%	15%
Vol Thru, %	87%	43%	54%	71%
Vol Right, %	8%	27%	44%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	429	358	93	397
LT Vol	21	108	2	58
Through Vol	374	155	50	280
RT Vol	34	95	41	59
Lane Flow Rate	461	385	100	427
Geometry Grp	1	1	1	1
Degree of Util (X)	0.863	0.751	0.222	0.806
Departure Headway (Hd)	6.738	7.026	8.004	6.796
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	535	516	446	534
Service Time	4.796	5.084	6.093	4.853
HCM Lane V/C Ratio	0.862	0.746	0.224	0.8
HCM Control Delay	38.9	28.4	13.4	32.5
HCM Lane LOS	E	D	B	D
HCM 95th-tile Q	9.3	6.4	0.8	7.7

Intersection	
Intersection Delay, s/veh	243.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	484	23	81	300	56	52	326	183	144	222	24
Future Vol, veh/h	48	484	23	81	300	56	52	326	183	144	222	24
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	52	520	25	87	323	60	56	351	197	155	239	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	311.5	176.5	305.7	134.4
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	9%	19%	37%
Vol Thru, %	58%	87%	69%	57%
Vol Right, %	33%	4%	13%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	561	555	437	390
LT Vol	52	48	81	144
Through Vol	326	484	300	222
RT Vol	183	23	56	24
Lane Flow Rate	603	597	470	419
Geometry Grp	1	1	1	1
Degree of Util (X)	1.578	1.59	1.247	1.122
Departure Headway (Hd)	12.353	12.579	13.815	14.388
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	302	292	268	256
Service Time	10.353	10.579	11.815	12.388
HCM Lane V/C Ratio	1.997	2.045	1.754	1.637
HCM Control Delay	305.7	311.5	176.5	134.4
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	27.4	27.3	15.8	12.3

Intersection	
Int Delay, s/veh	1020.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	156	93	76	6	19	38	15	411	5	23	249	51
Future Vol, veh/h	156	93	76	6	19	38	15	411	5	23	249	51
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	25	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	173	103	84	7	21	42	17	1644	6	26	277	57

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2071	2042	306	2132	2067	1647	334	0	0	1650	0	0
Stage 1	358	358	-	1681	1681	-	-	-	-	-	-	-
Stage 2	1713	1684	-	451	386	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 40	~ 57	739	36	55	124	1237	-	-	397	-	-
Stage 1	664	631	-	121	152	-	-	-	-	-	-	-
Stage 2	~ 116	152	-	592	614	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 13	~ 44	739	-	42	124	1237	-	-	397	-	-
Mov Cap-2 Maneuver	~ 13	~ 44	-	-	42	-	-	-	-	-	-	-
Stage 1	554	580	-	101	127	-	-	-	-	-	-	-
Stage 2	~ 53	127	-	396	564	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, $	6939.9		0.1	1
HCM LOS	F	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1237	-	-	23	-	397	-	-
HCM Lane V/C Ratio	0.013	-	-	15.7	-	0.064	-	-
HCM Control Delay (s)	8	0	-	$ 6939.9	-	14.7	0	-
HCM Lane LOS	A	A	-	F	-	B	A	-
HCM 95th %tile Q(veh)	0	-	-	45.3	-	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	137.7
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	199	594	391	232	226	105
Future Vol, veh/h	199	594	391	232	226	105
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	207	619	407	242	235	109
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	225.1	86.6	24.7
HCM LOS	F	F	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	0%	68%
Vol Thru, %	75%	63%	0%
Vol Right, %	0%	37%	32%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	793	623	331
LT Vol	199	0	226
Through Vol	594	391	0
RT Vol	0	232	105
Lane Flow Rate	826	649	345
Geometry Grp	1	1	1
Degree of Util (X)	1.436	1.079	0.665
Departure Headway (Hd)	6.468	6.584	7.697
Convergence, Y/N	Yes	Yes	Yes
Cap	570	558	472
Service Time	4.468	4.584	5.697
HCM Lane V/C Ratio	1.449	1.163	0.731
HCM Control Delay	225.1	86.6	24.7
HCM Lane LOS	F	F	C
HCM 95th-tile Q	38.2	17.8	4.8

Intersection	
Int Delay, s/veh	13.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	23	773	1	16	408	33	3	22	55	72	15	11
Future Vol, veh/h	23	773	1	16	408	33	3	22	55	72	15	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	24	814	1	17	429	35	3	23	58	76	16	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	464	0	0	815	0	0	1358	1361	815	1384	1344	447
Stage 1	-	-	-	-	-	-	863	863	-	481	481	-
Stage 2	-	-	-	-	-	-	495	498	-	903	863	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1108	-	-	821	-	-	127	150	381	122	153	616
Stage 1	-	-	-	-	-	-	352	374	-	570	557	-
Stage 2	-	-	-	-	-	-	560	548	-	335	374	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1108	-	-	821	-	-	108	140	381	86	143	616
Mov Cap-2 Maneuver	-	-	-	-	-	-	108	140	-	86	143	-
Stage 1	-	-	-	-	-	-	338	359	-	547	541	-
Stage 2	-	-	-	-	-	-	519	533	-	255	359	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	27.5	169.6
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	243	1108	-	-	821	-	-	102
HCM Lane V/C Ratio	0.347	0.022	-	-	0.021	-	-	1.011
HCM Control Delay (s)	27.5	8.3	0	-	9.5	0	-	169.6
HCM Lane LOS	D	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	1.5	0.1	-	-	0.1	-	-	6.3

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	80	0	0	60	34	0	0	0	23	0	3
Future Vol, veh/h	44	80	0	0	60	34	0	0	0	23	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16965	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	48	87	0	0	65	37	0	0	0	25	0	3

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	102	0	-	-	-	0			267	267	84
Stage 1	-	-	-	-	-	-			84	84	-
Stage 2	-	-	-	-	-	-			183	183	-
Critical Hdwy	4.1	-	-	-	-	-			6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-			5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.4	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-			3.5	4	3.3
Pot Cap-1 Maneuver	1503	-	0	0	-	-			727	642	981
Stage 1	-	-	0	0	-	-			944	829	-
Stage 2	-	-	0	0	-	-			853	752	-
Platoon blocked, %		-			-	-					
Mov Cap-1 Maneuver	1503	-	-	-	-	-			702	0	981
Mov Cap-2 Maneuver	-	-	-	-	-	-			702	0	-
Stage 1	-	-	-	-	-	-			912	0	-
Stage 2	-	-	-	-	-	-			853	0	-

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1503	-	-	-	726
HCM Lane V/C Ratio	0.032	-	-	-	0.039
HCM Control Delay (s)	7.5	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑			✣				
Traffic Vol, veh/h	0	697	124	95	505	0	101	0	139	0	0	0
Future Vol, veh/h	0	697	124	95	505	0	101	0	139	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	25	91	91	91	91	91	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	766	136	104	555	0	111	0	153	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	902	0	0	1529	1529	766
Stage 1	-	-	-	-	-	-	766	766	-
Stage 2	-	-	-	-	-	-	763	763	-
Critical Hdwy	-	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	762	-	0	130	118	406
Stage 1	0	-	-	-	-	0	462	415	-
Stage 2	0	-	-	-	-	0	464	416	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	762	-	-	112	0	406
Mov Cap-2 Maneuver	-	-	-	-	-	-	247	0	-
Stage 1	-	-	-	-	-	-	462	0	-
Stage 2	-	-	-	-	-	-	401	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	52.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	319	-	-	762	-
HCM Lane V/C Ratio	0.827	-	-	0.137	-
HCM Control Delay (s)	52.9	-	-	10.5	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	7.1	-	-	0.5	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	817	19	11	559	0	41	0	20	0	0	0
Future Vol, veh/h	0	817	19	11	559	0	41	0	20	0	0	0
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	928	22	13	635	0	47	0	23	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	951	0	0	1601	1601	476
Stage 1	-	-	-	-	-	-	940	940	-
Stage 2	-	-	-	-	-	-	661	661	-
Critical Hdwy	-	-	-	4.1	-	-	6.6	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	730	-	0	108	107	541
Stage 1	0	-	-	-	-	0	345	345	-
Stage 2	0	-	-	-	-	0	517	463	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	729	-	-	106	0	540
Mov Cap-2 Maneuver	-	-	-	-	-	-	234	0	-
Stage 1	-	-	-	-	-	-	345	0	-
Stage 2	-	-	-	-	-	-	508	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	21.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	287	-	-	729	-
HCM Lane V/C Ratio	0.242	-	-	0.017	-
HCM Control Delay (s)	21.5	-	-	10	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	836	1	56	512	0	58	0	67	0	0	0
Future Vol, veh/h	0	836	1	56	512	0	58	0	67	0	0	0
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	200	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	929	1	62	569	0	64	0	74	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	931	0	0	1624	-	466
Stage 1	-	-	-	-	-	-	931	-	-
Stage 2	-	-	-	-	-	-	693	-	-
Critical Hdwy	-	-	-	4.1	-	-	6.6	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	-	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	-	3.3
Pot Cap-1 Maneuver	0	-	-	743	-	0	104	0	549
Stage 1	0	-	-	-	-	0	349	0	-
Stage 2	0	-	-	-	-	0	500	0	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	742	-	-	95	0	548
Mov Cap-2 Maneuver	-	-	-	-	-	-	223	0	-
Stage 1	-	-	-	-	-	-	349	0	-
Stage 2	-	-	-	-	-	-	458	0	-

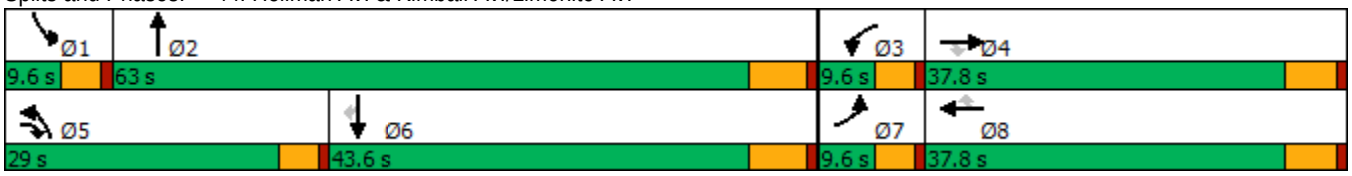
Approach	EB	WB	NB
HCM Control Delay, s	0	1	19.6
HCM LOS			C

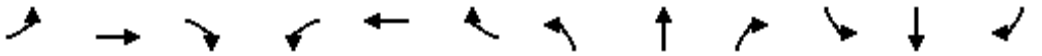
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	223	548	-	-	742	-
HCM Lane V/C Ratio	0.289	0.136	-	-	0.084	-
HCM Control Delay (s)	27.6	12.6	-	-	10.3	-
HCM Lane LOS	D	B	-	-	B	-
HCM 95th %tile Q(veh)	1.2	0.5	-	-	0.3	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	26	4	841	6	9	289	75	65	129	
Future Volume (vph)	26	4	841	6	9	289	75	65	129	
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	NA	Perm	
Protected Phases	7	4	5	3	8	5	2	6		1
Permitted Phases			4						6	
Detector Phase	7	4	5	3	8	5	2	6	6	
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	10.0	5.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	9.6	43.2	43.2	43.2	9.6
Total Split (s)	9.6	37.8	29.0	9.6	37.8	29.0	63.0	43.6	43.6	9.6
Total Split (%)	8.0%	31.5%	24.2%	8.0%	31.5%	24.2%	52.5%	36.3%	36.3%	8%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	5.2	5.2	5.2	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	4.6	6.2	6.2	6.2	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	None	None	Max	Max	Min	Min	None
Act Effct Green (s)	6.5	13.5	34.0	5.3	13.5	26.0	66.2	30.8	30.8	
Actuated g/C Ratio	0.08	0.17	0.44	0.07	0.17	0.34	0.85	0.40	0.40	
v/c Ratio	0.20	0.01	0.78	0.03	0.02	0.56	0.03	0.05	0.19	
Control Delay	44.7	30.5	7.1	44.7	30.1	31.3	5.6	19.7	4.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	44.7	30.5	7.1	44.7	30.1	31.3	5.6	19.7	4.4	
LOS	D	C	A	D	C	C	A	B	A	
Approach Delay		8.3			35.9		25.9	9.5		
Approach LOS		A			D		C	A		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 77.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 13.2	Intersection LOS: B
Intersection Capacity Utilization 80.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	4	841	6	9	0	289	75	2	0	65	129
Future Volume (veh/h)	26	4	841	6	9	0	289	75	2	0	65	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	27	4	885	6	9	0	304	79	2	0	68	136
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	42	542	810	23	968	432	372	1823	46	2	895	399
Arrive On Green	0.03	0.30	0.30	0.01	0.28	0.00	0.23	0.53	0.53	0.00	0.26	0.26
Sat Flow, veh/h	1619	1800	1525	2956	3420	1525	1619	3409	86	1619	3420	1525
Grp Volume(v), veh/h	27	4	885	6	9	0	304	39	42	0	68	136
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	1710	1525	1619	1710	1785	1619	1710	1525
Q Serve(g_s), s	1.8	0.2	32.0	0.2	0.2	0.0	18.9	1.2	1.2	0.0	1.6	7.7
Cycle Q Clear(g_c), s	1.8	0.2	32.0	0.2	0.2	0.0	18.9	1.2	1.2	0.0	1.6	7.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	42	542	810	23	968	432	372	914	954	2	895	399
V/C Ratio(X)	0.65	0.01	1.09	0.27	0.01	0.00	0.82	0.04	0.04	0.00	0.08	0.34
Avail Cap(c_a), veh/h	76	542	810	139	1030	460	372	914	954	76	1204	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	51.3	26.0	24.9	52.4	27.4	0.0	38.8	11.8	11.8	0.0	29.5	31.8
Incr Delay (d2), s/veh	6.0	0.0	59.9	2.3	0.0	0.0	17.8	0.1	0.1	0.0	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.1	31.2	0.1	0.1	0.0	8.9	0.4	0.4	0.0	0.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.3	26.0	84.8	54.7	27.4	0.0	56.6	11.9	11.9	0.0	29.6	32.3
LnGrp LOS	E	C	F	D	C	A	E	B	B	A	C	C
Approach Vol, veh/h		916			15			385			204	
Approach Delay, s/veh		83.7			38.3			47.2			31.4	
Approach LOS		F			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	63.0	5.4	37.8	29.0	34.0	7.3	35.9
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	5.0	56.8	5.0	32.0	24.4	37.4	5.0	32.0
Max Q Clear Time (g_c+I1), s	0.0	3.2	2.2	34.0	20.9	9.7	3.8	2.2
Green Ext Time (p_c), s	0.0	0.4	0.0	0.0	0.2	0.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	67.0
HCM 6th LOS	E

Intersection	
Intersection Delay, s/veh	241.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	875	24	44	522	8	45	5	148	59	6	2
Future Vol, veh/h	5	875	24	44	522	8	45	5	148	59	6	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	6	972	27	49	580	9	50	6	164	66	7	2
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

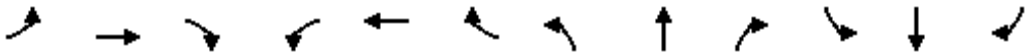
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	377.1	131.4	19.2	15.9
HCM LOS	F	F	C	C

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	23%	100%	0%	0%	100%	0%	88%
Vol Thru, %	3%	0%	100%	0%	0%	98%	9%
Vol Right, %	75%	0%	0%	100%	0%	2%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	198	5	875	24	44	530	67
LT Vol	45	5	0	0	44	0	59
Through Vol	5	0	875	0	0	522	6
RT Vol	148	0	0	24	0	8	2
Lane Flow Rate	220	6	972	27	49	589	74
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.46	0.011	1.81	0.044	0.107	1.207	0.186
Departure Headway (Hd)	9.041	7.533	7.019	6.3	9.273	8.744	10.782
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	400	478	525	572	389	418	335
Service Time	6.741	5.233	4.719	4	6.973	6.444	8.482
HCM Lane V/C Ratio	0.55	0.013	1.851	0.047	0.126	1.409	0.221
HCM Control Delay	19.2	10.3	389.3	9.3	13.1	141.2	15.9
HCM Lane LOS	C	B	F	A	B	F	C
HCM 95th-tile Q	2.4	0	57.9	0.1	0.4	20	0.7

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	6	284	451	547	1181
Future Volume (vph)	6	284	451	547	1181
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (%)	32.2%	32.2%	31.1%	67.8%	36.7%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	23.0	23.0	24.0	55.2	27.2
Actuated g/C Ratio	0.26	0.26	0.27	0.61	0.30
v/c Ratio	1.03	0.47	0.98	0.18	0.89
Control Delay	84.3	6.1	77.5	20.7	34.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	84.3	6.1	77.5	20.7	34.7
LOS	F	A	E	C	C
Approach Delay	54.2			46.4	34.7
Approach LOS	D			D	C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 42.4	Intersection LOS: D
Intersection Capacity Utilization 88.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	450	6	284	451	547	0	0	1181	489
Future Volume (veh/h)	0	0	0	450	6	284	451	547	0	0	1181	489
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				469	6	151	470	570	0	0	1230	374
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				457	6	411	512	3313	0	0	1451	439
Arrive On Green				0.26	0.26	0.26	0.57	1.00	0.00	0.00	0.29	0.29
Sat Flow, veh/h				1788	23	1610	1810	5358	0	0	5250	1508
Grp Volume(v), veh/h				475	0	151	470	570	0	0	1210	394
Grp Sat Flow(s),veh/h/ln				1811	0	1610	1810	1729	0	0	1634	1590
Q Serve(g_s), s				23.0	0.0	6.9	21.1	0.0	0.0	0.0	20.9	21.0
Cycle Q Clear(g_c), s				23.0	0.0	6.9	21.1	0.0	0.0	0.0	20.9	21.0
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.95
Lane Grp Cap(c), veh/h				463	0	411	512	3313	0	0	1427	463
V/C Ratio(X)				1.03	0.00	0.37	0.92	0.17	0.00	0.00	0.85	0.85
Avail Cap(c_a), veh/h				463	0	411	512	3313	0	0	1481	481
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.55	0.55	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.5	0.0	27.5	18.6	0.0	0.0	0.0	30.0	30.1
Incr Delay (d2), s/veh				48.8	0.0	1.2	13.4	0.1	0.0	0.0	6.4	17.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				15.6	0.0	6.7	6.7	0.0	0.0	0.0	8.4	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				82.3	0.0	28.7	31.9	0.1	0.0	0.0	36.4	47.7
LnGrp LOS				F	A	C	C	A	A	A	D	D
Approach Vol, veh/h					626			1040			1604	
Approach Delay, s/veh					69.4			14.5			39.2	
Approach LOS					E			B			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	63.3	29.0	31.3	32.0
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	55.2	23.0	24.0	* 27
Max Q Clear Time (g_c+I1), s	2.0	25.0	23.1	23.0
Green Ext Time (p_c), s	3.9	0.0	0.1	3.2

Intersection Summary	
HCM 6th Ctrl Delay	37.1
HCM 6th LOS	D

Notes

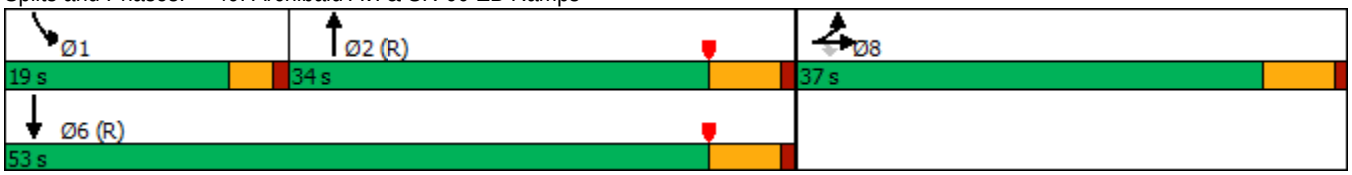
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

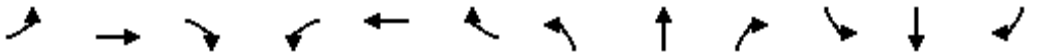
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	611	883	416	1216
Future Volume (vph)	0	611	883	416	1216
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (%)	41.1%	41.1%	37.8%	21.1%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	31.2	31.2	28.2	15.0	47.2
Actuated g/C Ratio	0.35	0.35	0.31	0.17	0.52
v/c Ratio	0.19	1.04	1.00dr	1.44	0.47
Control Delay	21.6	73.7	27.1	231.4	21.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.6	73.7	27.1	231.4	21.9
LOS	C	E	C	F	C
Approach Delay	65.5		27.1		75.2
Approach LOS	E		C		E

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.44	
Intersection Signal Delay: 54.6	Intersection LOS: D
Intersection Capacity Utilization 88.7%	ICU Level of Service E
Analysis Period (min) 15	

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	0	611	0	0	0	0	883	624	416	1216	0
Future Volume (veh/h)	114	0	611	0	0	0	0	883	624	416	1216	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	119	0	386				0	920	475	433	1267	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	485	0	431				0	1923	630	302	3129	0
Arrive On Green	0.27	0.00	0.27				0.00	0.39	0.39	0.06	0.20	0.00
Sat Flow, veh/h	1810	0	1610				0	5168	1606	1810	5358	0
Grp Volume(v), veh/h	119	0	386				0	920	475	433	1267	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1606	1810	1729	0
Q Serve(g_s), s	4.6	0.0	20.8				0.0	12.6	23.0	15.0	19.2	0.0
Cycle Q Clear(g_c), s	4.6	0.0	20.8				0.0	12.6	23.0	15.0	19.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	485	0	431				0	1923	630	302	3129	0
V/C Ratio(X)	0.25	0.00	0.90				0.00	0.48	0.75	1.44	0.40	0.00
Avail Cap(c_a), veh/h	627	0	558				0	1923	630	302	3129	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.49	0.49	0.34	0.34	0.00
Uniform Delay (d), s/veh	25.8	0.0	31.7				0.0	20.5	23.6	42.5	22.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	14.2				0.0	0.4	4.1	202.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	9.2				0.0	4.4	8.4	24.1	8.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.1	0.0	45.9				0.0	20.9	27.7	245.1	22.1	0.0
LnGrp LOS	C	A	D				A	C	C	F	C	A
Approach Vol, veh/h		505						1395			1700	
Approach Delay, s/veh		41.2						23.2			78.9	
Approach LOS		D						C			E	

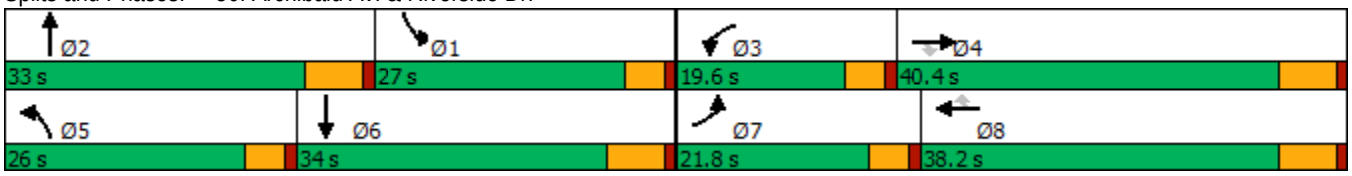
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	19.0	41.1				60.1		29.9				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	15.0	28.2				47.2		31.2				
Max Q Clear Time (g_c+I1), s	17.0	25.0				21.2		22.8				
Green Ext Time (p_c), s	0.0	2.3				9.1		1.3				

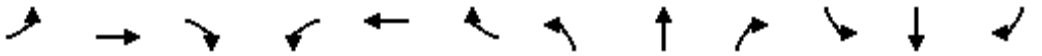
Intersection Summary			
HCM 6th Ctrl Delay			52.0
HCM 6th LOS			D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	241	673	376	161	480	125	308	735	307	988
Future Volume (vph)	241	673	376	161	480	125	308	735	307	988
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.8	40.4	40.4	19.6	38.2	38.2	26.0	33.0	27.0	34.0
Total Split (%)	18.2%	33.7%	33.7%	16.3%	31.8%	31.8%	21.7%	27.5%	22.5%	28.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	17.2	30.4	30.4	14.2	27.4	27.4	21.4	24.7	24.7	27.9
Actuated g/C Ratio	0.15	0.26	0.26	0.12	0.24	0.24	0.19	0.21	0.21	0.24
v/c Ratio	1.07	0.80	0.58	0.86	0.63	0.27	1.10	0.81	0.95	1.13
Control Delay	124.1	47.1	7.0	87.3	43.1	3.7	125.1	50.0	84.4	108.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	124.1	47.1	7.0	87.3	43.1	3.7	125.1	50.0	84.4	108.4
LOS	F	D	A	F	D	A	F	D	F	F
Approach Delay		49.8			45.9			71.0		103.7
Approach LOS		D			D			E		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 71.9	Intersection LOS: E
Intersection Capacity Utilization 94.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	241	673	376	161	480	125	308	735	61	307	988	264
Future Volume (veh/h)	241	673	376	161	480	125	308	735	61	307	988	264
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	256	716	243	171	511	74	328	782	56	327	1051	217
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	246	865	377	196	760	337	306	963	69	348	1001	206
Arrive On Green	0.15	0.25	0.25	0.12	0.22	0.22	0.19	0.21	0.21	0.21	0.25	0.25
Sat Flow, veh/h	1619	3420	1491	1619	3420	1519	1619	4676	333	1619	4075	840
Grp Volume(v), veh/h	256	716	243	171	511	74	328	547	291	327	845	423
Grp Sat Flow(s),veh/h/ln	1619	1710	1491	1619	1710	1519	1619	1638	1733	1619	1638	1639
Q Serve(g_s), s	17.2	22.4	16.5	11.7	15.5	2.6	21.4	18.0	18.1	22.5	27.8	27.8
Cycle Q Clear(g_c), s	17.2	22.4	16.5	11.7	15.5	2.6	21.4	18.0	18.1	22.5	27.8	27.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.51
Lane Grp Cap(c), veh/h	246	865	377	196	760	337	306	674	357	348	805	403
V/C Ratio(X)	1.04	0.83	0.64	0.87	0.67	0.22	1.07	0.81	0.82	0.94	1.05	1.05
Avail Cap(c_a), veh/h	246	1034	451	215	967	430	306	776	411	348	805	403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.0	39.9	37.7	48.8	40.2	12.2	45.9	42.8	42.9	43.7	42.7	42.7
Incr Delay (d2), s/veh	68.2	4.9	2.4	26.7	1.3	0.3	71.5	5.8	10.8	32.6	45.4	58.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	9.5	6.0	6.0	6.3	1.6	14.3	7.5	8.5	11.7	15.7	17.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	116.1	44.8	40.1	75.6	41.5	12.5	117.4	48.6	53.7	76.3	88.1	101.5
LnGrp LOS	F	D	D	E	D	B	F	D	D	E	F	F
Approach Vol, veh/h		1215			756			1166			1595	
Approach Delay, s/veh		58.9			46.4			69.2			89.2	
Approach LOS		E			D			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.5	29.5	18.3	34.8	26.0	34.0	21.8	31.3
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	22.4	* 27	15.0	34.2	21.4	27.8	17.2	32.0
Max Q Clear Time (g_c+I1), s	24.5	20.1	13.7	24.4	23.4	29.8	19.2	17.5
Green Ext Time (p_c), s	0.0	2.6	0.0	3.7	0.0	0.0	0.0	2.8

Intersection Summary	
HCM 6th Ctrl Delay	69.7
HCM 6th LOS	E

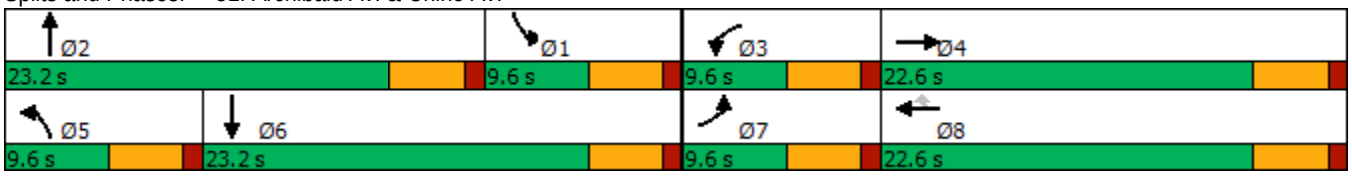
Notes

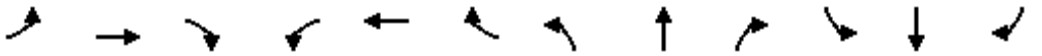
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	23	1	23	120	21	907	154	1215
Future Volume (vph)	23	1	23	120	21	907	154	1215
Turn Type	Prot	NA	Prot	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3		5	2	1	6
Permitted Phases				8				
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	9.6	22.6	9.6	22.6	9.6	23.2	9.6	23.2
Total Split (%)	14.8%	34.8%	14.8%	34.8%	14.8%	35.7%	14.8%	35.7%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	5.6	7.8	5.6	7.8	5.6	15.7	5.6	26.8
Actuated g/C Ratio	0.13	0.19	0.13	0.19	0.13	0.37	0.13	0.64
v/c Ratio	0.12	0.03	0.12	0.22	0.11	0.58	0.80	0.63
Control Delay	24.0	11.6	24.0	0.9	23.9	13.6	57.1	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	11.6	24.0	0.9	23.9	13.6	57.1	14.1
LOS	C	B	C	A	C	B	E	B
Approach Delay		21.1				13.8		18.9
Approach LOS		C				B		B

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 42	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 16.2	Intersection LOS: B
Intersection Capacity Utilization 59.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	1	6	23	0	120	21	907	44	154	1215	14
Future Volume (veh/h)	23	1	6	23	0	120	21	907	44	154	1215	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	26	1	5	26	0	49	23	1008	40	171	1350	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	50	19	95	50	131	111	45	1554	62	227	1498	17
Arrive On Green	0.03	0.07	0.07	0.03	0.00	0.07	0.03	0.32	0.32	0.14	0.43	0.43
Sat Flow, veh/h	1619	261	1304	1619	1800	1525	1619	4848	192	1619	3465	38
Grp Volume(v), veh/h	26	0	6	26	0	49	23	681	367	171	666	699
Grp Sat Flow(s),veh/h/ln	1619	0	1565	1619	1800	1525	1619	1638	1765	1619	1710	1793
Q Serve(g_s), s	0.7	0.0	0.2	0.7	0.0	0.8	0.6	7.5	7.5	4.3	15.3	15.3
Cycle Q Clear(g_c), s	0.7	0.0	0.2	0.7	0.0	0.8	0.6	7.5	7.5	4.3	15.3	15.3
Prop In Lane	1.00		0.83	1.00		1.00	1.00		0.11	1.00		0.02
Lane Grp Cap(c), veh/h	50	0	114	50	131	111	45	1050	565	227	739	775
V/C Ratio(X)	0.52	0.00	0.05	0.52	0.00	0.44	0.51	0.65	0.65	0.75	0.90	0.90
Avail Cap(c_a), veh/h	192	0	667	192	767	650	192	1443	777	227	753	790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.1	0.0	18.2	20.1	0.0	7.1	20.2	12.3	12.3	17.5	11.1	11.1
Incr Delay (d2), s/veh	7.9	0.0	0.2	7.9	0.0	2.8	8.5	0.7	1.3	13.4	13.8	13.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.1	0.3	0.0	0.5	0.3	1.8	2.0	2.0	6.0	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.1	0.0	18.4	28.1	0.0	9.8	28.7	13.0	13.6	30.8	25.0	24.5
LnGrp LOS	C	A	B	C	A	A	C	B	B	C	C	C
Approach Vol, veh/h		32			75			1071			1536	
Approach Delay, s/veh		26.3			16.2			13.5			25.4	
Approach LOS		C			B			B			C	

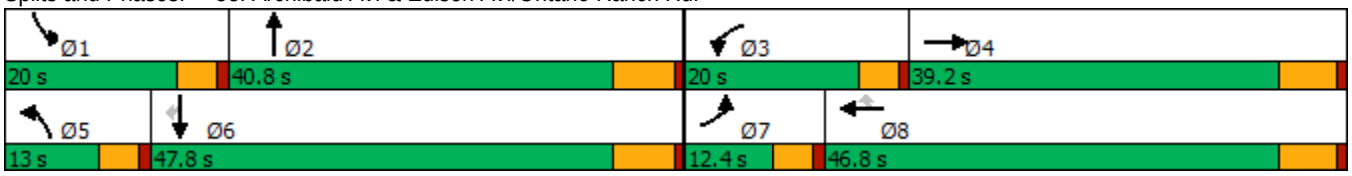
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	18.1	5.9	7.7	5.8	22.9	5.9	7.7
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	5.0	18.6	5.0	18.0	5.0	18.6	5.0	18.0
Max Q Clear Time (g_c+I1), s	6.3	9.5	2.7	2.2	2.6	17.3	2.7	2.8
Green Ext Time (p_c), s	0.0	3.9	0.0	0.0	0.0	0.9	0.0	0.1

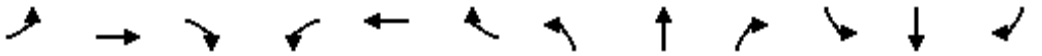
Intersection Summary	
HCM 6th Ctrl Delay	20.5
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	628	135	344	234	79	77	692	392	148	911	80
Future Volume (vph)	103	628	135	344	234	79	77	692	392	148	911	80
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	12.4	39.2		20.0	46.8	46.8	13.0	40.8		20.0	47.8	47.8
Total Split (%)	10.3%	32.7%		16.7%	39.0%	39.0%	10.8%	34.0%		16.7%	39.8%	39.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	7.2	25.8	105.2	15.2	33.8	33.8	7.9	28.5	105.2	13.3	36.7	36.7
Actuated g/C Ratio	0.07	0.25	1.00	0.14	0.32	0.32	0.08	0.27	1.00	0.13	0.35	0.35
v/c Ratio	0.52	0.77	0.09	0.83	0.42	0.14	0.65	0.77	0.27	0.75	0.79	0.13
Control Delay	60.9	44.7	0.1	63.8	31.9	0.5	76.8	42.4	0.4	69.5	37.8	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.9	44.7	0.1	63.8	31.9	0.5	76.8	42.4	0.4	69.5	37.8	0.4
LOS	E	D	A	E	C	A	E	D	A	E	D	A
Approach Delay		39.7			44.8			30.5			39.3	
Approach LOS		D			D			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 105.2	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 37.7	Intersection LOS: D
Intersection Capacity Utilization 79.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	628	135	344	234	79	77	692	392	148	911	80
Future Volume (veh/h)	103	628	135	344	234	79	77	692	392	148	911	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	106	647	0	355	241	47	79	713	0	153	939	60
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	157	802		415	579	491	98	962		182	1139	496
Arrive On Green	0.05	0.23	0.00	0.14	0.32	0.32	0.06	0.28	0.00	0.11	0.33	0.33
Sat Flow, veh/h	2956	3420	1525	2956	1800	1525	1619	3420	1525	1619	3420	1491
Grp Volume(v), veh/h	106	647	0	355	241	47	79	713	0	153	939	60
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1800	1525	1619	1710	1525	1619	1710	1491
Q Serve(g_s), s	3.3	16.9	0.0	11.1	9.9	2.0	4.6	17.9	0.0	8.8	23.9	2.6
Cycle Q Clear(g_c), s	3.3	16.9	0.0	11.1	9.9	2.0	4.6	17.9	0.0	8.8	23.9	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	157	802		415	579	491	98	962		182	1139	496
V/C Ratio(X)	0.67	0.81		0.86	0.42	0.10	0.80	0.74		0.84	0.82	0.12
Avail Cap(c_a), veh/h	244	1194		481	773	655	144	1241		264	1494	651
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.0	34.2	0.0	39.7	25.1	22.5	43.9	30.9	0.0	41.1	29.0	21.9
Incr Delay (d2), s/veh	1.9	2.6	0.0	11.3	0.5	0.1	11.3	1.8	0.0	10.4	3.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	6.8	0.0	4.4	4.0	0.7	2.0	6.9	0.0	3.8	9.2	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.8	36.7	0.0	51.0	25.6	22.5	55.2	32.6	0.0	51.5	32.0	22.0
LnGrp LOS	D	D		D	C	C	E	C		D	C	C
Approach Vol, veh/h		753	A		643			792	A		1152	
Approach Delay, s/veh		38.0			39.4			34.9			34.1	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.2	33.1	17.9	28.4	10.3	38.0	9.6	36.6
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	15.4	34.3	15.4	33.0	8.4	41.3	7.8	40.6
Max Q Clear Time (g_c+I1), s	10.8	19.9	13.1	18.9	6.6	25.9	5.3	11.9
Green Ext Time (p_c), s	0.1	3.6	0.2	3.3	0.0	5.3	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	36.2
HCM 6th LOS	D

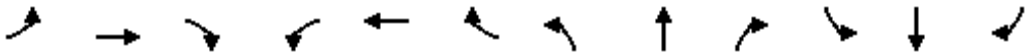
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	11	1149	1	10	1380
Future Volume (vph)	2	11	1149	1	10	1380
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.5	9.5	32.5	32.5	9.6	16.5
Total Split (s)	10.0	10.0	40.0	40.0	10.0	50.0
Total Split (%)	14.3%	14.3%	57.1%	57.1%	14.3%	71.4%
Yellow Time (s)	3.5	3.5	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	6.5	6.5	4.6	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max
Act Effct Green (s)	5.6	5.6	56.7	56.7	5.2	58.5
Actuated g/C Ratio	0.09	0.09	0.90	0.90	0.08	0.92
v/c Ratio	0.01	0.03	0.40	0.00	0.08	0.46
Control Delay	26.5	0.1	4.8	6.0	28.3	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	0.1	4.8	6.0	28.3	3.1
LOS	C	A	A	A	C	A
Approach Delay			4.8			3.3
Approach LOS			A			A

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 63.3	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.46	
Intersection Signal Delay: 4.0	Intersection LOS: A
Intersection Capacity Utilization 52.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	2	0	11	0	1149	1	10	1380	0
Future Volume (veh/h)	0	0	0	2	0	11	0	1149	1	10	1380	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1700	0	1800	0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h				2	0	3	0	1222	1	11	1468	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				21	0	18	0	2377	1059	23	2711	0
Arrive On Green				0.01	0.00	0.01	0.00	0.69	0.69	0.01	0.79	0.00
Sat Flow, veh/h				3141	0	2685	0	3510	1524	1619	3510	0
Grp Volume(v), veh/h				2	0	3	0	1222	1	11	1468	0
Grp Sat Flow(s),veh/h/ln				1570	0	1342	0	1710	1524	1619	1710	0
Q Serve(g_s), s				0.0	0.0	0.1	0.0	9.3	0.0	0.4	8.5	0.0
Cycle Q Clear(g_c), s				0.0	0.0	0.1	0.0	9.3	0.0	0.4	8.5	0.0
Prop In Lane				1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				21	0	18	0	2377	1059	23	2711	0
V/C Ratio(X)				0.10	0.00	0.17	0.00	0.51	0.00	0.48	0.54	0.00
Avail Cap(c_a), veh/h				315	0	269	0	2377	1059	159	2711	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				27.1	0.0	27.1	0.0	4.0	2.6	26.8	2.1	0.0
Incr Delay (d2), s/veh				1.9	0.0	4.3	0.0	0.8	0.0	5.8	0.8	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.0	0.0	0.0	0.0	0.9	0.0	0.2	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				29.0	0.0	31.4	0.0	4.8	2.6	32.6	2.8	0.0
LnGrp LOS				C	A	C	A	A	A	C	A	A
Approach Vol, veh/h					5			1223			1479	
Approach Delay, s/veh					30.4			4.8			3.1	
Approach LOS					C			A			A	

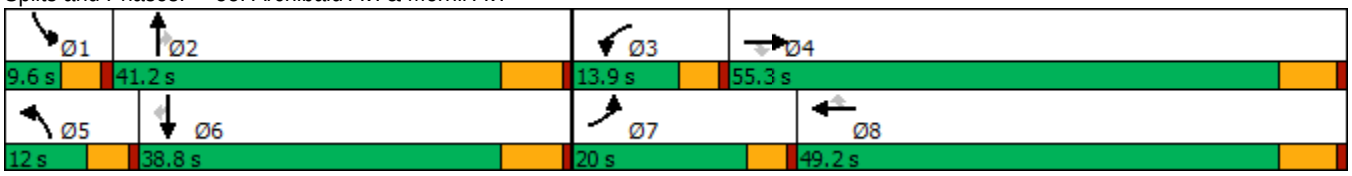
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	5.4	44.6				50.0		4.9				
Change Period (Y+Rc), s	4.6	6.5				6.5		4.5				
Max Green Setting (Gmax), s	5.4	33.5				43.5		5.5				
Max Q Clear Time (g_c+I1), s	2.4	11.3				10.5		2.1				
Green Ext Time (p_c), s	0.0	8.2				12.3		0.0				

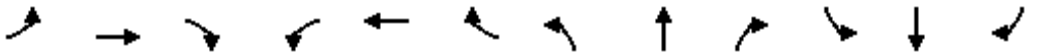
Intersection Summary		
HCM 6th Ctrl Delay		3.9
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	393	79	555	50	26	60	175	698	43	78	1072	232
Future Volume (vph)	393	79	555	50	26	60	175	698	43	78	1072	232
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	20.0	55.3	55.3	13.9	49.2	49.2	12.0	41.2	41.2	9.6	38.8	38.8
Total Split (%)	16.7%	46.1%	46.1%	11.6%	41.0%	41.0%	10.0%	34.3%	34.3%	8.0%	32.3%	32.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	16.4	32.1	32.1	7.4	24.9	24.9	7.6	38.5	38.5	5.2	33.3	33.3
Actuated g/C Ratio	0.16	0.32	0.32	0.07	0.25	0.25	0.08	0.38	0.38	0.05	0.33	0.33
v/c Ratio	1.54	0.14	0.91	0.44	0.06	0.12	1.48	0.55	0.07	0.53	0.97	0.39
Control Delay	292.5	24.2	39.2	61.1	27.3	0.5	287.3	31.0	0.2	65.2	57.5	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	292.5	24.2	39.2	61.1	27.3	0.5	287.3	31.0	0.2	65.2	57.5	14.1
LOS	F	C	D	E	C	A	F	C	A	E	E	B
Approach Delay		135.0			28.0			78.4			50.6	
Approach LOS		F			C			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 100.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.54	
Intersection Signal Delay: 82.1	Intersection LOS: F
Intersection Capacity Utilization 87.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	393	79	555	50	26	60	175	698	43	78	1072	232
Future Volume (veh/h)	393	79	555	50	26	60	175	698	43	78	1072	232
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	405	81	387	52	27	23	180	720	30	80	1105	181
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	277	512	434	65	276	234	133	1314	579	142	1197	534
Arrive On Green	0.17	0.28	0.28	0.04	0.15	0.15	0.08	0.38	0.38	0.05	0.35	0.35
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	1619	3420	1506	2956	3420	1525
Grp Volume(v), veh/h	405	81	387	52	27	23	180	720	30	80	1105	181
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1710	1506	1478	1710	1525
Q Serve(g_s), s	15.4	3.0	21.9	2.9	1.2	1.2	7.4	14.8	1.1	2.4	27.9	7.9
Cycle Q Clear(g_c), s	15.4	3.0	21.9	2.9	1.2	1.2	7.4	14.8	1.1	2.4	27.9	7.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	277	512	434	65	276	234	133	1314	579	142	1197	534
V/C Ratio(X)	1.46	0.16	0.89	0.79	0.10	0.10	1.35	0.55	0.05	0.56	0.92	0.34
Avail Cap(c_a), veh/h	277	982	832	167	860	728	133	1318	580	164	1227	547
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.3	24.2	30.9	42.8	32.7	32.7	41.3	21.6	17.4	41.9	28.1	21.6
Incr Delay (d2), s/veh	227.0	0.1	6.6	7.9	0.2	0.2	200.0	0.5	0.0	1.3	11.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.1	1.2	8.5	1.3	0.5	0.4	10.1	5.3	0.4	0.8	11.9	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	264.4	24.3	37.5	50.7	32.9	32.9	241.3	22.1	17.5	43.2	39.6	22.0
LnGrp LOS	F	C	D	D	C	C	F	C	B	D	D	C
Approach Vol, veh/h		873			102			930			1366	
Approach Delay, s/veh		141.5			42.0			64.4			37.4	
Approach LOS		F			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	41.1	8.2	31.8	12.0	38.0	20.0	20.0
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	34.7	9.3	49.1	7.4	32.3	15.4	43.0
Max Q Clear Time (g_c+I1), s	4.4	16.8	4.9	23.9	9.4	29.9	17.4	3.2
Green Ext Time (p_c), s	0.0	4.1	0.0	1.7	0.0	1.6	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	73.0
HCM 6th LOS	E

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	460	292	610	448	682	1000
Future Volume (vph)	460	292	610	448	682	1000
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	37.0	46.7	36.3	37.0	83.7
Total Split (%)	30.3%	30.8%	38.9%	30.3%	30.8%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min
Act Effct Green (s)	31.0	68.3	40.5	71.5	32.0	77.8
Actuated g/C Ratio	0.26	0.57	0.34	0.60	0.27	0.65
v/c Ratio	1.00	0.31	0.96	0.47	1.44	0.82
Control Delay	85.9	9.5	66.6	11.6	241.6	22.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.9	9.5	66.6	11.6	241.6	22.5
LOS	F	A	E	B	F	C
Approach Delay	56.2		43.3			111.4
Approach LOS	E		D			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.1	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.44	
Intersection Signal Delay: 78.9	Intersection LOS: E
Intersection Capacity Utilization 108.4%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	460	292	610	448	682	1000
Future Volume (veh/h)	460	292	610	448	682	1000
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	469	248	622	436	696	1020
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	469	848	651	958	484	1239
Arrive On Green	0.26	0.26	0.34	0.34	0.27	0.65
Sat Flow, veh/h	1810	1610	1900	1576	1810	1900
Grp Volume(v), veh/h	469	248	622	436	696	1020
Grp Sat Flow(s),veh/h/ln	1810	1610	1900	1576	1810	1900
Q Serve(g_s), s	31.0	10.3	38.3	18.2	32.0	48.2
Cycle Q Clear(g_c), s	31.0	10.3	38.3	18.2	32.0	48.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	469	848	651	958	484	1239
V/C Ratio(X)	1.00	0.29	0.96	0.46	1.44	0.82
Avail Cap(c_a), veh/h	469	848	658	963	484	1251
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.3	15.8	38.4	13.1	43.8	15.6
Incr Delay (d2), s/veh	41.5	0.1	24.5	0.4	208.3	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.6	3.5	21.1	11.0	41.4	18.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	85.8	15.9	62.9	13.5	252.1	19.9
LnGrp LOS	F	B	E	B	F	B
Approach Vol, veh/h	717		1058			1716
Approach Delay, s/veh	61.6		42.6			114.1
Approach LOS	E		D			F

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	37.0	46.3			83.3	36.3
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	32.0	41.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	34.0	40.3			50.2	33.0
Green Ext Time (p_c), s	0.0	0.7			4.6	0.0

Intersection Summary	
HCM 6th Ctrl Delay	81.6
HCM 6th LOS	F

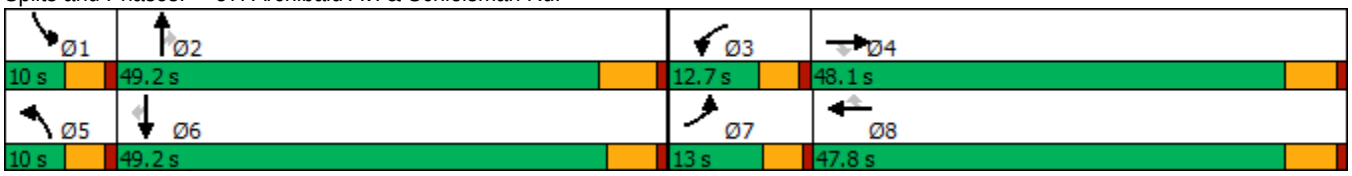
Notes

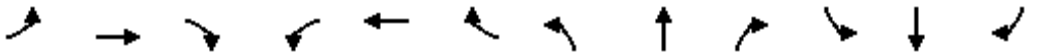
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	498	1136	220	121	369	65	226	678	122	185	744	431
Future Volume (vph)	498	1136	220	121	369	65	226	678	122	185	744	431
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	48.1	48.1	12.7	47.8	47.8	10.0	49.2	49.2	10.0	49.2	49.2
Total Split (%)	10.8%	40.1%	40.1%	10.6%	39.8%	39.8%	8.3%	41.0%	41.0%	8.3%	41.0%	41.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	8.5	43.4	43.4	7.3	42.3	42.3	5.4	24.6	24.6	5.4	25.4	25.4
Actuated g/C Ratio	0.08	0.43	0.43	0.07	0.41	0.41	0.05	0.24	0.24	0.05	0.25	0.25
v/c Ratio	1.75	0.53	0.29	0.49	0.18	0.09	1.24	0.55	0.26	1.02	0.59	0.66
Control Delay	383.0	24.1	7.6	54.3	20.5	1.0	188.4	35.1	6.4	120.7	35.1	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	383.0	24.1	7.6	54.3	20.5	1.0	188.4	35.1	6.4	120.7	35.1	11.8
LOS	F	C	A	D	C	A	F	D	A	F	D	B
Approach Delay		118.6			25.6			65.5			39.4	
Approach LOS		F			C			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.75	
Intersection Signal Delay: 74.0	Intersection LOS: E
Intersection Capacity Utilization 89.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	498	1136	220	121	369	65	226	678	122	185	744	431
Future Volume (veh/h)	498	1136	220	121	369	65	226	678	122	185	744	431
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	508	1159	142	123	377	40	231	692	87	189	759	326
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	280	2214	687	184	2071	642	180	1390	432	180	1390	430
Arrive On Green	0.08	0.43	0.43	0.05	0.40	0.40	0.05	0.27	0.27	0.05	0.27	0.27
Sat Flow, veh/h	3510	5187	1610	3510	5187	1608	3510	5187	1610	3510	5187	1605
Grp Volume(v), veh/h	508	1159	142	123	377	40	231	692	87	189	759	326
Grp Sat Flow(s),veh/h/ln	1755	1729	1610	1755	1729	1608	1755	1729	1610	1755	1729	1605
Q Serve(g_s), s	8.4	17.3	5.8	3.6	5.0	1.6	5.4	11.9	4.4	5.4	13.2	19.6
Cycle Q Clear(g_c), s	8.4	17.3	5.8	3.6	5.0	1.6	5.4	11.9	4.4	5.4	13.2	19.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	280	2214	687	184	2071	642	180	1390	432	180	1390	430
V/C Ratio(X)	1.81	0.52	0.21	0.67	0.18	0.06	1.28	0.50	0.20	1.05	0.55	0.76
Avail Cap(c_a), veh/h	280	2214	687	270	2071	642	180	2120	658	180	2160	668
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.4	22.3	19.0	49.0	20.5	19.5	49.9	32.5	29.8	49.9	33.0	35.4
Incr Delay (d2), s/veh	379.3	0.9	0.7	1.6	0.2	0.2	162.3	0.3	0.2	80.5	0.3	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.3	6.7	2.2	1.6	1.9	0.6	6.3	4.7	1.7	4.3	5.3	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	427.7	23.1	19.6	50.5	20.7	19.7	212.2	32.8	30.0	130.4	33.3	38.1
LnGrp LOS	F	C	B	D	C	B	F	C	C	F	C	D
Approach Vol, veh/h		1809			540			1010			1274	
Approach Delay, s/veh		136.5			27.4			73.6			49.0	
Approach LOS		F			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	34.4	10.1	50.7	10.0	34.4	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.4	43.0	8.1	42.3	5.4	* 44	8.4	42.0
Max Q Clear Time (g_c+I1), s	7.4	13.9	5.6	19.3	7.4	21.6	10.4	7.0
Green Ext Time (p_c), s	0.0	4.8	0.0	8.6	0.0	5.9	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	86.0
HCM 6th LOS	F

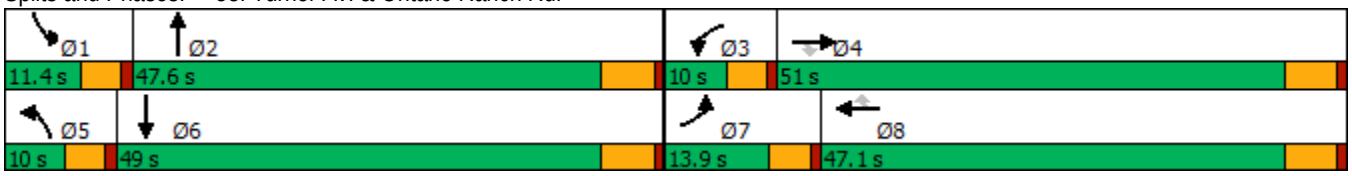
Notes

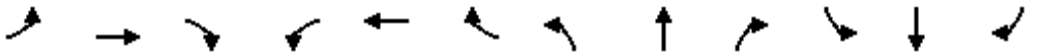
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	48	1237	43	34	681	14	28	8	30	8
Future Volume (vph)	48	1237	43	34	681	14	28	8	30	8
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	13.9	51.0	51.0	10.0	47.1	47.1	10.0	47.6	11.4	49.0
Total Split (%)	11.6%	42.5%	42.5%	8.3%	39.3%	39.3%	8.3%	39.7%	9.5%	40.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	7.8	58.5	58.5	6.2	57.0	57.0	6.2	16.8	6.8	17.4
Actuated g/C Ratio	0.09	0.69	0.69	0.07	0.68	0.68	0.07	0.20	0.08	0.21
v/c Ratio	0.35	0.57	0.04	0.31	0.32	0.01	0.26	0.16	0.25	0.10
Control Delay	49.1	17.6	0.1	52.4	15.0	0.0	51.2	12.2	49.3	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.1	17.6	0.1	52.4	15.0	0.0	51.2	12.2	49.3	14.5
LOS	D	B	A	D	B	A	D	B	D	B
Approach Delay		18.2			16.4			26.1		31.4
Approach LOS		B			B			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 84.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 18.3	Intersection LOS: B
Intersection Capacity Utilization 61.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	1237	43	34	681	14	28	8	43	30	8	24
Future Volume (veh/h)	48	1237	43	34	681	14	28	8	43	30	8	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	53	1359	35	37	748	12	31	9	28	33	9	12
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	81	1970	879	68	1942	866	62	56	174	64	103	138
Arrive On Green	0.05	0.58	0.58	0.04	0.57	0.57	0.04	0.15	0.12	0.04	0.15	0.13
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	382	1190	1619	699	933
Grp Volume(v), veh/h	53	1359	35	37	748	12	31	0	37	33	0	21
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	0	1572	1619	0	1632
Q Serve(g_s), s	2.6	22.8	0.8	1.8	9.9	0.3	1.5	0.0	1.7	1.6	0.0	0.9
Cycle Q Clear(g_c), s	2.6	22.8	0.8	1.8	9.9	0.3	1.5	0.0	1.7	1.6	0.0	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.76	1.00		0.57
Lane Grp Cap(c), veh/h	81	1970	879	68	1942	866	62	0	230	64	0	241
V/C Ratio(X)	0.65	0.69	0.04	0.54	0.39	0.01	0.50	0.00	0.16	0.51	0.00	0.09
Avail Cap(c_a), veh/h	196	1970	879	119	1942	866	119	0	840	147	0	900
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.0	12.2	7.5	38.3	9.7	7.7	38.5	0.0	31.1	38.4	0.0	30.5
Incr Delay (d2), s/veh	3.3	2.0	0.1	2.5	0.6	0.0	2.3	0.0	0.3	2.4	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	7.4	0.2	0.7	3.1	0.1	0.6	0.0	0.6	0.7	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	14.2	7.6	40.8	10.3	7.7	40.8	0.0	31.4	40.8	0.0	30.6
LnGrp LOS	D	B	A	D	B	A	D	A	C	D	A	C
Approach Vol, veh/h		1447			797			68			54	
Approach Delay, s/veh		15.0			11.7			35.7			36.8	
Approach LOS		B			B			D			D	

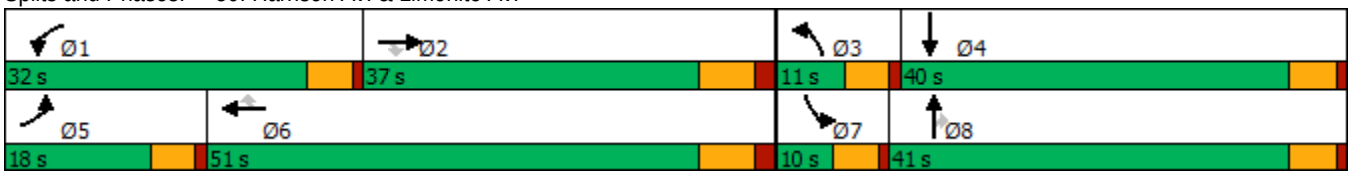
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	15.9	7.4	51.0	7.1	16.0	8.1	50.3
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	6.8	41.8	5.4	45.2	5.4	43.2	9.3	41.3
Max Q Clear Time (g_c+I1), s	3.6	3.7	3.8	24.8	3.5	2.9	4.6	11.9
Green Ext Time (p_c), s	0.0	0.2	0.0	9.7	0.0	0.1	0.0	5.1

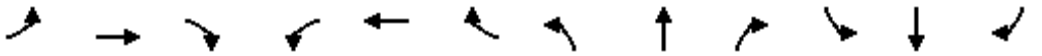
Intersection Summary	
HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	85	985	60	227	678	6	39	48	169	18	50
Future Volume (vph)	85	985	60	227	678	6	39	48	169	18	50
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	18.0	37.0	37.0	32.0	51.0	51.0	11.0	41.0	41.0	10.0	40.0
Total Split (%)	15.0%	30.8%	30.8%	26.7%	42.5%	42.5%	9.2%	34.2%	34.2%	8.3%	33.3%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	8.4	23.0	23.0	14.9	32.8	32.8	6.0	14.0	14.0	5.6	11.5
Actuated g/C Ratio	0.11	0.31	0.31	0.20	0.44	0.44	0.08	0.19	0.19	0.08	0.15
v/c Ratio	0.43	0.63	0.10	0.64	0.30	0.01	0.27	0.14	0.39	0.13	0.29
Control Delay	44.6	26.7	0.3	40.0	17.2	0.0	47.1	29.0	8.0	46.8	24.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.6	26.7	0.3	40.0	17.2	0.0	47.1	29.0	8.0	46.8	24.7
LOS	D	C	A	D	B	A	D	C	A	D	C
Approach Delay		26.7			22.7			18.0			28.5
Approach LOS		C			C			B			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 74.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 24.3	Intersection LOS: C
Intersection Capacity Utilization 54.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 59: Harrison Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	985	60	227	678	6	39	48	169	18	50	34
Future Volume (veh/h)	85	985	60	227	678	6	39	48	169	18	50	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	87	1005	56	232	692	4	40	49	87	18	51	26
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	118	1604	498	285	2081	646	74	235	196	39	124	63
Arrive On Green	0.07	0.31	0.31	0.16	0.40	0.40	0.04	0.12	0.12	0.02	0.10	0.10
Sat Flow, veh/h	1810	5187	1610	1810	5187	1610	1810	1900	1588	1810	1186	605
Grp Volume(v), veh/h	87	1005	56	232	692	4	40	49	87	18	0	77
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1610	1810	1900	1588	1810	0	1791
Q Serve(g_s), s	2.7	9.5	1.4	7.1	5.3	0.1	1.2	1.3	2.9	0.6	0.0	2.3
Cycle Q Clear(g_c), s	2.7	9.5	1.4	7.1	5.3	0.1	1.2	1.3	2.9	0.6	0.0	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	118	1604	498	285	2081	646	74	235	196	39	0	187
V/C Ratio(X)	0.74	0.63	0.11	0.81	0.33	0.01	0.54	0.21	0.44	0.46	0.00	0.41
Avail Cap(c_a), veh/h	409	2707	840	850	3971	1233	189	1180	986	157	0	1081
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.4	17.0	14.2	23.4	11.9	10.3	27.0	22.7	23.3	27.8	0.0	24.1
Incr Delay (d2), s/veh	3.3	0.4	0.1	2.2	0.1	0.0	2.2	0.4	1.6	3.1	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.1	0.4	2.7	1.6	0.0	0.5	0.6	1.0	0.3	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.7	17.4	14.3	25.6	12.0	10.3	29.3	23.1	24.9	30.8	0.0	25.5
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	A	C
Approach Vol, veh/h		1148			928			176			95	
Approach Delay, s/veh		18.2			15.4			25.4			26.5	
Approach LOS		B			B			C			C	

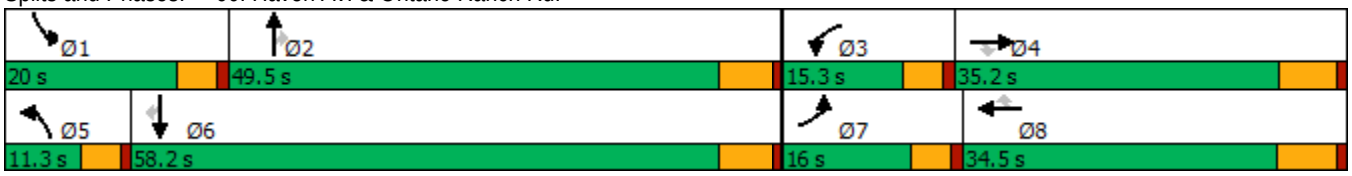
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	24.8	7.4	11.3	8.8	30.1	6.2	12.4
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	27.0	30.0	6.0	34.7	13.0	44.0	5.0	35.7
Max Q Clear Time (g_c+I1), s	9.1	11.5	3.2	4.3	4.7	7.3	2.6	4.9
Green Ext Time (p_c), s	0.2	6.2	0.0	0.3	0.0	4.7	0.0	0.5

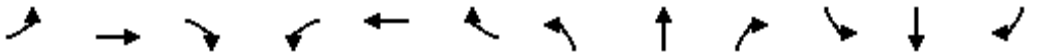
Intersection Summary	
HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	133	1016	73	67	593	141	31	97	25	182	285	124
Future Volume (vph)	133	1016	73	67	593	141	31	97	25	182	285	124
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	16.0	35.2	35.2	15.3	34.5	34.5	11.3	49.5	49.5	20.0	58.2	58.2
Total Split (%)	13.3%	29.3%	29.3%	12.8%	28.8%	28.8%	9.4%	41.3%	41.3%	16.7%	48.5%	48.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2	-2.2	-0.6	-2.5	-2.5	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	11.7	37.3	37.3	8.6	31.6	31.6	6.7	17.8	17.8	15.7	27.2	27.2
Actuated g/C Ratio	0.13	0.42	0.42	0.10	0.36	0.36	0.08	0.20	0.20	0.18	0.31	0.31
v/c Ratio	0.66	0.51	0.10	0.45	0.51	0.23	0.26	0.28	0.06	0.67	0.54	0.23
Control Delay	56.8	25.1	0.3	52.2	27.8	5.9	50.5	32.6	0.3	50.7	29.5	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.8	25.1	0.3	52.2	27.8	5.9	50.5	32.6	0.3	50.7	29.5	5.0
LOS	E	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		27.1			26.0			30.9			30.9	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 89	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 27.8	Intersection LOS: C
Intersection Capacity Utilization 58.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	133	1016	73	67	593	141	31	97	25	182	285	124
Future Volume (veh/h)	133	1016	73	67	593	141	31	97	25	182	285	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	139	1058	45	70	618	73	32	101	12	190	297	56
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	181	2139	664	99	1328	593	64	271	229	236	461	391
Arrive On Green	0.11	0.44	0.44	0.06	0.39	0.39	0.04	0.15	0.15	0.15	0.26	0.26
Sat Flow, veh/h	1619	4914	1525	1619	3420	1525	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	139	1058	45	70	618	73	32	101	12	190	297	56
Grp Sat Flow(s),veh/h/ln	1619	1638	1525	1619	1710	1525	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	6.5	12.2	1.3	3.3	10.6	2.4	1.5	4.0	0.5	8.9	11.5	2.2
Cycle Q Clear(g_c), s	6.5	12.2	1.3	3.3	10.6	2.4	1.5	4.0	0.5	8.9	11.5	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	181	2139	664	99	1328	593	64	271	229	236	461	391
V/C Ratio(X)	0.77	0.49	0.07	0.71	0.47	0.12	0.50	0.37	0.05	0.81	0.64	0.14
Avail Cap(c_a), veh/h	247	2139	664	233	1328	593	151	1043	884	330	1242	1053
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	16.0	12.9	36.2	17.9	15.4	36.9	30.0	28.6	32.5	26.0	22.5
Incr Delay (d2), s/veh	6.0	0.8	0.2	3.5	1.2	0.4	2.2	0.9	0.1	6.5	1.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	4.0	0.4	1.3	3.7	0.8	0.6	1.7	0.2	3.7	4.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.9	16.8	13.1	39.6	19.1	15.8	39.2	30.9	28.7	38.9	27.5	22.7
LnGrp LOS	D	B	B	D	B	B	D	C	C	D	C	C
Approach Vol, veh/h		1242			761			145			543	
Approach Delay, s/veh		19.2			20.7			32.5			31.0	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.4	15.8	8.8	38.5	7.1	24.1	12.8	34.5
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	15.4	43.7	10.7	* 29	6.7	52.4	11.4	28.0
Max Q Clear Time (g_c+I1), s	10.9	6.0	5.3	14.2	3.5	13.5	8.5	12.6
Green Ext Time (p_c), s	0.1	0.5	0.0	5.9	0.0	1.8	0.0	3.4

Intersection Summary	
HCM 6th Ctrl Delay	22.7
HCM 6th LOS	C

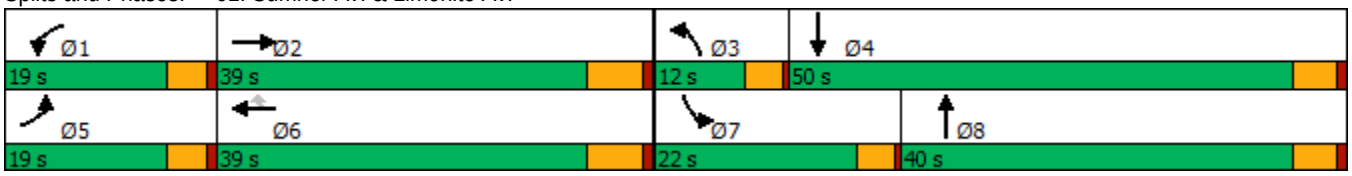
Notes

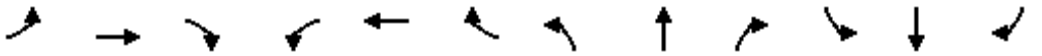
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	234	801	233	664	49	48	234	127	482
Future Volume (vph)	234	801	233	664	49	48	234	127	482
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	19.0	39.0	19.0	39.0	39.0	12.0	40.0	22.0	50.0
Total Split (%)	15.8%	32.5%	15.8%	32.5%	32.5%	10.0%	33.3%	18.3%	41.7%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	10.1	22.4	10.1	22.4	22.4	6.3	16.7	10.5	25.7
Actuated g/C Ratio	0.12	0.28	0.12	0.28	0.28	0.08	0.21	0.13	0.32
v/c Ratio	0.55	0.64	0.55	0.48	0.09	0.35	0.50	0.56	0.63
Control Delay	42.3	29.1	42.3	27.2	0.3	50.1	21.6	47.3	25.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.3	29.1	42.3	27.2	0.3	50.1	21.6	47.3	25.4
LOS	D	C	D	C	A	D	C	D	C
Approach Delay		31.9		29.5			24.7		28.8
Approach LOS		C		C			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 80.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 29.5	Intersection LOS: C
Intersection Capacity Utilization 64.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 61: Sumner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	801	90	233	664	49	48	234	153	127	482	213
Future Volume (veh/h)	234	801	90	233	664	49	48	234	153	127	482	213
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	241	826	81	240	685	43	49	241	87	131	497	122
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	356	1337	130	355	1442	448	68	504	177	169	717	175
Arrive On Green	0.10	0.28	0.28	0.10	0.28	0.28	0.04	0.19	0.19	0.09	0.25	0.25
Sat Flow, veh/h	3510	4804	469	3510	5187	1610	1810	2607	913	1810	2876	702
Grp Volume(v), veh/h	241	593	314	240	685	43	49	165	163	131	311	308
Grp Sat Flow(s),veh/h/ln	1755	1729	1815	1755	1729	1610	1810	1805	1715	1810	1805	1774
Q Serve(g_s), s	3.9	8.7	8.8	3.9	6.4	1.2	1.6	4.7	5.0	4.1	9.1	9.2
Cycle Q Clear(g_c), s	3.9	8.7	8.8	3.9	6.4	1.2	1.6	4.7	5.0	4.1	9.1	9.2
Prop In Lane	1.00		0.26	1.00		1.00	1.00		0.53	1.00		0.40
Lane Grp Cap(c), veh/h	356	962	505	355	1442	448	68	349	332	169	450	442
V/C Ratio(X)	0.68	0.62	0.62	0.68	0.48	0.10	0.72	0.47	0.49	0.77	0.69	0.70
Avail Cap(c_a), veh/h	871	1953	1025	871	2930	909	248	1081	1027	557	1390	1366
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.3	18.4	18.4	25.3	17.5	15.6	27.8	20.9	21.0	25.9	19.9	19.9
Incr Delay (d2), s/veh	0.8	0.6	1.3	0.8	0.2	0.1	5.3	0.7	0.8	2.8	1.4	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.9	3.2	1.4	2.1	0.4	0.7	1.8	1.8	1.7	3.4	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.2	19.0	19.6	26.2	17.8	15.7	33.1	21.6	21.8	28.7	21.3	21.4
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		1148			968			377			750	
Approach Delay, s/veh		20.7			19.8			23.2			22.6	
Approach LOS		C			B			C			C	

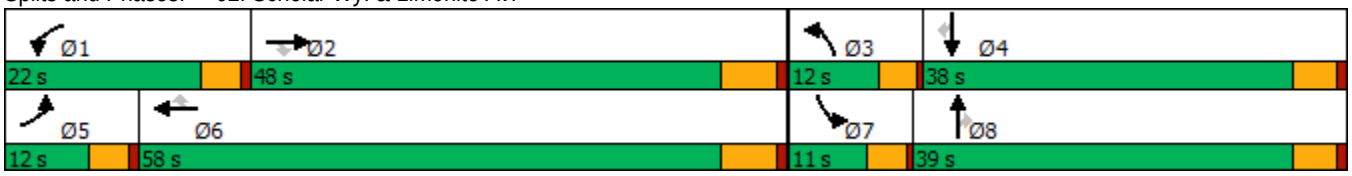
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	22.3	6.2	19.6	10.4	22.2	9.5	16.3
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	14.5	33.0	8.0	45.0	14.5	33.0	18.0	35.0
Max Q Clear Time (g_c+I1), s	5.9	10.8	3.6	11.2	5.9	8.4	6.1	7.0
Green Ext Time (p_c), s	0.2	5.4	0.0	2.9	0.2	4.4	0.1	1.4

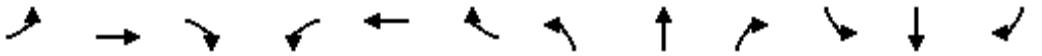
Intersection Summary	
HCM 6th Ctrl Delay	21.2
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	999	46	134	875	61	47	102	137	31	144	33
Future Volume (vph)	43	999	46	134	875	61	47	102	137	31	144	33
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	12.0	48.0	48.0	22.0	58.0	58.0	12.0	39.0	39.0	11.0	38.0	38.0
Total Split (%)	10.0%	40.0%	40.0%	18.3%	48.3%	48.3%	10.0%	32.5%	32.5%	9.2%	31.7%	31.7%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.3	31.2	31.2	11.1	41.6	41.6	6.5	12.7	12.7	5.8	12.3	12.3
Actuated g/C Ratio	0.08	0.40	0.40	0.14	0.54	0.54	0.08	0.16	0.16	0.07	0.16	0.16
v/c Ratio	0.32	0.73	0.07	0.55	0.48	0.07	0.33	0.35	0.38	0.24	0.27	0.09
Control Delay	49.1	25.7	0.2	45.9	16.1	1.9	49.0	35.5	9.1	48.6	33.0	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.1	25.7	0.2	45.9	16.1	1.9	49.0	35.5	9.1	48.6	33.0	0.5
LOS	D	C	A	D	B	A	D	D	A	D	C	A
Approach Delay		25.6			19.0			25.0			30.2	
Approach LOS		C			B			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 77.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 23.2	Intersection LOS: C
Intersection Capacity Utilization 61.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	999	46	134	875	61	47	102	137	31	144	33
Future Volume (veh/h)	43	999	46	134	875	61	47	102	137	31	144	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	46	1063	35	143	931	41	50	109	66	33	153	28
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	66	1492	665	184	1727	770	69	218	185	52	378	165
Arrive On Green	0.04	0.41	0.41	0.10	0.48	0.48	0.04	0.11	0.11	0.03	0.10	0.10
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	1900	1610	1810	3610	1569
Grp Volume(v), veh/h	46	1063	35	143	931	41	50	109	66	33	153	28
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1900	1610	1810	1805	1569
Q Serve(g_s), s	1.4	14.0	0.7	4.4	10.3	0.8	1.6	3.1	2.2	1.0	2.3	0.9
Cycle Q Clear(g_c), s	1.4	14.0	0.7	4.4	10.3	0.8	1.6	3.1	2.2	1.0	2.3	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	66	1492	665	184	1727	770	69	218	185	52	378	165
V/C Ratio(X)	0.70	0.71	0.05	0.78	0.54	0.05	0.72	0.50	0.36	0.64	0.40	0.17
Avail Cap(c_a), veh/h	238	2659	1186	555	3292	1468	254	1133	960	222	2089	908
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.2	13.9	10.0	25.0	10.4	8.0	27.1	23.7	23.3	27.4	23.9	23.3
Incr Delay (d2), s/veh	4.9	0.6	0.0	2.7	0.3	0.0	5.1	1.3	0.9	4.8	0.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	4.3	0.2	1.8	2.9	0.2	0.7	1.3	0.8	0.5	0.9	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.1	14.6	10.1	27.7	10.7	8.0	32.2	25.0	24.2	32.2	24.4	23.6
LnGrp LOS	C	B	B	C	B	A	C	C	C	C	C	C
Approach Vol, veh/h		1144			1115			225			214	
Approach Delay, s/veh		15.1			12.8			26.4			25.5	
Approach LOS		B			B			C			C	

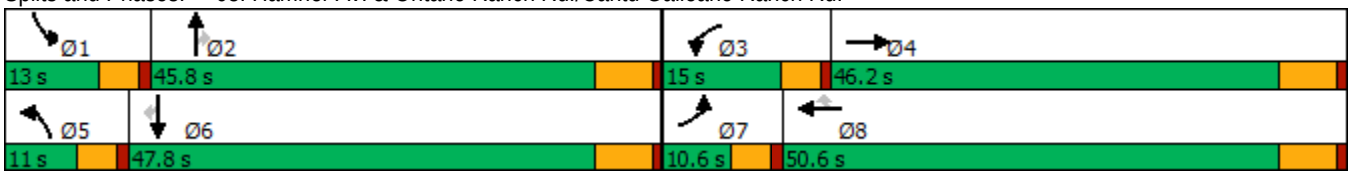
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	29.6	6.2	11.0	6.6	33.3	5.6	11.5
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	17.5	42.0	8.0	33.0	7.5	52.0	7.0	34.0
Max Q Clear Time (g_c+I1), s	6.4	16.0	3.6	4.3	3.4	12.3	3.0	5.1
Green Ext Time (p_c), s	0.1	7.6	0.0	0.8	0.0	7.0	0.0	0.6

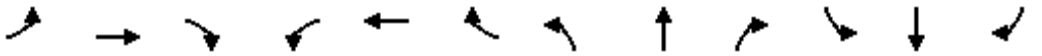
Intersection Summary	
HCM 6th Ctrl Delay	15.9
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	101	921	653	512	120	219	423	262	507	894	121
Future Volume (vph)	101	921	653	512	120	219	423	262	507	894	121
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	10.6	46.2	15.0	50.6	50.6	11.0	45.8	45.8	13.0	47.8	47.8
Total Split (%)	8.8%	38.5%	12.5%	42.2%	42.2%	9.2%	38.2%	38.2%	10.8%	39.8%	39.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2	-2.2
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.6	32.0	11.2	36.6	36.6	7.1	34.2	34.2	9.1	36.2	36.2
Actuated g/C Ratio	0.06	0.31	0.11	0.36	0.36	0.07	0.33	0.33	0.09	0.35	0.35
v/c Ratio	0.56	0.66	2.12	0.44	0.20	1.12	0.27	0.46	2.02	0.77	0.21
Control Delay	61.9	30.9	541.0	27.0	5.1	144.7	25.8	15.1	497.1	35.0	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.9	30.9	541.0	27.0	5.1	144.7	25.8	15.1	497.1	35.0	6.7
LOS	E	C	F	C	A	F	C	B	F	C	A
Approach Delay		33.2		286.2			51.5			186.7	
Approach LOS		C		F			D			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.13	
Intersection Signal Delay: 147.6	Intersection LOS: F
Intersection Capacity Utilization 88.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	921	296	653	512	120	219	423	262	507	894	121
Future Volume (veh/h)	101	921	296	653	512	120	219	423	262	507	894	121
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	105	959	251	680	533	91	228	441	194	528	931	71
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	173	1466	377	340	1207	539	216	1607	498	278	1190	530
Arrive On Green	0.06	0.30	0.27	0.12	0.35	0.35	0.07	0.33	0.33	0.09	0.35	0.35
Sat Flow, veh/h	2956	4943	1272	2956	3420	1525	2956	4914	1524	2956	3420	1524
Grp Volume(v), veh/h	105	900	310	680	533	91	228	441	194	528	931	71
Grp Sat Flow(s),veh/h/ln	1478	1548	1571	1478	1710	1525	1478	1638	1524	1478	1710	1524
Q Serve(g_s), s	3.3	16.2	16.7	11.0	11.4	3.9	7.0	6.3	9.4	9.0	23.3	3.0
Cycle Q Clear(g_c), s	3.3	16.2	16.7	11.0	11.4	3.9	7.0	6.3	9.4	9.0	23.3	3.0
Prop In Lane	1.00		0.81	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	173	1377	466	340	1207	539	216	1607	498	278	1190	530
V/C Ratio(X)	0.61	0.65	0.67	2.00	0.44	0.17	1.05	0.27	0.39	1.90	0.78	0.13
Avail Cap(c_a), veh/h	204	2050	693	340	1667	744	216	2148	666	278	1567	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	29.3	30.3	42.3	23.7	21.3	44.3	23.8	24.8	43.3	27.9	21.3
Incr Delay (d2), s/veh	1.7	0.5	1.6	460.0	0.3	0.1	75.9	0.1	0.5	417.1	1.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	5.5	6.1	25.5	4.3	1.3	4.7	2.3	3.2	19.2	9.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.6	29.9	32.0	502.3	24.0	21.4	120.2	23.9	25.3	460.4	29.9	21.4
LnGrp LOS	D	C	C	F	C	C	F	C	C	F	C	C
Approach Vol, veh/h		1315			1304			863			1530	
Approach Delay, s/veh		31.6			273.2			49.7			178.0	
Approach LOS		C			F			D			F	

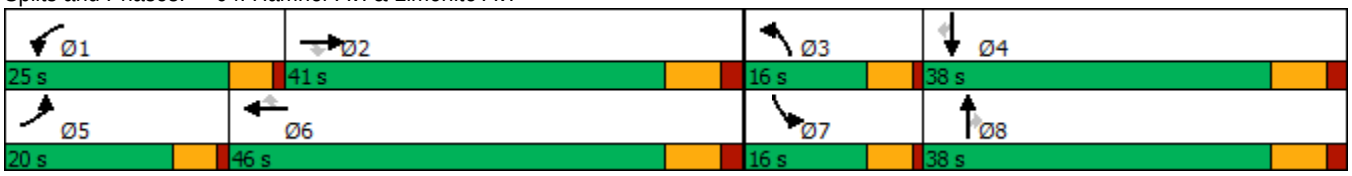
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	35.3	15.0	32.4	11.0	37.3	9.6	37.8
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	8.4	39.6	10.4	40.0	6.4	41.6	6.0	44.4
Max Q Clear Time (g_c+I1), s	11.0	11.4	13.0	18.7	9.0	25.3	5.3	13.4
Green Ext Time (p_c), s	0.0	3.3	0.0	7.4	0.0	5.5	0.0	3.6

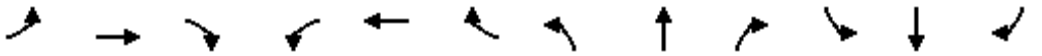
Intersection Summary	
HCM 6th Ctrl Delay	142.3
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	314	686	95	401	538	162	219	630	195	204	681	240
Future Volume (vph)	314	686	95	401	538	162	219	630	195	204	681	240
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	20.0	41.0	41.0	25.0	46.0	46.0	16.0	38.0	38.0	16.0	38.0	38.0
Total Split (%)	16.7%	34.2%	34.2%	20.8%	38.3%	38.3%	13.3%	31.7%	31.7%	13.3%	31.7%	31.7%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	12.7	25.1	25.1	15.6	28.0	28.0	9.7	26.1	26.1	9.4	25.8	25.8
Actuated g/C Ratio	0.13	0.25	0.25	0.15	0.28	0.28	0.10	0.26	0.26	0.09	0.26	0.26
v/c Ratio	0.74	0.55	0.20	0.76	0.55	0.30	0.67	0.48	0.36	0.64	0.53	0.42
Control Delay	55.4	35.4	3.7	52.4	33.9	6.0	57.2	34.1	6.8	56.5	34.9	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.4	35.4	3.7	52.4	33.9	6.0	57.2	34.1	6.8	56.5	34.9	6.7
LOS	E	D	A	D	C	A	E	C	A	E	C	A
Approach Delay		38.4			36.5			33.8			32.8	
Approach LOS		D			D			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 100.9	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 35.4	Intersection LOS: D
Intersection Capacity Utilization 66.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 64: Hamner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	314	686	95	401	538	162	219	630	195	204	681	240
Future Volume (veh/h)	314	686	95	401	538	162	219	630	195	204	681	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	324	707	77	413	555	122	226	649	117	210	702	184
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	405	1270	393	497	979	430	304	1327	403	288	1303	397
Arrive On Green	0.12	0.24	0.24	0.14	0.27	0.27	0.09	0.26	0.26	0.08	0.25	0.25
Sat Flow, veh/h	3510	5187	1606	3510	3610	1586	3510	5187	1577	3510	5187	1580
Grp Volume(v), veh/h	324	707	77	413	555	122	226	649	117	210	702	184
Grp Sat Flow(s),veh/h/ln	1755	1729	1606	1755	1805	1586	1755	1729	1577	1755	1729	1580
Q Serve(g_s), s	7.8	10.4	3.3	10.0	11.5	5.3	5.5	9.3	5.2	5.1	10.2	8.6
Cycle Q Clear(g_c), s	7.8	10.4	3.3	10.0	11.5	5.3	5.5	9.3	5.2	5.1	10.2	8.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	405	1270	393	497	979	430	304	1327	403	288	1303	397
V/C Ratio(X)	0.80	0.56	0.20	0.83	0.57	0.28	0.74	0.49	0.29	0.73	0.54	0.46
Avail Cap(c_a), veh/h	605	2028	628	807	1619	711	444	1849	562	444	1849	563
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	28.7	26.1	36.3	27.3	25.0	38.8	27.5	26.0	39.0	28.2	27.6
Incr Delay (d2), s/veh	2.5	0.8	0.5	1.8	1.1	0.8	1.6	0.6	0.8	1.3	0.7	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	4.1	1.2	4.1	4.8	1.9	2.3	3.6	1.9	2.1	4.0	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.0	29.5	26.6	38.1	28.4	25.8	40.4	28.1	26.9	40.3	28.9	29.4
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1108			1090			992			1096	
Approach Delay, s/veh		32.4			31.8			30.8			31.2	
Approach LOS		C			C			C			C	

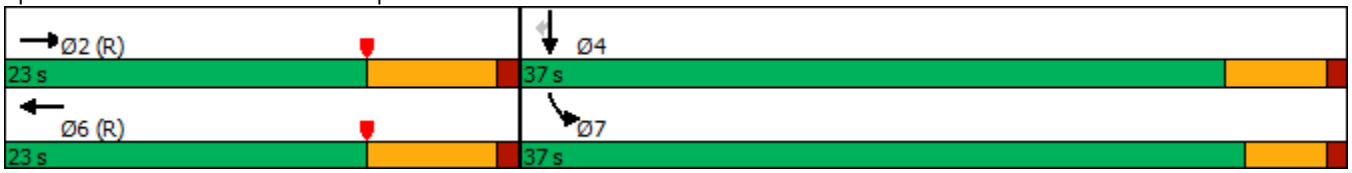
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.3	28.3	12.5	28.8	15.0	30.6	12.1	29.3
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	20.0	34.0	11.0	31.0	15.0	39.0	11.0	31.0
Max Q Clear Time (g_c+I1), s	12.0	12.4	7.5	12.2	9.8	13.5	7.1	11.3
Green Ext Time (p_c), s	0.4	8.5	0.1	8.6	0.2	7.6	0.1	7.8

Intersection Summary	
HCM 6th Ctrl Delay	31.6
HCM 6th LOS	C

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1242	552	503	470	326	0	1090
Future Volume (vph)	1242	552	503	470	326	0	1090
Turn Type	NA	Free	NA	Free	Prot	NA	Perm
Protected Phases	2		6		7	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		7	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		9.6	10.5	10.5
Total Split (s)	23.0		23.0		37.0	37.0	37.0
Total Split (%)	38.3%		38.3%		61.7%	61.7%	61.7%
Yellow Time (s)	5.8		5.8		3.6	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-2.8		-2.8		-0.6	-1.5	-1.5
Total Lost Time (s)	4.0		4.0		4.0	4.0	4.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Min		None	Min	Min
Act Effct Green (s)	19.0	60.0	19.0	60.0	33.0	33.0	33.0
Actuated g/C Ratio	0.32	1.00	0.32	1.00	0.55	0.55	0.55
v/c Ratio	0.78	0.35	0.45	0.30	0.32	0.67	0.64
Control Delay	22.6	0.6	15.2	0.9	8.6	12.1	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	0.6	15.2	0.9	8.6	12.1	11.1
LOS	C	A	B	A	A	B	B
Approach Delay	15.8		8.3			11.0	
Approach LOS	B		A			B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 53 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 12.4	Intersection LOS: B
Intersection Capacity Utilization 65.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	✣	↱
Traffic Volume (veh/h)	0	1242	552	0	503	470	0	0	0	326	0	1090
Future Volume (veh/h)	0	1242	552	0	503	470	0	0	0	326	0	1090
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1280	0	0	519	0				224	0	912
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2624		0	1826					653	0	1210
Arrive On Green	0.00	0.51	0.00	0.00	0.51	0.00				0.36	0.00	0.38
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1280	0	0	519	0				224	0	912
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	9.7	0.0	0.0	5.0	0.0				5.4	0.0	14.8
Cycle Q Clear(g_c), s	0.0	9.7	0.0	0.0	5.0	0.0				5.4	0.0	14.8
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2624		0	1826					653	0	1210
V/C Ratio(X)	0.00	0.49		0.00	0.28					0.34	0.00	0.75
Avail Cap(c_a), veh/h	0	2624		0	1826					995	0	1819
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.14	0.00	0.00	0.97	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.7	0.0	0.0	8.6	0.0				14.0	0.0	16.3
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.4	0.0				0.3	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.5	0.0	0.0	1.5	0.0				1.9	0.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	9.8	0.0	0.0	8.9	0.0				14.3	0.0	17.3
LnGrp LOS	A	A		A	A					B	A	B
Approach Vol, veh/h		1280	A		519	A					1136	
Approach Delay, s/veh		9.8			8.9						16.7	
Approach LOS		A			A						B	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	34.4	25.6	34.4
Change Period (Y+Rc), s	6.8	4.6	6.8
Max Green Setting (Gmax), s	16.2	32.4	16.2
Max Q Clear Time (g_c+I1), s	11.7	16.8	7.0
Green Ext Time (p_c), s	2.9	4.2	2.0

Intersection Summary	
HCM 6th Ctrl Delay	12.3
HCM 6th LOS	B

Notes

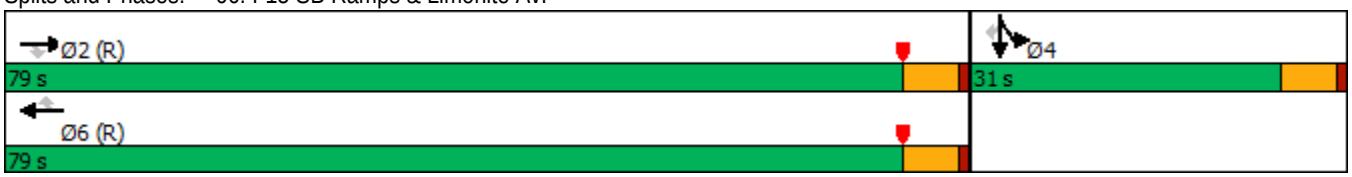
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1286	657	1119	577	145	1	480
Future Volume (vph)	1286	657	1119	577	145	1	480
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		4	4	
Permitted Phases		2		6			4
Detector Phase	2	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	36.5	36.5	23.5	23.5	23.5
Total Split (s)	79.0	79.0	79.0	79.0	31.0	31.0	31.0
Total Split (%)	71.8%	71.8%	71.8%	71.8%	28.2%	28.2%	28.2%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	Min	Min
Act Effct Green (s)	82.3	82.3	82.3	82.3	16.7	16.7	16.7
Actuated g/C Ratio	0.75	0.75	0.75	0.75	0.15	0.15	0.15
v/c Ratio	0.34	0.49	0.29	0.43	0.28	0.29	0.82
Control Delay	5.4	1.7	6.4	5.5	42.2	42.2	37.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.4	1.7	6.4	5.5	42.2	42.2	37.3
LOS	A	A	A	A	D	D	D
Approach Delay	4.2		6.1			38.5	
Approach LOS	A		A			D	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 10.0	Intersection LOS: A
Intersection Capacity Utilization 54.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	↰↑	↱↱
Traffic Volume (veh/h)	0	1286	657	0	1119	577	0	0	0	145	1	480
Future Volume (veh/h)	0	1286	657	0	1119	577	0	0	0	145	1	480
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1312	524	0	1142	589				149	0	256
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	4138	1285	0	4138	1285				370	0	329
Arrive On Green	0.00	0.80	0.80	0.00	1.00	1.00				0.10	0.00	0.10
Sat Flow, veh/h	0	5358	1610	0	5358	1610				3619	0	3220
Grp Volume(v), veh/h	0	1312	524	0	1142	589				149	0	256
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1610				1810	0	1610
Q Serve(g_s), s	0.0	7.5	10.7	0.0	0.0	0.0				4.2	0.0	8.5
Cycle Q Clear(g_c), s	0.0	7.5	10.7	0.0	0.0	0.0				4.2	0.0	8.5
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	4138	1285	0	4138	1285				370	0	329
V/C Ratio(X)	0.00	0.32	0.41	0.00	0.28	0.46				0.40	0.00	0.78
Avail Cap(c_a), veh/h	0	4138	1285	0	4138	1285				839	0	747
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.90	0.90				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	3.0	3.3	0.0	0.0	0.0				46.2	0.0	48.2
Incr Delay (d2), s/veh	0.0	0.2	1.0	0.0	0.1	1.1				0.3	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.6	2.4	0.0	0.1	0.4				1.9	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	3.2	4.3	0.0	0.1	1.1				46.5	0.0	49.7
LnGrp LOS	A	A	A	A	A	A				D	A	D
Approach Vol, veh/h		1836			1731						405	
Approach Delay, s/veh		3.5			0.5						48.5	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		93.3		16.7		93.3						
Change Period (Y+Rc), s		5.5		5.5		5.5						
Max Green Setting (Gmax), s		73.5		25.5		73.5						
Max Q Clear Time (g_c+I1), s		12.7		10.5		2.0						
Green Ext Time (p_c), s		8.5		0.7		7.3						

Intersection Summary	
HCM 6th Ctrl Delay	6.8
HCM 6th LOS	A

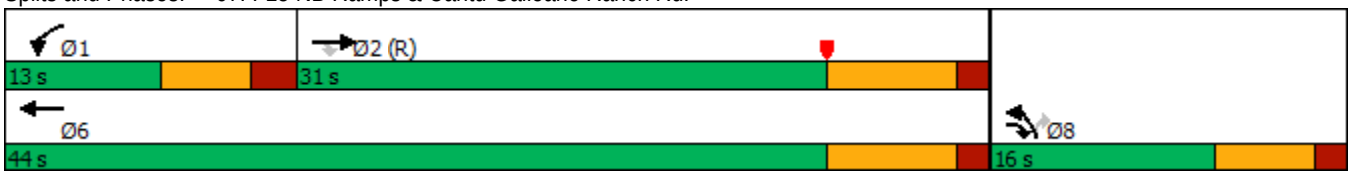
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	721	882	328	762	216	257
Future Volume (vph)	721	882	328	762	216	257
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	31.0	16.0	13.0	44.0	16.0	16.0
Total Split (%)	51.7%	26.7%	21.7%	73.3%	26.7%	26.7%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	-3.3	-2.0	-2.0	-3.3	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max
Act Effct Green (s)	27.0	43.0	9.0	40.0	12.0	12.0
Actuated g/C Ratio	0.45	0.72	0.15	0.67	0.20	0.20
v/c Ratio	0.33	0.79	0.66	0.23	0.44	0.37
Control Delay	6.9	11.9	30.8	4.1	15.9	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.9	11.9	30.8	4.1	15.9	7.2
LOS	A	B	C	A	B	A
Approach Delay	9.7			12.2	13.2	
Approach LOS	A			B	B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 11.1	Intersection LOS: B
Intersection Capacity Utilization 70.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	721	882	328	762	216	257
Future Volume (veh/h)	721	882	328	762	216	257
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	759	712	345	802	261	132
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2334	1012	527	3458	724	322
Arrive On Green	0.75	0.72	0.15	0.67	0.20	0.20
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	759	712	345	802	261	132
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	2.9	18.8	5.6	3.7	3.7	4.3
Cycle Q Clear(g_c), s	2.9	18.8	5.6	3.7	3.7	4.3
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2334	1012	527	3458	724	322
V/C Ratio(X)	0.33	0.70	0.66	0.23	0.36	0.41
Avail Cap(c_a), veh/h	2334	1012	527	3458	724	322
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.66	0.66	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.5	3.8	24.0	3.9	20.7	20.9
Incr Delay (d2), s/veh	0.2	2.7	6.2	0.0	1.4	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.4	2.4	0.6	1.5	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.7	6.5	30.3	4.0	22.1	24.7
LnGrp LOS	A	A	C	A	C	C
Approach Vol, veh/h	1471			1147	393	
Approach Delay, s/veh	5.6			11.9	23.0	
Approach LOS	A			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.0	31.0				44.0	16.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	7.0	23.7				36.7	10.0
Max Q Clear Time (g_c+I1), s	7.6	20.8				5.7	6.3
Green Ext Time (p_c), s	0.0	2.0				5.4	0.5

Intersection Summary	
HCM 6th Ctrl Delay	10.3
HCM 6th LOS	B

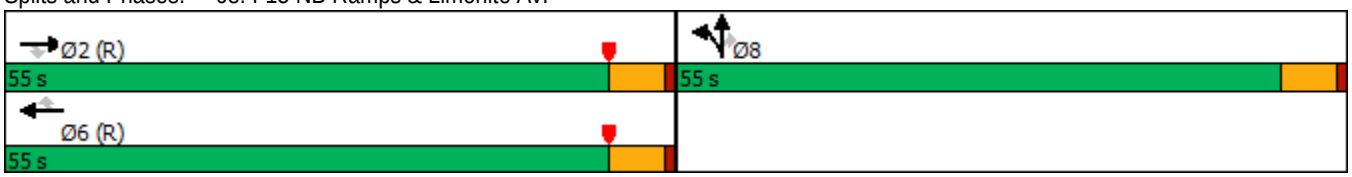
Notes

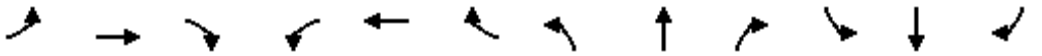
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	898	532	1243	209	452	2	852
Future Volume (vph)	898	532	1243	209	452	2	852
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		8	8	
Permitted Phases		2		6			8
Detector Phase	2	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	55.0	55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None
Act Effct Green (s)	59.1	59.1	59.1	59.1	39.9	39.9	39.9
Actuated g/C Ratio	0.54	0.54	0.54	0.54	0.36	0.36	0.36
v/c Ratio	0.33	0.48	0.45	0.22	0.37	0.37	0.78
Control Delay	14.6	4.7	17.3	3.0	26.2	26.2	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.6	4.7	17.3	3.0	26.2	26.2	30.9
LOS	B	A	B	A	C	C	C
Approach Delay	10.9		15.2			29.3	
Approach LOS	B		B			C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 18.1	Intersection LOS: B
Intersection Capacity Utilization 56.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱	↰	↕	↱↱			
Traffic Volume (veh/h)	0	898	532	0	1243	209	452	2	852	0	0	0
Future Volume (veh/h)	0	898	532	0	1243	209	452	2	852	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	0	907	537	0	1256	120	458	0	568			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	0	3499	1086	0	3499	1085	816	0	716			
Arrive On Green	0.00	1.00	1.00	0.00	0.67	0.67	0.23	0.00	0.23			
Sat Flow, veh/h	0	5358	1610	0	5358	1609	3619	0	3175			
Grp Volume(v), veh/h	0	907	537	0	1256	120	458	0	568			
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1609	1810	0	1588			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	11.4	2.9	12.3	0.0	18.6			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	11.4	2.9	12.3	0.0	18.6			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3499	1086	0	3499	1085	816	0	716			
V/C Ratio(X)	0.00	0.26	0.49	0.00	0.36	0.11	0.56	0.00	0.79			
Avail Cap(c_a), veh/h	0	3499	1086	0	3499	1085	1629	0	1429			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.95	0.95	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	7.7	6.3	37.8	0.0	40.2			
Incr Delay (d2), s/veh	0.0	0.2	1.5	0.0	0.3	0.2	0.6	0.0	2.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.5	0.0	3.6	0.9	5.3	0.0	7.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.2	1.5	0.0	8.0	6.5	38.4	0.0	42.2			
LnGrp LOS	A	A	A	A	A	A	D	A	D			
Approach Vol, veh/h		1444			1376			1026				
Approach Delay, s/veh		0.7			7.8			40.5				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		79.7				79.7		30.3				
Change Period (Y+Rc), s		5.5				5.5		5.5				
Max Green Setting (Gmax), s		49.5				49.5		49.5				
Max Q Clear Time (g_c+I1), s		2.0				13.4		20.6				
Green Ext Time (p_c), s		5.4				6.5		4.2				
Intersection Summary												
HCM 6th Ctrl Delay			13.9									
HCM 6th LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.

APPENDIX 7.2:

OPENING YEAR CUMULATIVE (2025) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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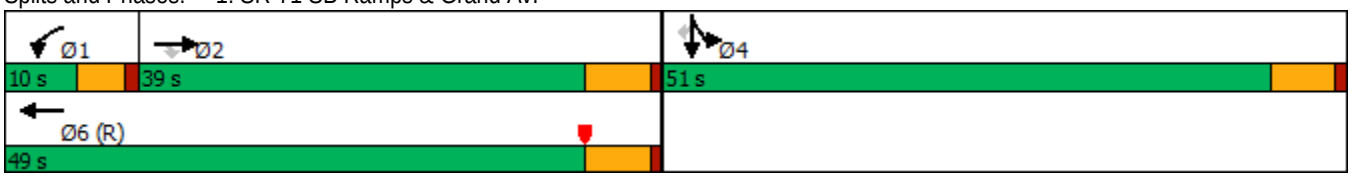
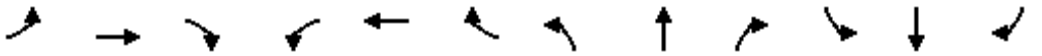
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	835	225	71	1494	963	5	346
Future Volume (vph)	835	225	71	1494	963	5	346
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	39.0	39.0	10.0	49.0	51.0	51.0	51.0
Total Split (%)	39.0%	39.0%	10.0%	49.0%	51.0%	51.0%	51.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None
Act Effct Green (s)	41.0	41.0	6.3	49.4	42.6	42.6	42.6
Actuated g/C Ratio	0.41	0.41	0.06	0.49	0.43	0.43	0.43
v/c Ratio	0.46	0.32	0.38	0.69	0.78	0.78	0.55
Control Delay	23.9	4.1	43.6	30.0	32.2	32.6	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.9	4.1	43.6	30.0	32.2	32.6	19.3
LOS	C	A	D	C	C	C	B
Approach Delay	19.7			30.6		29.0	
Approach LOS	B			C		C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 27.1	Intersection LOS: C
Intersection Capacity Utilization 62.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	835	225	71	1494	0	0	0	0	963	5	346
Future Volume (veh/h)	0	835	225	71	1494	0	0	0	0	963	5	346
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	982	176	84	1758	0				1137	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85				0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1861	578	180	2334	0				1332	0	
Arrive On Green	0.00	0.36	0.36	0.05	0.45	0.00				0.37	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	982	176	84	1758	0				1137	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	15.0	7.9	2.3	28.2	0.0				29.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	15.0	7.9	2.3	28.2	0.0				29.0	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1861	578	180	2334	0				1332	0	
V/C Ratio(X)	0.00	0.53	0.30	0.47	0.75	0.00				0.85	0.00	
Avail Cap(c_a), veh/h	0	1861	578	211	2334	0				1701	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.29	0.29	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	25.4	23.1	46.1	22.9	0.0				29.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	1.4	0.2	0.7	0.0				3.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.9	3.0	1.0	10.5	0.0				12.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	26.4	24.4	46.3	23.6	0.0				32.7	0.0	0.0
LnGrp LOS	A	C	C	D	C	A				C	A	
Approach Vol, veh/h		1158			1842						1137	A
Approach Delay, s/veh		26.1			24.6						32.7	
Approach LOS		C			C						C	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	9.1	39.9		40.8		49.0						
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8						
Max Green Setting (Gmax), s	5.4	33.2		45.2		43.2						
Max Q Clear Time (g_c+I1), s	4.3	17.0		31.0		30.2						
Green Ext Time (p_c), s	0.0	6.3		4.0		8.9						

Intersection Summary			
HCM 6th Ctrl Delay		27.3	
HCM 6th LOS		C	

Notes

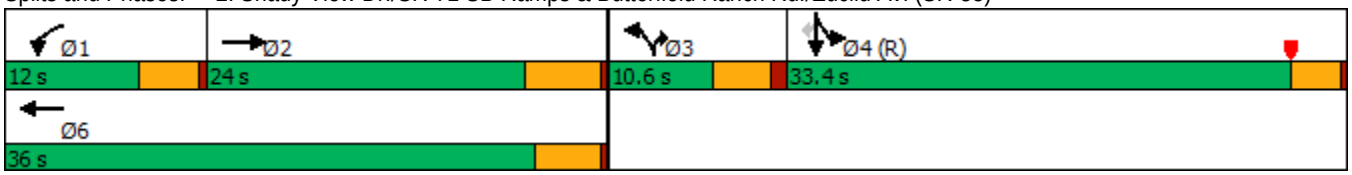
User approved volume balancing among the lanes for turning movement.

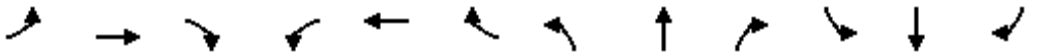
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	788	219	322	21	324	716	29	44
Future Volume (vph)	788	219	322	21	324	716	29	44
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	24.0	12.0	36.0	10.6	10.6	33.4	33.4	33.4
Total Split (%)	30.0%	15.0%	45.0%	13.3%	13.3%	41.8%	41.8%	41.8%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	19.0	14.2	37.7	6.1	6.1	23.7	23.7	23.7
Actuated g/C Ratio	0.24	0.18	0.47	0.08	0.08	0.30	0.30	0.30
v/c Ratio	0.98	0.70	0.19	0.15	1.08	0.75	0.75	0.08
Control Delay	58.7	47.6	18.4	37.3	92.8	34.4	34.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.7	47.6	18.4	37.3	92.8	34.4	34.1	0.3
LOS	E	D	B	D	F	C	C	A
Approach Delay	58.7		30.2				32.4	
Approach LOS	E		C				C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 48.5	Intersection LOS: D
Intersection Capacity Utilization 74.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	788	35	219	322	0	21	0	324	716	29	44
Future Volume (veh/h)	0	788	35	219	322	0	21	0	324	716	29	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	804	27	223	329	0	21	0	262	752	0	29
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	846	28	181	1399		0	0	0	1832	0	815
Arrive On Green	0.00	0.24	0.24	0.03	0.13	0.00	0.00	0.00	0.00	0.51	0.00	0.51
Sat Flow, veh/h	0	3659	120	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	407	424	223	329	0		0.0		752	0	29
Grp Sat Flow(s),veh/h/ln	0	1805	1878	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	17.8	17.8	8.0	6.6	0.0				10.4	0.0	0.7
Cycle Q Clear(g_c), s	0.0	17.8	17.8	8.0	6.6	0.0				10.4	0.0	0.7
Prop In Lane	0.00		0.06	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	429	446	181	1399					1832	0	815
V/C Ratio(X)	0.00	0.95	0.95	1.23	0.24					0.41	0.00	0.04
Avail Cap(c_a), veh/h	0	429	446	181	1421					1832	0	815
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.91	0.91	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	30.0	30.0	38.7	24.2	0.0				12.3	0.0	9.9
Incr Delay (d2), s/veh	0.0	30.6	29.9	140.3	0.1	0.0				0.7	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.7	11.0	10.6	2.7	0.0				3.7	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	60.6	59.9	179.0	24.3	0.0				13.0	0.0	10.0
LnGrp LOS	A	E	E	F	C					B	A	B
Approach Vol, veh/h		831			552	A					781	
Approach Delay, s/veh		60.3			86.8						12.9	
Approach LOS		E			F						B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	12.0	24.0		44.0		36.0						
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5						
Max Green Setting (Gmax), s	8.0	19.0		29.9		* 32						
Max Q Clear Time (g_c+I1), s	10.0	19.8		12.4		8.6						
Green Ext Time (p_c), s	0.0	0.0		2.7		1.5						

Intersection Summary												
HCM 6th Ctrl Delay			49.9									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

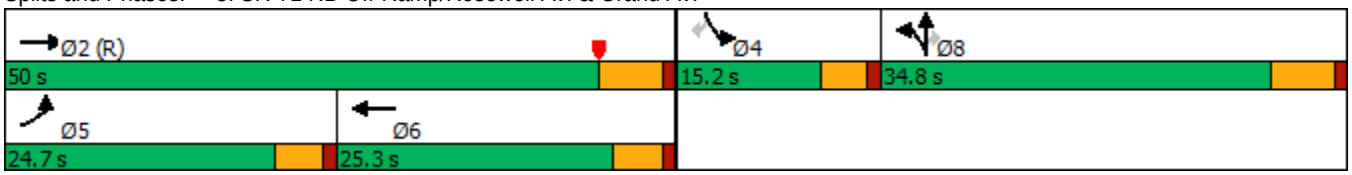
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

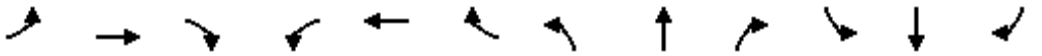
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	359	1245	195	1191	527	78	73	46	755
Future Volume (vph)	359	1245	195	1191	527	78	73	46	755
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.6	34.8		14.7	34.8	34.8	34.8	9.5	9.5
Total Split (s)	24.7	50.0		25.3	34.8	34.8	34.8	15.2	15.2
Total Split (%)	24.7%	50.0%		25.3%	34.8%	34.8%	34.8%	15.2%	15.2%
Yellow Time (s)	3.6	4.8		3.7	4.8	4.8	4.8	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8		-0.7	-1.8	-1.8	-1.8	-0.5	-0.5
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	Max	Max	Max	None	None
Act Effct Green (s)	20.7	46.0	100.0	21.3	31.4	31.4	31.4	10.6	10.6
Actuated g/C Ratio	0.21	0.46	1.00	0.21	0.31	0.31	0.31	0.11	0.11
v/c Ratio	1.05	0.57	0.13	0.97	0.61	0.61	0.13	0.26	0.95
Control Delay	100.0	18.9	0.1	56.6	35.1	34.9	1.5	44.5	31.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	100.0	18.9	0.1	56.6	35.1	34.9	1.5	44.5	31.8
LOS	F	B	A	E	D	C	A	D	C
Approach Delay		33.1		56.6		31.4			
Approach LOS		C		E		C			

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 39.2	Intersection LOS: D
Intersection Capacity Utilization 71.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	359	1245	195	0	1191	42	527	78	73	46	0	755
Future Volume (veh/h)	359	1245	195	0	1191	42	527	78	73	46	0	755
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	390	1353	0	0	1295	46	634	0	39	50	0	545
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	375	3174		0	2311	82	1115	0	496	0	0	0
Arrive On Green	0.21	0.61	0.00	0.00	0.35	0.35	0.31	0.00	0.31	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6795	232	3619	0	1610		0	
Grp Volume(v), veh/h	390	1353	0	0	972	369	634	0	39		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1858	1810	0	1610			
Q Serve(g_s), s	20.7	13.7	0.0	0.0	16.0	16.0	14.7	0.0	1.7			
Cycle Q Clear(g_c), s	20.7	13.7	0.0	0.0	16.0	16.0	14.7	0.0	1.7			
Prop In Lane	1.00		1.00	0.00		0.12	1.00		1.00			
Lane Grp Cap(c), veh/h	375	3174		0	1735	658	1115	0	496			
V/C Ratio(X)	1.04	0.43		0.00	0.56	0.56	0.57	0.00	0.08			
Avail Cap(c_a), veh/h	375	3174		0	1735	658	1115	0	496			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.79	0.79	0.00	0.00	0.88	0.88	1.00	0.00	1.00			
Uniform Delay (d), s/veh	39.7	10.2	0.0	0.0	26.0	26.1	29.0	0.0	24.5			
Incr Delay (d2), s/veh	52.4	0.3	0.0	0.0	0.4	1.0	2.1	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	14.2	4.5	0.0	0.0	6.1	7.0	6.3	0.0	0.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.1	10.5	0.0	0.0	26.4	27.0	31.1	0.0	24.8			
LnGrp LOS	F	B		A	C	C	C	A	C			
Approach Vol, veh/h		1743	A		1341			673				
Approach Delay, s/veh		28.8			26.6			30.8				
Approach LOS		C			C			C				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		65.2			24.7	40.5		34.8				
Change Period (Y+Rc), s		5.8			4.6	* 5.8		5.8				
Max Green Setting (Gmax), s		44.2			20.1	* 21		29.0				
Max Q Clear Time (g_c+I1), s		15.7			22.7	18.0		16.7				
Green Ext Time (p_c), s		10.6			0.0	1.9		2.0				

Intersection Summary		
HCM 6th Ctrl Delay	28.3	
HCM 6th LOS	C	

Notes

User approved volume balancing among the lanes for turning movement.

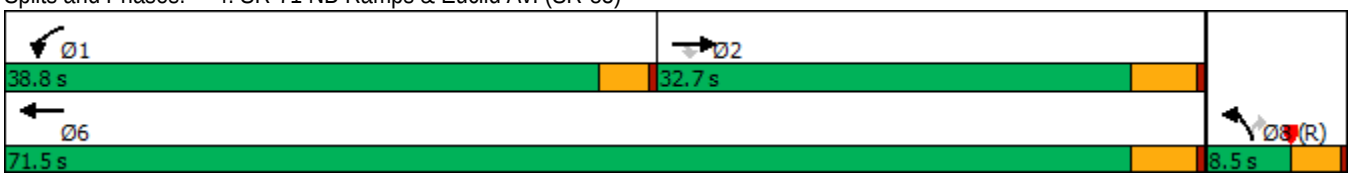
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	767	325	860	1157	48	921
Future Volume (vph)	767	325	860	1157	48	921
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	32.7	32.7	38.8	71.5	8.5	8.5
Total Split (%)	40.9%	40.9%	48.5%	89.4%	10.6%	10.6%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max
Act Effct Green (s)	24.3	24.3	35.3	63.1	8.9	8.9
Actuated g/C Ratio	0.30	0.30	0.44	0.79	0.11	0.11
v/c Ratio	0.74	0.55	1.15	0.43	0.13	1.33
Control Delay	25.7	10.2	106.0	3.1	35.5	172.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	10.2	106.0	3.1	35.5	172.4
LOS	C	B	F	A	D	F
Approach Delay	21.1			46.9	165.7	
Approach LOS	C			D	F	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.33	
Intersection Signal Delay: 68.2	Intersection LOS: E
Intersection Capacity Utilization 85.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	767	325	860	1157	48	921
Future Volume (veh/h)	767	325	860	1157	48	921
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	816	0	915	1231	51	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1016		798	2767	469	
Arrive On Green	0.09	0.00	0.44	0.77	0.13	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	816	0	915	1231	51	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	17.7	0.0	35.3	9.7	1.0	0.0
Cycle Q Clear(g_c), s	17.7	0.0	35.3	9.7	1.0	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1016		798	2767	469	
V/C Ratio(X)	0.80		1.15	0.44	0.11	
Avail Cap(c_a), veh/h	1273		798	3023	469	
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.22	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.1	0.0	22.4	3.3	30.5	0.0
Incr Delay (d2), s/veh	0.6	0.0	80.2	0.1	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	0.0	29.8	1.2	0.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.7	0.0	102.5	3.4	30.9	0.0
LnGrp LOS	C		F	A	C	
Approach Vol, veh/h	816	A		2146	51	A
Approach Delay, s/veh	34.7			45.7	30.9	
Approach LOS	C			D	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	38.8	27.0				65.8	14.2
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	35.3	28.2				67.0	5.0
Max Q Clear Time (g_c+I1), s	37.3	19.7				11.7	3.0
Green Ext Time (p_c), s	0.0	2.8				10.2	0.0

Intersection Summary		
HCM 6th Ctrl Delay		42.5
HCM 6th LOS		D

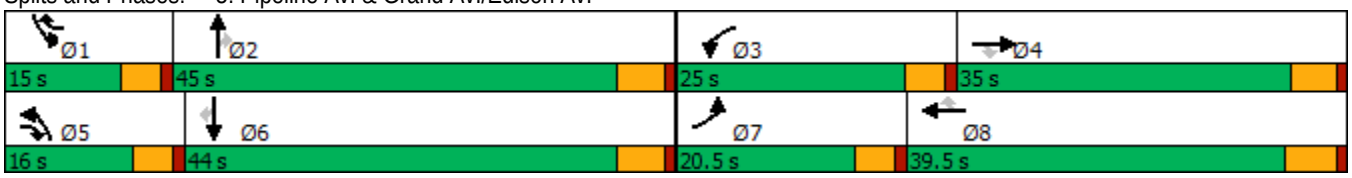
Notes

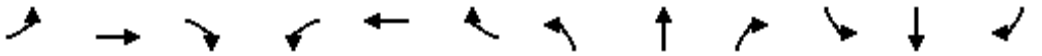
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	957	159	168	916	48	160	220	110	67	356	75
Future Volume (vph)	119	957	159	168	916	48	160	220	110	67	356	75
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	20.5	35.0	16.0	25.0	39.5	15.0	16.0	45.0	45.0	15.0	44.0	44.0
Total Split (%)	17.1%	29.2%	13.3%	20.8%	32.9%	12.5%	13.3%	37.5%	37.5%	12.5%	36.7%	36.7%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None
Act Effct Green (s)	8.6	34.7	44.4	10.1	36.1	44.6	9.7	22.1	22.1	8.5	18.7	18.7
Actuated g/C Ratio	0.10	0.39	0.50	0.11	0.40	0.50	0.11	0.25	0.25	0.10	0.21	0.21
v/c Ratio	0.41	0.52	0.20	0.49	0.48	0.06	0.52	0.27	0.25	0.45	0.51	0.19
Control Delay	44.4	24.2	3.3	44.0	22.6	3.1	45.9	28.8	6.8	51.1	33.6	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	24.2	3.3	44.0	22.6	3.1	45.9	28.8	6.8	51.1	33.6	3.2
LOS	D	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		23.5			24.9			29.5			31.4	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 89.4	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay: 26.0	Intersection LOS: C
Intersection Capacity Utilization 60.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	957	159	168	916	48	160	220	110	67	356	75
Future Volume (veh/h)	119	957	159	168	916	48	160	220	110	67	356	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	123	987	121	173	944	34	165	227	44	69	367	43
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	214	2079	759	274	2216	755	255	743	330	98	654	287
Arrive On Green	0.07	0.42	0.42	0.09	0.45	0.44	0.09	0.22	0.22	0.06	0.19	0.19
Sat Flow, veh/h	3141	4914	1505	3141	4914	1522	2956	3420	1519	1619	3420	1498
Grp Volume(v), veh/h	123	987	121	173	944	34	165	227	44	69	367	43
Grp Sat Flow(s),veh/h/ln	1570	1638	1505	1570	1638	1522	1478	1710	1519	1619	1710	1498
Q Serve(g_s), s	3.0	11.4	3.4	4.2	10.3	0.9	4.3	4.4	1.8	3.3	7.7	1.9
Cycle Q Clear(g_c), s	3.0	11.4	3.4	4.2	10.3	0.9	4.3	4.4	1.8	3.3	7.7	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	214	2079	759	274	2216	755	255	743	330	98	654	287
V/C Ratio(X)	0.57	0.47	0.16	0.63	0.43	0.05	0.65	0.31	0.13	0.71	0.56	0.15
Avail Cap(c_a), veh/h	658	2079	759	838	2216	755	451	1781	791	226	1738	761
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	16.4	10.6	34.7	14.7	10.2	34.8	25.8	24.8	36.3	28.8	26.5
Incr Delay (d2), s/veh	0.9	0.8	0.4	0.9	0.6	0.1	1.0	0.2	0.2	3.5	0.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	4.1	1.0	1.5	3.4	0.3	1.5	1.7	0.6	1.3	3.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.5	17.2	11.0	35.6	15.3	10.3	35.8	26.1	25.0	39.8	29.6	26.7
LnGrp LOS	D	B	B	D	B	B	D	C	C	D	C	C
Approach Vol, veh/h		1231			1151			436			479	
Approach Delay, s/veh		18.5			18.2			29.6			30.8	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	21.1	10.9	38.0	10.8	19.1	9.4	39.5
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	10.4	39.6	20.4	* 30	11.4	38.6	15.9	33.7
Max Q Clear Time (g_c+I1), s	5.3	6.4	6.2	13.4	6.3	9.7	5.0	12.3
Green Ext Time (p_c), s	0.0	1.5	0.2	6.6	0.1	2.5	0.1	6.3

Intersection Summary	
HCM 6th Ctrl Delay	21.7
HCM 6th LOS	C

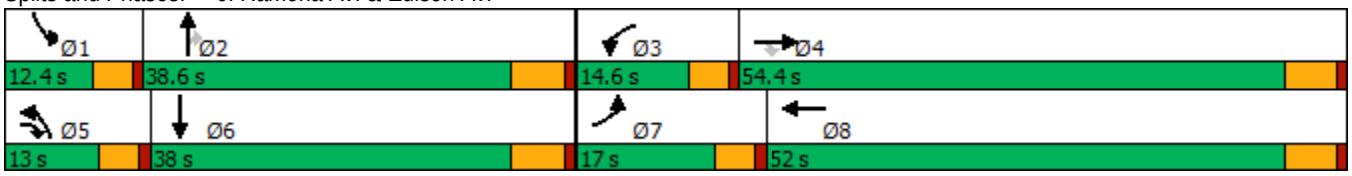
Notes

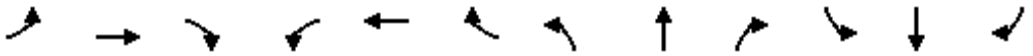
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	102	909	62	54	1055	46	320	61	52	472
Future Volume (vph)	102	909	62	54	1055	46	320	61	52	472
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	17.0	54.4	13.0	14.6	52.0	13.0	38.6	38.6	12.4	38.0
Total Split (%)	14.2%	45.3%	10.8%	12.2%	43.3%	10.8%	32.2%	32.2%	10.3%	31.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None
Act Effct Green (s)	11.3	53.9	61.7	8.6	48.7	7.8	27.5	27.5	7.6	27.3
Actuated g/C Ratio	0.10	0.49	0.57	0.08	0.45	0.07	0.25	0.25	0.07	0.25
v/c Ratio	0.68	0.60	0.05	0.47	0.82	0.44	0.41	0.15	0.52	0.74
Control Delay	70.0	24.9	3.4	63.6	34.2	64.3	35.9	2.3	69.0	42.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.0	24.9	3.4	63.6	34.2	64.3	35.9	2.3	69.0	42.7
LOS	E	C	A	E	C	E	D	A	E	D
Approach Delay		27.9			35.6		34.1			44.9
Approach LOS		C			D		C			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108.9	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 34.7	Intersection LOS: C
Intersection Capacity Utilization 74.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	909	62	54	1055	72	46	320	61	52	472	96
Future Volume (veh/h)	102	909	62	54	1055	72	46	320	61	52	472	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1700	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	113	1010	65	60	1172	76	51	356	37	58	524	95
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	147	1742	1347	84	1533	99	72	792	353	81	685	124
Arrive On Green	0.09	0.51	0.50	0.05	0.47	0.45	0.04	0.23	0.23	0.05	0.24	0.22
Sat Flow, veh/h	1619	3420	2480	1619	3258	211	1619	3420	1521	1619	2887	521
Grp Volume(v), veh/h	113	1010	65	60	615	633	51	356	37	58	309	310
Grp Sat Flow(s),veh/h/ln	1619	1710	1240	1619	1710	1759	1619	1710	1521	1619	1710	1698
Q Serve(g_s), s	7.0	21.0	1.3	3.7	30.3	30.4	3.2	9.1	2.0	3.6	17.2	17.4
Cycle Q Clear(g_c), s	7.0	21.0	1.3	3.7	30.3	30.4	3.2	9.1	2.0	3.6	17.2	17.4
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	147	1742	1347	84	805	828	72	792	353	81	406	403
V/C Ratio(X)	0.77	0.58	0.05	0.71	0.76	0.77	0.70	0.45	0.10	0.71	0.76	0.77
Avail Cap(c_a), veh/h	206	1742	1347	168	805	828	143	1160	516	133	570	566
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.3	17.4	11.0	47.6	22.3	22.4	48.0	33.6	30.8	47.7	36.2	36.6
Incr Delay (d2), s/veh	6.5	1.4	0.1	4.2	6.8	6.7	4.6	0.4	0.1	4.3	3.9	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	7.8	0.3	1.5	12.5	12.9	1.3	3.7	0.7	1.5	7.3	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.9	18.8	11.0	51.8	29.1	29.1	52.7	34.0	31.0	52.0	40.1	40.7
LnGrp LOS	D	B	B	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		1188			1308			444			677	
Approach Delay, s/veh		21.6			30.1			35.9			41.4	
Approach LOS		C			C			D			D	

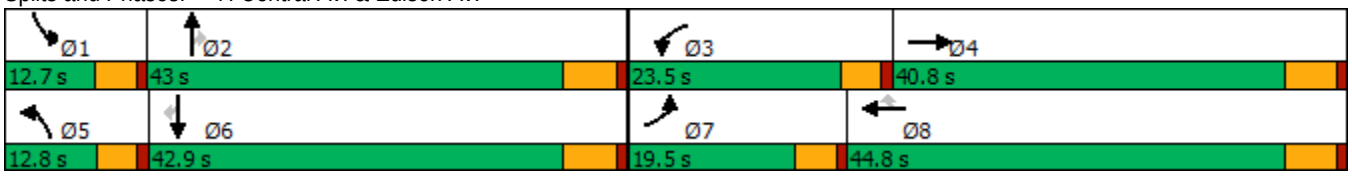
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	27.6	9.3	55.9	8.6	28.2	13.2	52.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	7.8	32.8	10.0	48.6	8.4	32.2	12.4	46.2
Max Q Clear Time (g_c+I1), s	5.6	11.1	5.7	23.0	5.2	19.4	9.0	32.4
Green Ext Time (p_c), s	0.0	2.1	0.0	7.5	0.0	2.8	0.0	6.4

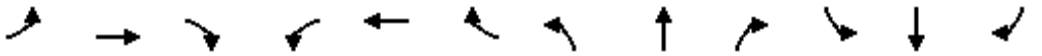
Intersection Summary	
HCM 6th Ctrl Delay	30.1
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	158	564	337	1080	125	81	839	328	94	989	267
Future Volume (vph)	158	564	337	1080	125	81	839	328	94	989	267
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	19.5	40.8	23.5	44.8	44.8	12.8	43.0	43.0	12.7	42.9	42.9
Total Split (%)	16.3%	34.0%	19.6%	37.3%	37.3%	10.7%	35.8%	35.8%	10.6%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	14.6	38.2	17.2	40.8	40.8	8.4	38.3	38.3	8.7	38.6	38.6
Actuated g/C Ratio	0.12	0.32	0.15	0.34	0.34	0.07	0.32	0.32	0.07	0.33	0.33
v/c Ratio	0.83	0.60	0.77	0.96	0.22	0.74	0.79	0.54	0.83	0.93	0.49
Control Delay	82.9	36.4	60.7	56.0	6.7	88.9	42.7	15.0	101.8	53.3	21.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.9	36.4	60.7	56.0	6.7	88.9	42.7	15.0	101.8	53.3	21.9
LOS	F	D	E	E	A	F	D	B	F	D	C
Approach Delay		45.8		53.0			38.4			50.4	
Approach LOS		D		D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 47.4	Intersection LOS: D
Intersection Capacity Utilization 88.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	564	61	337	1080	125	81	839	328	94	989	267
Future Volume (veh/h)	158	564	61	337	1080	125	81	839	328	94	989	267
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	165	588	58	351	1125	102	84	874	160	98	1030	220
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	197	1051	104	419	1184	521	111	1103	485	120	1121	493
Arrive On Green	0.12	0.33	0.32	0.13	0.35	0.35	0.07	0.32	0.32	0.07	0.33	0.33
Sat Flow, veh/h	1619	3145	310	3141	3420	1505	1619	3420	1503	1619	3420	1504
Grp Volume(v), veh/h	165	319	327	351	1125	102	84	874	160	98	1030	220
Grp Sat Flow(s),veh/h/ln	1619	1710	1744	1570	1710	1505	1619	1710	1503	1619	1710	1504
Q Serve(g_s), s	11.7	18.0	18.1	12.8	37.8	5.6	6.0	27.4	9.5	7.0	34.1	13.6
Cycle Q Clear(g_c), s	11.7	18.0	18.1	12.8	37.8	5.6	6.0	27.4	9.5	7.0	34.1	13.6
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	197	572	583	419	1184	521	111	1103	485	120	1121	493
V/C Ratio(X)	0.84	0.56	0.56	0.84	0.95	0.20	0.76	0.79	0.33	0.82	0.92	0.45
Avail Cap(c_a), veh/h	213	572	583	520	1184	521	121	1132	498	120	1129	497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.6	32.1	32.3	49.8	37.5	27.0	53.9	36.3	30.3	53.8	38.1	31.2
Incr Delay (d2), s/veh	21.5	3.9	3.9	8.0	16.6	0.8	18.7	3.8	0.4	32.6	11.9	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	7.8	8.0	5.4	17.7	2.1	3.0	11.5	3.4	3.9	15.4	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.2	36.0	36.1	57.8	54.1	27.8	72.6	40.2	30.6	86.4	49.9	31.8
LnGrp LOS	E	D	D	E	D	C	E	D	C	F	D	C
Approach Vol, veh/h		811			1578			1118			1348	
Approach Delay, s/veh		43.4			53.2			41.2			49.6	
Approach LOS		D			D			D			D	

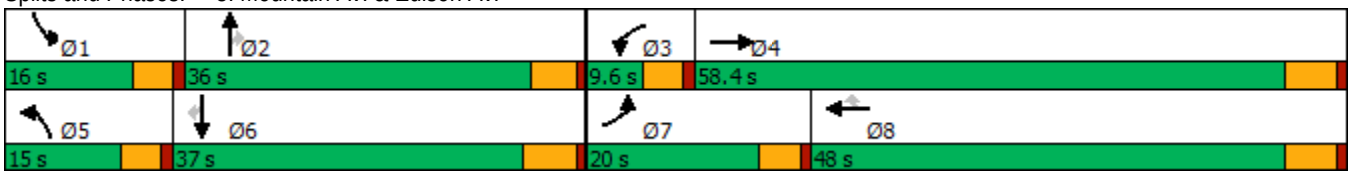
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	42.0	19.7	43.4	12.1	42.6	18.3	44.8
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	8.1	37.2	18.9	35.0	8.2	37.1	14.9	39.0
Max Q Clear Time (g_c+I1), s	9.0	29.4	14.8	20.1	8.0	36.1	13.7	39.8
Green Ext Time (p_c), s	0.0	3.6	0.3	3.1	0.0	0.7	0.0	0.0

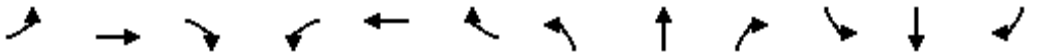
Intersection Summary	
HCM 6th Ctrl Delay	47.8
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	150	629	11	1105	116	90	164	44	114	84	281
Future Volume (vph)	150	629	11	1105	116	90	164	44	114	84	281
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	20.0	58.4	9.6	48.0	48.0	15.0	36.0	36.0	16.0	37.0	37.0
Total Split (%)	16.7%	48.7%	8.0%	40.0%	40.0%	12.5%	30.0%	30.0%	13.3%	30.8%	30.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	14.1	60.8	5.6	44.4	44.4	9.9	17.8	17.8	11.2	19.1	19.1
Actuated g/C Ratio	0.14	0.59	0.05	0.43	0.43	0.10	0.17	0.17	0.11	0.18	0.18
v/c Ratio	0.74	0.26	0.14	0.82	0.17	0.64	0.58	0.12	0.71	0.27	0.65
Control Delay	65.1	12.0	54.7	33.5	2.9	66.5	47.3	0.7	69.3	38.6	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.1	12.0	54.7	33.5	2.9	66.5	47.3	0.7	69.3	38.6	16.6
LOS	E	B	D	C	A	E	D	A	E	D	B
Approach Delay		21.6		30.8			46.2			33.0	
Approach LOS		C		C			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.6	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 30.1	Intersection LOS: C
Intersection Capacity Utilization 71.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	629	43	11	1105	116	90	164	44	114	84	281
Future Volume (veh/h)	150	629	43	11	1105	116	90	164	44	114	84	281
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	163	684	43	12	1201	115	98	178	18	124	91	167
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	201	2687	168	33	1592	709	131	246	208	160	291	242
Arrive On Green	0.12	0.57	0.55	0.02	0.47	0.47	0.08	0.14	0.14	0.10	0.16	0.16
Sat Flow, veh/h	1619	4720	295	1619	3420	1524	1619	1800	1525	1619	1800	1497
Grp Volume(v), veh/h	163	473	254	12	1201	115	98	178	18	124	91	167
Grp Sat Flow(s),veh/h/ln	1619	1638	1739	1619	1710	1524	1619	1800	1525	1619	1800	1497
Q Serve(g_s), s	9.4	7.0	7.1	0.7	27.6	4.2	5.7	9.1	1.0	7.1	4.3	10.1
Cycle Q Clear(g_c), s	9.4	7.0	7.1	0.7	27.6	4.2	5.7	9.1	1.0	7.1	4.3	10.1
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	201	1865	990	33	1592	709	131	246	208	160	291	242
V/C Ratio(X)	0.81	0.25	0.26	0.36	0.75	0.16	0.75	0.72	0.09	0.78	0.31	0.69
Avail Cap(c_a), veh/h	271	1865	990	95	1592	709	186	603	511	203	622	517
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.7	10.4	10.5	46.2	21.0	14.8	43.0	39.5	36.0	42.0	35.3	37.8
Incr Delay (d2), s/veh	9.1	0.3	0.6	2.4	3.4	0.5	5.0	4.0	0.2	10.0	0.6	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	2.3	2.5	0.3	10.6	1.4	2.4	4.2	0.4	3.2	1.8	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.9	10.7	11.1	48.6	24.4	15.3	48.0	43.5	36.2	52.0	35.9	41.2
LnGrp LOS	D	B	B	D	C	B	D	D	D	D	D	D
Approach Vol, veh/h		890			1328			294			382	
Approach Delay, s/veh		18.0			23.8			44.6			43.5	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	17.8	6.0	58.4	11.7	19.5	15.9	48.5
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	11.4	* 31	5.0	52.6	10.4	31.2	15.4	42.2
Max Q Clear Time (g_c+I1), s	9.1	11.1	2.7	9.1	7.7	12.1	11.4	29.6
Green Ext Time (p_c), s	0.0	0.9	0.0	4.8	0.0	0.9	0.1	6.6

Intersection Summary	
HCM 6th Ctrl Delay	26.7
HCM 6th LOS	C

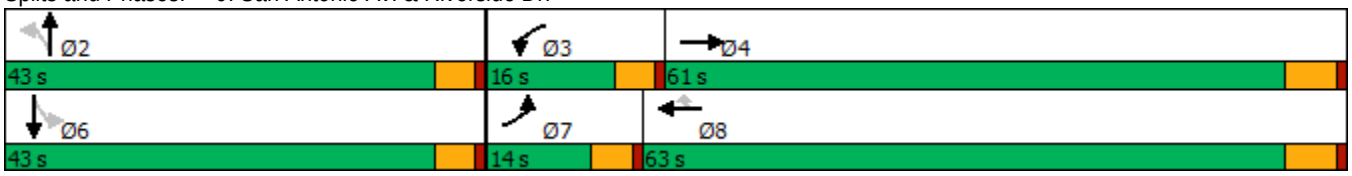
Notes

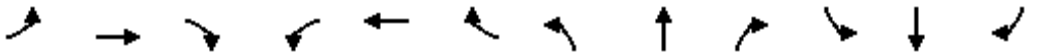
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	18	523	38	900	9	124	2	32	6
Future Volume (vph)	18	523	38	900	9	124	2	32	6
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	14.0	61.0	16.0	63.0	63.0	43.0	43.0	43.0	43.0
Total Split (%)	11.7%	50.8%	13.3%	52.5%	52.5%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	6.5	61.5	7.6	64.6	64.6	17.1	17.1	17.1	17.1
Actuated g/C Ratio	0.07	0.65	0.08	0.69	0.69	0.18	0.18	0.18	0.18
v/c Ratio	0.17	0.29	0.31	0.41	0.01	0.60	0.17	0.15	0.19
Control Delay	47.7	9.1	49.0	9.0	0.0	46.8	10.9	33.2	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.7	9.1	49.0	9.0	0.0	46.8	10.9	33.2	11.6
LOS	D	A	D	A	A	D	B	C	B
Approach Delay		10.2		10.6			36.5		19.2
Approach LOS		B		B			D		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 94	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 13.4	Intersection LOS: B
Intersection Capacity Utilization 55.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	523	62	38	900	9	124	2	47	32	6	53
Future Volume (veh/h)	18	523	62	38	900	9	124	2	47	32	6	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	19	562	63	41	968	9	133	2	28	34	6	40
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	45	2042	228	69	2303	1005	260	17	232	274	33	219
Arrive On Green	0.03	0.66	0.64	0.04	0.67	0.67	0.16	0.16	0.15	0.16	0.16	0.15
Sat Flow, veh/h	1619	3101	347	1619	3420	1492	1305	103	1436	1321	203	1353
Grp Volume(v), veh/h	19	309	316	41	968	9	133	0	30	34	0	46
Grp Sat Flow(s),veh/h/ln	1619	1710	1738	1619	1710	1492	1305	0	1538	1321	0	1556
Q Serve(g_s), s	1.0	6.6	6.7	2.2	11.3	0.2	8.6	0.0	1.5	2.0	0.0	2.3
Cycle Q Clear(g_c), s	1.0	6.6	6.7	2.2	11.3	0.2	10.8	0.0	1.5	3.4	0.0	2.3
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.93	1.00		0.87
Lane Grp Cap(c), veh/h	45	1126	1144	69	2303	1005	260	0	249	274	0	252
V/C Ratio(X)	0.42	0.27	0.28	0.59	0.42	0.01	0.51	0.00	0.12	0.12	0.00	0.18
Avail Cap(c_a), veh/h	185	1126	1144	222	2303	1005	629	0	685	648	0	693
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.9	6.2	6.3	41.2	6.5	4.7	36.4	0.0	31.6	32.9	0.0	32.0
Incr Delay (d2), s/veh	2.3	0.6	0.6	3.0	0.6	0.0	1.6	0.0	0.2	0.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.0	2.0	0.9	3.1	0.0	2.8	0.0	0.6	0.6	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.2	6.8	6.9	44.1	7.1	4.7	38.0	0.0	31.9	33.1	0.0	32.3
LnGrp LOS	D	A	A	D	A	A	D	A	C	C	A	C
Approach Vol, veh/h		644			1018			163			80	
Approach Delay, s/veh		8.0			8.6			36.9			32.6	
Approach LOS		A			A			D			C	

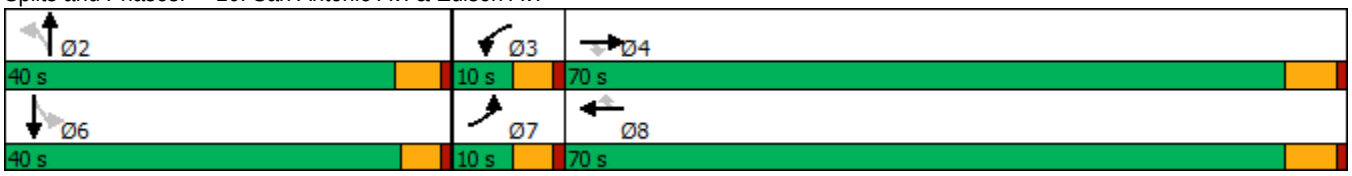
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.2	7.8	61.7		18.2	6.5	63.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		38.4	11.4	55.2		38.4	9.4	57.2				
Max Q Clear Time (g_c+I1), s		12.8	4.2	8.7		5.4	3.0	13.3				
Green Ext Time (p_c), s		0.6	0.0	3.8		0.4	0.0	7.6				

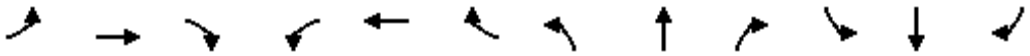
Intersection Summary												
HCM 6th Ctrl Delay			11.8									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	50	710	29	3	989	22	45	79	18	41
Future Volume (vph)	50	710	29	3	989	22	45	79	18	41
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	10.0	70.0	70.0	10.0	70.0	70.0	40.0	40.0	40.0	40.0
Total Split (%)	8.3%	58.3%	58.3%	8.3%	58.3%	58.3%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	6.0	73.1	73.1	5.8	67.1	67.1		17.2		17.2
Actuated g/C Ratio	0.06	0.73	0.73	0.06	0.67	0.67		0.17		0.17
v/c Ratio	0.56	0.31	0.03	0.06	0.47	0.02		0.69		0.53
Control Delay	71.5	6.4	0.8	51.0	10.1	0.0		54.3		28.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	71.5	6.4	0.8	51.0	10.1	0.0		54.3		28.0
LOS	E	A	A	D	B	A		D		C
Approach Delay		10.3			10.0			54.3		28.0
Approach LOS		B			B			D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 100.1	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 14.4	Intersection LOS: B
Intersection Capacity Utilization 60.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	710	29	3	989	22	45	79	15	18	41	100
Future Volume (veh/h)	50	710	29	3	989	22	45	79	15	18	41	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1000	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	54	772	24	3	1075	24	49	86	7	20	45	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	76	2481	1105	10	2355	1050	113	152	11	63	85	113
Arrive On Green	0.05	0.73	0.73	0.01	0.69	0.69	0.14	0.14	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1619	3420	1523	952	3420	1525	449	1097	80	150	633	844
Grp Volume(v), veh/h	54	772	24	3	1075	24	142	0	0	135	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1523	952	1710	1525	1626	0	0	1627	0	0
Q Serve(g_s), s	3.2	7.7	0.4	0.3	13.7	0.5	0.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.2	7.7	0.4	0.3	13.7	0.5	7.7	0.0	0.0	7.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.35		0.05	0.15		0.52
Lane Grp Cap(c), veh/h	76	2481	1105	10	2355	1050	277	0	0	261	0	0
V/C Ratio(X)	0.71	0.31	0.02	0.31	0.46	0.02	0.51	0.00	0.00	0.52	0.00	0.00
Avail Cap(c_a), veh/h	101	2481	1105	60	2355	1050	648	0	0	635	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	45.0	4.7	3.7	47.1	6.8	4.7	38.8	0.0	0.0	39.3	0.0	0.0
Incr Delay (d2), s/veh	7.5	0.3	0.0	6.4	0.6	0.0	1.5	0.0	0.0	1.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.0	0.1	0.1	3.9	0.1	3.2	0.0	0.0	3.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.5	5.0	3.7	53.5	7.4	4.8	40.3	0.0	0.0	40.9	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		850			1102			142			135	
Approach Delay, s/veh		8.0			7.5			40.3			40.9	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		17.3	5.0	73.5		17.3	8.5	70.0				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		34.9	5.4	64.2		* 35	5.4	64.2				
Max Q Clear Time (g_c+I1), s		9.7	2.3	9.7		9.3	5.2	15.7				
Green Ext Time (p_c), s		0.7	0.0	5.7		0.8	0.0	9.0				

Intersection Summary	
HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B

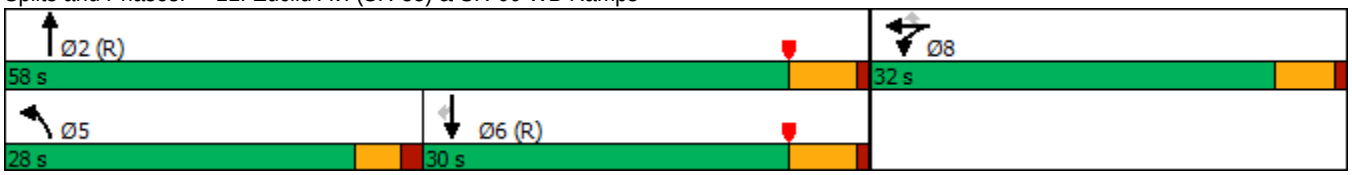
Notes

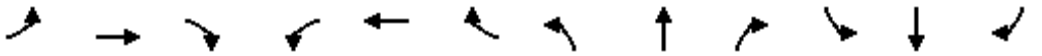
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	737	6	459	474	1024	1083	529
Future Volume (vph)	737	6	459	474	1024	1083	529
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	32.0	32.0	32.0	28.0	58.0	30.0	30.0
Total Split (%)	35.6%	35.6%	35.6%	31.1%	64.4%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	26.0	26.0	26.0	24.5	53.5	24.5	24.5
Actuated g/C Ratio	0.29	0.29	0.29	0.27	0.59	0.27	0.27
v/c Ratio	0.89	0.92	0.79	1.03	0.51	1.17	0.66
Control Delay	52.0	57.4	35.0	58.5	22.0	120.4	6.8
Queue Delay	0.0	0.0	0.0	0.0	2.7	0.0	0.0
Total Delay	52.0	57.4	35.0	58.5	24.7	120.4	6.8
LOS	D	E	D	E	C	F	A
Approach Delay		48.5			35.4	83.1	
Approach LOS		D			D	F	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 56.9	Intersection LOS: E
Intersection Capacity Utilization 112.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	737	6	459	474	1024	0	0	1083	529
Future Volume (veh/h)	0	0	0	737	6	459	474	1024	0	0	1083	529
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				870	0	181	504	1089	0	0	1152	335
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				964	0	429	472	2227	0	0	1104	492
Arrive On Green				0.27	0.00	0.27	0.52	1.00	0.00	0.00	0.31	0.31
Sat Flow, veh/h				3619	0	1610	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				870	0	181	504	1089	0	0	1152	335
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1610
Q Serve(g_s), s				20.9	0.0	8.4	23.5	0.0	0.0	0.0	27.5	16.4
Cycle Q Clear(g_c), s				20.9	0.0	8.4	23.5	0.0	0.0	0.0	27.5	16.4
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				964	0	429	472	2227	0	0	1104	492
V/C Ratio(X)				0.90	0.00	0.42	1.07	0.49	0.00	0.00	1.04	0.68
Avail Cap(c_a), veh/h				1086	0	483	472	2227	0	0	1104	492
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.27	0.27	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.9	0.0	27.3	21.5	0.0	0.0	0.0	31.2	27.4
Incr Delay (d2), s/veh				9.1	0.0	0.2	41.8	0.2	0.0	0.0	39.1	7.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				9.7	0.0	3.0	11.0	0.1	0.0	0.0	17.1	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				41.0	0.0	27.5	63.3	0.2	0.0	0.0	70.4	34.8
LnGrp LOS				D	A	C	F	A	A	A	F	C
Approach Vol, veh/h					1051			1593			1487	
Approach Delay, s/veh					38.6			20.2			62.4	
Approach LOS					D			C			E	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		61.0			28.0	33.0		29.0				
Change Period (Y+Rc), s		5.5			4.5	5.5		5.0				
Max Green Setting (Gmax), s		52.5			23.5	24.5		27.0				
Max Q Clear Time (g_c+I1), s		2.0			25.5	29.5		22.9				
Green Ext Time (p_c), s		14.5			0.0	0.0		1.1				

Intersection Summary		
HCM 6th Ctrl Delay	40.1	
HCM 6th LOS	D	

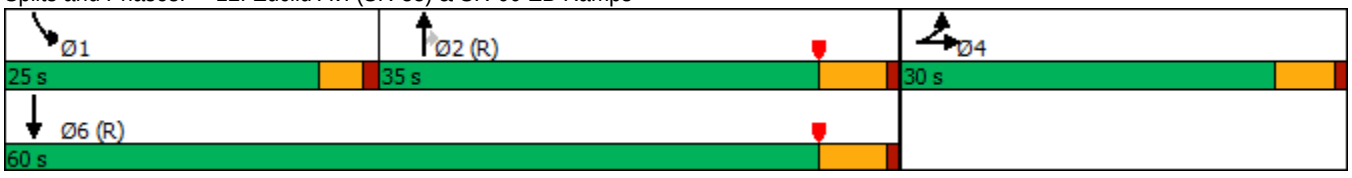
Notes

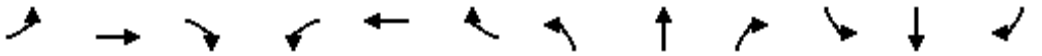
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	454	2	1045	769	409	1411
Future Volume (vph)	454	2	1045	769	409	1411
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	30.0	30.0	35.0	35.0	25.0	60.0
Total Split (%)	33.3%	33.3%	38.9%	38.9%	27.8%	66.7%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	25.0	25.0	29.5	29.5	21.0	54.5
Actuated g/C Ratio	0.28	0.28	0.33	0.33	0.23	0.61
v/c Ratio	0.90	1.36	0.93	0.86	1.02	0.68
Control Delay	56.1	204.2	44.2	17.8	63.5	5.5
Queue Delay	23.7	1.2	0.0	0.0	0.0	1.6
Total Delay	79.8	205.4	44.2	17.8	63.5	7.1
LOS	E	F	D	B	E	A
Approach Delay		154.2	33.0			19.8
Approach LOS		F	C			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.36	
Intersection Signal Delay: 54.0	Intersection LOS: D
Intersection Capacity Utilization 112.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	454	2	546	0	0	0	0	1045	769	409	1411	0
Future Volume (veh/h)	454	2	546	0	0	0	0	1045	769	409	1411	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	478	2	520				0	1100	610	431	1485	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	503	2	446				0	1183	513	422	2186	0
Arrive On Green	0.28	0.28	0.28				0.00	0.33	0.33	0.31	0.81	0.00
Sat Flow, veh/h	1810	6	1605				0	3705	1567	1810	3705	0
Grp Volume(v), veh/h	478	0	522				0	1100	610	431	1485	0
Grp Sat Flow(s),veh/h/ln	1810	0	1611				0	1805	1567	1810	1805	0
Q Serve(g_s), s	23.3	0.0	25.0				0.0	26.5	29.5	21.0	15.9	0.0
Cycle Q Clear(g_c), s	23.3	0.0	25.0				0.0	26.5	29.5	21.0	15.9	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	503	0	448				0	1183	513	422	2186	0
V/C Ratio(X)	0.95	0.00	1.17				0.00	0.93	1.19	1.02	0.68	0.00
Avail Cap(c_a), veh/h	503	0	448				0	1183	513	422	2186	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.33	1.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.61	0.61	0.09	0.09	0.00
Uniform Delay (d), s/veh	31.9	0.0	32.5				0.0	29.2	30.3	31.0	5.0	0.0
Incr Delay (d2), s/veh	27.9	0.0	96.7				0.0	9.4	96.4	18.8	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.3	0.0	21.0				0.0	12.2	24.0	10.0	3.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.8	0.0	129.2				0.0	38.7	126.7	49.8	5.2	0.0
LnGrp LOS	E	A	F				A	D	F	F	A	A
Approach Vol, veh/h		1000						1710			1916	
Approach Delay, s/veh		96.0						70.1			15.2	
Approach LOS		F						E			B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	25.0	35.0		30.0		60.0						
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5						
Max Green Setting (Gmax), s	21.0	29.5		25.0		54.5						
Max Q Clear Time (g_c+I1), s	23.0	31.5		27.0		17.9						
Green Ext Time (p_c), s	0.0	0.0		0.0		20.2						

Intersection Summary	
HCM 6th Ctrl Delay	53.0
HCM 6th LOS	D

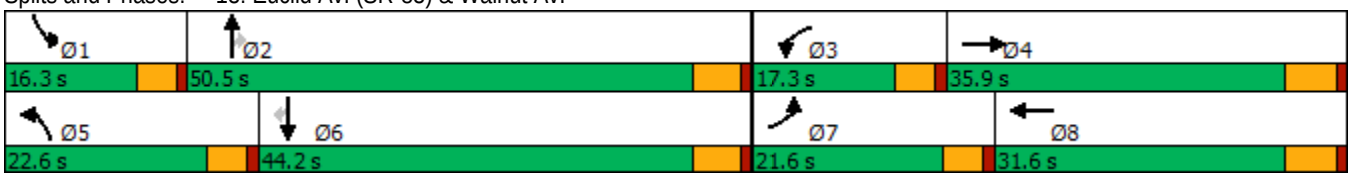
Notes

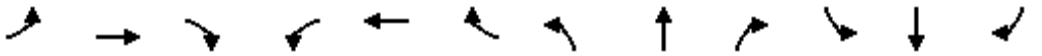
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	127	325	81	346	141	1403	51	168	1579	66
Future Volume (vph)	127	325	81	346	141	1403	51	168	1579	66
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	21.6	35.9	17.3	31.6	22.6	50.5	50.5	16.3	44.2	44.2
Total Split (%)	18.0%	29.9%	14.4%	26.3%	18.8%	42.1%	42.1%	13.6%	36.8%	36.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	13.0	27.4	9.7	21.8	13.9	45.5	45.5	10.2	41.7	41.7
Actuated g/C Ratio	0.12	0.25	0.09	0.20	0.13	0.41	0.41	0.09	0.38	0.38
v/c Ratio	0.71	0.56	0.60	0.84	0.73	0.73	0.08	0.66	0.90	0.10
Control Delay	68.8	36.7	68.2	45.9	68.8	31.7	0.2	62.1	42.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.8	36.7	68.2	45.9	68.8	31.7	0.2	62.1	42.2	0.3
LOS	E	D	E	D	E	C	A	E	D	A
Approach Delay		43.8		48.6		33.9			42.5	
Approach LOS		D		D		C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 40.6	Intersection LOS: D
Intersection Capacity Utilization 83.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	325	126	81	346	230	141	1403	51	168	1579	66
Future Volume (veh/h)	127	325	126	81	346	230	141	1403	51	168	1579	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	134	342	97	85	364	202	148	1477	36	177	1662	48
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	160	624	175	106	432	236	175	2098	651	231	1951	605
Arrive On Green	0.10	0.24	0.24	0.07	0.20	0.20	0.11	0.43	0.43	0.08	0.40	0.40
Sat Flow, veh/h	1619	2639	738	1619	2133	1164	1619	4914	1524	2956	4914	1524
Grp Volume(v), veh/h	134	220	219	85	291	275	148	1477	36	177	1662	48
Grp Sat Flow(s),veh/h/ln	1619	1710	1667	1619	1710	1586	1619	1638	1524	1478	1638	1524
Q Serve(g_s), s	8.6	11.9	12.2	5.5	17.2	17.7	9.5	26.0	1.5	6.2	32.6	2.1
Cycle Q Clear(g_c), s	8.6	11.9	12.2	5.5	17.2	17.7	9.5	26.0	1.5	6.2	32.6	2.1
Prop In Lane	1.00		0.44	1.00		0.73	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	160	405	394	106	347	322	175	2098	651	231	1951	605
V/C Ratio(X)	0.84	0.54	0.56	0.81	0.84	0.86	0.85	0.70	0.06	0.77	0.85	0.08
Avail Cap(c_a), veh/h	261	487	475	195	418	388	276	2098	651	327	1951	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.7	35.3	35.4	48.7	40.4	40.6	46.2	24.8	17.8	47.7	29.0	19.8
Incr Delay (d2), s/veh	5.7	1.1	1.2	5.3	12.1	14.8	7.5	2.0	0.2	3.8	4.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	4.9	4.9	2.3	8.1	7.9	4.1	9.9	0.5	2.4	12.9	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.4	36.5	36.7	54.1	52.5	55.4	53.7	26.8	17.9	51.6	34.0	20.1
LnGrp LOS	D	D	D	D	D	E	D	C	B	D	C	C
Approach Vol, veh/h		573			651			1661			1887	
Approach Delay, s/veh		40.3			53.9			29.0			35.3	
Approach LOS		D			D			C			D	

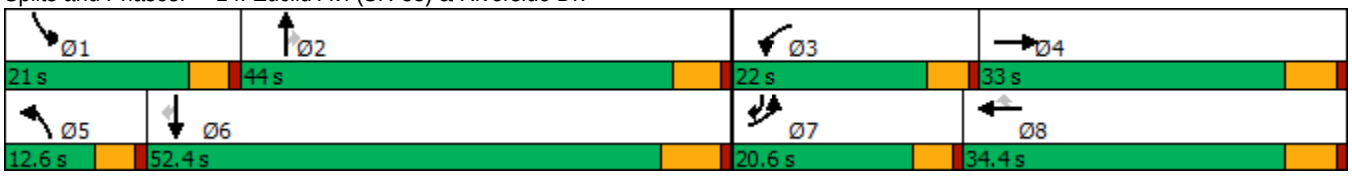
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.9	50.5	11.5	30.8	16.0	47.3	15.1	27.2
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	11.7	45.1	12.7	30.1	18.0	38.8	17.0	25.8
Max Q Clear Time (g_c+I1), s	8.2	28.0	7.5	14.2	11.5	34.6	10.6	19.7
Green Ext Time (p_c), s	0.1	9.5	0.0	2.1	0.1	3.4	0.1	1.7

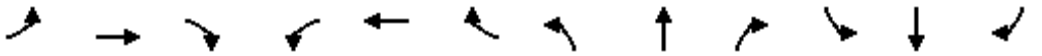
Intersection Summary	
HCM 6th Ctrl Delay	36.2
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	172	350	214	549	130	86	1164	177	195	1373	171
Future Volume (vph)	172	350	214	549	130	86	1164	177	195	1373	171
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	20.6	33.0	22.0	34.4	34.4	12.6	44.0	44.0	21.0	52.4	20.6
Total Split (%)	17.2%	27.5%	18.3%	28.7%	28.7%	10.5%	36.7%	36.7%	17.5%	43.7%	17.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None
Act Effct Green (s)	15.3	27.2	17.4	29.3	29.3	8.0	38.7	38.7	16.3	45.9	63.1
Actuated g/C Ratio	0.13	0.23	0.14	0.24	0.24	0.07	0.32	0.32	0.14	0.38	0.53
v/c Ratio	0.88	1.13	0.96	0.69	0.28	0.85	1.11	0.31	0.94	1.10	0.22
Control Delay	89.8	128.3	101.2	46.5	5.4	109.7	100.9	9.1	98.9	94.2	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.8	128.3	101.2	46.5	5.4	109.7	100.9	9.1	98.9	94.2	8.0
LOS	F	F	F	D	A	F	F	A	F	F	A
Approach Delay		117.3		53.6			90.1			86.3	
Approach LOS		F		D			F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 85.2	Intersection LOS: F
Intersection Capacity Utilization 101.5%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	350	85	214	549	130	86	1164	177	195	1373	171
Future Volume (veh/h)	172	350	85	214	549	130	86	1164	177	195	1373	171
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	181	368	73	225	578	108	91	1225	146	205	1445	121
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	205	328	65	233	827	369	107	1090	486	219	1327	784
Arrive On Green	0.13	0.22	0.22	0.14	0.24	0.24	0.07	0.32	0.32	0.14	0.39	0.39
Sat Flow, veh/h	1619	1459	289	1619	3420	1525	1619	3420	1525	1619	3420	1524
Grp Volume(v), veh/h	181	0	441	225	578	108	91	1225	146	205	1445	121
Grp Sat Flow(s),veh/h/ln	1619	0	1748	1619	1710	1525	1619	1710	1525	1619	1710	1524
Q Serve(g_s), s	13.3	0.0	27.2	16.7	18.7	7.0	6.7	38.6	8.7	15.2	47.0	5.1
Cycle Q Clear(g_c), s	13.3	0.0	27.2	16.7	18.7	7.0	6.7	38.6	8.7	15.2	47.0	5.1
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	205	0	393	233	827	369	107	1090	486	219	1327	784
V/C Ratio(X)	0.88	0.00	1.12	0.97	0.70	0.29	0.85	1.12	0.30	0.93	1.09	0.15
Avail Cap(c_a), veh/h	214	0	393	233	827	369	107	1090	486	219	1327	784
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	0.0	47.0	51.6	41.9	37.4	56.0	41.2	31.1	51.8	37.1	15.5
Incr Delay (d2), s/veh	30.5	0.0	83.3	49.4	2.6	0.4	42.6	68.0	1.6	42.4	52.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.0	20.5	9.8	7.9	2.6	3.9	25.4	3.3	8.6	28.4	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.6	0.0	130.3	100.9	44.5	37.9	98.6	109.2	32.7	94.2	89.6	15.9
LnGrp LOS	F	A	F	F	D	D	F	F	C	F	F	B
Approach Vol, veh/h		622			911			1462			1771	
Approach Delay, s/veh		116.4			57.6			100.9			85.1	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	45.1	22.0	33.0	12.6	53.5	19.9	35.1
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	16.4	* 39	17.4	27.2	8.0	45.9	16.0	28.6
Max Q Clear Time (g_c+I1), s	17.2	40.6	18.7	29.2	8.7	49.0	15.3	20.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	88.8
HCM 6th LOS	F

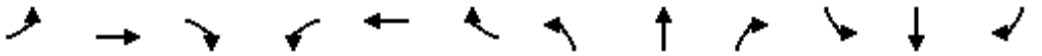
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	117	186	52	81	170	58	1248	145	63	1482	104
Future Volume (vph)	117	186	52	81	170	58	1248	145	63	1482	104
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	44.0	44.0	44.0	44.0	44.0	15.0	60.0	60.0	16.0	61.0	61.0
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	12.5%	50.0%	50.0%	13.3%	50.8%	50.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	29.1	29.1	29.1		29.1	8.1	56.3	56.3	8.5	55.4	55.4
Actuated g/C Ratio	0.27	0.27	0.27		0.27	0.08	0.52	0.52	0.08	0.52	0.52
v/c Ratio	0.63	0.41	0.12		0.92	0.51	0.74	0.18	0.52	0.89	0.14
Control Delay	50.1	34.8	4.2		68.0	65.9	25.9	10.6	65.4	34.0	6.9
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.1	34.8	4.2		68.0	65.9	25.9	10.6	65.4	34.0	6.9
LOS	D	C	A		E	E	C	B	E	C	A
Approach Delay		35.4			68.0		26.0			33.5	
Approach LOS		D			E		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 33.6	Intersection LOS: C
Intersection Capacity Utilization 94.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	186	52	81	170	57	58	1248	145	63	1482	104
Future Volume (veh/h)	117	186	52	81	170	57	58	1248	145	63	1482	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	124	198	39	86	181	49	62	1328	130	67	1577	80
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	227	495	419	120	221	55	77	1759	785	84	1773	774
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.05	0.51	0.51	0.05	0.52	0.52
Sat Flow, veh/h	1104	1800	1524	280	803	199	1619	3420	1525	1619	3420	1494
Grp Volume(v), veh/h	124	198	39	316	0	0	62	1328	130	67	1577	80
Grp Sat Flow(s),veh/h/ln	1104	1800	1524	1281	0	0	1619	1710	1525	1619	1710	1494
Q Serve(g_s), s	0.0	9.5	2.0	16.5	0.0	0.0	4.0	32.8	4.8	4.4	43.9	2.9
Cycle Q Clear(g_c), s	24.5	9.5	2.0	26.1	0.0	0.0	4.0	32.8	4.8	4.4	43.9	2.9
Prop In Lane	1.00		1.00	0.27		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	227	495	419	396	0	0	77	1759	785	84	1773	774
V/C Ratio(X)	0.55	0.40	0.09	0.80	0.00	0.00	0.80	0.75	0.17	0.80	0.89	0.10
Avail Cap(c_a), veh/h	319	645	546	523	0	0	158	1759	785	173	1773	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.9	31.4	28.7	38.6	0.0	0.0	50.2	20.5	13.7	50.0	22.9	13.1
Incr Delay (d2), s/veh	2.0	0.5	0.1	6.4	0.0	0.0	7.0	3.1	0.5	6.5	7.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	4.0	0.7	8.3	0.0	0.0	1.7	12.0	1.6	1.8	16.8	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.9	32.0	28.8	45.0	0.0	0.0	57.2	23.6	14.2	56.5	30.1	13.3
LnGrp LOS	D	C	C	D	A	A	E	C	B	E	C	B
Approach Vol, veh/h		361			316			1520			1724	
Approach Delay, s/veh		34.0			45.0			24.2			30.3	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.1	61.3		35.1	9.7	61.7		35.1				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	11.4	* 55		38.2	10.4	54.5		38.2				
Max Q Clear Time (g_c+I1), s	6.4	34.8		26.5	6.0	45.9		28.1				
Green Ext Time (p_c), s	0.0	9.1		1.2	0.0	6.0		1.2				

Intersection Summary			
HCM 6th Ctrl Delay		29.5	
HCM 6th LOS		C	

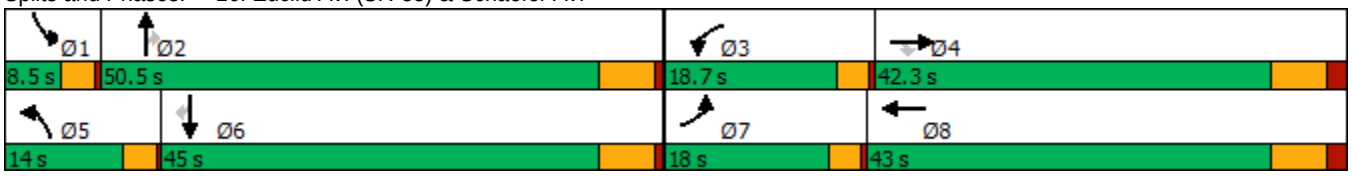
Notes

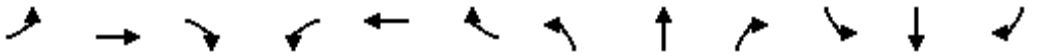
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	172	87	73	158	201	119	1213	39	33	1390	137
Future Volume (vph)	172	87	73	158	201	119	1213	39	33	1390	137
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	18.0	42.3	42.3	18.7	43.0	14.0	50.5	50.5	8.5	45.0	45.0
Total Split (%)	15.0%	35.3%	35.3%	15.6%	35.8%	11.7%	42.1%	42.1%	7.1%	37.5%	37.5%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	14.4	19.9	19.9	13.9	19.4	10.5	48.3	48.3	5.0	39.3	39.3
Actuated g/C Ratio	0.14	0.19	0.19	0.13	0.19	0.10	0.47	0.47	0.05	0.38	0.38
v/c Ratio	0.83	0.27	0.20	0.78	0.68	0.79	0.82	0.05	0.45	1.16	0.23
Control Delay	73.8	37.3	2.5	69.6	48.8	79.4	31.5	0.1	69.6	110.2	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.8	37.3	2.5	69.6	48.8	79.4	31.5	0.1	69.6	110.2	6.8
LOS	E	D	A	E	D	E	C	A	E	F	A
Approach Delay		48.6			57.7		34.7			100.3	
Approach LOS		D			E		C			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.7	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 66.5	Intersection LOS: E
Intersection Capacity Utilization 89.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	87	73	158	201	12	119	1213	39	33	1390	137
Future Volume (veh/h)	172	87	73	158	201	12	119	1213	39	33	1390	137
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	185	94	59	170	216	11	128	1304	32	35	1495	113
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	214	306	260	199	273	14	154	1601	714	51	1382	615
Arrive On Green	0.13	0.17	0.17	0.12	0.16	0.16	0.10	0.47	0.47	0.03	0.40	0.40
Sat Flow, veh/h	1619	1800	1525	1619	1697	86	1619	3420	1525	1619	3420	1522
Grp Volume(v), veh/h	185	94	59	170	0	227	128	1304	32	35	1495	113
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1784	1619	1710	1525	1619	1710	1522
Q Serve(g_s), s	10.8	4.4	3.2	9.9	0.0	11.8	7.5	31.6	1.1	2.1	39.0	4.6
Cycle Q Clear(g_c), s	10.8	4.4	3.2	9.9	0.0	11.8	7.5	31.6	1.1	2.1	39.0	4.6
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	214	306	260	199	0	287	154	1601	714	51	1382	615
V/C Ratio(X)	0.86	0.31	0.23	0.85	0.00	0.79	0.83	0.81	0.04	0.69	1.08	0.18
Avail Cap(c_a), veh/h	243	659	558	255	0	666	176	1601	714	84	1382	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	35.1	34.6	41.5	0.0	38.9	42.9	22.1	13.9	46.2	28.7	18.5
Incr Delay (d2), s/veh	22.0	0.4	0.3	16.3	0.0	3.7	21.9	3.4	0.0	5.9	49.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	1.9	1.2	4.7	0.0	5.2	3.7	11.6	0.4	0.9	23.4	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.0	35.5	34.9	57.8	0.0	42.6	64.8	25.4	14.0	52.2	78.2	18.6
LnGrp LOS	E	D	C	E	A	D	E	C	B	D	F	B
Approach Vol, veh/h		338			397			1464			1643	
Approach Delay, s/veh		50.5			49.1			28.6			73.5	
Approach LOS		D			D			C			E	

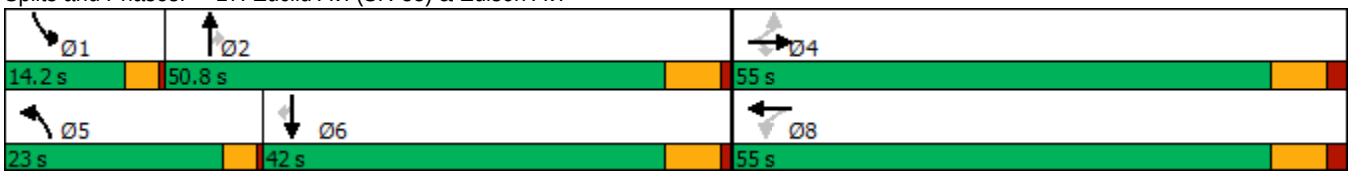
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	51.2	15.4	23.4	12.7	45.0	16.3	22.5
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	44.5	15.2	35.3	10.5	39.0	14.5	36.0
Max Q Clear Time (g_c+I1), s	4.1	33.6	11.9	6.4	9.5	41.0	12.8	13.8
Green Ext Time (p_c), s	0.0	6.0	0.1	0.5	0.0	0.0	0.0	0.9

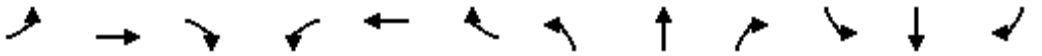
Intersection Summary	
HCM 6th Ctrl Delay	51.9
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	175	297	206	39	478	269	1146	44	78	1273	188
Future Volume (vph)	175	297	206	39	478	269	1146	44	78	1273	188
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	55.0	55.0	55.0	55.0	55.0	23.0	50.8	50.8	14.2	42.0	42.0
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	19.2%	42.3%	42.3%	11.8%	35.0%	35.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	48.0	48.0	48.0	48.0	48.0	19.5	48.1	48.1	9.2	36.0	36.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.16	0.40	0.40	0.08	0.30	0.30
v/c Ratio	1.36	0.43	0.29	0.13	0.81	1.07	0.87	0.07	0.65	1.29	0.37
Control Delay	233.5	28.4	4.1	24.2	41.9	122.9	42.2	2.9	77.6	174.6	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	233.5	28.4	4.1	24.2	41.9	122.9	42.2	2.9	77.6	174.6	17.0
LOS	F	C	A	C	D	F	D	A	E	F	B
Approach Delay		73.9			40.8		55.9			150.4	
Approach LOS		E			D		E			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.36	
Intersection Signal Delay: 90.8	Intersection LOS: F
Intersection Capacity Utilization 115.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	297	206	39	478	72	269	1146	44	78	1273	188
Future Volume (veh/h)	175	297	206	39	478	72	269	1146	44	78	1273	188
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	182	309	160	41	498	70	280	1194	38	81	1326	145
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	152	720	610	304	618	87	263	1371	611	100	1026	447
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.16	0.40	0.40	0.06	0.30	0.30
Sat Flow, veh/h	809	1800	1524	886	1544	217	1619	3420	1525	1619	3420	1489
Grp Volume(v), veh/h	182	309	160	41	0	568	280	1194	38	81	1326	145
Grp Sat Flow(s),veh/h/ln	809	1800	1524	886	0	1761	1619	1710	1525	1619	1710	1489
Q Serve(g_s), s	13.7	14.9	8.4	4.2	0.0	34.3	19.5	38.6	1.8	5.9	36.0	9.1
Cycle Q Clear(g_c), s	48.0	14.9	8.4	19.1	0.0	34.3	19.5	38.6	1.8	5.9	36.0	9.1
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	720	610	304	0	704	263	1371	611	100	1026	447
V/C Ratio(X)	1.19	0.43	0.26	0.13	0.00	0.81	1.06	0.87	0.06	0.81	1.29	0.32
Avail Cap(c_a), veh/h	152	720	610	304	0	704	263	1371	611	144	1026	447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.8	26.1	24.1	33.0	0.0	31.9	50.3	33.1	22.1	55.6	42.0	32.6
Incr Delay (d2), s/veh	134.4	0.4	0.2	0.2	0.0	6.9	73.5	6.4	0.0	12.8	138.9	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.2	6.2	3.0	0.9	0.0	15.1	12.9	15.9	0.6	2.7	33.9	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	190.2	26.5	24.4	33.2	0.0	38.8	123.7	39.5	22.1	68.4	180.9	33.0
LnGrp LOS	F	C	C	C	A	D	F	D	C	E	F	C
Approach Vol, veh/h		651			609			1512			1552	
Approach Delay, s/veh		71.7			38.4			54.7			161.2	
Approach LOS		E			D			D			F	

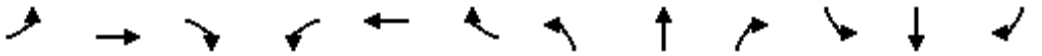
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.9	54.1		55.0	23.0	42.0		55.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	10.7	44.8		48.0	19.5	36.0		48.0				
Max Q Clear Time (g_c+I1), s	7.9	40.6		50.0	21.5	38.0		36.3				
Green Ext Time (p_c), s	0.0	2.7		0.0	0.0	0.0		2.8				

Intersection Summary			
HCM 6th Ctrl Delay		93.2	
HCM 6th LOS		F	

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	75	28	186	36	170	198	1384	14	77	1494	45
Future Volume (vph)	75	28	186	36	170	198	1384	14	77	1494	45
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	46.8	46.8	46.8	46.8	46.8	24.0	63.5	63.5	9.7	49.2	49.2
Total Split (%)	39.0%	39.0%	39.0%	39.0%	39.0%	20.0%	52.9%	52.9%	8.1%	41.0%	41.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	19.1	19.1	19.1	19.1	19.1	16.0	54.1	54.1	6.3	44.5	44.5
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20	0.17	0.58	0.58	0.07	0.47	0.47
v/c Ratio	0.53	0.08	0.41	0.15	0.63	0.74	0.72	0.02	0.72	0.94	0.06
Control Delay	46.9	29.5	7.1	30.9	39.3	55.5	18.9	0.0	82.8	38.4	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.9	29.5	7.1	30.9	39.3	55.5	18.9	0.0	82.8	38.4	1.6
LOS	D	C	A	C	D	E	B	A	F	D	A
Approach Delay		19.6			38.2		23.3			39.5	
Approach LOS		B			D		C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 93.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 31.0	Intersection LOS: C
Intersection Capacity Utilization 89.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	28	186	36	170	56	198	1384	14	77	1494	45
Future Volume (veh/h)	75	28	186	36	170	56	198	1384	14	77	1494	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	77	29	104	37	173	49	202	1412	13	79	1524	35
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	189	382	324	323	286	81	236	1940	865	98	1648	734
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.15	0.57	0.57	0.06	0.48	0.48
Sat Flow, veh/h	1112	1800	1525	1206	1349	382	1619	3420	1525	1619	3420	1524
Grp Volume(v), veh/h	77	29	104	37	0	222	202	1412	13	79	1524	35
Grp Sat Flow(s),veh/h/ln	1112	1800	1525	1206	0	1731	1619	1710	1525	1619	1710	1524
Q Serve(g_s), s	5.9	1.1	5.0	2.2	0.0	10.1	10.7	26.6	0.3	4.2	36.5	1.1
Cycle Q Clear(g_c), s	16.0	1.1	5.0	3.3	0.0	10.1	10.7	26.6	0.3	4.2	36.5	1.1
Prop In Lane	1.00		1.00	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	189	382	324	323	0	367	236	1940	865	98	1648	734
V/C Ratio(X)	0.41	0.08	0.32	0.11	0.00	0.60	0.85	0.73	0.02	0.80	0.93	0.05
Avail Cap(c_a), veh/h	487	864	732	645	0	831	379	2259	1008	115	1700	757
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.4	27.6	29.1	28.9	0.0	31.1	36.5	14.0	8.3	40.6	21.2	12.0
Incr Delay (d2), s/veh	1.0	0.1	0.4	0.1	0.0	1.2	8.5	1.0	0.0	27.5	8.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.5	1.8	0.6	0.0	4.1	4.4	8.1	0.1	2.3	13.9	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.4	27.7	29.6	29.1	0.0	32.3	45.0	15.0	8.3	68.1	30.1	12.1
LnGrp LOS	D	C	C	C	A	C	D	B	A	E	C	B
Approach Vol, veh/h		210			259			1627			1638	
Approach Delay, s/veh		32.9			31.9			18.6			31.6	
Approach LOS		C			C			B			C	

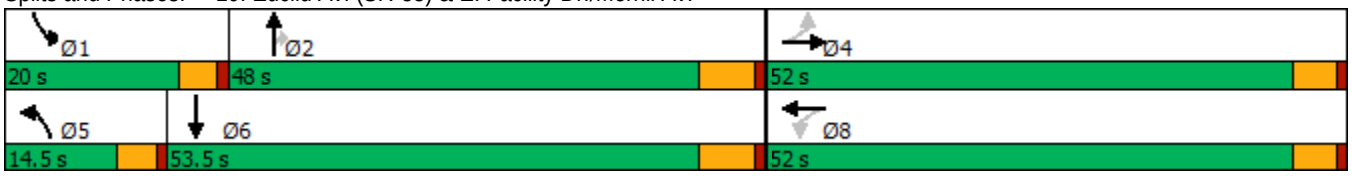
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.8	55.3		23.4	16.3	47.9		23.4				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	6.2	57.8		42.0	20.5	43.5		42.0				
Max Q Clear Time (g_c+I1), s	6.2	28.6		18.0	12.7	38.5		12.1				
Green Ext Time (p_c), s	0.0	11.1		0.5	0.2	3.7		1.0				

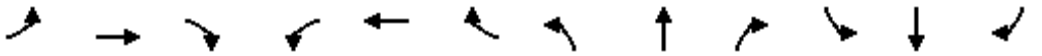
Intersection Summary			
HCM 6th Ctrl Delay		26.0	
HCM 6th LOS		C	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	4	9	301	53	11	1146	316	425	1222
Future Volume (vph)	4	9	301	53	11	1146	316	425	1222
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	52.0	52.0	52.0	52.0	14.5	48.0	48.0	20.0	53.5
Total Split (%)	43.3%	43.3%	43.3%	43.3%	12.1%	40.0%	40.0%	16.7%	44.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		47.0		47.0	10.0	42.0	42.0	15.5	59.1
Actuated g/C Ratio		0.39		0.39	0.08	0.35	0.35	0.13	0.49
v/c Ratio		0.05		1.37	0.08	0.99	0.54	2.11	0.78
Control Delay		12.9		205.8	52.4	62.0	24.4	540.3	29.9
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		12.9		205.8	52.4	62.0	24.4	540.3	29.9
LOS		B		F	D	E	C	F	C
Approach Delay		12.9		205.8		53.9			158.3
Approach LOS		B		F		D			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.11	
Intersection Signal Delay: 128.1	Intersection LOS: F
Intersection Capacity Utilization 128.4%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	9	19	301	53	441	11	1146	316	425	1222	43
Future Volume (veh/h)	4	9	19	301	53	441	11	1146	316	425	1222	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	4	9	19	310	55	428	11	1181	283	438	1260	30
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	87	193	359	271	41	317	41	1197	534	209	1548	37
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.03	0.35	0.35	0.13	0.45	0.45
Sat Flow, veh/h	135	492	916	586	104	809	1619	3420	1525	1619	3412	81
Grp Volume(v), veh/h	32	0	0	793	0	0	11	1181	283	438	631	659
Grp Sat Flow(s),veh/h/ln	1543	0	0	1499	0	0	1619	1710	1525	1619	1710	1783
Q Serve(g_s), s	0.0	0.0	0.0	45.5	0.0	0.0	0.8	41.1	17.8	15.5	38.4	38.4
Cycle Q Clear(g_c), s	1.5	0.0	0.0	47.0	0.0	0.0	0.8	41.1	17.8	15.5	38.4	38.4
Prop In Lane	0.12		0.59	0.39		0.54	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	638	0	0	629	0	0	41	1197	534	209	776	809
V/C Ratio(X)	0.05	0.00	0.00	1.26	0.00	0.00	0.27	0.99	0.53	2.09	0.81	0.81
Avail Cap(c_a), veh/h	638	0	0	629	0	0	135	1197	534	209	776	809
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.7	0.0	0.0	37.9	0.0	0.0	57.4	38.7	31.1	52.2	28.4	28.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	129.8	0.0	0.0	1.3	22.7	1.0	508.4	6.6	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	40.5	0.0	0.0	0.3	19.7	6.3	35.5	15.7	16.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.7	0.0	0.0	167.8	0.0	0.0	58.6	61.5	32.1	560.7	35.0	34.8
LnGrp LOS	C	A	A	F	A	A	E	E	C	F	D	C
Approach Vol, veh/h		32			793			1475			1728	
Approach Delay, s/veh		22.7			167.8			55.8			168.2	
Approach LOS		C			F			E			F	

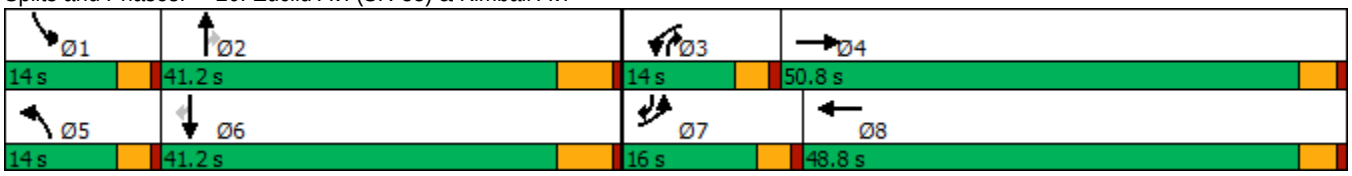
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.0	48.0		52.0	7.6	60.4		52.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	15.5	42.0		47.0	10.0	47.5		47.0				
Max Q Clear Time (g_c+I1), s	17.5	43.1		3.5	2.8	40.4		49.0				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	4.0		0.0				

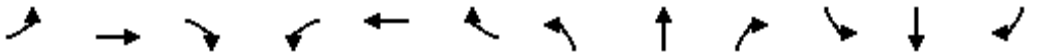
Intersection Summary												
HCM 6th Ctrl Delay			125.8									
HCM 6th LOS			F									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	147	283	59	836	119	1036	58	245	789	430
Future Volume (vph)	147	283	59	836	119	1036	58	245	789	430
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	16.0	50.8	14.0	48.8	14.0	41.2	14.0	14.0	41.2	16.0
Total Split (%)	13.3%	42.3%	11.7%	40.7%	11.7%	34.3%	11.7%	11.7%	34.3%	13.3%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	10.8	44.9	10.0	41.0	10.0	35.3	51.3	10.0	35.3	48.1
Actuated g/C Ratio	0.09	0.39	0.09	0.35	0.09	0.31	0.44	0.09	0.31	0.42
v/c Ratio	0.54	0.25	0.43	0.93	0.87	1.01	0.08	0.98	0.77	0.66
Control Delay	58.7	24.0	61.9	48.3	101.2	72.1	5.5	105.4	43.2	26.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.7	24.0	61.9	48.3	101.2	72.1	5.5	105.4	43.2	26.1
LOS	E	C	E	D	F	E	A	F	D	C
Approach Delay		34.8		49.0		71.8			48.6	
Approach LOS		C		D		E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 53.7	Intersection LOS: D
Intersection Capacity Utilization 95.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	283	44	59	836	247	119	1036	58	245	789	430
Future Volume (veh/h)	147	283	44	59	836	247	119	1036	58	245	789	430
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	150	289	36	60	853	216	121	1057	47	250	805	310
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	261	1097	135	122	933	236	144	1071	593	263	1071	606
Arrive On Green	0.09	0.36	0.36	0.08	0.35	0.35	0.09	0.31	0.31	0.09	0.31	0.31
Sat Flow, veh/h	2956	3064	378	1619	2703	684	1619	3420	1525	2956	3420	1506
Grp Volume(v), veh/h	150	160	165	60	540	529	121	1057	47	250	805	310
Grp Sat Flow(s),veh/h/ln	1478	1710	1732	1619	1710	1677	1619	1710	1525	1478	1710	1506
Q Serve(g_s), s	5.5	7.5	7.6	4.0	33.9	34.0	8.3	34.5	2.2	9.5	23.8	17.4
Cycle Q Clear(g_c), s	5.5	7.5	7.6	4.0	33.9	34.0	8.3	34.5	2.2	9.5	23.8	17.4
Prop In Lane	1.00		0.22	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	261	612	620	122	590	579	144	1071	593	263	1071	606
V/C Ratio(X)	0.58	0.26	0.27	0.49	0.91	0.91	0.84	0.99	0.08	0.95	0.75	0.51
Avail Cap(c_a), veh/h	316	704	713	144	674	661	144	1071	593	263	1071	606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	25.6	25.6	49.9	35.2	35.2	50.4	38.4	21.7	51.0	34.7	25.4
Incr Delay (d2), s/veh	0.7	0.2	0.2	1.1	14.9	15.2	32.0	24.2	0.1	41.6	3.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	3.0	3.0	1.6	15.8	15.5	4.5	16.9	0.8	4.9	9.6	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.0	25.8	25.8	51.0	50.1	50.4	82.4	62.6	21.7	92.6	37.7	26.1
LnGrp LOS	D	C	C	D	D	D	F	E	C	F	D	C
Approach Vol, veh/h		475			1129			1225			1365	
Approach Delay, s/veh		33.4			50.3			63.0			45.1	
Approach LOS		C			D			E			D	

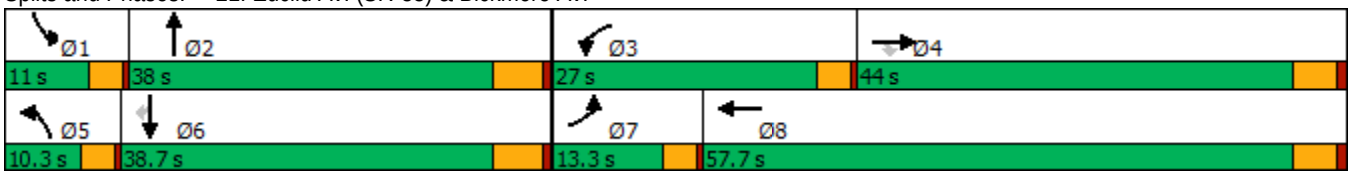
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	41.2	12.5	44.7	14.0	41.2	13.9	43.3
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	10.0	35.2	10.0	46.3	10.0	35.2	12.0	44.3
Max Q Clear Time (g_c+I1), s	11.5	36.5	6.0	9.6	10.3	25.8	7.5	36.0
Green Ext Time (p_c), s	0.0	0.0	0.0	1.8	0.0	4.0	0.1	2.8

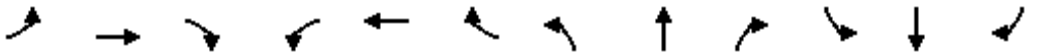
Intersection Summary	
HCM 6th Ctrl Delay	50.4
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	70	14	40	211	234	77	848	52	724	212
Future Volume (vph)	70	14	40	211	234	77	848	52	724	212
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	13.3	44.0	44.0	27.0	57.7	10.3	38.0	11.0	38.7	38.7
Total Split (%)	11.1%	36.7%	36.7%	22.5%	48.1%	8.6%	31.7%	9.2%	32.3%	32.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	8.3	19.5	19.5	18.7	29.5	7.2	34.6	7.0	31.6	31.6
Actuated g/C Ratio	0.09	0.21	0.21	0.20	0.32	0.08	0.37	0.08	0.34	0.34
v/c Ratio	0.54	0.04	0.11	0.72	0.83	0.68	0.77	0.48	0.69	0.35
Control Delay	60.6	29.6	0.5	52.1	39.8	75.6	35.2	61.2	32.8	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.6	29.6	0.5	52.1	39.8	75.6	35.2	61.2	32.8	5.7
LOS	E	C	A	D	D	E	D	E	C	A
Approach Delay		37.8			43.9		38.4		28.5	
Approach LOS		D			D		D		C	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 92.4		
Natural Cycle: 105		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.83		
Intersection Signal Delay: 36.0	Intersection LOS: D	
Intersection Capacity Utilization 74.9%	ICU Level of Service D	
Analysis Period (min) 15		

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	14	40	211	234	187	77	848	35	52	724	212
Future Volume (veh/h)	70	14	40	211	234	187	77	848	35	52	724	212
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	78	16	40	234	260	169	86	942	32	58	804	188
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	96	333	282	278	302	197	106	1117	38	80	1076	480
Arrive On Green	0.06	0.18	0.18	0.17	0.30	0.30	0.07	0.33	0.33	0.05	0.31	0.31
Sat Flow, veh/h	1619	1800	1525	1619	1019	662	1619	3375	115	1619	3420	1525
Grp Volume(v), veh/h	78	16	40	234	0	429	86	477	497	58	804	188
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1681	1619	1710	1779	1619	1710	1525
Q Serve(g_s), s	3.2	0.5	1.5	9.3	0.0	16.0	3.5	17.2	17.2	2.3	14.0	6.4
Cycle Q Clear(g_c), s	3.2	0.5	1.5	9.3	0.0	16.0	3.5	17.2	17.2	2.3	14.0	6.4
Prop In Lane	1.00		1.00	1.00		0.39	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	96	333	282	278	0	499	106	566	589	80	1076	480
V/C Ratio(X)	0.81	0.05	0.14	0.84	0.00	0.86	0.81	0.84	0.84	0.72	0.75	0.39
Avail Cap(c_a), veh/h	239	1056	895	572	0	1332	166	836	870	183	1707	761
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.9	22.3	22.7	26.7	0.0	22.1	30.7	20.6	20.6	31.2	20.4	17.8
Incr Delay (d2), s/veh	5.9	0.0	0.1	2.7	0.0	1.7	7.6	3.4	3.3	4.6	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.2	0.5	3.5	0.0	5.8	1.4	6.1	6.3	0.9	4.6	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.8	22.3	22.8	29.4	0.0	23.8	38.2	24.1	24.0	35.7	20.8	18.0
LnGrp LOS	D	C	C	C	A	C	D	C	C	D	C	B
Approach Vol, veh/h		134			663			1060			1050	
Approach Delay, s/veh		30.9			25.8			25.2			21.1	
Approach LOS		C			C			C			C	

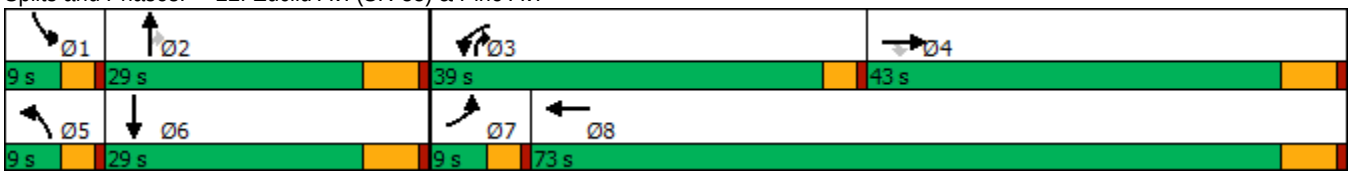
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	27.5	14.9	17.3	7.9	26.4	7.5	24.7
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	7.5	32.5	23.5	39.0	6.8	33.2	9.8	52.7
Max Q Clear Time (g_c+I1), s	4.3	19.2	11.3	3.5	5.5	16.0	5.2	18.0
Green Ext Time (p_c), s	0.0	2.8	0.2	0.1	0.0	3.2	0.0	1.7

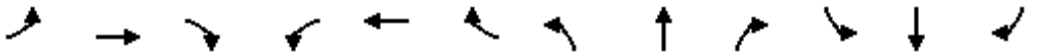
Intersection Summary	
HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	9	199	54	1168	358	63	901	758	66	782
Future Volume (vph)	9	199	54	1168	358	63	901	758	66	782
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	39.0	73.0	9.0	29.0	39.0	9.0	29.0
Total Split (%)	7.5%	35.8%	35.8%	32.5%	60.8%	7.5%	24.2%	32.5%	7.5%	24.2%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.0	19.7	19.7	35.2	57.4	5.0	23.2	60.4	5.0	23.2
Actuated g/C Ratio	0.05	0.19	0.19	0.34	0.56	0.05	0.22	0.59	0.05	0.22
v/c Ratio	0.12	0.60	0.14	1.20	0.49	0.83	1.21	0.74	0.87	1.08
Control Delay	54.6	44.9	0.7	130.2	15.6	114.0	143.3	11.8	121.7	94.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.6	44.9	0.7	130.2	15.6	114.0	143.3	11.8	121.7	94.4
LOS	D	D	A	F	B	F	F	B	F	F
Approach Delay		36.1			97.6		84.4			96.4
Approach LOS		D			F		F			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.2	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.21	
Intersection Signal Delay: 88.7	Intersection LOS: F
Intersection Capacity Utilization 97.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	199	54	1168	358	108	63	901	758	66	782	18
Future Volume (veh/h)	9	199	54	1168	358	108	63	901	758	66	782	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	9	205	0	1204	369	109	65	929	525	68	806	15
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	18	261		1065	660	195	81	810	903	83	819	15
Arrive On Green	0.01	0.15	0.00	0.36	0.49	0.49	0.05	0.24	0.24	0.05	0.24	0.24
Sat Flow, veh/h	1619	1800	1525	2956	1335	394	1619	3420	1493	1619	3435	64
Grp Volume(v), veh/h	9	205	0	1204	0	478	65	929	525	68	401	420
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1729	1619	1710	1493	1619	1710	1788
Q Serve(g_s), s	0.5	10.7	0.0	35.0	0.0	18.8	3.9	23.0	21.2	4.0	22.7	22.7
Cycle Q Clear(g_c), s	0.5	10.7	0.0	35.0	0.0	18.8	3.9	23.0	21.2	4.0	22.7	22.7
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	18	261		1065	0	855	81	810	903	83	408	426
V/C Ratio(X)	0.50	0.78		1.13	0.00	0.56	0.80	1.15	0.58	0.82	0.98	0.98
Avail Cap(c_a), veh/h	83	686		1065	0	1193	83	810	903	83	408	426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.7	40.0	0.0	31.1	0.0	17.1	45.7	37.1	12.1	45.6	36.8	36.8
Incr Delay (d2), s/veh	7.8	7.2	0.0	70.7	0.0	0.8	38.1	80.4	0.6	41.9	40.1	39.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.0	0.0	21.7	0.0	6.7	2.3	17.8	5.9	2.5	13.2	13.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.5	47.2	0.0	101.7	0.0	18.0	83.8	117.4	12.8	87.5	76.9	76.0
LnGrp LOS	E	D		F	A	B	F	F	B	F	E	E
Approach Vol, veh/h		214	A		1682			1519			889	
Approach Delay, s/veh		47.5			77.9			79.8			77.3	
Approach LOS		D			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	29.0	39.0	20.1	8.8	29.2	5.1	54.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.0	23.0	35.0	37.0	5.0	23.0	5.0	67.0
Max Q Clear Time (g_c+I1), s	6.0	25.0	37.0	12.7	5.9	24.7	2.5	20.8
Green Ext Time (p_c), s	0.0	0.0	0.0	1.4	0.0	0.0	0.0	4.5

Intersection Summary	
HCM 6th Ctrl Delay	76.9
HCM 6th LOS	E

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	47.8
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	54	274	15	21	569	17	19	84	15	20	115	49
Future Vol, veh/h	54	274	15	21	569	17	19	84	15	20	115	49
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	59	301	16	23	625	19	21	92	16	22	126	54
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	20.3	80.1	13.3	14.7
HCM LOS	C	F	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	16%	3%	11%
Vol Thru, %	71%	80%	94%	62%
Vol Right, %	13%	4%	3%	27%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	118	343	607	184
LT Vol	19	54	21	20
Through Vol	84	274	569	115
RT Vol	15	15	17	49
Lane Flow Rate	130	377	667	202
Geometry Grp	1	1	1	1
Degree of Util (X)	0.261	0.645	1.07	0.388
Departure Headway (Hd)	7.609	6.405	5.776	7.228
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	475	569	620	501
Service Time	5.609	4.405	3.874	5.228
HCM Lane V/C Ratio	0.274	0.663	1.076	0.403
HCM Control Delay	13.3	20.3	80.1	14.7
HCM Lane LOS	B	C	F	B
HCM 95th-tile Q	1	4.6	18.6	1.8

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	59	3	1	244	21	19	63	3	32	66	55
Future Vol, veh/h	20	59	3	1	244	21	19	63	3	32	66	55
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	22	63	3	1	262	23	20	68	3	34	71	59
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.6	10.3	8.8	9.1
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	24%	0%	21%
Vol Thru, %	74%	72%	92%	43%
Vol Right, %	4%	4%	8%	36%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	85	82	266	153
LT Vol	19	20	1	32
Through Vol	63	59	244	66
RT Vol	3	3	21	55
Lane Flow Rate	91	88	286	165
Geometry Grp	1	1	1	1
Degree of Util (X)	0.127	0.12	0.364	0.216
Departure Headway (Hd)	5.016	4.887	4.58	4.727
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	710	729	784	755
Service Time	3.077	2.948	2.627	2.781
HCM Lane V/C Ratio	0.128	0.121	0.365	0.219
HCM Control Delay	8.8	8.6	10.3	9.1
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.4	0.4	1.7	0.8

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	63	670	851	78	33	51
Future Vol, veh/h	63	670	851	78	33	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	67	713	905	83	35	54

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	988	0	-	0	1794	947
Stage 1	-	-	-	-	947	-
Stage 2	-	-	-	-	847	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	708	-	-	-	147	394
Stage 1	-	-	-	-	380	-
Stage 2	-	-	-	-	424	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	708	-	-	-	124	394
Mov Cap-2 Maneuver	-	-	-	-	124	-
Stage 1	-	-	-	-	320	-
Stage 2	-	-	-	-	424	-

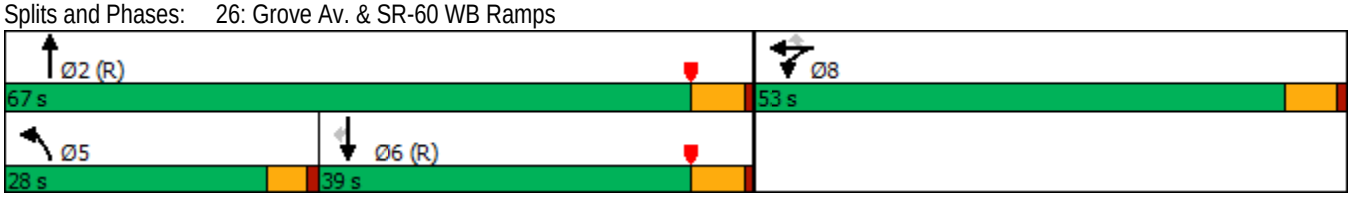
Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	33.8
HCM LOS			D

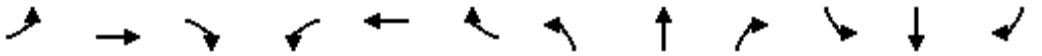
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	708	-	-	-	212
HCM Lane V/C Ratio	0.095	-	-	-	0.422
HCM Control Delay (s)	10.6	0	-	-	33.8
HCM Lane LOS	B	A	-	-	D
HCM 95th %tile Q(veh)	0.3	-	-	-	1.9

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	613	290	1174	775	624
Future Volume (vph)	0	613	290	1174	775	624
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	53.0	53.0	28.0	67.0	39.0	39.0
Total Split (%)	44.2%	44.2%	23.3%	55.8%	32.5%	32.5%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	47.2	47.2	22.6	61.2	34.0	34.0
Actuated g/C Ratio	0.39	0.39	0.19	0.51	0.28	0.28
v/c Ratio	0.43	0.99	0.93	0.69	0.82	0.73
Control Delay	28.9	64.6	63.2	25.1	48.3	7.9
Queue Delay	0.0	0.0	0.0	3.0	0.0	0.0
Total Delay	28.9	64.6	63.2	28.1	48.3	7.9
LOS	C	E	E	C	D	A
Approach Delay	53.4			35.1	30.3	
Approach LOS	D			D	C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 37.6	Intersection LOS: D
Intersection Capacity Utilization 107.7%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	280	0	613	290	1174	0	0	775	624
Future Volume (veh/h)	0	0	0	280	0	613	290	1174	0	0	775	624
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				304	0	537	315	1276	0	0	842	567
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				645	0	574	335	1974	0	0	1166	518
Arrive On Green				0.36	0.00	0.36	0.37	1.00	0.00	0.00	0.32	0.32
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1603
Grp Volume(v), veh/h				304	0	537	315	1276	0	0	842	567
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1603
Q Serve(g_s), s				15.6	0.0	38.6	20.2	0.0	0.0	0.0	24.7	38.8
Cycle Q Clear(g_c), s				15.6	0.0	38.6	20.2	0.0	0.0	0.0	24.7	38.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				645	0	574	335	1974	0	0	1166	518
V/C Ratio(X)				0.47	0.00	0.94	0.94	0.65	0.00	0.00	0.72	1.10
Avail Cap(c_a), veh/h				712	0	633	353	1974	0	0	1166	518
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				29.9	0.0	37.3	37.1	0.0	0.0	0.0	35.9	40.6
Incr Delay (d2), s/veh				0.5	0.0	20.3	5.1	0.1	0.0	0.0	3.9	68.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.6	0.0	17.7	7.2	0.0	0.0	0.0	11.1	24.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				30.4	0.0	57.6	42.2	0.1	0.0	0.0	39.7	108.6
LnGrp LOS				C	A	E	D	A	A	A	D	F
Approach Vol, veh/h					841			1591			1409	
Approach Delay, s/veh					47.8			8.5			67.4	
Approach LOS					D			A			E	

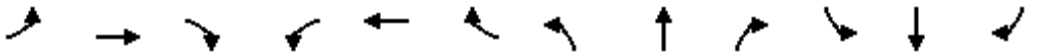
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		71.4			26.8	44.6		48.6				
Change Period (Y+Rc), s		5.8			4.6	5.8		5.8				
Max Green Setting (Gmax), s		61.2			23.4	33.2		47.2				
Max Q Clear Time (g_c+I1), s		2.0			22.2	40.8		40.6				
Green Ext Time (p_c), s		12.0			0.1	0.0		2.2				

Intersection Summary												
HCM 6th Ctrl Delay			38.7									
HCM 6th LOS			D									

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	1	224	770	390	666
Future Volume (vph)	1	224	770	390	666
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	48.0	48.0	43.0	29.0	72.0
Total Split (%)	40.0%	40.0%	35.8%	24.2%	60.0%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	42.2	42.2	37.2	24.4	66.2
Actuated g/C Ratio	0.35	0.35	0.31	0.20	0.55
v/c Ratio	1.19	0.35	1.14	1.16	0.36
Control Delay	135.6	8.2	111.7	146.4	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.2
Total Delay	135.6	8.2	111.7	146.4	14.2
LOS	F	A	F	F	B
Approach Delay	104.6		111.7		63.0
Approach LOS	F		F		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.19	
Intersection Signal Delay: 93.2	Intersection LOS: F
Intersection Capacity Utilization 107.7%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	695	1	224	0	0	0	0	770	395	390	666	0
Future Volume (veh/h)	695	1	224	0	0	0	0	770	395	390	666	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	755	1	168				0	837	320	424	724	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	636	1	565				0	791	302	368	1992	0
Arrive On Green	0.35	0.35	0.35				0.00	0.31	0.31	0.41	1.00	0.00
Sat Flow, veh/h	1807	2	1607				0	2648	974	1810	3705	0
Grp Volume(v), veh/h	756	0	168				0	591	566	424	724	0
Grp Sat Flow(s),veh/h/ln	1810	0	1607				0	1805	1721	1810	1805	0
Q Serve(g_s), s	42.2	0.0	9.1				0.0	37.2	37.2	24.4	0.0	0.0
Cycle Q Clear(g_c), s	42.2	0.0	9.1				0.0	37.2	37.2	24.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.57	1.00		0.00
Lane Grp Cap(c), veh/h	636	0	565				0	560	534	368	1992	0
V/C Ratio(X)	1.19	0.00	0.30				0.00	1.06	1.06	1.15	0.36	0.00
Avail Cap(c_a), veh/h	636	0	565				0	560	534	368	1992	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.63	0.63	0.46	0.46	0.00
Uniform Delay (d), s/veh	38.9	0.0	28.2				0.0	41.4	41.4	35.6	0.0	0.0
Incr Delay (d2), s/veh	99.7	0.0	0.3				0.0	46.3	48.2	82.7	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	35.3	0.0	3.4				0.0	22.9	22.2	16.3	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	138.6	0.0	28.5				0.0	87.7	89.6	118.3	0.2	0.0
LnGrp LOS	F	A	C				A	F	F	F	A	A
Approach Vol, veh/h		924						1157			1148	
Approach Delay, s/veh		118.6						88.6			43.8	
Approach LOS		F						F			D	

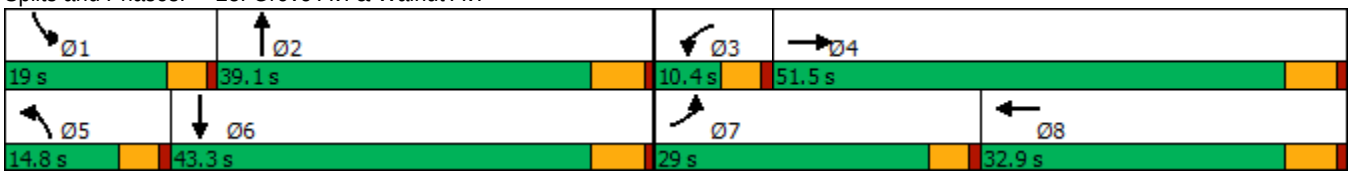
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	29.0	43.0		48.0		72.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	24.4	37.2		42.2		66.2
Max Q Clear Time (g_c+I1), s	26.4	39.2		44.2		2.0
Green Ext Time (p_c), s	0.0	0.0		0.0		5.2

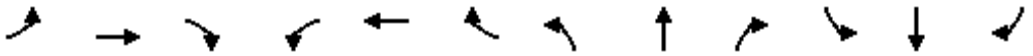
Intersection Summary	
HCM 6th Ctrl Delay	81.3
HCM 6th LOS	F

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	199	212	19	211	54	667	100	626
Future Volume (vph)	199	212	19	211	54	667	100	626
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	29.0	51.5	10.4	32.9	14.8	39.1	19.0	43.3
Total Split (%)	24.2%	42.9%	8.7%	27.4%	12.3%	32.6%	15.8%	36.1%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	18.4	35.9	5.5	16.4	8.0	34.4	11.2	39.9
Actuated g/C Ratio	0.18	0.35	0.05	0.16	0.08	0.34	0.11	0.39
v/c Ratio	0.80	0.27	0.25	0.73	0.50	0.69	0.67	0.66
Control Delay	61.6	21.9	58.6	31.7	62.5	35.2	64.5	31.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.6	21.9	58.6	31.7	62.5	35.2	64.5	31.0
LOS	E	C	E	C	E	D	E	C
Approach Delay		38.6		32.9		37.2		35.0
Approach LOS		D		C		D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 101.6	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 36.0	Intersection LOS: D
Intersection Capacity Utilization 70.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	212	62	19	211	202	54	667	14	100	626	116
Future Volume (veh/h)	199	212	62	19	211	202	54	667	14	100	626	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	234	249	58	22	248	167	64	785	15	118	736	100
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	266	873	199	37	349	226	80	1212	23	144	1188	161
Arrive On Green	0.16	0.32	0.32	0.02	0.18	0.18	0.05	0.35	0.35	0.09	0.39	0.39
Sat Flow, veh/h	1619	2756	629	1619	1982	1284	1619	3432	66	1619	3025	411
Grp Volume(v), veh/h	234	153	154	22	213	202	64	391	409	118	416	420
Grp Sat Flow(s),veh/h/ln	1619	1710	1675	1619	1710	1556	1619	1710	1788	1619	1710	1725
Q Serve(g_s), s	13.5	6.4	6.6	1.3	11.2	11.8	3.7	18.3	18.3	6.8	18.6	18.6
Cycle Q Clear(g_c), s	13.5	6.4	6.6	1.3	11.2	11.8	3.7	18.3	18.3	6.8	18.6	18.6
Prop In Lane	1.00		0.38	1.00		0.82	1.00		0.04	1.00		0.24
Lane Grp Cap(c), veh/h	266	542	530	37	301	274	80	604	631	144	672	678
V/C Ratio(X)	0.88	0.28	0.29	0.59	0.71	0.74	0.80	0.65	0.65	0.82	0.62	0.62
Avail Cap(c_a), veh/h	414	819	802	98	486	442	173	604	631	244	672	678
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	24.5	24.5	46.2	37.0	37.3	44.9	25.9	25.9	42.7	23.2	23.2
Incr Delay (d2), s/veh	8.7	0.3	0.3	5.3	3.0	3.9	6.9	5.3	5.1	4.3	4.2	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	2.5	2.5	0.6	4.7	4.5	1.6	7.8	8.1	2.8	7.7	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.6	24.7	24.8	51.5	40.1	41.2	51.8	31.2	31.0	47.0	27.5	27.5
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		541			437			864			954	
Approach Delay, s/veh		34.7			41.2			32.6			29.9	
Approach LOS		C			D			C			C	

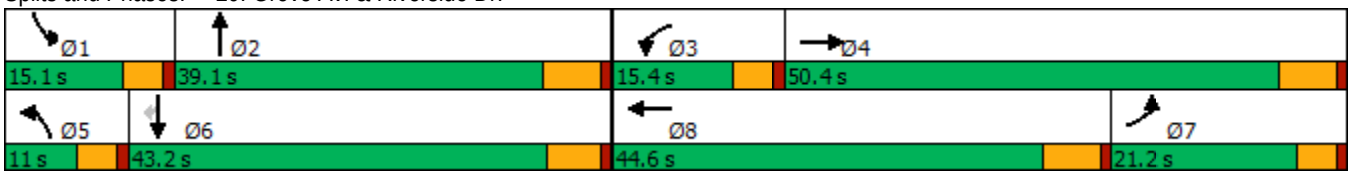
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	39.5	6.8	36.0	9.3	43.3	20.3	22.6
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	33.3	5.8	45.7	10.2	37.5	24.4	27.1
Max Q Clear Time (g_c+I1), s	8.8	20.3	3.3	8.6	5.7	20.6	15.5	13.8
Green Ext Time (p_c), s	0.1	3.7	0.0	1.7	0.0	4.4	0.2	1.9

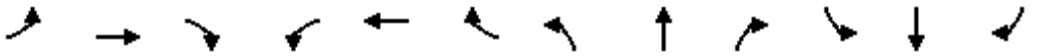
Intersection Summary	
HCM 6th Ctrl Delay	33.4
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	162	418	73	829	26	370	92	389	184
Future Volume (vph)	162	418	73	829	26	370	92	389	184
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	21.2	50.4	15.4	44.6	11.0	39.1	15.1	43.2	43.2
Total Split (%)	17.7%	42.0%	12.8%	37.2%	9.2%	32.6%	12.6%	36.0%	36.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	15.4	46.8	9.2	38.4	5.9	32.9	9.8	41.2	41.2
Actuated g/C Ratio	0.13	0.40	0.08	0.33	0.05	0.28	0.08	0.35	0.35
v/c Ratio	0.86	0.72	0.65	0.97	0.36	0.96	0.77	0.69	0.31
Control Delay	84.8	38.2	76.6	60.1	67.4	73.6	87.5	41.3	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.8	38.2	76.6	60.1	67.4	73.6	87.5	41.3	5.4
LOS	F	D	E	E	E	E	F	D	A
Approach Delay		50.4		61.2		73.2		37.8	
Approach LOS		D		E		E		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.1	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 55.1	Intersection LOS: E
Intersection Capacity Utilization 86.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	418	38	73	829	129	26	370	56	92	389	184
Future Volume (veh/h)	162	418	38	73	829	129	26	370	56	92	389	184
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	180	464	35	81	921	117	29	411	40	102	432	118
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	204	658	50	100	976	124	42	451	44	124	594	504
Arrive On Green	0.13	0.40	0.40	0.06	0.32	0.32	0.03	0.28	0.28	0.08	0.33	0.33
Sat Flow, veh/h	1619	1653	125	1619	3046	387	1619	1611	157	1619	1800	1525
Grp Volume(v), veh/h	180	0	499	81	517	521	29	0	451	102	432	118
Grp Sat Flow(s),veh/h/ln	1619	0	1778	1619	1710	1723	1619	0	1768	1619	1800	1525
Q Serve(g_s), s	12.9	0.0	27.6	5.8	34.6	34.6	2.1	0.0	29.0	7.3	24.9	4.3
Cycle Q Clear(g_c), s	12.9	0.0	27.6	5.8	34.6	34.6	2.1	0.0	29.0	7.3	24.9	4.3
Prop In Lane	1.00		0.07	1.00		0.22	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	204	0	708	100	548	552	42	0	495	124	594	504
V/C Ratio(X)	0.88	0.00	0.70	0.81	0.94	0.94	0.69	0.00	0.91	0.82	0.73	0.23
Avail Cap(c_a), veh/h	229	0	708	149	558	563	88	0	495	145	594	504
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.5	0.0	29.6	54.5	38.9	38.9	56.8	0.0	41.0	53.5	34.7	12.2
Incr Delay (d2), s/veh	26.5	0.0	3.2	11.0	24.7	24.6	7.2	0.0	23.6	24.1	7.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	0.0	11.6	2.6	17.4	17.5	0.9	0.0	15.2	3.7	11.7	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.0	0.0	32.8	65.5	63.6	63.5	64.0	0.0	64.6	77.6	42.3	13.3
LnGrp LOS	E	A	C	E	E	E	E	A	E	E	D	B
Approach Vol, veh/h		679			1119			480			652	
Approach Delay, s/veh		44.5			63.7			64.5			42.6	
Approach LOS		D			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	39.1	11.9	53.1	7.7	45.0	21.1	43.9
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	10.5	32.9	10.8	44.2	6.4	* 37	16.6	* 38
Max Q Clear Time (g_c+I1), s	9.3	31.0	7.8	29.6	4.1	26.9	14.9	36.6
Green Ext Time (p_c), s	0.0	0.5	0.0	2.4	0.0	2.1	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	54.7
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	42.5
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	68	97	30	11	87	32	39	359	15	50	439	34
Future Vol, veh/h	68	97	30	11	87	32	39	359	15	50	439	34
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	76	108	33	12	97	36	43	399	17	56	488	38
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	16.9	14.4	34.1	65.7
HCM LOS	C	B	D	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	35%	8%	10%
Vol Thru, %	87%	50%	67%	84%
Vol Right, %	4%	15%	25%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	413	195	130	523
LT Vol	39	68	11	50
Through Vol	359	97	87	439
RT Vol	15	30	32	34
Lane Flow Rate	459	217	144	581
Geometry Grp	1	1	1	1
Degree of Util (X)	0.83	0.454	0.311	1.011
Departure Headway (Hd)	6.615	7.664	7.901	6.264
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	551	472	458	575
Service Time	4.615	5.664	5.901	4.362
HCM Lane V/C Ratio	0.833	0.46	0.314	1.01
HCM Control Delay	34.1	16.9	14.4	65.7
HCM Lane LOS	D	C	B	F
HCM 95th-tile Q	8.5	2.3	1.3	15

Intersection	
Intersection Delay, s/veh	21.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	47	50	29	38	109	43	40	297	11	45	354	46
Future Vol, veh/h	47	50	29	38	109	43	40	297	11	45	354	46
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	52	56	32	42	121	48	44	330	12	50	393	51
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.8	14.3	19.9	28.6
HCM LOS	B	B	C	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	37%	20%	10%
Vol Thru, %	85%	40%	57%	80%
Vol Right, %	3%	23%	23%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	348	126	190	445
LT Vol	40	47	38	45
Through Vol	297	50	109	354
RT Vol	11	29	43	46
Lane Flow Rate	387	140	211	494
Geometry Grp	1	1	1	1
Degree of Util (X)	0.653	0.273	0.397	0.803
Departure Headway (Hd)	6.075	7.032	6.765	5.847
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	592	508	530	618
Service Time	4.129	5.109	4.831	3.898
HCM Lane V/C Ratio	0.654	0.276	0.398	0.799
HCM Control Delay	19.9	12.8	14.3	28.6
HCM Lane LOS	C	B	B	D
HCM 95th-tile Q	4.8	1.1	1.9	8

Intersection	
Intersection Delay, s/veh	360
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	226	44	274	557	34	31	237	86	65	292	31
Future Vol, veh/h	37	226	44	274	557	34	31	237	86	65	292	31
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	41	248	48	301	612	37	34	260	95	71	321	34
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	68.8	681.6	89.5	120.3
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	12%	32%	17%
Vol Thru, %	67%	74%	64%	75%
Vol Right, %	24%	14%	4%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	354	307	865	388
LT Vol	31	37	274	65
Through Vol	237	226	557	292
RT Vol	86	44	34	31
Lane Flow Rate	389	337	951	426
Geometry Grp	1	1	1	1
Degree of Util (X)	0.98	0.879	2.451	1.093
Departure Headway (Hd)	13.551	13.925	9.693	13.182
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	272	263	390	281
Service Time	11.551	11.925	7.693	11.182
HCM Lane V/C Ratio	1.43	1.281	2.438	1.516
HCM Control Delay	89.5	68.8	681.6	120.3
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	9.6	7.5	72.1	12.3

Intersection	
Int Delay, s/veh	31.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	40	37	15	13	92	21	68	381	12	39	485	103
Future Vol, veh/h	40	37	15	13	92	21	68	381	12	39	485	103
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	44	41	16	14	101	23	75	419	13	43	533	113

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1314	1258	590	1280	1308	426	646	0	0	432	0	0
Stage 1	676	676	-	576	576	-	-	-	-	-	-	-
Stage 2	638	582	-	704	732	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	136	172	511	144	161	633	949	-	-	1138	-	-
Stage 1	446	456	-	506	505	-	-	-	-	-	-	-
Stage 2	468	502	-	431	430	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	46	145	511	97	136	633	949	-	-	1138	-	-
Mov Cap-2 Maneuver	46	145	-	97	136	-	-	-	-	-	-	-
Stage 1	400	429	-	453	452	-	-	-	-	-	-	-
Stage 2	314	450	-	355	404	-	-	-	-	-	-	-

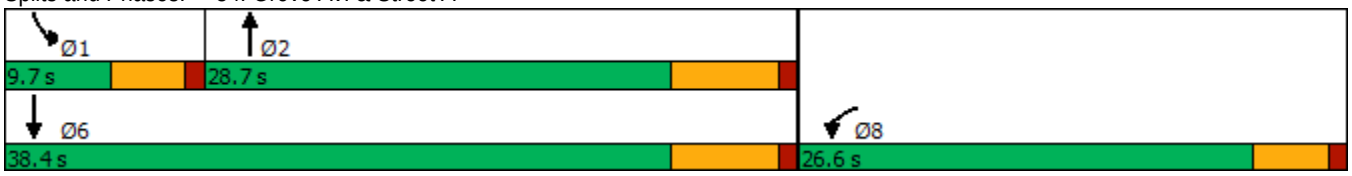
Approach	EB	WB	NB	SB
HCM Control Delay, s	280	115	1.3	0.5
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	949	-	-	80	149	1138	-	-
HCM Lane V/C Ratio	0.079	-	-	1.264	0.929	0.038	-	-
HCM Control Delay (s)	9.1	0	-	280	115	8.3	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	7.6	6.6	0.1	-	-

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	31	450	38	474
Future Volume (vph)	31	450	38	474
Turn Type	Prot	NA	Prot	NA
Protected Phases	8	2	1	6
Permitted Phases				
Detector Phase	8	2	1	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	5.0	10.0
Minimum Split (s)	26.6	23.2	9.6	16.2
Total Split (s)	26.6	28.7	9.7	38.4
Total Split (%)	40.9%	44.2%	14.9%	59.1%
Yellow Time (s)	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2
Lead/Lag		Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	
Recall Mode	None	Min	None	Min
Act Effct Green (s)	12.2	34.8	5.3	37.8
Actuated g/C Ratio	0.26	0.75	0.11	0.82
v/c Ratio	0.10	0.45	0.22	0.35
Control Delay	12.7	13.3	26.7	6.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.7	13.3	26.7	6.2
LOS	B	B	C	A
Approach Delay	12.7	13.3		7.7
Approach LOS	B	B		A

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 46.1	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.45	
Intersection Signal Delay: 10.7	Intersection LOS: B
Intersection Capacity Utilization 52.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 34: Grove Av. & Street A



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	31	11	450	103	38	474
Future Volume (veh/h)	31	11	450	103	38	474
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	34	12	489	112	41	515
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	125	44	603	138	76	1078
Arrive On Green	0.10	0.10	0.43	0.43	0.05	0.60
Sat Flow, veh/h	1203	425	1417	325	1619	1800
Grp Volume(v), veh/h	47	0	0	601	41	515
Grp Sat Flow(s),veh/h/ln	1663	0	0	1742	1619	1800
Q Serve(g_s), s	0.9	0.0	0.0	11.0	0.9	5.8
Cycle Q Clear(g_c), s	0.9	0.0	0.0	11.0	0.9	5.8
Prop In Lane	0.72	0.26		0.19	1.00	
Lane Grp Cap(c), veh/h	173	0	0	741	76	1078
V/C Ratio(X)	0.27	0.00	0.00	0.81	0.54	0.48
Avail Cap(c_a), veh/h	1007	0	0	1079	227	1596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.0	0.0	0.0	9.2	16.9	4.1
Incr Delay (d2), s/veh	0.8	0.0	0.0	3.1	2.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	2.5	0.3	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.8	0.0	0.0	12.2	19.2	4.4
LnGrp LOS	B	A	A	B	B	A
Approach Vol, veh/h	47		601			556
Approach Delay, s/veh	15.8		12.2			5.5
Approach LOS	B		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.3	21.7			27.9	8.4
Change Period (Y+Rc), s	4.6	6.2			6.2	4.6
Max Green Setting (Gmax), s	5.1	22.5			32.2	22.0
Max Q Clear Time (g_c+I1), s	2.9	13.0			7.8	2.9
Green Ext Time (p_c), s	0.0	2.5			2.9	0.1

Intersection Summary	
HCM 6th Ctrl Delay	9.3
HCM 6th LOS	A

Intersection	
Intersection Delay, s/veh	385.5
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	146	588	786	405	385	120
Future Vol, veh/h	146	588	786	405	385	120
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	151	606	810	418	397	124
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	243.8	602.8	78.8
HCM LOS	F	F	F

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	0%	76%
Vol Thru, %	80%	66%	0%
Vol Right, %	0%	34%	24%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	734	1191	505
LT Vol	146	0	385
Through Vol	588	786	0
RT Vol	0	405	120
Lane Flow Rate	757	1228	521
Geometry Grp	1	1	1
Degree of Util (X)	1.46	2.287	1.013
Departure Headway (Hd)	8.833	7.533	8.945
Convergence, Y/N	Yes	Yes	Yes
Cap	416	491	411
Service Time	6.833	5.533	6.945
HCM Lane V/C Ratio	1.82	2.501	1.268
HCM Control Delay	243.8	602.8	78.8
HCM Lane LOS	F	F	F
HCM 95th-tile Q	30.7	81.9	12.7

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	19	318	10	124	643	156	5	20	8	28	19	13
Future Vol, veh/h	19	318	10	124	643	156	5	20	8	28	19	13
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	19	324	10	127	656	159	5	20	8	29	19	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	815	0	0	335	0	0	1374	1437	330	1371	1363	736
Stage 1	-	-	-	-	-	-	368	368	-	990	990	-
Stage 2	-	-	-	-	-	-	1006	1069	-	381	373	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	821	-	-	1236	-	-	124	135	716	125	149	422
Stage 1	-	-	-	-	-	-	656	625	-	299	327	-
Stage 2	-	-	-	-	-	-	293	300	-	645	622	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	821	-	-	1235	-	-	88	106	715	88	117	422
Mov Cap-2 Maneuver	-	-	-	-	-	-	88	106	-	88	117	-
Stage 1	-	-	-	-	-	-	637	607	-	291	264	-
Stage 2	-	-	-	-	-	-	212	242	-	599	604	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.1	42.5	65.4
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	129	821	-	-	1235	-	-	117
HCM Lane V/C Ratio	0.261	0.024	-	-	0.102	-	-	0.523
HCM Control Delay (s)	42.5	9.5	0	-	8.2	0	-	65.4
HCM Lane LOS	E	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	1	0.1	-	-	0.3	-	-	2.4

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	11	74	0	0	94	25	0	0	0	136	0	41
Future Vol, veh/h	11	74	0	0	94	25	0	0	0	136	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	13	90	0	0	115	30	0	0	0	166	0	50

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	145	0	0	90	0	0	271	261	90	246	246	130
Stage 1	-	-	-	-	-	-	116	116	-	130	130	-
Stage 2	-	-	-	-	-	-	155	145	-	116	116	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1450	-	-	1518	-	-	686	647	973	712	660	925
Stage 1	-	-	-	-	-	-	894	803	-	878	792	-
Stage 2	-	-	-	-	-	-	852	781	-	894	803	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1450	-	-	1518	-	-	644	641	973	707	654	925
Mov Cap-2 Maneuver	-	-	-	-	-	-	644	641	-	707	654	-
Stage 1	-	-	-	-	-	-	886	796	-	870	792	-
Stage 2	-	-	-	-	-	-	806	781	-	886	796	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0	0	11.8
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1450	-	-	1518	-	-	748
HCM Lane V/C Ratio	-	0.009	-	-	-	-	-	0.289
HCM Control Delay (s)	0	7.5	0	-	0	-	-	11.8
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	1.2

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	210	653	110	131	938	50	142	11	108	15	3	63
Future Vol, veh/h	210	653	110	131	938	50	142	11	108	15	3	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	216	673	113	135	967	52	146	11	111	15	3	65

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1019	0	0	786	0	0	2402	2394	673	2486	2481	993
Stage 1	-	-	-	-	-	-	1105	1105	-	1263	1263	-
Stage 2	-	-	-	-	-	-	1297	1289	-	1223	1218	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	689	-	-	842	-	-	~ 23	34	459	20	30	300
Stage 1	-	-	-	-	-	-	258	289	-	210	243	-
Stage 2	-	-	-	-	-	-	201	236	-	221	255	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	689	-	-	842	-	-	~ 11	20	459	~ 13	17	300
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ -203	~ -26	-	~ -41	34	-
Stage 1	-	-	-	-	-	-	177	199	-	144	204	-
Stage 2	-	-	-	-	-	-	~ 130	198	-	108	175	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.7	1.2		2.2
HCM LOS			-	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	+	689	-	-	842	-	-	+
HCM Lane V/C Ratio	-	0.314	-	-	0.16	-	-	-
HCM Control Delay (s)	-	12.6	-	-	10.1	-	-	2.2
HCM Lane LOS	-	B	-	-	B	-	-	A
HCM 95th %tile Q(veh)	-	1.3	-	-	0.6	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	109	601	64	28	1068	45	18	0	35	13	0	33
Future Vol, veh/h	109	601	64	28	1068	45	18	0	35	13	0	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	120	660	70	31	1174	49	20	0	38	14	0	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1223	0	0	730	0	0	2214	2220	365	1831	2231	1199
Stage 1	-	-	-	-	-	-	935	935	-	1261	1261	-
Stage 2	-	-	-	-	-	-	1279	1285	-	570	970	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	577	-	-	883	-	-	28	44	638	54	43	228
Stage 1	-	-	-	-	-	-	289	347	-	211	244	-
Stage 2	-	-	-	-	-	-	206	237	-	479	334	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	577	-	-	883	-	-	~ 19	34	638	42	33	228
Mov Cap-2 Maneuver	-	-	-	-	-	-	40	83	-	118	122	-
Stage 1	-	-	-	-	-	-	229	275	-	167	235	-
Stage 2	-	-	-	-	-	-	167	229	-	357	265	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0.2	75.5	32.6
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	105	577	-	-	883	-	-	180
HCM Lane V/C Ratio	0.555	0.208	-	-	0.035	-	-	0.281
HCM Control Delay (s)	75.5	12.9	-	-	9.2	-	-	32.6
HCM Lane LOS	F	B	-	-	A	-	-	D
HCM 95th %tile Q(veh)	2.6	0.8	-	-	0.1	-	-	1.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	58.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	101	547	1	43	959	64	152	11	36	19	3	30
Future Vol, veh/h	101	547	1	43	959	64	152	11	36	19	3	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	200	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	109	588	1	46	1031	69	163	12	39	20	3	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1100	0	0	589	0	0	1982	1999	295	1676	1965	1066
Stage 1	-	-	-	-	-	-	807	807	-	1158	1158	-
Stage 2	-	-	-	-	-	-	1175	1192	-	518	807	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	642	-	-	996	-	-	~ 42	61	707	70	64	273
Stage 1	-	-	-	-	-	-	346	397	-	241	273	-
Stage 2	-	-	-	-	-	-	236	263	-	514	397	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	642	-	-	996	-	-	~ 31	48	707	51	51	273
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 70	108	-	137	147	-
Stage 1	-	-	-	-	-	-	287	330	-	200	260	-
Stage 2	-	-	-	-	-	-	196	251	-	389	330	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0.4	$ 567.1	26.7
HCM LOS			F	D

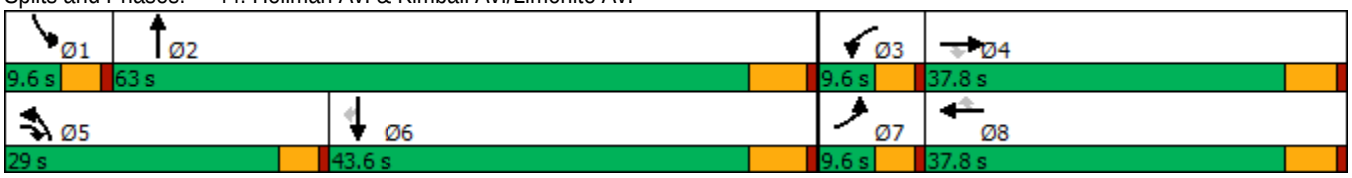
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	70	308	642	-	-	996	-	-	137	253
HCM Lane V/C Ratio	2.335	0.164	0.169	-	-	0.046	-	-	0.149	0.14
HCM Control Delay (s)	$ 736.6	19	11.7	-	-	8.8	-	-	35.8	21.5
HCM Lane LOS	F	C	B	-	-	A	-	-	E	C
HCM 95th %tile Q(veh)	15.6	0.6	0.6	-	-	0.1	-	-	0.5	0.5

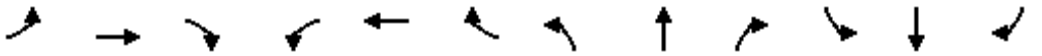
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	46	7	334	1	2	857	228	38	22	
Future Volume (vph)	46	7	334	1	2	857	228	38	22	
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	NA	Perm	
Protected Phases	7	4	5	3	8	5	2	6		1
Permitted Phases			4						6	
Detector Phase	7	4	5	3	8	5	2	6	6	
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	10.0	5.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	9.6	43.2	43.2	43.2	9.6
Total Split (s)	9.6	37.8	29.0	9.6	37.8	29.0	63.0	43.6	43.6	9.6
Total Split (%)	8.0%	31.5%	24.2%	8.0%	31.5%	24.2%	52.5%	36.3%	36.3%	8%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	5.2	5.2	5.2	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	4.6	6.2	6.2	6.2	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	None	None	Max	Max	None	None	None
Act Effct Green (s)	9.2	13.5	61.5	5.1	13.5	44.5	64.5	22.0	22.0	
Actuated g/C Ratio	0.11	0.16	0.71	0.06	0.16	0.51	0.74	0.25	0.25	
v/c Ratio	0.28	0.03	0.30	0.01	0.00	1.09	0.10	0.05	0.05	
Control Delay	45.4	31.6	2.2	46.0	31.5	89.1	6.0	23.2	0.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	45.4	31.6	2.2	46.0	31.5	89.1	6.0	23.2	0.2	
LOS	D	C	A	D	C	F	A	C	A	
Approach Delay		7.8			36.3		71.3	14.8		
Approach LOS		A			D		E	B		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 86.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 53.1	Intersection LOS: D
Intersection Capacity Utilization 83.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	7	334	1	2	0	857	228	5	0	38	22
Future Volume (veh/h)	46	7	334	1	2	0	857	228	5	0	38	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	48	7	352	1	2	0	902	240	5	0	40	23
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	62	351	705	4	540	241	433	2131	44	2	1041	464
Arrive On Green	0.04	0.19	0.19	0.00	0.16	0.00	0.27	0.62	0.62	0.00	0.30	0.30
Sat Flow, veh/h	1619	1800	1525	2956	3420	1525	1619	3426	71	1619	3420	1525
Grp Volume(v), veh/h	48	7	352	1	2	0	902	120	125	0	40	23
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	1710	1525	1619	1710	1787	1619	1710	1525
Q Serve(g_s), s	2.7	0.3	14.7	0.0	0.0	0.0	24.4	2.6	2.6	0.0	0.8	1.0
Cycle Q Clear(g_c), s	2.7	0.3	14.7	0.0	0.0	0.0	24.4	2.6	2.6	0.0	0.8	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	62	351	705	4	540	241	433	1063	1111	2	1041	464
V/C Ratio(X)	0.77	0.02	0.50	0.25	0.00	0.00	2.09	0.11	0.11	0.00	0.04	0.05
Avail Cap(c_a), veh/h	89	631	942	162	1198	534	433	1063	1111	89	1400	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	43.5	29.7	17.2	45.6	32.4	0.0	33.5	7.0	7.0	0.0	22.4	22.4
Incr Delay (d2), s/veh	13.3	0.0	0.5	11.3	0.0	0.0	496.3	0.2	0.2	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.1	4.7	0.0	0.0	0.0	68.4	0.8	0.8	0.0	0.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.8	29.7	17.7	56.8	32.4	0.0	529.7	7.2	7.2	0.0	22.4	22.5
LnGrp LOS	E	C	B	E	C	A	F	A	A	A	C	C
Approach Vol, veh/h		407			3			1147			63	
Approach Delay, s/veh		22.5			40.6			418.1			22.4	
Approach LOS		C			D			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	63.0	4.7	23.6	29.0	34.0	8.1	20.2
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	5.0	56.8	5.0	32.0	24.4	37.4	5.0	32.0
Max Q Clear Time (g_c+I1), s	0.0	4.6	2.0	16.7	26.4	3.0	4.7	2.0
Green Ext Time (p_c), s	0.0	1.2	0.0	1.1	0.0	0.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	302.7
HCM 6th LOS	F

Intersection	
Intersection Delay, s/veh	369.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	58	511	34	243	1018	81	23	0	132	139	0	25
Future Vol, veh/h	58	511	34	243	1018	81	23	0	132	139	0	25
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	62	544	36	259	1083	86	24	0	140	148	0	27
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

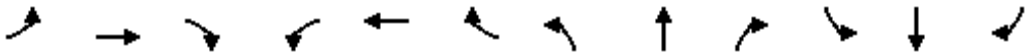
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	88.3	578.8	17.9	20.6
HCM LOS	F	F	C	C

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	15%	100%	0%	0%	100%	0%	85%
Vol Thru, %	0%	0%	100%	0%	0%	93%	0%
Vol Right, %	85%	0%	0%	100%	0%	7%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	155	58	511	34	243	1099	164
LT Vol	23	58	0	0	243	0	139
Through Vol	0	0	511	0	0	1018	0
RT Vol	132	0	0	34	0	81	25
Lane Flow Rate	165	62	544	36	259	1169	174
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.371	0.133	1.097	0.066	0.594	2.506	0.428
Departure Headway (Hd)	9.6	9.139	8.62	7.894	8.615	8.044	10.348
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	378	395	424	456	421	468	351
Service Time	7.3	6.839	6.32	5.594	6.315	5.744	8.048
HCM Lane V/C Ratio	0.437	0.157	1.283	0.079	0.615	2.498	0.496
HCM Control Delay	17.9	13.2	101.9	11.2	23.2	701.6	20.6
HCM Lane LOS	C	B	F	B	C	F	C
HCM 95th-tile Q	1.7	0.5	15.9	0.2	3.7	89	2.1

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	4	530	716	1136	445
Future Volume (vph)	4	530	716	1136	445
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (%)	32.2%	32.2%	31.1%	67.8%	36.7%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	23.0	23.0	35.1	55.2	16.1
Actuated g/C Ratio	0.26	0.26	0.39	0.61	0.18
v/c Ratio	1.42	1.20	1.13	0.40	0.60
Control Delay	231.4	136.3	103.0	19.6	29.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	231.4	136.3	103.0	19.6	29.3
LOS	F	F	F	B	C
Approach Delay	186.4			51.8	29.3
Approach LOS	F			D	C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.42	
Intersection Signal Delay: 89.4	Intersection LOS: F
Intersection Capacity Utilization 97.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	588	4	530	716	1136	0	0	445	211
Future Volume (veh/h)	0	0	0	588	4	530	716	1136	0	0	445	211
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				653	4	402	796	1262	0	0	494	224
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				460	3	411	643	3181	0	0	949	311
Arrive On Green				0.26	0.26	0.26	0.71	1.00	0.00	0.00	0.19	0.19
Sat Flow, veh/h				1799	11	1610	1810	5358	0	0	5168	1606
Grp Volume(v), veh/h				657	0	402	796	1262	0	0	494	224
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1729	0	0	1634	1606
Q Serve(g_s), s				23.0	0.0	22.3	32.0	0.0	0.0	0.0	8.1	11.8
Cycle Q Clear(g_c), s				23.0	0.0	22.3	32.0	0.0	0.0	0.0	8.1	11.8
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				463	0	411	643	3181	0	0	949	311
V/C Ratio(X)				1.42	0.00	0.98	1.24	0.40	0.00	0.00	0.52	0.72
Avail Cap(c_a), veh/h				463	0	411	643	3181	0	0	1481	485
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.5	0.0	33.2	13.0	0.0	0.0	0.0	32.5	34.0
Incr Delay (d2), s/veh				201.5	0.0	38.4	108.4	0.0	0.0	0.0	2.0	13.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				35.2	0.0	21.9	23.7	0.0	0.0	0.0	3.2	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				235.0	0.0	71.7	121.4	0.0	0.0	0.0	34.6	47.5
LnGrp LOS				F	A	E	F	A	A	A	C	D
Approach Vol, veh/h					1059			2058			718	
Approach Delay, s/veh					173.0			47.0			38.6	
Approach LOS					F			D			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	61.0	29.0	37.8	23.2
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	55.2	23.0	24.0	* 27
Max Q Clear Time (g_c+I1), s	2.0	25.0	34.0	13.8
Green Ext Time (p_c), s	11.1	0.0	0.0	3.7

Intersection Summary	
HCM 6th Ctrl Delay	80.2
HCM 6th LOS	F

Notes

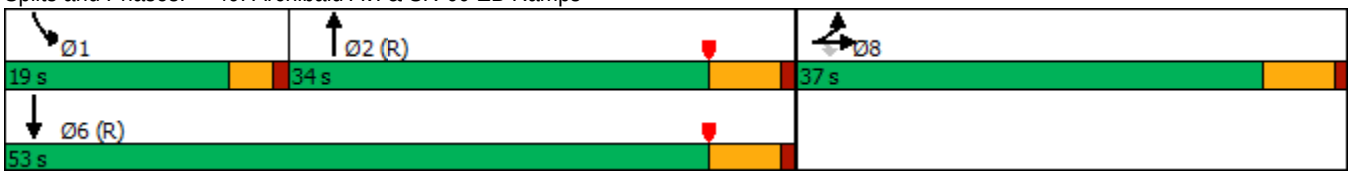
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

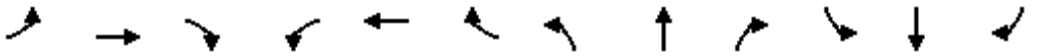
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	3	553	1452	171	863
Future Volume (vph)	3	553	1452	171	863
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (%)	41.1%	41.1%	37.8%	21.1%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	30.5	30.5	31.4	12.5	47.9
Actuated g/C Ratio	0.34	0.34	0.35	0.14	0.53
v/c Ratio	0.70	0.95	1.13dr	0.73	0.33
Control Delay	32.8	51.6	53.3	39.1	25.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	32.8	51.6	53.3	39.1	25.7
LOS	C	D	D	D	C
Approach Delay	43.7		53.3		27.9
Approach LOS	D		D		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 44.7	Intersection LOS: D
Intersection Capacity Utilization 97.5%	ICU Level of Service F
Analysis Period (min) 15	

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	400	3	553	0	0	0	0	1452	698	171	863	0
Future Volume (veh/h)	400	3	553	0	0	0	0	1452	698	171	863	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	426	3	371				0	1545	512	182	918	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	497	3	445				0	2102	675	220	3086	0
Arrive On Green	0.28	0.28	0.28				0.00	0.43	0.43	0.04	0.20	0.00
Sat Flow, veh/h	1797	13	1610				0	5168	1575	1810	5358	0
Grp Volume(v), veh/h	429	0	371				0	1545	512	182	918	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1575	1810	1729	0
Q Serve(g_s), s	20.2	0.0	19.5				0.0	23.7	24.8	9.0	13.6	0.0
Cycle Q Clear(g_c), s	20.2	0.0	19.5				0.0	23.7	24.8	9.0	13.6	0.0
Prop In Lane	0.99		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	500	0	445				0	2102	675	220	3086	0
V/C Ratio(X)	0.86	0.00	0.83				0.00	0.74	0.76	0.83	0.30	0.00
Avail Cap(c_a), veh/h	628	0	558				0	2102	675	302	3086	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.36	0.36	0.77	0.77	0.00
Uniform Delay (d), s/veh	30.9	0.0	30.6				0.0	21.4	21.8	42.2	20.1	0.0
Incr Delay (d2), s/veh	9.5	0.0	8.6				0.0	0.8	2.9	7.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	0.0	8.1				0.0	8.1	8.5	4.5	6.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.4	0.0	39.3				0.0	22.3	24.7	49.7	20.3	0.0
LnGrp LOS	D	A	D				A	C	C	D	C	A
Approach Vol, veh/h		800						2057			1100	
Approach Delay, s/veh		39.9						22.9			25.2	
Approach LOS		D						C			C	

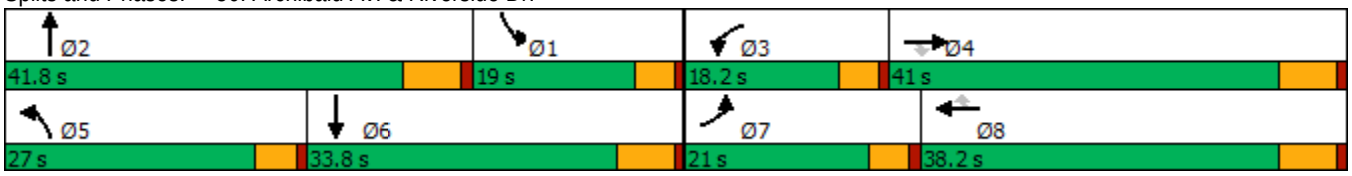
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	15.0	44.4				59.3		30.7				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	15.0	28.2				47.2		31.2				
Max Q Clear Time (g_c+I1), s	11.0	26.8				15.6		22.2				
Green Ext Time (p_c), s	0.1	1.3				6.4		2.6				

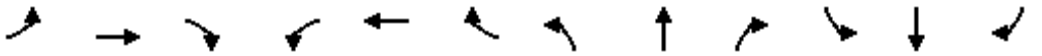
Intersection Summary			
HCM 6th Ctrl Delay			27.0
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	256	329	277	110	509	186	362	1228	144	730
Future Volume (vph)	256	329	277	110	509	186	362	1228	144	730
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.0	41.0	41.0	18.2	38.2	38.2	27.0	41.8	19.0	33.8
Total Split (%)	17.5%	34.2%	34.2%	15.2%	31.8%	31.8%	22.5%	34.8%	15.8%	28.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	16.5	28.9	28.9	11.3	23.8	23.8	22.5	35.0	14.5	27.1
Actuated g/C Ratio	0.15	0.26	0.26	0.10	0.21	0.21	0.20	0.31	0.13	0.24
v/c Ratio	1.14	0.39	0.49	0.71	0.74	0.42	1.18	0.89	0.73	0.89
Control Delay	146.4	35.8	6.7	72.9	47.5	7.6	150.1	45.2	68.7	48.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	146.4	35.8	6.7	72.9	47.5	7.6	150.1	45.2	68.7	48.5
LOS	F	D	A	E	D	A	F	D	E	D
Approach Delay		59.2			41.7			68.2		51.0
Approach LOS		E			D			E		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 57.3	Intersection LOS: E
Intersection Capacity Utilization 94.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	256	329	277	110	509	186	362	1228	56	144	730	262
Future Volume (veh/h)	256	329	277	110	509	186	362	1228	56	144	730	262
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	272	350	161	117	541	116	385	1306	57	153	777	201
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	245	934	409	141	715	313	334	1490	65	190	911	234
Arrive On Green	0.15	0.27	0.27	0.09	0.21	0.21	0.21	0.31	0.31	0.12	0.23	0.23
Sat Flow, veh/h	1619	3420	1498	1619	3420	1495	1619	4827	211	1619	3896	999
Grp Volume(v), veh/h	272	350	161	117	541	116	385	886	477	153	652	326
Grp Sat Flow(s),veh/h/ln	1619	1710	1498	1619	1710	1495	1619	1638	1762	1619	1638	1619
Q Serve(g_s), s	16.4	9.0	9.5	7.7	16.1	5.1	22.4	27.8	27.8	10.0	20.6	20.9
Cycle Q Clear(g_c), s	16.4	9.0	9.5	7.7	16.1	5.1	22.4	27.8	27.8	10.0	20.6	20.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		0.62
Lane Grp Cap(c), veh/h	245	934	409	141	715	313	334	1011	544	190	766	379
V/C Ratio(X)	1.11	0.37	0.39	0.83	0.76	0.37	1.15	0.88	0.88	0.81	0.85	0.86
Avail Cap(c_a), veh/h	245	1098	481	203	1009	441	334	1076	578	215	834	412
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	31.9	32.1	48.7	40.3	18.4	43.0	35.5	35.5	46.7	39.7	39.8
Incr Delay (d2), s/veh	90.5	0.2	0.6	11.7	2.1	0.7	96.8	8.0	13.7	15.8	7.9	15.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.4	3.6	3.3	3.4	6.6	2.5	17.5	11.5	13.2	4.7	8.7	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	136.5	32.2	32.7	60.4	42.4	19.1	139.8	43.5	49.2	62.5	47.6	55.6
LnGrp LOS	F	C	C	E	D	B	F	D	D	E	D	E
Approach Vol, veh/h		783			774			1748			1131	
Approach Delay, s/veh		68.5			41.6			66.3			51.9	
Approach LOS		E			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.9	39.7	14.1	35.8	27.0	31.6	21.0	28.9
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	14.4	* 36	13.6	34.8	22.4	27.6	16.4	32.0
Max Q Clear Time (g_c+I1), s	12.0	29.8	9.7	11.5	24.4	22.9	18.4	18.1
Green Ext Time (p_c), s	0.0	3.7	0.0	2.5	0.0	2.3	0.0	3.0

Intersection Summary	
HCM 6th Ctrl Delay	58.7
HCM 6th LOS	E

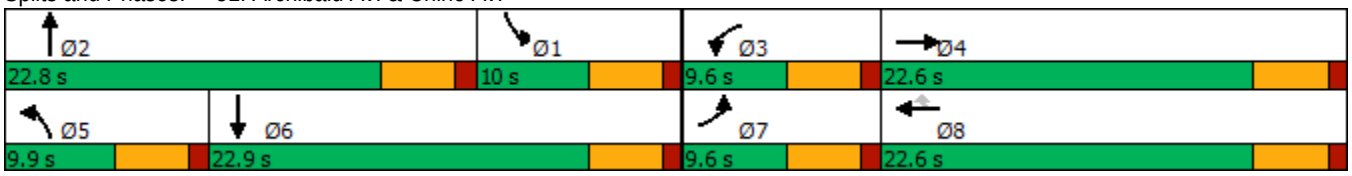
Notes

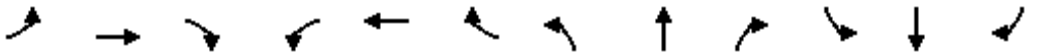
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	102	3	83	5	264	115	1217	124	958
Future Volume (vph)	102	3	83	5	264	115	1217	124	958
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	9.6	22.6	9.6	22.6	22.6	9.9	22.8	10.0	22.9
Total Split (%)	14.8%	34.8%	14.8%	34.8%	34.8%	15.2%	35.1%	15.4%	35.2%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	5.0	10.4	9.4	8.4	8.4	5.3	18.3	5.4	18.4
Actuated g/C Ratio	0.09	0.19	0.17	0.15	0.15	0.10	0.33	0.10	0.33
v/c Ratio	0.77	0.11	0.34	0.02	0.62	0.82	0.86	0.87	0.96
Control Delay	64.0	9.4	30.7	18.6	9.8	68.3	25.8	75.5	40.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.0	9.4	30.7	18.6	9.8	68.3	25.8	75.5	40.5
LOS	E	A	C	B	A	E	C	E	D
Approach Delay		51.3		14.8			29.4		44.4
Approach LOS		D		B			C		D

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 55.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 34.2	Intersection LOS: C
Intersection Capacity Utilization 60.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	3	28	83	5	264	115	1217	41	124	958	26
Future Volume (veh/h)	102	3	28	83	5	264	115	1217	41	124	958	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	112	3	13	91	5	153	126	1337	43	136	1053	27
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	138	38	163	115	204	173	156	1633	53	177	1181	30
Arrive On Green	0.09	0.13	0.13	0.07	0.11	0.11	0.10	0.33	0.33	0.11	0.35	0.35
Sat Flow, veh/h	1619	293	1271	1619	1800	1525	1619	4890	157	1619	3407	87
Grp Volume(v), veh/h	112	0	16	91	5	153	126	896	484	136	528	552
Grp Sat Flow(s),veh/h/ln	1619	0	1564	1619	1800	1525	1619	1638	1771	1619	1710	1784
Q Serve(g_s), s	3.5	0.0	0.5	2.8	0.1	3.4	3.9	12.9	12.9	4.2	15.0	15.0
Cycle Q Clear(g_c), s	3.5	0.0	0.5	2.8	0.1	3.4	3.9	12.9	12.9	4.2	15.0	15.0
Prop In Lane	1.00		0.81	1.00		1.00	1.00		0.09	1.00		0.05
Lane Grp Cap(c), veh/h	138	0	200	115	204	173	156	1094	591	177	593	619
V/C Ratio(X)	0.81	0.00	0.08	0.79	0.02	0.88	0.81	0.82	0.82	0.77	0.89	0.89
Avail Cap(c_a), veh/h	158	0	548	158	631	535	167	1161	628	177	610	636
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.1	0.0	19.7	23.5	20.2	10.2	22.7	15.7	15.7	22.2	15.9	15.9
Incr Delay (d2), s/veh	23.9	0.0	0.2	17.2	0.0	13.6	23.7	4.5	8.0	18.6	15.1	14.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	0.2	1.5	0.0	2.2	2.2	4.1	5.0	2.2	6.7	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.9	0.0	19.9	40.7	20.3	23.9	46.4	20.2	23.7	40.8	30.9	30.4
LnGrp LOS	D	A	B	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		128			249			1506			1216	
Approach Delay, s/veh		43.5			29.9			23.5			31.8	
Approach LOS		D			C			C			C	

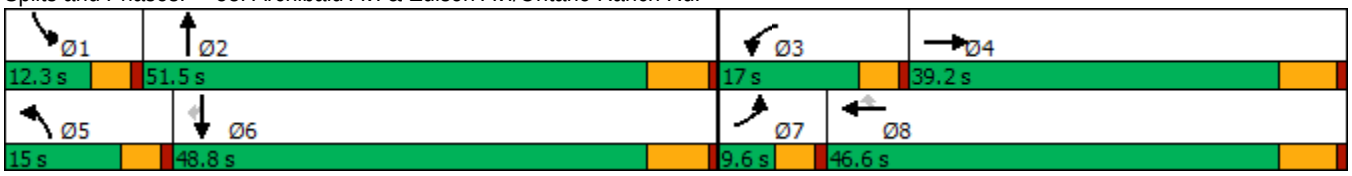
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	21.7	8.2	11.2	9.5	22.4	9.0	10.4
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	5.4	18.2	5.0	18.0	5.3	18.3	5.0	18.0
Max Q Clear Time (g_c+I1), s	6.2	14.9	4.8	2.5	5.9	17.0	5.5	5.4
Green Ext Time (p_c), s	0.0	2.3	0.0	0.0	0.0	0.8	0.0	0.4

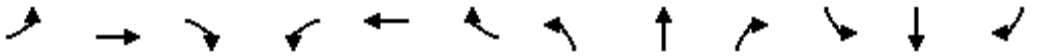
Intersection Summary	
HCM 6th Ctrl Delay	28.1
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	254	46	514	645	150	177	1128	456	70	568	162
Future Volume (vph)	43	254	46	514	645	150	177	1128	456	70	568	162
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	9.6	39.2		17.0	46.6	46.6	15.0	51.5		12.3	48.8	48.8
Total Split (%)	8.0%	32.7%		14.2%	38.8%	38.8%	12.5%	42.9%		10.3%	40.7%	40.7%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.1	31.1	112.7	12.7	41.3	41.3	10.6	42.0	112.7	7.3	35.9	35.9
Actuated g/C Ratio	0.05	0.28	1.00	0.11	0.37	0.37	0.09	0.37	1.00	0.06	0.32	0.32
v/c Ratio	0.33	0.28	0.03	1.60	1.01	0.24	1.21	0.91	0.31	0.69	0.54	0.28
Control Delay	62.9	34.1	0.0	318.3	75.8	10.0	183.2	46.1	0.5	87.1	32.9	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.9	34.1	0.0	318.3	75.8	10.0	183.2	46.1	0.5	87.1	32.9	6.5
LOS	E	C	A	F	E	A	F	D	A	F	C	A
Approach Delay		33.2			163.5			48.0			32.3	
Approach LOS		C			F			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.60	
Intersection Signal Delay: 79.7	Intersection LOS: E
Intersection Capacity Utilization 95.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	254	46	514	645	150	177	1128	456	70	568	162
Future Volume (veh/h)	43	254	46	514	645	150	177	1128	456	70	568	162
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	44	262	0	530	665	101	182	1163	0	72	586	134
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	97	945		319	632	536	146	1266		89	1146	511
Arrive On Green	0.03	0.28	0.00	0.11	0.35	0.35	0.09	0.37	0.00	0.06	0.34	0.34
Sat Flow, veh/h	2956	3420	1525	2956	1800	1525	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	44	262	0	530	665	101	182	1163	0	72	586	134
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1800	1525	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	1.7	6.9	0.0	12.4	40.4	5.3	10.4	37.3	0.0	5.1	15.8	7.4
Cycle Q Clear(g_c), s	1.7	6.9	0.0	12.4	40.4	5.3	10.4	37.3	0.0	5.1	15.8	7.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	97	945		319	632	536	146	1266		89	1146	511
V/C Ratio(X)	0.45	0.28		1.66	1.05	0.19	1.24	0.92		0.81	0.51	0.26
Avail Cap(c_a), veh/h	129	981		319	632	536	146	1338		108	1258	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.6	32.6	0.0	51.3	37.3	25.9	52.3	34.6	0.0	53.7	30.7	27.9
Incr Delay (d2), s/veh	1.2	0.2	0.0	311.9	50.2	0.2	154.1	10.0	0.0	24.8	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.8	0.0	18.2	25.3	1.9	10.3	16.0	0.0	2.6	6.1	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.8	32.8	0.0	363.2	87.5	26.1	206.4	44.5	0.0	78.5	31.0	28.1
LnGrp LOS	E	C		F	F	C	F	D		E	C	C
Approach Vol, veh/h		306	A		1296			1345	A		792	
Approach Delay, s/veh		36.1			195.5			66.4			34.9	
Approach LOS		D			F			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	49.1	17.0	38.0	15.0	45.0	8.4	46.6
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	7.7	45.0	12.4	33.0	10.4	42.3	5.0	40.4
Max Q Clear Time (g_c+I1), s	7.1	39.3	14.4	8.9	12.4	17.8	3.7	42.4
Green Ext Time (p_c), s	0.0	3.3	0.0	1.4	0.0	3.9	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	102.0
HCM 6th LOS	F

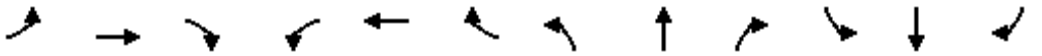
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	17	1744	9	26	1102
Future Volume (vph)	12	17	1744	9	26	1102
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.5	9.5	32.5	32.5	9.6	16.5
Total Split (s)	9.5	9.5	41.4	41.4	9.6	51.0
Total Split (%)	13.6%	13.6%	59.1%	59.1%	13.7%	72.9%
Yellow Time (s)	3.5	3.5	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	6.5	6.5	4.6	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max
Act Effct Green (s)	5.1	5.1	54.7	54.7	5.1	56.4
Actuated g/C Ratio	0.08	0.08	0.90	0.90	0.08	0.93
v/c Ratio	0.05	0.04	0.61	0.01	0.21	0.37
Control Delay	26.3	0.2	7.7	4.8	30.0	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.3	0.2	7.7	4.8	30.0	2.4
LOS	C	A	A	A	C	A
Approach Delay			7.7			3.1
Approach LOS			A			A

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 60.8	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 5.9	Intersection LOS: A
Intersection Capacity Utilization 64.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	12	0	17	0	1744	9	26	1102	0
Future Volume (veh/h)	0	0	0	12	0	17	0	1744	9	26	1102	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1700	0	1800	0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h				13	0	7	0	1875	7	28	1185	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				75	0	64	0	2293	1023	51	2677	0
Arrive On Green				0.02	0.00	0.02	0.00	0.67	0.67	0.03	0.78	0.00
Sat Flow, veh/h				3141	0	2685	0	3510	1525	1619	3510	0
Grp Volume(v), veh/h				13	0	7	0	1875	7	28	1185	0
Grp Sat Flow(s),veh/h/ln				1570	0	1342	0	1710	1525	1619	1710	0
Q Serve(g_s), s				0.2	0.0	0.1	0.0	22.7	0.1	1.0	6.6	0.0
Cycle Q Clear(g_c), s				0.2	0.0	0.1	0.0	22.7	0.1	1.0	6.6	0.0
Prop In Lane				1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				75	0	64	0	2293	1023	51	2677	0
V/C Ratio(X)				0.17	0.00	0.11	0.00	0.82	0.01	0.55	0.44	0.00
Avail Cap(c_a), veh/h				276	0	236	0	2293	1023	142	2677	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				27.2	0.0	27.2	0.0	6.8	3.1	27.1	2.1	0.0
Incr Delay (d2), s/veh				1.1	0.0	0.7	0.0	3.4	0.0	3.4	0.5	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.1	0.0	0.0	0.0	3.6	0.0	0.4	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.3	0.0	27.9	0.0	10.2	3.1	30.6	2.6	0.0
LnGrp LOS				C	A	C	A	B	A	C	A	A
Approach Vol, veh/h					20			1882			1213	
Approach Delay, s/veh					28.2			10.2			3.2	
Approach LOS					C			B			A	

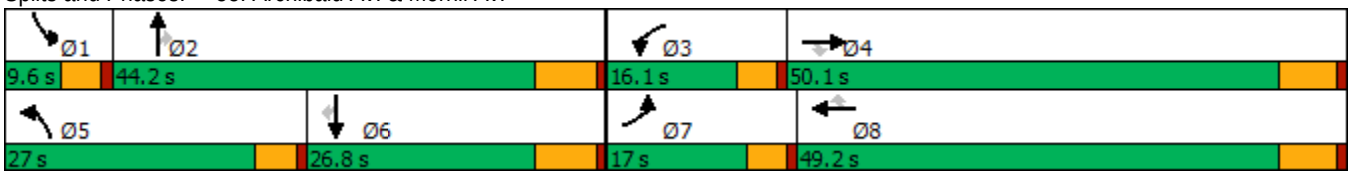
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	6.4	44.6				51.0		5.9				
Change Period (Y+Rc), s	4.6	6.5				6.5		4.5				
Max Green Setting (Gmax), s	5.0	34.9				44.5		5.0				
Max Q Clear Time (g_c+I1), s	3.0	24.7				8.6		2.2				
Green Ext Time (p_c), s	0.0	7.8				9.1		0.0				

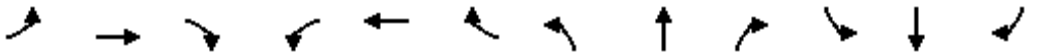
Intersection Summary		
HCM 6th Ctrl Delay		7.6
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	298	24	175	81	55	141	646	1314	41	43	590	482
Future Volume (vph)	298	24	175	81	55	141	646	1314	41	43	590	482
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	17.0	50.1	50.1	16.1	49.2	49.2	27.0	44.2	44.2	9.6	26.8	26.8
Total Split (%)	14.2%	41.8%	41.8%	13.4%	41.0%	41.0%	22.5%	36.8%	36.8%	8.0%	22.3%	22.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	12.6	21.4	21.4	8.7	15.3	15.3	22.8	42.5	42.5	5.1	20.6	20.6
Actuated g/C Ratio	0.13	0.23	0.23	0.09	0.16	0.16	0.24	0.45	0.45	0.05	0.22	0.22
v/c Ratio	1.41	0.06	0.37	0.56	0.19	0.38	1.70	0.87	0.06	0.28	0.81	0.90
Control Delay	243.8	29.2	6.6	57.5	33.3	7.0	351.5	33.2	0.1	50.7	45.4	36.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	243.8	29.2	6.6	57.5	33.3	7.0	351.5	33.2	0.1	50.7	45.4	36.6
LOS	F	C	A	E	C	A	F	C	A	D	D	D
Approach Delay		149.9			27.1			135.3			41.8	
Approach LOS		F			C			F			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 93.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.70	
Intersection Signal Delay: 102.6	Intersection LOS: F
Intersection Capacity Utilization 96.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	298	24	175	81	55	141	646	1314	41	43	590	482
Future Volume (veh/h)	298	24	175	81	55	141	646	1314	41	43	590	482
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	307	25	125	84	57	50	666	1355	23	44	608	431
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	231	347	294	105	207	175	417	1550	691	111	798	356
Arrive On Green	0.14	0.19	0.19	0.06	0.11	0.11	0.26	0.45	0.45	0.04	0.23	0.23
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	1619	3420	1525	2956	3420	1525
Grp Volume(v), veh/h	307	25	125	84	57	50	666	1355	23	44	608	431
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1710	1525	1478	1710	1525
Q Serve(g_s), s	12.4	1.0	6.3	4.5	2.5	2.6	22.4	31.2	0.7	1.3	14.4	20.3
Cycle Q Clear(g_c), s	12.4	1.0	6.3	4.5	2.5	2.6	22.4	31.2	0.7	1.3	14.4	20.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	231	347	294	105	207	175	417	1550	691	111	798	356
V/C Ratio(X)	1.33	0.07	0.43	0.80	0.28	0.29	1.60	0.87	0.03	0.40	0.76	1.21
Avail Cap(c_a), veh/h	231	908	770	214	890	754	417	1550	691	170	798	356
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.3	28.7	30.9	40.1	35.2	35.2	32.3	21.5	13.2	40.9	31.1	33.3
Incr Delay (d2), s/veh	175.3	0.1	1.0	5.2	0.7	0.9	280.0	5.9	0.0	0.8	4.3	118.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.8	0.4	2.3	1.9	1.1	1.0	40.3	11.6	0.2	0.4	5.9	18.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	212.6	28.8	31.9	45.4	35.9	36.1	312.3	27.4	13.2	41.7	35.4	151.6
LnGrp LOS	F	C	C	D	D	D	F	C	B	D	D	F
Approach Vol, veh/h		457			191			2044			1083	
Approach Delay, s/veh		153.1			40.1			120.1			81.9	
Approach LOS		F			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	45.9	10.2	23.0	27.0	26.8	17.0	16.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	37.7	11.5	43.9	22.4	20.3	12.4	43.0
Max Q Clear Time (g_c+I1), s	3.3	33.2	6.5	8.3	24.4	22.3	14.4	4.6
Green Ext Time (p_c), s	0.0	3.1	0.0	0.5	0.0	0.0	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	109.1
HCM 6th LOS	F

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	356	1006	954	381	257	551
Future Volume (vph)	356	1006	954	381	257	551
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	27.0	56.7	36.3	27.0	83.7
Total Split (%)	30.3%	22.5%	47.3%	30.3%	22.5%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min
Act Effct Green (s)	26.5	48.8	51.5	83.3	22.0	78.8
Actuated g/C Ratio	0.23	0.42	0.45	0.72	0.19	0.68
v/c Ratio	0.90	1.50	1.18	0.33	0.78	0.44
Control Delay	68.4	255.9	122.5	4.0	62.2	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.4	255.9	122.5	4.0	62.2	10.3
LOS	E	F	F	A	E	B
Approach Delay	206.9		88.7			26.8
Approach LOS	F		F			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.50	
Intersection Signal Delay: 120.4	Intersection LOS: F
Intersection Capacity Utilization 121.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	356	1006	954	381	257	551
Future Volume (veh/h)	356	1006	954	381	257	551
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	371	992	994	350	268	574
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	478	690	833	1132	297	1226
Arrive On Green	0.26	0.26	0.44	0.44	0.16	0.65
Sat Flow, veh/h	1810	1610	1900	1610	1810	1900
Grp Volume(v), veh/h	371	992	994	350	268	574
Grp Sat Flow(s),veh/h/ln	1810	1610	1900	1610	1810	1900
Q Serve(g_s), s	22.2	31.0	51.4	9.7	17.0	18.0
Cycle Q Clear(g_c), s	22.2	31.0	51.4	9.7	17.0	18.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	478	690	833	1132	297	1226
V/C Ratio(X)	0.78	1.44	1.19	0.31	0.90	0.47
Avail Cap(c_a), veh/h	478	690	833	1132	340	1275
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.9	33.5	32.9	6.6	48.1	10.6
Incr Delay (d2), s/veh	7.1	205.1	98.8	0.2	24.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.4	57.2	44.4	6.5	9.3	6.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	47.0	238.6	131.7	6.8	72.2	10.7
LnGrp LOS	D	F	F	A	E	B
Approach Vol, veh/h	1363		1344			842
Approach Delay, s/veh	186.5		99.2			30.3
Approach LOS	F		F			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	24.3	56.7			81.0	36.3
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	22.0	51.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	19.0	53.4			20.0	33.0
Green Ext Time (p_c), s	0.2	0.0			1.9	0.0

Intersection Summary		
HCM 6th Ctrl Delay	116.3	
HCM 6th LOS	F	

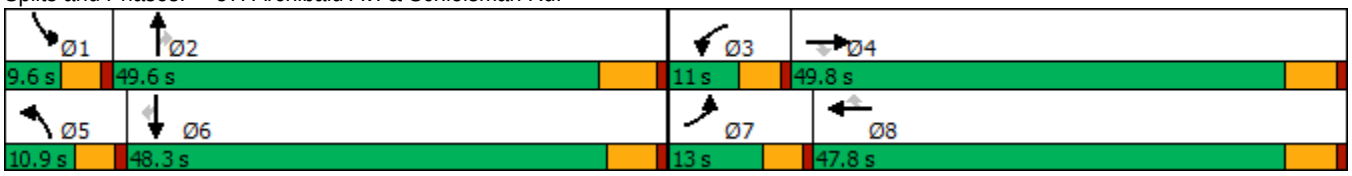
Notes

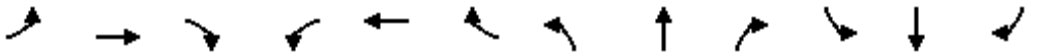
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	510	441	149	279	801	163	290	909	242	120	508	523
Future Volume (vph)	510	441	149	279	801	163	290	909	242	120	508	523
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	49.8	49.8	11.0	47.8	47.8	10.9	49.6	49.6	9.6	48.3	48.3
Total Split (%)	10.8%	41.5%	41.5%	9.2%	39.8%	39.8%	9.1%	41.3%	41.3%	8.0%	40.3%	40.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	8.4	44.2	44.2	6.4	42.2	42.2	6.3	38.6	38.6	5.0	38.1	38.1
Actuated g/C Ratio	0.07	0.38	0.38	0.06	0.37	0.37	0.05	0.33	0.33	0.04	0.33	0.33
v/c Ratio	2.22	0.25	0.23	1.60	0.47	0.28	1.69	0.58	0.37	0.88	0.33	0.92
Control Delay	588.0	25.5	4.7	326.7	29.8	11.2	364.0	33.0	4.7	102.7	29.3	47.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	588.0	25.5	4.7	326.7	29.8	11.2	364.0	33.0	4.7	102.7	29.3	47.8
LOS	F	C	A	F	C	B	F	C	A	F	C	D
Approach Delay		283.5			94.0			94.8			45.3	
Approach LOS		F			F			F			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.22	
Intersection Signal Delay: 125.1	Intersection LOS: F
Intersection Capacity Utilization 82.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	510	441	149	279	801	163	290	909	242	120	508	523
Future Volume (veh/h)	510	441	149	279	801	163	290	909	242	120	508	523
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	567	490	102	310	890	104	322	1010	196	133	564	459
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	256	1982	605	195	1892	580	192	1737	539	152	1678	514
Arrive On Green	0.07	0.38	0.38	0.06	0.36	0.36	0.05	0.33	0.33	0.04	0.32	0.32
Sat Flow, veh/h	3510	5187	1584	3510	5187	1590	3510	5187	1610	3510	5187	1588
Grp Volume(v), veh/h	567	490	102	310	890	104	322	1010	196	133	564	459
Grp Sat Flow(s),veh/h/ln	1755	1729	1584	1755	1729	1590	1755	1729	1610	1755	1729	1588
Q Serve(g_s), s	8.4	7.4	4.9	6.4	15.2	5.1	6.3	18.5	10.6	4.3	9.5	31.7
Cycle Q Clear(g_c), s	8.4	7.4	4.9	6.4	15.2	5.1	6.3	18.5	10.6	4.3	9.5	31.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	256	1982	605	195	1892	580	192	1737	539	152	1678	514
V/C Ratio(X)	2.21	0.25	0.17	1.59	0.47	0.18	1.68	0.58	0.36	0.87	0.34	0.89
Avail Cap(c_a), veh/h	256	1982	605	195	1892	580	192	1955	607	152	1932	592
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	24.3	23.5	54.4	28.0	24.9	54.4	31.6	29.0	54.8	29.6	37.1
Incr Delay (d2), s/veh	558.9	0.3	0.6	287.9	0.8	0.7	326.1	0.3	0.4	37.4	0.1	14.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.5	3.0	1.9	10.6	6.1	2.0	11.4	7.4	4.0	2.6	3.8	13.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	612.3	24.6	24.1	342.3	28.9	25.5	380.6	32.0	29.4	92.2	29.7	51.6
LnGrp LOS	F	C	C	F	C	C	F	C	C	F	C	D
Approach Vol, veh/h		1159			1304			1528			1156	
Approach Delay, s/veh		312.0			103.1			105.1			45.6	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	44.8	11.0	49.8	10.9	43.5	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.0	43.4	6.4	44.0	6.3	* 43	8.4	42.0
Max Q Clear Time (g_c+I1), s	6.3	20.5	8.4	9.4	8.3	33.7	10.4	17.2
Green Ext Time (p_c), s	0.0	7.4	0.0	3.6	0.0	3.5	0.0	6.4

Intersection Summary	
HCM 6th Ctrl Delay	137.8
HCM 6th LOS	F

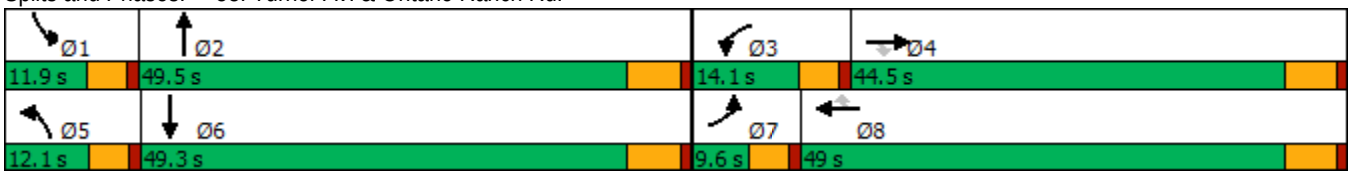
Notes

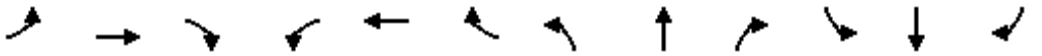
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	31	677	37	47	1361	20	63	26	37	17
Future Volume (vph)	31	677	37	47	1361	20	63	26	37	17
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	9.6	44.5	44.5	14.1	49.0	49.0	12.1	49.5	11.9	49.3
Total Split (%)	8.0%	37.1%	37.1%	11.8%	40.8%	40.8%	10.1%	41.3%	9.9%	41.1%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	5.2	48.9	48.9	7.1	50.6	50.6	7.2	18.0	6.5	15.1
Actuated g/C Ratio	0.06	0.57	0.57	0.08	0.59	0.59	0.08	0.21	0.08	0.17
v/c Ratio	0.35	0.39	0.04	0.39	0.76	0.02	0.52	0.20	0.34	0.29
Control Delay	56.3	18.6	0.1	51.8	24.1	0.1	58.1	16.1	52.1	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.3	18.6	0.1	51.8	24.1	0.1	58.1	16.1	52.1	12.6
LOS	E	B	A	D	C	A	E	B	D	B
Approach Delay		19.3			24.7			36.4		24.3
Approach LOS		B			C			D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 86.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 23.7	Intersection LOS: C
Intersection Capacity Utilization 63.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	677	37	47	1361	20	63	26	41	37	17	70
Future Volume (veh/h)	31	677	37	47	1361	20	63	26	41	37	17	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	34	752	30	52	1512	13	70	29	33	41	19	55
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	53	1795	801	69	1828	815	87	106	120	60	49	143
Arrive On Green	0.03	0.52	0.52	0.04	0.53	0.53	0.05	0.14	0.14	0.04	0.12	0.12
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	768	874	1619	408	1180
Grp Volume(v), veh/h	34	752	30	52	1512	13	70	0	62	41	0	74
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	0	1643	1619	0	1588
Q Serve(g_s), s	1.7	10.8	0.8	2.6	29.8	0.3	3.5	0.0	2.7	2.0	0.0	3.5
Cycle Q Clear(g_c), s	1.7	10.8	0.8	2.6	29.8	0.3	3.5	0.0	2.7	2.0	0.0	3.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.53	1.00		0.74
Lane Grp Cap(c), veh/h	53	1795	801	69	1828	815	87	0	226	60	0	193
V/C Ratio(X)	0.64	0.42	0.04	0.75	0.83	0.02	0.81	0.00	0.27	0.68	0.00	0.38
Avail Cap(c_a), veh/h	100	1795	801	190	1828	815	150	0	888	146	0	855
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.6	11.7	9.3	38.3	15.7	8.8	37.8	0.0	31.2	38.4	0.0	32.7
Incr Delay (d2), s/veh	4.6	0.7	0.1	6.1	4.5	0.0	6.5	0.0	0.6	4.9	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.6	0.2	1.1	10.5	0.1	1.4	0.0	1.1	0.8	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.2	12.4	9.4	44.3	20.1	8.9	44.3	0.0	31.9	43.4	0.0	34.0
LnGrp LOS	D	B	A	D	C	A	D	A	C	D	A	C
Approach Vol, veh/h		816			1577			132			115	
Approach Delay, s/veh		13.6			20.8			38.5			37.3	
Approach LOS		B			C			D			D	

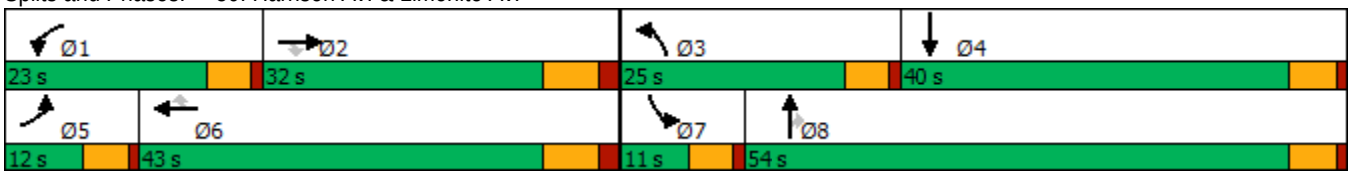
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	16.9	8.0	48.2	8.9	15.6	7.3	49.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	7.3	43.7	9.5	38.7	7.5	43.5	5.0	43.2
Max Q Clear Time (g_c+I1), s	4.0	4.7	4.6	12.8	5.5	5.5	3.7	31.8
Green Ext Time (p_c), s	0.0	0.3	0.0	5.1	0.0	0.4	0.0	7.4

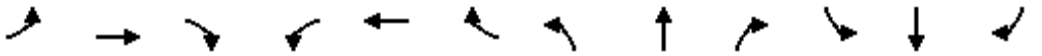
Intersection Summary	
HCM 6th Ctrl Delay	20.2
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	46	569	23	154	1116	23	162	115	229	29	122
Future Volume (vph)	46	569	23	154	1116	23	162	115	229	29	122
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	12.0	32.0	32.0	23.0	43.0	43.0	25.0	54.0	54.0	11.0	40.0
Total Split (%)	10.0%	26.7%	26.7%	19.2%	35.8%	35.8%	20.8%	45.0%	45.0%	9.2%	33.3%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	6.4	18.5	18.5	11.8	29.6	29.6	12.4	28.8	28.8	5.8	16.5
Actuated g/C Ratio	0.08	0.22	0.22	0.14	0.35	0.35	0.15	0.35	0.35	0.07	0.20
v/c Ratio	0.35	0.52	0.05	0.62	0.63	0.04	0.63	0.18	0.34	0.24	0.57
Control Delay	52.3	32.0	0.2	49.7	26.8	0.1	48.4	23.4	4.6	51.1	34.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	32.0	0.2	49.7	26.8	0.1	48.4	23.4	4.6	51.1	34.2
LOS	D	C	A	D	C	A	D	C	A	D	C
Approach Delay		32.3			29.1			22.9			36.2
Approach LOS		C			C			C			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 83.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 29.3	Intersection LOS: C
Intersection Capacity Utilization 64.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 59: Harrison Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	569	23	154	1116	23	162	115	229	29	122	84
Future Volume (veh/h)	46	569	23	154	1116	23	162	115	229	29	122	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	48	593	17	160	1162	22	169	120	121	30	127	59
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	81	1423	428	202	1770	536	213	448	379	58	185	86
Arrive On Green	0.04	0.27	0.27	0.11	0.34	0.34	0.12	0.24	0.24	0.03	0.15	0.15
Sat Flow, veh/h	1810	5187	1560	1810	5187	1572	1810	1900	1606	1810	1227	570
Grp Volume(v), veh/h	48	593	17	160	1162	22	169	120	121	30	0	186
Grp Sat Flow(s),veh/h/ln	1810	1729	1560	1810	1729	1572	1810	1900	1606	1810	0	1797
Q Serve(g_s), s	1.7	6.0	0.5	5.6	12.3	0.6	5.9	3.3	4.0	1.1	0.0	6.3
Cycle Q Clear(g_c), s	1.7	6.0	0.5	5.6	12.3	0.6	5.9	3.3	4.0	1.1	0.0	6.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	81	1423	428	202	1770	536	213	448	379	58	0	271
V/C Ratio(X)	0.59	0.42	0.04	0.79	0.66	0.04	0.80	0.27	0.32	0.51	0.00	0.69
Avail Cap(c_a), veh/h	197	2012	605	505	2898	878	562	1436	1214	168	0	968
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.2	19.2	17.2	27.9	18.0	14.2	27.7	20.1	20.4	30.7	0.0	25.9
Incr Delay (d2), s/veh	2.6	0.2	0.0	2.6	0.4	0.0	2.6	0.3	0.5	2.6	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.1	0.2	2.3	4.1	0.2	2.4	1.3	1.4	0.5	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.8	19.4	17.2	30.5	18.4	14.2	30.2	20.4	20.8	33.3	0.0	29.0
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	A	C
Approach Vol, veh/h		658			1344			410			216	
Approach Delay, s/veh		20.3			19.8			24.6			29.6	
Approach LOS		C			B			C			C	

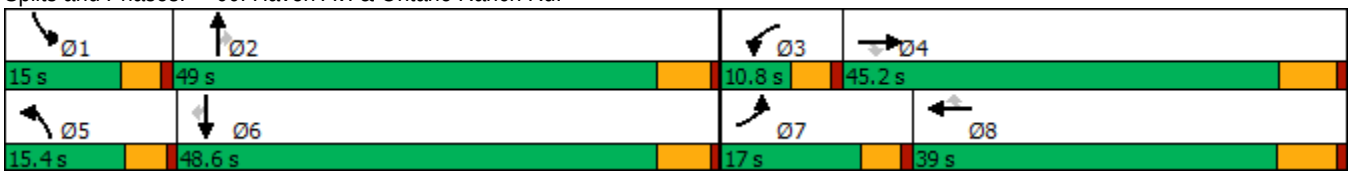
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	24.7	12.6	15.0	7.9	29.0	7.1	20.5
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	18.0	25.0	20.0	34.7	7.0	36.0	6.0	48.7
Max Q Clear Time (g_c+I1), s	7.6	8.0	7.9	8.3	3.7	14.3	3.1	6.0
Green Ext Time (p_c), s	0.1	3.3	0.1	0.9	0.0	7.7	0.0	1.0

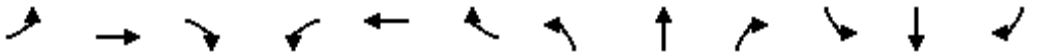
Intersection Summary	
HCM 6th Ctrl Delay	21.5
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	706	31	23	1164	89	68	207	86	129	63	82
Future Volume (vph)	150	706	31	23	1164	89	68	207	86	129	63	82
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	17.0	45.2	45.2	10.8	39.0	39.0	15.4	49.0	49.0	15.0	48.6	48.6
Total Split (%)	14.2%	37.7%	37.7%	9.0%	32.5%	32.5%	12.8%	40.8%	40.8%	12.5%	40.5%	40.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	12.5	46.4	46.4	5.7	32.9	32.9	8.2	19.6	19.6	10.5	24.1	24.1
Actuated g/C Ratio	0.13	0.48	0.48	0.06	0.34	0.34	0.08	0.20	0.20	0.11	0.25	0.25
v/c Ratio	0.77	0.32	0.04	0.26	1.07	0.15	0.53	0.61	0.21	0.79	0.15	0.18
Control Delay	67.6	19.0	0.1	54.7	80.6	1.4	59.3	41.6	1.2	74.6	30.4	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.6	19.0	0.1	54.7	80.6	1.4	59.3	41.6	1.2	74.6	30.4	0.8
LOS	E	B	A	D	F	A	E	D	A	E	C	A
Approach Delay		26.6			74.6			35.3			42.4	
Approach LOS		C			E			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 51.1	Intersection LOS: D
Intersection Capacity Utilization 80.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	706	31	23	1164	89	68	207	86	129	63	82
Future Volume (veh/h)	150	706	31	23	1164	89	68	207	86	129	63	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	160	751	20	24	1238	50	72	220	41	137	67	54
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	191	2301	714	41	1285	573	90	280	237	166	364	309
Arrive On Green	0.12	0.47	0.47	0.03	0.38	0.38	0.06	0.16	0.16	0.10	0.20	0.20
Sat Flow, veh/h	1619	4914	1525	1619	3420	1525	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	160	751	20	24	1238	50	72	220	41	137	67	54
Grp Sat Flow(s),veh/h/ln	1619	1638	1525	1619	1710	1525	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	8.4	8.3	0.6	1.3	30.6	1.8	3.8	10.2	2.0	7.2	2.7	2.5
Cycle Q Clear(g_c), s	8.4	8.3	0.6	1.3	30.6	1.8	3.8	10.2	2.0	7.2	2.7	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	191	2301	714	41	1285	573	90	280	237	166	364	309
V/C Ratio(X)	0.84	0.33	0.03	0.59	0.96	0.09	0.80	0.79	0.17	0.83	0.18	0.17
Avail Cap(c_a), veh/h	232	2301	714	116	1285	573	202	899	762	195	891	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.3	14.4	12.4	41.7	26.4	17.4	40.4	35.1	31.7	38.1	28.6	28.5
Incr Delay (d2), s/veh	17.1	0.4	0.1	4.8	17.7	0.3	6.1	4.9	0.3	18.9	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	2.7	0.2	0.5	13.8	0.6	1.6	4.6	0.7	3.6	1.1	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.4	14.8	12.5	46.5	44.1	17.7	46.5	40.0	32.0	57.0	28.8	28.8
LnGrp LOS	D	B	B	D	D	B	D	D	C	E	C	C
Approach Vol, veh/h		931			1312			333			258	
Approach Delay, s/veh		21.6			43.1			40.4			43.8	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	19.2	6.8	47.0	9.4	23.3	14.8	39.0
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	10.4	43.2	6.2	* 39	10.8	42.8	12.4	32.5
Max Q Clear Time (g_c+I1), s	9.2	12.2	3.3	10.3	5.8	4.7	10.4	32.6
Green Ext Time (p_c), s	0.0	1.3	0.0	5.0	0.0	0.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	35.8
HCM 6th LOS	D

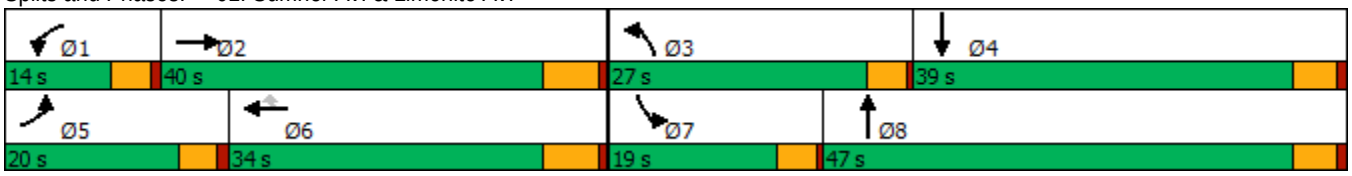
Notes

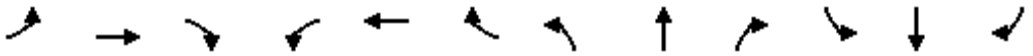
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	261	609	118	911	35	200	413	105	207
Future Volume (vph)	261	609	118	911	35	200	413	105	207
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	20.0	40.0	14.0	34.0	34.0	27.0	47.0	19.0	39.0
Total Split (%)	16.7%	33.3%	11.7%	28.3%	28.3%	22.5%	39.2%	15.8%	32.5%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	10.8	26.0	7.1	22.3	22.3	14.1	22.3	9.4	14.8
Actuated g/C Ratio	0.13	0.31	0.09	0.27	0.27	0.17	0.27	0.11	0.18
v/c Ratio	0.59	0.41	0.41	0.67	0.06	0.67	0.57	0.53	0.52
Control Delay	43.0	24.7	45.5	31.7	0.2	46.9	28.5	49.5	19.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	24.7	45.5	31.7	0.2	46.9	28.5	49.5	19.7
LOS	D	C	D	C	A	D	C	D	B
Approach Delay		29.9		32.2			33.5		26.2
Approach LOS		C		C			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 82.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 31.0	Intersection LOS: C
Intersection Capacity Utilization 63.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 61: Sumner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	261	609	35	118	911	35	200	413	120	105	207	169
Future Volume (veh/h)	261	609	35	118	911	35	200	413	120	105	207	169
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	269	628	30	122	939	32	206	426	50	108	213	77
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	386	1697	81	208	1472	451	256	653	76	140	358	125
Arrive On Green	0.11	0.33	0.33	0.06	0.28	0.28	0.14	0.20	0.20	0.08	0.14	0.14
Sat Flow, veh/h	3510	5073	241	3510	5187	1590	1810	3256	380	1810	2620	919
Grp Volume(v), veh/h	269	427	231	122	939	32	206	235	241	108	145	145
Grp Sat Flow(s),veh/h/ln	1755	1729	1857	1755	1729	1590	1810	1805	1831	1810	1805	1735
Q Serve(g_s), s	4.4	5.6	5.6	2.0	9.4	0.9	6.5	7.1	7.2	3.5	4.5	4.7
Cycle Q Clear(g_c), s	4.4	5.6	5.6	2.0	9.4	0.9	6.5	7.1	7.2	3.5	4.5	4.7
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.21	1.00		0.53
Lane Grp Cap(c), veh/h	386	1156	621	208	1472	451	256	362	367	140	246	237
V/C Ratio(X)	0.70	0.37	0.37	0.59	0.64	0.07	0.81	0.65	0.66	0.77	0.59	0.61
Avail Cap(c_a), veh/h	917	1981	1064	562	2447	750	701	1277	1296	457	1034	994
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	15.0	15.0	27.2	18.6	15.5	24.7	21.8	21.8	26.9	24.1	24.2
Incr Delay (d2), s/veh	0.9	0.2	0.4	1.0	0.5	0.1	2.3	1.5	1.5	3.4	1.7	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.8	2.0	0.8	3.1	0.3	2.6	2.7	2.8	1.5	1.8	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.3	15.2	15.4	28.2	19.0	15.6	27.0	23.3	23.3	30.2	25.7	26.1
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		927			1093			682			398	
Approach Delay, s/veh		18.5			20.0			24.4			27.1	
Approach LOS		B			B			C			C	

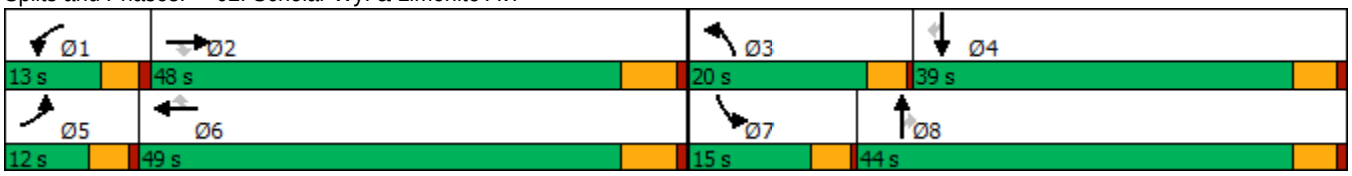
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	25.8	12.4	13.1	11.0	22.8	8.6	16.9
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	9.5	34.0	23.0	34.0	15.5	28.0	15.0	42.0
Max Q Clear Time (g_c+I1), s	4.0	7.6	8.5	6.7	6.4	11.4	5.5	9.2
Green Ext Time (p_c), s	0.1	3.8	0.1	1.2	0.2	5.5	0.0	2.1

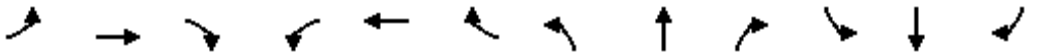
Intersection Summary	
HCM 6th Ctrl Delay	21.4
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	852	69	44	860	28	107	190	108	55	208	30
Future Volume (vph)	33	852	69	44	860	28	107	190	108	55	208	30
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	12.0	48.0	48.0	13.0	49.0	49.0	20.0	44.0	44.0	15.0	39.0	39.0
Total Split (%)	10.0%	40.0%	40.0%	10.8%	40.8%	40.8%	16.7%	36.7%	36.7%	12.5%	32.5%	32.5%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.2	28.1	28.1	6.7	28.4	28.4	10.0	16.6	16.6	7.4	14.4	14.4
Actuated g/C Ratio	0.09	0.39	0.39	0.09	0.39	0.39	0.14	0.23	0.23	0.10	0.20	0.20
v/c Ratio	0.23	0.66	0.11	0.29	0.66	0.04	0.46	0.48	0.26	0.33	0.31	0.08
Control Delay	46.1	24.1	0.6	45.8	23.6	0.1	43.2	31.6	7.4	44.7	29.9	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.1	24.1	0.6	45.8	23.6	0.1	43.2	31.6	7.4	44.7	29.9	0.4
LOS	D	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		23.2			24.0			28.2			29.7	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 72.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 25.0	Intersection LOS: C
Intersection Capacity Utilization 63.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	852	69	44	860	28	107	190	108	55	208	30
Future Volume (veh/h)	33	852	69	44	860	28	107	190	108	55	208	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	36	926	41	48	935	19	116	207	75	60	226	31
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	55	1331	593	68	1356	605	150	391	331	78	599	255
Arrive On Green	0.03	0.37	0.37	0.04	0.38	0.38	0.08	0.21	0.21	0.04	0.17	0.17
Sat Flow, veh/h	1810	3610	1609	1810	3610	1610	1810	1900	1608	1810	3610	1534
Grp Volume(v), veh/h	36	926	41	48	935	19	116	207	75	60	226	31
Grp Sat Flow(s),veh/h/ln	1810	1805	1609	1810	1805	1610	1810	1900	1608	1810	1805	1534
Q Serve(g_s), s	1.1	12.3	0.9	1.5	12.3	0.4	3.6	5.5	2.2	1.9	3.2	1.0
Cycle Q Clear(g_c), s	1.1	12.3	0.9	1.5	12.3	0.4	3.6	5.5	2.2	1.9	3.2	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	55	1331	593	68	1356	605	150	391	331	78	599	255
V/C Ratio(X)	0.65	0.70	0.07	0.71	0.69	0.03	0.77	0.53	0.23	0.77	0.38	0.12
Avail Cap(c_a), veh/h	240	2681	1195	272	2744	1224	512	1310	1109	352	2170	922
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	15.2	11.6	26.9	14.9	11.2	25.4	20.0	18.7	26.8	21.0	20.1
Incr Delay (d2), s/veh	4.7	0.7	0.0	5.0	0.6	0.0	3.1	0.8	0.3	5.8	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.9	0.3	0.7	3.9	0.1	1.5	2.3	0.8	0.9	1.2	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.8	15.8	11.6	31.9	15.5	11.2	28.5	20.8	19.0	32.6	21.3	20.2
LnGrp LOS	C	B	B	C	B	B	C	C	B	C	C	C
Approach Vol, veh/h		1003			1002			398			317	
Approach Delay, s/veh		16.2			16.2			22.7			23.3	
Approach LOS		B			B			C			C	

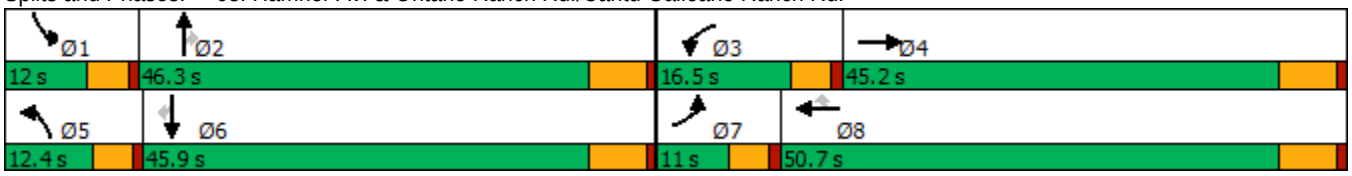
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	26.9	8.7	14.4	6.2	27.2	6.4	16.6
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	8.5	42.0	16.0	34.0	7.5	43.0	11.0	39.0
Max Q Clear Time (g_c+I1), s	3.5	14.3	5.6	5.2	3.1	14.3	3.9	7.5
Green Ext Time (p_c), s	0.0	6.5	0.1	1.2	0.0	6.5	0.0	1.1

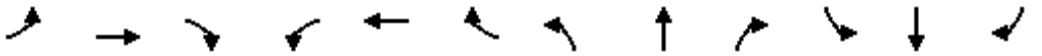
Intersection Summary	
HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	107	661	297	1097	220	186	763	545	167	228	96
Future Volume (vph)	107	661	297	1097	220	186	763	545	167	228	96
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	11.0	45.2	16.5	50.7	50.7	12.4	46.3	46.3	12.0	45.9	45.9
Total Split (%)	9.2%	37.7%	13.8%	42.3%	42.3%	10.3%	38.6%	38.6%	10.0%	38.3%	38.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.4	39.0	11.9	44.5	44.5	7.8	40.1	40.1	7.4	39.7	39.7
Actuated g/C Ratio	0.05	0.32	0.10	0.37	0.37	0.06	0.33	0.33	0.06	0.33	0.33
v/c Ratio	0.78	0.43	1.16	0.98	0.37	1.10	0.53	0.97	1.05	0.23	0.18
Control Delay	87.1	31.3	149.7	59.3	9.7	147.2	33.7	58.3	134.6	29.8	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.1	31.3	149.7	59.3	9.7	147.2	33.7	58.3	134.6	29.8	2.0
LOS	F	C	F	E	A	F	C	E	F	C	A
Approach Delay		38.3		69.2			56.8			60.0	
Approach LOS		D		E			E			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 58.1	Intersection LOS: E
Intersection Capacity Utilization 75.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	661	89	297	1097	220	186	763	545	167	228	96
Future Volume (veh/h)	107	661	89	297	1097	220	186	763	545	167	228	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	122	751	101	338	1247	250	211	867	612	190	259	109
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	158	1812	239	293	1268	566	192	1642	510	182	1131	504
Arrive On Green	0.05	0.33	0.33	0.10	0.37	0.37	0.06	0.33	0.33	0.06	0.33	0.33
Sat Flow, veh/h	2956	5576	735	2956	3420	1525	2956	4914	1525	2956	3420	1524
Grp Volume(v), veh/h	122	623	229	338	1247	250	211	867	612	190	259	109
Grp Sat Flow(s),veh/h/ln	1478	1548	1668	1478	1710	1525	1478	1638	1525	1478	1710	1524
Q Serve(g_s), s	4.9	12.5	12.9	11.9	43.3	14.8	7.8	17.1	40.1	7.4	6.6	6.2
Cycle Q Clear(g_c), s	4.9	12.5	12.9	11.9	43.3	14.8	7.8	17.1	40.1	7.4	6.6	6.2
Prop In Lane	1.00		0.44	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	158	1509	542	293	1268	566	192	1642	510	182	1131	504
V/C Ratio(X)	0.77	0.41	0.42	1.15	0.98	0.44	1.10	0.53	1.20	1.04	0.23	0.22
Avail Cap(c_a), veh/h	158	1509	542	293	1268	566	192	1642	510	182	1131	504
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.1	31.6	31.7	54.0	37.4	28.4	56.1	32.3	39.9	56.3	29.1	28.9
Incr Delay (d2), s/veh	19.2	0.2	0.5	100.5	21.2	0.5	93.6	0.3	107.9	78.2	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	4.5	5.0	8.4	20.6	5.2	5.3	6.5	29.4	4.7	2.6	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.3	31.8	32.2	154.6	58.6	28.9	149.7	32.6	147.9	134.5	29.2	29.1
LnGrp LOS	E	C	C	F	E	C	F	C	F	F	C	C
Approach Vol, veh/h		974			1835			1690			558	
Approach Delay, s/veh		37.3			72.3			89.0			65.0	
Approach LOS		D			E			F			E	

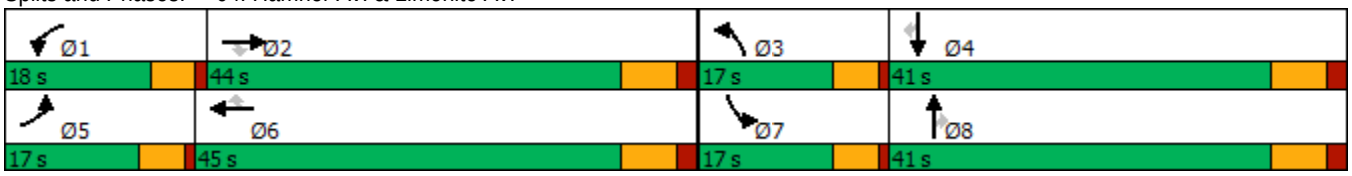
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	46.3	16.5	45.2	12.4	45.9	11.0	50.7
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	7.4	40.1	11.9	39.0	7.8	39.7	6.4	44.5
Max Q Clear Time (g_c+I1), s	9.4	42.1	13.9	14.9	9.8	8.6	6.9	45.3
Green Ext Time (p_c), s	0.0	0.0	0.0	5.1	0.0	1.8	0.0	0.0

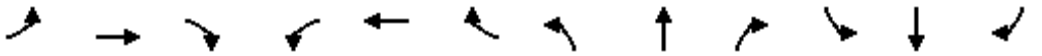
Intersection Summary	
HCM 6th Ctrl Delay	70.3
HCM 6th LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	642	53	190	603	92	193	752	275	171	404	125
Future Volume (vph)	188	642	53	190	603	92	193	752	275	171	404	125
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	17.0	44.0	44.0	18.0	45.0	45.0	17.0	41.0	41.0	17.0	41.0	41.0
Total Split (%)	14.2%	36.7%	36.7%	15.0%	37.5%	37.5%	14.2%	34.2%	34.2%	14.2%	34.2%	34.2%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	9.5	27.7	27.7	9.7	27.9	27.9	9.6	28.6	28.6	9.1	28.1	28.1
Actuated g/C Ratio	0.10	0.28	0.28	0.10	0.28	0.28	0.10	0.29	0.29	0.09	0.28	0.28
v/c Ratio	0.60	0.48	0.11	0.59	0.64	0.18	0.61	0.54	0.45	0.57	0.29	0.24
Control Delay	54.3	31.8	0.4	53.4	35.3	3.3	54.3	32.6	7.8	53.8	29.9	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.3	31.8	0.4	53.4	35.3	3.3	54.3	32.6	7.8	53.8	29.9	6.7
LOS	D	C	A	D	D	A	D	C	A	D	C	A
Approach Delay		34.7			35.9			30.4			31.6	
Approach LOS		C			D			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99.9	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 33.0	Intersection LOS: C
Intersection Capacity Utilization 61.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 64: Hamner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	642	53	190	603	92	193	752	275	171	404	125
Future Volume (veh/h)	188	642	53	190	603	92	193	752	275	171	404	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	200	683	43	202	641	72	205	800	195	182	430	93
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	281	1431	444	284	999	446	286	1453	451	262	1417	440
Arrive On Green	0.08	0.28	0.28	0.08	0.28	0.28	0.08	0.28	0.28	0.07	0.27	0.27
Sat Flow, veh/h	3510	5187	1608	3510	3610	1610	3510	5187	1608	3510	5187	1610
Grp Volume(v), veh/h	200	683	43	202	641	72	205	800	195	182	430	93
Grp Sat Flow(s),veh/h/ln	1755	1729	1608	1755	1805	1610	1755	1729	1608	1755	1729	1610
Q Serve(g_s), s	4.6	9.1	1.7	4.7	13.0	2.8	4.7	10.9	8.3	4.2	5.5	3.7
Cycle Q Clear(g_c), s	4.6	9.1	1.7	4.7	13.0	2.8	4.7	10.9	8.3	4.2	5.5	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	281	1431	444	284	999	446	286	1453	451	262	1417	440
V/C Ratio(X)	0.71	0.48	0.10	0.71	0.64	0.16	0.72	0.55	0.43	0.69	0.30	0.21
Avail Cap(c_a), veh/h	506	2306	715	548	1648	735	506	2119	657	506	2119	658
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.3	25.1	22.4	37.3	26.5	22.8	37.3	25.5	24.5	37.6	24.0	23.3
Incr Delay (d2), s/veh	1.3	0.5	0.2	1.2	1.5	0.4	1.3	0.7	1.4	1.2	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	3.5	0.6	1.9	5.3	1.0	2.0	4.2	0.2	1.8	2.1	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.6	25.7	22.6	38.5	27.9	23.1	38.5	26.2	25.9	38.8	24.2	23.8
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		926			915			1200			705	
Approach Delay, s/veh		28.3			29.9			28.3			27.9	
Approach LOS		C			C			C			C	

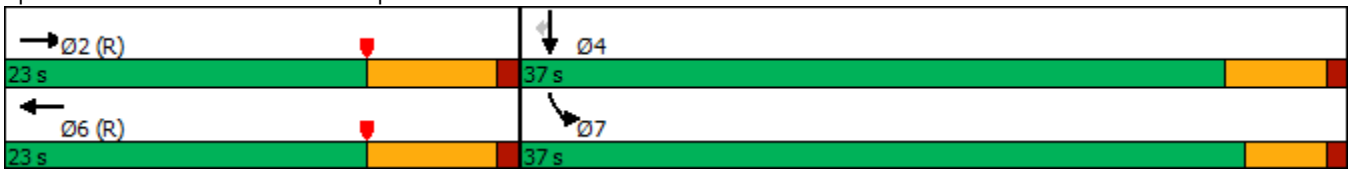
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	30.0	11.8	29.7	11.7	30.0	11.2	30.3
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	13.0	37.0	12.0	34.0	12.0	38.0	12.0	34.0
Max Q Clear Time (g_c+I1), s	6.7	11.1	6.7	7.5	6.6	15.0	6.2	12.9
Green Ext Time (p_c), s	0.1	8.6	0.1	5.8	0.1	7.9	0.1	10.3

Intersection Summary	
HCM 6th Ctrl Delay	28.6
HCM 6th LOS	C

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1134	358	584	197	349	0	1414
Future Volume (vph)	1134	358	584	197	349	0	1414
Turn Type	NA	Free	NA	Free	Prot	NA	Perm
Protected Phases	2		6		7	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		7	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		9.6	10.5	10.5
Total Split (s)	23.0		23.0		37.0	37.0	37.0
Total Split (%)	38.3%		38.3%		61.7%	61.7%	61.7%
Yellow Time (s)	5.8		5.8		3.6	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8		6.8		4.6	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Min		None	Min	Min
Act Effct Green (s)	16.2	60.0	16.2	60.0	32.4	31.5	31.5
Actuated g/C Ratio	0.27	1.00	0.27	1.00	0.54	0.52	0.52
v/c Ratio	0.90	0.25	0.67	0.14	0.38	1.00	0.96
Control Delay	31.9	0.4	20.3	0.2	9.5	48.4	37.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.9	0.4	20.3	0.2	9.5	48.4	37.7
LOS	C	A	C	A	A	D	D
Approach Delay	24.4		15.2			37.1	
Approach LOS	C		B			D	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 53 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 28.1	Intersection LOS: C
Intersection Capacity Utilization 84.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1134	358	0	584	197	0	0	0	349	0	1414
Future Volume (veh/h)	0	1134	358	0	584	197	0	0	0	349	0	1414
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1260	0	0	649	0				259	0	1412
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1634		0	1137					896	0	1594
Arrive On Green	0.00	0.32	0.00	0.00	0.32	0.00				0.49	0.00	0.49
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1260	0	0	649	0				259	0	1412
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	13.2	0.0	0.0	9.0	0.0				5.1	0.0	23.7
Cycle Q Clear(g_c), s	0.0	13.2	0.0	0.0	9.0	0.0				5.1	0.0	23.7
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1634		0	1137					896	0	1594
V/C Ratio(X)	0.00	0.77		0.00	0.57					0.29	0.00	0.89
Avail Cap(c_a), veh/h	0	1634		0	1137					977	0	1739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.65	0.00	0.00	0.91	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	18.6	0.0	0.0	17.2	0.0				8.9	0.0	13.6
Incr Delay (d2), s/veh	0.0	2.4	0.0	0.0	1.9	0.0				0.2	0.0	5.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.6	0.0	0.0	3.3	0.0				1.5	0.0	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	20.9	0.0	0.0	19.1	0.0				9.1	0.0	19.2
LnGrp LOS	A	C		A	B					A	A	B
Approach Vol, veh/h		1260	A		649	A					1671	
Approach Delay, s/veh		20.9			19.1						17.6	
Approach LOS		C			B						B	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		25.7		34.3		25.7						
Change Period (Y+Rc), s		6.8		4.6		6.8						
Max Green Setting (Gmax), s		16.2		32.4		16.2						
Max Q Clear Time (g_c+I1), s		15.2		25.7		11.0						
Green Ext Time (p_c), s		0.7		4.0		1.8						

Intersection Summary		
HCM 6th Ctrl Delay		19.1
HCM 6th LOS		B

Notes

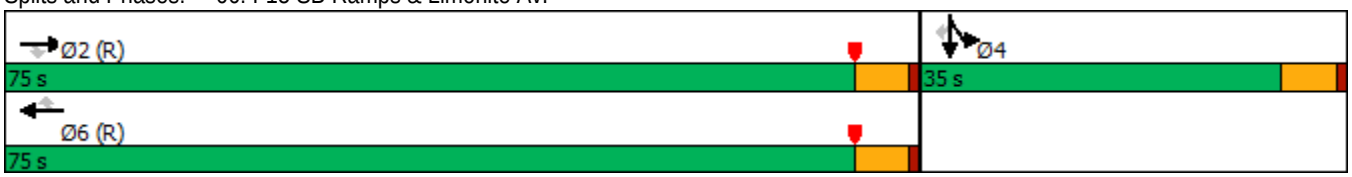
User approved volume balancing among the lanes for turning movement.

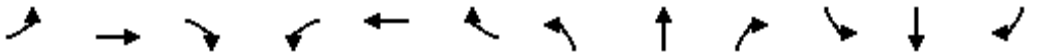
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1203	632	855	714	162	0	459
Future Volume (vph)	1203	632	855	714	162	0	459
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		4	4	
Permitted Phases		2		6			4
Detector Phase	2	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	36.5	36.5	23.5	23.5	23.5
Total Split (s)	75.0	75.0	75.0	75.0	35.0	35.0	35.0
Total Split (%)	68.2%	68.2%	68.2%	68.2%	31.8%	31.8%	31.8%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	Min	Min
Act Effct Green (s)	85.6	85.6	85.6	85.6	13.4	13.4	13.4
Actuated g/C Ratio	0.78	0.78	0.78	0.78	0.12	0.12	0.12
v/c Ratio	0.32	0.48	0.23	0.53	0.41	0.41	0.82
Control Delay	4.3	1.6	6.0	5.7	48.6	48.6	29.8
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	4.3	1.6	6.0	5.8	48.6	48.6	29.8
LOS	A	A	A	A	D	D	C
Approach Delay	3.4		5.9			34.7	
Approach LOS	A		A			C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 9.2	Intersection LOS: A
Intersection Capacity Utilization 52.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	↰	↱↱
Traffic Volume (veh/h)	0	1203	632	0	855	714	0	0	0	162	0	459
Future Volume (veh/h)	0	1203	632	0	855	714	0	0	0	162	0	459
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1280	550	0	910	760				172	0	190
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	4240	1316	0	4240	1316				299	0	262
Arrive On Green	0.00	0.82	0.82	0.00	0.82	0.82				0.08	0.00	0.08
Sat Flow, veh/h	0	5358	1610	0	5358	1610				3619	0	3173
Grp Volume(v), veh/h	0	1280	550	0	910	760				172	0	190
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1610				1810	0	1587
Q Serve(g_s), s	0.0	6.6	10.4	0.0	4.3	18.0				5.0	0.0	6.4
Cycle Q Clear(g_c), s	0.0	6.6	10.4	0.0	4.3	18.0				5.0	0.0	6.4
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	4240	1316	0	4240	1316				299	0	262
V/C Ratio(X)	0.00	0.30	0.42	0.00	0.21	0.58				0.58	0.00	0.72
Avail Cap(c_a), veh/h	0	4240	1316	0	4240	1316				971	0	851
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.94	0.94				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	2.4	2.8	0.0	2.2	3.5				48.6	0.0	49.2
Incr Delay (d2), s/veh	0.0	0.2	1.0	0.0	0.1	1.7				0.7	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	2.0	0.0	0.8	3.5				2.2	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	2.6	3.8	0.0	2.3	5.2				49.2	0.0	50.7
LnGrp LOS	A	A	A	A	A	A				D	A	D
Approach Vol, veh/h		1830			1670						362	
Approach Delay, s/veh		3.0			3.6						50.0	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		95.4		14.6		95.4						
Change Period (Y+Rc), s		5.5		5.5		5.5						
Max Green Setting (Gmax), s		69.5		29.5		69.5						
Max Q Clear Time (g_c+I1), s		12.4		8.4		20.0						
Green Ext Time (p_c), s		8.3		0.7		6.3						

Intersection Summary	
HCM 6th Ctrl Delay	7.7
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	546	937	396	508	274	325
Future Volume (vph)	546	937	396	508	274	325
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	32.1	15.0	12.9	45.0	15.0	15.0
Total Split (%)	53.5%	25.0%	21.5%	75.0%	25.0%	25.0%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.0	6.0	7.3	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max
Act Effct Green (s)	24.8	41.1	6.9	37.7	9.0	9.0
Actuated g/C Ratio	0.41	0.68	0.12	0.63	0.15	0.15
v/c Ratio	0.28	0.93	1.08	0.17	0.73	0.52
Control Delay	9.8	22.5	98.5	4.8	25.6	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.8	22.5	98.5	4.8	25.6	9.5
LOS	A	C	F	A	C	A
Approach Delay	17.8			45.9	20.5	
Approach LOS	B			D	C	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 26.8	Intersection LOS: C
Intersection Capacity Utilization 79.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	546	937	396	508	274	325
Future Volume (veh/h)	546	937	396	508	274	325
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	600	696	435	558	338	170
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2144	907	404	3259	543	242
Arrive On Green	0.69	0.69	0.11	0.63	0.15	0.15
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	600	696	435	558	338	170
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	2.7	21.5	6.9	2.7	5.3	6.0
Cycle Q Clear(g_c), s	2.7	21.5	6.9	2.7	5.3	6.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2144	907	404	3259	543	242
V/C Ratio(X)	0.28	0.77	1.08	0.17	0.62	0.70
Avail Cap(c_a), veh/h	2144	907	404	3259	543	242
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.52	0.52	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.9	5.5	26.5	4.6	23.9	24.2
Incr Delay (d2), s/veh	0.2	3.3	67.1	0.0	5.3	15.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.7	6.3	0.5	2.4	3.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.0	8.8	93.7	4.7	29.2	40.1
LnGrp LOS	A	A	F	A	C	D
Approach Vol, veh/h	1296			993	508	
Approach Delay, s/veh	7.5			43.6	32.8	
Approach LOS	A			D	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	12.9	32.1				45.0	15.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	6.9	24.8				37.7	9.0
Max Q Clear Time (g_c+I1), s	8.9	23.5				4.7	8.0
Green Ext Time (p_c), s	0.0	0.8				3.6	0.2

Intersection Summary			
HCM 6th Ctrl Delay		24.9	
HCM 6th LOS		C	

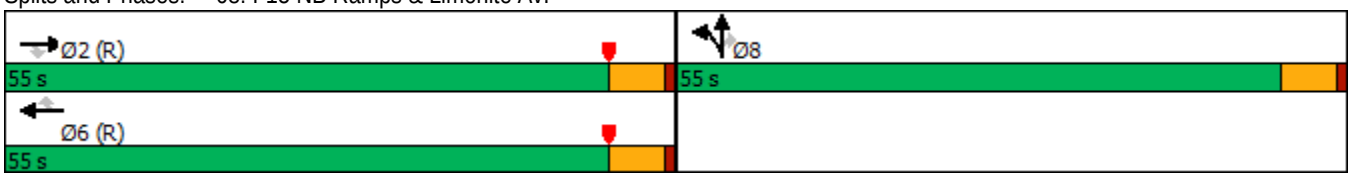
Notes

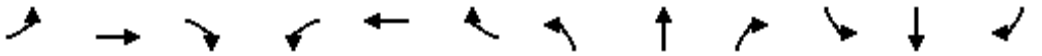
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	567	797	1229	426	341	0	346
Future Volume (vph)	567	797	1229	426	341	0	346
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		8	8	
Permitted Phases		2		6			8
Detector Phase	2	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	55.0	55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None
Act Effct Green (s)	80.8	80.8	80.8	80.8	18.2	18.2	18.2
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.17	0.17	0.17
v/c Ratio	0.16	0.59	0.34	0.34	0.63	0.63	0.48
Control Delay	4.3	5.8	6.0	1.4	51.5	51.7	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.3	5.8	6.0	1.4	51.5	51.7	7.0
LOS	A	A	A	A	D	D	A
Approach Delay	5.2		4.8			29.1	
Approach LOS	A		A			C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 9.4	Intersection LOS: A
Intersection Capacity Utilization 53.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱	↰	↕	↱↱			
Traffic Volume (veh/h)	0	567	797	0	1229	426	341	0	346	0	0	0
Future Volume (veh/h)	0	567	797	0	1229	426	341	0	346	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	0	591	830	0	1280	324	355	0	146			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	0	3997	1241	0	3997	1241	468	0	410			
Arrive On Green	0.00	1.00	1.00	0.00	0.77	0.77	0.13	0.00	0.13			
Sat Flow, veh/h	0	5358	1610	0	5358	1610	3619	0	3171			
Grp Volume(v), veh/h	0	591	830	0	1280	324	355	0	146			
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1610	1810	0	1585			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	8.3	6.4	10.4	0.0	4.6			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	8.3	6.4	10.4	0.0	4.6			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3997	1241	0	3997	1241	468	0	410			
V/C Ratio(X)	0.00	0.15	0.67	0.00	0.32	0.26	0.76	0.00	0.36			
Avail Cap(c_a), veh/h	0	3997	1241	0	3997	1241	1629	0	1427			
HCM Platoon Ratio	1.00	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.96	0.96	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	3.8	3.6	46.2	0.0	43.7			
Incr Delay (d2), s/veh	0.0	0.1	2.8	0.0	0.2	0.5	2.5	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.0	0.0	2.0	1.6	4.7	0.0	1.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.1	2.8	0.0	4.1	4.1	48.8	0.0	44.2			
LnGrp LOS	A	A	A	A	A	A	D	A	D			
Approach Vol, veh/h		1421			1604			501				
Approach Delay, s/veh		1.6			4.1			47.4				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		90.3				90.3		19.7				
Change Period (Y+Rc), s		5.5				5.5		5.5				
Max Green Setting (Gmax), s		49.5				49.5		49.5				
Max Q Clear Time (g_c+I1), s		2.0				10.3		12.4				
Green Ext Time (p_c), s		4.5				7.3		1.8				

Intersection Summary	
HCM 6th Ctrl Delay	9.3
HCM 6th LOS	A

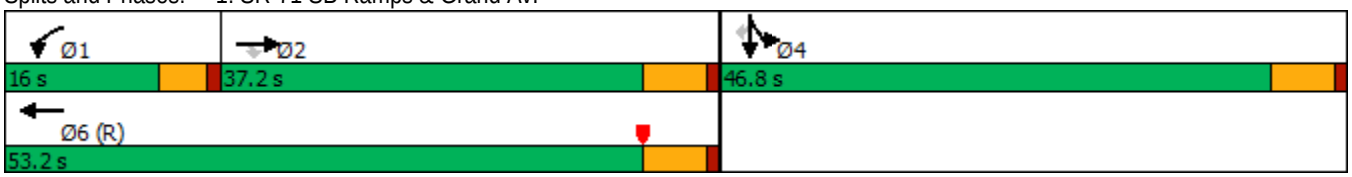
Notes

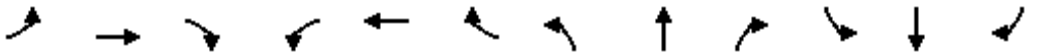
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1485	588	315	1436	951	1	496
Future Volume (vph)	1485	588	315	1436	951	1	496
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	37.2	37.2	16.0	53.2	46.8	46.8	46.8
Total Split (%)	37.2%	37.2%	16.0%	53.2%	46.8%	46.8%	46.8%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None
Act Effct Green (s)	35.1	35.1	12.6	51.7	40.3	40.3	40.3
Actuated g/C Ratio	0.35	0.35	0.13	0.52	0.40	0.40	0.40
v/c Ratio	0.96	0.70	0.85	0.63	0.81	0.81	0.84
Control Delay	46.3	7.8	48.0	22.3	36.5	36.6	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.3	7.8	48.0	22.3	36.5	36.6	34.6
LOS	D	A	D	C	D	D	C
Approach Delay	35.4			26.9		35.9	
Approach LOS	D			C		D	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 32.7	Intersection LOS: C
Intersection Capacity Utilization 81.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1485	588	315	1436	0	0	0	0	951	1	496
Future Volume (veh/h)	0	1485	588	315	1436	0	0	0	0	951	1	496
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1747	603	371	1689	0				1120	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85				0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1722	535	421	2552	0				1300	0	
Arrive On Green	0.00	0.33	0.33	0.12	0.49	0.00				0.36	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	1747	603	371	1689	0				1120	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	33.2	33.2	10.4	24.5	0.0				28.7	0.0	0.0
Cycle Q Clear(g_c), s	0.0	33.2	33.2	10.4	24.5	0.0				28.7	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1722	535	421	2552	0				1300	0	
V/C Ratio(X)	0.00	1.01	1.13	0.88	0.66	0.00				0.86	0.00	
Avail Cap(c_a), veh/h	0	1722	535	421	2552	0				1549	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	33.4	33.4	43.3	19.1	0.0				29.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	25.3	79.2	2.1	0.1	0.0				4.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	16.9	23.8	4.4	8.8	0.0				12.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	58.7	112.6	45.4	19.3	0.0				34.3	0.0	0.0
LnGrp LOS	A	F	F	D	B	A				C	A	
Approach Vol, veh/h		2350			2060						1120	A
Approach Delay, s/veh		72.6			24.0						34.3	
Approach LOS		E			C						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.0	37.2		39.9		53.2
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	11.4	31.4		41.0		47.4
Max Q Clear Time (g_c+I1), s	12.4	35.2		30.7		26.5
Green Ext Time (p_c), s	0.0	0.0		3.4		11.9

Intersection Summary		
HCM 6th Ctrl Delay		46.7
HCM 6th LOS		D

Notes

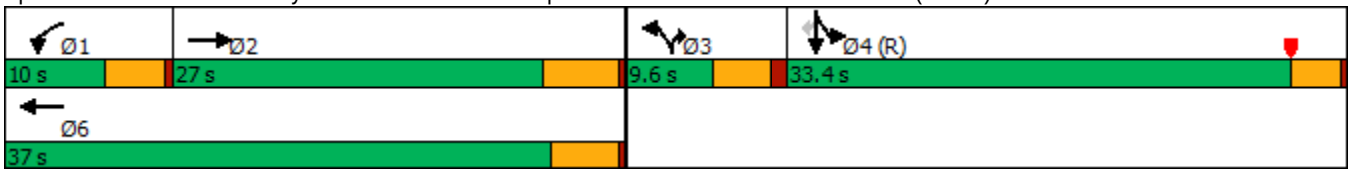
User approved volume balancing among the lanes for turning movement.

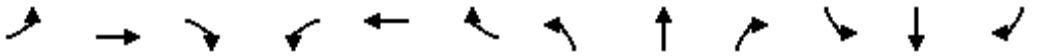
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	963	136	307	19	166	738	74	75
Future Volume (vph)	963	136	307	19	166	738	74	75
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	27.0	10.0	37.0	9.6	9.6	33.4	33.4	33.4
Total Split (%)	33.8%	12.5%	46.3%	12.0%	12.0%	41.8%	41.8%	41.8%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	23.2	9.4	37.2	5.1	5.1	25.3	25.3	25.3
Actuated g/C Ratio	0.29	0.12	0.46	0.06	0.06	0.32	0.32	0.32
v/c Ratio	1.03	0.67	0.19	0.18	0.71	0.78	0.77	0.13
Control Delay	65.3	49.0	24.5	39.3	26.5	35.0	34.3	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.3	49.0	24.5	39.3	26.5	35.0	34.3	0.9
LOS	E	D	C	D	C	D	C	A
Approach Delay	65.3		32.1				31.8	
Approach LOS	E		C				C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 45.1	Intersection LOS: D
Intersection Capacity Utilization 76.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	963	65	136	307	0	19	0	166	738	74	75
Future Volume (veh/h)	0	963	65	136	307	0	19	0	166	738	74	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	1003	56	142	320	0	20	0	114	824	0	51
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	956	53	136	1444		0	0	0	1787	0	795
Arrive On Green	0.00	0.28	0.28	0.02	0.13	0.00	0.00	0.00	0.00	0.49	0.00	0.49
Sat Flow, veh/h	0	3571	194	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	521	538	142	320	0		0.0		824	0	51
Grp Sat Flow(s),veh/h/ln	0	1805	1865	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	22.0	22.0	6.0	6.3	0.0				11.9	0.0	1.3
Cycle Q Clear(g_c), s	0.0	22.0	22.0	6.0	6.3	0.0				11.9	0.0	1.3
Prop In Lane	0.00		0.10	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	496	513	136	1444					1787	0	795
V/C Ratio(X)	0.00	1.05	1.05	1.05	0.22					0.46	0.00	0.06
Avail Cap(c_a), veh/h	0	496	513	136	1467					1787	0	795
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.66	0.66	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.0	29.0	39.0	23.6	0.0				13.3	0.0	10.6
Incr Delay (d2), s/veh	0.0	53.9	53.3	75.5	0.0	0.0				0.9	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	16.0	16.5	5.5	2.6	0.0				4.3	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	82.9	82.3	114.5	23.6	0.0				14.1	0.0	10.7
LnGrp LOS	A	F	F	F	C					B	A	B
Approach Vol, veh/h		1059			462	A					875	
Approach Delay, s/veh		82.6			51.5						13.9	
Approach LOS		F			D						B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	10.0	27.0		43.0		37.0						
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5						
Max Green Setting (Gmax), s	6.0	22.0		29.9		* 33						
Max Q Clear Time (g_c+I1), s	8.0	24.0		13.9		8.3						
Green Ext Time (p_c), s	0.0	0.0		3.0		1.5						

Intersection Summary												
HCM 6th Ctrl Delay			51.5									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

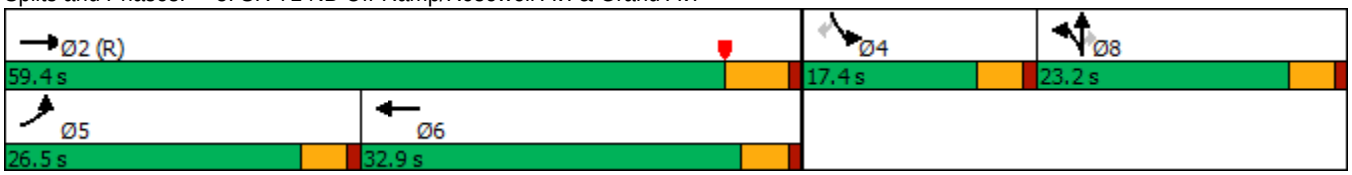
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

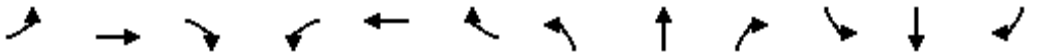
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	389	1711	336	1731	402	146	227	172	847
Future Volume (vph)	389	1711	336	1731	402	146	227	172	847
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	34.8		14.7	21.5	21.5	21.5	9.5	9.5
Total Split (s)	26.5	59.4		32.9	23.2	23.2	23.2	17.4	17.4
Total Split (%)	26.5%	59.4%		32.9%	23.2%	23.2%	23.2%	17.4%	17.4%
Yellow Time (s)	3.5	4.8		3.7	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.8		4.7	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	22.0	53.6	100.0	28.2	18.7	18.7	18.7	12.9	12.9
Actuated g/C Ratio	0.22	0.54	1.00	0.28	0.19	0.19	0.19	0.13	0.13
v/c Ratio	1.07	0.67	0.23	1.11	0.78	1.06	0.61	0.81	0.99
Control Delay	92.7	21.7	0.1	90.7	56.7	106.4	24.7	68.7	41.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.7	21.7	0.1	90.7	56.7	106.4	24.7	68.7	41.5
LOS	F	C	A	F	E	F	C	E	D
Approach Delay		30.1		90.7		67.8			
Approach LOS		C		F		E			

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 56.1	Intersection LOS: E
Intersection Capacity Utilization 88.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	389	1711	336	0	1731	134	402	146	227	172	0	847
Future Volume (veh/h)	389	1711	336	0	1731	134	402	146	227	172	0	847
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	423	1860	0	0	1882	146	298	354	106	187	0	603
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	398	3683		0	2773	215	338	355	301	0	0	0
Arrive On Green	0.22	0.71	0.00	0.00	0.45	0.45	0.19	0.19	0.19	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6498	483	1810	1900	1610		0	
Grp Volume(v), veh/h	423	1860	0	0	1480	548	298	354	106		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1813	1810	1900	1610			
Q Serve(g_s), s	22.0	16.2	0.0	0.0	24.0	24.0	16.0	18.6	5.7			
Cycle Q Clear(g_c), s	22.0	16.2	0.0	0.0	24.0	24.0	16.0	18.6	5.7			
Prop In Lane	1.00		1.00	0.00		0.27	1.00		1.00			
Lane Grp Cap(c), veh/h	398	3683		0	2181	807	338	355	301			
V/C Ratio(X)	1.06	0.51		0.00	0.68	0.68	0.88	1.00	0.35			
Avail Cap(c_a), veh/h	398	3683		0	2181	807	338	355	301			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.27	0.27	0.00	0.00	0.60	0.60	1.00	1.00	1.00			
Uniform Delay (d), s/veh	39.0	6.6	0.0	0.0	22.1	22.1	39.6	40.6	35.4			
Incr Delay (d2), s/veh	42.0	0.1	0.0	0.0	0.5	1.4	21.8	46.7	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	13.9	4.4	0.0	0.0	8.8	10.0	8.8	12.9	2.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.0	6.7	0.0	0.0	22.6	23.5	61.4	87.3	35.6			
LnGrp LOS	F	A		A	C	C	E	F	D			
Approach Vol, veh/h		2283	A		2028			758				
Approach Delay, s/veh		20.5			22.8			69.9				
Approach LOS		C			C			E				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		76.8			26.5	50.3		23.2				
Change Period (Y+Rc), s		5.8			4.5	* 5.8		4.5				
Max Green Setting (Gmax), s		53.6			22.0	* 28		18.7				
Max Q Clear Time (g_c+I1), s		18.2			24.0	26.0		20.6				
Green Ext Time (p_c), s		18.0			0.0	2.0		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	28.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

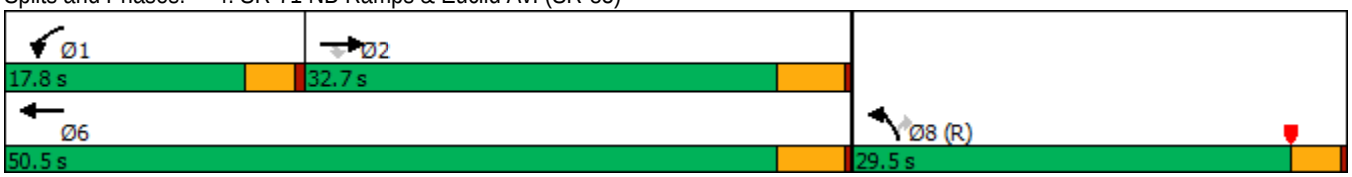
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	953	169	418	1324	143	1160
Future Volume (vph)	953	169	418	1324	143	1160
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	32.7	32.7	17.8	50.5	29.5	29.5
Total Split (%)	40.9%	40.9%	22.3%	63.1%	36.9%	36.9%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max
Act Effct Green (s)	27.6	27.6	14.3	45.4	26.6	26.6
Actuated g/C Ratio	0.34	0.34	0.18	0.57	0.33	0.33
v/c Ratio	0.89	0.31	1.51	0.75	0.14	1.71
Control Delay	27.2	7.7	272.7	15.9	19.4	344.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.2	7.7	272.7	15.9	19.4	344.5
LOS	C	A	F	B	B	F
Approach Delay	24.2			77.5	308.9	
Approach LOS	C			E	F	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.71	
Intersection Signal Delay: 135.5	Intersection LOS: F
Intersection Capacity Utilization 105.3%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	953	169	418	1324	143	1160
Future Volume (veh/h)	953	169	418	1324	143	1160
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	1108	0	486	1540	166	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1183		323	1986	1228	
Arrive On Green	0.66	0.00	0.18	0.55	0.35	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	1108	0	486	1540	166	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	21.9	0.0	14.3	26.8	2.6	0.0
Cycle Q Clear(g_c), s	21.9	0.0	14.3	26.8	2.6	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1183		323	1986	1228	
V/C Ratio(X)	0.94		1.50	0.78	0.14	
Avail Cap(c_a), veh/h	1273		323	2076	1228	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.25	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.0	0.0	32.8	14.1	17.8	0.0
Incr Delay (d2), s/veh	3.9	0.0	241.7	1.8	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	27.3	8.5	1.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.9	0.0	274.6	15.9	18.0	0.0
LnGrp LOS	B		F	B	B	
Approach Vol, veh/h	1108	A		2026	166	A
Approach Delay, s/veh	16.9			78.0	18.0	
Approach LOS	B			E	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	17.8	30.7				48.5	31.5
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	14.3	28.2				46.0	26.0
Max Q Clear Time (g_c+I1), s	16.3	23.9				28.8	4.6
Green Ext Time (p_c), s	0.0	2.3				9.5	0.3

Intersection Summary	
HCM 6th Ctrl Delay	54.5
HCM 6th LOS	D

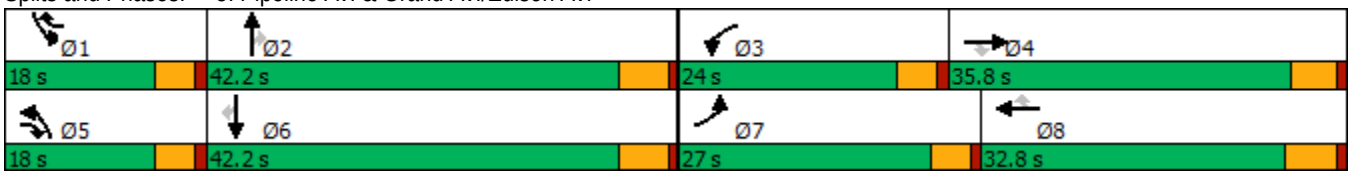
Notes

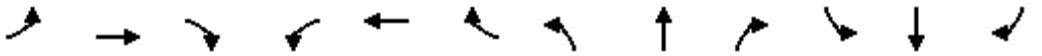
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	1140	253	248	1019	91	302	463	181	140	583	167
Future Volume (vph)	280	1140	253	248	1019	91	302	463	181	140	583	167
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	27.0	35.8	18.0	24.0	32.8	18.0	18.0	42.2	42.2	18.0	42.2	42.2
Total Split (%)	22.5%	29.8%	15.0%	20.0%	27.3%	15.0%	15.0%	35.2%	35.2%	15.0%	35.2%	35.2%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None
Act Effct Green (s)	15.2	32.1	46.2	14.1	30.9	44.1	14.1	28.6	28.6	13.1	27.7	27.7
Actuated g/C Ratio	0.15	0.31	0.44	0.14	0.30	0.42	0.14	0.27	0.27	0.13	0.27	0.27
v/c Ratio	0.67	0.83	0.39	0.64	0.77	0.14	0.83	0.54	0.35	0.75	0.71	0.35
Control Delay	50.5	40.4	14.7	50.9	38.9	4.9	63.9	34.7	6.0	69.2	39.2	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.5	40.4	14.7	50.9	38.9	4.9	63.9	34.7	6.0	69.2	39.2	6.3
LOS	D	D	B	D	D	A	E	C	A	E	D	A
Approach Delay		38.2			38.8			38.5			37.7	
Approach LOS		D			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 104.1	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 38.3	Intersection LOS: D
Intersection Capacity Utilization 75.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	1140	253	248	1019	91	302	463	181	140	583	167
Future Volume (veh/h)	280	1140	253	248	1019	91	302	463	181	140	583	167
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	308	1253	212	273	1120	62	332	509	112	154	641	108
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	395	1580	689	358	1556	644	402	951	424	191	888	386
Arrive On Green	0.13	0.32	0.32	0.11	0.32	0.30	0.14	0.28	0.28	0.12	0.26	0.26
Sat Flow, veh/h	3141	4914	1523	3141	4914	1524	2956	3420	1525	1619	3420	1487
Grp Volume(v), veh/h	308	1253	212	273	1120	62	332	509	112	154	641	108
Grp Sat Flow(s),veh/h/ln	1570	1638	1523	1570	1638	1524	1478	1710	1525	1619	1710	1487
Q Serve(g_s), s	9.4	23.0	8.8	8.3	20.0	2.4	10.8	12.5	5.7	9.2	16.9	5.7
Cycle Q Clear(g_c), s	9.4	23.0	8.8	8.3	20.0	2.4	10.8	12.5	5.7	9.2	16.9	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	395	1580	689	358	1556	644	402	951	424	191	888	386
V/C Ratio(X)	0.78	0.79	0.31	0.76	0.72	0.10	0.83	0.54	0.26	0.81	0.72	0.28
Avail Cap(c_a), veh/h	730	1580	689	635	1556	644	418	1321	589	229	1321	574
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.9	30.6	17.2	42.5	29.9	17.2	41.6	30.3	27.8	42.5	33.4	29.2
Incr Delay (d2), s/veh	1.3	4.2	1.2	1.3	2.9	0.3	11.5	0.5	0.3	13.6	1.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	9.3	3.0	3.2	7.8	0.8	4.4	5.0	2.0	4.3	6.8	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.2	34.8	18.4	43.8	32.8	17.5	53.0	30.8	28.2	56.1	34.5	29.6
LnGrp LOS	D	C	B	D	C	B	D	C	C	E	C	C
Approach Vol, veh/h		1773			1455			953			903	
Approach Delay, s/veh		34.3			34.2			38.2			37.6	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	31.5	15.3	36.5	17.5	29.7	16.4	35.3
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	13.4	36.8	19.4	* 31	13.4	36.8	22.4	27.0
Max Q Clear Time (g_c+I1), s	11.2	14.5	10.3	25.0	12.8	18.9	11.4	22.0
Green Ext Time (p_c), s	0.0	3.5	0.3	4.0	0.0	4.2	0.4	3.0

Intersection Summary	
HCM 6th Ctrl Delay	35.6
HCM 6th LOS	D

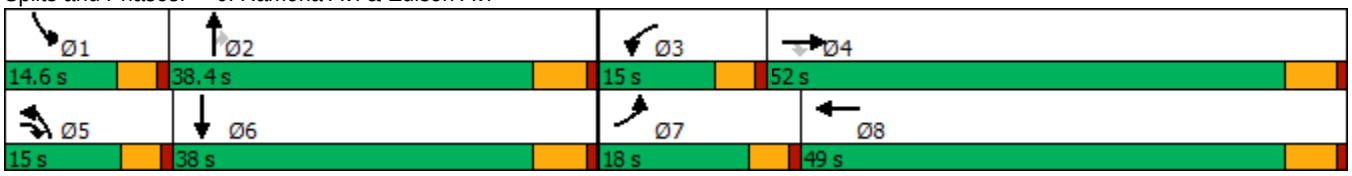
Notes

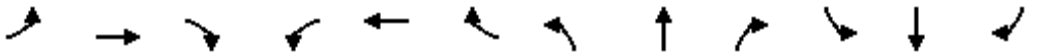
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	120	1227	120	92	1045	97	458	77	66	424
Future Volume (vph)	120	1227	120	92	1045	97	458	77	66	424
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	18.0	52.0	15.0	15.0	49.0	15.0	38.4	38.4	14.6	38.0
Total Split (%)	15.0%	43.3%	12.5%	12.5%	40.8%	12.5%	32.0%	32.0%	12.2%	31.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None
Act Effct Green (s)	12.5	48.2	62.6	10.1	45.8	10.3	30.1	30.1	9.0	26.5
Actuated g/C Ratio	0.11	0.43	0.56	0.09	0.41	0.09	0.27	0.27	0.08	0.24
v/c Ratio	0.75	0.93	0.09	0.70	0.90	0.73	0.56	0.18	0.57	0.74
Control Delay	73.5	43.3	2.8	75.7	41.3	78.0	38.4	4.3	68.0	43.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.5	43.3	2.8	75.7	41.3	78.0	38.4	4.3	68.0	43.4
LOS	E	D	A	E	D	E	D	A	E	D
Approach Delay		42.5			44.0		40.3			46.1
Approach LOS		D			D		D			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.3	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 43.1	Intersection LOS: D
Intersection Capacity Utilization 76.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	1227	120	92	1045	69	97	458	77	66	424	108
Future Volume (veh/h)	120	1227	120	92	1045	69	97	458	77	66	424	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1700	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	135	1379	111	103	1174	76	109	515	65	74	476	100
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	169	1561	1350	135	1418	92	141	841	375	101	622	130
Arrive On Green	0.10	0.46	0.45	0.08	0.43	0.42	0.09	0.25	0.25	0.06	0.22	0.20
Sat Flow, veh/h	1619	3420	2536	1619	3261	211	1619	3420	1525	1619	2816	588
Grp Volume(v), veh/h	135	1379	111	103	615	635	109	515	65	74	288	288
Grp Sat Flow(s),veh/h/ln	1619	1710	1268	1619	1710	1762	1619	1710	1525	1619	1710	1694
Q Serve(g_s), s	8.6	38.6	2.3	6.6	33.4	33.5	6.9	14.1	3.5	4.7	16.6	16.8
Cycle Q Clear(g_c), s	8.6	38.6	2.3	6.6	33.4	33.5	6.9	14.1	3.5	4.7	16.6	16.8
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	169	1561	1350	135	744	766	141	841	375	101	378	374
V/C Ratio(X)	0.80	0.88	0.08	0.76	0.83	0.83	0.77	0.61	0.17	0.73	0.76	0.77
Avail Cap(c_a), veh/h	216	1561	1350	169	744	766	169	1119	499	163	553	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	26.0	12.0	47.2	26.2	26.3	47.0	35.2	31.2	48.4	38.4	38.8
Incr Delay (d2), s/veh	11.6	7.6	0.1	11.0	10.2	10.0	13.2	0.7	0.2	3.8	3.7	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	15.9	0.6	3.0	14.6	15.0	3.2	5.7	1.3	2.0	7.0	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.6	33.7	12.2	58.2	36.4	36.4	60.1	35.9	31.5	52.2	42.0	42.7
LnGrp LOS	E	C	B	E	D	D	E	D	C	D	D	D
Approach Vol, veh/h		1625			1353			689			650	
Approach Delay, s/veh		34.2			38.1			39.3			43.5	
Approach LOS		C			D			D			D	

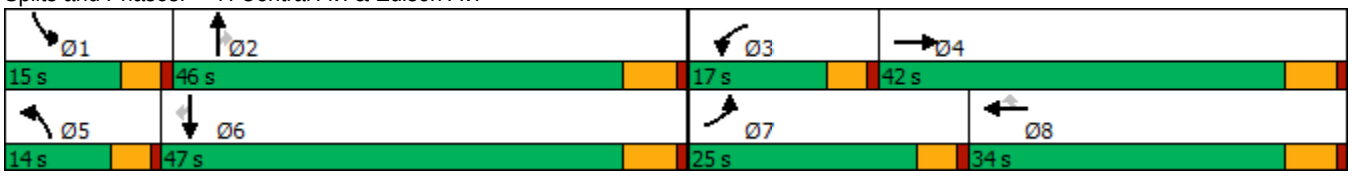
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	29.9	12.7	52.0	13.2	27.2	15.0	49.7
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.0	32.6	10.4	46.2	10.4	32.2	13.4	43.2
Max Q Clear Time (g_c+I1), s	6.7	16.1	8.6	40.6	8.9	18.8	10.6	35.5
Green Ext Time (p_c), s	0.0	3.0	0.0	4.0	0.0	2.6	0.0	4.3

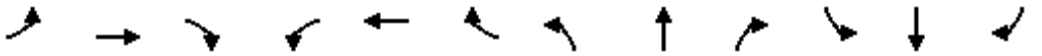
Intersection Summary	
HCM 6th Ctrl Delay	37.6
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	233	957	273	737	109	93	1071	440	123	858	145
Future Volume (vph)	233	957	273	737	109	93	1071	440	123	858	145
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	25.0	42.0	17.0	34.0	34.0	14.0	46.0	46.0	15.0	47.0	47.0
Total Split (%)	20.8%	35.0%	14.2%	28.3%	28.3%	11.7%	38.3%	38.3%	12.5%	39.2%	39.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	20.0	38.0	12.7	30.7	30.7	9.5	41.8	41.8	10.9	43.1	43.1
Actuated g/C Ratio	0.17	0.32	0.11	0.26	0.26	0.08	0.35	0.35	0.09	0.36	0.36
v/c Ratio	0.89	1.00	0.84	0.86	0.22	0.75	0.92	0.67	0.86	0.72	0.23
Control Delay	81.3	68.6	74.7	54.1	3.2	87.1	50.7	20.5	99.4	37.0	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.3	68.6	74.7	54.1	3.2	87.1	50.7	20.5	99.4	37.0	4.9
LOS	F	E	E	D	A	F	D	C	F	D	A
Approach Delay		70.9		54.2			44.5			39.7	
Approach LOS		E		D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.4	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 52.2	Intersection LOS: D
Intersection Capacity Utilization 91.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	233	957	91	273	737	109	93	1071	440	123	858	145
Future Volume (veh/h)	233	957	91	273	737	109	93	1071	440	123	858	145
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	240	987	90	281	760	101	96	1104	373	127	885	115
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	270	1004	92	341	885	395	124	1193	523	149	1244	554
Arrive On Green	0.17	0.32	0.30	0.11	0.26	0.26	0.08	0.35	0.35	0.09	0.36	0.36
Sat Flow, veh/h	1619	3165	289	3141	3420	1525	1619	3420	1499	1619	3420	1524
Grp Volume(v), veh/h	240	533	544	281	760	101	96	1104	373	127	885	115
Grp Sat Flow(s),veh/h/ln	1619	1710	1743	1570	1710	1525	1619	1710	1499	1619	1710	1524
Q Serve(g_s), s	17.4	37.0	37.1	10.5	25.4	6.3	7.0	37.2	25.8	9.3	26.6	6.2
Cycle Q Clear(g_c), s	17.4	37.0	37.1	10.5	25.4	6.3	7.0	37.2	25.8	9.3	26.6	6.2
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	270	543	553	341	885	395	124	1193	523	149	1244	554
V/C Ratio(X)	0.89	0.98	0.98	0.82	0.86	0.26	0.77	0.93	0.71	0.85	0.71	0.21
Avail Cap(c_a), veh/h	284	543	553	341	885	395	135	1199	526	149	1244	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.8	40.6	40.7	52.3	42.3	35.2	54.2	37.5	33.8	53.6	32.7	26.2
Incr Delay (d2), s/veh	25.2	34.6	34.3	14.2	10.6	1.6	19.2	12.1	4.5	34.1	1.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	20.0	20.4	4.7	11.6	2.4	3.4	16.8	9.6	5.1	10.8	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.9	75.2	75.0	66.5	52.9	36.8	73.5	49.6	38.3	87.7	34.6	26.4
LnGrp LOS	E	E	E	E	D	D	E	D	D	F	C	C
Approach Vol, veh/h		1317			1142			1573			1127	
Approach Delay, s/veh		74.9			54.8			48.4			39.8	
Approach LOS		E			D			D			D	

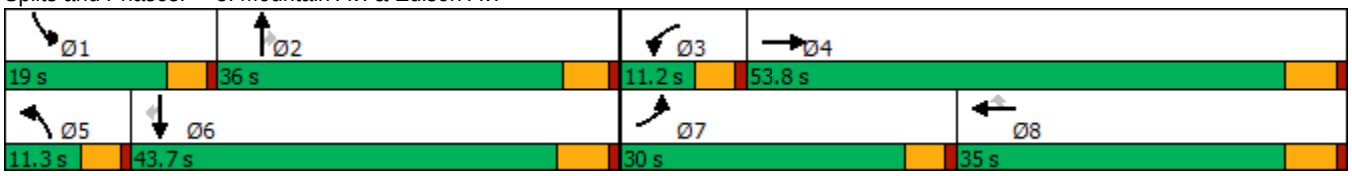
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	45.8	17.0	42.0	13.2	47.6	24.0	35.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.4	40.2	12.4	36.2	9.4	41.2	20.4	28.2
Max Q Clear Time (g_c+I1), s	11.3	39.2	12.5	39.1	9.0	28.6	19.4	27.4
Green Ext Time (p_c), s	0.0	0.8	0.0	0.0	0.0	4.8	0.0	0.4

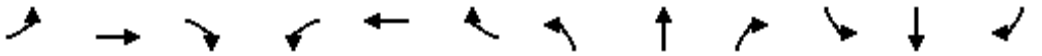
Intersection Summary	
HCM 6th Ctrl Delay	54.7
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	221	1239	38	803	103	41	99	30	121	182	230
Future Volume (vph)	221	1239	38	803	103	41	99	30	121	182	230
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	30.0	53.8	11.2	35.0	35.0	11.3	36.0	36.0	19.0	43.7	43.7
Total Split (%)	25.0%	44.8%	9.3%	29.2%	29.2%	9.4%	30.0%	30.0%	15.8%	36.4%	36.4%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	17.7	51.5	6.8	35.6	35.6	6.9	15.1	15.1	12.8	22.0	22.0
Actuated g/C Ratio	0.19	0.55	0.07	0.38	0.38	0.07	0.16	0.16	0.14	0.23	0.23
v/c Ratio	0.74	0.51	0.34	0.63	0.15	0.36	0.35	0.08	0.56	0.44	0.44
Control Delay	53.2	17.2	55.6	30.1	0.5	56.1	40.7	0.4	52.6	35.6	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.2	17.2	55.6	30.1	0.5	56.1	40.7	0.4	52.6	35.6	6.8
LOS	D	B	E	C	A	E	D	A	D	D	A
Approach Delay		22.3		27.9			37.3			27.0	
Approach LOS		C		C			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 93.8	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 25.6	Intersection LOS: C
Intersection Capacity Utilization 67.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	221	1239	87	38	803	103	41	99	30	121	182	230
Future Volume (veh/h)	221	1239	87	38	803	103	41	99	30	121	182	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	226	1264	87	39	819	93	42	101	16	123	186	170
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	268	2562	176	66	1443	644	69	234	194	160	349	296
Arrive On Green	0.17	0.55	0.53	0.04	0.42	0.42	0.04	0.13	0.13	0.10	0.19	0.19
Sat Flow, veh/h	1619	4685	322	1619	3420	1525	1619	1800	1492	1619	1800	1525
Grp Volume(v), veh/h	226	884	467	39	819	93	42	101	16	123	186	170
Grp Sat Flow(s),veh/h/ln	1619	1638	1731	1619	1710	1525	1619	1800	1492	1619	1800	1525
Q Serve(g_s), s	12.3	15.2	15.3	2.2	16.6	3.4	2.3	4.7	0.9	6.7	8.5	9.2
Cycle Q Clear(g_c), s	12.3	15.2	15.3	2.2	16.6	3.4	2.3	4.7	0.9	6.7	8.5	9.2
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	268	1791	947	66	1443	644	69	234	194	160	349	296
V/C Ratio(X)	0.84	0.49	0.49	0.59	0.57	0.14	0.61	0.43	0.08	0.77	0.53	0.57
Avail Cap(c_a), veh/h	462	1791	947	128	1443	644	130	632	524	267	785	665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.8	12.8	12.9	42.9	20.0	16.2	42.9	36.5	34.9	40.0	33.0	33.3
Incr Delay (d2), s/veh	2.8	1.0	1.8	3.0	1.6	0.5	3.2	1.3	0.2	2.9	1.3	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	5.0	5.6	0.9	6.3	1.2	1.0	2.1	0.3	2.7	3.6	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.6	13.8	14.8	46.0	21.6	16.7	46.1	37.8	35.0	42.9	34.3	35.1
LnGrp LOS	D	B	B	D	C	B	D	D	D	D	C	D
Approach Vol, veh/h		1577			951			159			479	
Approach Delay, s/veh		17.8			22.1			39.7			36.8	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	16.5	7.7	53.8	7.9	21.7	19.1	42.4
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	* 31	6.6	48.0	6.7	37.9	25.4	29.2
Max Q Clear Time (g_c+I1), s	8.7	6.7	4.2	17.3	4.3	11.2	14.3	18.6
Green Ext Time (p_c), s	0.1	0.5	0.0	10.2	0.0	1.5	0.2	4.0

Intersection Summary	
HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

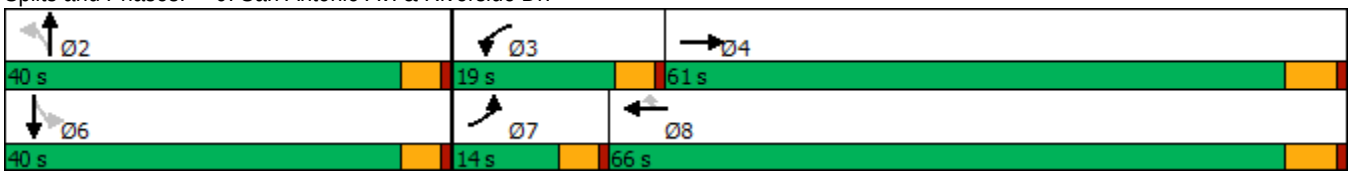
Notes

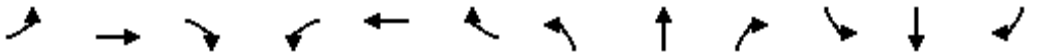
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	33	856	63	798	39	96	16	17	8
Future Volume (vph)	33	856	63	798	39	96	16	17	8
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	14.0	61.0	19.0	66.0	66.0	40.0	40.0	40.0	40.0
Total Split (%)	11.7%	50.8%	15.8%	55.0%	55.0%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	7.3	63.0	9.0	66.9	66.9	15.5	15.5	15.5	15.5
Actuated g/C Ratio	0.07	0.65	0.09	0.69	0.69	0.16	0.16	0.16	0.16
v/c Ratio	0.28	0.47	0.45	0.35	0.04	0.51	0.22	0.09	0.15
Control Delay	50.6	11.5	52.6	8.8	1.9	46.1	16.4	34.9	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.6	11.5	52.6	8.8	1.9	46.1	16.4	34.9	15.5
LOS	D	B	D	A	A	D	B	C	B
Approach Delay		12.8		11.6			34.7		21.3
Approach LOS		B		B			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 14.1	Intersection LOS: B
Intersection Capacity Utilization 56.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	856	123	63	798	39	96	16	44	17	8	33
Future Volume (veh/h)	33	856	123	63	798	39	96	16	44	17	8	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	34	892	122	66	831	41	100	17	22	18	8	11
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	63	2059	282	93	2400	1070	233	88	114	215	85	117
Arrive On Green	0.04	0.68	0.66	0.06	0.70	0.70	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1619	3013	412	1619	3420	1524	1337	710	919	1307	686	944
Grp Volume(v), veh/h	34	506	508	66	831	41	100	0	39	18	0	19
Grp Sat Flow(s),veh/h/ln	1619	1710	1715	1619	1710	1524	1337	0	1629	1307	0	1630
Q Serve(g_s), s	1.8	11.8	11.9	3.5	8.5	0.7	6.3	0.0	1.9	1.1	0.0	0.9
Cycle Q Clear(g_c), s	1.8	11.8	11.9	3.5	8.5	0.7	7.3	0.0	1.9	3.0	0.0	0.9
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.56	1.00		0.58
Lane Grp Cap(c), veh/h	63	1168	1172	93	2400	1070	233	0	201	215	0	201
V/C Ratio(X)	0.54	0.43	0.43	0.71	0.35	0.04	0.43	0.00	0.19	0.08	0.00	0.09
Avail Cap(c_a), veh/h	183	1168	1172	275	2400	1070	612	0	664	586	0	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.7	6.3	6.4	40.9	5.2	4.0	37.5	0.0	34.9	36.1	0.0	34.5
Incr Delay (d2), s/veh	2.7	1.2	1.2	3.7	0.4	0.1	1.3	0.0	0.5	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.4	3.5	1.4	2.2	0.2	2.1	0.0	0.8	0.4	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.4	7.5	7.6	44.6	5.6	4.1	38.8	0.0	35.4	36.3	0.0	34.7
LnGrp LOS	D	A	A	D	A	A	D	A	D	D	A	C
Approach Vol, veh/h		1048			938			139			37	
Approach Delay, s/veh		8.7			8.3			37.8			35.5	
Approach LOS		A			A			D			D	

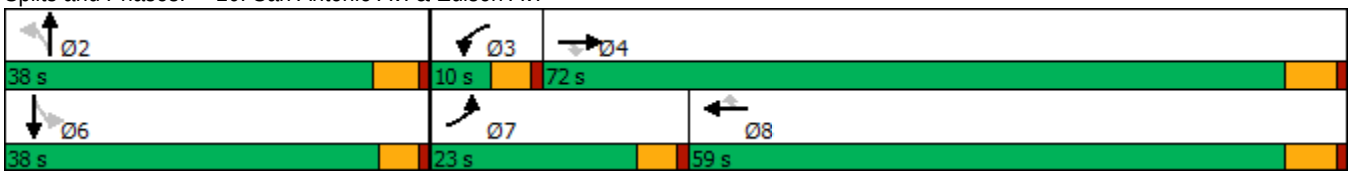
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.9	9.1	64.4		14.9	7.4	66.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		35.4	14.4	55.2		35.4	9.4	60.2				
Max Q Clear Time (g_c+I1), s		9.3	5.5	13.9		5.0	3.8	10.5				
Green Ext Time (p_c), s		0.5	0.0	7.1		0.1	0.0	6.4				

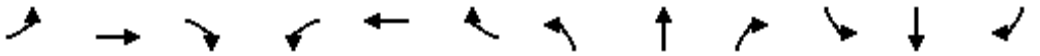
Intersection Summary												
HCM 6th Ctrl Delay			10.9									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	90	1192	41	7	864	18	23	33	13	44
Future Volume (vph)	90	1192	41	7	864	18	23	33	13	44
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	23.0	72.0	72.0	10.0	59.0	59.0	38.0	38.0	38.0	38.0
Total Split (%)	19.2%	60.0%	60.0%	8.3%	49.2%	49.2%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	10.7	72.5	72.5	5.8	61.4	61.4		14.5		14.5
Actuated g/C Ratio	0.11	0.75	0.75	0.06	0.63	0.63		0.15		0.15
v/c Ratio	0.54	0.49	0.04	0.12	0.42	0.02		0.30		0.43
Control Delay	52.1	7.3	1.5	51.3	11.7	0.1		34.2		29.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	52.1	7.3	1.5	51.3	11.7	0.1		34.2		29.0
LOS	D	A	A	D	B	A		C		C
Approach Delay		10.2			11.7			34.2		29.0
Approach LOS		B			B			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.8	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay: 12.3	Intersection LOS: B
Intersection Capacity Utilization 57.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	1192	41	7	864	18	23	33	11	13	44	53
Future Volume (veh/h)	90	1192	41	7	864	18	23	33	11	13	44	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1000	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	96	1268	43	7	919	16	24	35	8	14	47	26
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	130	2519	1123	15	2298	1025	101	124	23	63	114	56
Arrive On Green	0.08	0.74	0.74	0.02	0.67	0.67	0.12	0.12	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1619	3420	1525	952	3420	1525	406	1049	197	156	1011	497
Grp Volume(v), veh/h	96	1268	43	7	919	16	67	0	0	87	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	952	1710	1525	1652	0	0	1664	0	0
Q Serve(g_s), s	5.4	14.3	0.7	0.7	11.1	0.3	0.0	0.0	0.0	0.2	0.0	0.0
Cycle Q Clear(g_c), s	5.4	14.3	0.7	0.7	11.1	0.3	3.2	0.0	0.0	4.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.36		0.12	0.16		0.30
Lane Grp Cap(c), veh/h	130	2519	1123	15	2298	1025	248	0	0	233	0	0
V/C Ratio(X)	0.74	0.50	0.04	0.48	0.40	0.02	0.27	0.00	0.00	0.37	0.00	0.00
Avail Cap(c_a), veh/h	333	2519	1123	62	2298	1025	643	0	0	650	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	41.5	5.1	3.3	45.1	6.8	5.0	37.4	0.0	0.0	38.4	0.0	0.0
Incr Delay (d2), s/veh	3.1	0.7	0.1	8.7	0.5	0.0	0.6	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	3.5	0.2	0.2	3.2	0.1	1.4	0.0	0.0	1.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.6	5.8	3.4	53.8	7.3	5.1	38.0	0.0	0.0	39.4	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1407			942			67			87	
Approach Delay, s/veh		8.4			7.6			38.0			39.4	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.9	5.4	72.0		14.9	11.4	66.0				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		32.9	5.4	66.2		* 33	18.4	53.2				
Max Q Clear Time (g_c+I1), s		5.2	2.7	16.3		6.4	7.4	13.1				
Green Ext Time (p_c), s		0.3	0.0	11.8		0.5	0.1	7.0				

Intersection Summary												
HCM 6th Ctrl Delay			10.0									
HCM 6th LOS			A									

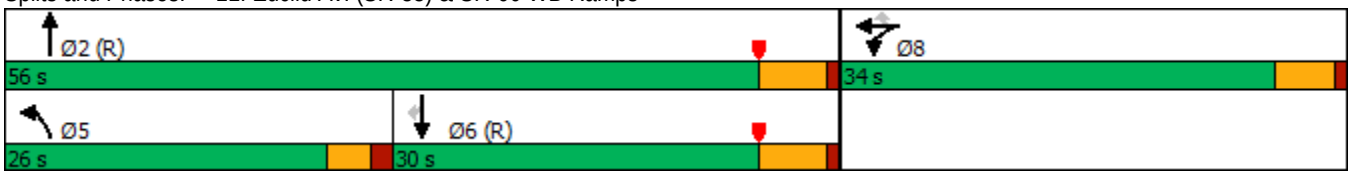
Notes

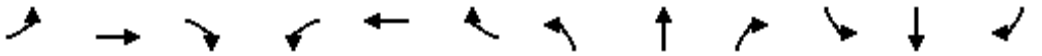
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	690	7	441	499	1185	1100	533
Future Volume (vph)	690	7	441	499	1185	1100	533
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	34.0	34.0	34.0	26.0	56.0	30.0	30.0
Total Split (%)	37.8%	37.8%	37.8%	28.9%	62.2%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	25.7	25.7	25.7	24.8	53.8	24.5	24.5
Actuated g/C Ratio	0.29	0.29	0.29	0.28	0.60	0.27	0.27
v/c Ratio	0.84	0.86	0.76	1.04	0.57	1.17	0.66
Control Delay	46.0	47.5	32.4	53.8	24.1	118.0	6.7
Queue Delay	0.0	0.0	0.0	0.0	5.0	0.0	0.0
Total Delay	46.0	47.5	32.4	53.8	29.2	118.0	6.7
LOS	D	D	C	D	C	F	A
Approach Delay		42.2			36.4	81.7	
Approach LOS		D			D	F	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 54.5	Intersection LOS: D
Intersection Capacity Utilization 104.8%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	690	7	441	499	1185	0	0	1100	533
Future Volume (veh/h)	0	0	0	690	7	441	499	1185	0	0	1100	533
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				808	0	188	520	1234	0	0	1146	350
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				915	0	407	432	2276	0	0	1233	550
Arrive On Green				0.25	0.00	0.25	0.48	1.00	0.00	0.00	0.34	0.34
Sat Flow, veh/h				3619	0	1608	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				808	0	188	520	1234	0	0	1146	350
Grp Sat Flow(s),veh/h/ln				1810	0	1608	1810	1805	0	0	1805	1610
Q Serve(g_s), s				19.3	0.0	8.9	21.5	0.0	0.0	0.0	27.6	16.5
Cycle Q Clear(g_c), s				19.3	0.0	8.9	21.5	0.0	0.0	0.0	27.6	16.5
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				915	0	407	432	2276	0	0	1233	550
V/C Ratio(X)				0.88	0.00	0.46	1.20	0.54	0.00	0.00	0.93	0.64
Avail Cap(c_a), veh/h				1166	0	518	432	2276	0	0	1233	550
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				32.3	0.0	28.4	23.5	0.0	0.0	0.0	28.6	24.9
Incr Delay (d2), s/veh				5.8	0.0	0.3	93.5	0.1	0.0	0.0	13.5	5.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.6	0.0	3.3	16.8	0.0	0.0	0.0	13.3	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				38.1	0.0	28.7	117.0	0.1	0.0	0.0	42.1	30.5
LnGrp LOS				D	A	C	F	A	A	A	D	C
Approach Vol, veh/h					996			1754			1496	
Approach Delay, s/veh					36.4			34.7			39.4	
Approach LOS					D			C			D	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	62.2		26.0	36.2		27.8						
Change Period (Y+Rc), s	5.5		4.5	5.5		5.0						
Max Green Setting (Gmax), s	50.5		21.5	24.5		29.0						
Max Q Clear Time (g_c+I1), s	2.0		23.5	29.6		21.3						
Green Ext Time (p_c), s	17.4		0.0	0.0		1.4						

Intersection Summary		
HCM 6th Ctrl Delay	36.8	
HCM 6th LOS	D	

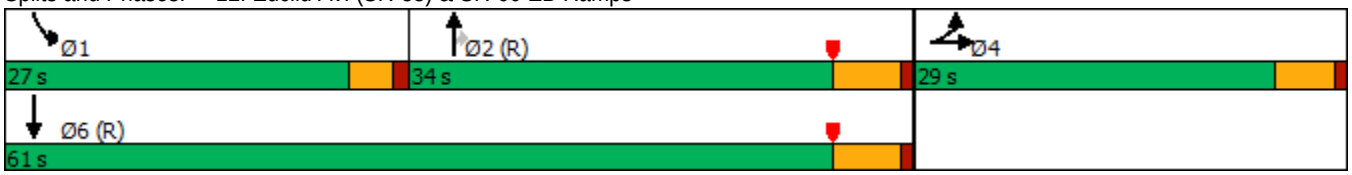
Notes

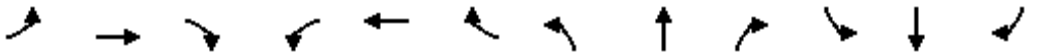
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	450	3	1234	698	406	1384
Future Volume (vph)	450	3	1234	698	406	1384
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	29.0	29.0	34.0	34.0	27.0	61.0
Total Split (%)	32.2%	32.2%	37.8%	37.8%	30.0%	67.8%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	24.0	24.0	29.3	29.3	22.2	55.5
Actuated g/C Ratio	0.27	0.27	0.33	0.33	0.25	0.62
v/c Ratio	0.90	1.16	1.07	0.77	0.93	0.63
Control Delay	57.5	123.6	78.8	11.1	46.6	4.7
Queue Delay	51.1	4.3	0.0	0.0	0.0	1.0
Total Delay	108.6	127.9	78.8	11.1	46.6	5.7
LOS	F	F	E	B	D	A
Approach Delay		119.4	54.3			15.0
Approach LOS		F	D			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 52.0	Intersection LOS: D
Intersection Capacity Utilization 104.8%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	450	3	465	0	0	0	0	1234	698	406	1384	0
Future Volume (veh/h)	450	3	465	0	0	0	0	1234	698	406	1384	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	434	38	407				0	1259	518	414	1412	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	483	37	398				0	1194	520	437	2226	0
Arrive On Green	0.27	0.27	0.27				0.00	0.33	0.33	0.48	1.00	0.00
Sat Flow, veh/h	1810	139	1492				0	3705	1571	1810	3705	0
Grp Volume(v), veh/h	434	0	445				0	1259	518	414	1412	0
Grp Sat Flow(s),veh/h/ln	1810	0	1631				0	1805	1571	1810	1805	0
Q Serve(g_s), s	20.8	0.0	24.0				0.0	29.8	29.6	19.6	0.0	0.0
Cycle Q Clear(g_c), s	20.8	0.0	24.0				0.0	29.8	29.6	19.6	0.0	0.0
Prop In Lane	1.00		0.91				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	483	0	435				0	1194	520	437	2226	0
V/C Ratio(X)	0.90	0.00	1.02				0.00	1.05	1.00	0.95	0.63	0.00
Avail Cap(c_a), veh/h	483	0	435				0	1194	520	462	2226	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.24	0.24	0.09	0.09	0.00
Uniform Delay (d), s/veh	31.8	0.0	33.0				0.0	30.1	30.1	22.7	0.0	0.0
Incr Delay (d2), s/veh	19.1	0.0	49.1				0.0	30.3	18.6	4.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.0	0.0	14.7				0.0	17.0	13.1	5.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.9	0.0	82.1				0.0	60.4	48.7	27.2	0.1	0.0
LnGrp LOS	D	A	F				A	F	D	C	A	A
Approach Vol, veh/h		879						1777			1826	
Approach Delay, s/veh		66.7						57.0			6.3	
Approach LOS		E						E			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	25.7	35.3		29.0		61.0
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	23.0	28.5		24.0		55.5
Max Q Clear Time (g_c+I1), s	21.6	31.8		26.0		2.0
Green Ext Time (p_c), s	0.1	0.0		0.0		22.3

Intersection Summary	
HCM 6th Ctrl Delay	38.2
HCM 6th LOS	D

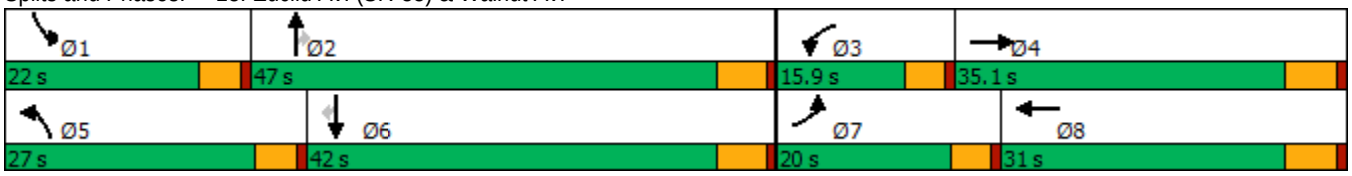
Notes

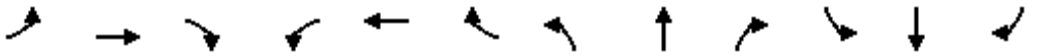
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	116	400	76	400	204	1638	80	285	1364	158
Future Volume (vph)	116	400	76	400	204	1638	80	285	1364	158
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	20.0	35.1	15.9	31.0	27.0	47.0	47.0	22.0	42.0	42.0
Total Split (%)	16.7%	29.3%	13.3%	25.8%	22.5%	39.2%	39.2%	18.3%	35.0%	35.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	12.2	28.0	9.1	22.6	18.4	41.9	41.9	14.9	38.4	38.4
Actuated g/C Ratio	0.11	0.25	0.08	0.20	0.16	0.37	0.37	0.13	0.34	0.34
v/c Ratio	0.70	0.69	0.61	0.85	0.82	0.95	0.13	0.77	0.86	0.27
Control Delay	70.9	41.3	71.6	53.2	70.4	47.6	3.2	61.9	42.3	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.9	41.3	71.6	53.2	70.4	47.6	3.2	61.9	42.3	7.7
LOS	E	D	E	D	E	D	A	E	D	A
Approach Delay		46.4		55.5		48.2			42.4	
Approach LOS		D		E		D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.1	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 46.8	Intersection LOS: D
Intersection Capacity Utilization 84.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	400	151	76	400	151	204	1638	80	285	1364	158
Future Volume (veh/h)	116	400	151	76	400	151	204	1638	80	285	1364	158
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	123	426	138	81	426	135	217	1743	58	303	1451	114
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	148	582	186	101	509	160	245	1935	600	360	1788	555
Arrive On Green	0.09	0.23	0.23	0.06	0.20	0.20	0.15	0.39	0.39	0.12	0.36	0.36
Sat Flow, veh/h	1619	2537	813	1619	2547	798	1619	4914	1523	2956	4914	1524
Grp Volume(v), veh/h	123	286	278	81	284	277	217	1743	58	303	1451	114
Grp Sat Flow(s),veh/h/ln	1619	1710	1640	1619	1710	1635	1619	1638	1523	1478	1638	1524
Q Serve(g_s), s	7.9	16.3	16.6	5.2	16.9	17.2	13.9	35.2	2.5	10.6	28.2	5.4
Cycle Q Clear(g_c), s	7.9	16.3	16.6	5.2	16.9	17.2	13.9	35.2	2.5	10.6	28.2	5.4
Prop In Lane	1.00		0.50	1.00		0.49	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	148	392	376	101	342	327	245	1935	600	360	1788	555
V/C Ratio(X)	0.83	0.73	0.74	0.80	0.83	0.85	0.88	0.90	0.10	0.84	0.81	0.21
Avail Cap(c_a), veh/h	236	474	455	173	408	390	343	1935	600	487	1788	555
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.2	37.7	37.8	48.9	40.6	40.7	43.9	30.1	20.2	45.4	30.3	23.1
Incr Delay (d2), s/veh	6.5	4.5	5.1	5.6	11.9	13.7	14.3	7.3	0.3	7.4	4.1	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	7.0	6.9	2.2	7.9	7.9	6.4	14.3	0.9	4.2	11.2	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.7	42.1	42.9	54.5	52.4	54.4	58.2	37.4	20.5	52.8	34.5	23.9
LnGrp LOS	D	D	D	D	D	D	E	D	C	D	C	C
Approach Vol, veh/h		687			642			2018			1868	
Approach Delay, s/veh		44.5			53.6			39.1			36.8	
Approach LOS		D			D			D			D	

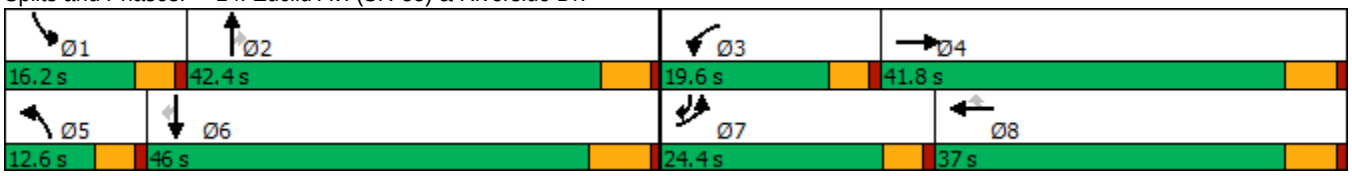
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.5	47.0	11.2	30.0	20.6	43.9	14.3	26.9
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	17.4	41.6	11.3	29.3	22.4	36.6	15.4	25.2
Max Q Clear Time (g_c+I1), s	12.6	37.2	7.2	18.6	15.9	30.2	9.9	19.2
Green Ext Time (p_c), s	0.3	3.6	0.0	2.3	0.2	4.6	0.1	1.6

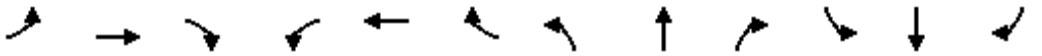
Intersection Summary	
HCM 6th Ctrl Delay	40.8
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	163	496	203	443	69	108	1437	263	150	1163	208
Future Volume (vph)	163	496	203	443	69	108	1437	263	150	1163	208
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	24.4	41.8	19.6	37.0	37.0	12.6	42.4	42.4	16.2	46.0	24.4
Total Split (%)	20.3%	34.8%	16.3%	30.8%	30.8%	10.5%	35.3%	35.3%	13.5%	38.3%	20.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None
Act Effct Green (s)	16.1	36.0	15.0	34.9	34.9	8.0	37.0	37.0	11.6	39.5	57.5
Actuated g/C Ratio	0.13	0.30	0.12	0.29	0.29	0.07	0.31	0.31	0.10	0.33	0.48
v/c Ratio	0.78	1.16	1.05	0.46	0.13	1.06	1.42	0.47	1.00	1.08	0.28
Control Delay	74.0	129.2	127.8	37.5	0.5	156.5	227.8	15.7	126.7	88.7	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.0	129.2	127.8	37.5	0.5	156.5	227.8	15.7	126.7	88.7	8.4
LOS	E	F	F	D	A	F	F	B	F	F	A
Approach Delay		117.3		59.6			192.7			81.4	
Approach LOS		F		E			F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.42	
Intersection Signal Delay: 125.7	Intersection LOS: F
Intersection Capacity Utilization 114.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	496	96	203	443	69	108	1437	263	150	1163	208
Future Volume (veh/h)	163	496	96	203	443	69	108	1437	263	150	1163	208
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	170	517	75	211	461	56	112	1497	220	156	1211	126
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	195	457	66	201	1029	459	107	1045	466	155	1147	688
Arrive On Green	0.12	0.30	0.30	0.12	0.30	0.30	0.07	0.31	0.31	0.10	0.34	0.34
Sat Flow, veh/h	1619	1537	223	1619	3420	1524	1619	3420	1525	1619	3420	1506
Grp Volume(v), veh/h	170	0	592	211	461	56	112	1497	220	156	1211	126
Grp Sat Flow(s),veh/h/ln	1619	0	1760	1619	1710	1524	1619	1710	1525	1619	1710	1506
Q Serve(g_s), s	12.5	0.0	36.0	15.0	13.2	3.2	8.0	37.0	14.2	11.6	40.6	6.0
Cycle Q Clear(g_c), s	12.5	0.0	36.0	15.0	13.2	3.2	8.0	37.0	14.2	11.6	40.6	6.0
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	195	0	523	201	1029	459	107	1045	466	155	1147	688
V/C Ratio(X)	0.87	0.00	1.13	1.05	0.45	0.12	1.05	1.43	0.47	1.01	1.06	0.18
Avail Cap(c_a), veh/h	265	0	523	201	1029	459	107	1045	466	155	1147	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.4	0.0	42.6	53.1	34.2	30.7	56.5	42.0	34.1	54.8	40.2	19.6
Incr Delay (d2), s/veh	16.9	0.0	80.9	78.0	0.3	0.1	100.3	200.2	3.4	73.8	42.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	0.0	26.7	10.3	5.4	1.2	6.1	43.6	5.5	7.8	23.2	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.3	0.0	123.4	131.0	34.5	30.8	156.8	242.3	37.5	128.6	83.0	20.2
LnGrp LOS	E	A	F	F	C	C	F	F	D	F	F	C
Approach Vol, veh/h		762			728			1829			1493	
Approach Delay, s/veh		111.3			62.2			212.4			82.4	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	43.5	19.6	41.8	12.6	47.1	19.1	42.3
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	11.6	* 37	15.0	36.0	8.0	39.5	19.8	31.2
Max Q Clear Time (g_c+I1), s	13.6	39.0	17.0	38.0	10.0	42.6	14.5	15.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.6

Intersection Summary	
HCM 6th Ctrl Delay	133.4
HCM 6th LOS	F

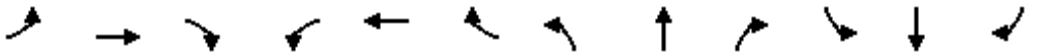
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	104	307	60	85	122	57	1690	248	27	1316	78
Future Volume (vph)	104	307	60	85	122	57	1690	248	27	1316	78
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	44.0	44.0	44.0	44.0	44.0	12.4	65.0	65.0	11.0	63.6	63.6
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	10.3%	54.2%	54.2%	9.2%	53.0%	53.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	31.3	31.3	31.3		31.3	7.1	62.7	62.7	5.9	58.2	58.2
Actuated g/C Ratio	0.28	0.28	0.28		0.28	0.06	0.56	0.56	0.05	0.52	0.52
v/c Ratio	0.43	0.65	0.13		1.04	0.60	0.94	0.31	0.34	0.79	0.10
Control Delay	38.2	41.8	6.2		112.0	77.5	36.6	12.6	65.2	28.2	5.7
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.2	41.8	6.2		112.0	77.5	36.6	12.6	65.2	28.2	5.7
LOS	D	D	A		F	E	D	B	E	C	A
Approach Delay		36.4			112.0		34.8			27.6	
Approach LOS		D			F		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 36.6	Intersection LOS: D
Intersection Capacity Utilization 96.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	307	60	85	122	10	57	1690	248	27	1316	78
Future Volume (veh/h)	104	307	60	85	122	10	57	1690	248	27	1316	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	112	330	42	91	131	7	61	1817	196	29	1415	51
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	282	549	465	126	164	8	76	1783	779	43	1712	748
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.05	0.52	0.52	0.03	0.50	0.50
Sat Flow, veh/h	1200	1800	1525	268	536	25	1619	3420	1494	1619	3420	1494
Grp Volume(v), veh/h	112	330	42	229	0	0	61	1817	196	29	1415	51
Grp Sat Flow(s),veh/h/ln	1200	1800	1525	829	0	0	1619	1710	1494	1619	1710	1494
Q Serve(g_s), s	0.0	17.9	2.3	14.7	0.0	0.0	4.3	59.8	8.3	2.0	40.4	2.0
Cycle Q Clear(g_c), s	15.6	17.9	2.3	32.6	0.0	0.0	4.3	59.8	8.3	2.0	40.4	2.0
Prop In Lane	1.00		1.00	0.40		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	282	549	465	297	0	0	76	1783	779	43	1712	748
V/C Ratio(X)	0.40	0.60	0.09	0.77	0.00	0.00	0.80	1.02	0.25	0.68	0.83	0.07
Avail Cap(c_a), veh/h	315	599	508	335	0	0	110	1783	779	90	1712	748
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.1	33.9	28.5	42.9	0.0	0.0	54.1	27.5	15.1	55.4	24.4	14.8
Incr Delay (d2), s/veh	0.9	1.4	0.1	9.4	0.0	0.0	14.8	26.3	0.8	6.9	4.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	7.7	0.8	6.9	0.0	0.0	2.0	27.5	2.7	0.9	15.5	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.0	35.4	28.6	52.3	0.0	0.0	69.0	53.7	15.9	62.3	29.1	15.0
LnGrp LOS	C	D	C	D	A	A	E	F	B	E	C	B
Approach Vol, veh/h		484			229			2074			1495	
Approach Delay, s/veh		34.5			52.3			50.6			29.3	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.6	66.3		40.8	10.0	63.9		40.8				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	6.4	* 60		38.2	7.8	57.1		38.2				
Max Q Clear Time (g_c+I1), s	4.0	61.8		19.9	6.3	42.4		34.6				
Green Ext Time (p_c), s	0.0	0.0		2.1	0.0	8.0		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		41.4	
HCM 6th LOS		D	

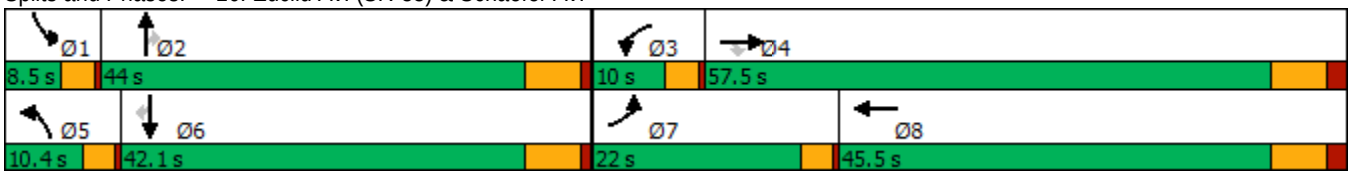
Notes

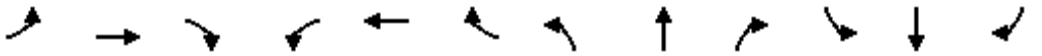
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	315	313	205	85	79	100	1623	90	32	1344	125
Future Volume (vph)	315	313	205	85	79	100	1623	90	32	1344	125
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	8.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	22.0	57.5	57.5	10.0	45.5	10.4	44.0	44.0	8.5	42.1	42.1
Total Split (%)	18.3%	47.9%	47.9%	8.3%	37.9%	8.7%	36.7%	36.7%	7.1%	35.1%	35.1%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	18.7	25.5	25.5	6.6	13.3	7.0	42.1	42.1	5.1	36.5	36.5
Actuated g/C Ratio	0.20	0.27	0.27	0.07	0.14	0.07	0.44	0.44	0.05	0.38	0.38
v/c Ratio	1.01	0.66	0.41	0.78	0.43	0.86	1.09	0.12	0.38	1.04	0.19
Control Delay	93.8	37.6	12.5	88.3	35.9	99.7	80.3	2.0	60.6	67.1	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.8	37.6	12.5	88.3	35.9	99.7	80.3	2.0	60.6	67.1	5.1
LOS	F	D	B	F	D	F	F	A	E	E	A
Approach Delay		52.7			59.2		77.5			61.8	
Approach LOS		D			E		E			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 95.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 66.5	Intersection LOS: E
Intersection Capacity Utilization 94.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	315	313	205	85	79	28	100	1623	90	32	1344	125
Future Volume (veh/h)	315	313	205	85	79	28	100	1623	90	32	1344	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	318	316	166	86	80	23	101	1639	73	32	1358	96
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	337	408	346	107	114	33	125	1546	689	50	1387	619
Arrive On Green	0.21	0.23	0.23	0.07	0.08	0.08	0.08	0.45	0.45	0.03	0.41	0.41
Sat Flow, veh/h	1619	1800	1525	1619	1344	386	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	318	316	166	86	0	103	101	1639	73	32	1358	96
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1730	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	17.2	14.7	8.4	4.7	0.0	5.2	5.5	40.2	2.5	1.7	34.8	3.6
Cycle Q Clear(g_c), s	17.2	14.7	8.4	4.7	0.0	5.2	5.5	40.2	2.5	1.7	34.8	3.6
Prop In Lane	1.00		1.00	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	337	408	346	107	0	147	125	1546	689	50	1387	619
V/C Ratio(X)	0.94	0.77	0.48	0.81	0.00	0.70	0.81	1.06	0.11	0.64	0.98	0.16
Avail Cap(c_a), veh/h	337	1021	866	118	0	749	126	1546	689	91	1387	619
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.7	32.3	29.9	41.0	0.0	39.6	40.4	24.4	14.0	42.6	26.1	16.8
Incr Delay (d2), s/veh	34.4	2.4	0.8	26.7	0.0	4.5	29.4	40.8	0.1	5.1	19.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	6.2	3.0	2.6	0.0	2.3	3.0	22.2	0.8	0.7	15.7	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.2	34.6	30.6	67.7	0.0	44.1	69.8	65.2	14.1	47.7	45.3	16.9
LnGrp LOS	E	C	C	E	A	D	E	F	B	D	D	B
Approach Vol, veh/h		800			189			1813			1486	
Approach Delay, s/veh		47.5			54.8			63.4			43.5	
Approach LOS		D			D			E			D	

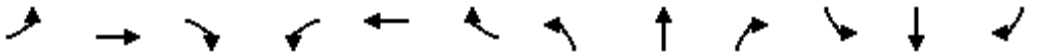
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	46.2	9.4	27.2	10.4	42.1	22.0	14.5
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	38.0	6.5	50.5	6.9	36.1	18.5	38.5
Max Q Clear Time (g_c+I1), s	3.7	42.2	6.7	16.7	7.5	36.8	19.2	7.2
Green Ext Time (p_c), s	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	53.2
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	298	533	366	47	314	278	1585	81	95	1438	197
Future Volume (vph)	298	533	366	47	314	278	1585	81	95	1438	197
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	17.0	54.8	54.8	13.2	51.0	51.0
Total Split (%)	43.3%	43.3%	43.3%	43.3%	43.3%	14.2%	45.7%	45.7%	11.0%	42.5%	42.5%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	45.0	45.0	45.0	45.0	45.0	13.5	49.2	49.2	9.3	45.0	45.0
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.11	0.41	0.41	0.08	0.38	0.38
v/c Ratio	1.29	0.83	0.55	0.43	0.57	1.62	1.19	0.13	0.81	1.18	0.32
Control Delay	189.6	46.3	16.7	42.0	33.3	336.9	125.8	7.8	95.5	124.4	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	189.6	46.3	16.7	42.0	33.3	336.9	125.8	7.8	95.5	124.4	13.5
LOS	F	D	B	D	C	F	F	A	F	F	B
Approach Delay		73.0			34.3		151.1			110.2	
Approach LOS		E			C		F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.62	
Intersection Signal Delay: 111.0	Intersection LOS: F
Intersection Capacity Utilization 118.0%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	298	533	366	47	314	45	278	1585	81	95	1438	197
Future Volume (veh/h)	298	533	366	47	314	45	278	1585	81	95	1438	197
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	314	561	303	49	331	41	293	1668	77	100	1514	175
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	261	675	572	117	588	73	182	1411	628	121	1282	572
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.11	0.41	0.41	0.07	0.38	0.38
Sat Flow, veh/h	969	1800	1525	614	1568	194	1619	3420	1522	1619	3420	1525
Grp Volume(v), veh/h	314	561	303	49	0	372	293	1668	77	100	1514	175
Grp Sat Flow(s),veh/h/ln	969	1800	1525	614	0	1762	1619	1710	1522	1619	1710	1525
Q Serve(g_s), s	24.9	34.0	18.6	9.4	0.0	20.1	13.5	49.5	3.8	7.3	45.0	9.7
Cycle Q Clear(g_c), s	45.0	34.0	18.6	43.4	0.0	20.1	13.5	49.5	3.8	7.3	45.0	9.7
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	261	675	572	117	0	661	182	1411	628	121	1283	572
V/C Ratio(X)	1.20	0.83	0.53	0.42	0.00	0.56	1.61	1.18	0.12	0.83	1.18	0.31
Avail Cap(c_a), veh/h	261	675	572	117	0	661	182	1411	628	131	1283	572
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.4	34.0	29.2	53.8	0.0	29.7	53.3	35.2	21.8	54.7	37.5	26.5
Incr Delay (d2), s/veh	121.3	8.7	0.9	2.4	0.0	1.1	297.9	89.4	0.1	29.0	89.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.6	15.7	6.7	1.5	0.0	8.3	20.3	36.2	1.3	3.8	33.2	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	171.7	42.7	30.2	56.2	0.0	30.8	351.1	124.7	21.9	83.8	127.1	26.8
LnGrp LOS	F	D	C	E	A	C	F	F	C	F	F	C
Approach Vol, veh/h		1178			421			2038			1789	
Approach Delay, s/veh		73.9			33.8			153.3			114.8	
Approach LOS		E			C			F			F	

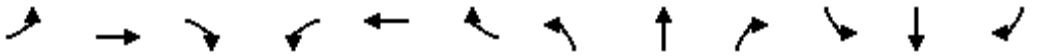
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.5	55.5		52.0	17.0	51.0		52.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	9.7	48.8		45.0	13.5	45.0		45.0				
Max Q Clear Time (g_c+I1), s	9.3	51.5		47.0	15.5	47.0		45.4				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		114.1	
HCM 6th LOS		F	

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	42	176	239	8	23	137	1692	19	68	1641	69
Future Volume (vph)	42	176	239	8	23	137	1692	19	68	1641	69
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	46.8	46.8	46.8	46.8	46.8	14.0	63.2	63.2	10.0	59.2	59.2
Total Split (%)	39.0%	39.0%	39.0%	39.0%	39.0%	11.7%	52.7%	52.7%	8.3%	49.3%	49.3%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	18.5	18.5	18.5	18.5	18.5	10.6	58.2	58.2	6.6	54.2	54.2
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19	0.11	0.60	0.60	0.07	0.56	0.56
v/c Ratio	0.21	0.58	0.68	0.06	0.28	0.88	0.93	0.02	0.70	0.97	0.09
Control Delay	33.5	41.7	26.8	30.1	12.8	87.7	29.3	0.7	80.0	37.7	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	41.7	26.8	30.1	12.8	87.7	29.3	0.7	80.0	37.7	3.9
LOS	C	D	C	C	B	F	C	A	E	D	A
Approach Delay		33.1			14.3		33.4			38.0	
Approach LOS		C			B		C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 34.9	Intersection LOS: C
Intersection Capacity Utilization 80.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	176	239	8	23	67	137	1692	19	68	1641	69
Future Volume (veh/h)	42	176	239	8	23	67	137	1692	19	68	1641	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	47	198	153	9	26	72	154	1901	20	76	1844	66
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	190	258	219	119	61	168	183	2187	976	94	2000	873
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.11	0.64	0.64	0.06	0.58	0.58
Sat Flow, veh/h	1245	1800	1525	988	422	1168	1619	3420	1525	1619	3420	1494
Grp Volume(v), veh/h	47	198	153	9	0	98	154	1901	20	76	1844	66
Grp Sat Flow(s),veh/h/ln	1245	1800	1525	988	0	1590	1619	1710	1525	1619	1710	1494
Q Serve(g_s), s	3.2	9.3	8.4	0.8	0.0	5.0	8.2	39.8	0.4	4.1	42.9	1.7
Cycle Q Clear(g_c), s	8.1	9.3	8.4	10.1	0.0	5.0	8.2	39.8	0.4	4.1	42.9	1.7
Prop In Lane	1.00		1.00	1.00		0.73	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	190	258	219	119	0	228	183	2187	976	94	2000	873
V/C Ratio(X)	0.25	0.77	0.70	0.08	0.00	0.43	0.84	0.87	0.02	0.80	0.92	0.08
Avail Cap(c_a), veh/h	604	856	726	447	0	756	193	2227	993	119	2072	905
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.2	36.4	36.0	41.3	0.0	34.5	38.4	12.9	5.8	41.1	16.5	8.0
Incr Delay (d2), s/veh	0.5	3.5	3.0	0.2	0.0	0.9	25.3	3.9	0.0	24.1	7.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	4.2	3.1	0.2	0.0	1.9	4.3	11.6	0.1	2.2	14.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.7	39.9	39.0	41.5	0.0	35.5	63.6	16.9	5.8	65.1	23.8	8.0
LnGrp LOS	D	D	D	D	A	D	E	B	A	E	C	A
Approach Vol, veh/h		398			107			2075			1986	
Approach Delay, s/veh		39.4			36.0			20.2			24.9	
Approach LOS		D			D			C			C	

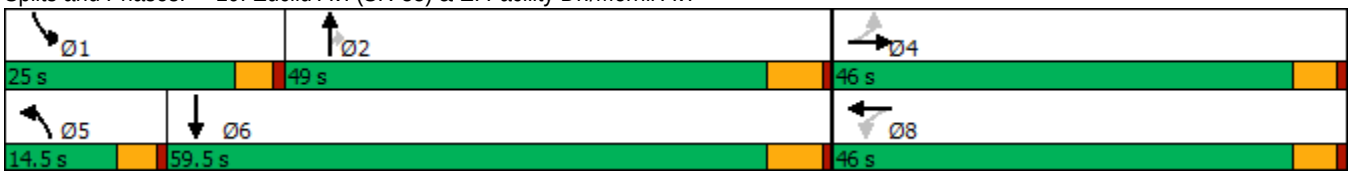
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	62.2		17.5	13.5	57.3		17.5				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	6.5	57.5		42.0	10.5	53.5		42.0				
Max Q Clear Time (g_c+I1), s	6.1	41.8		11.3	10.2	44.9		12.1				
Green Ext Time (p_c), s	0.0	11.1		1.3	0.0	6.7		0.4				

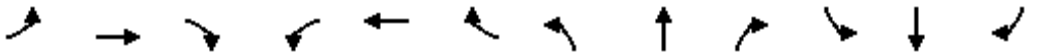
Intersection Summary			
HCM 6th Ctrl Delay		24.3	
HCM 6th LOS		C	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	12	33	379	2	5	1388	320	408	1419
Future Volume (vph)	12	33	379	2	5	1388	320	408	1419
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	14.5	49.0	49.0	25.0	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	12.1%	40.8%	40.8%	20.8%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		41.0		41.0	10.0	43.0	43.0	20.5	65.1
Actuated g/C Ratio		0.34		0.34	0.08	0.36	0.36	0.17	0.54
v/c Ratio		0.12		1.90	0.04	1.24	0.58	1.63	0.84
Control Delay		22.4		436.6	51.4	151.5	26.1	332.1	29.2
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		22.4		436.6	51.4	151.5	26.1	332.1	29.2
LOS		C		F	D	F	C	F	C
Approach Delay		22.4		436.6		127.8			96.7
Approach LOS		C		F		F			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.90	
Intersection Signal Delay: 175.3	Intersection LOS: F
Intersection Capacity Utilization 141.0%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	33	14	379	2	515	5	1388	320	408	1419	1
Future Volume (veh/h)	12	33	14	379	2	515	5	1388	320	408	1419	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	13	36	14	416	2	556	5	1525	287	448	1559	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	117	310	112	259	1	289	21	1226	547	277	1766	0
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.01	0.36	0.36	0.17	0.52	0.00
Sat Flow, veh/h	237	908	327	632	3	845	1619	3420	1525	1619	3510	0
Grp Volume(v), veh/h	63	0	0	974	0	0	5	1525	287	448	1559	0
Grp Sat Flow(s),veh/h/ln	1472	0	0	1481	0	0	1619	1710	1525	1619	1710	0
Q Serve(g_s), s	0.0	0.0	0.0	38.0	0.0	0.0	0.4	43.0	17.8	20.5	48.6	0.0
Cycle Q Clear(g_c), s	3.0	0.0	0.0	41.0	0.0	0.0	0.4	43.0	17.8	20.5	48.6	0.0
Prop In Lane	0.21		0.22	0.43		0.57	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	539	0	0	549	0	0	21	1226	547	277	1766	0
V/C Ratio(X)	0.12	0.00	0.00	1.78	0.00	0.00	0.24	1.24	0.53	1.62	0.88	0.00
Avail Cap(c_a), veh/h	539	0	0	549	0	0	135	1226	547	277	1766	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.0	0.0	0.0	40.8	0.0	0.0	58.7	38.5	30.4	49.7	25.8	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	356.2	0.0	0.0	2.2	117.0	0.9	295.0	5.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	70.1	0.0	0.0	0.2	36.5	6.3	30.5	18.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.0	0.0	0.0	397.0	0.0	0.0	60.9	155.5	31.4	344.7	31.4	0.0
LnGrp LOS	C	A	A	F	A	A	E	F	C	F	C	A
Approach Vol, veh/h		63			974			1817			2007	
Approach Delay, s/veh		27.0			397.0			135.6			101.4	
Approach LOS		C			F			F			F	

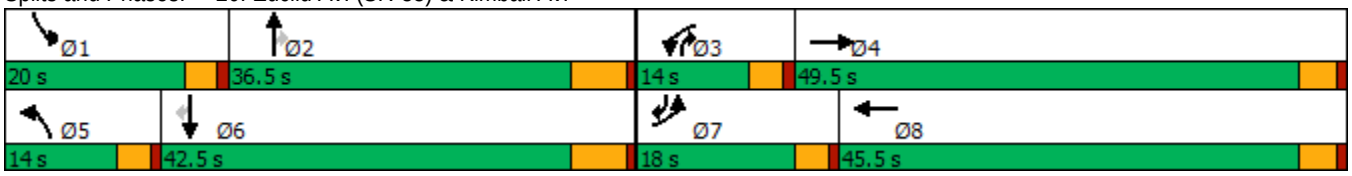
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.0	49.0		46.0	6.0	68.0		46.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	20.5	43.0		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	22.5	45.0		5.0	2.4	50.6		43.0				
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	2.2		0.0				

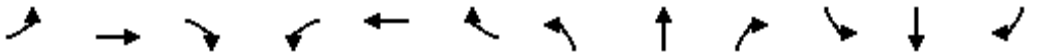
Intersection Summary												
HCM 6th Ctrl Delay			172.5									
HCM 6th LOS			F									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	393	866	91	383	84	1073	52	480	1083	266
Future Volume (vph)	393	866	91	383	84	1073	52	480	1083	266
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	18.0	49.5	14.0	45.5	14.0	36.5	14.0	20.0	42.5	18.0
Total Split (%)	15.0%	41.3%	11.7%	37.9%	11.7%	30.4%	11.7%	16.7%	35.4%	15.0%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	14.0	38.3	10.0	34.3	10.0	30.6	46.6	16.0	36.6	52.6
Actuated g/C Ratio	0.12	0.34	0.09	0.30	0.09	0.27	0.41	0.14	0.32	0.46
v/c Ratio	1.11	0.85	0.66	0.57	0.61	1.20	0.08	1.19	1.01	0.33
Control Delay	127.0	42.5	74.2	30.8	70.5	137.9	1.9	149.4	69.3	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	127.0	42.5	74.2	30.8	70.5	137.9	1.9	149.4	69.3	4.2
LOS	F	D	E	C	E	F	A	F	E	A
Approach Delay		67.3		36.8		127.4			80.9	
Approach LOS		E		D		F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay: 82.7	Intersection LOS: F
Intersection Capacity Utilization 99.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	393	866	78	91	383	186	84	1073	52	480	1083	266
Future Volume (veh/h)	393	866	78	91	383	186	84	1073	52	480	1083	266
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	405	893	77	94	395	154	87	1106	39	495	1116	176
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	375	1038	90	138	687	264	136	945	552	428	1152	707
Arrive On Green	0.13	0.33	0.33	0.09	0.28	0.28	0.08	0.28	0.28	0.14	0.34	0.34
Sat Flow, veh/h	2956	3186	275	1619	2414	929	1619	3420	1525	2956	3420	1524
Grp Volume(v), veh/h	405	479	491	94	278	271	87	1106	39	495	1116	176
Grp Sat Flow(s),veh/h/ln	1478	1710	1750	1619	1710	1633	1619	1710	1525	1478	1710	1524
Q Serve(g_s), s	14.0	29.0	29.0	6.2	15.4	15.7	5.7	30.5	1.8	16.0	35.5	7.7
Cycle Q Clear(g_c), s	14.0	29.0	29.0	6.2	15.4	15.7	5.7	30.5	1.8	16.0	35.5	7.7
Prop In Lane	1.00		0.16	1.00		0.57	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	375	557	570	138	487	465	136	945	552	428	1152	707
V/C Ratio(X)	1.08	0.86	0.86	0.68	0.57	0.58	0.64	1.17	0.07	1.16	0.97	0.25
Avail Cap(c_a), veh/h	375	697	713	147	635	606	147	945	552	428	1152	707
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.2	34.9	34.9	49.0	33.8	33.9	48.9	40.0	23.1	47.2	36.0	18.0
Incr Delay (d2), s/veh	69.8	8.9	8.7	8.8	0.4	0.4	5.7	88.3	0.1	93.4	19.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	12.8	13.0	2.8	6.2	6.0	2.4	23.5	0.6	11.1	16.6	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	118.0	43.8	43.6	57.8	34.2	34.3	54.6	128.2	23.1	140.6	55.4	18.1
LnGrp LOS	F	D	D	E	C	C	D	F	C	F	E	B
Approach Vol, veh/h		1375			643			1232			1787	
Approach Delay, s/veh		65.6			37.7			119.7			75.4	
Approach LOS		E			D			F			E	

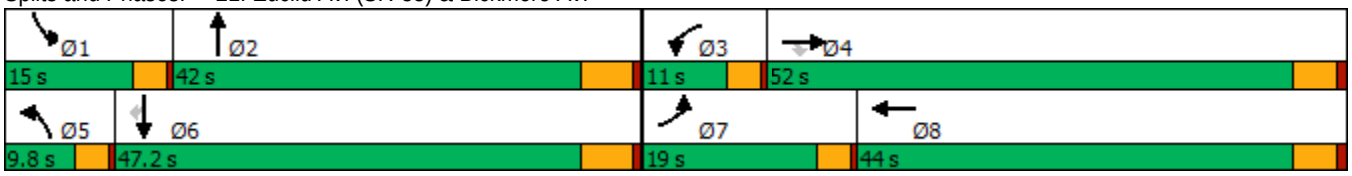
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	36.5	13.4	40.5	13.3	43.2	18.0	35.9
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	16.0	30.5	10.0	45.0	10.0	36.5	14.0	41.0
Max Q Clear Time (g_c+I1), s	18.0	32.5	8.2	31.0	7.7	37.5	16.0	17.7
Green Ext Time (p_c), s	0.0	0.0	0.0	4.8	0.0	0.0	0.0	1.9

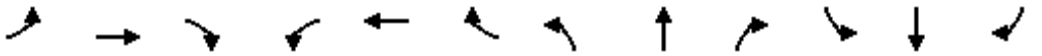
Intersection Summary	
HCM 6th Ctrl Delay	78.7
HCM 6th LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	188	125	117	60	32	46	805	128	957	175
Future Volume (vph)	188	125	117	60	32	46	805	128	957	175
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	19.0	52.0	52.0	11.0	44.0	9.8	42.0	15.0	47.2	47.2
Total Split (%)	15.8%	43.3%	43.3%	9.2%	36.7%	8.2%	35.0%	12.5%	39.3%	39.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	16.0	22.1	22.1	7.1	11.1	6.2	31.4	11.5	38.8	38.8
Actuated g/C Ratio	0.18	0.25	0.25	0.08	0.13	0.07	0.36	0.13	0.44	0.44
v/c Ratio	0.70	0.30	0.27	0.50	0.44	0.44	0.82	0.66	0.69	0.25
Control Delay	51.1	29.8	6.2	57.7	17.3	57.4	33.6	56.4	25.3	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.1	29.8	6.2	57.7	17.3	57.4	33.6	56.4	25.3	5.7
LOS	D	C	A	E	B	E	C	E	C	A
Approach Delay		32.7			31.2		34.8		25.7	
Approach LOS		C			C		C		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 88	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 30.2	Intersection LOS: C
Intersection Capacity Utilization 69.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	125	117	60	32	82	46	805	109	128	957	175
Future Volume (veh/h)	188	125	117	60	32	82	46	805	109	128	957	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	204	136	112	65	35	61	50	875	95	139	1040	158
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	248	349	296	90	57	99	77	1071	116	173	1380	615
Arrive On Green	0.15	0.19	0.19	0.06	0.10	0.10	0.05	0.34	0.34	0.11	0.40	0.40
Sat Flow, veh/h	1619	1800	1525	1619	589	1026	1619	3111	338	1619	3420	1525
Grp Volume(v), veh/h	204	136	112	65	0	96	50	481	489	139	1040	158
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1615	1619	1710	1739	1619	1710	1525
Q Serve(g_s), s	7.1	3.9	3.7	2.3	0.0	3.3	1.8	15.0	15.0	4.9	15.2	4.0
Cycle Q Clear(g_c), s	7.1	3.9	3.7	2.3	0.0	3.3	1.8	15.0	15.0	4.9	15.2	4.0
Prop In Lane	1.00		1.00	1.00		0.64	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	248	349	296	90	0	156	77	589	599	173	1380	615
V/C Ratio(X)	0.82	0.39	0.38	0.72	0.00	0.62	0.65	0.82	0.82	0.80	0.75	0.26
Avail Cap(c_a), veh/h	429	1448	1227	208	0	1078	175	1068	1086	319	2440	1088
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	20.5	20.5	27.1	0.0	25.4	27.4	17.5	17.5	25.5	14.9	11.6
Incr Delay (d2), s/veh	2.6	0.3	0.3	4.0	0.0	1.5	3.4	1.1	1.1	3.3	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	1.5	1.2	0.9	0.0	1.2	0.7	4.6	4.7	1.8	4.3	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.6	20.8	20.8	31.1	0.0	26.8	30.8	18.6	18.5	28.8	15.3	11.7
LnGrp LOS	C	C	C	C	A	C	C	B	B	C	B	B
Approach Vol, veh/h		452			161			1020			1337	
Approach Delay, s/veh		23.4			28.6			19.2			16.3	
Approach LOS		C			C			B			B	

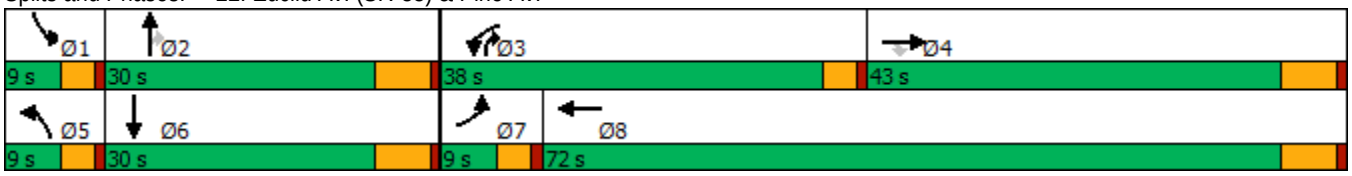
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	25.6	6.8	16.3	6.3	29.1	12.4	10.6
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	11.5	36.5	7.5	47.0	6.3	41.7	15.5	39.0
Max Q Clear Time (g_c+I1), s	6.9	17.0	4.3	5.9	3.8	17.2	9.1	5.3
Green Ext Time (p_c), s	0.1	3.1	0.0	0.6	0.0	4.5	0.1	0.3

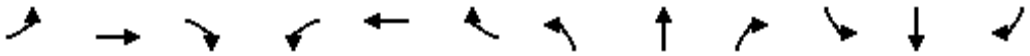
Intersection Summary	
HCM 6th Ctrl Delay	19.0
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	6	494	108	629	79	63	854	1267	148	1008
Future Volume (vph)	6	494	108	629	79	63	854	1267	148	1008
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	38.0	72.0	9.0	30.0	38.0	9.0	30.0
Total Split (%)	7.5%	35.8%	35.8%	31.7%	60.0%	7.5%	25.0%	31.7%	7.5%	25.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.0	35.6	35.6	34.0	71.8	5.0	24.0	64.0	5.0	24.0
Actuated g/C Ratio	0.04	0.30	0.30	0.29	0.61	0.04	0.20	0.54	0.04	0.20
v/c Ratio	0.09	0.93	0.20	0.76	0.15	0.94	1.26	1.47	2.22	1.50
Control Delay	58.3	66.3	3.6	45.7	6.8	152.1	167.5	243.5	623.1	265.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.3	66.3	3.6	45.7	6.8	152.1	167.5	243.5	623.1	265.0
LOS	E	E	A	D	A	F	F	F	F	F
Approach Delay		55.1			38.1		211.2			310.6
Approach LOS		E			D		F			F

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 118.6		
Natural Cycle: 115		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 2.22		
Intersection Signal Delay: 186.9	Intersection LOS: F	
Intersection Capacity Utilization 131.1%	ICU Level of Service H	
Analysis Period (min) 15		

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	494	108	629	79	74	63	854	1267	148	1008	5
Future Volume (veh/h)	6	494	108	629	79	74	63	854	1267	148	1008	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	6	504	0	642	81	74	64	871	876	151	1029	5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	12	551		705	465	425	75	762	704	75	778	4
Arrive On Green	0.01	0.31	0.00	0.24	0.54	0.54	0.05	0.22	0.22	0.05	0.22	0.22
Sat Flow, veh/h	1619	1800	1525	2956	866	791	1619	3420	1525	1619	3490	17
Grp Volume(v), veh/h	6	504	0	642	0	155	64	871	876	151	504	530
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1658	1619	1710	1525	1619	1710	1797
Q Serve(g_s), s	0.4	29.0	0.0	22.7	0.0	5.1	4.2	24.0	24.0	5.0	24.0	24.0
Cycle Q Clear(g_c), s	0.4	29.0	0.0	22.7	0.0	5.1	4.2	24.0	24.0	5.0	24.0	24.0
Prop In Lane	1.00		1.00	1.00		0.48	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	12	551		705	0	890	75	762	704	75	381	401
V/C Ratio(X)	0.49	0.91		0.91	0.00	0.17	0.85	1.14	1.24	2.01	1.32	1.32
Avail Cap(c_a), veh/h	75	619		934	0	1016	75	762	704	75	381	401
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.2	36.0	0.0	39.9	0.0	12.7	51.0	41.8	29.0	51.3	41.8	41.8
Incr Delay (d2), s/veh	10.6	17.7	0.0	9.0	0.0	0.1	54.7	79.4	121.7	497.1	162.4	161.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	14.7	0.0	8.7	0.0	1.8	2.8	17.8	39.9	12.3	26.6	27.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.8	53.7	0.0	48.9	0.0	12.8	105.7	121.2	150.7	548.5	204.3	203.5
LnGrp LOS	E	D		D	A	B	F	F	F	F	F	F
Approach Vol, veh/h		510	A		797			1811			1185	
Approach Delay, s/veh		53.8			41.9			134.9			247.8	
Approach LOS		D			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	30.0	29.7	39.0	9.0	30.0	4.8	63.8
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.0	24.0	34.0	37.0	5.0	24.0	5.0	66.0
Max Q Clear Time (g_c+I1), s	7.0	26.0	24.7	31.0	6.2	26.0	2.4	7.1
Green Ext Time (p_c), s	0.0	0.0	0.9	1.9	0.0	0.0	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	139.2
HCM 6th LOS	F

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	48.7
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	77	544	24	7	354	7	14	105	11	19	91	52
Future Vol, veh/h	77	544	24	7	354	7	14	105	11	19	91	52
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	81	573	25	7	373	7	15	111	12	20	96	55
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	80.9	20.2	13.3	13.7
HCM LOS	F	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	12%	2%	12%
Vol Thru, %	81%	84%	96%	56%
Vol Right, %	8%	4%	2%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	130	645	368	162
LT Vol	14	77	7	19
Through Vol	105	544	354	91
RT Vol	11	24	7	52
Lane Flow Rate	137	679	387	171
Geometry Grp	1	1	1	1
Degree of Util (X)	0.272	1.074	0.65	0.328
Departure Headway (Hd)	7.506	5.697	6.274	7.235
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	482	631	581	500
Service Time	5.506	3.783	4.274	5.235
HCM Lane V/C Ratio	0.284	1.076	0.666	0.342
HCM Control Delay	13.3	80.9	20.2	13.7
HCM Lane LOS	B	F	C	B
HCM 95th-tile Q	1.1	19	4.7	1.4

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	19	287	5	2	79	10	6	96	8	23	73	15
Future Vol, veh/h	19	287	5	2	79	10	6	96	8	23	73	15
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	22	330	6	2	91	11	7	110	9	26	84	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.8	8.8	9.4	9.4
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	6%	2%	21%
Vol Thru, %	87%	92%	87%	66%
Vol Right, %	7%	2%	11%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	110	311	91	111
LT Vol	6	19	2	23
Through Vol	96	287	79	73
RT Vol	8	5	10	15
Lane Flow Rate	126	357	105	128
Geometry Grp	1	1	1	1
Degree of Util (X)	0.181	0.464	0.143	0.182
Departure Headway (Hd)	5.14	4.677	4.921	5.132
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	692	765	722	693
Service Time	3.222	2.738	3.001	3.214
HCM Lane V/C Ratio	0.182	0.467	0.145	0.185
HCM Control Delay	9.4	11.8	8.8	9.4
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.7	2.5	0.5	0.7

Intersection	
Int Delay, s/veh	12.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	99	867	842	45	66	74
Future Vol, veh/h	99	867	842	45	66	74
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	105	922	896	48	70	79

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	944	0	-	0	2052	920
Stage 1	-	-	-	-	920	-
Stage 2	-	-	-	-	1132	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	735	-	-	-	109	406
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	311	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	735	-	-	-	77	406
Mov Cap-2 Maneuver	-	-	-	-	77	-
Stage 1	-	-	-	-	277	-
Stage 2	-	-	-	-	311	-

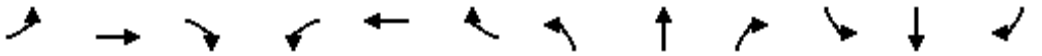
Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	172.3
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	735	-	-	-	135
HCM Lane V/C Ratio	0.143	-	-	-	1.103
HCM Control Delay (s)	10.7	0	-	-	172.3
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0.5	-	-	-	8.4

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	369	245	968	1080	716
Future Volume (vph)	0	369	245	968	1080	716
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	38.0	38.0	28.0	82.0	54.0	54.0
Total Split (%)	31.7%	31.7%	23.3%	68.3%	45.0%	45.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	27.2	27.2	20.2	81.2	56.4	56.4
Actuated g/C Ratio	0.23	0.23	0.17	0.68	0.47	0.47
v/c Ratio	0.82	0.82	0.84	0.41	0.66	0.67
Control Delay	59.8	42.4	48.4	12.5	28.6	6.3
Queue Delay	3.5	0.0	0.0	0.6	0.1	0.0
Total Delay	63.3	42.4	48.4	13.1	28.6	6.3
LOS	E	D	D	B	C	A
Approach Delay	52.1			20.2	19.7	
Approach LOS	D			C	B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 25.9	Intersection LOS: C
Intersection Capacity Utilization 97.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	321	0	369	245	968	0	0	1080	716
Future Volume (veh/h)	0	0	0	321	0	369	245	968	0	0	1080	716
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				334	0	204	255	1008	0	0	1125	571
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				380	0	338	278	2504	0	0	1810	790
Arrive On Green				0.21	0.00	0.21	0.31	1.00	0.00	0.00	0.50	0.50
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1575
Grp Volume(v), veh/h				334	0	204	255	1008	0	0	1125	571
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1575
Q Serve(g_s), s				21.5	0.0	13.8	16.3	0.0	0.0	0.0	27.1	34.0
Cycle Q Clear(g_c), s				21.5	0.0	13.8	16.3	0.0	0.0	0.0	27.1	34.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				380	0	338	278	2504	0	0	1810	790
V/C Ratio(X)				0.88	0.00	0.60	0.92	0.40	0.00	0.00	0.62	0.72
Avail Cap(c_a), veh/h				486	0	432	353	2504	0	0	1810	790
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				45.9	0.0	42.9	40.8	0.0	0.0	0.0	21.7	23.4
Incr Delay (d2), s/veh				14.1	0.0	1.7	2.9	0.0	0.0	0.0	1.6	5.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				10.8	0.0	5.5	6.0	0.0	0.0	0.0	11.1	13.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				60.0	0.0	44.6	43.7	0.0	0.0	0.0	23.3	29.1
LnGrp LOS				E	A	D	D	A	A	A	C	C
Approach Vol, veh/h					538			1263			1696	
Approach Delay, s/veh					54.2			8.9			25.2	
Approach LOS					D			A			C	

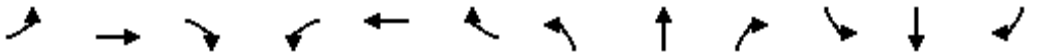
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		89.0			23.1	66.0		31.0				
Change Period (Y+Rc), s		5.8			4.6	5.8		5.8				
Max Green Setting (Gmax), s		76.2			23.4	48.2		32.2				
Max Q Clear Time (g_c+I1), s		2.0			18.3	36.0		23.5				
Green Ext Time (p_c), s		8.3			0.2	7.3		1.7				

Intersection Summary		
HCM 6th Ctrl Delay	23.8	
HCM 6th LOS	C	

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	370	756	470	932
Future Volume (vph)	0	370	756	470	932
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	38.0	38.0	44.0	38.0	82.0
Total Split (%)	31.7%	31.7%	36.7%	31.7%	68.3%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	32.2	32.2	38.2	33.4	76.2
Actuated g/C Ratio	0.27	0.27	0.32	0.28	0.64
v/c Ratio	1.01	0.75	1.06	1.01	0.44
Control Delay	88.5	35.9	81.0	94.3	8.5
Queue Delay	0.0	0.0	0.0	7.1	0.2
Total Delay	88.5	35.9	81.0	101.4	8.7
LOS	F	D	F	F	A
Approach Delay	64.9		81.0		39.7
Approach LOS	E		F		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 59.7	Intersection LOS: E
Intersection Capacity Utilization 97.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	457	0	370	0	0	0	0	756	353	470	932	0
Future Volume (veh/h)	457	0	370	0	0	0	0	756	353	470	932	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	491	0	311				0	813	297	505	1002	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	486	0	432				0	817	298	504	2292	0
Arrive On Green	0.27	0.00	0.27				0.00	0.32	0.32	0.56	1.00	0.00
Sat Flow, veh/h	1810	0	1610				0	2663	937	1810	3705	0
Grp Volume(v), veh/h	491	0	311				0	571	539	505	1002	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1699	1810	1805	0
Q Serve(g_s), s	32.2	0.0	21.0				0.0	37.9	38.0	33.4	0.0	0.0
Cycle Q Clear(g_c), s	32.2	0.0	21.0				0.0	37.9	38.0	33.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.55	1.00		0.00
Lane Grp Cap(c), veh/h	486	0	432				0	575	541	504	2292	0
V/C Ratio(X)	1.01	0.00	0.72				0.00	0.99	1.00	1.00	0.44	0.00
Avail Cap(c_a), veh/h	486	0	432				0	575	541	504	2292	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.69	0.69	0.70	0.70	0.00
Uniform Delay (d), s/veh	43.9	0.0	39.8				0.0	40.8	40.8	26.6	0.0	0.0
Incr Delay (d2), s/veh	43.7	0.0	5.7				0.0	29.8	31.2	34.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.7	0.0	8.7				0.0	20.7	19.8	13.5	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.6	0.0	45.5				0.0	70.6	72.0	60.8	0.4	0.0
LnGrp LOS	F	A	D				A	E	E	F	A	A
Approach Vol, veh/h		802						1110			1507	
Approach Delay, s/veh		71.3						71.3			20.7	
Approach LOS		E						E			C	

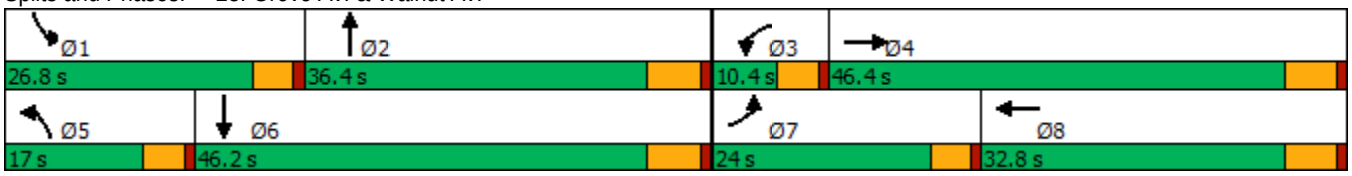
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	38.0	44.0		38.0		82.0						
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8						
Max Green Setting (Gmax), s	33.4	38.2		32.2		76.2						
Max Q Clear Time (g_c+I1), s	35.4	40.0		34.2		2.0						
Green Ext Time (p_c), s	0.0	0.0		0.0		8.2						

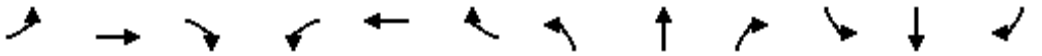
Intersection Summary												
HCM 6th Ctrl Delay			49.0									
HCM 6th LOS			D									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	164	319	19	172	90	694	189	778
Future Volume (vph)	164	319	19	172	90	694	189	778
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	24.0	46.4	10.4	32.8	17.0	36.4	26.8	46.2
Total Split (%)	20.0%	38.7%	8.7%	27.3%	14.2%	30.3%	22.3%	38.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	14.2	29.1	5.5	13.8	9.6	33.5	15.8	42.2
Actuated g/C Ratio	0.14	0.30	0.06	0.14	0.10	0.34	0.16	0.43
v/c Ratio	0.73	0.42	0.22	0.57	0.60	0.65	0.76	0.70
Control Delay	61.1	28.1	56.2	26.2	61.9	33.2	60.5	28.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.1	28.1	56.2	26.2	61.9	33.2	60.5	28.6
LOS	E	C	E	C	E	C	E	C
Approach Delay		37.6		27.9		36.4		33.8
Approach LOS		D		C		D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 98.5	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 34.6	Intersection LOS: C
Intersection Capacity Utilization 72.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	319	87	19	172	136	90	694	27	189	778	186
Future Volume (veh/h)	164	319	87	19	172	136	90	694	27	189	778	186
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	171	332	76	20	179	107	94	723	18	197	810	126
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	203	635	144	35	263	149	117	1286	32	230	1325	206
Arrive On Green	0.13	0.23	0.23	0.02	0.13	0.13	0.07	0.38	0.38	0.14	0.45	0.45
Sat Flow, veh/h	1619	2771	626	1619	2090	1182	1619	3410	85	1619	2966	461
Grp Volume(v), veh/h	171	203	205	20	145	141	94	362	379	197	467	469
Grp Sat Flow(s),veh/h/ln	1619	1710	1687	1619	1710	1562	1619	1710	1785	1619	1710	1717
Q Serve(g_s), s	9.3	9.4	9.6	1.1	7.3	7.9	5.2	15.2	15.2	10.8	18.8	18.8
Cycle Q Clear(g_c), s	9.3	9.4	9.6	1.1	7.3	7.9	5.2	15.2	15.2	10.8	18.8	18.8
Prop In Lane	1.00		0.37	1.00		0.76	1.00		0.05	1.00		0.27
Lane Grp Cap(c), veh/h	203	392	387	35	216	197	117	645	673	230	764	767
V/C Ratio(X)	0.84	0.52	0.53	0.57	0.67	0.72	0.80	0.56	0.56	0.86	0.61	0.61
Avail Cap(c_a), veh/h	347	768	757	104	510	466	222	645	673	397	764	767
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.7	30.5	30.6	43.8	37.7	38.0	41.3	22.3	22.3	37.9	19.0	19.0
Incr Delay (d2), s/veh	3.7	1.1	1.1	5.2	3.6	4.9	4.8	3.5	3.4	3.6	3.6	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	3.8	3.8	0.5	3.1	3.1	2.1	6.2	6.4	4.3	7.4	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.4	31.5	31.7	49.0	41.3	42.8	46.1	25.8	25.7	41.5	22.7	22.7
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		579			306			835			1133	
Approach Delay, s/veh		34.8			42.5			28.0			25.9	
Approach LOS		C			D			C			C	

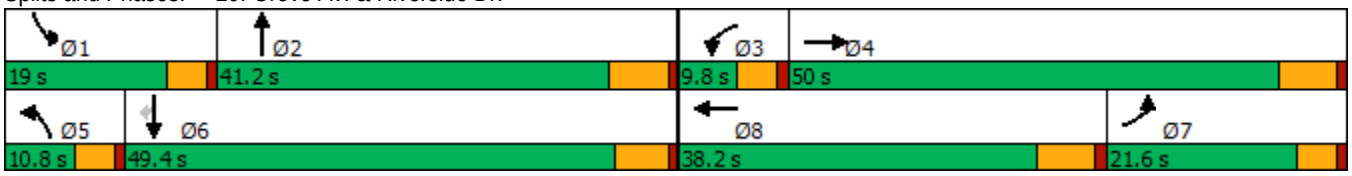
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	39.9	6.6	26.5	11.1	46.2	15.9	17.2
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	22.2	30.6	5.8	40.6	12.4	40.4	19.4	27.0
Max Q Clear Time (g_c+I1), s	12.8	17.2	3.1	11.6	7.2	20.8	11.3	9.9
Green Ext Time (p_c), s	0.2	3.4	0.0	2.2	0.0	5.4	0.1	1.3

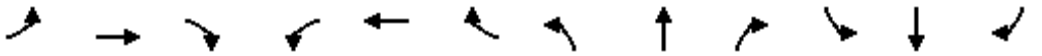
Intersection Summary	
HCM 6th Ctrl Delay	30.1
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	180	636	46	597	31	486	169	404	189
Future Volume (vph)	180	636	46	597	31	486	169	404	189
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	21.6	50.0	9.8	38.2	10.8	41.2	19.0	49.4	49.4
Total Split (%)	18.0%	41.7%	8.2%	31.8%	9.0%	34.3%	15.8%	41.2%	41.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	17.4	43.9	5.2	29.6	5.8	35.0	14.1	47.8	47.8
Actuated g/C Ratio	0.15	0.37	0.04	0.25	0.05	0.30	0.12	0.41	0.41
v/c Ratio	0.79	1.03	0.69	0.87	0.40	1.13	0.91	0.58	0.27
Control Delay	72.9	80.2	100.0	53.5	70.2	117.7	97.9	32.8	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.9	80.2	100.0	53.5	70.2	117.7	97.9	32.8	4.6
LOS	E	F	F	D	E	F	F	C	A
Approach Delay		78.6		56.3		115.3		40.2	
Approach LOS		E		E		F		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.7	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 70.5	Intersection LOS: E
Intersection Capacity Utilization 102.0%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	636	24	46	597	115	31	486	86	169	404	189
Future Volume (veh/h)	180	636	24	46	597	115	31	486	86	169	404	189
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	188	662	24	48	622	74	32	506	73	176	421	140
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	261	634	23	60	707	84	44	452	65	196	697	590
Arrive On Green	0.16	0.37	0.37	0.04	0.23	0.23	0.03	0.29	0.29	0.12	0.39	0.39
Sat Flow, veh/h	1619	1725	63	1619	3078	366	1619	1538	222	1619	1800	1525
Grp Volume(v), veh/h	188	0	686	48	345	351	32	0	579	176	421	140
Grp Sat Flow(s),veh/h/ln	1619	0	1787	1619	1710	1734	1619	0	1760	1619	1800	1525
Q Serve(g_s), s	13.1	0.0	43.8	3.5	23.2	23.3	2.3	0.0	35.0	12.8	22.3	4.2
Cycle Q Clear(g_c), s	13.1	0.0	43.8	3.5	23.2	23.3	2.3	0.0	35.0	12.8	22.3	4.2
Prop In Lane	1.00		0.03	1.00		0.21	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	261	0	657	60	393	398	44	0	517	196	697	590
V/C Ratio(X)	0.72	0.00	1.04	0.81	0.88	0.88	0.72	0.00	1.12	0.90	0.60	0.24
Avail Cap(c_a), veh/h	261	0	657	71	459	465	84	0	517	196	697	590
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.5	0.0	37.7	57.0	44.3	44.3	57.5	0.0	42.1	51.7	29.2	7.9
Incr Delay (d2), s/veh	8.2	0.0	47.3	36.4	15.7	15.8	7.9	0.0	76.9	37.0	3.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	26.4	2.0	11.1	11.3	1.0	0.0	25.4	7.1	9.9	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.6	0.0	85.0	93.4	60.0	60.1	65.4	0.0	119.0	88.7	33.1	8.9
LnGrp LOS	E	A	F	F	E	E	E	A	F	F	C	A
Approach Vol, veh/h		874			744			611			737	
Approach Delay, s/veh		78.7			62.2			116.2			41.8	
Approach LOS		E			E			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	41.2	9.0	50.0	7.9	52.3	25.4	33.6
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	14.4	35.0	5.2	43.8	6.2	* 44	17.0	* 32
Max Q Clear Time (g_c+I1), s	14.8	37.0	5.5	45.8	4.3	24.3	15.1	25.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.7	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	73.1
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	61.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	83	198	28	10	43	42	39	513	21	39	405	24
Future Vol, veh/h	83	198	28	10	43	42	39	513	21	39	405	24
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	86	206	29	10	45	44	41	534	22	41	422	25
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	24.7	14.2	101.1	46.5
HCM LOS	C	B	F	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	27%	11%	8%
Vol Thru, %	90%	64%	45%	87%
Vol Right, %	4%	9%	44%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	573	309	95	468
LT Vol	39	83	10	39
Through Vol	513	198	43	405
RT Vol	21	28	42	24
Lane Flow Rate	597	322	99	488
Geometry Grp	1	1	1	1
Degree of Util (X)	1.12	0.661	0.228	0.906
Departure Headway (Hd)	6.757	7.783	8.692	7.053
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	543	467	416	517
Service Time	4.767	5.783	6.692	5.053
HCM Lane V/C Ratio	1.099	0.69	0.238	0.944
HCM Control Delay	101.1	24.7	14.2	46.5
HCM Lane LOS	F	C	B	E
HCM 95th-tile Q	19.5	4.7	0.9	10.5

Intersection	
Intersection Delay, s/veh	53.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	108	155	98	2	50	41	28	444	34	58	307	59
Future Vol, veh/h	108	155	98	2	50	41	28	444	34	58	307	59
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	116	167	105	2	54	44	30	477	37	62	330	63
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	32.9	14.5	83.3	43.9
HCM LOS	D	B	F	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	30%	2%	14%
Vol Thru, %	88%	43%	54%	72%
Vol Right, %	7%	27%	44%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	506	361	93	424
LT Vol	28	108	2	58
Through Vol	444	155	50	307
RT Vol	34	98	41	59
Lane Flow Rate	544	388	100	456
Geometry Grp	1	1	1	1
Degree of Util (X)	1.061	0.784	0.237	0.884
Departure Headway (Hd)	7.023	7.569	8.815	7.26
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	522	481	410	502
Service Time	5.03	5.569	6.815	5.26
HCM Lane V/C Ratio	1.042	0.807	0.244	0.908
HCM Control Delay	83.3	32.9	14.5	43.9
HCM Lane LOS	F	D	B	E
HCM 95th-tile Q	16.4	7	0.9	9.7

Intersection	
Intersection Delay, s/veh	408.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	484	23	165	300	56	52	396	401	144	249	24
Future Vol, veh/h	48	484	23	165	300	56	52	396	401	144	249	24
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	52	520	25	177	323	60	56	426	431	155	268	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	323.9	285.1	652.9	177.3
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	9%	32%	35%
Vol Thru, %	47%	87%	58%	60%
Vol Right, %	47%	4%	11%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	849	555	521	417
LT Vol	52	48	165	144
Through Vol	396	484	300	249
RT Vol	401	23	56	24
Lane Flow Rate	913	597	560	448
Geometry Grp	1	1	1	1
Degree of Util (X)	2.365	1.59	1.493	1.2
Departure Headway (Hd)	13.351	16.533	17.035	18.854
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	283	227	218	197
Service Time	11.351	14.533	15.035	16.854
HCM Lane V/C Ratio	3.226	2.63	2.569	2.274
HCM Control Delay	652.9	323.9	285.1	177.3
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	50.7	22	19.2	12

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	156	93	76	6	19	38	15	699	5	23	361	51
Future Vol, veh/h	156	93	76	6	19	38	15	699	5	23	361	51
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	25	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	173	103	84	7	21	42	17	2796	6	26	401	57

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3347	3318	430	3408	3343	2799	458	0	0	2802	0	0
Stage 1	482	482	-	2833	2833	-	-	-	-	-	-	-
Stage 2	2865	2836	-	575	510	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 5	~ 9	629	~ 4	~ 8	~ 24	1114	-	-	141	-	-
Stage 1	569	557	-	25	39	-	-	-	-	-	-	-
Stage 2	~ 24	~ 39	-	507	541	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 7	629	-	~ 6	~ 24	1114	-	-	141	-	-
Mov Cap-2 Maneuver	-	~ 7	-	-	~ 6	-	-	-	-	-	-	-
Stage 1	569	418	-	25	39	-	-	-	-	-	-	-
Stage 2	-	~ 39	-	248	406	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			0	1.9
HCM LOS	-	-		

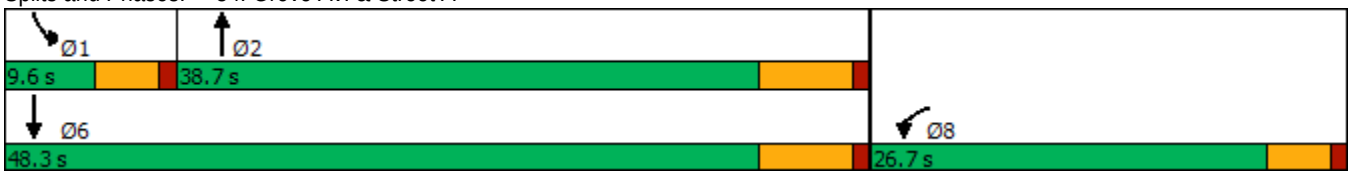
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1114	-	-	-	-	141	-	-
HCM Lane V/C Ratio	0.015	-	-	-	-	0.181	-	-
HCM Control Delay (s)	8.3	0	-	-	-	36.1	0	-
HCM Lane LOS	A	A	-	-	-	E	A	-
HCM 95th %tile Q(veh)	0	-	-	-	-	0.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	109	669	19	423
Future Volume (vph)	109	669	19	423
Turn Type	Prot	NA	Prot	NA
Protected Phases	8	2	1	6
Permitted Phases				
Detector Phase	8	2	1	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	5.0	10.0
Minimum Split (s)	26.6	23.2	9.6	16.2
Total Split (s)	26.7	38.7	9.6	48.3
Total Split (%)	35.6%	51.6%	12.8%	64.4%
Yellow Time (s)	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2
Lead/Lag		Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	
Recall Mode	None	Min	None	Min
Act Effct Green (s)	12.7	36.0	5.1	37.6
Actuated g/C Ratio	0.21	0.59	0.08	0.61
v/c Ratio	0.46	0.73	0.16	0.42
Control Delay	20.9	17.9	31.0	8.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	20.9	17.9	31.0	8.3
LOS	C	B	C	A
Approach Delay	20.9	17.9		9.3
Approach LOS	C	B		A

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 61.2	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 15.4	Intersection LOS: B
Intersection Capacity Utilization 58.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 34: Grove Av. & Street A



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	109	49	669	42	19	423
Future Volume (veh/h)	109	49	669	42	19	423
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	118	53	727	46	21	460
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	202	91	830	53	41	1099
Arrive On Green	0.18	0.18	0.50	0.50	0.03	0.61
Sat Flow, veh/h	1133	509	1675	106	1619	1800
Grp Volume(v), veh/h	172	0	0	773	21	460
Grp Sat Flow(s),veh/h/ln	1652	0	0	1781	1619	1800
Q Serve(g_s), s	4.9	0.0	0.0	19.8	0.7	6.8
Cycle Q Clear(g_c), s	4.9	0.0	0.0	19.8	0.7	6.8
Prop In Lane	0.69	0.31		0.06	1.00	
Lane Grp Cap(c), veh/h	295	0	0	883	41	1099
V/C Ratio(X)	0.58	0.00	0.00	0.88	0.51	0.42
Avail Cap(c_a), veh/h	713	0	0	1130	158	1479
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.3	0.0	0.0	11.5	24.7	5.2
Incr Delay (d2), s/veh	1.8	0.0	0.0	6.5	3.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.0	6.2	0.3	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.1	0.0	0.0	18.0	28.3	5.5
LnGrp LOS	C	A	A	B	C	A
Approach Vol, veh/h	172		773			481
Approach Delay, s/veh	21.1		18.0			6.5
Approach LOS	C		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.9	31.6			37.5	13.7
Change Period (Y+Rc), s	4.6	6.2			6.2	4.6
Max Green Setting (Gmax), s	5.0	32.5			42.1	22.1
Max Q Clear Time (g_c+I1), s	2.7	21.8			8.8	6.9
Green Ext Time (p_c), s	0.0	3.6			2.6	0.4

Intersection Summary	
HCM 6th Ctrl Delay	14.5
HCM 6th LOS	B

Intersection	
Intersection Delay, s/veh	465.9
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	220	722	724	492	373	159
Future Vol, veh/h	220	722	724	492	373	159
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	229	752	754	513	389	166
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	444.4	644.3	96.3
HCM LOS	F	F	F

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	0%	70%
Vol Thru, %	77%	60%	0%
Vol Right, %	0%	40%	30%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	942	1216	532
LT Vol	220	0	373
Through Vol	722	724	0
RT Vol	0	492	159
Lane Flow Rate	981	1267	554
Geometry Grp	1	1	1
Degree of Util (X)	1.92	2.376	1.071
Departure Headway (Hd)	9.126	8.234	9.129
Convergence, Y/N	Yes	Yes	Yes
Cap	412	456	405
Service Time	7.126	6.234	7.129
HCM Lane V/C Ratio	2.381	2.779	1.368
HCM Control Delay	444.4	644.3	96.3
HCM Lane LOS	F	F	F
HCM 95th-tile Q	50.9	80.1	14.5

Intersection	
Int Delay, s/veh	37

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	23	991	1	16	492	33	3	22	55	72	15	11
Future Vol, veh/h	23	991	1	16	492	33	3	22	55	72	15	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	24	1043	1	17	518	35	3	23	58	76	16	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	553	0	0	1044	0	0	1676	1679	1044	1702	1662	536
Stage 1	-	-	-	-	-	-	1092	1092	-	570	570	-
Stage 2	-	-	-	-	-	-	584	587	-	1132	1092	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1027	-	-	674	-	-	76	96	281	~ 73	98	549
Stage 1	-	-	-	-	-	-	262	293	-	510	509	-
Stage 2	-	-	-	-	-	-	501	500	-	249	293	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1027	-	-	674	-	-	60	87	281	~ 43	89	549
Mov Cap-2 Maneuver	-	-	-	-	-	-	60	87	-	~ 43	89	-
Stage 1	-	-	-	-	-	-	247	277	-	481	490	-
Stage 2	-	-	-	-	-	-	457	482	-	171	277	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	50.1	$ 609.6
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	160	1027	-	-	674	-	-	53
HCM Lane V/C Ratio	0.526	0.024	-	-	0.025	-	-	1.946
HCM Control Delay (s)	50.1	8.6	0	-	10.5	0	-	$ 609.6
HCM Lane LOS	F	A	A	-	B	A	-	F
HCM 95th %tile Q(veh)	2.6	0.1	-	-	0.1	-	-	10.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	44	80	0	0	60	34	0	0	0	23	0	3
Future Vol, veh/h	44	80	0	0	60	34	0	0	0	23	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	48	87	0	0	65	37	0	0	0	25	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	102	0	0	87	0	0	268	285	87	267	267	84
Stage 1	-	-	-	-	-	-	183	183	-	84	84	-
Stage 2	-	-	-	-	-	-	85	102	-	183	183	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1503	-	-	1522	-	-	689	628	977	690	642	981
Stage 1	-	-	-	-	-	-	823	752	-	929	829	-
Stage 2	-	-	-	-	-	-	928	815	-	823	752	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1503	-	-	1522	-	-	669	607	977	672	620	981
Mov Cap-2 Maneuver	-	-	-	-	-	-	669	607	-	672	620	-
Stage 1	-	-	-	-	-	-	795	726	-	897	829	-
Stage 2	-	-	-	-	-	-	925	815	-	795	726	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.7	0	0	10.4
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1503	-	-	1522	-	-	697
HCM Lane V/C Ratio	-	0.032	-	-	-	-	-	0.041
HCM Control Delay (s)	0	7.5	0	-	0	-	-	10.4
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	100	873	124	95	840	21	101	5	139	55	14	258
Future Vol, veh/h	100	873	124	95	840	21	101	5	139	55	14	258
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	25	91	91	91	91	91	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	110	959	136	104	923	84	111	5	153	60	15	266

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1007	0	0	1095	0	0	2493	2394	959	2499	2488	965
Stage 1	-	-	-	-	-	-	1179	1179	-	1173	1173	-
Stage 2	-	-	-	-	-	-	1314	1215	-	1326	1315	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	696	-	-	645	-	-	~ 20	34	314	~ 20	30	312
Stage 1	-	-	-	-	-	-	234	267	-	236	268	-
Stage 2	-	-	-	-	-	-	197	256	-	194	230	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	696	-	-	645	-	-	~ 2	24	314	~ 8	21	312
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ -148	75	-	~ -25	66	-
Stage 1	-	-	-	-	-	-	197	225	-	199	225	-
Stage 2	-	-	-	-	-	-	~ 23	215	-	82	194	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	1.1	2.9	
HCM LOS			A	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	+	696	-	-	645	-	-	+
HCM Lane V/C Ratio	-	0.158	-	-	0.162	-	-	-
HCM Control Delay (s)	2.9	11.1	-	-	11.7	-	-	-
HCM Lane LOS	A	B	-	-	B	-	-	-
HCM 95th %tile Q(veh)	-	0.6	-	-	0.6	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	51	997	19	11	783	18	41	0	20	48	0	132
Future Vol, veh/h	51	997	19	11	783	18	41	0	20	48	0	132
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	58	1133	22	13	890	20	47	0	23	55	0	150

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	910	0	0	1156	0	0	2262	2197	579	1609	2198	900
Stage 1	-	-	-	-	-	-	1261	1261	-	926	926	-
Stage 2	-	-	-	-	-	-	1001	936	-	683	1272	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	757	-	-	612	-	-	~ 26	46	463	78	45	340
Stage 1	-	-	-	-	-	-	183	244	-	325	350	-
Stage 2	-	-	-	-	-	-	295	346	-	410	241	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	757	-	-	611	-	-	~ 13	42	463	69	41	340
Mov Cap-2 Maneuver	-	-	-	-	-	-	64	133	-	178	136	-
Stage 1	-	-	-	-	-	-	169	225	-	300	343	-
Stage 2	-	-	-	-	-	-	161	339	-	360	222	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	124.7	48.7
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	89	757	-	-	611	-	-	274
HCM Lane V/C Ratio	0.779	0.077	-	-	0.02	-	-	0.747
HCM Control Delay (s)	124.7	10.2	-	-	11	-	-	48.7
HCM Lane LOS	F	B	-	-	B	-	-	E
HCM 95th %tile Q(veh)	4	0.2	-	-	0.1	-	-	5.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	8.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	49	1015	1	56	628	26	58	5	67	68	14	126
Future Vol, veh/h	49	1015	1	56	628	26	58	5	67	68	14	126
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	200	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	54	1128	1	62	698	29	64	6	74	76	16	140

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	727	0	0	1130	0	0	2153	2089	566	1512	2075	713
Stage 1	-	-	-	-	-	-	1238	1238	-	837	837	-
Stage 2	-	-	-	-	-	-	915	851	-	675	1238	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	886	-	-	626	-	-	~ 31	53	473	92	54	435
Stage 1	-	-	-	-	-	-	189	250	-	364	385	-
Stage 2	-	-	-	-	-	-	329	379	-	415	250	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	886	-	-	625	-	-	~ 17	45	473	~ 66	46	435
Mov Cap-2 Maneuver	-	-	-	-	-	-	78	138	-	164	124	-
Stage 1	-	-	-	-	-	-	177	235	-	342	347	-
Stage 2	-	-	-	-	-	-	192	341	-	321	235	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.9	75.3	30.3
HCM LOS			F	D

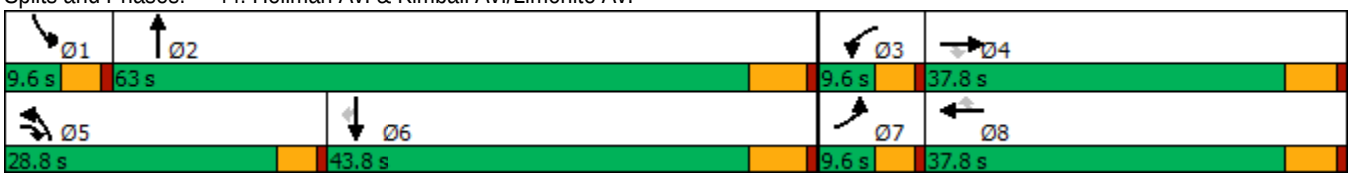
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	78	405	886	-	-	625	-	-	164	348
HCM Lane V/C Ratio	0.826	0.198	0.061	-	-	0.1	-	-	0.461	0.447
HCM Control Delay (s)	148.8	16.1	9.3	-	-	11.4	-	-	44.4	23.4
HCM Lane LOS	F	C	A	-	-	B	-	-	E	C
HCM 95th %tile Q(veh)	4.1	0.7	0.2	-	-	0.3	-	-	2.1	2.2

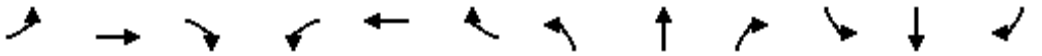
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	26	4	841	6	9	289	80	79	129	
Future Volume (vph)	26	4	841	6	9	289	80	79	129	
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	NA	Perm	
Protected Phases	7	4	5	3	8	5	2	6		1
Permitted Phases			4						6	
Detector Phase	7	4	5	3	8	5	2	6	6	
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	10.0	5.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	9.6	43.2	43.2	43.2	9.6
Total Split (s)	9.6	37.8	28.8	9.6	37.8	28.8	63.0	43.8	43.8	9.6
Total Split (%)	8.0%	31.5%	24.0%	8.0%	31.5%	24.0%	52.5%	36.5%	36.5%	8%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	5.2	5.2	5.2	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	4.6	6.2	6.2	6.2	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	None	None	Max	Max	Min	Min	None
Act Effct Green (s)	6.5	13.5	33.7	5.3	13.5	25.7	66.1	30.9	30.9	
Actuated g/C Ratio	0.08	0.17	0.44	0.07	0.17	0.33	0.85	0.40	0.40	
v/c Ratio	0.20	0.01	0.79	0.03	0.02	0.57	0.03	0.06	0.19	
Control Delay	44.7	30.5	8.4	44.5	30.1	31.6	5.6	19.5	4.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	44.7	30.5	8.4	44.5	30.1	31.6	5.6	19.5	4.4	
LOS	D	C	A	D	C	C	A	B	A	
Approach Delay		9.5			35.9		25.8	10.1		
Approach LOS		A			D		C	B		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 77.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 14.0	Intersection LOS: B
Intersection Capacity Utilization 80.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	4	841	6	9	0	289	80	2	0	79	129
Future Volume (veh/h)	26	4	841	6	9	0	289	80	2	0	79	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	27	4	885	6	9	0	304	84	2	0	83	136
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	42	542	807	23	968	432	369	1826	43	2	902	402
Arrive On Green	0.03	0.30	0.30	0.01	0.28	0.00	0.23	0.53	0.53	0.00	0.26	0.26
Sat Flow, veh/h	1619	1800	1525	2956	3420	1525	1619	3414	81	1619	3420	1525
Grp Volume(v), veh/h	27	4	885	6	9	0	304	42	44	0	83	136
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	1710	1525	1619	1710	1785	1619	1710	1525
Q Serve(g_s), s	1.8	0.2	32.0	0.2	0.2	0.0	19.0	1.2	1.3	0.0	1.9	7.7
Cycle Q Clear(g_c), s	1.8	0.2	32.0	0.2	0.2	0.0	19.0	1.2	1.3	0.0	1.9	7.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	42	542	807	23	968	432	369	914	955	2	902	402
V/C Ratio(X)	0.65	0.01	1.10	0.27	0.01	0.00	0.82	0.05	0.05	0.00	0.09	0.34
Avail Cap(c_a), veh/h	76	542	807	139	1030	460	369	914	955	76	1211	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	51.3	26.0	25.0	52.4	27.4	0.0	39.0	11.8	11.8	0.0	29.5	31.6
Incr Delay (d2), s/veh	6.0	0.0	61.3	2.3	0.0	0.0	18.5	0.1	0.1	0.0	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.1	31.5	0.1	0.1	0.0	9.0	0.5	0.5	0.0	0.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.3	26.0	86.3	54.7	27.4	0.0	57.5	11.9	11.9	0.0	29.6	32.1
LnGrp LOS	E	C	F	D	C	A	E	B	B	A	C	C
Approach Vol, veh/h		916			15			390			219	
Approach Delay, s/veh		85.2			38.3			47.4			31.1	
Approach LOS		F			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	63.0	5.4	37.8	28.8	34.2	7.3	35.9
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	5.0	56.8	5.0	32.0	24.2	37.6	5.0	32.0
Max Q Clear Time (g_c+I1), s	0.0	3.3	2.2	34.0	21.0	9.7	3.8	2.2
Green Ext Time (p_c), s	0.0	0.4	0.0	0.0	0.2	0.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	67.5
HCM 6th LOS	E

Intersection	
Intersection Delay, s/veh	440.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	1101	24	44	609	24	45	5	148	100	6	58
Future Vol, veh/h	26	1101	24	44	609	24	45	5	148	100	6	58
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	29	1223	27	49	677	27	50	6	164	111	7	64
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

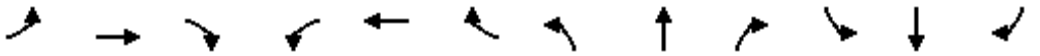
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	669.3	273.7	24.2	23.5
HCM LOS	F	F	C	C

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	23%	100%	0%	0%	100%	0%	61%
Vol Thru, %	3%	0%	100%	0%	0%	96%	4%
Vol Right, %	75%	0%	0%	100%	0%	4%	35%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	198	26	1101	24	44	633	164
LT Vol	45	26	0	0	44	0	100
Through Vol	5	0	1101	0	0	609	6
RT Vol	148	0	0	24	0	24	58
Lane Flow Rate	220	29	1223	27	49	703	182
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.496	0.063	2.5	0.049	0.116	1.56	0.44
Departure Headway (Hd)	11.067	8.698	8.179	7.451	11.075	10.517	11.806
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	328	414	453	483	326	352	308
Service Time	8.767	6.398	5.879	5.151	8.775	8.217	9.506
HCM Lane V/C Ratio	0.671	0.07	2.7	0.056	0.15	1.997	0.591
HCM Control Delay	24.2	12	699.2	10.5	15.2	291.7	23.5
HCM Lane LOS	C	B	F	B	C	F	C
HCM 95th-tile Q	2.6	0.2	87.3	0.2	0.4	30.5	2.1

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	6	284	451	554	1184
Future Volume (vph)	6	284	451	554	1184
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (%)	32.2%	32.2%	31.1%	67.8%	36.7%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	23.0	23.0	24.0	55.2	27.2
Actuated g/C Ratio	0.26	0.26	0.27	0.61	0.30
v/c Ratio	1.11	0.47	0.98	0.18	0.89
Control Delay	110.5	6.1	76.2	20.3	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	110.5	6.1	76.2	20.3	34.8
LOS	F	A	E	C	C
Approach Delay	72.4			45.4	34.8
Approach LOS	E			D	C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 46.3	Intersection LOS: D
Intersection Capacity Utilization 90.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	489	6	284	451	554	0	0	1184	489
Future Volume (veh/h)	0	0	0	489	6	284	451	554	0	0	1184	489
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				509	6	151	470	577	0	0	1233	374
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				457	5	411	513	3315	0	0	1453	439
Arrive On Green				0.26	0.26	0.26	0.57	1.00	0.00	0.00	0.29	0.29
Sat Flow, veh/h				1789	21	1610	1810	5358	0	0	5253	1505
Grp Volume(v), veh/h				515	0	151	470	577	0	0	1212	395
Grp Sat Flow(s),veh/h/ln				1811	0	1610	1810	1729	0	0	1634	1590
Q Serve(g_s), s				23.0	0.0	6.9	21.1	0.0	0.0	0.0	20.9	21.1
Cycle Q Clear(g_c), s				23.0	0.0	6.9	21.1	0.0	0.0	0.0	20.9	21.1
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.95
Lane Grp Cap(c), veh/h				463	0	411	513	3315	0	0	1428	463
V/C Ratio(X)				1.11	0.00	0.37	0.92	0.17	0.00	0.00	0.85	0.85
Avail Cap(c_a), veh/h				463	0	411	513	3315	0	0	1481	481
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.47	0.47	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.5	0.0	27.5	18.5	0.0	0.0	0.0	30.0	30.1
Incr Delay (d2), s/veh				76.4	0.0	1.2	11.7	0.1	0.0	0.0	6.5	17.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				19.2	0.0	6.7	6.5	0.0	0.0	0.0	8.4	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				109.9	0.0	28.7	30.3	0.1	0.0	0.0	36.5	47.8
LnGrp LOS				F	A	C	C	A	A	A	D	D
Approach Vol, veh/h					666			1047			1607	
Approach Delay, s/veh					91.5			13.6			39.3	
Approach LOS					F			B			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	63.3	29.0	31.3	32.0
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	55.2	23.0	24.0	* 27
Max Q Clear Time (g_c+I1), s	2.0	25.0	23.1	23.1
Green Ext Time (p_c), s	4.0	0.0	0.1	3.1

Intersection Summary	
HCM 6th Ctrl Delay	41.6
HCM 6th LOS	D

Notes

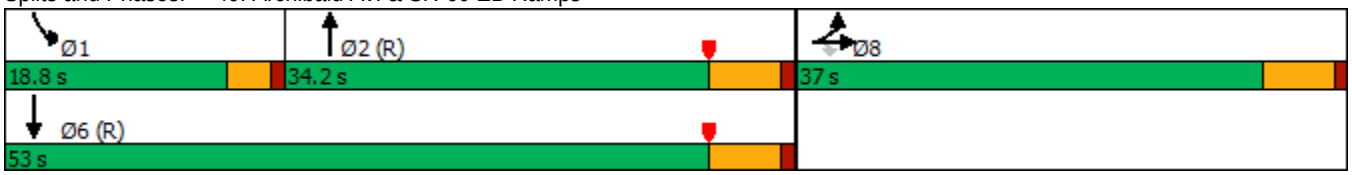
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

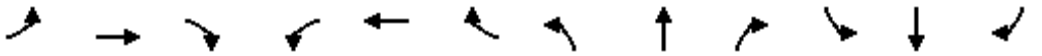
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	611	890	416	1258
Future Volume (vph)	0	611	890	416	1258
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	10.8	10.8	25.8	9.0	25.8
Total Split (s)	37.0	37.0	34.2	18.8	53.0
Total Split (%)	41.1%	41.1%	38.0%	20.9%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	31.2	31.2	28.4	14.8	47.2
Actuated g/C Ratio	0.35	0.35	0.32	0.16	0.52
v/c Ratio	0.19	1.04	1.12dr	1.46	0.48
Control Delay	21.6	73.7	28.0	239.1	22.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.6	73.7	28.0	239.1	22.5
LOS	C	E	C	F	C
Approach Delay	65.5		28.0		76.3
Approach LOS	E		C		E

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.46
Intersection Signal Delay: 54.9 Intersection LOS: D
Intersection Capacity Utilization 90.9% ICU Level of Service E
Analysis Period (min) 15
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	0	611	0	0	0	0	890	727	416	1258	0
Future Volume (veh/h)	114	0	611	0	0	0	0	890	727	416	1258	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	119	0	386				0	927	582	433	1310	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	485	0	431				0	1934	634	298	3129	0
Arrive On Green	0.27	0.00	0.27				0.00	0.39	0.39	0.05	0.20	0.00
Sat Flow, veh/h	1810	0	1610				0	5168	1606	1810	5358	0
Grp Volume(v), veh/h	119	0	386				0	927	582	433	1310	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1606	1810	1729	0
Q Serve(g_s), s	4.6	0.0	20.8				0.0	12.7	31.0	14.8	19.9	0.0
Cycle Q Clear(g_c), s	4.6	0.0	20.8				0.0	12.7	31.0	14.8	19.9	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	485	0	431				0	1934	634	298	3129	0
V/C Ratio(X)	0.25	0.00	0.90				0.00	0.48	0.92	1.46	0.42	0.00
Avail Cap(c_a), veh/h	627	0	558				0	1934	634	298	3129	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.38	0.38	0.34	0.34	0.00
Uniform Delay (d), s/veh	25.8	0.0	31.7				0.0	20.3	25.9	42.6	22.2	0.0
Incr Delay (d2), s/veh	0.3	0.0	14.2				0.0	0.3	9.7	211.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	9.2				0.0	4.4	12.1	24.5	9.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.1	0.0	45.9				0.0	20.7	35.5	253.7	22.4	0.0
LnGrp LOS	C	A	D				A	C	D	F	C	A
Approach Vol, veh/h		505						1509			1743	
Approach Delay, s/veh		41.2						26.4			79.9	
Approach LOS		D						C			E	

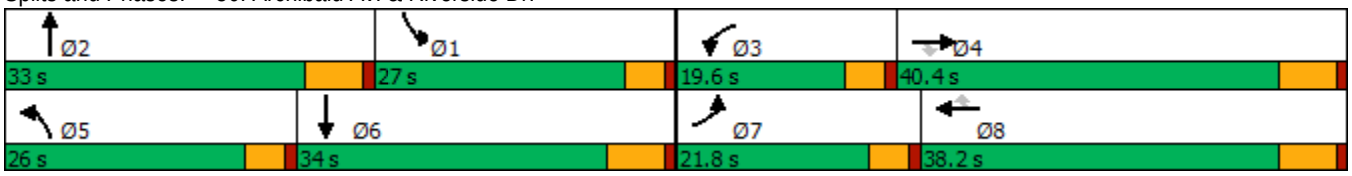
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	18.8	41.3				60.1		29.9				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	14.8	28.4				47.2		31.2				
Max Q Clear Time (g_c+I1), s	16.8	33.0				21.9		22.8				
Green Ext Time (p_c), s	0.0	0.0				9.4		1.3				

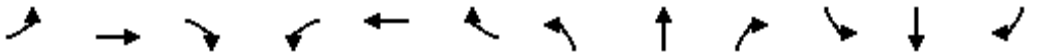
Intersection Summary			
HCM 6th Ctrl Delay			53.2
HCM 6th LOS			D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	241	673	379	166	480	125	315	845	307	1030
Future Volume (vph)	241	673	379	166	480	125	315	845	307	1030
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.8	40.4	40.4	19.6	38.2	38.2	26.0	33.0	27.0	34.0
Total Split (%)	18.2%	33.7%	33.7%	16.3%	31.8%	31.8%	21.7%	27.5%	22.5%	28.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	17.2	30.5	30.5	14.4	27.6	27.6	21.4	26.0	23.3	27.9
Actuated g/C Ratio	0.15	0.26	0.26	0.12	0.24	0.24	0.18	0.22	0.20	0.24
v/c Ratio	1.07	0.80	0.58	0.89	0.63	0.27	1.12	0.89	1.01	1.17
Control Delay	124.9	47.1	7.0	90.4	42.9	3.7	133.0	54.8	99.4	124.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	124.9	47.1	7.0	90.4	42.9	3.7	133.0	54.8	99.4	124.3
LOS	F	D	A	F	D	A	F	D	F	F
Approach Delay		49.9			46.8			74.7		119.6
Approach LOS		D			D			E		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 78.4	Intersection LOS: E
Intersection Capacity Utilization 96.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	241	673	379	166	480	125	315	845	75	307	1030	264
Future Volume (veh/h)	241	673	379	166	480	125	315	845	75	307	1030	264
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	256	716	246	177	511	74	335	899	71	327	1096	217
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	245	863	376	202	773	343	304	1031	81	319	1007	199
Arrive On Green	0.15	0.25	0.25	0.12	0.23	0.23	0.19	0.22	0.22	0.20	0.25	0.25
Sat Flow, veh/h	1619	3420	1491	1619	3420	1519	1619	4638	365	1619	4108	813
Grp Volume(v), veh/h	256	716	246	177	511	74	335	634	336	327	874	439
Grp Sat Flow(s),veh/h/ln	1619	1710	1491	1619	1710	1519	1619	1638	1727	1619	1638	1644
Q Serve(g_s), s	17.2	22.5	16.8	12.2	15.5	2.7	21.4	21.3	21.4	22.4	27.9	27.9
Cycle Q Clear(g_c), s	17.2	22.5	16.8	12.2	15.5	2.7	21.4	21.3	21.4	22.4	27.9	27.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		0.49
Lane Grp Cap(c), veh/h	245	863	376	202	773	343	304	728	384	319	803	403
V/C Ratio(X)	1.05	0.83	0.65	0.88	0.66	0.22	1.10	0.87	0.88	1.03	1.09	1.09
Avail Cap(c_a), veh/h	245	1028	448	213	962	427	304	771	407	319	803	403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.3	40.2	38.1	49.0	40.1	13.1	46.2	42.7	42.7	45.7	43.0	43.0
Incr Delay (d2), s/veh	70.2	5.0	2.6	28.7	1.2	0.3	81.3	10.2	18.1	57.3	58.6	71.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.4	9.6	6.1	6.4	6.3	1.6	15.1	9.2	10.6	13.6	17.2	18.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	118.5	45.2	40.7	77.6	41.3	13.4	127.5	52.9	60.8	103.0	101.6	114.1
LnGrp LOS	F	D	D	E	D	B	F	D	E	F	F	F
Approach Vol, veh/h		1218			762			1305			1640	
Approach Delay, s/veh		59.7			47.0			74.1			105.2	
Approach LOS		E			D			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.6	31.5	18.8	34.9	26.0	34.1	21.8	31.9
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	22.4	* 27	15.0	34.2	21.4	27.8	17.2	32.0
Max Q Clear Time (g_c+I1), s	24.4	23.4	14.2	24.5	23.4	29.9	19.2	17.5
Green Ext Time (p_c), s	0.0	1.8	0.0	3.6	0.0	0.0	0.0	2.8

Intersection Summary	
HCM 6th Ctrl Delay	76.7
HCM 6th LOS	E

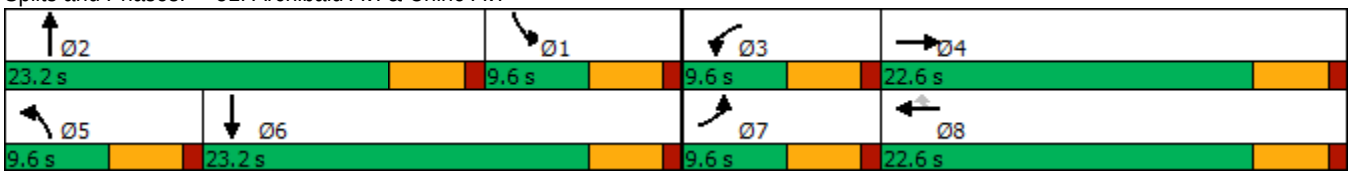
Notes

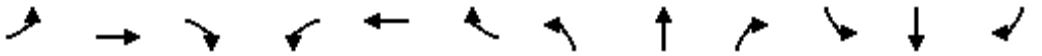
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	23	1	26	120	21	1038	154	1265
Future Volume (vph)	23	1	26	120	21	1038	154	1265
Turn Type	Prot	NA	Prot	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3		5	2	1	6
Permitted Phases				8				
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	9.6	22.6	9.6	22.6	9.6	23.2	9.6	23.2
Total Split (%)	14.8%	34.8%	14.8%	34.8%	14.8%	35.7%	14.8%	35.7%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	5.4	7.7	5.4	7.7	5.4	17.4	5.4	28.2
Actuated g/C Ratio	0.12	0.18	0.12	0.18	0.12	0.40	0.12	0.65
v/c Ratio	0.13	0.03	0.14	0.23	0.11	0.62	0.85	0.64
Control Delay	24.4	11.7	24.5	0.9	24.2	14.5	64.8	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.4	11.7	24.5	0.9	24.2	14.5	64.8	14.3
LOS	C	B	C	A	C	B	E	B
Approach Delay		21.4				14.7		19.7
Approach LOS		C				B		B

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 43.5	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 16.9	Intersection LOS: B
Intersection Capacity Utilization 61.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	1	6	26	0	120	21	1038	51	154	1265	14
Future Volume (veh/h)	23	1	6	26	0	120	21	1038	51	154	1265	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	26	1	5	29	0	49	23	1153	48	171	1406	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	50	19	94	55	135	115	45	1679	70	189	1511	16
Arrive On Green	0.03	0.07	0.07	0.03	0.00	0.08	0.03	0.35	0.35	0.12	0.44	0.44
Sat Flow, veh/h	1619	261	1304	1619	1800	1525	1619	4838	201	1619	3466	37
Grp Volume(v), veh/h	26	0	6	29	0	49	23	781	420	171	693	728
Grp Sat Flow(s),veh/h/ln	1619	0	1565	1619	1800	1525	1619	1638	1763	1619	1710	1793
Q Serve(g_s), s	0.7	0.0	0.2	0.8	0.0	0.8	0.6	8.7	8.8	4.5	16.5	16.5
Cycle Q Clear(g_c), s	0.7	0.0	0.2	0.8	0.0	0.8	0.6	8.7	8.8	4.5	16.5	16.5
Prop In Lane	1.00		0.83	1.00		1.00	1.00		0.11	1.00		0.02
Lane Grp Cap(c), veh/h	50	0	113	55	135	115	45	1137	612	189	745	782
V/C Ratio(X)	0.52	0.00	0.05	0.53	0.00	0.43	0.51	0.69	0.69	0.90	0.93	0.93
Avail Cap(c_a), veh/h	189	0	658	189	757	641	189	1424	766	189	745	782
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.4	0.0	18.5	20.3	0.0	7.8	20.5	12.0	12.0	18.7	11.5	11.5
Incr Delay (d2), s/veh	8.0	0.0	0.2	7.6	0.0	2.5	8.6	1.0	1.9	39.7	18.2	17.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.1	0.4	0.0	0.5	0.3	2.1	2.4	3.4	7.2	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.4	0.0	18.7	27.9	0.0	10.3	29.1	13.0	13.8	58.4	29.6	29.1
LnGrp LOS	C	A	B	C	A	B	C	B	B	E	C	C
Approach Vol, veh/h		32			78			1224			1592	
Approach Delay, s/veh		26.6			16.8			13.6			32.5	
Approach LOS		C			B			B			C	

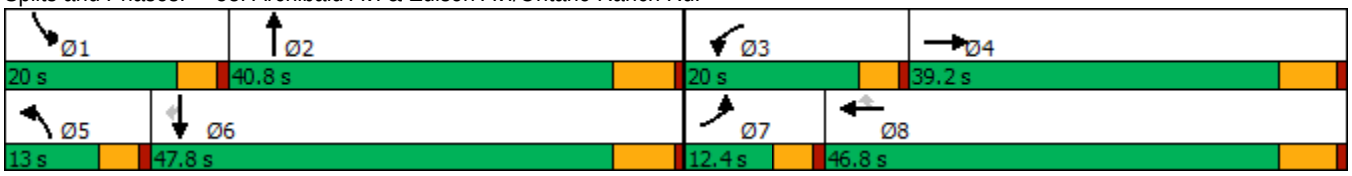
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	19.5	6.1	7.7	5.8	23.3	5.9	7.8
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	5.0	18.6	5.0	18.0	5.0	18.6	5.0	18.0
Max Q Clear Time (g_c+I1), s	6.5	10.8	2.8	2.2	2.6	18.5	2.7	2.8
Green Ext Time (p_c), s	0.0	4.1	0.0	0.0	0.0	0.1	0.0	0.1

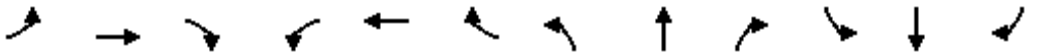
Intersection Summary	
HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	776	135	364	291	79	77	760	446	148	937	107
Future Volume (vph)	173	776	135	364	291	79	77	760	446	148	937	107
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	12.4	39.2		20.0	46.8	46.8	13.0	40.8		20.0	47.8	47.8
Total Split (%)	10.3%	32.7%		16.7%	39.0%	39.0%	10.8%	34.0%		16.7%	39.8%	39.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	7.9	30.2	111.9	15.6	37.9	37.9	7.9	30.5	111.9	13.5	38.7	38.7
Actuated g/C Ratio	0.07	0.27	1.00	0.14	0.34	0.34	0.07	0.27	1.00	0.12	0.35	0.35
v/c Ratio	0.86	0.87	0.09	0.91	0.49	0.13	0.69	0.84	0.30	0.78	0.82	0.18
Control Delay	88.4	50.7	0.1	77.0	33.7	0.4	84.1	48.2	0.5	76.6	41.1	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.4	50.7	0.1	77.0	33.7	0.4	84.1	48.2	0.5	76.6	41.1	2.1
LOS	F	D	A	E	C	A	F	D	A	E	D	A
Approach Delay		50.4			51.6			33.8			42.0	
Approach LOS		D			D			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 43.3	Intersection LOS: D
Intersection Capacity Utilization 85.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	173	776	135	364	291	79	77	760	446	148	937	107
Future Volume (veh/h)	173	776	135	364	291	79	77	760	446	148	937	107
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	178	800	0	375	300	47	79	784	0	153	966	88
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	213	913		421	607	515	98	947		179	1119	488
Arrive On Green	0.07	0.27	0.00	0.14	0.34	0.34	0.06	0.28	0.00	0.11	0.33	0.33
Sat Flow, veh/h	2956	3420	1525	2956	1800	1525	1619	3420	1525	1619	3420	1491
Grp Volume(v), veh/h	178	800	0	375	300	47	79	784	0	153	966	88
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1800	1525	1619	1710	1525	1619	1710	1491
Q Serve(g_s), s	6.4	24.2	0.0	13.5	14.3	2.3	5.2	23.2	0.0	10.0	28.6	4.6
Cycle Q Clear(g_c), s	6.4	24.2	0.0	13.5	14.3	2.3	5.2	23.2	0.0	10.0	28.6	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	213	913		421	607	515	98	947		179	1119	488
V/C Ratio(X)	0.83	0.88		0.89	0.49	0.09	0.81	0.83		0.85	0.86	0.18
Avail Cap(c_a), veh/h	213	1045		421	676	573	126	1086		231	1307	570
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.5	37.9	0.0	45.5	28.5	24.5	50.1	36.6	0.0	47.2	34.1	26.0
Incr Delay (d2), s/veh	22.6	7.7	0.0	19.7	0.6	0.1	19.6	4.8	0.0	17.6	5.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	10.5	0.0	5.9	5.9	0.8	2.5	9.6	0.0	4.7	11.7	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.1	45.6	0.0	65.2	29.1	24.5	69.7	41.5	0.0	64.8	39.6	26.2
LnGrp LOS	E	D		E	C	C	E	D		E	D	C
Approach Vol, veh/h		978	A		722			863	A		1207	
Approach Delay, s/veh		50.4			47.5			44.1			41.8	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.6	36.4	20.0	35.1	11.1	41.8	12.4	42.7
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	15.4	34.3	15.4	33.0	8.4	41.3	7.8	40.6
Max Q Clear Time (g_c+I1), s	12.0	25.2	15.5	26.2	7.2	30.6	8.4	16.3
Green Ext Time (p_c), s	0.1	3.1	0.0	2.7	0.0	4.5	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	45.7
HCM 6th LOS	D

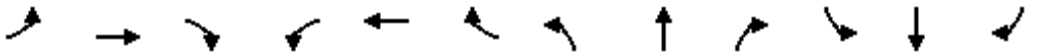
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	11	1270	1	10	1426
Future Volume (vph)	2	11	1270	1	10	1426
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.5	9.5	32.5	32.5	9.6	16.5
Total Split (s)	10.0	10.0	40.0	40.0	10.0	50.0
Total Split (%)	14.3%	14.3%	57.1%	57.1%	14.3%	71.4%
Yellow Time (s)	3.5	3.5	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	6.5	6.5	4.6	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max
Act Effct Green (s)	5.6	5.6	56.7	56.7	5.2	58.5
Actuated g/C Ratio	0.09	0.09	0.90	0.90	0.08	0.92
v/c Ratio	0.01	0.03	0.44	0.00	0.08	0.48
Control Delay	26.5	0.1	5.3	6.0	28.3	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	0.1	5.3	6.0	28.3	3.3
LOS	C	A	A	A	C	A
Approach Delay			5.3			3.4
Approach LOS			A			A

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 63.3	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.48	
Intersection Signal Delay: 4.3	Intersection LOS: A
Intersection Capacity Utilization 54.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	2	0	11	0	1270	1	10	1426	0
Future Volume (veh/h)	0	0	0	2	0	11	0	1270	1	10	1426	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1700	0	1800	0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h				2	0	3	0	1351	1	11	1517	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				21	0	18	0	2377	1059	23	2711	0
Arrive On Green				0.01	0.00	0.01	0.00	0.69	0.69	0.01	0.79	0.00
Sat Flow, veh/h				3141	0	2685	0	3510	1524	1619	3510	0
Grp Volume(v), veh/h				2	0	3	0	1351	1	11	1517	0
Grp Sat Flow(s),veh/h/ln				1570	0	1342	0	1710	1524	1619	1710	0
Q Serve(g_s), s				0.0	0.0	0.1	0.0	10.9	0.0	0.4	9.1	0.0
Cycle Q Clear(g_c), s				0.0	0.0	0.1	0.0	10.9	0.0	0.4	9.1	0.0
Prop In Lane				1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				21	0	18	0	2377	1059	23	2711	0
V/C Ratio(X)				0.10	0.00	0.17	0.00	0.57	0.00	0.48	0.56	0.00
Avail Cap(c_a), veh/h				315	0	269	0	2377	1059	159	2711	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				27.1	0.0	27.1	0.0	4.2	2.6	26.8	2.1	0.0
Incr Delay (d2), s/veh				1.9	0.0	4.3	0.0	1.0	0.0	5.8	0.8	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.0	0.0	0.0	0.0	1.0	0.0	0.2	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				29.0	0.0	31.4	0.0	5.2	2.6	32.6	3.0	0.0
LnGrp LOS				C	A	C	A	A	A	C	A	A
Approach Vol, veh/h					5			1352			1528	
Approach Delay, s/veh					30.4			5.2			3.2	
Approach LOS					C			A			A	

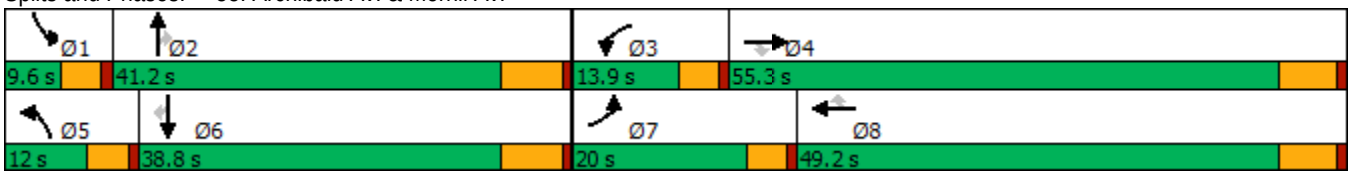
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	5.4	44.6				50.0		4.9				
Change Period (Y+Rc), s	4.6	6.5				6.5		4.5				
Max Green Setting (Gmax), s	5.4	33.5				43.5		5.5				
Max Q Clear Time (g_c+I1), s	2.4	12.9				11.1		2.1				
Green Ext Time (p_c), s	0.0	9.0				12.8		0.0				

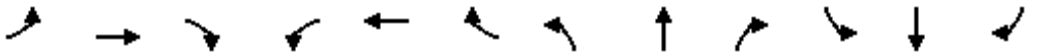
Intersection Summary		
HCM 6th Ctrl Delay		4.2
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	514	86	694	50	29	60	229	698	43	78	1072	278
Future Volume (vph)	514	86	694	50	29	60	229	698	43	78	1072	278
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	20.0	55.3	55.3	13.9	49.2	49.2	12.0	41.2	41.2	9.6	38.8	38.8
Total Split (%)	16.7%	46.1%	46.1%	11.6%	41.0%	41.0%	10.0%	34.3%	34.3%	8.0%	32.3%	32.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	20.6	45.9	45.9	7.6	34.5	34.5	7.5	37.5	37.5	5.1	32.7	32.7
Actuated g/C Ratio	0.18	0.40	0.40	0.07	0.30	0.30	0.07	0.33	0.33	0.04	0.29	0.29
v/c Ratio	1.81	0.12	0.96	0.48	0.05	0.11	2.23	0.64	0.07	0.61	1.12	0.52
Control Delay	407.3	22.3	49.0	68.3	25.7	0.4	606.6	38.1	0.2	75.9	107.0	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	407.3	22.3	49.0	68.3	25.7	0.4	606.6	38.1	0.2	75.9	107.0	20.3
LOS	F	C	D	E	C	A	F	D	A	E	F	C
Approach Delay		189.6			30.2			170.6			88.4	
Approach LOS		F			C			F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.23	
Intersection Signal Delay: 141.3	Intersection LOS: F
Intersection Capacity Utilization 98.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	514	86	694	50	29	60	229	698	43	78	1072	278
Future Volume (veh/h)	514	86	694	50	29	60	229	698	43	78	1072	278
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	530	89	530	52	30	23	236	720	30	80	1105	229
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	238	669	567	64	476	404	114	1149	506	127	1055	471
Arrive On Green	0.15	0.37	0.37	0.04	0.26	0.26	0.07	0.34	0.34	0.04	0.31	0.31
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	1619	3420	1506	2956	3420	1525
Grp Volume(v), veh/h	530	89	530	52	30	23	236	720	30	80	1105	229
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1710	1506	1478	1710	1525
Q Serve(g_s), s	15.4	3.4	35.0	3.3	1.3	1.2	7.4	18.5	1.4	2.8	32.3	12.8
Cycle Q Clear(g_c), s	15.4	3.4	35.0	3.3	1.3	1.2	7.4	18.5	1.4	2.8	32.3	12.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	238	669	567	64	476	404	114	1149	506	127	1055	471
V/C Ratio(X)	2.23	0.13	0.93	0.81	0.06	0.06	2.06	0.63	0.06	0.63	1.05	0.49
Avail Cap(c_a), veh/h	238	844	715	144	739	626	114	1149	506	141	1055	471
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.7	21.7	31.7	49.9	28.8	28.7	48.7	29.2	23.6	49.3	36.2	29.5
Incr Delay (d2), s/veh	565.1	0.1	17.0	8.5	0.1	0.1	507.0	1.1	0.0	4.7	41.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	43.2	1.4	15.0	1.5	0.6	0.4	18.9	7.2	0.5	1.1	18.3	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	609.7	21.8	48.6	58.4	28.8	28.8	555.7	30.3	23.6	54.0	77.2	30.2
LnGrp LOS	F	C	D	E	C	C	F	C	C	D	F	C
Approach Vol, veh/h		1149			105			986			1414	
Approach Delay, s/veh		305.4			43.5			155.9			68.3	
Approach LOS		F			D			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	41.7	8.8	45.1	12.0	38.8	20.0	33.9
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	34.7	9.3	49.1	7.4	32.3	15.4	43.0
Max Q Clear Time (g_c+I1), s	4.8	20.5	5.3	37.0	9.4	34.3	17.4	3.3
Green Ext Time (p_c), s	0.0	3.7	0.0	1.9	0.0	0.0	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	165.8
HCM 6th LOS	F

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	460	335	621	448	793	1028
Future Volume (vph)	460	335	621	448	793	1028
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	37.0	46.7	36.3	37.0	83.7
Total Split (%)	30.3%	30.8%	38.9%	30.3%	30.8%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min
Act Effct Green (s)	31.0	68.3	41.0	72.0	32.0	78.3
Actuated g/C Ratio	0.26	0.57	0.34	0.60	0.27	0.65
v/c Ratio	1.00	0.36	0.97	0.47	1.67	0.84
Control Delay	87.1	10.9	68.8	12.0	343.3	24.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.1	10.9	68.8	12.0	343.3	24.0
LOS	F	B	E	B	F	C
Approach Delay	54.9		45.0			163.0
Approach LOS	D		D			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.67	
Intersection Signal Delay: 105.5	Intersection LOS: F
Intersection Capacity Utilization 115.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	460	335	621	448	793	1028
Future Volume (veh/h)	460	335	621	448	793	1028
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	469	292	634	436	809	1049
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	468	845	655	960	483	1241
Arrive On Green	0.26	0.26	0.34	0.34	0.27	0.65
Sat Flow, veh/h	1810	1610	1900	1576	1810	1900
Grp Volume(v), veh/h	469	292	634	436	809	1049
Grp Sat Flow(s),veh/h/ln	1810	1610	1900	1576	1810	1900
Q Serve(g_s), s	31.0	12.6	39.4	18.2	32.0	51.3
Cycle Q Clear(g_c), s	31.0	12.6	39.4	18.2	32.0	51.3
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	468	845	655	960	483	1241
V/C Ratio(X)	1.00	0.35	0.97	0.45	1.68	0.85
Avail Cap(c_a), veh/h	468	845	656	960	483	1246
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	16.5	38.6	13.1	44.0	16.1
Incr Delay (d2), s/veh	42.4	0.1	27.2	0.4	313.3	5.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.7	4.3	22.2	11.0	55.4	19.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	86.9	16.6	65.8	13.5	357.3	21.3
LnGrp LOS	F	B	E	B	F	C
Approach Vol, veh/h	761		1070			1858
Approach Delay, s/veh	59.9		44.5			167.6
Approach LOS	E		D			F

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	37.0	46.7			83.7	36.3
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	32.0	41.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	34.0	41.4			53.3	33.0
Green Ext Time (p_c), s	0.0	0.0			4.7	0.0

Intersection Summary		
HCM 6th Ctrl Delay		109.7
HCM 6th LOS		F

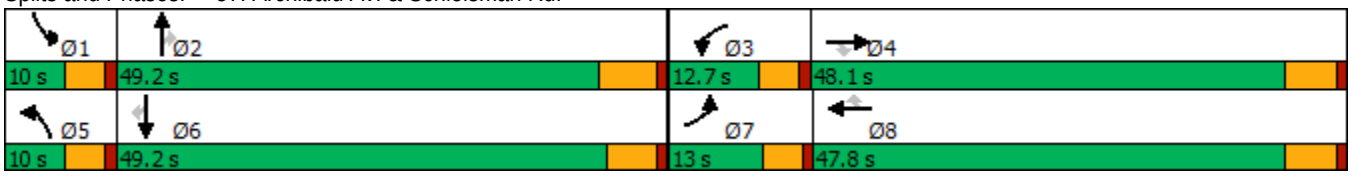
Notes

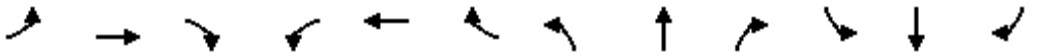
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	498	1136	220	121	369	68	226	686	122	192	765	431
Future Volume (vph)	498	1136	220	121	369	68	226	686	122	192	765	431
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	48.1	48.1	12.7	47.8	47.8	10.0	49.2	49.2	10.0	49.2	49.2
Total Split (%)	10.8%	40.1%	40.1%	10.6%	39.8%	39.8%	8.3%	41.0%	41.0%	8.3%	41.0%	41.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	8.5	43.4	43.4	7.3	42.3	42.3	5.4	25.0	25.0	5.4	25.8	25.8
Actuated g/C Ratio	0.08	0.42	0.42	0.07	0.41	0.41	0.05	0.24	0.24	0.05	0.25	0.25
v/c Ratio	1.76	0.53	0.29	0.49	0.18	0.10	1.25	0.55	0.25	1.06	0.60	0.66
Control Delay	386.2	24.3	8.0	54.6	20.6	1.4	189.5	35.0	6.4	130.6	35.3	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	386.2	24.3	8.0	54.6	20.6	1.4	189.5	35.0	6.4	130.6	35.3	11.7
LOS	F	C	A	D	C	A	F	D	A	F	D	B
Approach Delay		119.6			25.6			65.5			41.1	
Approach LOS		F			C			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.76	
Intersection Signal Delay: 74.6	Intersection LOS: E
Intersection Capacity Utilization 89.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	498	1136	220	121	369	68	226	686	122	192	765	431
Future Volume (veh/h)	498	1136	220	121	369	68	226	686	122	192	765	431
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	508	1159	142	123	377	43	231	700	87	196	781	326
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	280	2210	686	184	2068	641	180	1396	433	180	1396	432
Arrive On Green	0.08	0.43	0.43	0.05	0.40	0.40	0.05	0.27	0.27	0.05	0.27	0.27
Sat Flow, veh/h	3510	5187	1610	3510	5187	1608	3510	5187	1610	3510	5187	1605
Grp Volume(v), veh/h	508	1159	142	123	377	43	231	700	87	196	781	326
Grp Sat Flow(s),veh/h/ln	1755	1729	1610	1755	1729	1608	1755	1729	1610	1755	1729	1605
Q Serve(g_s), s	8.4	17.4	5.8	3.6	5.0	1.7	5.4	12.0	4.4	5.4	13.6	19.6
Cycle Q Clear(g_c), s	8.4	17.4	5.8	3.6	5.0	1.7	5.4	12.0	4.4	5.4	13.6	19.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	280	2210	686	184	2068	641	180	1396	433	180	1396	432
V/C Ratio(X)	1.81	0.52	0.21	0.67	0.18	0.07	1.28	0.50	0.20	1.09	0.56	0.75
Avail Cap(c_a), veh/h	280	2210	686	270	2068	641	180	2117	657	180	2157	667
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.5	22.3	19.0	49.0	20.5	19.6	50.0	32.5	29.7	50.0	33.1	35.3
Incr Delay (d2), s/veh	380.5	0.9	0.7	1.6	0.2	0.2	163.1	0.3	0.2	92.9	0.4	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.3	6.8	2.2	1.6	1.9	0.7	6.3	4.8	1.7	4.6	5.4	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	429.0	23.2	19.7	50.6	20.7	19.8	213.1	32.8	30.0	142.9	33.5	38.0
LnGrp LOS	F	C	B	D	C	B	F	C	C	F	C	D
Approach Vol, veh/h		1809			543			1018			1303	
Approach Delay, s/veh		136.9			27.4			73.5			51.1	
Approach LOS		F			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	34.5	10.1	50.7	10.0	34.5	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.4	43.0	8.1	42.3	5.4	* 44	8.4	42.0
Max Q Clear Time (g_c+I1), s	7.4	14.0	5.6	19.4	7.4	21.6	10.4	7.0
Green Ext Time (p_c), s	0.0	4.8	0.0	8.6	0.0	6.1	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	86.4
HCM 6th LOS	F

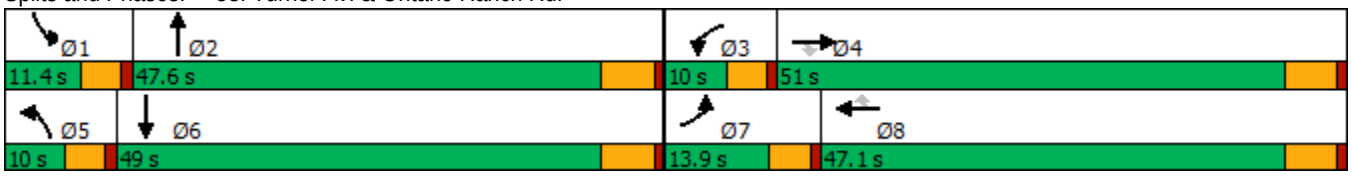
Notes

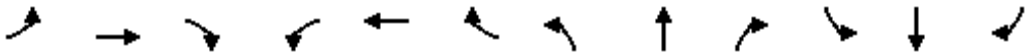
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	55	1431	43	34	756	14	28	8	30	8
Future Volume (vph)	55	1431	43	34	756	14	28	8	30	8
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	13.9	51.0	51.0	10.0	47.1	47.1	10.0	47.6	11.4	49.0
Total Split (%)	11.6%	42.5%	42.5%	8.3%	39.3%	39.3%	8.3%	39.7%	9.5%	40.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	7.5	57.1	57.1	5.6	50.7	50.7	5.6	15.0	6.2	15.6
Actuated g/C Ratio	0.09	0.68	0.68	0.07	0.61	0.61	0.07	0.18	0.07	0.19
v/c Ratio	0.42	0.67	0.04	0.34	0.40	0.02	0.29	0.18	0.28	0.12
Control Delay	51.6	20.5	0.1	54.6	17.2	0.0	53.2	13.0	50.9	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.6	20.5	0.1	54.6	17.2	0.0	53.2	13.0	50.9	14.6
LOS	D	C	A	D	B	A	D	B	D	B
Approach Delay		21.1			18.5			27.3		31.2
Approach LOS		C			B			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 83.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 20.7	Intersection LOS: C
Intersection Capacity Utilization 70.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	1431	43	34	756	14	28	8	43	30	8	27
Future Volume (veh/h)	55	1431	43	34	756	14	28	8	43	30	8	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	60	1573	35	37	831	12	31	9	28	33	9	16
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	74	1892	844	56	1855	827	50	48	149	52	74	131
Arrive On Green	0.05	0.55	0.55	0.03	0.54	0.54	0.03	0.13	0.13	0.03	0.13	0.13
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	382	1190	1619	581	1033
Grp Volume(v), veh/h	60	1573	35	37	831	12	31	0	37	33	0	25
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	0	1572	1619	0	1614
Q Serve(g_s), s	3.0	31.1	0.9	1.8	12.0	0.3	1.5	0.0	1.7	1.6	0.0	1.1
Cycle Q Clear(g_c), s	3.0	31.1	0.9	1.8	12.0	0.3	1.5	0.0	1.7	1.6	0.0	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.76	1.00		0.64
Lane Grp Cap(c), veh/h	74	1892	844	56	1855	827	50	0	197	52	0	204
V/C Ratio(X)	0.81	0.83	0.04	0.66	0.45	0.01	0.62	0.00	0.19	0.63	0.00	0.12
Avail Cap(c_a), veh/h	184	1892	844	107	1855	827	107	0	804	135	0	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.6	15.1	8.3	39.0	11.3	8.6	39.1	0.0	32.0	39.1	0.0	31.7
Incr Delay (d2), s/veh	7.7	4.4	0.1	4.8	0.8	0.0	4.6	0.0	0.5	4.6	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	10.8	0.3	0.8	4.0	0.1	0.6	0.0	0.6	0.7	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.3	19.5	8.4	43.7	12.1	8.7	43.7	0.0	32.5	43.7	0.0	31.9
LnGrp LOS	D	B	A	D	B	A	D	A	C	D	A	C
Approach Vol, veh/h		1668			880			68			58	
Approach Delay, s/veh		20.3			13.4			37.6			38.6	
Approach LOS		C			B			D			D	

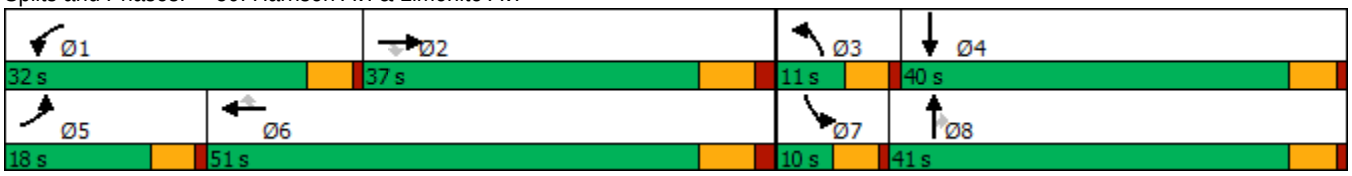
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	16.0	7.4	51.0	7.1	16.1	8.3	50.1
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	6.8	41.8	5.4	45.2	5.4	43.2	9.3	41.3
Max Q Clear Time (g_c+I1), s	3.6	3.7	3.8	33.1	3.5	3.1	5.0	14.0
Green Ext Time (p_c), s	0.0	0.2	0.0	8.0	0.0	0.1	0.0	5.8

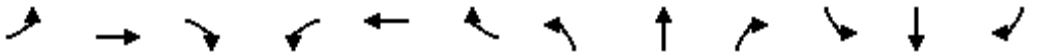
Intersection Summary	
HCM 6th Ctrl Delay	18.8
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	85	1096	60	227	721	6	39	48	169	18	50
Future Volume (vph)	85	1096	60	227	721	6	39	48	169	18	50
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	18.0	37.0	37.0	32.0	51.0	51.0	11.0	41.0	41.0	10.0	40.0
Total Split (%)	15.0%	30.8%	30.8%	26.7%	42.5%	42.5%	9.2%	34.2%	34.2%	8.3%	33.3%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	8.4	25.3	25.3	15.0	35.2	35.2	6.0	14.1	14.1	5.5	11.6
Actuated g/C Ratio	0.11	0.33	0.33	0.20	0.46	0.46	0.08	0.18	0.18	0.07	0.15
v/c Ratio	0.44	0.65	0.10	0.66	0.31	0.01	0.28	0.14	0.40	0.14	0.29
Control Delay	46.3	26.9	0.3	41.8	16.8	0.0	48.5	30.0	8.2	47.9	25.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.3	26.9	0.3	41.8	16.8	0.0	48.5	30.0	8.2	47.9	25.5
LOS	D	C	A	D	B	A	D	C	A	D	C
Approach Delay		26.9			22.7			18.5			29.4
Approach LOS		C			C			B			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 76.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 24.6	Intersection LOS: C
Intersection Capacity Utilization 57.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 59: Harrison Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	1096	60	227	721	6	39	48	169	18	50	34
Future Volume (veh/h)	85	1096	60	227	721	6	39	48	169	18	50	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	87	1118	56	232	736	4	40	49	87	18	51	26
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	116	1712	531	283	2193	681	73	227	189	39	119	61
Arrive On Green	0.06	0.33	0.33	0.16	0.42	0.42	0.04	0.12	0.12	0.02	0.10	0.10
Sat Flow, veh/h	1810	5187	1610	1810	5187	1610	1810	1900	1588	1810	1186	605
Grp Volume(v), veh/h	87	1118	56	232	736	4	40	49	87	18	0	77
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1610	1810	1900	1588	1810	0	1791
Q Serve(g_s), s	2.8	11.0	1.4	7.4	5.7	0.1	1.3	1.4	3.1	0.6	0.0	2.4
Cycle Q Clear(g_c), s	2.8	11.0	1.4	7.4	5.7	0.1	1.3	1.4	3.1	0.6	0.0	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	116	1712	531	283	2193	681	73	227	189	39	0	180
V/C Ratio(X)	0.75	0.65	0.11	0.82	0.34	0.01	0.54	0.22	0.46	0.46	0.00	0.43
Avail Cap(c_a), veh/h	393	2600	807	816	3813	1184	181	1133	947	151	0	1038
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.5	17.1	13.9	24.4	11.6	10.0	28.2	23.8	24.6	28.9	0.0	25.3
Incr Delay (d2), s/veh	3.7	0.4	0.1	2.2	0.1	0.0	2.3	0.5	1.7	3.1	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	3.6	0.4	2.9	1.7	0.0	0.6	0.6	1.1	0.3	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.2	17.6	14.0	26.6	11.7	10.0	30.5	24.3	26.3	32.0	0.0	26.9
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	A	C
Approach Vol, veh/h		1261			972			176			95	
Approach Delay, s/veh		18.3			15.3			26.7			27.9	
Approach LOS		B			B			C			C	

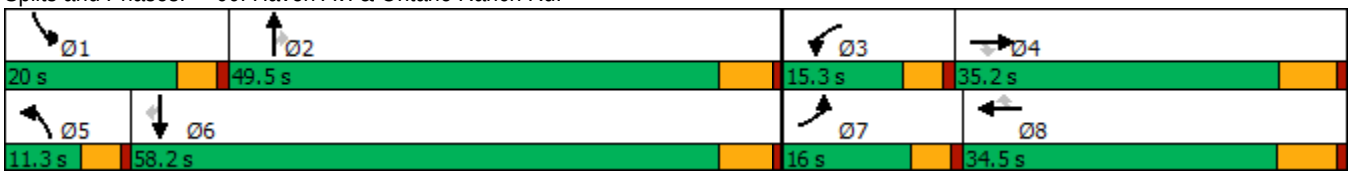
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.4	26.7	7.4	11.3	8.8	32.3	6.3	12.4
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	27.0	30.0	6.0	34.7	13.0	44.0	5.0	35.7
Max Q Clear Time (g_c+I1), s	9.4	13.0	3.3	4.4	4.8	7.7	2.6	5.1
Green Ext Time (p_c), s	0.2	6.7	0.0	0.3	0.0	5.0	0.0	0.5

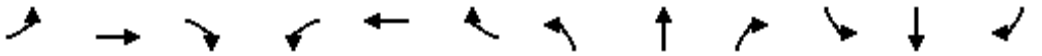
Intersection Summary	
HCM 6th Ctrl Delay	18.1
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	1203	73	67	665	141	31	97	25	182	285	127
Future Volume (vph)	140	1203	73	67	665	141	31	97	25	182	285	127
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	16.0	35.2	35.2	15.3	34.5	34.5	11.3	49.5	49.5	20.0	58.2	58.2
Total Split (%)	13.3%	29.3%	29.3%	12.8%	28.8%	28.8%	9.4%	41.3%	41.3%	16.7%	48.5%	48.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	11.7	35.5	35.5	7.9	28.9	28.9	6.0	15.9	15.9	15.2	25.5	25.5
Actuated g/C Ratio	0.13	0.40	0.40	0.09	0.32	0.32	0.07	0.18	0.18	0.17	0.28	0.28
v/c Ratio	0.70	0.64	0.11	0.49	0.63	0.25	0.30	0.32	0.07	0.69	0.58	0.25
Control Delay	59.6	28.8	0.3	55.2	32.1	6.4	52.7	34.8	0.3	53.0	32.1	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.6	28.8	0.3	55.2	32.1	6.4	52.7	34.8	0.3	53.0	32.1	5.3
LOS	E	C	A	E	C	A	D	C	A	D	C	A
Approach Delay		30.3			29.7			32.8			32.8	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 89.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 30.8	Intersection LOS: C
Intersection Capacity Utilization 66.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	1203	73	67	665	141	31	97	25	182	285	127
Future Volume (veh/h)	140	1203	73	67	665	141	31	97	25	182	285	127
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	146	1253	45	70	693	73	32	101	12	190	297	59
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	177	2012	625	87	1210	540	52	227	193	225	420	356
Arrive On Green	0.11	0.41	0.41	0.05	0.35	0.35	0.03	0.13	0.13	0.14	0.23	0.23
Sat Flow, veh/h	1619	4914	1525	1619	3420	1525	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	146	1253	45	70	693	73	32	101	12	190	297	59
Grp Sat Flow(s),veh/h/ln	1619	1638	1525	1619	1710	1525	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	7.0	16.0	1.4	3.4	13.0	2.6	1.5	4.1	0.5	9.1	12.0	2.4
Cycle Q Clear(g_c), s	7.0	16.0	1.4	3.4	13.0	2.6	1.5	4.1	0.5	9.1	12.0	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	177	2012	625	87	1210	540	52	227	193	225	420	356
V/C Ratio(X)	0.82	0.62	0.07	0.81	0.57	0.14	0.62	0.44	0.06	0.85	0.71	0.17
Avail Cap(c_a), veh/h	233	2012	625	219	1210	540	137	994	842	315	1192	1010
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.5	18.5	14.2	37.0	20.7	17.4	37.8	32.0	30.4	33.3	27.9	24.2
Incr Delay (d2), s/veh	12.8	1.5	0.2	6.4	2.0	0.5	4.4	1.4	0.1	10.3	2.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	5.4	0.5	1.4	4.8	0.9	0.6	1.8	0.2	3.9	5.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.3	20.0	14.4	43.5	22.7	17.9	42.3	33.4	30.6	43.5	30.1	24.4
LnGrp LOS	D	B	B	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1444			836			145			546	
Approach Delay, s/veh		22.6			24.0			35.1			34.1	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.6	15.8	8.8	38.9	7.1	24.3	13.3	34.5
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	15.4	43.7	10.7	* 29	6.7	52.4	11.4	28.0
Max Q Clear Time (g_c+I1), s	11.1	6.1	5.4	18.0	3.5	14.0	9.0	15.0
Green Ext Time (p_c), s	0.1	0.5	0.0	5.8	0.0	1.8	0.0	3.5

Intersection Summary	
HCM 6th Ctrl Delay	25.7
HCM 6th LOS	C

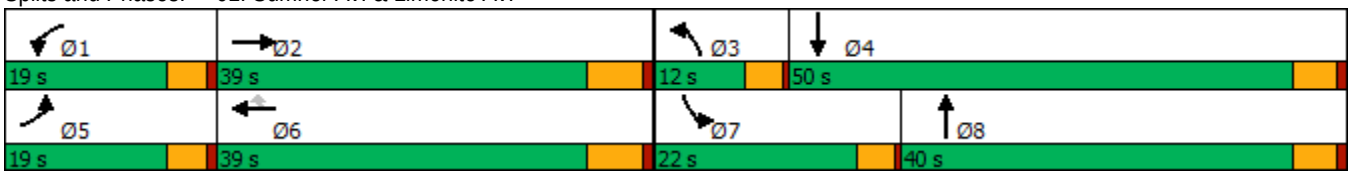
Notes

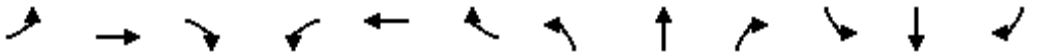
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	234	905	233	704	49	51	234	127	482
Future Volume (vph)	234	905	233	704	49	51	234	127	482
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	19.0	39.0	19.0	39.0	39.0	12.0	40.0	22.0	50.0
Total Split (%)	15.8%	32.5%	15.8%	32.5%	32.5%	10.0%	33.3%	18.3%	41.7%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	10.3	24.8	10.2	24.7	24.7	6.4	18.7	10.7	25.5
Actuated g/C Ratio	0.12	0.29	0.12	0.29	0.29	0.08	0.22	0.13	0.30
v/c Ratio	0.57	0.69	0.57	0.48	0.09	0.39	0.47	0.58	0.67
Control Delay	44.7	30.7	44.8	27.7	0.3	53.1	21.8	50.1	28.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.7	30.7	44.8	27.7	0.3	53.1	21.8	50.1	28.0
LOS	D	C	D	C	A	D	C	D	C
Approach Delay		33.4		30.4			25.5		31.4
Approach LOS		C		C			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 85.2	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 31.1	Intersection LOS: C
Intersection Capacity Utilization 66.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 61: Sumner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	905	97	233	704	49	51	234	153	127	482	213
Future Volume (veh/h)	234	905	97	233	704	49	51	234	153	127	482	213
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	241	933	88	240	726	43	53	241	87	131	497	122
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	351	1446	136	350	1554	482	70	498	174	169	706	172
Arrive On Green	0.10	0.30	0.30	0.10	0.30	0.30	0.04	0.19	0.19	0.09	0.25	0.25
Sat Flow, veh/h	3510	4822	454	3510	5187	1610	1810	2607	913	1810	2876	702
Grp Volume(v), veh/h	241	668	353	240	726	43	53	165	163	131	311	308
Grp Sat Flow(s),veh/h/ln	1755	1729	1818	1755	1729	1610	1810	1805	1715	1810	1805	1774
Q Serve(g_s), s	4.1	10.3	10.4	4.1	7.0	1.2	1.8	5.0	5.3	4.4	9.7	9.8
Cycle Q Clear(g_c), s	4.1	10.3	10.4	4.1	7.0	1.2	1.8	5.0	5.3	4.4	9.7	9.8
Prop In Lane	1.00		0.25	1.00		1.00	1.00		0.53	1.00		0.40
Lane Grp Cap(c), veh/h	351	1037	545	350	1554	482	70	345	327	169	443	435
V/C Ratio(X)	0.69	0.64	0.65	0.69	0.47	0.09	0.76	0.48	0.50	0.78	0.70	0.71
Avail Cap(c_a), veh/h	826	1851	973	826	2776	862	235	1025	973	528	1317	1294
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	18.7	18.7	26.8	17.6	15.5	29.3	22.2	22.3	27.3	21.2	21.2
Incr Delay (d2), s/veh	0.9	0.7	1.3	0.9	0.2	0.1	6.1	0.8	0.9	2.9	1.5	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	3.5	3.8	1.5	2.3	0.4	0.8	1.9	1.9	1.8	3.7	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.7	19.4	20.0	27.7	17.8	15.6	35.4	23.0	23.2	30.2	22.7	22.8
LnGrp LOS	C	B	C	C	B	B	D	C	C	C	C	C
Approach Vol, veh/h		1262			1009			381			750	
Approach Delay, s/veh		21.2			20.1			24.8			24.1	
Approach LOS		C			C			C			C	

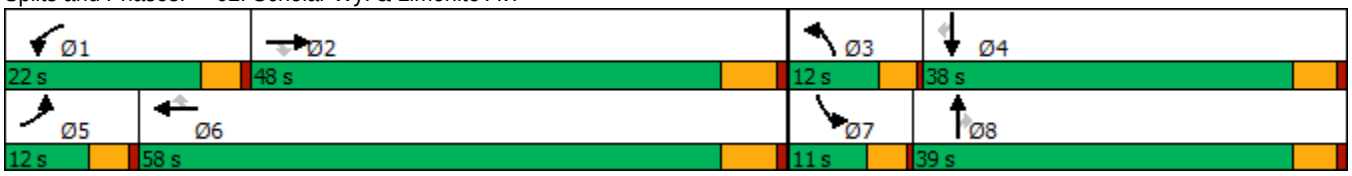
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	24.5	6.4	20.1	10.7	24.5	9.7	16.8
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	14.5	33.0	8.0	45.0	14.5	33.0	18.0	35.0
Max Q Clear Time (g_c+I1), s	6.1	12.4	3.8	11.8	6.1	9.0	6.4	7.3
Green Ext Time (p_c), s	0.2	6.0	0.0	2.9	0.2	4.7	0.1	1.4

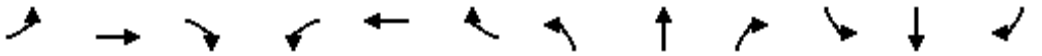
Intersection Summary	
HCM 6th Ctrl Delay	21.9
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	1103	46	134	915	61	47	102	137	31	144	33
Future Volume (vph)	43	1103	46	134	915	61	47	102	137	31	144	33
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	12.0	48.0	48.0	22.0	58.0	58.0	12.0	39.0	39.0	11.0	38.0	38.0
Total Split (%)	10.0%	40.0%	40.0%	18.3%	48.3%	48.3%	10.0%	32.5%	32.5%	9.2%	31.7%	31.7%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.2	35.7	35.7	11.2	45.9	45.9	6.4	12.8	12.8	5.8	12.3	12.3
Actuated g/C Ratio	0.08	0.44	0.44	0.14	0.56	0.56	0.08	0.16	0.16	0.07	0.15	0.15
v/c Ratio	0.34	0.75	0.06	0.58	0.48	0.07	0.36	0.37	0.39	0.26	0.28	0.10
Control Delay	51.6	25.7	0.2	49.0	15.7	1.8	51.6	37.7	9.3	50.7	34.9	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.6	25.7	0.2	49.0	15.7	1.8	51.6	37.7	9.3	50.7	34.9	0.5
LOS	D	C	A	D	B	A	D	D	A	D	C	A
Approach Delay		25.7			19.0			26.4			31.8	
Approach LOS		C			B			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 81.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 23.5	Intersection LOS: C
Intersection Capacity Utilization 64.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	1103	46	134	915	61	47	102	137	31	144	33
Future Volume (veh/h)	43	1103	46	134	915	61	47	102	137	31	144	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	46	1173	35	143	973	41	50	109	66	33	153	28
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	64	1586	707	183	1823	813	68	212	180	51	369	161
Arrive On Green	0.04	0.44	0.44	0.10	0.50	0.50	0.04	0.11	0.11	0.03	0.10	0.10
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	1900	1610	1810	3610	1569
Grp Volume(v), veh/h	46	1173	35	143	973	41	50	109	66	33	153	28
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1900	1610	1810	1805	1569
Q Serve(g_s), s	1.5	16.5	0.8	4.7	11.1	0.8	1.7	3.3	2.3	1.1	2.4	1.0
Cycle Q Clear(g_c), s	1.5	16.5	0.8	4.7	11.1	0.8	1.7	3.3	2.3	1.1	2.4	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	64	1586	707	183	1823	813	68	212	180	51	369	161
V/C Ratio(X)	0.72	0.74	0.05	0.78	0.53	0.05	0.74	0.51	0.37	0.65	0.41	0.17
Avail Cap(c_a), veh/h	223	2486	1109	519	3078	1373	237	1059	898	208	1954	849
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.1	14.2	9.8	26.7	10.2	7.7	29.1	25.5	25.1	29.3	25.7	25.0
Incr Delay (d2), s/veh	5.4	0.7	0.0	2.7	0.2	0.0	5.7	1.4	0.9	5.1	0.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	5.1	0.2	1.9	3.1	0.2	0.8	1.5	0.9	0.5	1.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.5	14.9	9.8	29.5	10.5	7.7	34.7	26.9	26.0	34.4	26.2	25.4
LnGrp LOS	C	B	A	C	B	A	C	C	C	C	C	C
Approach Vol, veh/h		1254			1157			225			214	
Approach Delay, s/veh		15.5			12.7			28.4			27.4	
Approach LOS		B			B			C			C	

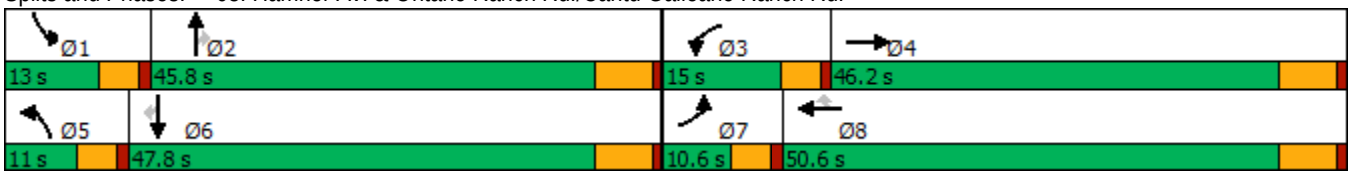
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	32.8	6.3	11.2	6.7	36.8	5.7	11.8
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	17.5	42.0	8.0	33.0	7.5	52.0	7.0	34.0
Max Q Clear Time (g_c+I1), s	6.7	18.5	3.7	4.4	3.5	13.1	3.1	5.3
Green Ext Time (p_c), s	0.1	8.3	0.0	0.8	0.0	7.4	0.0	0.6

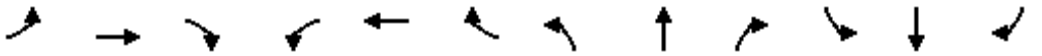
Intersection Summary	
HCM 6th Ctrl Delay	16.3
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	108	1101	653	581	120	219	423	262	507	894	124
Future Volume (vph)	108	1101	653	581	120	219	423	262	507	894	124
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	10.6	46.2	15.0	50.6	50.6	11.0	45.8	45.8	13.0	47.8	47.8
Total Split (%)	8.8%	38.5%	12.5%	42.2%	42.2%	9.2%	38.2%	38.2%	10.8%	39.8%	39.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.1	34.3	10.5	38.8	38.8	6.5	33.1	33.1	8.5	35.2	35.2
Actuated g/C Ratio	0.06	0.32	0.10	0.36	0.36	0.06	0.31	0.31	0.08	0.32	0.32
v/c Ratio	0.68	0.75	2.38	0.49	0.20	1.30	0.29	0.49	2.29	0.84	0.23
Control Delay	74.4	34.8	653.0	29.2	5.3	210.1	29.4	18.8	616.3	42.1	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.4	34.8	653.0	29.2	5.3	210.1	29.4	18.8	616.3	42.1	7.8
LOS	E	C	F	C	A	F	C	B	F	D	A
Approach Delay		37.6		327.9			70.1			230.2	
Approach LOS		D		F			E			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.38	
Intersection Signal Delay: 173.0	Intersection LOS: F
Intersection Capacity Utilization 95.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	1101	296	653	581	120	219	423	262	507	894	124
Future Volume (veh/h)	108	1101	296	653	581	120	219	423	262	507	894	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	112	1147	251	680	605	91	228	441	194	528	931	74
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	161	1541	334	301	1189	530	185	1496	464	243	1108	494
Arrive On Green	0.05	0.30	0.30	0.10	0.35	0.35	0.06	0.30	0.30	0.08	0.32	0.32
Sat Flow, veh/h	2956	5130	1114	2956	3420	1525	2956	4914	1524	2956	3420	1524
Grp Volume(v), veh/h	112	1037	361	680	605	91	228	441	194	528	931	74
Grp Sat Flow(s),veh/h/ln	1478	1548	1600	1478	1710	1525	1478	1638	1524	1478	1710	1524
Q Serve(g_s), s	3.8	20.6	20.8	10.4	14.3	4.2	6.4	7.0	10.4	8.4	25.8	3.5
Cycle Q Clear(g_c), s	3.8	20.6	20.8	10.4	14.3	4.2	6.4	7.0	10.4	8.4	25.8	3.5
Prop In Lane	1.00		0.70	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	1395	480	301	1189	530	185	1496	464	243	1108	494
V/C Ratio(X)	0.70	0.74	0.75	2.26	0.51	0.17	1.23	0.29	0.42	2.17	0.84	0.15
Avail Cap(c_a), veh/h	174	1818	626	301	1486	663	185	1904	590	243	1392	620
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.5	32.2	32.3	45.9	26.4	23.1	47.9	27.2	28.3	46.9	32.1	24.5
Incr Delay (d2), s/veh	8.4	1.2	3.7	577.7	0.3	0.2	142.1	0.1	0.6	541.3	3.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	7.2	7.9	27.8	5.5	1.4	5.9	2.6	3.6	21.2	10.5	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.9	33.4	35.9	623.6	26.8	23.3	190.0	27.3	28.9	588.2	36.0	24.7
LnGrp LOS	E	C	D	F	C	C	F	C	C	F	D	C
Approach Vol, veh/h		1510			1376			863			1533	
Approach Delay, s/veh		35.7			321.5			70.6			225.6	
Approach LOS		D			F			E			F	

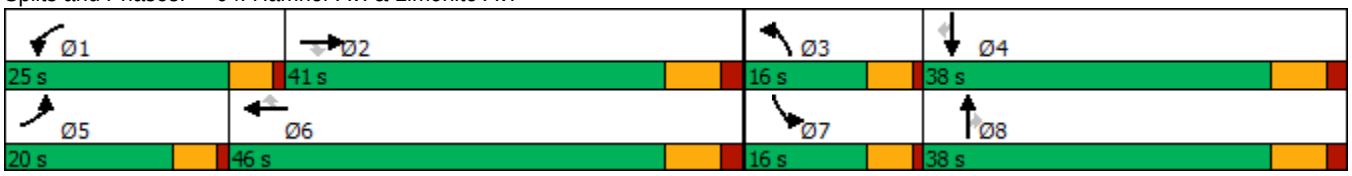
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	37.3	15.0	36.9	11.0	39.3	10.2	41.7
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	8.4	39.6	10.4	40.0	6.4	41.6	6.0	44.4
Max Q Clear Time (g_c+I1), s	10.4	12.4	12.4	22.8	8.4	27.8	5.8	16.3
Green Ext Time (p_c), s	0.0	3.3	0.0	7.9	0.0	5.1	0.0	4.1

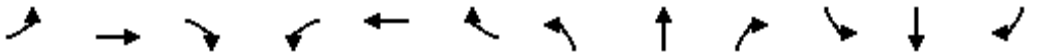
Intersection Summary	
HCM 6th Ctrl Delay	171.0
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	314	783	102	401	575	162	222	630	195	204	681	240
Future Volume (vph)	314	783	102	401	575	162	222	630	195	204	681	240
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	20.0	41.0	41.0	25.0	46.0	46.0	16.0	38.0	38.0	16.0	38.0	38.0
Total Split (%)	16.7%	34.2%	34.2%	20.8%	38.3%	38.3%	13.3%	31.7%	31.7%	13.3%	31.7%	31.7%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	12.8	27.8	27.8	16.0	30.9	30.9	9.9	26.4	26.4	9.5	26.1	26.1
Actuated g/C Ratio	0.12	0.27	0.27	0.15	0.30	0.30	0.09	0.25	0.25	0.09	0.25	0.25
v/c Ratio	0.75	0.58	0.20	0.77	0.55	0.28	0.69	0.49	0.37	0.66	0.54	0.43
Control Delay	58.0	35.8	4.5	54.3	33.6	5.8	59.8	35.6	6.9	58.8	36.5	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.0	35.8	4.5	54.3	33.6	5.8	59.8	35.6	6.9	58.8	36.5	6.8
LOS	E	D	A	D	C	A	E	D	A	E	D	A
Approach Delay		39.0			36.9			35.4			34.2	
Approach LOS		D			D			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 104.3	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 36.4	Intersection LOS: D
Intersection Capacity Utilization 68.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 64: Hamner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	314	783	102	401	575	162	222	630	195	204	681	240
Future Volume (veh/h)	314	783	102	401	575	162	222	630	195	204	681	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	324	807	84	413	593	122	229	649	117	210	702	184
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	401	1364	422	493	1044	459	304	1300	395	285	1272	388
Arrive On Green	0.11	0.26	0.26	0.14	0.29	0.29	0.09	0.25	0.25	0.08	0.25	0.25
Sat Flow, veh/h	3510	5187	1606	3510	3610	1586	3510	5187	1577	3510	5187	1580
Grp Volume(v), veh/h	324	807	84	413	593	122	229	649	117	210	702	184
Grp Sat Flow(s),veh/h/ln	1755	1729	1606	1755	1805	1586	1755	1729	1577	1755	1729	1580
Q Serve(g_s), s	8.2	12.3	3.7	10.4	12.7	5.4	5.8	9.7	5.4	5.3	10.7	9.0
Cycle Q Clear(g_c), s	8.2	12.3	3.7	10.4	12.7	5.4	5.8	9.7	5.4	5.3	10.7	9.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	401	1364	422	493	1044	459	304	1300	395	285	1272	388
V/C Ratio(X)	0.81	0.59	0.20	0.84	0.57	0.27	0.75	0.50	0.30	0.74	0.55	0.47
Avail Cap(c_a), veh/h	581	1946	603	775	1554	683	426	1775	539	426	1775	541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	29.1	26.0	37.9	27.4	24.8	40.4	29.1	27.5	40.7	29.8	29.2
Incr Delay (d2), s/veh	3.4	0.9	0.5	2.6	1.0	0.7	2.6	0.6	0.9	1.4	0.8	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	4.9	1.4	4.4	5.2	2.0	2.5	3.9	2.0	2.2	4.3	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.5	30.0	26.5	40.5	28.4	25.5	43.1	29.7	28.4	42.1	30.7	31.1
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1215			1128			995			1096	
Approach Delay, s/veh		33.1			32.5			32.6			32.9	
Approach LOS		C			C			C			C	

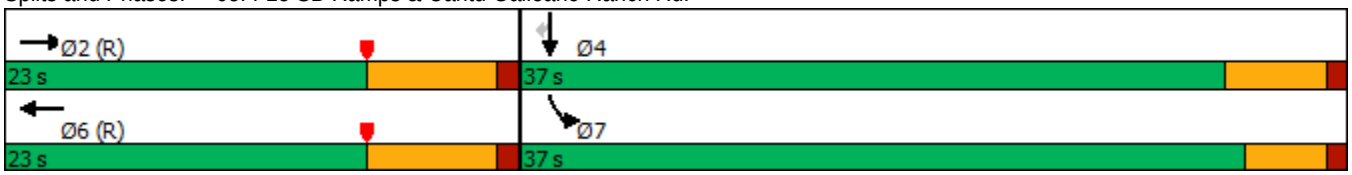
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.7	30.8	12.8	29.2	15.4	33.2	12.3	29.7
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	20.0	34.0	11.0	31.0	15.0	39.0	11.0	31.0
Max Q Clear Time (g_c+I1), s	12.4	14.3	7.8	12.7	10.2	14.7	7.3	11.7
Green Ext Time (p_c), s	0.3	9.2	0.1	8.4	0.2	8.0	0.1	7.7

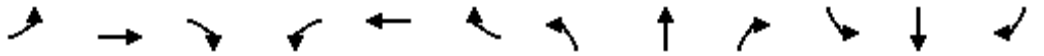
Intersection Summary	
HCM 6th Ctrl Delay	32.8
HCM 6th LOS	C

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1422	552	506	470	326	0	1157
Future Volume (vph)	1422	552	506	470	326	0	1157
Turn Type	NA	Free	NA	Free	Prot	NA	Perm
Protected Phases	2		6		7	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		7	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		9.6	10.5	10.5
Total Split (s)	23.0		23.0		37.0	37.0	37.0
Total Split (%)	38.3%		38.3%		61.7%	61.7%	61.7%
Yellow Time (s)	5.8		5.8		3.6	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8		6.8		4.6	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Min		None	Min	Min
Act Effct Green (s)	16.2	60.0	16.2	60.0	32.4	31.5	31.5
Actuated g/C Ratio	0.27	1.00	0.27	1.00	0.54	0.52	0.52
v/c Ratio	1.05	0.35	0.54	0.30	0.33	0.76	0.72
Control Delay	61.6	0.6	16.9	1.0	8.9	17.6	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.6	0.6	16.9	1.0	8.9	17.6	15.4
LOS	E	A	B	A	A	B	B
Approach Delay	44.6		9.3			15.0	
Approach LOS	D		A			B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 53 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 26.9	Intersection LOS: C
Intersection Capacity Utilization 72.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1422	552	0	506	470	0	0	0	326	0	1157
Future Volume (veh/h)	0	1422	552	0	506	470	0	0	0	326	0	1157
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1466	0	0	522	0				224	0	981
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2237		0	1557					685	0	1220
Arrive On Green	0.00	0.43	0.00	0.00	0.43	0.00				0.38	0.00	0.38
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1466	0	0	522	0				224	0	981
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	13.4	0.0	0.0	5.8	0.0				5.3	0.0	16.3
Cycle Q Clear(g_c), s	0.0	13.4	0.0	0.0	5.8	0.0				5.3	0.0	16.3
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2237		0	1557					685	0	1220
V/C Ratio(X)	0.00	0.66		0.00	0.34					0.33	0.00	0.80
Avail Cap(c_a), veh/h	0	2237		0	1557					977	0	1739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.09	0.00	0.00	0.95	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.5	0.0	0.0	11.3	0.0				13.2	0.0	16.7
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.6	0.0				0.3	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.9	0.0	0.0	1.9	0.0				1.8	0.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.7	0.0	0.0	11.9	0.0				13.5	0.0	18.5
LnGrp LOS	A	B		A	B					B	A	B
Approach Vol, veh/h		1466	A		522	A					1205	
Approach Delay, s/veh		13.7			11.9						17.6	
Approach LOS		B			B						B	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		32.7		27.3		32.7						
Change Period (Y+Rc), s		6.8		4.6		6.8						
Max Green Setting (Gmax), s		16.2		32.4		16.2						
Max Q Clear Time (g_c+I1), s		15.4		18.3		7.8						
Green Ext Time (p_c), s		0.6		4.4		1.9						

Intersection Summary		
HCM 6th Ctrl Delay		14.9
HCM 6th LOS		B

Notes

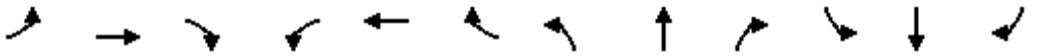
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1310	730	1156	577	145	1	480
Future Volume (vph)	1310	730	1156	577	145	1	480
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		4	4	
Permitted Phases		2		6			4
Detector Phase	2	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	36.5	36.5	23.5	23.5	23.5
Total Split (s)	74.0	74.0	74.0	74.0	36.0	36.0	36.0
Total Split (%)	67.3%	67.3%	67.3%	67.3%	32.7%	32.7%	32.7%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	Min	Min
Act Effct Green (s)	80.5	80.5	80.5	80.5	18.5	18.5	18.5
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.17	0.17	0.17
v/c Ratio	0.35	0.54	0.31	0.44	0.26	0.26	0.81
Control Delay	6.1	2.1	7.3	5.8	40.1	40.2	40.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.1	2.1	7.3	5.8	40.1	40.2	40.3
LOS	A	A	A	A	D	D	D
Approach Delay	4.6		6.8			40.2	
Approach LOS	A		A			D	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 10.6	Intersection LOS: B
Intersection Capacity Utilization 58.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	↰	↱↱
Traffic Volume (veh/h)	0	1310	730	0	1156	577	0	0	0	145	1	480
Future Volume (veh/h)	0	1310	730	0	1156	577	0	0	0	145	1	480
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1337	599	0	1180	589				149	0	256
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	4137	1284	0	4137	1284				371	0	330
Arrive On Green	0.00	0.80	0.80	0.00	0.80	0.80				0.10	0.00	0.10
Sat Flow, veh/h	0	5358	1610	0	5358	1610				3619	0	3220
Grp Volume(v), veh/h	0	1337	599	0	1180	589				149	0	256
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1610				1810	0	1610
Q Serve(g_s), s	0.0	7.7	13.2	0.0	6.6	12.8				4.2	0.0	8.5
Cycle Q Clear(g_c), s	0.0	7.7	13.2	0.0	6.6	12.8				4.2	0.0	8.5
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	4137	1284	0	4137	1284				371	0	330
V/C Ratio(X)	0.00	0.32	0.47	0.00	0.29	0.46				0.40	0.00	0.78
Avail Cap(c_a), veh/h	0	4137	1284	0	4137	1284				1003	0	893
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.90	0.90				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	3.0	3.6	0.0	2.9	3.6				46.2	0.0	48.1
Incr Delay (d2), s/veh	0.0	0.2	1.2	0.0	0.2	1.1				0.3	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	2.9	0.0	1.4	2.8				1.9	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	3.2	4.8	0.0	3.1	4.6				46.5	0.0	49.6
LnGrp LOS	A	A	A	A	A	A				D	A	D
Approach Vol, veh/h		1936			1769						405	
Approach Delay, s/veh		3.7			3.6						48.5	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		93.2		16.8		93.2						
Change Period (Y+Rc), s		5.5		5.5		5.5						
Max Green Setting (Gmax), s		68.5		30.5		68.5						
Max Q Clear Time (g_c+I1), s		15.2		10.5		14.8						
Green Ext Time (p_c), s		9.0		0.8		7.6						

Intersection Summary	
HCM 6th Ctrl Delay	8.1
HCM 6th LOS	A

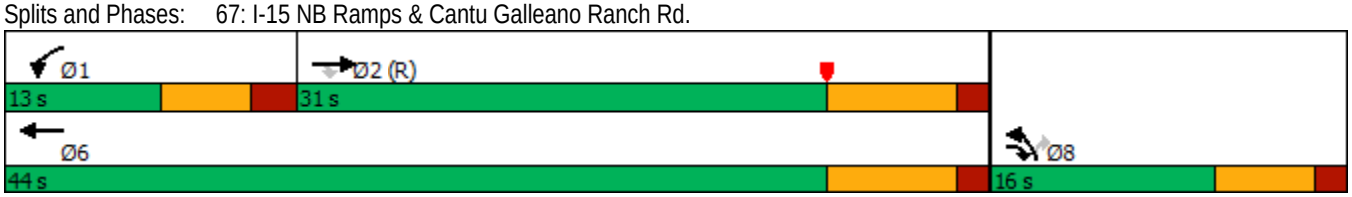
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	728	1055	328	765	216	257
Future Volume (vph)	728	1055	328	765	216	257
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	31.0	16.0	13.0	44.0	16.0	16.0
Total Split (%)	51.7%	26.7%	21.7%	73.3%	26.7%	26.7%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.0	6.0	7.3	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max
Act Effct Green (s)	23.7	41.0	7.0	36.7	10.0	10.0
Actuated g/C Ratio	0.40	0.68	0.12	0.61	0.17	0.17
v/c Ratio	0.37	1.00	0.85	0.25	0.52	0.42
Control Delay	11.2	33.4	47.6	5.6	18.1	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.2	33.4	47.6	5.6	18.1	8.5
LOS	B	C	D	A	B	A
Approach Delay	24.3			18.2	15.1	
Approach LOS	C			B	B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 21.0	Intersection LOS: C
Intersection Capacity Utilization 84.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	728	1055	328	765	216	257
Future Volume (veh/h)	728	1055	328	765	216	257
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	766	895	345	805	261	132
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2049	904	410	3173	603	268
Arrive On Green	0.66	0.66	0.12	0.61	0.17	0.17
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	766	895	345	805	261	132
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	4.0	23.7	5.8	4.3	3.9	4.5
Cycle Q Clear(g_c), s	4.0	23.7	5.8	4.3	3.9	4.5
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2049	904	410	3173	603	268
V/C Ratio(X)	0.37	0.99	0.84	0.25	0.43	0.49
Avail Cap(c_a), veh/h	2049	904	410	3173	603	268
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.26	0.26	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.9	6.2	26.0	5.4	22.5	22.7
Incr Delay (d2), s/veh	0.1	13.0	18.6	0.0	2.3	6.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	7.9	3.1	0.9	1.6	2.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.0	19.2	44.6	5.4	24.7	29.0
LnGrp LOS	A	B	D	A	C	C
Approach Vol, veh/h	1661			1150	393	
Approach Delay, s/veh	13.6			17.1	26.2	
Approach LOS	B			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.0	31.0				44.0	16.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	7.0	23.7				36.7	10.0
Max Q Clear Time (g_c+I1), s	7.8	25.7				6.3	6.5
Green Ext Time (p_c), s	0.0	0.0				5.4	0.5

Intersection Summary		
HCM 6th Ctrl Delay		16.4
HCM 6th LOS		B

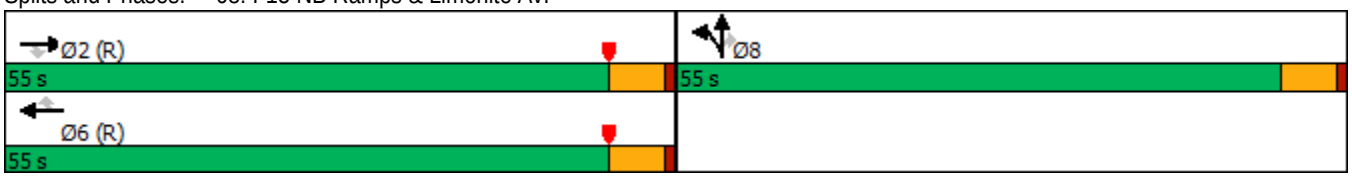
Notes

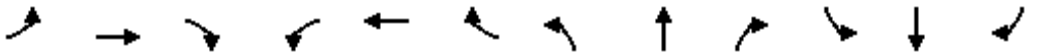
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	919	532	1251	209	481	2	852
Future Volume (vph)	919	532	1251	209	481	2	852
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		8	8	
Permitted Phases		2		6			8
Detector Phase	2	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	55.0	55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None
Act Effct Green (s)	58.9	58.9	58.9	58.9	40.1	40.1	40.1
Actuated g/C Ratio	0.54	0.54	0.54	0.54	0.36	0.36	0.36
v/c Ratio	0.33	0.48	0.46	0.22	0.39	0.39	0.78
Control Delay	15.6	5.7	17.4	3.0	26.5	26.6	31.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	5.7	17.4	3.0	26.5	26.6	31.2
LOS	B	A	B	A	C	C	C
Approach Delay	12.0		15.4			29.5	
Approach LOS	B		B			C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 18.7	Intersection LOS: B
Intersection Capacity Utilization 56.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱	↰	↕	↱↱			
Traffic Volume (veh/h)	0	919	532	0	1251	209	481	2	852	0	0	0
Future Volume (veh/h)	0	919	532	0	1251	209	481	2	852	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	0	928	537	0	1264	120	487	0	568			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	0	3494	1085	0	3494	1084	819	0	719			
Arrive On Green	0.00	1.00	1.00	0.00	0.67	0.67	0.23	0.00	0.23			
Sat Flow, veh/h	0	5358	1610	0	5358	1609	3619	0	3175			
Grp Volume(v), veh/h	0	928	537	0	1264	120	487	0	568			
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1609	1810	0	1588			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	11.6	2.9	13.2	0.0	18.5			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	11.6	2.9	13.2	0.0	18.5			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3494	1085	0	3494	1084	819	0	719			
V/C Ratio(X)	0.00	0.27	0.50	0.00	0.36	0.11	0.59	0.00	0.79			
Avail Cap(c_a), veh/h	0	3494	1085	0	3494	1084	1629	0	1429			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.95	0.95	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	7.7	6.3	38.0	0.0	40.1			
Incr Delay (d2), s/veh	0.0	0.2	1.5	0.0	0.3	0.2	0.7	0.0	2.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.5	0.0	3.7	0.9	5.7	0.0	7.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.2	1.5	0.0	8.0	6.5	38.7	0.0	42.1			
LnGrp LOS	A	A	A	A	A	A	D	A	D			
Approach Vol, veh/h		1465			1384			1055				
Approach Delay, s/veh		0.7			7.9			40.5				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		79.6				79.6		30.4				
Change Period (Y+Rc), s		5.5				5.5		5.5				
Max Green Setting (Gmax), s		49.5				49.5		49.5				
Max Q Clear Time (g_c+I1), s		2.0				13.6		20.5				
Green Ext Time (p_c), s		5.5				6.6		4.4				
Intersection Summary												
HCM 6th Ctrl Delay			14.0									
HCM 6th LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.

APPENDIX 7.3:

OPENING YEAR CUMULATIVE (2025) WITHOUT PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

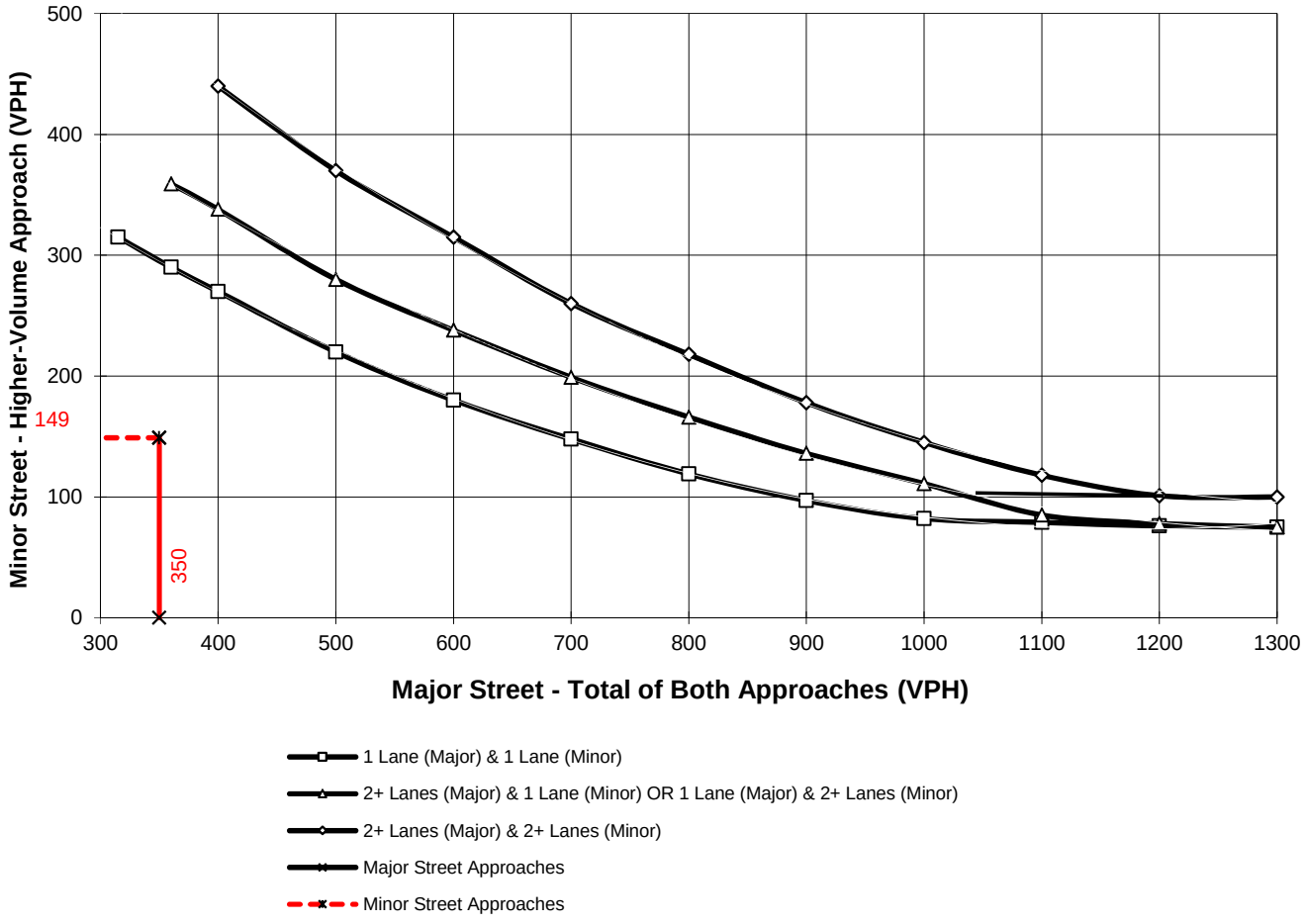
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Cumulative (2025) Without Project Conditions - Weekday AM Peak Hou**

Major Street Name = **Eucalyptus Av.** Total of Both Approaches (VPH) = **350**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Bon View Av.** High Volume Approach (VPH) = **149**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

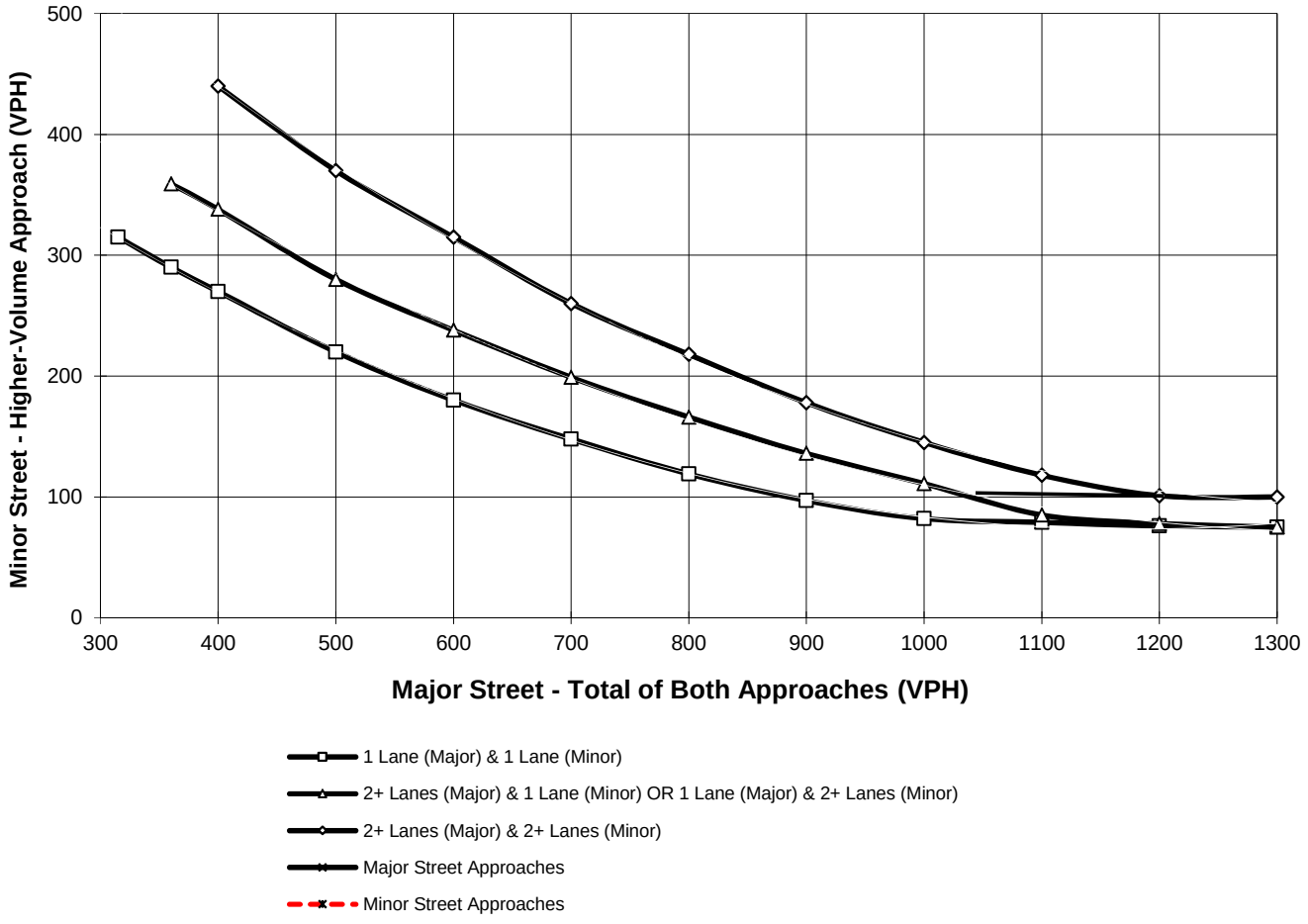
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Cumulative (2025) Without Project Conditions - Weekday AM Peak Hou**

Major Street Name = **Walker Av.** Total of Both Approaches (VPH) = **204**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Eucalyptus Av.** High Volume Approach (VPH) = **177**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

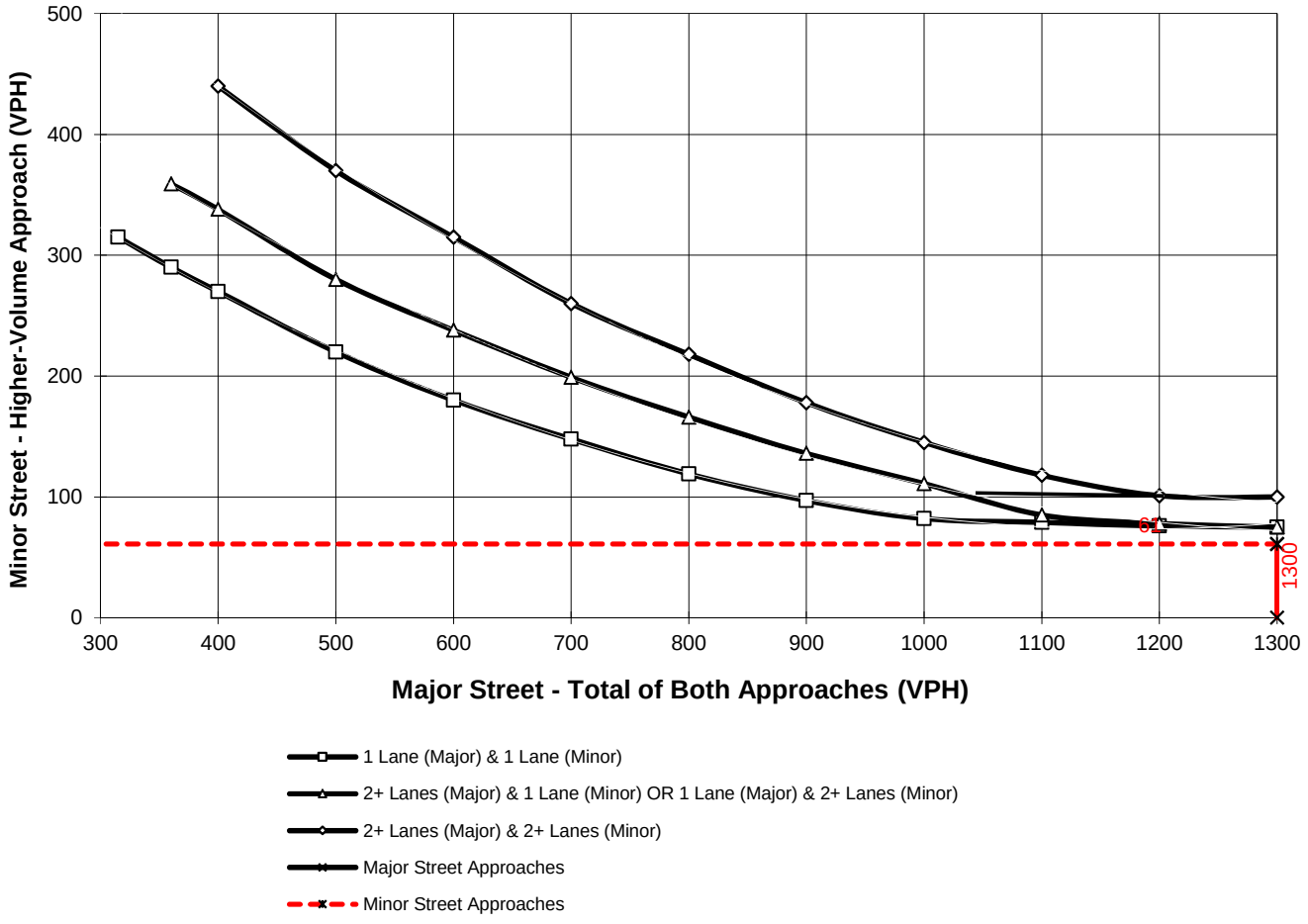
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Cumulative (2025) Without Project Conditions - Weekday AM Peak Hou**

Major Street Name = **Merrill Av.**
Total of Both Approaches (VPH) = **1407**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Baker Av.**
High Volume Approach (VPH) = **61**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

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APPENDIX 7.4:

OPENING YEAR CUMULATIVE (2025) WITH PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

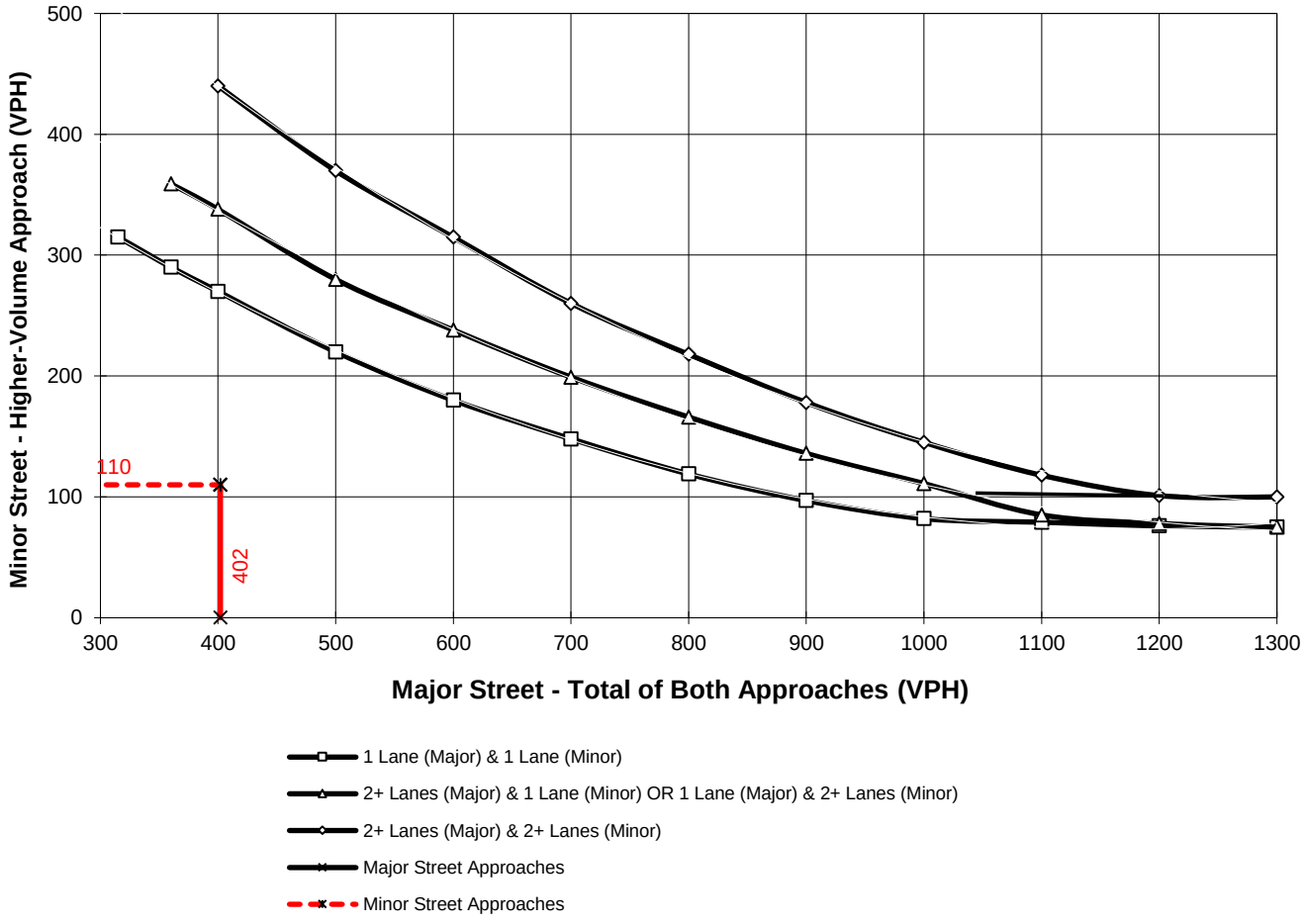
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Cumulative (2025) With Project Conditions - Weekday PM Peak Hour**

Major Street Name = **Eucalyptus Av.** Total of Both Approaches (VPH) = **402**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Bon View Av.** High Volume Approach (VPH) = **110**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

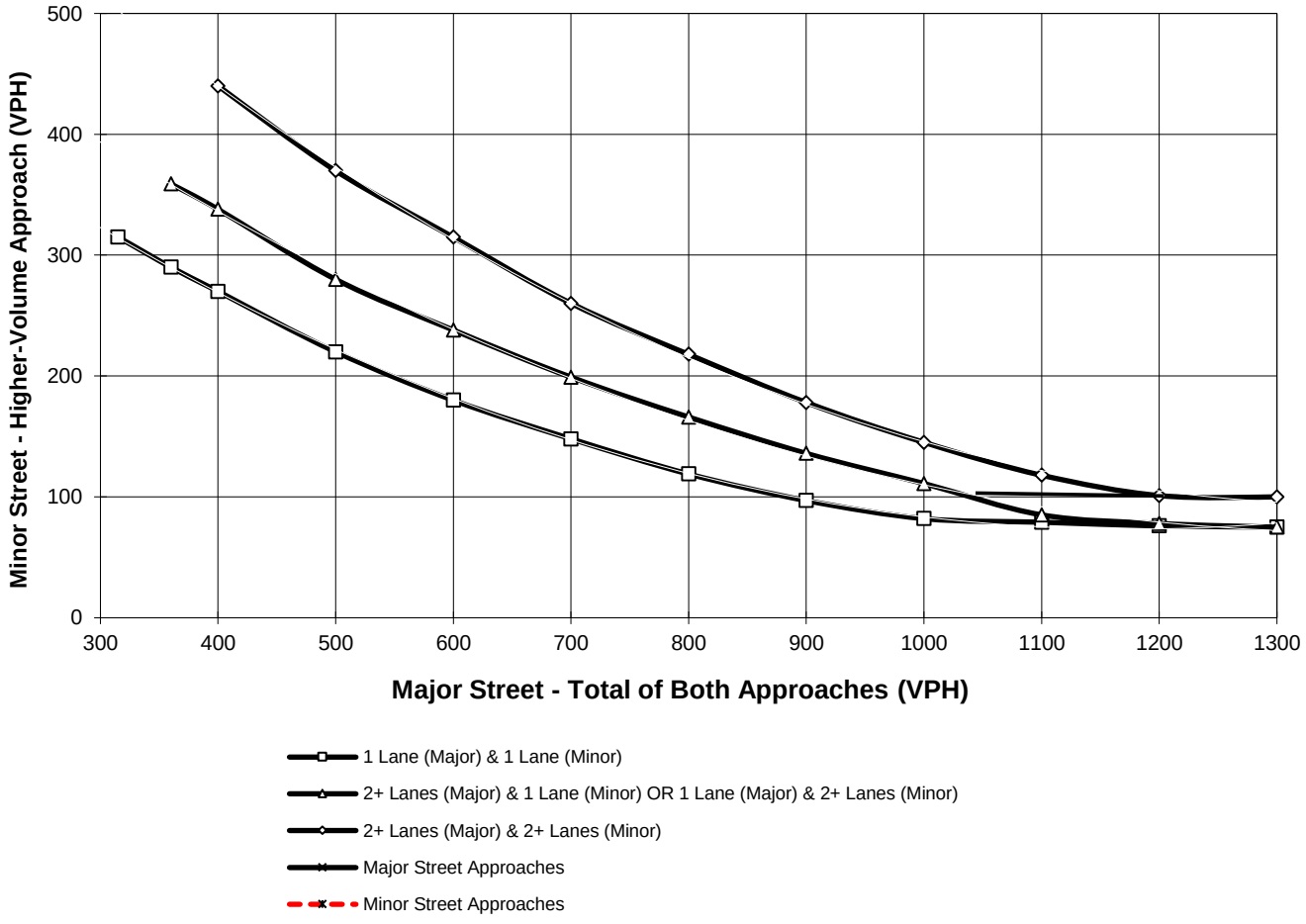
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Cumulative (2025) With Project Conditions - Weekday AM Peak Hour**

Major Street Name = **Walker Av.** Total of Both Approaches (VPH) = **204**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Eucalyptus Av.** High Volume Approach (VPH) = **177**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

APPENDIX 7.5:

OPENING YEAR CUMULATIVE (2025) WITHOUT PROJECT CONDITIONS OFF-RAMP QUEUING ANALYSIS WORKSHEETS

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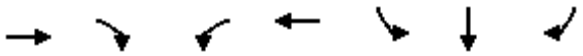


Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	976	265	84	1755	537	544	407
v/c Ratio	0.45	0.32	0.38	0.67	0.75	0.76	0.57
Control Delay	23.3	4.1	43.2	29.6	31.5	31.8	19.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.3	4.1	43.2	29.6	31.5	31.8	19.9
Queue Length 50th (ft)	176	0	28	339	285	289	146
Queue Length 95th (ft)	207	42	m32	m364	361	366	203
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	2174	831	224	2610	806	808	801
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.32	0.38	0.67	0.67	0.67	0.51

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	835	223	327	21	331	380	381	45
v/c Ratio	0.98	0.70	0.19	0.15	1.08	0.75	0.75	0.08
Control Delay	57.4	47.7	18.2	37.3	92.8	34.4	34.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.4	47.7	18.2	37.3	92.8	34.4	34.1	0.3
Queue Length 50th (ft)	217	108	57	10	~86	175	176	0
Queue Length 95th (ft)	#341	#279	96	32	#246	251	250	0
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	855	320	1700	137	306	640	645	693
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.70	0.19	0.15	1.08	0.59	0.59	0.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	390	1295	212	1322	327	331	79	50	821
v/c Ratio	1.03	0.54	0.13	0.96	0.61	0.60	0.13	0.26	0.94
Control Delay	96.1	18.8	0.1	56.8	35.0	34.8	1.5	44.5	30.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.1	18.8	0.1	56.8	35.0	34.8	1.5	44.5	30.3
Queue Length 50th (ft)	~279	194	0	243	186	188	0	30	63
Queue Length 95th (ft)	#469	222	m0	#321	286	289	9	66	#194
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	379	2386	1615	1371	540	548	598	202	886
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.54	0.13	0.96	0.61	0.60	0.13	0.25	0.93

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	811	346	915	1199	51	880
v/c Ratio	0.74	0.55	1.14	0.42	0.13	1.19
Control Delay	25.7	10.2	103.6	3.0	35.5	112.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	10.2	103.6	3.0	35.5	112.1
Queue Length 50th (ft)	175	58	~543	65	12	~233
Queue Length 95th (ft)	m199	m92	#764	60	29	#464
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1263	692	800	3023	384	738
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.50	1.14	0.40	0.13	1.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	439	439	400	467	1087	1147	563
v/c Ratio	0.89	0.92	0.79	0.97	0.51	1.15	0.66
Control Delay	52.0	57.4	34.8	43.1	21.0	110.9	6.7
Queue Delay	0.0	0.0	0.0	0.0	2.6	0.0	0.0
Total Delay	52.0	57.4	34.8	43.1	23.7	110.9	6.7
Queue Length 50th (ft)	246	253	168	257	319	~412	0
Queue Length 95th (ft)	#420	#448	#316	m#313	m342	#539	83
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)	400		400	285			
Base Capacity (vph)	514	493	524	483	2145	998	854
Starvation Cap Reductn	0	0	0	0	902	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.89	0.76	0.97	0.87	1.15	0.66

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

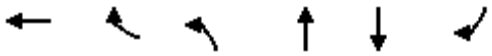
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	430	502	1061	809	431	1480
v/c Ratio	0.90	1.09	0.95	0.89	0.95	0.68
Control Delay	56.1	98.8	48.6	20.7	46.3	5.5
Queue Delay	22.2	5.3	0.0	0.0	0.0	1.5
Total Delay	78.3	104.1	48.6	20.7	46.3	7.1
Queue Length 50th (ft)	247	~323	310	101	192	84
Queue Length 95th (ft)	#431	#529	#445	#380	m189	m97
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	476	461	1119	911	461	2186
Starvation Cap Reductn	0	0	0	0	0	485
Spillback Cap Reductn	57	52	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.03	1.23	0.95	0.89	0.93	0.87

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	292	666	310	1271	825	678
v/c Ratio	0.41	0.99	0.92	0.69	0.80	0.73
Control Delay	28.6	64.6	62.4	25.1	47.2	7.9
Queue Delay	0.0	0.0	0.0	2.9	0.0	0.0
Total Delay	28.6	64.6	62.4	28.0	47.2	7.9
Queue Length 50th (ft)	162	469	258	334	315	0
Queue Length 95th (ft)	239	#729	m223	m288	395	111
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	709	675	351	1841	1026	930
Starvation Cap Reductn	0	0	0	442	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.99	0.88	0.91	0.80	0.73

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	756	226	1252	424	695
v/c Ratio	1.19	0.33	1.13	1.16	0.35
Control Delay	135.6	7.7	106.9	147.1	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	135.6	7.7	106.9	147.1	13.5
Queue Length 50th (ft)	~706	19	~570	~402	91
Queue Length 95th (ft)	#944	76	#710	m#584	158
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	636	681	1107	367	1991
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.19	0.33	1.13	1.16	0.35

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	553	589	796	1260	723
v/c Ratio	1.20	1.20	1.13	0.40	0.60
Control Delay	140.2	136.3	102.4	19.1	29.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	140.2	136.3	102.4	19.1	29.2
Queue Length 50th (ft)	~384	~365	~492	226	90
Queue Length 95th (ft)	#582	#571	m#615	m237	114
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	462	490	705	3181	1961
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.20	1.20	1.13	0.40	0.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	429	588	2256	182	812
v/c Ratio	0.72	0.93	1.07dr	0.73	0.29
Control Delay	33.7	45.9	44.9	42.9	24.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	33.7	45.9	44.9	42.9	24.3
Queue Length 50th (ft)	206	248	~397	112	153
Queue Length 95th (ft)	313	#458	#493	m135	m158
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	627	652	2289	300	2799
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.68	0.90	0.99	0.61	0.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1209	398	643	219	349	728	718
v/c Ratio	0.86	0.25	0.66	0.14	0.38	0.90	0.86
Control Delay	29.2	0.4	20.2	0.2	9.5	29.3	24.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	0.4	20.2	0.2	9.5	29.3	24.2
Queue Length 50th (ft)	151	0	117	0	69	217	195
Queue Length 95th (ft)	#224	0	168	m0	121	#469	#426
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1400	1615	974	1615	926	809	838
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.25	0.66	0.14	0.38	0.90	0.86

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1274	652	822	760	86	86	488
v/c Ratio	0.31	0.46	0.20	0.53	0.51	0.51	0.79
Control Delay	3.4	1.4	4.1	4.9	56.6	56.6	20.4
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	3.4	1.4	4.1	5.0	56.6	56.6	20.4
Queue Length 50th (ft)	64	0	29	36	62	62	40
Queue Length 95th (ft)	113	26	114	223	108	108	94
Internal Link Dist (ft)	1166		735			976	
Turn Bay Length (ft)		250					250
Base Capacity (vph)	4160	1408	4160	1445	397	397	945
Starvation Cap Reductn	0	0	0	93	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.46	0.20	0.56	0.22	0.22	0.52

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	598	981	435	553	451	207
v/c Ratio	0.28	0.89	1.07	0.17	0.73	0.52
Control Delay	9.4	18.4	93.2	4.8	25.6	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.4	18.4	93.2	4.8	25.6	9.5
Queue Length 50th (ft)	31	161	~92	25	57	0
Queue Length 95th (ft)	m46	m#282	#171	37	#113	54
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2135	1105	408	3259	618	396
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.89	1.07	0.17	0.73	0.52

Intersection Summary

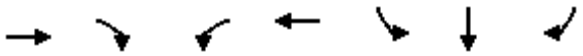
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	585	830	1261	444	143	143	360
v/c Ratio	0.15	0.58	0.32	0.33	0.58	0.58	0.51
Control Delay	3.6	4.3	5.0	1.2	52.6	52.6	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.6	4.3	5.0	1.2	52.6	52.6	7.4
Queue Length 50th (ft)	30	53	87	0	101	101	3
Queue Length 95th (ft)	52	162	141	29	156	156	45
Internal Link Dist (ft)	735		1069			1143	
Turn Bay Length (ft)				250			250
Base Capacity (vph)	3926	1424	3926	1330	771	771	1454
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.58	0.32	0.33	0.19	0.19	0.25

Intersection Summary



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1744	692	371	1681	545	547	584
v/c Ratio	0.95	0.70	0.85	0.62	0.79	0.79	0.84
Control Delay	45.3	7.7	47.9	22.1	35.4	35.5	34.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.3	7.7	47.9	22.1	35.4	35.5	34.9
Queue Length 50th (ft)	~414	22	130	264	298	301	275
Queue Length 95th (ft)	#475	88	m129	m256	401	402	383
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	1831	985	439	2690	734	735	737
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.70	0.85	0.62	0.74	0.74	0.79

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1068	142	313	20	173	423	423	78
v/c Ratio	1.02	0.67	0.19	0.18	0.71	0.78	0.77	0.13
Control Delay	64.5	50.3	24.5	39.3	26.5	35.0	34.3	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.5	50.3	24.5	39.3	26.5	35.0	34.3	0.9
Queue Length 50th (ft)	~317	72	70	10	10	192	192	0
Queue Length 95th (ft)	#442	m#159	115	31	#95	286	284	5
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	1043	213	1676	115	245	640	648	693
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.67	0.19	0.17	0.71	0.66	0.65	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	423	1830	365	1951	249	347	247	187	921
v/c Ratio	1.06	0.66	0.23	1.07	0.78	1.06	0.61	0.81	0.99
Control Delay	92.7	21.6	0.1	76.2	56.7	106.4	24.7	68.7	40.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.7	21.6	0.1	76.2	56.7	106.4	24.7	68.7	40.8
Queue Length 50th (ft)	~311	312	0	~401	160	~256	67	117	106
Queue Length 95th (ft)	m#403	m335	m0	#479	#287	#440	150	#232	#259
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	398	2780	1615	1831	320	328	406	232	931
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.66	0.23	1.07	0.78	1.06	0.61	0.81	0.99

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1105	197	486	1412	166	1303
v/c Ratio	0.89	0.31	1.49	0.69	0.14	1.65
Control Delay	27.6	7.7	262.7	14.4	19.5	316.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.6	7.7	262.7	14.4	19.5	316.3
Queue Length 50th (ft)	234	20	~341	237	29	~834
Queue Length 95th (ft)	m275	m29	#489	285	49	#1007
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1263	641	327	2075	1163	791
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.31	1.49	0.68	0.14	1.65

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	410	403	372	392	1227	1143	555
v/c Ratio	0.84	0.86	0.76	0.91	0.57	0.71	0.63
Control Delay	46.0	47.5	32.4	37.6	24.0	31.4	6.1
Queue Delay	0.0	0.0	0.0	0.0	4.7	0.0	0.0
Total Delay	46.0	47.5	32.4	37.6	28.7	31.4	6.1
Queue Length 50th (ft)	220	219	150	207	397	221	0
Queue Length 95th (ft)	#340	#369	256	m233	m424	275	81
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)				285			400
Base Capacity (vph)	552	528	545	441	2159	1610	883
Starvation Cap Reductn	0	0	0	0	846	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.76	0.68	0.89	0.93	0.71	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

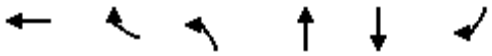
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	413	476	1127	712	414	1409
v/c Ratio	0.90	1.06	0.96	0.77	0.93	0.63
Control Delay	57.5	88.5	49.3	11.1	57.8	6.0
Queue Delay	50.3	19.9	0.0	0.0	0.0	0.7
Total Delay	107.8	108.5	49.3	11.1	57.8	6.7
Queue Length 50th (ft)	238	~290	332	41	171	67
Queue Length 95th (ft)	#418	#492	#475	190	m#376	110
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	457	451	1175	924	461	2226
Starvation Cap Reductn	0	0	0	0	0	439
Spillback Cap Reductn	147	136	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.33	1.51	0.96	0.77	0.90	0.79

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	329	384	233	986	1117	746
v/c Ratio	0.81	0.81	0.81	0.40	0.64	0.67
Control Delay	59.5	41.2	47.0	12.3	27.4	6.0
Queue Delay	3.2	0.0	0.0	0.6	0.0	0.0
Total Delay	62.7	41.2	47.0	12.8	27.4	6.0
Queue Length 50th (ft)	241	183	194	224	341	19
Queue Length 95th (ft)	334	292	m193	m223	474	137
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	484	536	351	2448	1736	1121
Starvation Cap Reductn	0	0	0	954	0	0
Spillback Cap Reductn	80	0	0	0	37	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.72	0.66	0.66	0.66	0.67

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	491	389	1133	505	987
v/c Ratio	1.01	0.73	1.00	1.01	0.43
Control Delay	88.5	33.8	66.0	93.6	8.4
Queue Delay	0.0	0.0	0.0	7.1	0.2
Total Delay	88.5	33.8	66.0	100.7	8.6
Queue Length 50th (ft)	~390	178	~441	~374	121
Queue Length 95th (ft)	#612	298	#597	#641	152
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	484	536	1130	502	2292
Starvation Cap Reductn	0	0	0	12	460
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.01	0.73	1.00	1.03	0.54

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	475	296	470	570	1739
v/c Ratio	1.03	0.47	0.98	0.18	0.89
Control Delay	84.3	6.1	77.5	20.7	34.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	84.3	6.1	77.5	20.7	34.7
Queue Length 50th (ft)	~291	0	236	102	256
Queue Length 95th (ft)	#479	61	m#420	138	305
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	462	633	481	3181	1959
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.03	0.47	0.98	0.18	0.89

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	119	636	1570	433	1267
v/c Ratio	0.19	1.04	1.00dr	1.44	0.47
Control Delay	21.6	73.7	27.1	231.4	21.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.6	73.7	27.1	231.4	21.9
Queue Length 50th (ft)	47	~361	204	~352	264
Queue Length 95th (ft)	87	#571	248	m#398	m288
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	625	613	2043	300	2720
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.19	1.04	0.77	1.44	0.47

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1280	569	519	485	302	585	573
v/c Ratio	0.78	0.35	0.45	0.30	0.32	0.67	0.64
Control Delay	22.6	0.6	15.2	0.9	8.6	12.1	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	0.6	15.2	0.9	8.6	12.1	11.1
Queue Length 50th (ft)	151	0	51	0	56	112	101
Queue Length 95th (ft)	199	0	121	0	100	226	200
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1642	1615	1143	1615	943	870	899
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.35	0.45	0.30	0.32	0.67	0.64

Intersection Summary

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1312	670	1142	589	74	75	490
v/c Ratio	0.34	0.49	0.29	0.43	0.28	0.29	0.82
Control Delay	5.4	1.7	6.4	5.5	42.2	42.2	37.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.4	1.7	6.4	5.5	42.2	42.2	37.3
Queue Length 50th (ft)	95	0	156	164	49	50	115
Queue Length 95th (ft)	152	34	180	297	89	89	167
Internal Link Dist (ft)	1166		735			975	
Turn Bay Length (ft)		250					250
Base Capacity (vph)	3879	1376	3879	1356	397	398	812
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.49	0.29	0.43	0.19	0.19	0.60

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	759	928	345	802	341	157
v/c Ratio	0.33	0.79	0.66	0.23	0.44	0.37
Control Delay	6.9	11.9	30.8	4.1	15.9	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.9	11.9	30.8	4.1	15.9	7.2
Queue Length 50th (ft)	27	150	61	33	36	0
Queue Length 95th (ft)	m53	#242	99	46	69	45
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2334	1171	525	3458	769	419
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.79	0.66	0.23	0.44	0.37

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	907	537	1256	211	228	231	861
v/c Ratio	0.33	0.48	0.45	0.22	0.37	0.37	0.78
Control Delay	14.6	4.7	17.3	3.0	26.2	26.2	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.6	4.7	17.3	3.0	26.2	26.2	30.9
Queue Length 50th (ft)	112	8	191	0	122	124	259
Queue Length 95th (ft)	165	96	273	41	164	167	297
Internal Link Dist (ft)	735		1069			1151	
Turn Bay Length (ft)				250			250
Base Capacity (vph)	2786	1116	2786	953	771	774	1334
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.48	0.45	0.22	0.30	0.30	0.65

Intersection Summary

APPENDIX 7.6:

OPENING YEAR CUMULATIVE (2025) WITH PROJECT CONDITIONS OFF-RAMP QUEUING ANALYSIS WORKSHEETS

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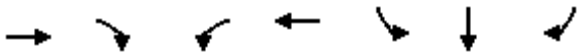


Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	982	265	84	1758	566	573	407
v/c Ratio	0.46	0.32	0.38	0.69	0.78	0.78	0.55
Control Delay	23.9	4.1	43.6	30.0	32.2	32.6	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.9	4.1	43.6	30.0	32.2	32.6	19.3
Queue Length 50th (ft)	181	0	28	339	300	305	143
Queue Length 95th (ft)	208	42	m32	m363	388	393	203
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	2126	818	224	2562	806	808	801
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.32	0.38	0.69	0.70	0.71	0.51

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	840	223	329	21	331	380	381	45
v/c Ratio	0.98	0.70	0.19	0.15	1.08	0.75	0.75	0.08
Control Delay	58.7	47.6	18.4	37.3	92.8	34.4	34.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.7	47.6	18.4	37.3	92.8	34.4	34.1	0.3
Queue Length 50th (ft)	218	108	58	10	~86	175	176	0
Queue Length 95th (ft)	#344	#279	96	32	#246	251	250	0
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	855	320	1700	137	306	640	645	693
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.70	0.19	0.15	1.08	0.59	0.59	0.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	390	1353	212	1341	327	331	79	50	821
v/c Ratio	1.05	0.57	0.13	0.97	0.61	0.61	0.13	0.26	0.95
Control Delay	100.0	18.9	0.1	56.6	35.1	34.9	1.5	44.5	31.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	100.0	18.9	0.1	56.6	35.1	34.9	1.5	44.5	31.8
Queue Length 50th (ft)	~282	206	0	246	186	188	0	30	66
Queue Length 95th (ft)	#472	235	m0	#324	286	289	9	66	#201
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	373	2386	1615	1389	539	546	596	202	878
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.05	0.57	0.13	0.97	0.61	0.61	0.13	0.25	0.94

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	816	346	915	1231	51	980
v/c Ratio	0.74	0.55	1.15	0.43	0.13	1.33
Control Delay	25.7	10.2	106.0	3.1	35.5	172.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	10.2	106.0	3.1	35.5	172.4
Queue Length 50th (ft)	176	57	~546	68	12	~344
Queue Length 95th (ft)	m199	m92	#767	62	29	#583
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1272	695	796	3023	387	737
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.50	1.15	0.41	0.13	1.33

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	439	439	400	504	1089	1152	563
v/c Ratio	0.89	0.92	0.79	1.03	0.51	1.17	0.66
Control Delay	52.0	57.4	35.0	58.5	22.0	120.4	6.8
Queue Delay	0.0	0.0	0.0	0.0	2.7	0.0	0.0
Total Delay	52.0	57.4	35.0	58.5	24.7	120.4	6.8
Queue Length 50th (ft)	246	253	168	~319	322	~415	0
Queue Length 95th (ft)	#420	#448	#317	m#366	m347	#543	83
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)	400		400	285			
Base Capacity (vph)	514	493	523	491	2145	982	848
Starvation Cap Reductn	0	0	0	0	903	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.89	0.76	1.03	0.88	1.17	0.66

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

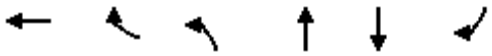
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	430	625	1100	809	431	1485
v/c Ratio	0.90	1.36	0.93	0.86	1.02	0.68
Control Delay	56.1	204.2	44.2	17.8	63.5	5.5
Queue Delay	23.7	1.2	0.0	0.0	0.0	1.6
Total Delay	79.8	205.4	44.2	17.8	63.5	7.1
Queue Length 50th (ft)	247	~483	315	86	~211	84
Queue Length 95th (ft)	#431	#704	#446	#366	m199	m96
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	476	459	1183	936	421	2186
Starvation Cap Reductn	0	0	0	0	0	485
Spillback Cap Reductn	59	54	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.03	1.54	0.93	0.86	1.02	0.87

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	304	666	315	1276	842	678
v/c Ratio	0.43	0.99	0.93	0.69	0.82	0.73
Control Delay	28.9	64.6	63.2	25.1	48.3	7.9
Queue Delay	0.0	0.0	0.0	3.0	0.0	0.0
Total Delay	28.9	64.6	63.2	28.1	48.3	7.9
Queue Length 50th (ft)	170	469	262	334	324	0
Queue Length 95th (ft)	250	#729	m225	m286	404	111
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	709	675	351	1841	1023	929
Starvation Cap Reductn	0	0	0	442	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.99	0.90	0.91	0.82	0.73

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	756	243	1266	424	724
v/c Ratio	1.19	0.35	1.14	1.16	0.36
Control Delay	135.6	8.2	111.7	146.4	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.2
Total Delay	135.6	8.2	111.7	146.4	14.2
Queue Length 50th (ft)	~706	24	~582	~402	100
Queue Length 95th (ft)	#944	85	#722	m#568	164
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	636	686	1107	367	1991
Starvation Cap Reductn	0	0	0	0	542
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.19	0.35	1.14	1.16	0.50

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	657	589	796	1262	728
v/c Ratio	1.42	1.20	1.13	0.40	0.60
Control Delay	231.4	136.3	103.0	19.6	29.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	231.4	136.3	103.0	19.6	29.3
Queue Length 50th (ft)	~509	~365	~492	226	91
Queue Length 95th (ft)	#718	#571	m#592	m230	115
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	462	490	704	3181	1963
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.42	1.20	1.13	0.40	0.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	429	588	2288	182	918
v/c Ratio	0.70	0.95	1.13dr	0.73	0.33
Control Delay	32.8	51.6	53.3	39.1	25.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	32.8	51.6	53.3	39.1	25.7
Queue Length 50th (ft)	206	271	~408	113	172
Queue Length 95th (ft)	313	#487	#504	m123	m160
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	627	629	2244	300	2763
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.68	0.93	1.02	0.61	0.33

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1260	398	649	219	349	809	801
v/c Ratio	0.90	0.25	0.67	0.14	0.38	1.00	0.96
Control Delay	31.9	0.4	20.3	0.2	9.5	48.4	37.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.9	0.4	20.3	0.2	9.5	48.4	37.7
Queue Length 50th (ft)	160	0	118	0	69	273	246
Queue Length 95th (ft)	#239	0	171	m0	121	#548	#505
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1400	1615	974	1615	926	809	838
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.25	0.67	0.14	0.38	1.00	0.96

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1280	672	910	760	86	86	488
v/c Ratio	0.32	0.48	0.23	0.53	0.41	0.41	0.82
Control Delay	4.3	1.6	6.0	5.7	48.6	48.6	29.8
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	4.3	1.6	6.0	5.8	48.6	48.6	29.8
Queue Length 50th (ft)	78	0	42	35	60	60	77
Queue Length 95th (ft)	133	30	156	259	104	104	132
Internal Link Dist (ft)	1166		735			976	
Turn Bay Length (ft)		250					250
Base Capacity (vph)	4034	1389	4034	1425	459	459	964
Starvation Cap Reductn	0	0	0	93	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.48	0.23	0.57	0.19	0.19	0.51

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	600	1030	435	558	451	207
v/c Ratio	0.28	0.93	1.08	0.17	0.73	0.52
Control Delay	9.8	22.5	98.5	4.8	25.6	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.8	22.5	98.5	4.8	25.6	9.5
Queue Length 50th (ft)	32	180	~93	26	57	0
Queue Length 95th (ft)	m44	m#297	#172	37	#113	54
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2143	1108	402	3259	618	396
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.93	1.08	0.17	0.73	0.52

Intersection Summary

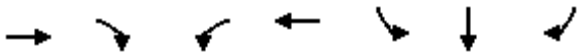
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	591	830	1280	444	177	178	360
v/c Ratio	0.16	0.59	0.34	0.34	0.63	0.63	0.48
Control Delay	4.3	5.8	6.0	1.4	51.5	51.7	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.3	5.8	6.0	1.4	51.5	51.7	7.0
Queue Length 50th (ft)	33	80	99	0	124	125	5
Queue Length 95th (ft)	58	194	160	32	184	185	45
Internal Link Dist (ft)	735		1069			1143	
Turn Bay Length (ft)				250			250
Base Capacity (vph)	3809	1406	3809	1304	771	771	1451
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.59	0.34	0.34	0.23	0.23	0.25

Intersection Summary



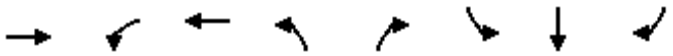
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1747	692	371	1689	559	561	584
v/c Ratio	0.96	0.70	0.85	0.63	0.81	0.81	0.84
Control Delay	46.3	7.8	48.0	22.3	36.5	36.6	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.3	7.8	48.0	22.3	36.5	36.6	34.6
Queue Length 50th (ft)	~416	22	130	265	310	311	275
Queue Length 95th (ft)	#476	89	m126	m250	414	417	383
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	1823	983	439	2681	734	735	737
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.70	0.85	0.63	0.76	0.76	0.79

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1071	142	320	20	173	423	423	78
v/c Ratio	1.03	0.67	0.19	0.18	0.71	0.78	0.77	0.13
Control Delay	65.3	49.0	24.5	39.3	26.5	35.0	34.3	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.3	49.0	24.5	39.3	26.5	35.0	34.3	0.9
Queue Length 50th (ft)	~319	73	73	10	10	192	192	0
Queue Length 95th (ft)	#444	m#141	m109	31	#95	286	284	5
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	1043	213	1676	115	245	640	648	693
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.67	0.19	0.17	0.71	0.66	0.65	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	423	1860	365	2028	249	347	247	187	921
v/c Ratio	1.07	0.67	0.23	1.11	0.78	1.06	0.61	0.81	0.99
Control Delay	92.7	21.7	0.1	90.7	56.7	106.4	24.7	68.7	41.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.7	21.7	0.1	90.7	56.7	106.4	24.7	68.7	41.5
Queue Length 50th (ft)	~313	319	0	~429	160	~256	67	117	107
Queue Length 95th (ft)	m#398	m340	m0	#507	#287	#440	150	#232	#261
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	397	2780	1615	1834	320	328	406	232	929
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.07	0.67	0.23	1.11	0.78	1.06	0.61	0.81	0.99

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1108	197	486	1540	166	1349
v/c Ratio	0.89	0.31	1.51	0.75	0.14	1.71
Control Delay	27.2	7.7	272.7	15.9	19.4	344.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.2	7.7	272.7	15.9	19.4	344.5
Queue Length 50th (ft)	230	20	~343	274	29	~888
Queue Length 95th (ft)	m271	m28	#492	327	49	#1060
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1272	645	322	2075	1165	789
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.31	1.51	0.74	0.14	1.71

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	410	403	372	520	1234	1146	555
v/c Ratio	0.84	0.86	0.76	1.04	0.57	1.17	0.66
Control Delay	46.0	47.5	32.4	53.8	24.1	118.0	6.7
Queue Delay	0.0	0.0	0.0	0.0	5.0	0.0	0.0
Total Delay	46.0	47.5	32.4	53.8	29.2	118.0	6.7
Queue Length 50th (ft)	220	219	150	~354	401	~411	0
Queue Length 95th (ft)	#340	#369	256	m#353	m386	#538	81
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)				285			400
Base Capacity (vph)	552	528	545	498	2159	982	843
Starvation Cap Reductn	0	0	0	0	846	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.76	0.68	1.04	0.94	1.17	0.66

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

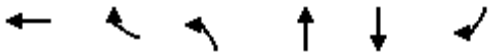
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	413	523	1259	712	414	1412
v/c Ratio	0.90	1.16	1.07	0.77	0.93	0.63
Control Delay	57.5	123.6	78.8	11.1	46.6	4.7
Queue Delay	51.1	4.3	0.0	0.0	0.0	1.0
Total Delay	108.6	127.9	78.8	11.1	46.6	5.7
Queue Length 50th (ft)	238	~351	~432	41	188	68
Queue Length 95th (ft)	#418	#560	#562	190	m196	m93
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	457	451	1175	924	461	2226
Starvation Cap Reductn	0	0	0	0	0	506
Spillback Cap Reductn	166	153	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.42	1.76	1.07	0.77	0.90	0.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	334	384	255	1008	1125	746
v/c Ratio	0.82	0.82	0.84	0.41	0.66	0.67
Control Delay	59.8	42.4	48.4	12.5	28.6	6.3
Queue Delay	3.5	0.0	0.0	0.6	0.1	0.0
Total Delay	63.3	42.4	48.4	13.1	28.6	6.3
Queue Length 50th (ft)	244	188	212	224	356	22
Queue Length 95th (ft)	339	299	m204	m216	479	143
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	484	531	351	2441	1696	1108
Starvation Cap Reductn	0	0	0	951	0	0
Spillback Cap Reductn	80	0	0	0	34	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.72	0.73	0.68	0.68	0.67

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	491	398	1193	505	1002
v/c Ratio	1.01	0.75	1.06	1.01	0.44
Control Delay	88.5	35.9	81.0	94.3	8.5
Queue Delay	0.0	0.0	0.0	7.1	0.2
Total Delay	88.5	35.9	81.0	101.4	8.7
Queue Length 50th (ft)	~390	190	~514	~389	123
Queue Length 95th (ft)	#612	313	#653	#641	158
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	484	532	1128	502	2292
Starvation Cap Reductn	0	0	0	12	456
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.01	0.75	1.06	1.03	0.55

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	515	296	470	577	1742
v/c Ratio	1.11	0.47	0.98	0.18	0.89
Control Delay	110.5	6.1	76.2	20.3	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	110.5	6.1	76.2	20.3	34.8
Queue Length 50th (ft)	~339	0	238	103	256
Queue Length 95th (ft)	#531	61	m#386	m133	306
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	462	633	481	3181	1959
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.11	0.47	0.98	0.18	0.89

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	119	636	1684	433	1310
v/c Ratio	0.19	1.04	1.12dr	1.46	0.48
Control Delay	21.6	73.7	28.0	239.1	22.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.6	73.7	28.0	239.1	22.5
Queue Length 50th (ft)	47	~361	220	~355	272
Queue Length 95th (ft)	87	#571	268	m#388	m289
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	625	613	2066	296	2720
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.19	1.04	0.82	1.46	0.48

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1466	569	522	485	302	619	608
v/c Ratio	1.05	0.35	0.54	0.30	0.33	0.76	0.72
Control Delay	61.6	0.6	16.9	1.0	8.9	17.6	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.6	0.6	16.9	1.0	8.9	17.6	15.4
Queue Length 50th (ft)	~218	0	51	0	57	151	136
Queue Length 95th (ft)	#301	0	118	2	103	#321	260
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1400	1615	974	1615	926	815	844
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.05	0.35	0.54	0.30	0.33	0.76	0.72

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1337	745	1180	589	74	75	490
v/c Ratio	0.35	0.54	0.31	0.44	0.26	0.26	0.81
Control Delay	6.1	2.1	7.3	5.8	40.1	40.2	40.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.1	2.1	7.3	5.8	40.1	40.2	40.3
Queue Length 50th (ft)	106	0	165	158	48	49	132
Queue Length 95th (ft)	165	37	228	289	87	87	183
Internal Link Dist (ft)	1166		735			975	
Turn Bay Length (ft)		250					250
Base Capacity (vph)	3797	1382	3797	1339	475	476	900
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.54	0.31	0.44	0.16	0.16	0.54

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	766	1111	345	805	341	157
v/c Ratio	0.37	1.00	0.85	0.25	0.52	0.42
Control Delay	11.2	33.4	47.6	5.6	18.1	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.2	33.4	47.6	5.6	18.1	8.5
Queue Length 50th (ft)	47	~239	64	41	38	0
Queue Length 95th (ft)	m49	m#253	#128	58	72	47
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2048	1109	408	3172	660	375
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	1.00	0.85	0.25	0.52	0.42

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	928	537	1264	211	243	245	861
v/c Ratio	0.33	0.48	0.46	0.22	0.39	0.39	0.78
Control Delay	15.6	5.7	17.4	3.0	26.5	26.6	31.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	5.7	17.4	3.0	26.5	26.6	31.2
Queue Length 50th (ft)	116	9	194	0	131	132	261
Queue Length 95th (ft)	188	117	276	41	175	176	300
Internal Link Dist (ft)	735		1069			1151	
Turn Bay Length (ft)				250			250
Base Capacity (vph)	2778	1114	2778	950	771	774	1329
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.48	0.46	0.22	0.32	0.32	0.65

Intersection Summary

APPENDIX 7.7:

OPENING YEAR CUMULATIVE (2025) WITHOUT PROJECT CONDITIONS FREEWAY FACILITY ANALYSIS WORKSHEETS

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2895	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	850
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.35
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	12.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2895	1083
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	8.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.926	0.893
Flow Rate (vi),pc/h	3398	1318
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.35	0.31

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	6.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.417
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	770
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	58.3
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	1859	Ramp Junction Speed (S), mi/h	65.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	13.0
Level of Service (LOS)	A		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	458	556
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.893
Flow Rate (vi),pc/h	528	677
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.25	0.36

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	11.4
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.308
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	528	Ramp Junction Speed (S), mi/h	61.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	1205	Average Density (D), pc/mi/ln	9.8
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1715	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1016
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.42
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4694	Heavy Vehicle Adjustment Factor (f_{HV})	0.787
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1621
Total Trucks, %	27.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.68
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3969	725
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	29.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.775	0.855
Flow Rate (vi),pc/h	5567	922
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.90	0.44

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	29.8
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.496
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2115
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	56.1
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	64.2
Flow in Lanes 1 and 2 (v12), pc/h	3452	Ramp Junction Speed (S), mi/h	58.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	4374	Average Density (D), pc/mi/ln	37.0
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1587	758
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	30.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.769	0.893
Flow Rate (vi),pc/h	2243	923
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.31	0.22

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	16.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.381
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	726
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.3
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	1517	Ramp Junction Speed (S), mi/h	64.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	11.7
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1587	Heavy Vehicle Adjustment Factor (f_{HV})	0.769
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	748
Total Trucks, %	30.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.31
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	10.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8188	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2337
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.97
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	42.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8188	829
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.855
Flow Rate (vi),pc/h	9349	1054
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	1.08	0.50

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	37.4
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	47.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.086	Outer Lanes Freeway Speed (SO), mi/h	61.1
Flow in Lanes 1 and 2 (v12), pc/h	3949	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	5003	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.952	9441	9548	0.99	53.8	43.9	E

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.952	0.833	9441	953	9600	2100	0.98	0.45	64.8	59.2	36.4	40.0	E

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	8518	9548	0.89	59.3	35.9	E

Segment 4: Merge

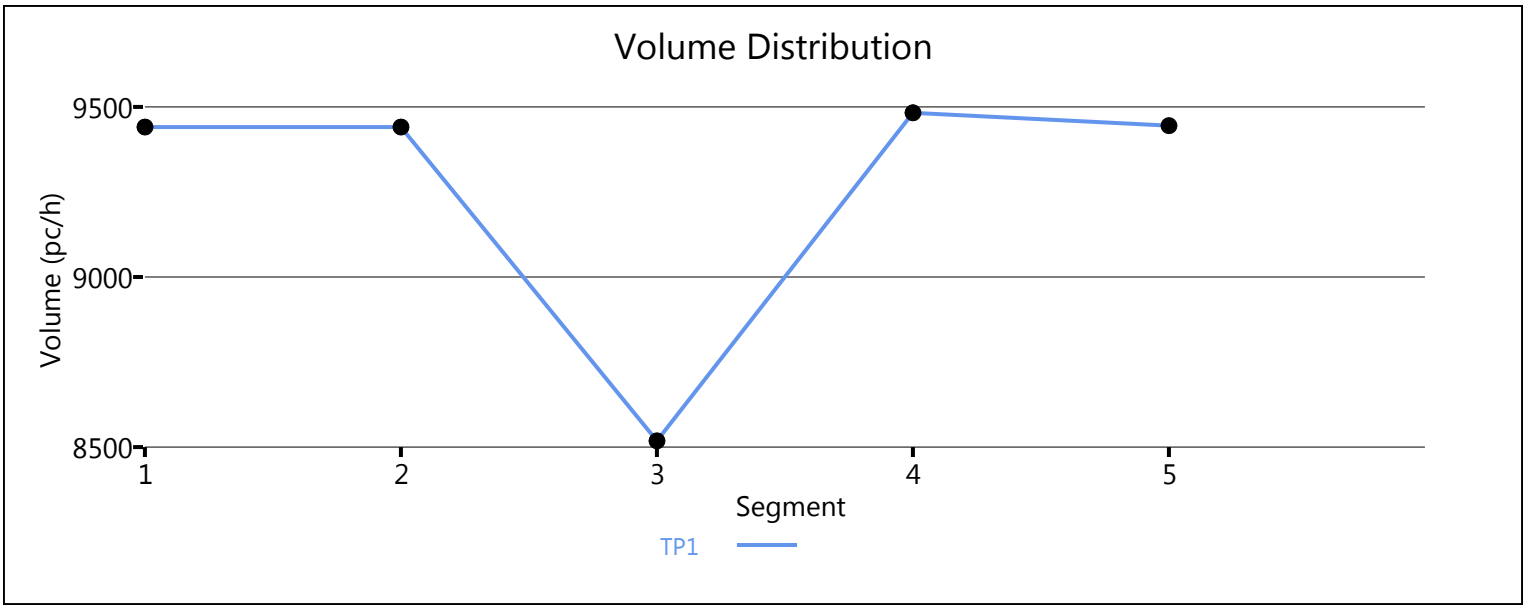
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.826	9483	965	9600	2100	0.99	0.46	58.6	55.1	40.5	32.4	D

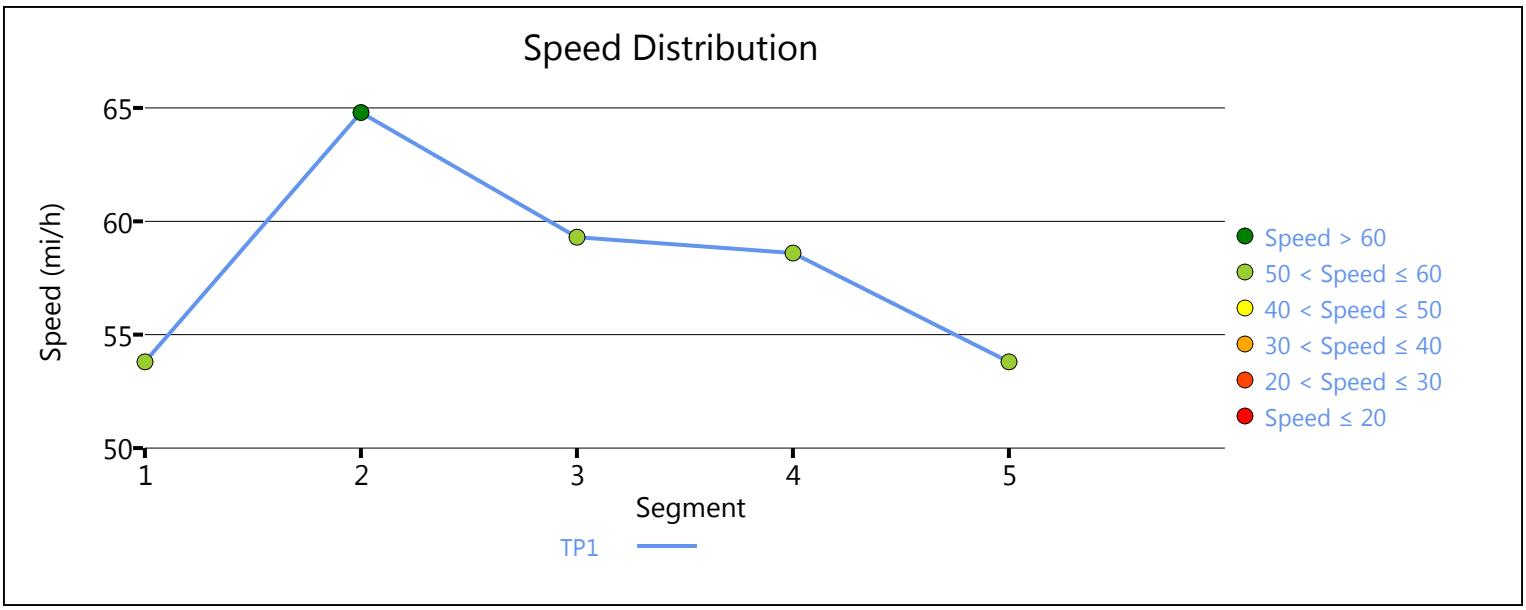
Segment 5: Basic

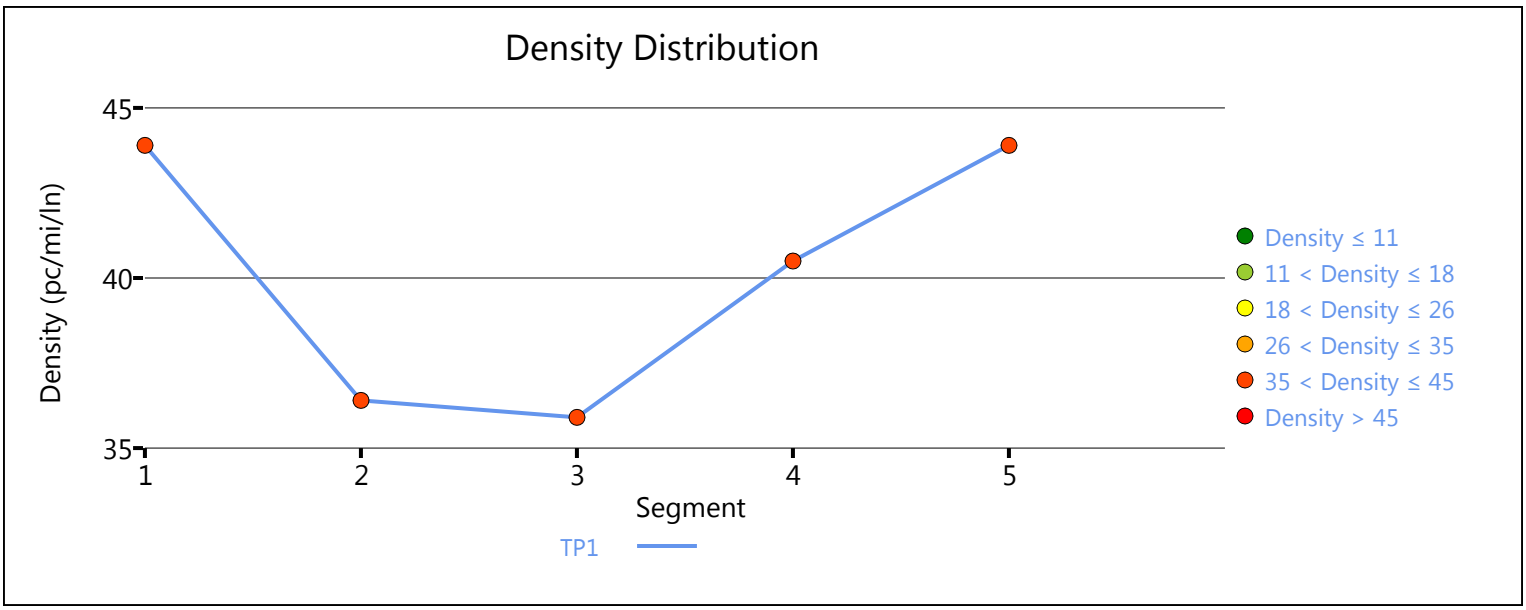
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.952	9445	9548	0.99	53.8	43.9	E

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	57.0	40.6	38.8	2.0	E

Facility Overall Results			
Space Mean Speed, mi/h	57.0	Density, veh/mi/ln	38.8
Average Travel Time, min	2.0	Density, pc/mi/ln	40.6







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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	5999	847
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	7.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.862
Flow Rate (vi),pc/h	6974	1068
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.58	0.51

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	31.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.394
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1370
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	75.3
Flow in Lanes 1 and 2 (v12), pc/h	3187	Ramp Junction Speed (S), mi/h	65.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	21.3
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5999	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1395
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2022) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8016	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2223
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.93
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	38.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8016	721
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	18.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.847
Flow Rate (vi),pc/h	8891	925
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.74	0.44

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	30.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.381
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1745
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.3
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	73.9
Flow in Lanes 1 and 2 (v12), pc/h	3623	Ramp Junction Speed (S), mi/h	65.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	27.1
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	9244	9548	0.97	55.1	41.9	E

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.971	0.885	9244	958	9600	2100	0.96	0.46	64.9	59.2	35.6	38.8	E

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.990	8210	9548	0.86	60.9	33.7	D

Segment 4: Merge

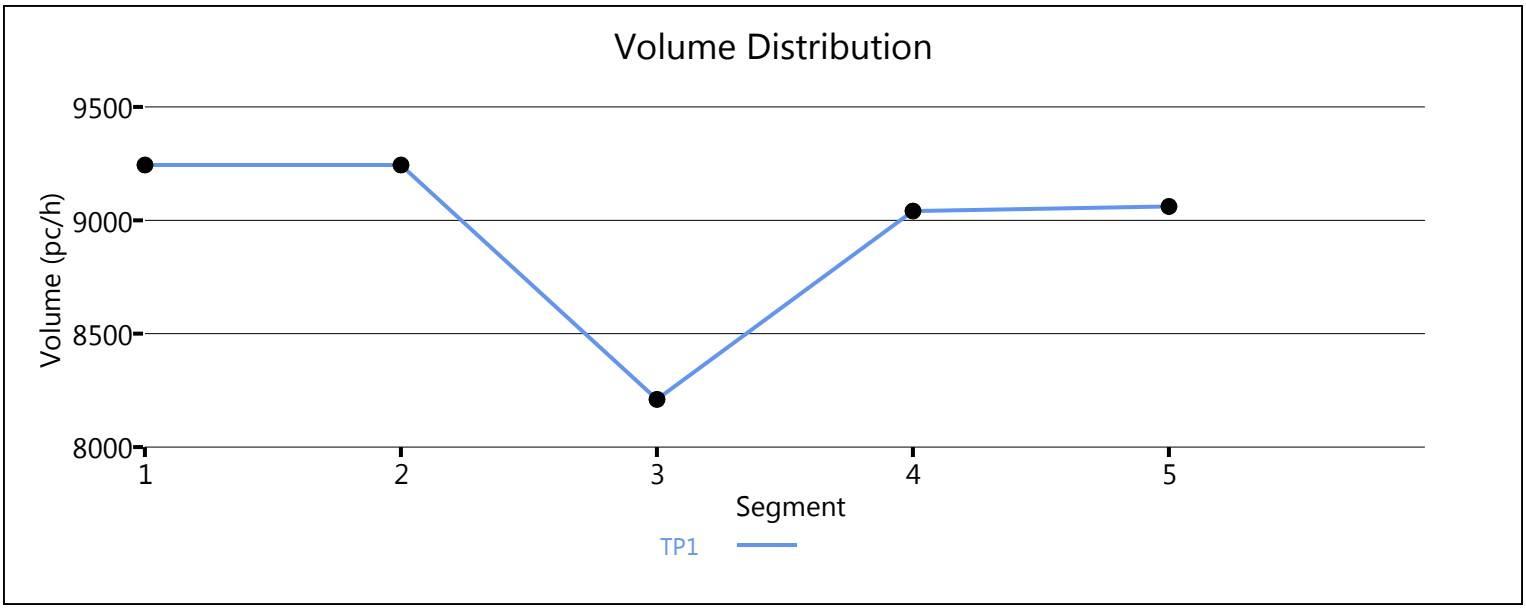
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.990	0.806	9041	831	9600	2100	0.94	0.40	60.0	57.2	37.7	30.1	D

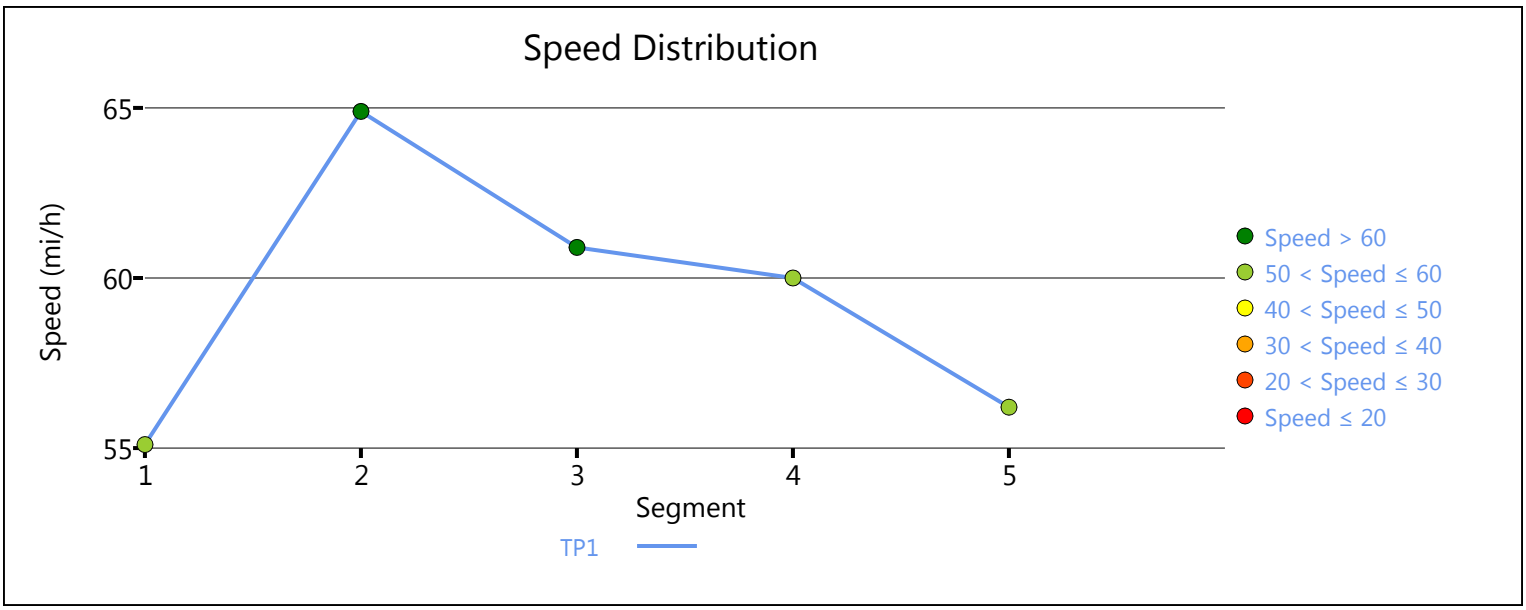
Segment 5: Basic

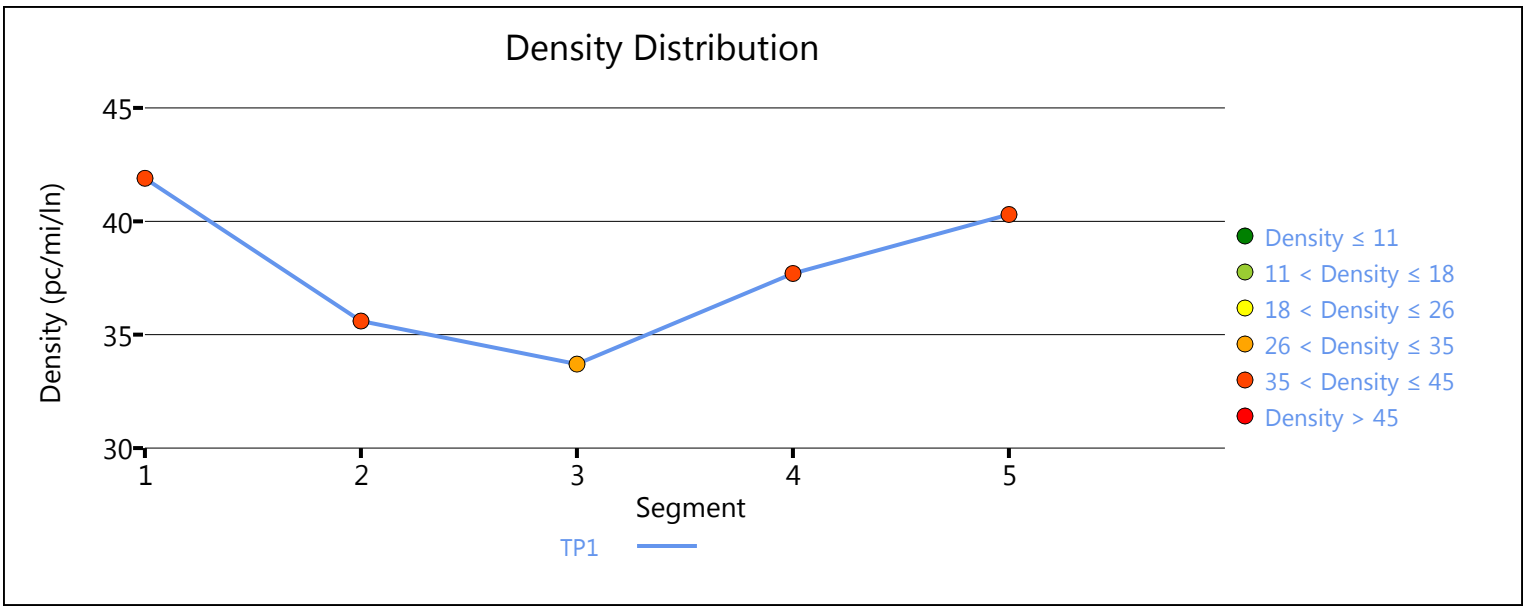
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	9061	9548	0.95	56.2	40.3	E

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	58.8	37.9	37.1	1.8	E

Facility Overall Results			
Space Mean Speed, mi/h	58.8	Density, veh/mi/ln	37.1
Average Travel Time, min	1.8	Density, pc/mi/ln	37.9







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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4930	700
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.855
Flow Rate (vi),pc/h	5413	890
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.66	0.42

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	22.3
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.308
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1624
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.107	Outer Lanes Freeway Speed (SO), mi/h	66.0
Flow in Lanes 1 and 2 (v12), pc/h	2165	Ramp Junction Speed (S), mi/h	63.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	3055	Average Density (D), pc/mi/ln	24.7
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5630	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1576
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.66
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5180	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1478
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.62
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	5180	1331
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.862
Flow Rate (vi),pc/h	5914	1678
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.62	0.80

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	31.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.449
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1195
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	57.4
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.0
Flow in Lanes 1 and 2 (v12), pc/h	3525	Ramp Junction Speed (S), mi/h	63.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	23.2
Level of Service (LOS)	D		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4367	583
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.952
Flow Rate (vi),pc/h	4889	666
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.77	0.32

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	26.9
Distance to Upstream Ramp (LUP), ft	1000	Speed Index (M)	0.373
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1921
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	59.6
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	64.9
Flow in Lanes 1 and 2 (v12), pc/h	2968	Ramp Junction Speed (S), mi/h	61.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	3634	Average Density (D), pc/mi/ln	30.2
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4950	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1847
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	65.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5792	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1285
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.54
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 NB, On-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4647	1145
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	0.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	1.000	0.909
Flow Rate (vi),pc/h	5051	1369
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.89	0.72

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	278.9	Density in Ramp Influence Area (DR), pc/mi/ln	38.4
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.605
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2132
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	53.1
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	64.1
Flow in Lanes 1 and 2 (v12), pc/h	2919	Ramp Junction Speed (S), mi/h	56.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	4288	Average Density (D), pc/mi/ln	38.0
Level of Service (LOS)	E		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4553	583
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.980
Flow Rate (vi),pc/h	5050	647
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.70	0.31

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	28.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.356
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1744
Distance to Downstream Ramp (LDOWN), ft	1000	Off-Ramp Influenece Area Speed (SR), mi/h	60.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.604	Outer Lanes Freeway Speed (SO), mi/h	73.9
Flow in Lanes 1 and 2 (v12), pc/h	3306	Ramp Junction Speed (S), mi/h	64.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	26.2
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4553	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1683
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.70
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4704	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1343
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.56
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4704	1281
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.926
Flow Rate (vi),pc/h	5371	1504
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.56	0.36

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	12.3
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.433
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1431
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	57.9
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	75.1
Flow in Lanes 1 and 2 (v12), pc/h	2509	Ramp Junction Speed (S), mi/h	65.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	20.4
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	334	835
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	11.00	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.901	0.935
Flow Rate (vi),pc/h	403	971
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.29	0.51

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	12.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.311
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	403	Ramp Junction Speed (S), mi/h	61.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	1374	Average Density (D), pc/mi/ln	11.2
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1902	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1096
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.46
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4143	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1194
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.50
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3014	1129
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	3474	1301
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.66	0.62

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	22.5
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.309
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1320
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	67.0
Flow in Lanes 1 and 2 (v12), pc/h	2154	Ramp Junction Speed (S), mi/h	62.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	3455	Average Density (D), pc/mi/ln	25.3
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3093	1182
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	14.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.877	0.943
Flow Rate (vi),pc/h	3833	1362
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.53	0.32

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	24.4
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.421
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1359
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.2
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	75.4
Flow in Lanes 1 and 2 (v12), pc/h	2474	Ramp Junction Speed (S), mi/h	63.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	20.2
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3093	Heavy Vehicle Adjustment Factor (f_{HV})	0.877
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1278
Total Trucks, %	14.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.53
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8010	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2262
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.94
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	39.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7217	793
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	13.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.885
Flow Rate (vi),pc/h	8079	974
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.94	0.46

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	31.3
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.487
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2424
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	56.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.096	Outer Lanes Freeway Speed (SO), mi/h	62.7
Flow in Lanes 1 and 2 (v12), pc/h	3232	Ramp Junction Speed (S), mi/h	59.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	4206	Average Density (D), pc/mi/ln	38.0
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	8927	9548	0.93	57.0	39.2	E

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.855	8927	723	9600	2100	0.93	0.34	65.4	59.8	34.1	36.9	E

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	8208	9548	0.86	60.9	33.7	D

Segment 4: Merge

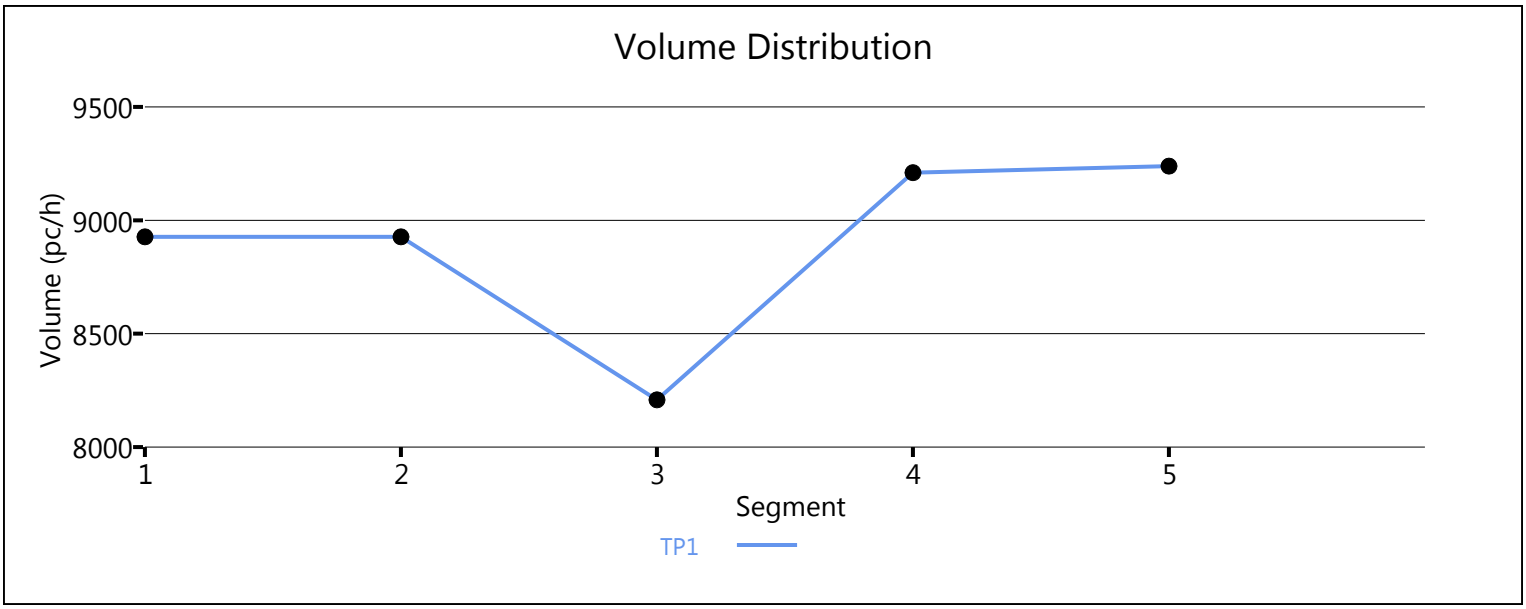
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.971	0.917	9210	1002	9600	2100	0.96	0.48	59.2	55.8	38.9	31.7	D

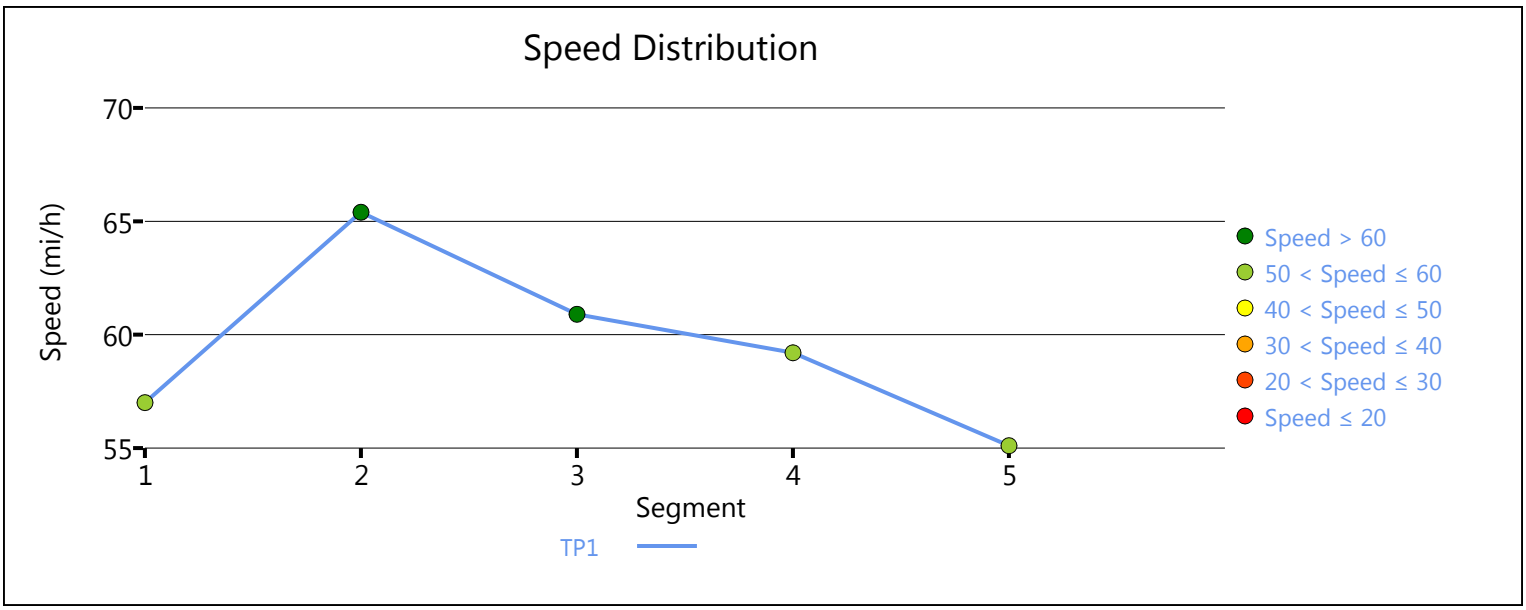
Segment 5: Basic

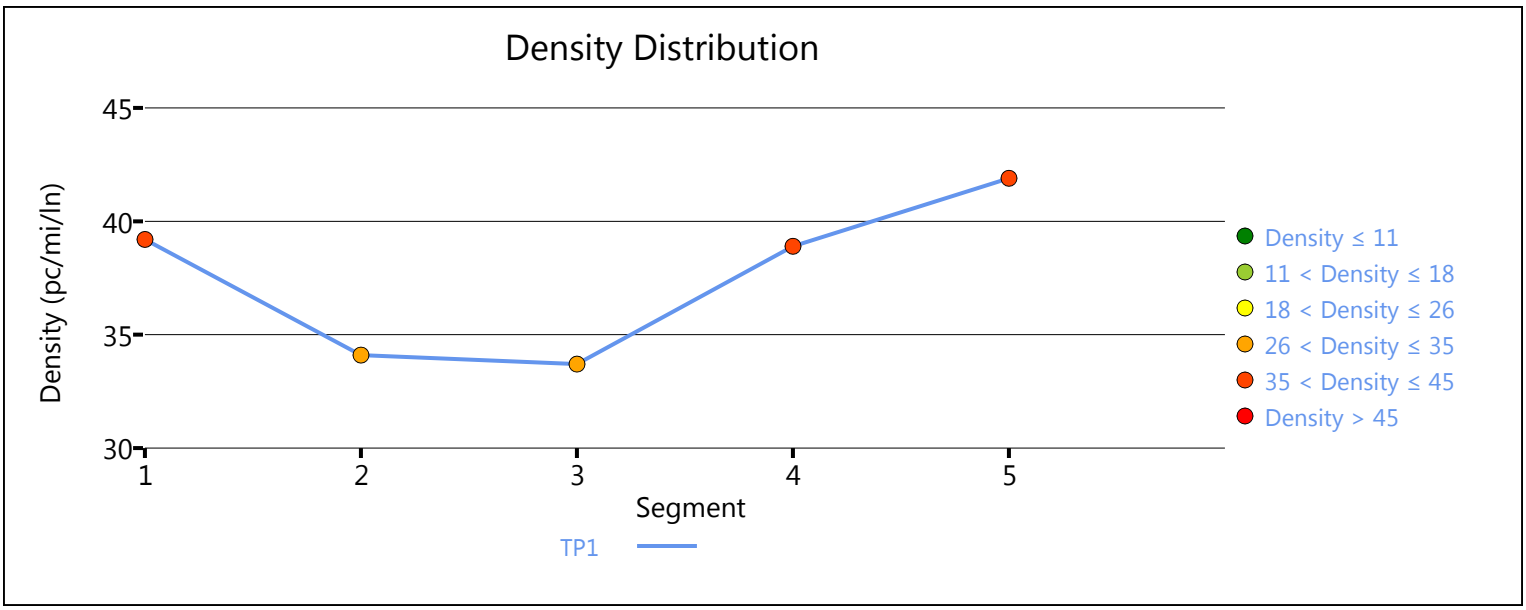
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	9239	9548	0.97	55.1	41.9	E

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	58.6	38.1	36.7	1.9	E

Facility Overall Results			
Space Mean Speed, mi/h	58.6	Density, veh/mi/ln	36.7
Average Travel Time, min	1.9	Density, pc/mi/ln	38.1







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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4980	646
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	7.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.893
Flow Rate (vi),pc/h	5789	786
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.48	0.37

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	26.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.369
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1166
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.7
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.1
Flow in Lanes 1 and 2 (v12), pc/h	2589	Ramp Junction Speed (S), mi/h	66.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	17.4
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5626	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1321
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.55
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6984	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1936
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.81
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6984	744
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.862
Flow Rate (vi),pc/h	7746	938
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.65	0.45

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	27.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.382
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1483
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.3
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	74.9
Flow in Lanes 1 and 2 (v12), pc/h	3231	Ramp Junction Speed (S), mi/h	65.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	23.5
Level of Service (LOS)	C		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.980	7905	9548	0.83	62.3	31.7	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.980	0.840	7905	861	9600	2100	0.82	0.41	65.6	59.5	30.1	33.3	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	1.000	7024	9548	0.74	65.6	26.8	D

Segment 4: Merge

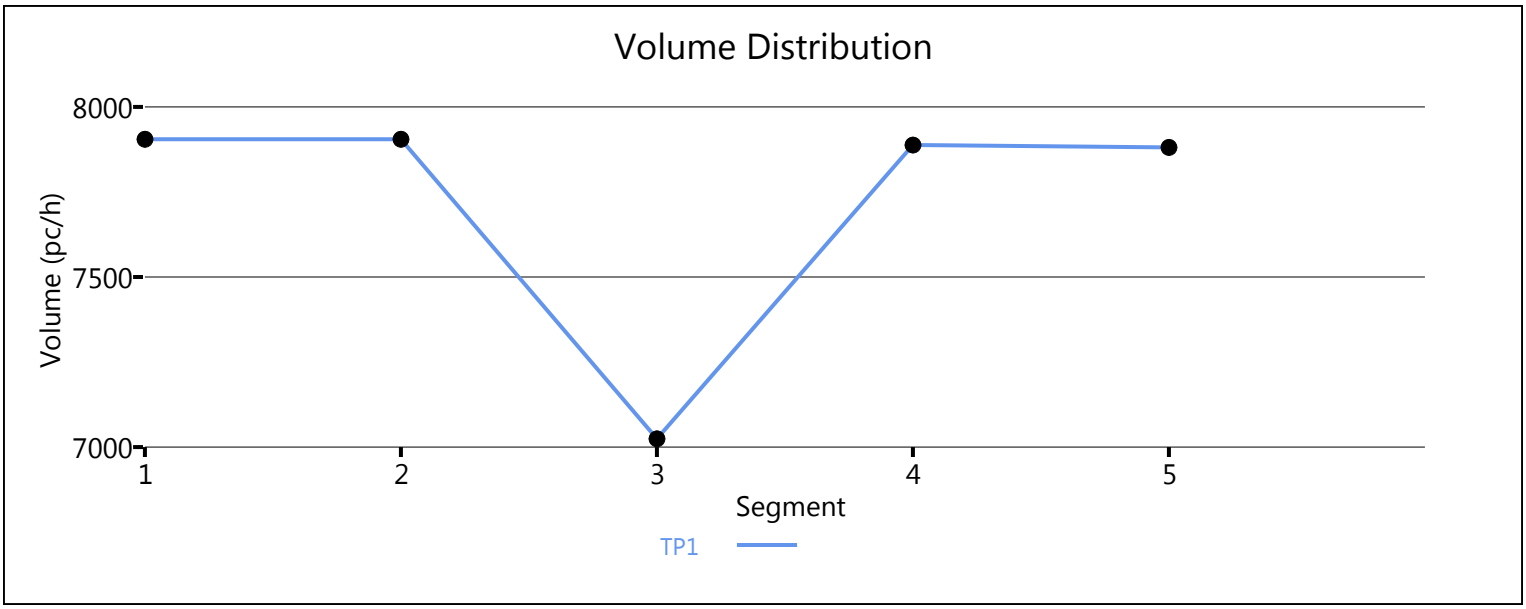
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	1.000	0.901	7888	864	9600	2100	0.82	0.41	62.0	59.6	31.8	26.6	C

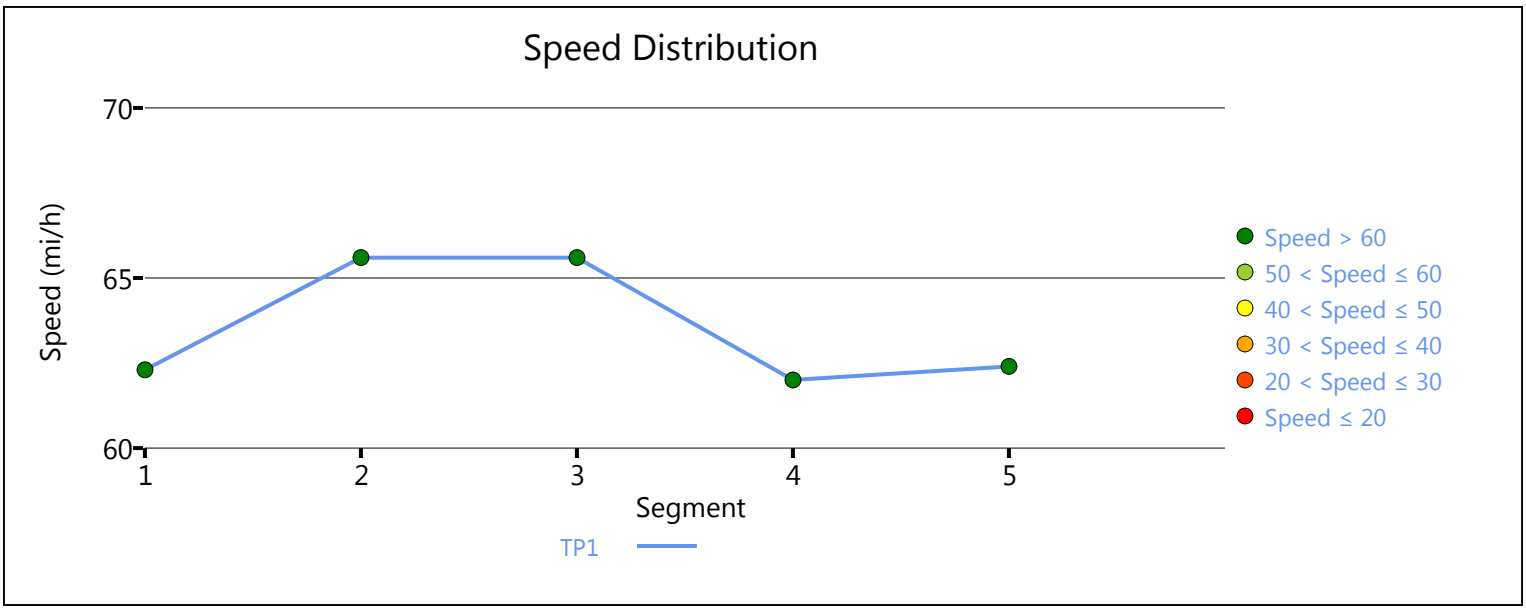
Segment 5: Basic

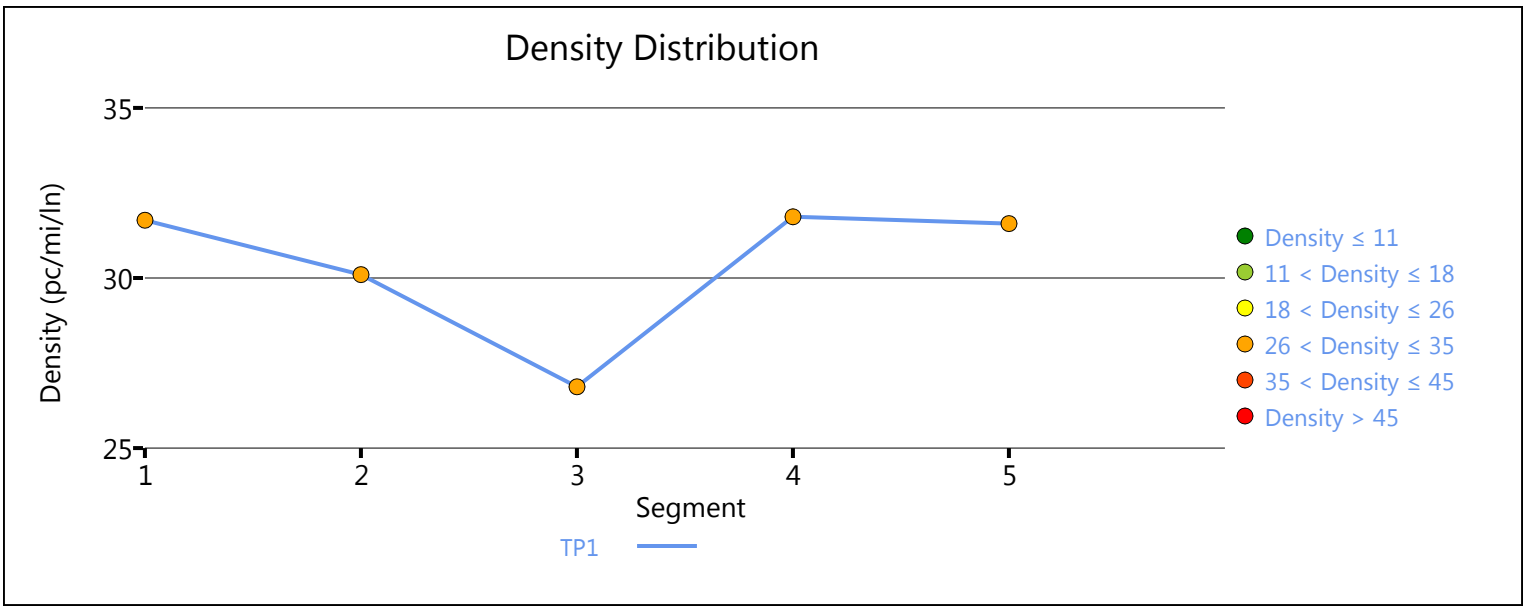
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.990	7881	9548	0.83	62.4	31.6	D

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	63.5	30.3	30.1	1.7	D

Facility Overall Results			
Space Mean Speed, mi/h	63.5	Density, veh/mi/ln	30.1
Average Travel Time, min	1.7	Density, pc/mi/ln	30.3







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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4708	939
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.926
Flow Rate (vi),pc/h	5222	1102
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.66	0.52

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	23.3
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.320
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1567
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.080	Outer Lanes Freeway Speed (SO), mi/h	66.2
Flow in Lanes 1 and 2 (v12), pc/h	2089	Ramp Junction Speed (S), mi/h	63.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	3191	Average Density (D), pc/mi/ln	24.9
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5647	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1580
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.66
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4091	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1179
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.49
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4091	1266
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.909
Flow Rate (vi),pc/h	4716	1514
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.49	0.72

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	25.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.434
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	903
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	57.8
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	2910	Ramp Junction Speed (S), mi/h	63.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	18.5
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3740	635
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.980
Flow Rate (vi),pc/h	4270	704
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.69	0.34

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	24.3
Distance to Upstream Ramp (LUP), ft	1000	Speed Index (M)	0.331
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1678
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	60.7
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	65.8
Flow in Lanes 1 and 2 (v12), pc/h	2592	Ramp Junction Speed (S), mi/h	62.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	3296	Average Density (D), pc/mi/ln	26.6
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4375	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1648
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.69
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5050	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1131
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.47
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 NB, On-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3980	1070
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.909
Flow Rate (vi),pc/h	4370	1279
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.78	0.67

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	113.9	Density in Ramp Influence Area (DR), pc/mi/ln	34.6
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.496
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1844
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	56.1
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	65.2
Flow in Lanes 1 and 2 (v12), pc/h	2526	Ramp Junction Speed (S), mi/h	58.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	3805	Average Density (D), pc/mi/ln	32.0
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4933	1265
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.971
Flow Rate (vi),pc/h	5522	1416
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.77	0.67

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	32.3
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.425
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1819
Distance to Downstream Ramp (LDOWN), ft	1000	Off-Ramp Influenece Area Speed (SR), mi/h	58.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.557	Outer Lanes Freeway Speed (SO), mi/h	73.6
Flow in Lanes 1 and 2 (v12), pc/h	3703	Ramp Junction Speed (S), mi/h	62.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	29.5
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4933	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1841
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	65.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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APPENDIX 7.8:

OPENING YEAR CUMULATIVE (2025) WITH PROJECT CONDITIONS FREEWAY FACILITY ANALYSIS WORKSHEETS

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2944	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	864
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.36
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	12.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2944	1132
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	8.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.926	0.893
Flow Rate (vi),pc/h	3456	1378
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.36	0.33

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	7.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.422
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	769
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	58.2
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	1918	Ramp Junction Speed (S), mi/h	65.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	13.3
Level of Service (LOS)	A		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	458	574
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	13.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.885
Flow Rate (vi),pc/h	528	705
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.26	0.37

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	11.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.309
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	528	Ramp Junction Speed (S), mi/h	61.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	1233	Average Density (D), pc/mi/ln	10.1
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1733	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1027
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.43
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4708	Heavy Vehicle Adjustment Factor (f_{HV})	0.787
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1626
Total Trucks, %	27.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.68
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3969	739
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	29.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.775	0.862
Flow Rate (vi),pc/h	5567	932
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.90	0.44

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	29.9
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.499
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2115
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	56.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	64.2
Flow in Lanes 1 and 2 (v12), pc/h	3452	Ramp Junction Speed (S), mi/h	58.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	4384	Average Density (D), pc/mi/ln	37.1
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1647	818
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	30.00	14.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.769	0.877
Flow Rate (vi),pc/h	2328	1014
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.32	0.24

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	16.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.389
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	723
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	1605	Ramp Junction Speed (S), mi/h	63.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	12.2
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1647	Heavy Vehicle Adjustment Factor (f_{HV})	0.769
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	776
Total Trucks, %	30.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.32
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	11.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8212	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2344
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.98
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	42.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8212	848
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	18.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.847
Flow Rate (vi),pc/h	9376	1088
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	1.09	0.52

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	37.9
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	46.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.082	Outer Lanes Freeway Speed (SO), mi/h	61.1
Flow in Lanes 1 and 2 (v12), pc/h	3976	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	5064	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.952	9454	9548	0.99	53.7	44.0	E

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.952	0.840	9454	959	9600	2100	0.98	0.46	64.8	59.2	36.5	40.0	E

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	8518	9548	0.89	59.3	35.9	E

Segment 4: Merge

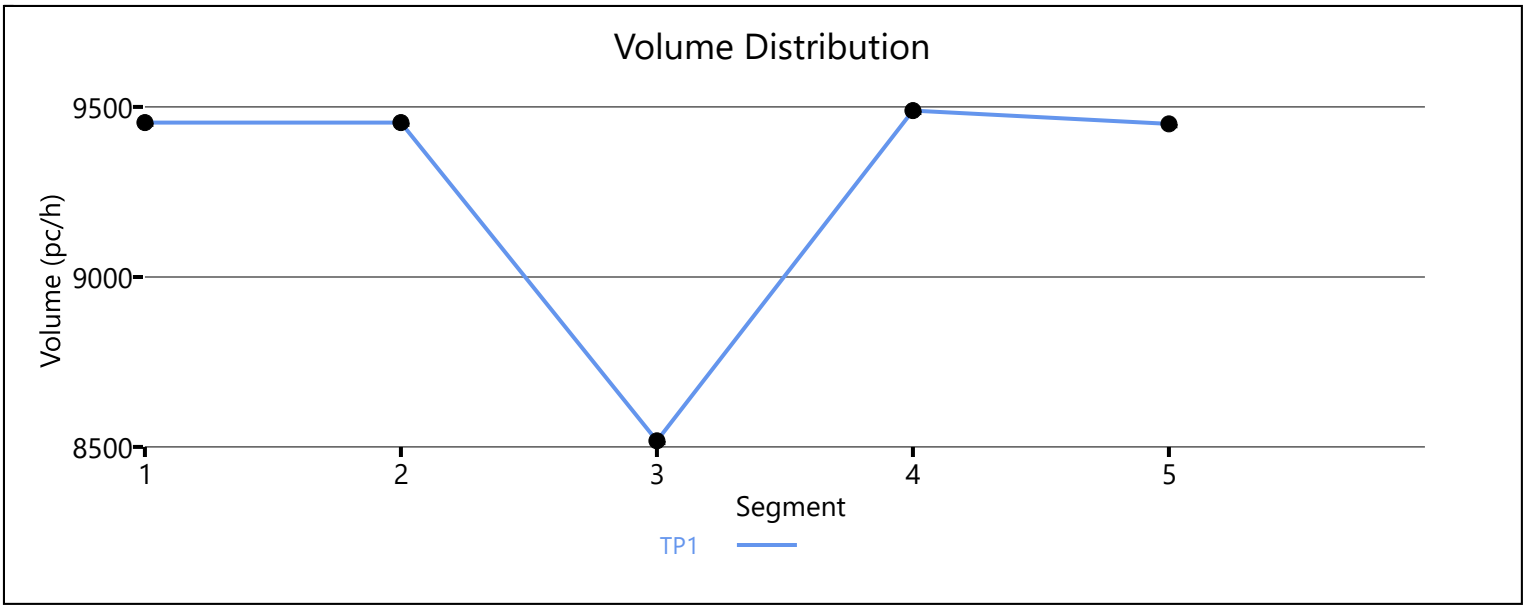
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.826	9489	971	9600	2100	0.99	0.46	58.5	55.0	40.6	32.4	D

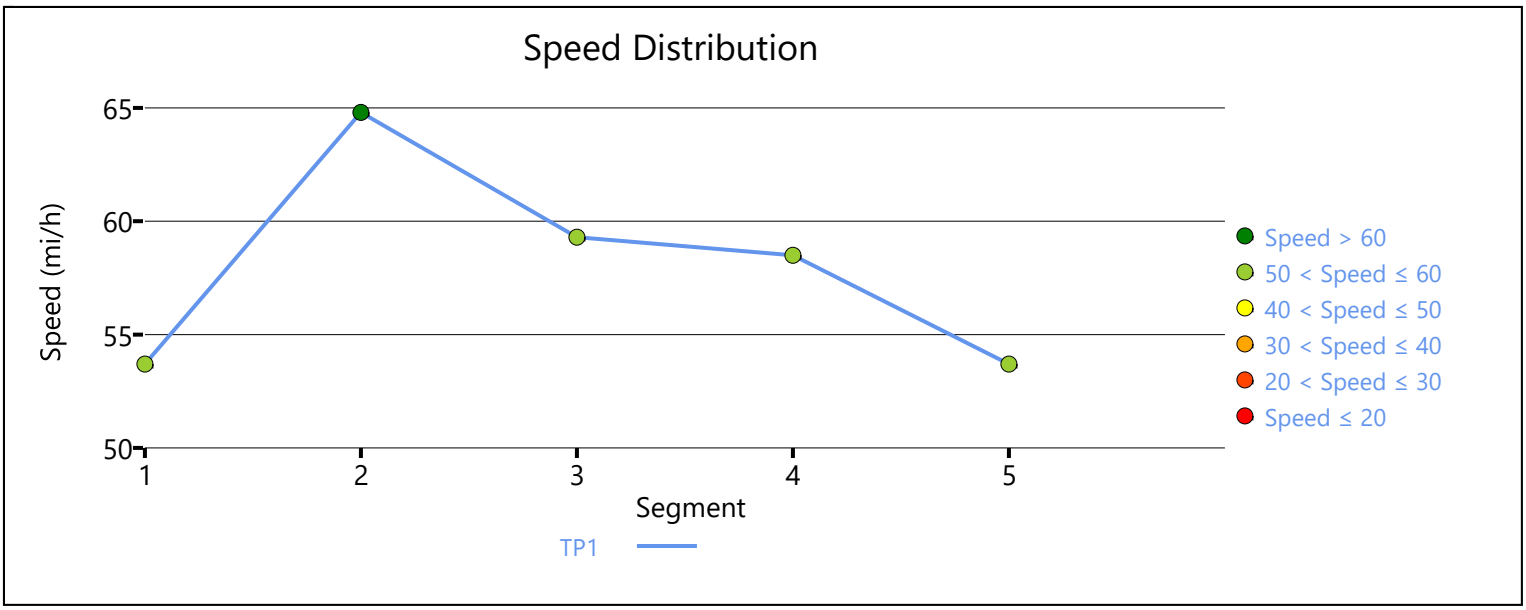
Segment 5: Basic

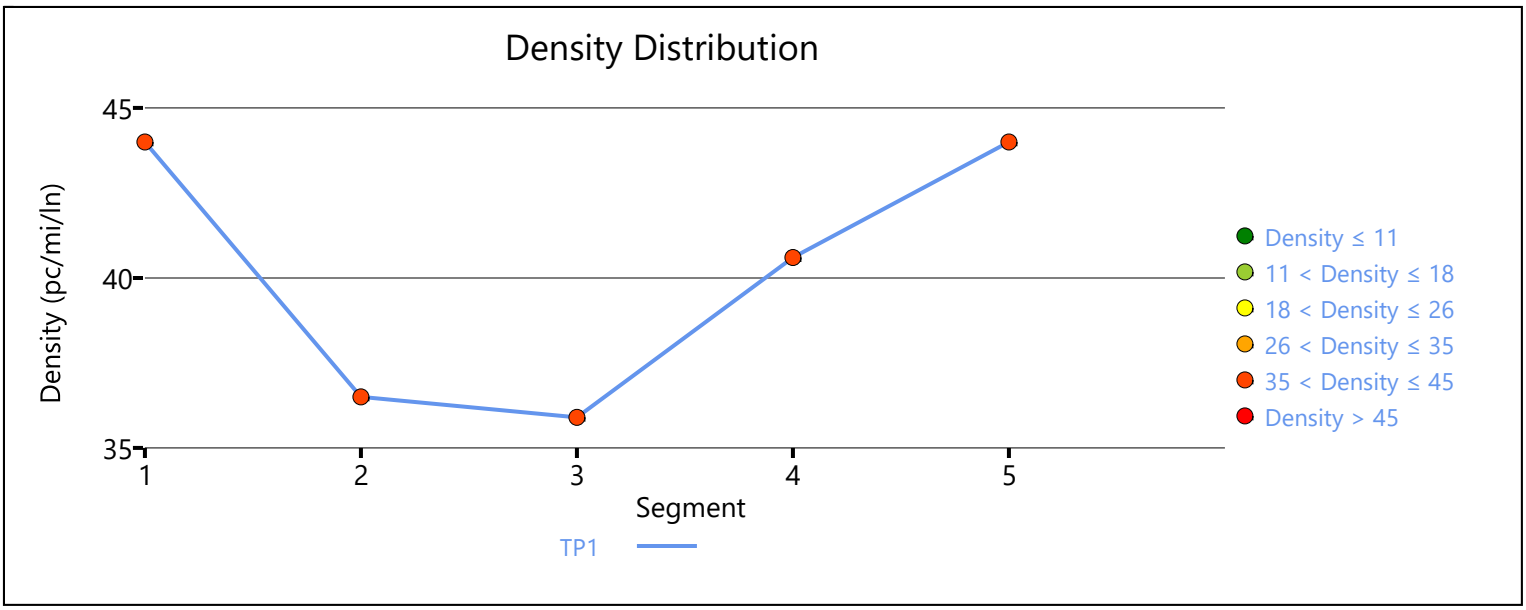
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.952	9450	9548	0.99	53.7	44.0	E

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	57.0	40.7	38.9	2.0	E

Facility Overall Results			
Space Mean Speed, mi/h	57.0	Density, veh/mi/ln	38.9
Average Travel Time, min	2.0	Density, pc/mi/ln	40.7







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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6070	907
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	7.00	18.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.847
Flow Rate (vi),pc/h	7056	1164
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.59	0.55

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	31.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.403
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1263
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.7
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	75.8
Flow in Lanes 1 and 2 (v12), pc/h	3118	Ramp Junction Speed (S), mi/h	65.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	21.6
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6070	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1411
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.59
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8098	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2246
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.94
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	39.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8098	787
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	21.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.826
Flow Rate (vi),pc/h	8982	1036
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.75	0.49

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	31.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.391
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1734
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	73.9
Flow in Lanes 1 and 2 (v12), pc/h	3717	Ramp Junction Speed (S), mi/h	65.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	27.5
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.980	9177	9548	0.96	55.5	41.3	E

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.980	0.893	9177	969	9600	2100	0.96	0.46	64.9	59.2	35.4	38.6	E

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.990	8210	9548	0.86	60.9	33.7	D

Segment 4: Merge

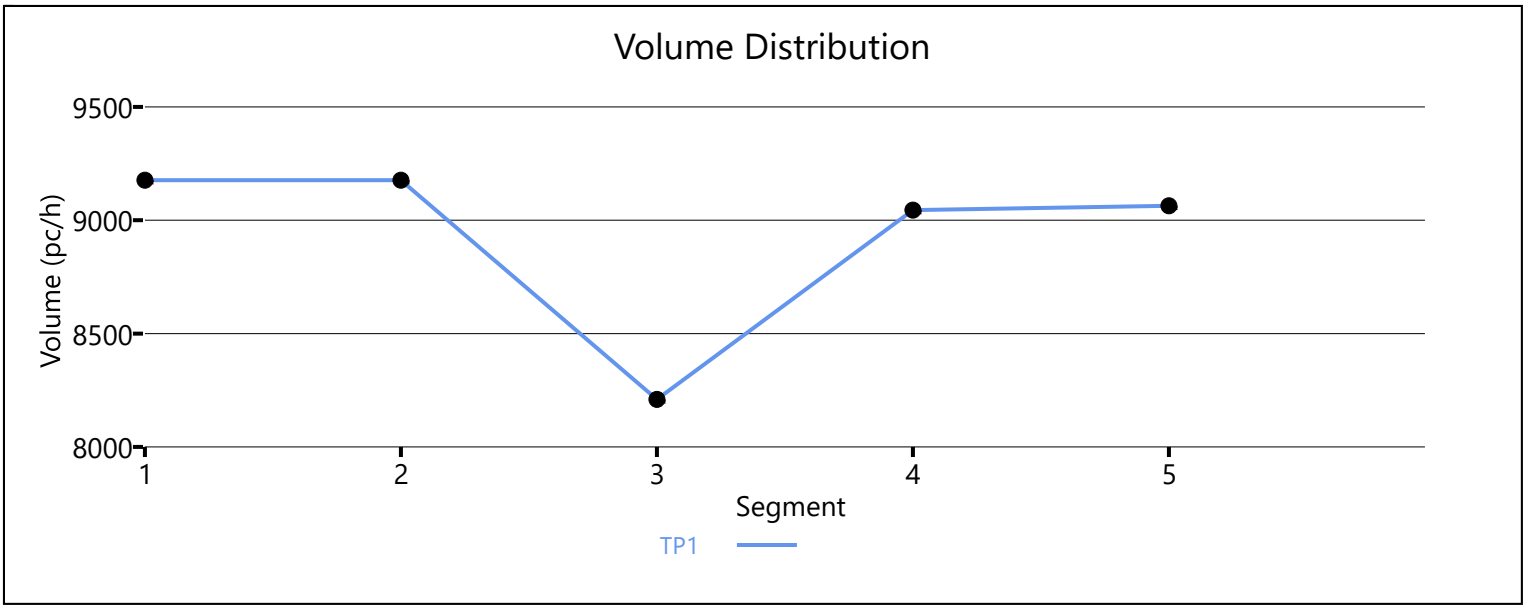
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.990	0.806	9045	835	9600	2100	0.94	0.40	60.0	57.2	37.7	30.1	D

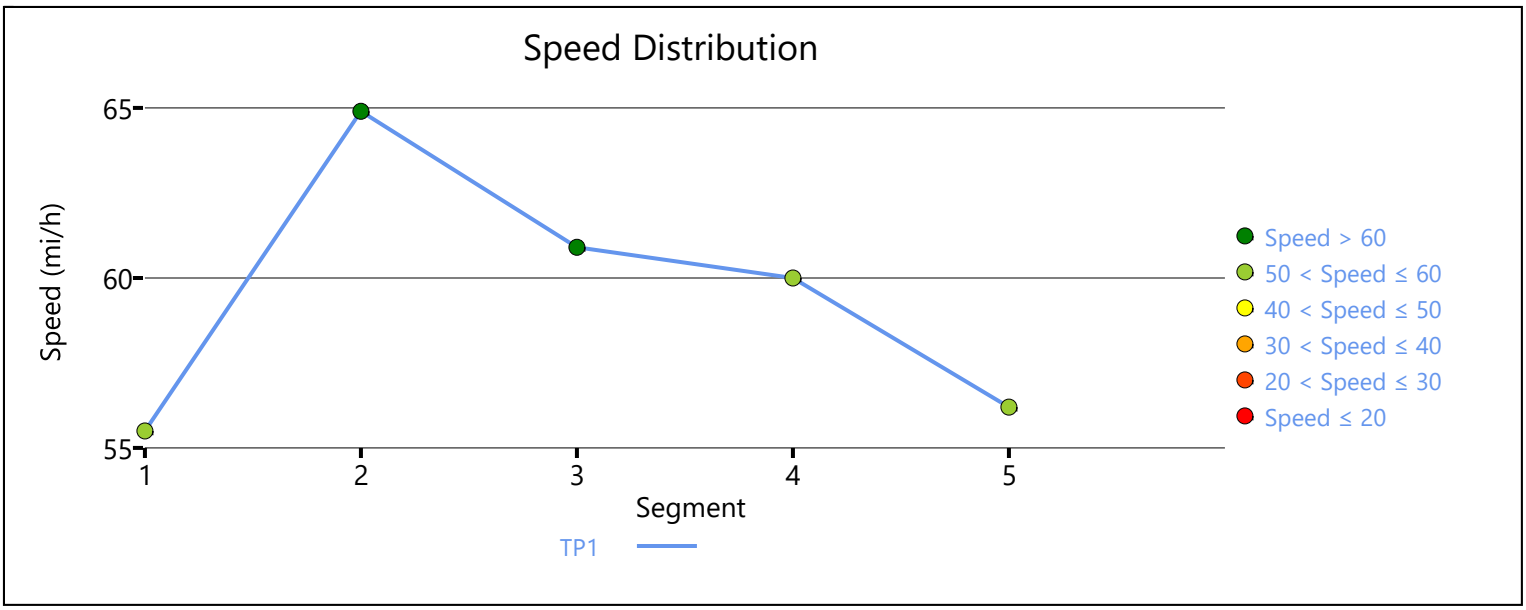
Segment 5: Basic

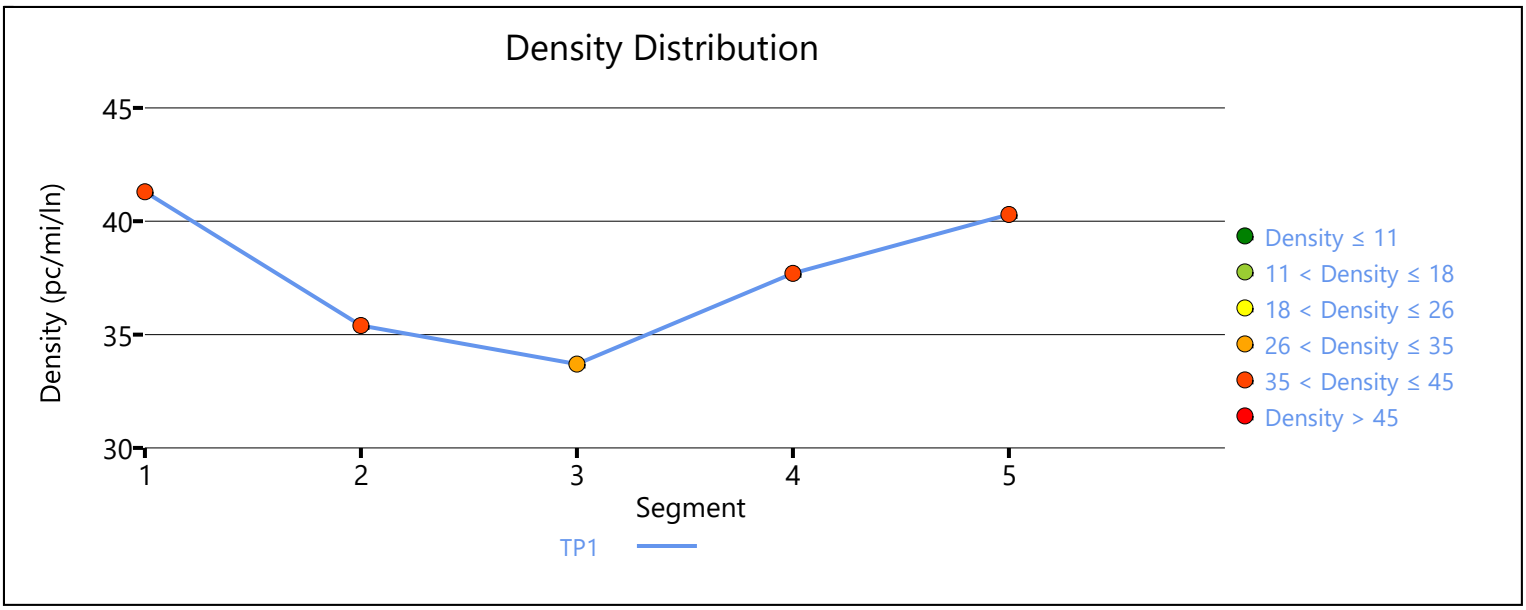
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	9064	9548	0.95	56.2	40.3	E

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	58.9	37.8	37.1	1.8	E

Facility Overall Results			
Space Mean Speed, mi/h	58.9	Density, veh/mi/ln	37.1
Average Travel Time, min	1.8	Density, pc/mi/ln	37.8







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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4933	718
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.855
Flow Rate (vi),pc/h	5416	913
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.66	0.43

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	22.5
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.310
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1625
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.104	Outer Lanes Freeway Speed (SO), mi/h	66.0
Flow in Lanes 1 and 2 (v12), pc/h	2166	Ramp Junction Speed (S), mi/h	63.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	3079	Average Density (D), pc/mi/ln	24.9
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5651	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1582
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.66
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5294	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1526
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.64
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	5294	1445
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.862
Flow Rate (vi),pc/h	6102	1822
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.64	0.87

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	32.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.462
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1207
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	57.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.0
Flow in Lanes 1 and 2 (v12), pc/h	3688	Ramp Junction Speed (S), mi/h	63.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	24.1
Level of Service (LOS)	D		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4367	597
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.952
Flow Rate (vi),pc/h	4889	682
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.77	0.32

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	27.1
Distance to Upstream Ramp (LUP), ft	1000	Speed Index (M)	0.376
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1921
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	59.5
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	64.9
Flow in Lanes 1 and 2 (v12), pc/h	2968	Ramp Junction Speed (S), mi/h	61.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	3650	Average Density (D), pc/mi/ln	30.3
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4964	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1852
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	65.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5826	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1292
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.54
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 NB, On-Ramp at Cantu Galleano		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4647	1179
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	0.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	1.000	0.909
Flow Rate (vi),pc/h	5051	1410
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.90	0.74

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	287.7	Density in Ramp Influence Area (DR), pc/mi/ln	38.7
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.617
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2132
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	52.7
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	64.1
Flow in Lanes 1 and 2 (v12), pc/h	2919	Ramp Junction Speed (S), mi/h	56.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	4329	Average Density (D), pc/mi/ln	38.5
Level of Service (LOS)	E		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4602	632
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.980
Flow Rate (vi),pc/h	5104	701
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.71	0.33

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	29.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.361
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1761
Distance to Downstream Ramp (LDOWN), ft	1000	Off-Ramp Influenece Area Speed (SR), mi/h	59.9
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.600	Outer Lanes Freeway Speed (SO), mi/h	73.8
Flow in Lanes 1 and 2 (v12), pc/h	3343	Ramp Junction Speed (S), mi/h	64.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	26.5
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4602	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1701
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.71
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4728	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1350
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.56
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4728	1305
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.926
Flow Rate (vi),pc/h	5398	1532
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.56	0.36

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	12.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.436
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1431
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	57.8
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	75.1
Flow in Lanes 1 and 2 (v12), pc/h	2537	Ramp Junction Speed (S), mi/h	65.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	20.5
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	334	906
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	11.00	9.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.901	0.917
Flow Rate (vi),pc/h	403	1074
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.31	0.57

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	13.3
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.312
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	403	Ramp Junction Speed (S), mi/h	61.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	1477	Average Density (D), pc/mi/ln	12.0
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1973	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1147
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.48
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4206	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1212
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.51
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3014	1192
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	3474	1374
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.67	0.65

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	23.0
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.319
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1320
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.1
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	67.0
Flow in Lanes 1 and 2 (v12), pc/h	2154	Ramp Junction Speed (S), mi/h	62.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	3528	Average Density (D), pc/mi/ln	25.8
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3120	1209
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	14.00	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.877	0.935
Flow Rate (vi),pc/h	3867	1405
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.54	0.33

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	24.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.424
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1354
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	75.4
Flow in Lanes 1 and 2 (v12), pc/h	2513	Ramp Junction Speed (S), mi/h	63.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	20.4
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3120	Heavy Vehicle Adjustment Factor (f_{HV})	0.877
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1289
Total Trucks, %	14.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.54
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8106	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2290
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.95
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	40.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7238	868
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.862
Flow Rate (vi),pc/h	8102	1095
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.96	0.52

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	32.2
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.524
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2431
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	55.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.081	Outer Lanes Freeway Speed (SO), mi/h	62.7
Flow in Lanes 1 and 2 (v12), pc/h	3241	Ramp Junction Speed (S), mi/h	59.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	4336	Average Density (D), pc/mi/ln	39.0
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	8933	9548	0.94	57.0	39.2	E

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.855	8933	730	9600	2100	0.93	0.35	65.4	59.8	34.1	37.0	E

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	8208	9548	0.86	60.9	33.7	D

Segment 4: Merge

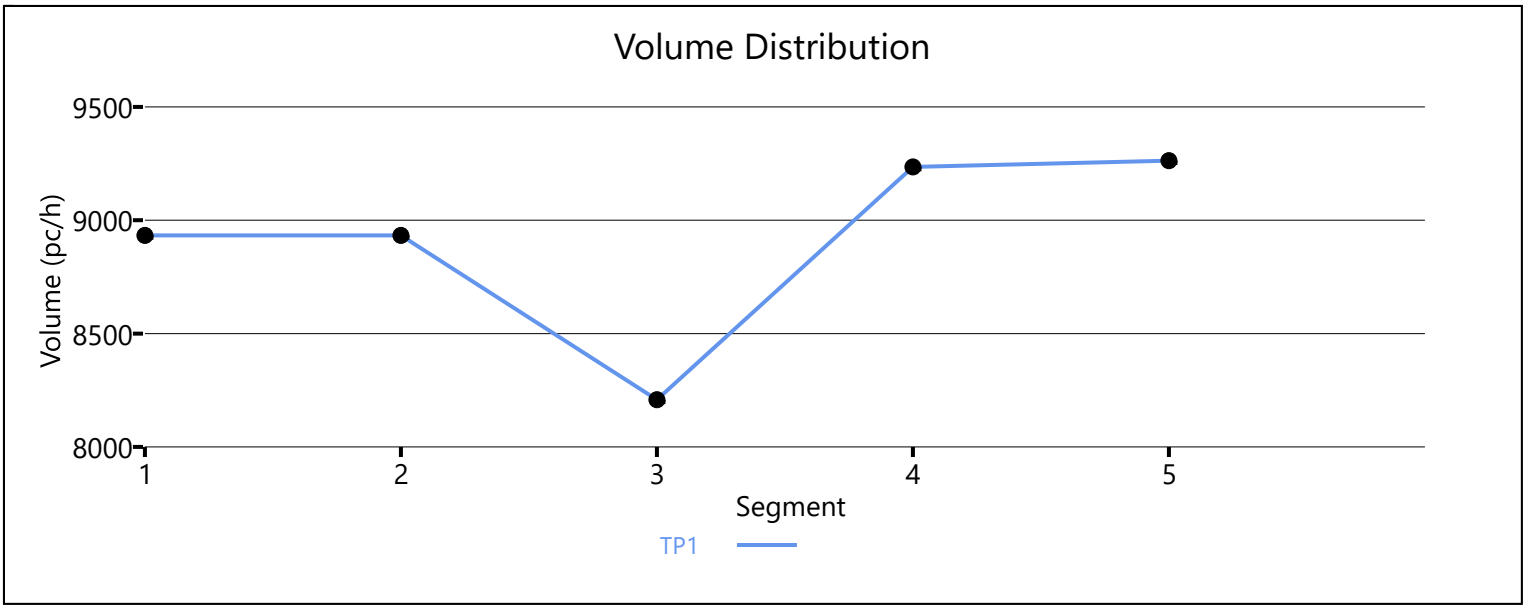
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.971	0.917	9235	1027	9600	2100	0.96	0.49	59.1	55.6	39.1	31.9	D

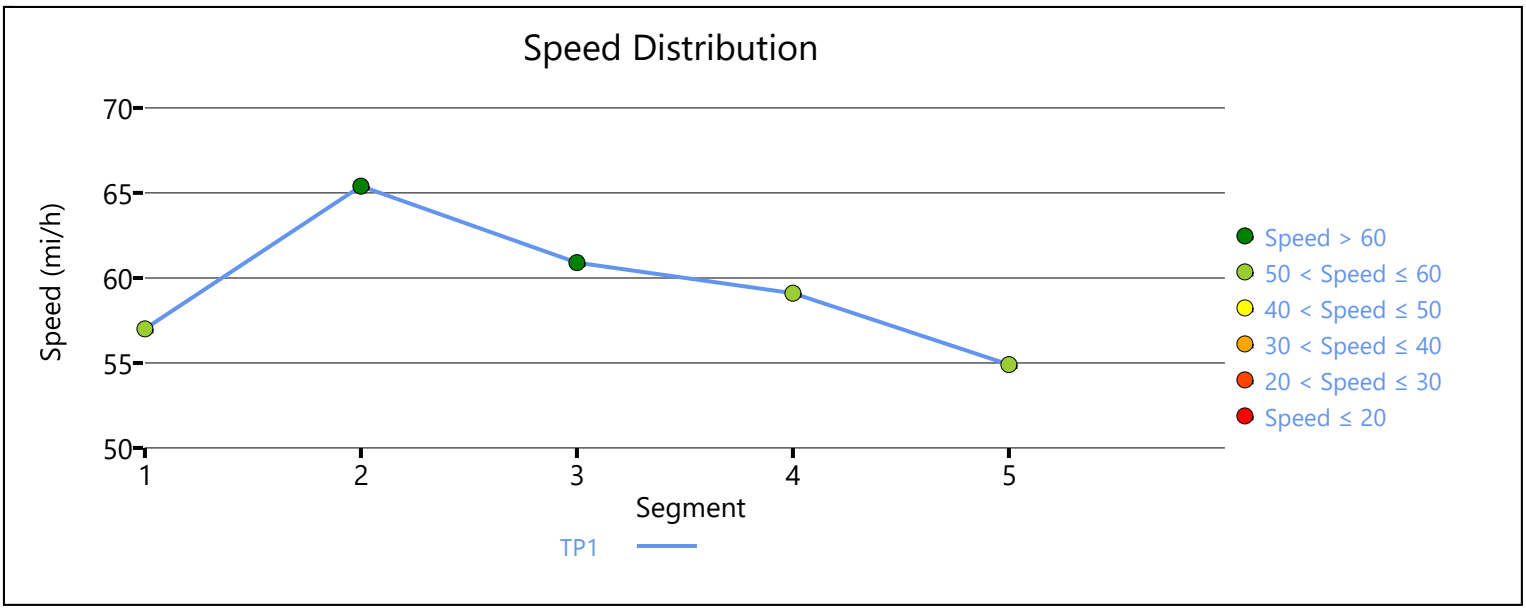
Segment 5: Basic

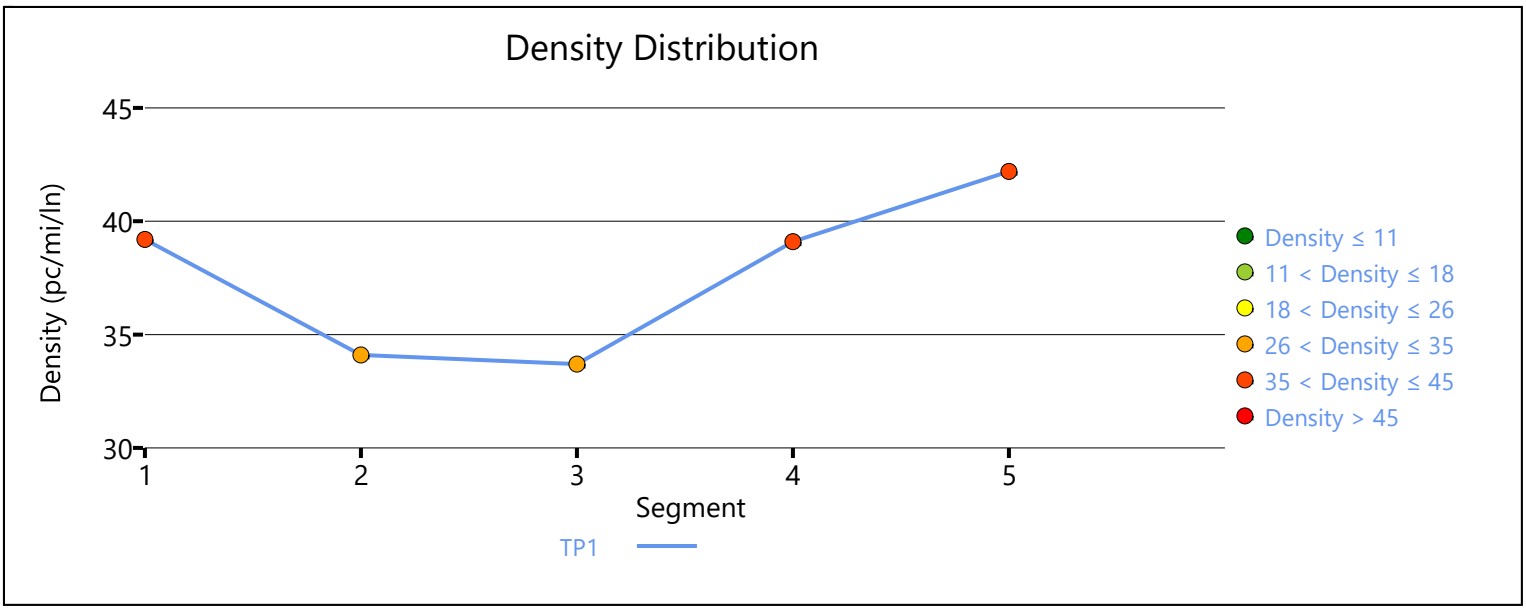
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	9263	9548	0.97	54.9	42.2	E

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	58.5	38.2	36.9	1.9	E

Facility Overall Results			
Space Mean Speed, mi/h	58.5	Density, veh/mi/ln	36.9
Average Travel Time, min	1.9	Density, pc/mi/ln	38.2







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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4985	673
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	7.00	13.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.885
Flow Rate (vi),pc/h	5795	827
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.48	0.39

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	26.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.372
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1156
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.6
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.2
Flow in Lanes 1 and 2 (v12), pc/h	2614	Ramp Junction Speed (S), mi/h	66.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	17.5
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5658	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1328
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.55
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7021	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1947
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.81
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7021	773
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.855
Flow Rate (vi),pc/h	7787	983
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.65	0.47

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	27.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.386
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1479
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.2
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	74.9
Flow in Lanes 1 and 2 (v12), pc/h	3271	Ramp Junction Speed (S), mi/h	65.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	23.7
Level of Service (LOS)	C		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.980	7914	9548	0.83	62.3	31.7	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.980	0.840	7914	871	9600	2100	0.82	0.41	65.5	59.5	30.2	33.4	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	1.000	7024	9548	0.74	65.6	26.8	D

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	1.000	0.901	7905	881	9600	2100	0.82	0.42	61.9	59.5	31.9	26.7	C

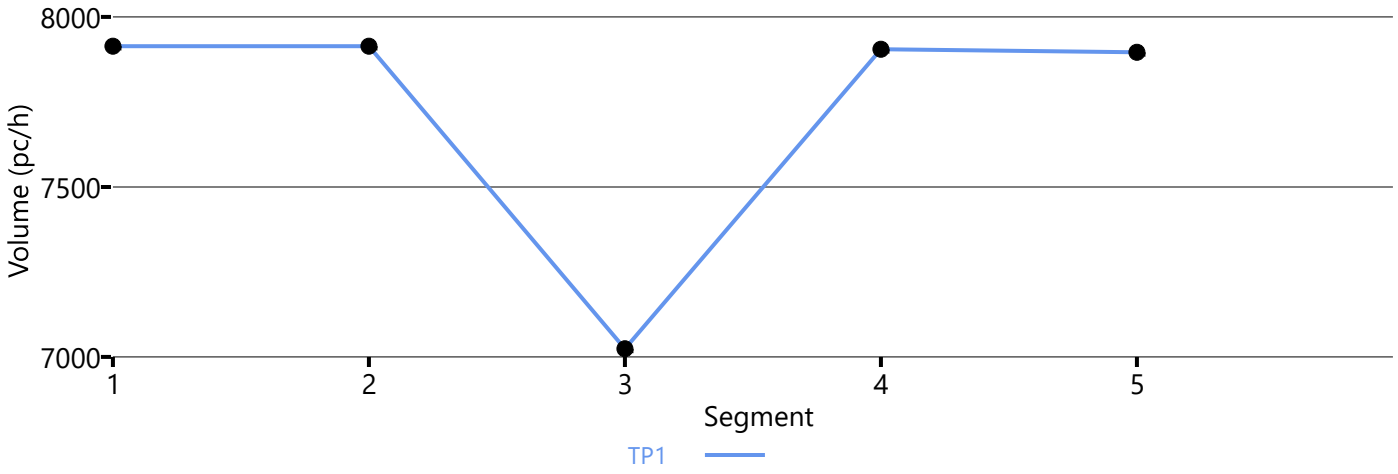
Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.990	7896	9548	0.83	62.4	31.6	D

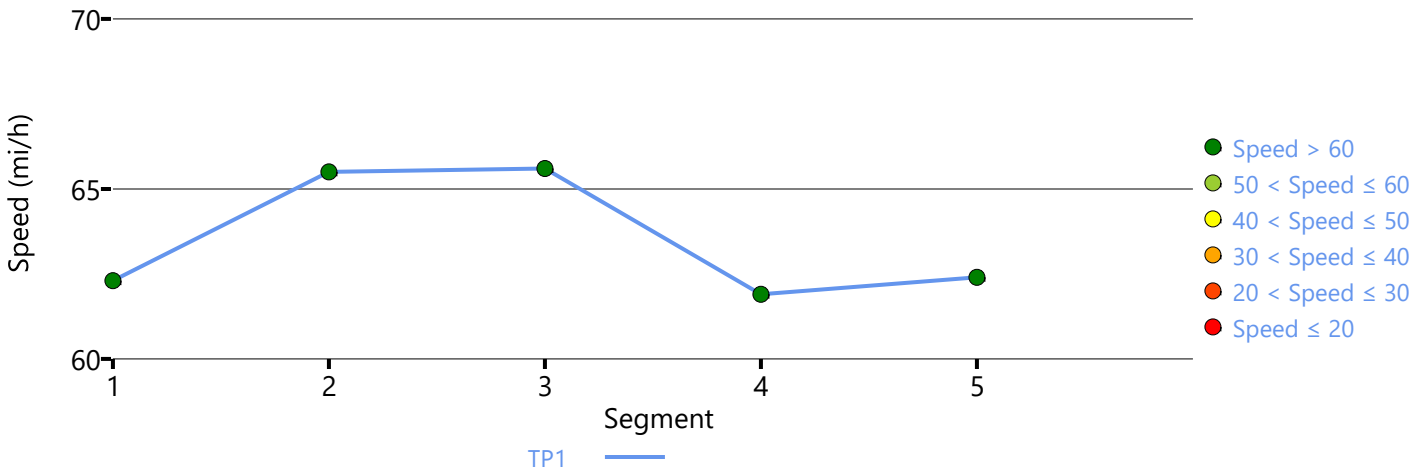
Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	63.4	30.4	30.1	1.7	D

Facility Overall Results			
Space Mean Speed, mi/h	63.4	Density, veh/mi/ln	30.1
Average Travel Time, min	1.7	Density, pc/mi/ln	30.4

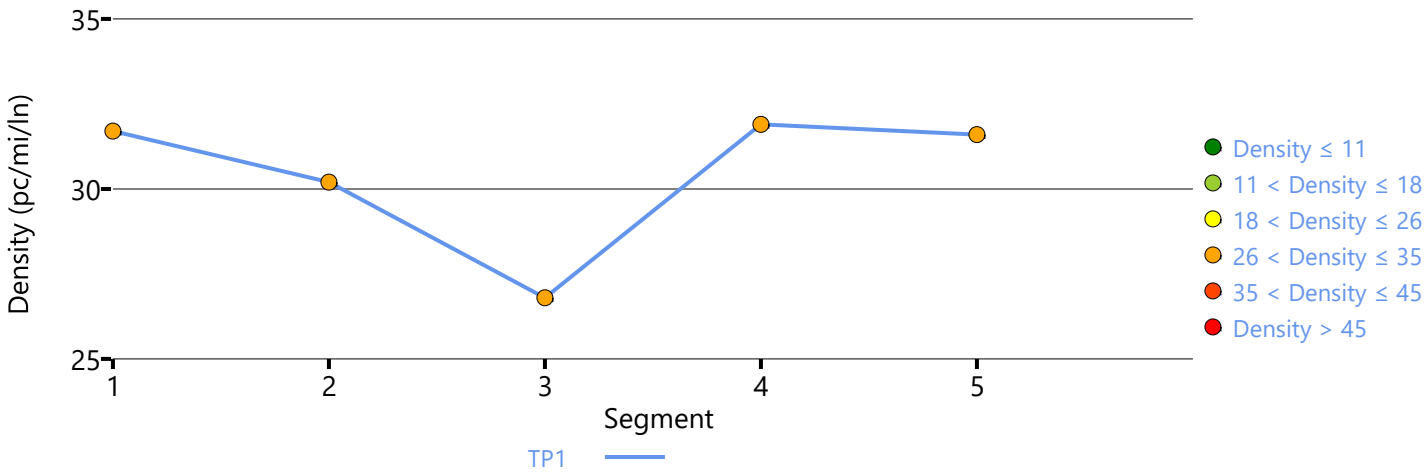
Volume Distribution



Speed Distribution



Density Distribution



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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4722	1010
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.909
Flow Rate (vi),pc/h	5237	1208
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.67	0.58

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	24.1
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.332
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1571
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	60.7
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.067	Outer Lanes Freeway Speed (SO), mi/h	66.1
Flow in Lanes 1 and 2 (v12), pc/h	2095	Ramp Junction Speed (S), mi/h	63.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	3303	Average Density (D), pc/mi/ln	25.5
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5732	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1604
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.67
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.6
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4146	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1195
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.50
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4146	1321
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.909
Flow Rate (vi),pc/h	4779	1580
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.50	0.75

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	26.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.440
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	902
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	57.7
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	2975	Ramp Junction Speed (S), mi/h	63.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	18.8
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3740	695
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	4.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.962
Flow Rate (vi),pc/h	4270	785
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.70	0.37

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	24.9
Distance to Upstream Ramp (LUP), ft	1000	Speed Index (M)	0.340
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1678
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	60.5
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	65.8
Flow in Lanes 1 and 2 (v12), pc/h	2592	Ramp Junction Speed (S), mi/h	62.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	3377	Average Density (D), pc/mi/ln	27.1
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4435	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1670
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.70
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5192	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1173
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.49
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 NB, On-Ramp at Cantu Galleano		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3980	1212
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.901
Flow Rate (vi),pc/h	4370	1462
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.81	0.77

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	153.1	Density in Ramp Influence Area (DR), pc/mi/ln	36.0
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.531
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1844
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	55.1
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	65.2
Flow in Lanes 1 and 2 (v12), pc/h	2526	Ramp Junction Speed (S), mi/h	57.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	3988	Average Density (D), pc/mi/ln	33.6
Level of Service (LOS)	E		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4956	1288
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	4.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.962
Flow Rate (vi),pc/h	5548	1455
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.77	0.69

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	32.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.429
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1825
Distance to Downstream Ramp (LDOWN), ft	1000	Off-Ramp Influenece Area Speed (SR), mi/h	58.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.554	Outer Lanes Freeway Speed (SO), mi/h	73.6
Flow in Lanes 1 and 2 (v12), pc/h	3723	Ramp Junction Speed (S), mi/h	62.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	29.7
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4956	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1849
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	65.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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APPENDIX 7.9:

OPENING YEAR CUMULATIVE (2025) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

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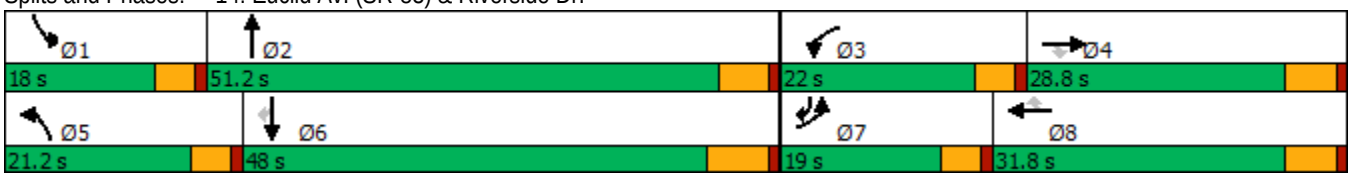
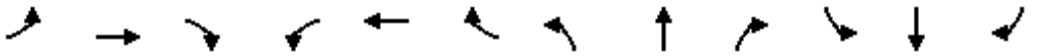
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	172	350	69	214	549	130	81	1127	195	1251	171
Future Volume (vph)	172	350	69	214	549	130	81	1127	195	1251	171
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2	1	6	7
Permitted Phases			4			8					6
Detector Phase	7	4	4	3	8	8	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	9.6	34.5	9.6
Total Split (s)	19.0	28.8	28.8	22.0	31.8	31.8	21.2	51.2	18.0	48.0	19.0
Total Split (%)	15.8%	24.0%	24.0%	18.3%	26.5%	26.5%	17.7%	42.7%	15.0%	40.0%	15.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	Max	None
Act Effct Green (s)	14.3	20.9	20.9	17.4	23.9	23.9	10.6	45.8	13.4	49.7	66.0
Actuated g/C Ratio	0.12	0.18	0.18	0.15	0.20	0.20	0.09	0.39	0.11	0.42	0.56
v/c Ratio	0.92	0.61	0.20	0.95	0.83	0.33	0.59	0.73	1.12	0.64	0.19
Control Delay	99.7	49.3	3.2	96.4	56.5	8.7	67.7	33.1	150.0	30.3	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	99.7	49.3	3.2	96.4	56.5	8.7	67.7	33.1	150.0	30.3	2.5
LOS	F	D	A	F	E	A	E	C	F	C	A
Approach Delay		58.6			59.1			35.1		41.8	
Approach LOS		E			E			D		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.9	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 45.4	Intersection LOS: D
Intersection Capacity Utilization 82.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	350	69	214	549	130	81	1127	177	195	1251	171
Future Volume (veh/h)	172	350	69	214	549	130	81	1127	177	195	1251	171
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	181	368	57	225	578	108	85	1186	146	205	1317	121
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	197	579	258	239	666	297	105	1719	212	184	2145	851
Arrive On Green	0.12	0.17	0.17	0.15	0.19	0.19	0.06	0.39	0.39	0.11	0.44	0.44
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	4432	545	1619	4914	1524
Grp Volume(v), veh/h	181	368	57	225	578	108	85	876	456	205	1317	121
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	1638	1702	1619	1638	1524
Q Serve(g_s), s	13.0	11.8	3.8	16.2	19.3	7.2	6.1	26.4	26.4	13.4	24.4	4.5
Cycle Q Clear(g_c), s	13.0	11.8	3.8	16.2	19.3	7.2	6.1	26.4	26.4	13.4	24.4	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	197	579	258	239	666	297	105	1271	660	184	2145	851
V/C Ratio(X)	0.92	0.64	0.22	0.94	0.87	0.36	0.81	0.69	0.69	1.12	0.61	0.14
Avail Cap(c_a), veh/h	197	666	297	239	753	336	228	1271	660	184	2145	851
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.2	45.7	42.3	49.8	46.1	41.2	54.5	30.2	30.2	52.3	25.6	12.5
Incr Delay (d2), s/veh	40.7	1.6	0.4	42.2	9.7	0.7	5.5	3.1	5.8	100.9	1.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	5.0	1.4	9.2	8.9	2.7	2.6	10.1	11.1	10.5	9.3	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.0	47.3	42.8	92.1	55.8	42.0	60.0	33.3	36.0	153.2	26.9	12.9
LnGrp LOS	F	D	D	F	E	D	E	C	D	F	C	B
Approach Vol, veh/h		606			911			1417			1643	
Approach Delay, s/veh		60.2			63.1			35.8			41.7	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	52.3	22.0	25.8	12.3	58.0	19.0	28.8
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	13.4	* 46	17.4	23.0	16.6	41.5	14.4	26.0
Max Q Clear Time (g_c+I1), s	15.4	28.4	18.2	13.8	8.1	26.4	15.0	21.3
Green Ext Time (p_c), s	0.0	7.5	0.0	1.6	0.0	8.1	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	46.6
HCM 6th LOS	D

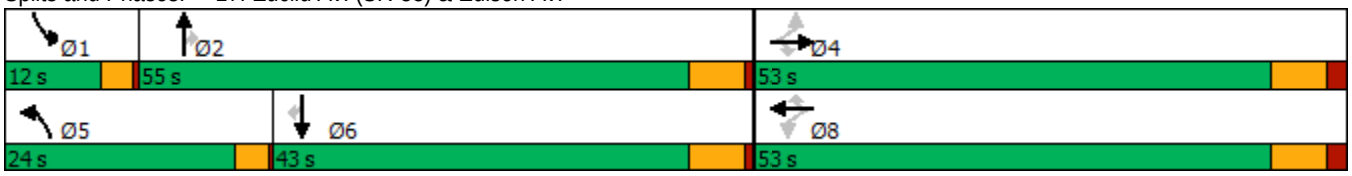
Notes

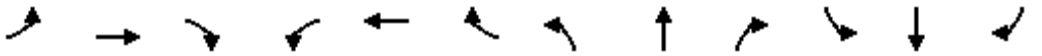
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	297	141	39	478	72	250	1100	44	78	1118	188
Future Volume (vph)	175	297	141	39	478	72	250	1100	44	78	1118	188
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	53.0	53.0	53.0	53.0	53.0	53.0	24.0	55.0	55.0	12.0	43.0	43.0
Total Split (%)	44.2%	44.2%	44.2%	44.2%	44.2%	44.2%	20.0%	45.8%	45.8%	10.0%	35.8%	35.8%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	46.0	46.0	46.0	46.0	46.0	46.0	20.1	46.4	46.4	8.0	34.3	34.3
Actuated g/C Ratio	0.39	0.39	0.39	0.39	0.39	0.39	0.17	0.40	0.40	0.07	0.29	0.29
v/c Ratio	1.01	0.44	0.22	0.13	0.70	0.12	0.94	0.59	0.07	0.74	0.81	0.35
Control Delay	106.9	29.1	4.7	25.4	36.9	3.8	89.6	29.2	2.6	89.9	43.3	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	106.9	29.1	4.7	25.4	36.9	3.8	89.6	29.2	2.6	89.9	43.3	7.7
LOS	F	C	A	C	D	A	F	C	A	F	D	A
Approach Delay		45.6			32.1			39.2			41.1	
Approach LOS		D			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 39.8	Intersection LOS: D
Intersection Capacity Utilization 96.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	297	141	39	478	72	250	1100	44	78	1118	188
Future Volume (veh/h)	175	297	141	39	478	72	250	1100	44	78	1118	188
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	182	309	92	41	498	70	260	1146	38	81	1165	145
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	199	717	608	321	717	608	284	1949	605	100	1392	422
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.18	0.40	0.40	0.06	0.28	0.28
Sat Flow, veh/h	809	1800	1524	944	1800	1524	1619	4914	1525	1619	4914	1488
Grp Volume(v), veh/h	182	309	92	41	498	70	260	1146	38	81	1165	145
Grp Sat Flow(s),veh/h/ln	809	1800	1524	944	1800	1524	1619	1638	1525	1619	1638	1488
Q Serve(g_s), s	19.4	14.4	4.5	3.8	26.6	3.3	18.2	21.2	1.8	5.7	25.7	8.9
Cycle Q Clear(g_c), s	46.0	14.4	4.5	18.2	26.6	3.3	18.2	21.2	1.8	5.7	25.7	8.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	199	717	608	321	717	608	284	1949	605	100	1392	422
V/C Ratio(X)	0.92	0.43	0.15	0.13	0.69	0.12	0.92	0.59	0.06	0.81	0.84	0.34
Avail Cap(c_a), veh/h	199	717	608	321	717	608	288	2086	648	119	1575	477
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.4	25.2	22.2	31.8	28.9	21.9	46.8	27.4	21.5	53.5	38.9	32.8
Incr Delay (d2), s/veh	41.1	0.4	0.1	0.2	2.9	0.1	31.3	0.4	0.0	24.4	3.7	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	5.9	1.6	0.9	11.4	1.2	9.4	7.7	0.6	2.9	10.1	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	91.5	25.6	22.3	32.0	31.8	22.0	78.1	27.8	21.6	77.9	42.6	33.3
LnGrp LOS	F	C	C	C	C	C	E	C	C	E	D	C
Approach Vol, veh/h		583			609			1444			1391	
Approach Delay, s/veh		45.7			30.7			36.7			43.7	
Approach LOS		D			C			D			D	

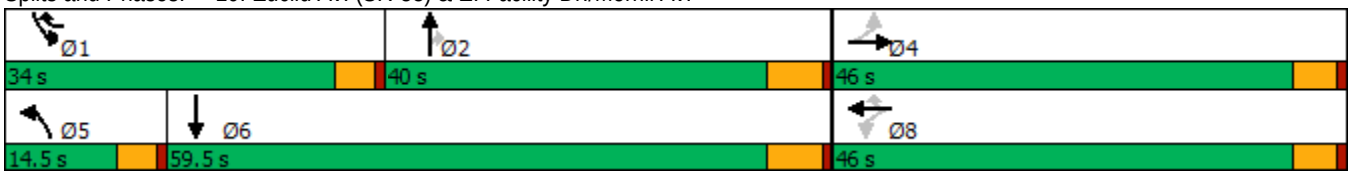
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.6	51.8		53.0	23.7	38.7		53.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	8.5	49.0		46.0	20.5	37.0		46.0				
Max Q Clear Time (g_c+I1), s	7.7	23.2		48.0	20.2	27.7		28.6				
Green Ext Time (p_c), s	0.0	7.9		0.0	0.0	5.0		3.0				

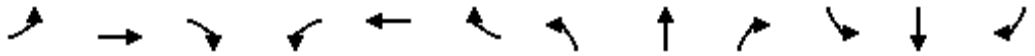
Intersection Summary												
HCM 6th Ctrl Delay			39.5									
HCM 6th LOS			D									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	4	9	270	53	374	11	1146	211	200	1222
Future Volume (vph)	4	9	270	53	374	11	1146	211	200	1222
Turn Type	Perm	NA	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	1	5	2		1	6
Permitted Phases	4		8		8			2		
Detector Phase	4	4	8	8	1	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	34.0	14.5	40.0	40.0	34.0	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	28.3%	12.1%	33.3%	33.3%	28.3%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	4.5	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		20.4	20.4	20.4	41.4	10.6	27.9	27.9	15.8	46.4
Actuated g/C Ratio		0.25	0.25	0.25	0.51	0.13	0.35	0.35	0.20	0.58
v/c Ratio		0.08	0.54	0.50	0.48	0.05	0.69	0.37	0.65	0.46
Control Delay		15.2	35.1	33.0	13.9	41.6	26.8	14.7	42.8	12.6
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		15.2	35.1	33.0	13.9	41.6	26.8	14.7	42.8	12.6
LOS		B	D	C	B	D	C	B	D	B
Approach Delay		15.2		23.2			25.0			16.7
Approach LOS		B		C			C			B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 80.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 21.2	Intersection LOS: C
Intersection Capacity Utilization 64.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	9	19	270	53	374	11	1146	211	200	1222	43
Future Volume (veh/h)	4	9	19	270	53	374	11	1146	211	200	1222	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	4	9	19	317	0	359	11	1181	175	206	1260	30
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	83	135	224	872	0	601	45	1765	548	251	2399	57
Arrive On Green	0.24	0.24	0.24	0.24	0.00	0.24	0.03	0.36	0.36	0.15	0.49	0.49
Sat Flow, veh/h	77	563	935	2652	0	1525	1619	4914	1525	1619	4934	117
Grp Volume(v), veh/h	32	0	0	317	0	359	11	1181	175	206	836	454
Grp Sat Flow(s),veh/h/ln	1575	0	0	1326	0	1525	1619	1638	1525	1619	1638	1776
Q Serve(g_s), s	0.0	0.0	0.0	5.3	0.0	11.7	0.4	12.7	5.2	7.7	11.1	11.1
Cycle Q Clear(g_c), s	1.0	0.0	0.0	6.2	0.0	11.7	0.4	12.7	5.2	7.7	11.1	11.1
Prop In Lane	0.12		0.59	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	441	0	0	872	0	601	45	1765	548	251	1593	863
V/C Ratio(X)	0.07	0.00	0.00	0.36	0.00	0.60	0.24	0.67	0.32	0.82	0.53	0.53
Avail Cap(c_a), veh/h	1063	0	0	1971	0	1233	258	2662	826	761	2792	1514
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	0.0	0.0	20.5	0.0	15.1	29.9	17.0	14.6	25.7	11.1	11.1
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	0.4	1.0	0.4	0.3	2.6	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	1.7	0.0	3.2	0.2	3.8	1.5	2.7	2.8	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.6	0.0	0.0	20.6	0.0	15.4	30.9	17.4	14.9	28.2	11.4	11.6
LnGrp LOS	B	A	A	C	A	B	C	B	B	C	B	B
Approach Vol, veh/h		32			676			1367			1496	
Approach Delay, s/veh		18.6			17.8			17.2			13.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.2	28.5		20.0	6.2	36.5		20.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	29.5	34.0		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	9.7	14.7		3.0	2.4	13.1		13.7				
Green Ext Time (p_c), s	0.2	7.8		0.1	0.0	9.3		1.2				

Intersection Summary			
HCM 6th Ctrl Delay		15.9	
HCM 6th LOS		B	

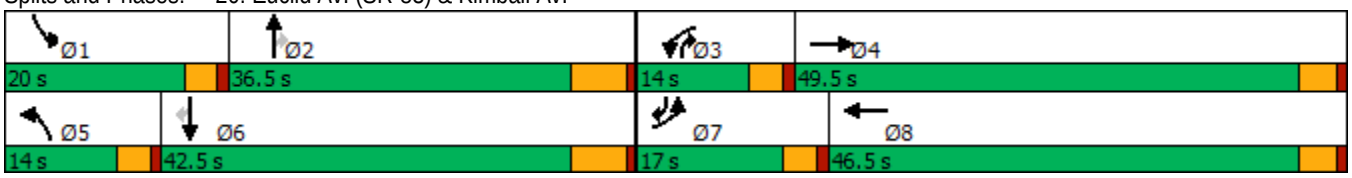
Notes

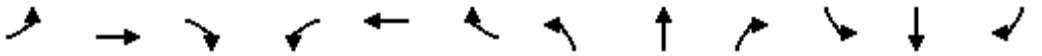
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	142	283	59	836	119	936	58	245	759	428
Future Volume (vph)	142	283	59	836	119	936	58	245	759	428
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	17.0	49.5	14.0	46.5	14.0	36.5	14.0	20.0	42.5	17.0
Total Split (%)	14.2%	41.3%	11.7%	38.8%	11.7%	30.4%	11.7%	16.7%	35.4%	14.2%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	11.0	43.4	10.1	39.1	10.1	26.9	43.1	13.2	30.0	43.0
Actuated g/C Ratio	0.10	0.40	0.09	0.36	0.09	0.25	0.40	0.12	0.28	0.39
v/c Ratio	0.49	0.25	0.40	0.91	0.81	0.79	0.09	0.70	0.57	0.69
Control Delay	54.7	23.3	59.2	45.5	88.1	44.3	2.4	58.4	35.8	26.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.7	23.3	59.2	45.5	88.1	44.3	2.4	58.4	35.8	26.9
LOS	D	C	E	D	F	D	A	E	D	C
Approach Delay		32.8		46.2		46.8			37.0	
Approach LOS		C		D		D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 41.7	Intersection LOS: D
Intersection Capacity Utilization 83.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	283	44	59	836	247	119	936	58	245	759	428
Future Volume (veh/h)	142	283	44	59	836	247	119	936	58	245	759	428
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	145	289	36	60	853	216	121	955	47	250	774	308
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	300	1140	141	134	955	242	161	1217	504	312	1247	537
Arrive On Green	0.10	0.37	0.37	0.08	0.35	0.35	0.10	0.25	0.25	0.11	0.25	0.25
Sat Flow, veh/h	2956	3064	378	1619	2703	684	1619	4914	1525	2956	4914	1506
Grp Volume(v), veh/h	145	160	165	60	540	529	121	955	47	250	774	308
Grp Sat Flow(s),veh/h/ln	1478	1710	1732	1619	1710	1677	1619	1638	1525	1478	1638	1506
Q Serve(g_s), s	4.5	6.3	6.4	3.4	28.8	28.8	7.0	17.5	2.1	8.0	13.5	16.0
Cycle Q Clear(g_c), s	4.5	6.3	6.4	3.4	28.8	28.8	7.0	17.5	2.1	8.0	13.5	16.0
Prop In Lane	1.00		0.22	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	300	636	644	134	604	592	161	1217	504	312	1247	537
V/C Ratio(X)	0.48	0.25	0.26	0.45	0.89	0.89	0.75	0.78	0.09	0.80	0.62	0.57
Avail Cap(c_a), veh/h	398	798	808	168	745	730	168	1554	609	490	1860	725
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	21.0	21.0	42.1	29.5	29.5	42.2	33.9	22.3	42.1	31.9	25.2
Incr Delay (d2), s/veh	0.4	0.2	0.2	0.9	10.1	10.4	14.4	2.1	0.1	2.2	0.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	2.4	2.5	1.3	12.5	12.3	3.3	6.6	0.7	2.8	4.9	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.4	21.2	21.2	43.0	39.6	39.8	56.7	36.0	22.4	44.4	32.4	26.2
LnGrp LOS	D	C	C	D	D	D	E	D	C	D	C	C
Approach Vol, veh/h		470			1129			1123			1332	
Approach Delay, s/veh		27.4			39.9			37.6			33.2	
Approach LOS		C			D			D			C	

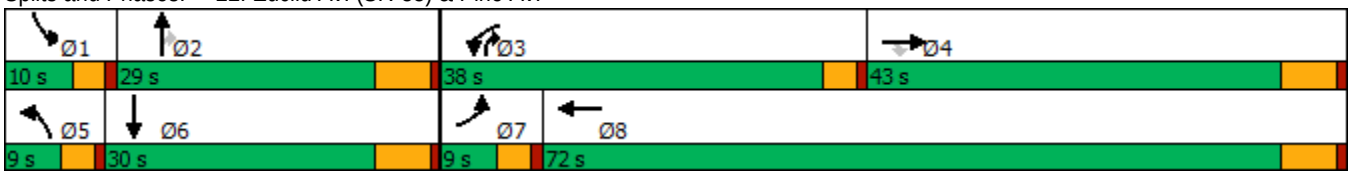
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	29.9	12.0	40.4	13.6	30.5	13.8	38.6
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	16.0	30.5	10.0	45.0	10.0	36.5	13.0	42.0
Max Q Clear Time (g_c+I1), s	10.0	19.5	5.4	8.4	9.0	18.0	6.5	30.8
Green Ext Time (p_c), s	0.2	4.4	0.0	1.8	0.0	5.5	0.1	3.3

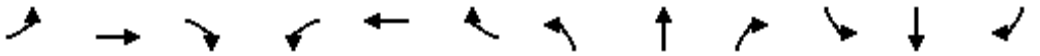
Intersection Summary	
HCM 6th Ctrl Delay	35.6
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	9	199	54	1168	358	63	801	758	66	752
Future Volume (vph)	9	199	54	1168	358	63	801	758	66	752
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	38.0	72.0	9.0	29.0	38.0	10.0	30.0
Total Split (%)	7.5%	35.8%	35.8%	31.7%	60.0%	7.5%	24.2%	31.7%	8.3%	25.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.1	15.4	15.4	34.5	52.6	5.1	20.2	56.7	6.1	21.2
Actuated g/C Ratio	0.05	0.16	0.16	0.36	0.55	0.05	0.21	0.59	0.06	0.22
v/c Ratio	0.11	0.37	0.16	1.14	0.50	0.77	0.80	0.42	0.67	0.74
Control Delay	52.3	37.5	0.9	106.3	15.9	98.4	44.0	1.8	78.8	40.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	37.5	0.9	106.3	15.9	98.4	44.0	1.8	78.8	40.5
LOS	D	D	A	F	B	F	D	A	E	D
Approach Delay		30.4			80.6		26.4			43.6
Approach LOS		C			F		C			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.14	
Intersection Signal Delay: 50.3	Intersection LOS: D
Intersection Capacity Utilization 82.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	199	54	1168	358	108	63	801	758	66	752	18
Future Volume (veh/h)	9	199	54	1168	358	108	63	801	758	66	752	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	9	205	0	1204	369	109	65	826	525	68	775	15
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	18	343		1175	650	192	80	1062	1635	84	1084	21
Arrive On Green	0.01	0.10	0.00	0.40	0.49	0.49	0.05	0.22	0.22	0.05	0.22	0.22
Sat Flow, veh/h	1619	3420	1525	2956	1335	394	1619	4914	2626	1619	4963	96
Grp Volume(v), veh/h	9	205	0	1204	0	478	65	826	525	68	511	279
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1478	0	1729	1619	1638	1313	1619	1638	1783
Q Serve(g_s), s	0.5	4.9	0.0	34.0	0.0	16.8	3.4	13.5	8.3	3.6	12.4	12.4
Cycle Q Clear(g_c), s	0.5	4.9	0.0	34.0	0.0	16.8	3.4	13.5	8.3	3.6	12.4	12.4
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	18	343		1175	0	842	80	1062	1635	84	716	390
V/C Ratio(X)	0.49	0.60		1.02	0.00	0.57	0.81	0.78	0.32	0.81	0.71	0.72
Avail Cap(c_a), veh/h	95	1480		1175	0	1335	95	1322	1774	114	919	500
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.0	36.8	0.0	25.8	0.0	15.6	40.2	31.6	8.0	40.1	30.9	31.0
Incr Delay (d2), s/veh	7.5	2.4	0.0	32.6	0.0	0.9	29.8	1.8	0.0	19.1	1.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.1	0.0	15.6	0.0	5.7	1.9	5.0	1.8	1.8	4.5	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.5	39.2	0.0	58.3	0.0	16.4	70.0	33.4	8.0	59.2	32.1	33.1
LnGrp LOS	D	D		F	A	B	E	C	A	E	C	C
Approach Vol, veh/h		214	A		1682			1416			858	
Approach Delay, s/veh		39.6			46.4			25.7			34.6	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	24.5	38.0	14.6	8.2	24.7	5.0	47.6
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	6.0	23.0	34.0	37.0	5.0	24.0	5.0	66.0
Max Q Clear Time (g_c+I1), s	5.6	15.5	36.0	6.9	5.4	14.4	2.5	18.8
Green Ext Time (p_c), s	0.0	2.9	0.0	1.7	0.0	2.0	0.0	4.5

Intersection Summary	
HCM 6th Ctrl Delay	36.6
HCM 6th LOS	D

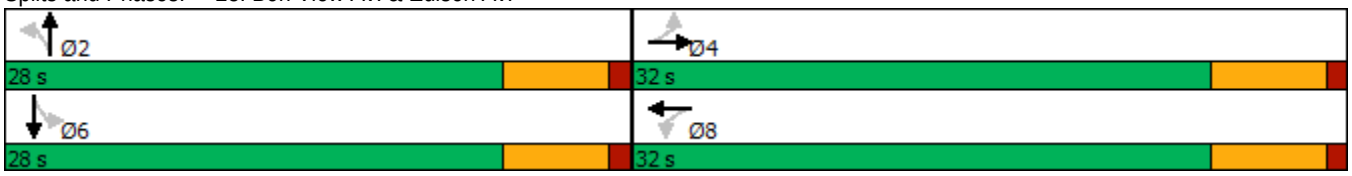
Notes

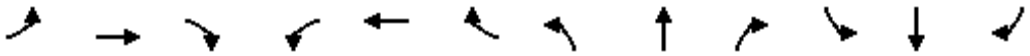
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	54	274	21	569	19	82	20	110
Future Volume (vph)	54	274	21	569	19	82	20	110
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	27.8	27.8	27.8	27.8
Total Split (s)	32.0	32.0	32.0	32.0	28.0	28.0	28.0	28.0
Total Split (%)	53.3%	53.3%	53.3%	53.3%	46.7%	46.7%	46.7%	46.7%
Yellow Time (s)	5.2	5.2	5.2	5.2	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		5.8		5.8
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)		22.4		22.4		12.5		12.5
Actuated g/C Ratio		0.48		0.48		0.27		0.27
v/c Ratio		0.52		0.80		0.29		0.43
Control Delay		12.4		21.2		15.0		15.4
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		12.4		21.2		15.0		15.4
LOS		B		C		B		B
Approach Delay		12.4		21.2		15.0		15.4
Approach LOS		B		C		B		B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 47.1	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 17.4	Intersection LOS: B
Intersection Capacity Utilization 64.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 23: Bon View Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	274	15	21	569	17	19	82	15	20	110	49
Future Volume (veh/h)	54	274	15	21	569	17	19	82	15	20	110	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	59	301	16	23	625	19	21	90	16	22	121	54
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	170	652	32	104	767	23	138	337	53	123	281	115
Arrive On Green	0.45	0.45	0.45	0.45	0.45	0.45	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	147	1444	71	25	1698	51	133	1352	214	92	1129	461
Grp Volume(v), veh/h	376	0	0	667	0	0	127	0	0	197	0	0
Grp Sat Flow(s),veh/h/ln	1662	0	0	1774	0	0	1700	0	0	1682	0	0
Q Serve(g_s), s	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.9	0.0	0.0	13.1	0.0	0.0	2.3	0.0	0.0	3.9	0.0	0.0
Prop In Lane	0.16		0.04	0.03		0.03	0.17		0.13	0.11		0.27
Lane Grp Cap(c), veh/h	854	0	0	894	0	0	528	0	0	519	0	0
V/C Ratio(X)	0.44	0.00	0.00	0.75	0.00	0.00	0.24	0.00	0.00	0.38	0.00	0.00
Avail Cap(c_a), veh/h	1140	0	0	1229	0	0	1026	0	0	1021	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.6	0.0	0.0	9.6	0.0	0.0	12.2	0.0	0.0	12.8	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	1.6	0.0	0.0	0.2	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	2.9	0.0	0.0	0.7	0.0	0.0	1.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.0	0.0	0.0	11.3	0.0	0.0	12.4	0.0	0.0	13.2	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h		376			667			127			197	
Approach Delay, s/veh		8.0			11.3			12.4			13.2	
Approach LOS		A			B			B			B	

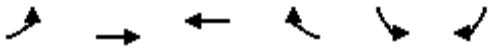
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.8		24.3		15.8		24.3				
Change Period (Y+Rc), s		5.8		6.2		5.8		6.2				
Max Green Setting (Gmax), s		22.2		25.8		22.2		25.8				
Max Q Clear Time (g_c+I1), s		4.3		7.9		5.9		15.1				
Green Ext Time (p_c), s		0.5		2.0		0.8		3.0				

Intersection Summary												
HCM 6th Ctrl Delay			10.8									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	63	340	753	28
Future Volume (vph)	63	340	753	28
Turn Type	Perm	NA	NA	Prot
Protected Phases		4	8	6
Permitted Phases	4			
Detector Phase	4	4	8	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	16.2	16.2	23.2	32.8
Total Split (s)	86.0	86.0	86.0	34.0
Total Split (%)	71.7%	71.7%	71.7%	28.3%
Yellow Time (s)	5.2	5.2	5.2	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0
Total Lost Time (s)		6.2	6.2	5.8
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	Min
Act Effct Green (s)		19.9	19.9	12.9
Actuated g/C Ratio		0.43	0.43	0.28
v/c Ratio		0.72	0.60	0.17
Control Delay		19.0	11.6	8.5
Queue Delay		0.0	0.0	0.0
Total Delay		19.0	11.6	8.5
LOS		B	B	A
Approach Delay		19.0	11.6	8.5
Approach LOS		B	B	A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 45.8	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 13.7	Intersection LOS: B
Intersection Capacity Utilization 70.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 25: Merrill Av. & Bon View Av.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	63	340	753	76	28	51
Future Volume (veh/h)	63	340	753	76	28	51
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	67	362	801	81	30	54
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	157	518	1281	130	151	272
Arrive On Green	0.41	0.41	0.41	0.41	0.27	0.27
Sat Flow, veh/h	110	1268	3226	317	561	1010
Grp Volume(v), veh/h	429	0	437	445	85	0
Grp Sat Flow(s),veh/h/ln	1379	0	1710	1743	1590	0
Q Serve(g_s), s	2.5	0.0	7.5	7.5	1.5	0.0
Cycle Q Clear(g_c), s	10.1	0.0	7.5	7.5	1.5	0.0
Prop In Lane	0.16			0.18	0.35	0.64
Lane Grp Cap(c), veh/h	675	0	699	712	427	0
V/C Ratio(X)	0.64	0.00	0.63	0.63	0.20	0.00
Avail Cap(c_a), veh/h	3111	0	3668	3739	1205	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.9	0.0	8.7	8.7	10.5	0.0
Incr Delay (d2), s/veh	1.0	0.0	0.9	0.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	1.5	1.6	0.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.9	0.0	9.7	9.6	10.7	0.0
LnGrp LOS	A	A	A	A	B	A
Approach Vol, veh/h		429	882		85	
Approach Delay, s/veh		9.9	9.7		10.7	
Approach LOS		A	A		B	

Timer - Assigned Phs		4		6	8
Phs Duration (G+Y+Rc), s		21.4		15.8	21.4
Change Period (Y+Rc), s		6.2		5.8	6.2
Max Green Setting (Gmax), s		79.8		28.2	79.8
Max Q Clear Time (g_c+I1), s		12.1		3.5	9.5
Green Ext Time (p_c), s		3.1		0.2	5.6

Intersection Summary	
HCM 6th Ctrl Delay	9.8
HCM 6th LOS	A

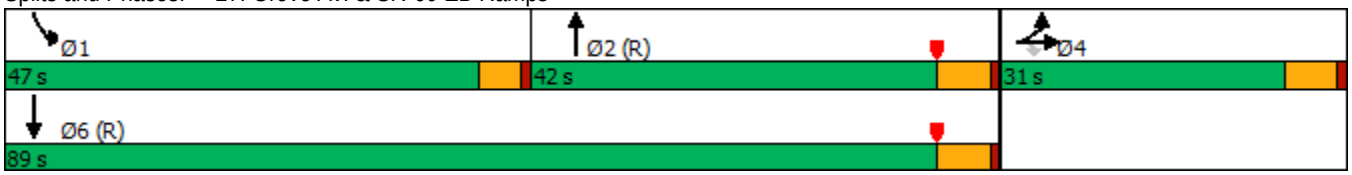
Notes

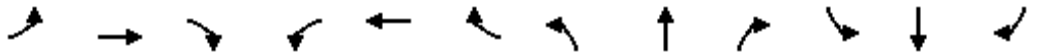
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	695	1	208	760	390	639
Future Volume (vph)	695	1	208	760	390	639
Turn Type	Split	NA	Perm	NA	Prot	NA
Protected Phases	4	4		2	1	6
Permitted Phases			4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	30.8	26.8	9.6	22.8
Total Split (s)	31.0	31.0	31.0	42.0	47.0	89.0
Total Split (%)	25.8%	25.8%	25.8%	35.0%	39.2%	74.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.6	5.8
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	25.2	25.2	25.2	45.7	32.9	83.2
Actuated g/C Ratio	0.21	0.21	0.21	0.38	0.27	0.69
v/c Ratio	1.05	1.05	0.44	0.93	0.86	0.28
Control Delay	106.4	107.0	8.0	47.6	66.1	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.9	0.0
Total Delay	106.4	107.0	8.0	47.6	67.0	7.6
LOS	F	F	A	D	E	A
Approach Delay		84.0		47.6		30.1
Approach LOS		F		D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 52.4	Intersection LOS: D
Intersection Capacity Utilization 88.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	695	1	208	0	0	0	0	760	392	390	639	0
Future Volume (veh/h)	695	1	208	0	0	0	0	760	392	390	639	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	756	0	151				0	826	317	424	695	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	760	0	337				0	1044	400	444	2503	0
Arrive On Green	0.21	0.00	0.21				0.00	0.41	0.41	0.49	1.00	0.00
Sat Flow, veh/h	3619	0	1606				0	2645	977	1810	3705	0
Grp Volume(v), veh/h	756	0	151				0	584	559	424	695	0
Grp Sat Flow(s),veh/h/ln	1810	0	1606				0	1805	1721	1810	1805	0
Q Serve(g_s), s	25.0	0.0	9.8				0.0	33.9	34.1	26.9	0.0	0.0
Cycle Q Clear(g_c), s	25.0	0.0	9.8				0.0	33.9	34.1	26.9	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.57	1.00		0.00
Lane Grp Cap(c), veh/h	760	0	337				0	739	705	444	2503	0
V/C Ratio(X)	0.99	0.00	0.45				0.00	0.79	0.79	0.95	0.28	0.00
Avail Cap(c_a), veh/h	760	0	337				0	739	705	639	2503	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.64	0.64	0.49	0.49	0.00
Uniform Delay (d), s/veh	47.3	0.0	41.3				0.0	30.9	31.0	29.9	0.0	0.0
Incr Delay (d2), s/veh	31.3	0.0	0.9				0.0	5.5	5.9	10.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.2	0.0	3.9				0.0	15.1	14.5	9.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.6	0.0	42.3				0.0	36.5	36.9	40.4	0.1	0.0
LnGrp LOS	E	A	D				A	D	D	D	A	A
Approach Vol, veh/h		907						1143			1119	
Approach Delay, s/veh		72.5						36.7			15.4	
Approach LOS		E						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	34.1	54.9		31.0		89.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	42.4	36.2		25.2		83.2
Max Q Clear Time (g_c+I1), s	28.9	36.1		27.0		2.0
Green Ext Time (p_c), s	0.5	0.1		0.0		5.0

Intersection Summary		
HCM 6th Ctrl Delay		39.4
HCM 6th LOS		D

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	68	97	11	87	39	343	50	385
Future Volume (vph)	68	97	11	87	39	343	50	385
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Total Split (s)	42.0	42.0	42.0	42.0	78.0	78.0	78.0	78.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	65.0%	65.0%	65.0%	65.0%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		20.1		20.1		72.0		72.0
Actuated g/C Ratio		0.19		0.19		0.69		0.69
v/c Ratio		0.81		0.43		0.39		0.46
Control Delay		61.2		37.1		9.0		9.9
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		61.2		37.1		9.0		9.9
LOS		E		D		A		A
Approach Delay		61.2		37.1		9.0		9.9
Approach LOS		E		D		A		A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 104.6	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 21.0	Intersection LOS: C
Intersection Capacity Utilization 64.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 30: Grove Av. & Chino Rd.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	97	30	11	87	32	39	343	15	50	385	34
Future Volume (veh/h)	68	97	30	11	87	32	39	343	15	50	385	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	76	108	33	12	97	36	43	381	17	56	428	38
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	125	141	39	50	202	70	125	1065	46	136	1007	87
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.71	0.71	0.71	0.71	0.71	0.71
Sat Flow, veh/h	467	857	237	67	1229	428	120	1494	65	136	1413	122
Grp Volume(v), veh/h	217	0	0	145	0	0	441	0	0	522	0	0
Grp Sat Flow(s),veh/h/ln	1561	0	0	1725	0	0	1679	0	0	1670	0	0
Q Serve(g_s), s	5.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.5	0.0	0.0	7.7	0.0	0.0	9.5	0.0	0.0	12.0	0.0	0.0
Prop In Lane	0.35		0.15	0.08		0.25	0.10		0.04	0.11		0.07
Lane Grp Cap(c), veh/h	305	0	0	322	0	0	1236	0	0	1230	0	0
V/C Ratio(X)	0.71	0.00	0.00	0.45	0.00	0.00	0.36	0.00	0.00	0.42	0.00	0.00
Avail Cap(c_a), veh/h	598	0	0	641	0	0	1236	0	0	1230	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	40.7	0.0	0.0	38.4	0.0	0.0	5.5	0.0	0.0	5.9	0.0	0.0
Incr Delay (d2), s/veh	3.1	0.0	0.0	1.0	0.0	0.0	0.8	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.0	0.0	3.2	0.0	0.0	2.8	0.0	0.0	3.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.8	0.0	0.0	39.4	0.0	0.0	6.3	0.0	0.0	7.0	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		217			145			441			522	
Approach Delay, s/veh		43.8			39.4			6.3			7.0	
Approach LOS		D			D			A			A	

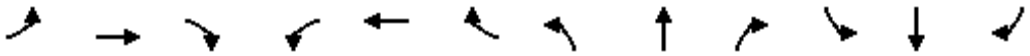
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		78.0		22.8		78.0		22.8				
Change Period (Y+Rc), s		6.2		6.2		6.2		6.2				
Max Green Setting (Gmax), s		71.8		35.8		71.8		35.8				
Max Q Clear Time (g_c+I1), s		11.5		15.5		14.0		9.7				
Green Ext Time (p_c), s		2.8		1.0		3.4		0.7				

Intersection Summary												
HCM 6th Ctrl Delay			16.3									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	47	50	38	109	38	281	45	300
Future Volume (vph)	47	50	38	109	38	281	45	300
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	46.0	46.0	46.0	46.0	74.0	74.0	74.0	74.0
Total Split (%)	38.3%	38.3%	38.3%	38.3%	61.7%	61.7%	61.7%	61.7%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.8		5.8		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		17.3		17.3		68.1		68.1
Actuated g/C Ratio		0.18		0.18		0.70		0.70
v/c Ratio		0.64		0.73		0.32		0.38
Control Delay		47.8		50.4		7.2		7.7
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		47.8		50.4		7.2		7.7
LOS		D		D		A		A
Approach Delay		47.8		50.4		7.2		7.7
Approach LOS		D		D		A		A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.4	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 20.1	Intersection LOS: C
Intersection Capacity Utilization 52.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 31: Grove Av. & Schaefer Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	50	24	38	109	43	38	281	11	45	300	46
Future Volume (veh/h)	47	50	24	38	109	43	38	281	11	45	300	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	52	56	27	42	121	48	42	312	12	50	333	51
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	115	112	44	83	161	59	148	1062	40	148	953	141
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	410	737	287	246	1058	384	146	1475	55	147	1323	196
Grp Volume(v), veh/h	135	0	0	211	0	0	366	0	0	434	0	0
Grp Sat Flow(s),veh/h/ln	1434	0	0	1688	0	0	1677	0	0	1665	0	0
Q Serve(g_s), s	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.1	0.0	0.0	11.3	0.0	0.0	6.8	0.0	0.0	8.6	0.0	0.0
Prop In Lane	0.39		0.20	0.20		0.23	0.11		0.03	0.12		0.12
Lane Grp Cap(c), veh/h	272	0	0	303	0	0	1250	0	0	1242	0	0
V/C Ratio(X)	0.50	0.00	0.00	0.70	0.00	0.00	0.29	0.00	0.00	0.35	0.00	0.00
Avail Cap(c_a), veh/h	679	0	0	748	0	0	1250	0	0	1242	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	37.0	0.0	0.0	38.5	0.0	0.0	4.6	0.0	0.0	4.9	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	0.0	2.9	0.0	0.0	0.6	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	0.0	4.7	0.0	0.0	1.8	0.0	0.0	2.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.4	0.0	0.0	41.4	0.0	0.0	5.2	0.0	0.0	5.7	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		135			211			366			434	
Approach Delay, s/veh		38.4			41.4			5.2			5.7	
Approach LOS		D			D			A			A	

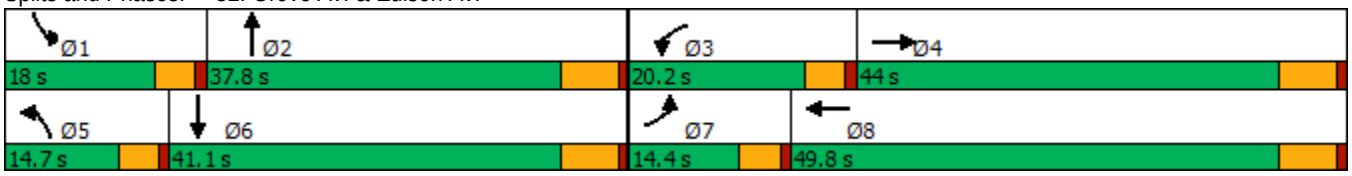
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		74.0		20.2		74.0		20.2				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		67.8		40.2		67.8		40.2				
Max Q Clear Time (g_c+I1), s		8.8		10.1		10.6		13.3				
Green Ext Time (p_c), s		2.2		0.7		2.7		1.1				

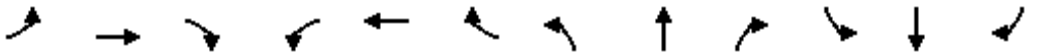
Intersection Summary												
HCM 6th Ctrl Delay			16.0									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	37	226	106	557	31	221	65	238
Future Volume (vph)	37	226	106	557	31	221	65	238
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	9.6	28.2	9.6	28.2
Total Split (s)	14.4	44.0	20.2	49.8	14.7	37.8	18.0	41.1
Total Split (%)	12.0%	36.7%	16.8%	41.5%	12.3%	31.5%	15.0%	34.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	7.0	39.0	10.8	47.5	6.7	13.9	8.6	17.9
Actuated g/C Ratio	0.08	0.42	0.12	0.52	0.07	0.15	0.09	0.19
v/c Ratio	0.34	0.39	0.61	0.70	0.29	0.55	0.47	0.45
Control Delay	51.7	22.9	55.1	26.6	50.8	39.5	53.2	34.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.7	22.9	55.1	26.6	50.8	39.5	53.2	34.7
LOS	D	C	E	C	D	D	D	C
Approach Delay		26.4		31.0		40.7		38.3
Approach LOS		C		C		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 91.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 33.3	Intersection LOS: C
Intersection Capacity Utilization 67.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	226	44	106	557	34	31	221	36	65	238	31
Future Volume (veh/h)	37	226	44	106	557	34	31	221	36	65	238	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	41	248	48	116	612	37	34	243	40	71	262	34
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	60	696	135	144	885	54	53	356	58	88	435	56
Arrive On Green	0.04	0.47	0.47	0.09	0.53	0.53	0.03	0.12	0.12	0.05	0.14	0.14
Sat Flow, veh/h	1619	1465	284	1619	1680	102	1619	2946	478	1619	3048	391
Grp Volume(v), veh/h	41	0	296	116	0	649	34	140	143	71	146	150
Grp Sat Flow(s),veh/h/ln	1619	0	1749	1619	0	1782	1619	1710	1714	1619	1710	1730
Q Serve(g_s), s	2.1	0.0	8.9	5.8	0.0	22.4	1.7	6.5	6.6	3.6	6.6	6.8
Cycle Q Clear(g_c), s	2.1	0.0	8.9	5.8	0.0	22.4	1.7	6.5	6.6	3.6	6.6	6.8
Prop In Lane	1.00		0.16	1.00		0.06	1.00		0.28	1.00		0.23
Lane Grp Cap(c), veh/h	60	0	831	144	0	938	53	207	207	88	244	247
V/C Ratio(X)	0.69	0.00	0.36	0.81	0.00	0.69	0.64	0.68	0.69	0.80	0.60	0.61
Avail Cap(c_a), veh/h	192	0	831	305	0	938	198	653	654	262	721	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	0.0	13.7	37.0	0.0	14.6	39.6	34.8	34.9	38.7	33.3	33.3
Incr Delay (d2), s/veh	5.1	0.0	1.2	4.0	0.0	4.2	4.7	3.8	4.1	6.2	2.3	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	3.2	2.3	0.0	8.3	0.7	2.7	2.8	1.5	2.7	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.5	0.0	14.9	41.1	0.0	18.8	44.3	38.7	39.0	44.9	35.6	35.7
LnGrp LOS	D	A	B	D	A	B	D	D	D	D	D	D
Approach Vol, veh/h		337			765			317			367	
Approach Delay, s/veh		18.5			22.1			39.4			37.4	
Approach LOS		B			C			D			D	

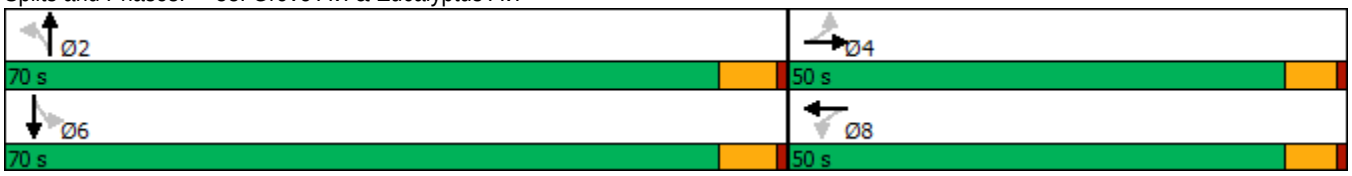
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	16.2	11.9	45.5	7.3	18.0	7.7	49.8
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	13.4	31.6	15.6	37.8	10.1	34.9	9.8	43.6
Max Q Clear Time (g_c+I1), s	5.6	8.6	7.8	10.9	3.7	8.8	4.1	24.4
Green Ext Time (p_c), s	0.0	1.3	0.1	1.5	0.0	1.4	0.0	3.7

Intersection Summary	
HCM 6th Ctrl Delay	27.7
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	40	37	13	92	68	315	39	263
Future Volume (vph)	40	37	13	92	68	315	39	263
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	50.0	50.0	50.0	50.0	70.0	70.0	70.0	70.0
Total Split (%)	41.7%	41.7%	41.7%	41.7%	58.3%	58.3%	58.3%	58.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	6.2	6.2	6.2	6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)	13.0	13.0	13.0	13.0	67.2	67.2	67.2	67.2
Actuated g/C Ratio	0.14	0.14	0.14	0.14	0.73	0.73	0.73	0.73
v/c Ratio	0.27	0.22	0.08	0.48	0.12	0.14	0.06	0.17
Control Delay	37.6	27.4	32.8	38.3	5.2	4.4	4.9	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.6	27.4	32.8	38.3	5.2	4.4	4.9	3.8
LOS	D	C	C	D	A	A	A	A
Approach Delay		31.9		37.8		4.5		3.9
Approach LOS		C		D		A		A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 92.3	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.48	
Intersection Signal Delay: 10.8	Intersection LOS: B
Intersection Capacity Utilization 43.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	37	15	13	92	21	68	315	12	39	263	103
Future Volume (veh/h)	40	37	15	13	92	21	68	315	12	39	263	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	44	41	16	14	101	23	75	346	13	43	289	113
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	159	159	62	211	183	42	739	2464	92	772	1773	678
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.73	0.73	0.73	0.73	0.73	0.73
Sat Flow, veh/h	1216	1232	481	1292	1419	323	943	3361	126	981	2419	925
Grp Volume(v), veh/h	44	0	57	14	0	124	75	176	183	43	202	200
Grp Sat Flow(s),veh/h/ln	1216	0	1713	1292	0	1742	943	1710	1777	981	1710	1634
Q Serve(g_s), s	3.1	0.0	2.6	0.9	0.0	5.8	2.3	2.7	2.7	1.2	3.1	3.2
Cycle Q Clear(g_c), s	8.9	0.0	2.6	3.5	0.0	5.8	5.5	2.7	2.7	3.9	3.1	3.2
Prop In Lane	1.00		0.28	1.00		0.19	1.00		0.07	1.00		0.57
Lane Grp Cap(c), veh/h	159	0	221	211	0	225	739	1253	1303	772	1253	1197
V/C Ratio(X)	0.28	0.00	0.26	0.07	0.00	0.55	0.10	0.14	0.14	0.06	0.16	0.17
Avail Cap(c_a), veh/h	619	0	870	700	0	885	739	1253	1303	772	1253	1197
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.7	0.0	34.1	35.7	0.0	35.5	4.4	3.5	3.5	4.0	3.5	3.5
Incr Delay (d2), s/veh	0.9	0.0	0.6	0.1	0.0	2.1	0.3	0.2	0.2	0.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	1.1	0.3	0.0	2.5	0.3	0.6	0.6	0.2	0.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.6	0.0	34.8	35.8	0.0	37.6	4.6	3.7	3.7	4.2	3.8	3.8
LnGrp LOS	D	A	C	D	A	D	A	A	A	A	A	A
Approach Vol, veh/h		101			138			434			445	
Approach Delay, s/veh		37.3			37.5			3.9			3.8	
Approach LOS		D			D			A			A	

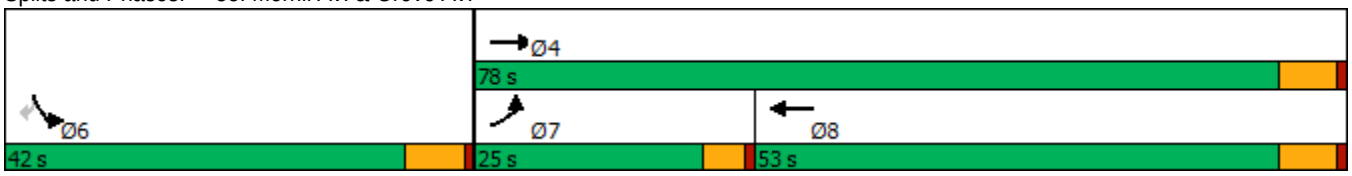
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		70.0		17.0		70.0		17.0				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		63.8		44.2		63.8		44.2				
Max Q Clear Time (g_c+I1), s		7.5		10.9		5.9		7.8				
Green Ext Time (p_c), s		2.3		0.4		2.5		0.7				

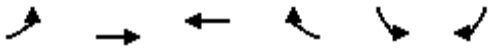
Intersection Summary												
HCM 6th Ctrl Delay			11.0									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	93	305	702	186	104
Future Volume (vph)	93	305	702	186	104
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	28.2	28.2
Total Split (s)	25.0	78.0	53.0	42.0	42.0
Total Split (%)	20.8%	65.0%	44.2%	35.0%	35.0%
Yellow Time (s)	3.6	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	6.2	6.2
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	Max	Max	None	None
Act Effct Green (s)	10.4	72.6	59.8	17.2	17.2
Actuated g/C Ratio	0.10	0.71	0.59	0.17	0.17
v/c Ratio	0.59	0.25	1.01	0.71	0.31
Control Delay	58.5	6.4	56.2	54.3	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	58.5	6.4	56.2	54.3	9.4
LOS	E	A	E	D	A
Approach Delay		18.6	56.2	38.2	
Approach LOS		B	E	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.2	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 44.3	Intersection LOS: D
Intersection Capacity Utilization 89.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	93	305	702	301	186	104
Future Volume (veh/h)	93	305	702	301	186	104
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	96	314	724	310	192	107
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	119	1314	729	312	233	219
Arrive On Green	0.07	0.73	0.61	0.61	0.14	0.14
Sat Flow, veh/h	1619	1800	1196	512	1619	1525
Grp Volume(v), veh/h	96	314	0	1034	192	107
Grp Sat Flow(s),veh/h/ln	1619	1800	0	1708	1619	1525
Q Serve(g_s), s	5.7	5.6	0.0	58.9	11.3	6.4
Cycle Q Clear(g_c), s	5.7	5.6	0.0	58.9	11.3	6.4
Prop In Lane	1.00			0.30	1.00	1.00
Lane Grp Cap(c), veh/h	119	1314	0	1041	233	219
V/C Ratio(X)	0.80	0.24	0.00	0.99	0.82	0.49
Avail Cap(c_a), veh/h	336	1314	0	1041	589	555
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.8	4.3	0.0	19.0	40.9	38.8
Incr Delay (d2), s/veh	4.7	0.4	0.0	26.3	7.2	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.5	0.0	25.6	4.7	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	49.6	4.8	0.0	45.3	48.1	40.4
LnGrp LOS	D	A	A	D	D	D
Approach Vol, veh/h		410	1034		299	
Approach Delay, s/veh		15.3	45.3		45.4	
Approach LOS		B	D		D	

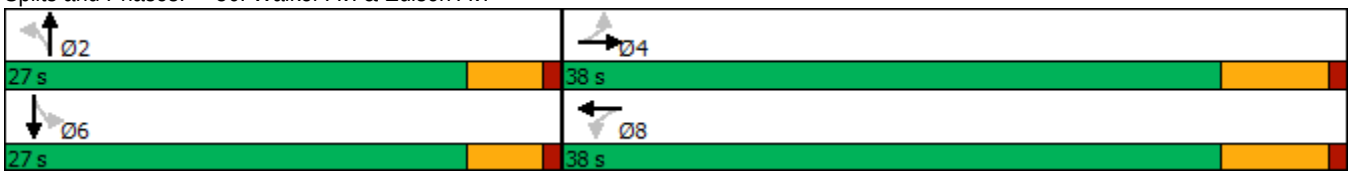
Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	78.0	20.3	11.8	66.2
Change Period (Y+Rc), s	6.2	6.2	4.6	6.2
Max Green Setting (Gmax), s	71.8	35.8	20.4	46.8
Max Q Clear Time (g_c+I1), s	7.6	13.3	7.7	60.9
Green Ext Time (p_c), s	1.7	0.8	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	38.2
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	19	268	124	475	5	20	28	19
Future Volume (vph)	19	268	124	475	5	20	28	19
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	26.7	26.7	26.7	26.7
Total Split (s)	38.0	38.0	38.0	38.0	27.0	27.0	27.0	27.0
Total Split (%)	58.5%	58.5%	58.5%	58.5%	41.5%	41.5%	41.5%	41.5%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		4.7		4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		44.2		44.2		12.3		12.3
Actuated g/C Ratio		0.76		0.76		0.21		0.21
v/c Ratio		0.24		0.65		0.09		0.19
Control Delay		6.1		13.4		15.1		16.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		6.1		13.4		15.1		16.8
LOS		A		B		B		B
Approach Delay		6.1		13.4		15.1		16.8
Approach LOS		A		B		B		B

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 58.3	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 11.7	Intersection LOS: B
Intersection Capacity Utilization 84.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	268	10	124	475	156	5	20	8	28	19	13
Future Volume (veh/h)	19	268	10	124	475	156	5	20	8	28	19	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	19	273	10	127	485	159	5	20	8	29	19	13
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	103	1042	37	211	689	212	98	172	60	184	105	49
Arrive On Green	0.64	0.64	0.64	0.64	0.64	0.64	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	41	1639	58	201	1082	333	106	1178	411	530	721	339
Grp Volume(v), veh/h	302	0	0	771	0	0	33	0	0	61	0	0
Grp Sat Flow(s),veh/h/ln	1738	0	0	1616	0	0	1696	0	0	1590	0	0
Q Serve(g_s), s	0.0	0.0	0.0	8.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.7	0.0	0.0	15.9	0.0	0.0	0.8	0.0	0.0	1.6	0.0	0.0
Prop In Lane	0.06		0.03	0.16		0.21	0.15		0.24	0.48		0.21
Lane Grp Cap(c), veh/h	1182	0	0	1112	0	0	330	0	0	338	0	0
V/C Ratio(X)	0.26	0.00	0.00	0.69	0.00	0.00	0.10	0.00	0.00	0.18	0.00	0.00
Avail Cap(c_a), veh/h	1182	0	0	1112	0	0	827	0	0	799	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.0	0.0	0.0	6.1	0.0	0.0	18.6	0.0	0.0	18.9	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	3.6	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	2.9	0.0	0.0	0.3	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.5	0.0	0.0	9.6	0.0	0.0	18.7	0.0	0.0	19.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		302			771			33			61	
Approach Delay, s/veh		4.5			9.6			18.7			19.2	
Approach LOS		A			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		12.0		38.0		12.0		38.0				
Change Period (Y+Rc), s		* 4.7		6.2		* 4.7		6.2				
Max Green Setting (Gmax), s		* 22		31.8		* 22		31.8				
Max Q Clear Time (g_c+I1), s		2.8		5.7		3.6		17.9				
Green Ext Time (p_c), s		0.1		1.6		0.2		4.4				

Intersection Summary		
HCM 6th Ctrl Delay	9.1	
HCM 6th LOS	A	

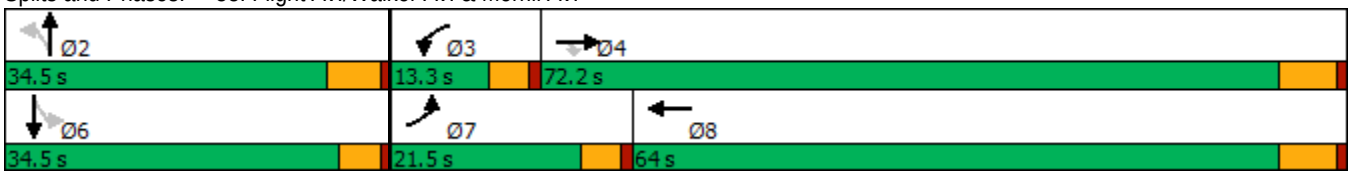
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	Ø6	Ø7
Lane Configurations								
Traffic Volume (vph)	381	110	131	812	142	0		
Future Volume (vph)	381	110	131	812	142	0		
Turn Type	NA	Perm	Prot	NA	Perm	NA		
Protected Phases	4		3	8		2	6	7
Permitted Phases		4			2			
Detector Phase	4	4	3	8	2	2		
Switch Phase								
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0	5.0
Minimum Split (s)	23.2	23.2	9.6	23.2	32.8	32.8	21.6	9.6
Total Split (s)	72.2	72.2	13.3	64.0	34.5	34.5	34.5	21.5
Total Split (%)	60.2%	60.2%	11.1%	53.3%	28.8%	28.8%	29%	18%
Yellow Time (s)	5.2	5.2	3.6	5.2	4.8	4.8	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.2	6.2	4.6	6.2	5.8	5.8		
Lead/Lag	Lag	Lag	Lead	Lag				Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				Yes
Recall Mode	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	66.2	66.2	8.7	79.6	18.9	18.9		
Actuated g/C Ratio	0.60	0.60	0.08	0.72	0.17	0.17		
v/c Ratio	0.36	0.12	1.06	0.34	0.67	0.16		
Control Delay	13.5	4.8	147.7	6.8	57.4	0.5		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	13.5	4.8	147.7	6.8	57.4	0.5		
LOS	B	A	F	A	E	A		
Approach Delay	11.6			26.4		32.8		
Approach LOS	B			C		C		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.5	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 23.0	Intersection LOS: C
Intersection Capacity Utilization 51.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 38: Flight Av./Walker Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	381	110	131	812	0	142	0	108	0	0	0
Future Volume (veh/h)	0	381	110	131	812	0	142	0	108	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	0	393	113	135	837	0	146	0	111	0	0	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	2	1151	976	136	2628	0	256	0	176	0	208	0
Arrive On Green	0.00	0.64	0.64	0.08	0.77	0.00	0.12	0.00	0.12	0.00	0.00	0.00
Sat Flow, veh/h	1619	1800	1525	1619	3510	0	1619	0	1525	0	1800	0
Grp Volume(v), veh/h	0	393	113	135	837	0	146	0	111	0	0	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	0	1619	0	1525	0	1800	0
Q Serve(g_s), s	0.0	10.4	3.0	8.6	7.7	0.0	9.0	0.0	7.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	10.4	3.0	8.6	7.7	0.0	9.0	0.0	7.2	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	2	1151	976	136	2628	0	256	0	176	0	208	0
V/C Ratio(X)	0.00	0.34	0.12	0.99	0.32	0.00	0.57	0.00	0.63	0.00	0.00	0.00
Avail Cap(c_a), veh/h	265	1151	976	136	2628	0	520	0	424	0	522	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	8.6	7.2	47.2	3.7	0.0	44.4	0.0	43.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.2	73.4	0.3	0.0	2.0	0.0	3.7	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.6	0.9	6.1	1.7	0.0	3.6	0.0	2.8	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	9.4	7.5	120.6	4.0	0.0	46.4	0.0	47.3	0.0	0.0	0.0
LnGrp LOS	A	A	A	F	A	A	D	A	D	A	A	A
Approach Vol, veh/h		506			972			257			0	
Approach Delay, s/veh		9.0			20.2			46.8			0.0	
Approach LOS		A			C			D				

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		17.7	13.3	72.2		17.7	0.0	85.5				
Change Period (Y+Rc), s		5.8	4.6	6.2		* 5.8	4.6	6.2				
Max Green Setting (Gmax), s		28.7	8.7	66.0		* 30	16.9	57.8				
Max Q Clear Time (g_c+I1), s		11.0	10.6	12.4		0.0	0.0	9.7				
Green Ext Time (p_c), s		0.9	0.0	2.6		0.0	0.0	6.0				

Intersection Summary	
HCM 6th Ctrl Delay	20.8
HCM 6th LOS	C

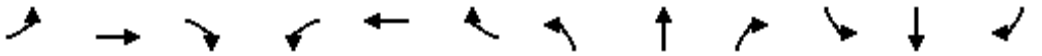
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBL	WBT	NBL	NBT	Ø6
Lane Configurations						
Traffic Volume (vph)	424	28	925	18	0	
Future Volume (vph)	424	28	925	18	0	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4		8		2	6
Permitted Phases		8		2		
Detector Phase	4	8	8	2	2	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	26.6
Total Split (s)	91.0	91.0	91.0	29.0	29.0	29.0
Total Split (%)	75.8%	75.8%	75.8%	24.2%	24.2%	24%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.2	6.2	6.2		6.2	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Max	None	None	None
Act Effct Green (s)	97.4	97.4	97.4		12.4	
Actuated g/C Ratio	0.83	0.83	0.83		0.11	
v/c Ratio	0.19	0.05	0.36		0.31	
Control Delay	3.1	3.7	4.0		26.3	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	3.1	3.7	4.0		26.3	
LOS	A	A	A		C	
Approach Delay	3.1		4.0		26.3	
Approach LOS	A		A		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.2	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.36	
Intersection Signal Delay: 4.5	Intersection LOS: A
Intersection Capacity Utilization 45.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 40: Van Vliet Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	424	64	28	925	0	18	0	35	0	0	0
Future Volume (veh/h)	0	424	64	28	925	0	18	0	35	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	0	466	70	31	1016	0	20	0	38	0	0	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	68	2401	359	709	2752	0	74	13	78	0	140	0
Arrive On Green	0.00	0.80	0.80	0.80	0.80	0.00	0.08	0.00	0.08	0.00	0.00	0.00
Sat Flow, veh/h	532	2984	446	833	3510	0	363	165	1002	0	1800	0
Grp Volume(v), veh/h	0	266	270	31	1016	0	58	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	532	1710	1720	833	1710	0	1529	0	0	0	1800	0
Q Serve(g_s), s	0.0	3.8	3.8	0.9	8.7	0.0	1.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	3.8	3.8	4.8	8.7	0.0	3.7	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.26	1.00		0.00	0.34		0.66	0.00		0.00
Lane Grp Cap(c), veh/h	68	1376	1384	709	2752	0	164	0	0	0	140	0
V/C Ratio(X)	0.00	0.19	0.20	0.04	0.37	0.00	0.35	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	68	1376	1384	709	2752	0	372	0	0	0	417	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	2.4	2.4	2.9	2.9	0.0	46.5	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.3	0.1	0.4	0.0	1.3	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.7	0.7	0.1	1.5	0.0	1.5	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	2.7	2.7	3.1	3.2	0.0	47.8	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	A	A	A
Approach Vol, veh/h		536			1047			58			0	
Approach Delay, s/veh		2.7			3.2			47.8			0.0	
Approach LOS		A			A			D				

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.4		91.0		14.4		91.0				
Change Period (Y+Rc), s		6.2		6.2		* 6.2		6.2				
Max Green Setting (Gmax), s		22.8		84.8		* 24		84.8				
Max Q Clear Time (g_c+I1), s		5.7		5.8		0.0		10.7				
Green Ext Time (p_c), s		0.2		3.0		0.0		8.3				

Intersection Summary												
HCM 6th Ctrl Delay			4.6									
HCM 6th LOS			A									

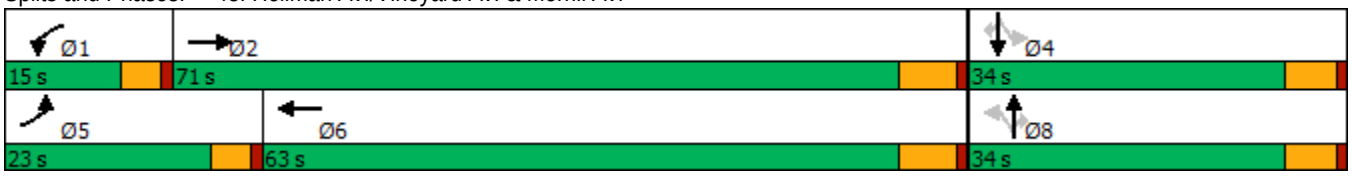
Notes

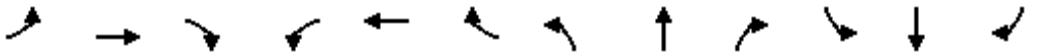
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBL	WBT	NBL	NBR	Ø4	Ø5
Lane Configurations							
Traffic Volume (vph)	457	43	801	152	36		
Future Volume (vph)	457	43	801	152	36		
Turn Type	NA	Prot	NA	Perm	Perm		
Protected Phases	2	1	6			4	5
Permitted Phases				8	8		
Detector Phase	2	1	6	8	8		
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	28.2	9.6	28.2	27.8	27.8	27.8	9.6
Total Split (s)	71.0	15.0	63.0	34.0	34.0	34.0	23.0
Total Split (%)	59.2%	12.5%	52.5%	28.3%	28.3%	28%	19%
Yellow Time (s)	5.2	3.6	5.2	4.8	4.8	4.8	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.2	4.6	6.2	5.8	5.8		
Lead/Lag	Lag	Lead	Lag				Lead
Lead-Lag Optimize?	Yes	Yes	Yes				Yes
Recall Mode	Max	None	Max	None	None	None	None
Act Effct Green (s)	68.2	7.5	78.3	18.9	18.9		
Actuated g/C Ratio	0.62	0.07	0.72	0.17	0.17		
v/c Ratio	0.23	0.42	0.35	0.73	0.06		
Control Delay	11.0	61.6	6.9	61.9	0.2		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	11.0	61.6	6.9	61.9	0.2		
LOS	B	E	A	E	A		
Approach Delay	11.0		9.7				
Approach LOS	B		A				

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.3	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 15.2	Intersection LOS: B
Intersection Capacity Utilization 50.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 43: Hellman Av./Vineyard Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	457	1	43	801	0	152	0	36	0	0	0
Future Volume (veh/h)	0	457	1	43	801	0	152	0	36	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	0	491	1	46	861	0	163	0	39	0	0	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	2	2343	5	59	2576	0	273	221	188	74	221	188
Arrive On Green	0.00	0.67	0.67	0.04	0.75	0.00	0.12	0.00	0.12	0.00	0.00	0.00
Sat Flow, veh/h	1619	3502	7	1619	3510	0	1619	1800	1525	1313	1800	1525
Grp Volume(v), veh/h	0	240	252	46	861	0	163	0	39	0	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1799	1619	1710	0	1619	1800	1525	1313	1800	1525
Q Serve(g_s), s	0.0	5.2	5.2	2.7	8.0	0.0	9.5	0.0	2.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.2	5.2	2.7	8.0	0.0	9.5	0.0	2.2	0.0	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	1144	1203	59	2576	0	273	221	188	74	221	188
V/C Ratio(X)	0.00	0.21	0.21	0.78	0.33	0.00	0.60	0.00	0.21	0.00	0.00	0.00
Avail Cap(c_a), veh/h	308	1144	1203	174	2576	0	546	524	444	295	524	444
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	6.2	6.2	46.3	3.9	0.0	41.4	0.0	38.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.4	7.8	0.4	0.0	2.1	0.0	0.5	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.6	1.6	1.2	1.8	0.0	3.8	0.0	0.8	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	6.6	6.6	54.1	4.3	0.0	43.5	0.0	38.8	0.0	0.0	0.0
LnGrp LOS	A	A	A	D	A	A	D	A	D	A	A	A
Approach Vol, veh/h		492			907			202			0	
Approach Delay, s/veh		6.6			6.8			42.6			0.0	
Approach LOS		A			A			D				

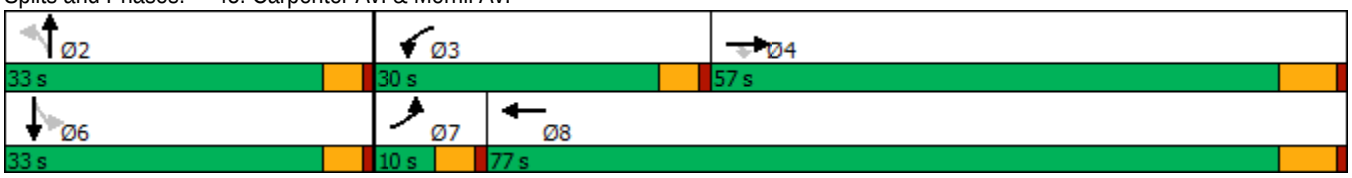
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	71.0		17.7	0.0	79.1		17.7				
Change Period (Y+Rc), s	4.6	6.2		5.8	4.6	6.2		5.8				
Max Green Setting (Gmax), s	10.4	64.8		28.2	18.4	56.8		28.2				
Max Q Clear Time (g_c+I1), s	4.7	7.2		0.0	0.0	10.0		11.5				
Green Ext Time (p_c), s	0.0	2.7		0.0	0.0	6.2		0.4				

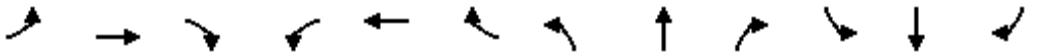
Intersection Summary			
HCM 6th Ctrl Delay		11.3	
HCM 6th LOS		B	

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	11	449	34	243	810	23	0	128	0
Future Volume (vph)	11	449	34	243	810	23	0	128	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	26.6	26.6
Total Split (s)	10.0	57.0	57.0	30.0	77.0	33.0	33.0	33.0	33.0
Total Split (%)	8.3%	47.5%	47.5%	25.0%	64.2%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2		4.6		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.2	51.8	51.8	18.7	73.4		12.9		12.9
Actuated g/C Ratio	0.05	0.52	0.52	0.19	0.74		0.13		0.13
v/c Ratio	0.13	0.51	0.04	0.80	0.69		0.51		0.78
Control Delay	52.2	19.6	0.1	57.5	12.1		15.8		41.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	52.2	19.6	0.1	57.5	12.1		15.8		41.2
LOS	D	B	A	E	B		B		D
Approach Delay		19.0			22.2		15.8		41.2
Approach LOS		B			C		B		D

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 99			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 22.2		Intersection LOS: C	
Intersection Capacity Utilization 87.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 45: Carpenter Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	449	34	243	810	45	23	0	132	128	0	11
Future Volume (veh/h)	11	449	34	243	810	45	23	0	132	128	0	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	12	478	36	259	862	48	24	0	140	136	0	12
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	24	926	785	289	1131	63	65	15	241	224	3	14
Arrive On Green	0.01	0.51	0.51	0.17	0.67	0.67	0.17	0.00	0.17	0.17	0.00	0.17
Sat Flow, veh/h	1714	1800	1525	1714	1689	94	153	89	1412	929	16	83
Grp Volume(v), veh/h	12	478	36	259	0	910	164	0	0	148	0	0
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	0	1783	1654	0	0	1029	0	0
Q Serve(g_s), s	0.7	18.6	1.2	15.6	0.0	36.4	0.0	0.0	0.0	5.6	0.0	0.0
Cycle Q Clear(g_c), s	0.7	18.6	1.2	15.6	0.0	36.4	9.9	0.0	0.0	15.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.05	0.15		0.85	0.92		0.08
Lane Grp Cap(c), veh/h	24	926	785	289	0	1194	322	0	0	241	0	0
V/C Ratio(X)	0.50	0.52	0.05	0.90	0.00	0.76	0.51	0.00	0.00	0.61	0.00	0.00
Avail Cap(c_a), veh/h	88	926	785	412	0	1194	469	0	0	367	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	51.8	17.0	12.8	43.0	0.0	11.8	40.6	0.0	0.0	43.6	0.0	0.0
Incr Delay (d2), s/veh	5.8	2.1	0.1	13.2	0.0	4.6	1.2	0.0	0.0	2.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	7.3	0.4	7.4	0.0	12.6	4.1	0.0	0.0	4.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.6	19.0	12.9	56.2	0.0	16.4	41.8	0.0	0.0	46.1	0.0	0.0
LnGrp LOS	E	B	B	E	A	B	D	A	A	D	A	A
Approach Vol, veh/h		526			1169			164			148	
Approach Delay, s/veh		19.5			25.2			41.8			46.1	
Approach LOS		B			C			D			D	

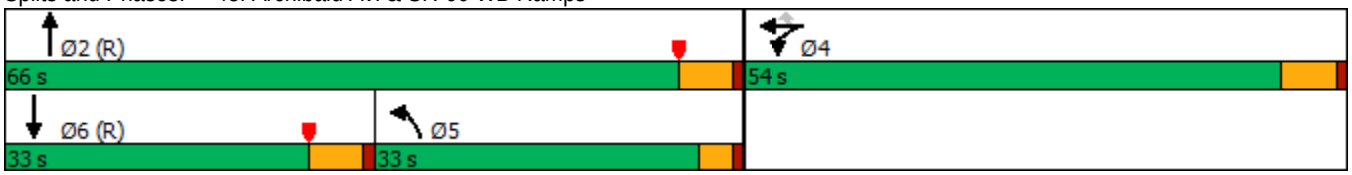
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.7	22.5	60.6		22.7	6.1	77.0				
Change Period (Y+Rc), s		4.6	4.6	6.2		4.6	4.6	6.2				
Max Green Setting (Gmax), s		28.4	25.4	50.8		28.4	5.4	70.8				
Max Q Clear Time (g_c+I1), s		11.9	17.6	20.6		17.5	2.7	38.4				
Green Ext Time (p_c), s		0.9	0.2	2.8		0.6	0.0	7.2				

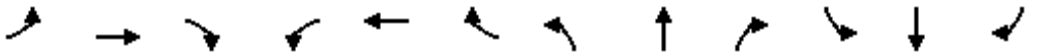
Intersection Summary	
HCM 6th Ctrl Delay	26.6
HCM 6th LOS	C

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	4	530	716	1134	440
Future Volume (vph)	4	530	716	1134	440
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	54.0	54.0	33.0	66.0	33.0
Total Split (%)	45.0%	45.0%	27.5%	55.0%	27.5%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	46.5	46.5	30.9	61.7	26.7
Actuated g/C Ratio	0.39	0.39	0.26	0.51	0.22
v/c Ratio	0.77	0.85	0.86	0.46	0.49
Control Delay	40.1	42.1	42.3	10.8	37.6
Queue Delay	0.0	0.0	1.2	0.4	0.0
Total Delay	40.1	42.1	43.5	11.3	37.6
LOS	D	D	D	B	D
Approach Delay	41.2			23.7	37.6
Approach LOS	D			C	D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 31.4	Intersection LOS: C
Intersection Capacity Utilization 73.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	494	4	530	716	1134	0	0	440	211
Future Volume (veh/h)	0	0	0	494	4	530	716	1134	0	0	440	211
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				537	4	393	778	1233	0	0	478	219
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				630	5	564	1162	2859	0	0	842	276
Arrive On Green				0.35	0.35	0.35	0.11	0.18	0.00	0.00	0.17	0.17
Sat Flow, veh/h				1797	13	1610	3510	5358	0	0	5168	1605
Grp Volume(v), veh/h				541	0	393	778	1233	0	0	478	219
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1729	0	0	1634	1605
Q Serve(g_s), s				33.2	0.0	25.2	25.6	25.3	0.0	0.0	10.7	15.7
Cycle Q Clear(g_c), s				33.2	0.0	25.2	25.6	25.3	0.0	0.0	10.7	15.7
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				634	0	564	1162	2859	0	0	842	276
V/C Ratio(X)				0.85	0.00	0.70	0.67	0.43	0.00	0.00	0.57	0.79
Avail Cap(c_a), veh/h				724	0	644	1162	2859	0	0	1111	364
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.47	0.47	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				36.1	0.0	33.5	47.1	32.4	0.0	0.0	45.6	47.6
Incr Delay (d2), s/veh				10.4	0.0	4.1	0.6	0.2	0.0	0.0	2.8	20.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				15.8	0.0	22.2	12.1	11.7	0.0	0.0	4.5	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				46.5	0.0	37.6	47.7	32.6	0.0	0.0	48.4	68.2
LnGrp LOS				D	A	D	D	C	A	A	D	E
Approach Vol, veh/h					934			2011			697	
Approach Delay, s/veh					42.7			38.5			54.6	
Approach LOS					D			D			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	72.0	48.0	45.5	26.4
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	60.2	48.0	29.0	* 27
Max Q Clear Time (g_c+I1), s	27.3	35.2	27.6	17.7
Green Ext Time (p_c), s	9.8	6.8	0.3	2.9

Intersection Summary	
HCM 6th Ctrl Delay	42.6
HCM 6th LOS	D

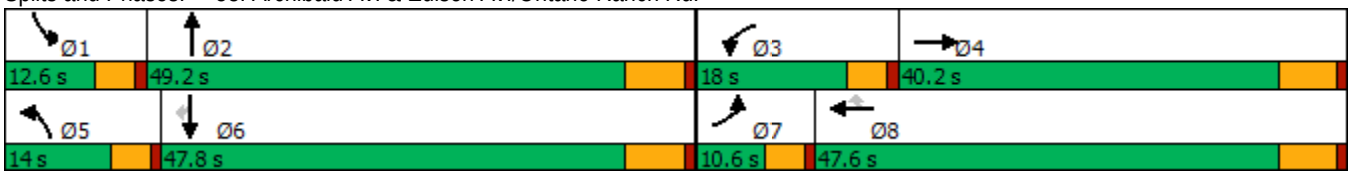
Notes

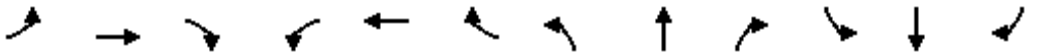
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	220	46	458	531	150	177	1108	439	70	501	108
Future Volume (vph)	27	220	46	458	531	150	177	1108	439	70	501	108
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	10.6	40.2		18.0	47.6	47.6	14.0	49.2		12.6	47.8	47.8
Total Split (%)	8.8%	33.5%		15.0%	39.7%	39.7%	11.7%	41.0%		10.5%	39.8%	39.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.6	16.3	95.6	13.9	29.4	29.4	9.8	38.0	95.6	7.5	32.9	32.9
Actuated g/C Ratio	0.06	0.17	1.00	0.15	0.31	0.31	0.10	0.40	1.00	0.08	0.34	0.34
v/c Ratio	0.16	0.39	0.03	1.10	0.52	0.27	1.11	0.84	0.30	0.57	0.44	0.18
Control Delay	51.5	38.1	0.0	115.1	32.0	6.0	146.5	34.2	0.5	66.1	25.4	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.5	38.1	0.0	115.1	32.0	6.0	146.5	34.2	0.5	66.1	25.4	2.1
LOS	D	D	A	F	C	A	F	C	A	E	C	A
Approach Delay		33.4			62.0			37.1			25.9	
Approach LOS		C			E			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 95.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 42.2	Intersection LOS: D
Intersection Capacity Utilization 78.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	220	46	458	531	150	177	1108	439	70	501	108
Future Volume (veh/h)	27	220	46	458	531	150	177	1108	439	70	501	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	28	227	0	472	547	101	182	1142	0	72	516	78
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	85	410		475	863	385	183	1372		89	1175	524
Arrive On Green	0.03	0.12	0.00	0.16	0.25	0.25	0.11	0.40	0.00	0.06	0.34	0.34
Sat Flow, veh/h	2956	3420	1525	2956	3420	1525	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	28	227	0	472	547	101	182	1142	0	72	516	78
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1710	1525	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	0.8	5.2	0.0	13.3	11.9	4.4	9.4	25.0	0.0	3.7	9.7	2.9
Cycle Q Clear(g_c), s	0.8	5.2	0.0	13.3	11.9	4.4	9.4	25.0	0.0	3.7	9.7	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	85	410		475	863	385	183	1372		89	1175	524
V/C Ratio(X)	0.33	0.55		0.99	0.63	0.26	1.00	0.83		0.80	0.44	0.15
Avail Cap(c_a), veh/h	213	1396		475	1699	758	183	1753		155	1695	756
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.7	34.6	0.0	34.9	27.7	24.9	36.9	22.4	0.0	38.9	21.1	18.9
Incr Delay (d2), s/veh	0.8	1.2	0.0	39.3	0.8	0.4	65.5	2.9	0.0	6.2	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.1	0.0	7.0	4.5	1.5	6.7	9.0	0.0	1.5	3.4	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.5	35.7	0.0	74.2	28.5	25.3	102.4	25.3	0.0	45.1	21.4	19.1
LnGrp LOS	D	D		E	C	C	F	C		D	C	B
Approach Vol, veh/h		255	A		1120			1324	A		666	
Approach Delay, s/veh		36.2			47.5			35.9			23.7	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	39.9	18.0	16.2	14.0	35.1	7.0	27.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	8.0	42.7	13.4	34.0	9.4	41.3	6.0	41.4
Max Q Clear Time (g_c+I1), s	5.7	27.0	15.3	7.2	11.4	11.7	2.8	13.9
Green Ext Time (p_c), s	0.0	6.4	0.0	1.2	0.0	3.3	0.0	3.7

Intersection Summary	
HCM 6th Ctrl Delay	37.4
HCM 6th LOS	D

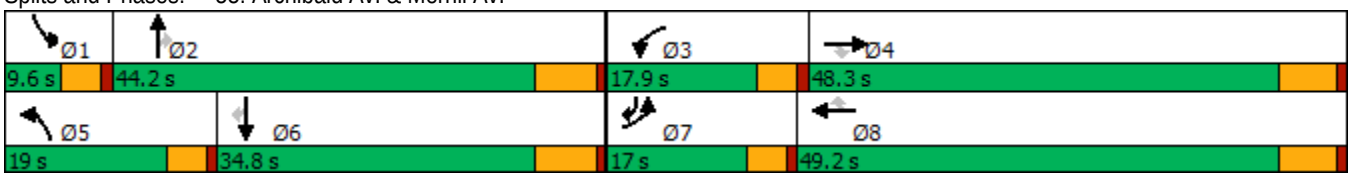
Notes

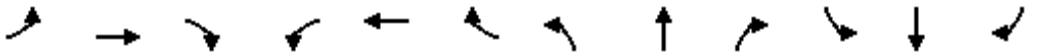
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	261	22	141	81	50	141	531	1314	41	43	590	359
Future Volume (vph)	261	22	141	81	50	141	531	1314	41	43	590	359
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	9.6
Total Split (s)	17.0	48.3	48.3	17.9	49.2	49.2	19.0	44.2	44.2	9.6	34.8	17.0
Total Split (%)	14.2%	40.3%	40.3%	14.9%	41.0%	41.0%	15.8%	36.8%	36.8%	8.0%	29.0%	14.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	None
Act Effct Green (s)	12.7	21.4	21.4	8.9	15.2	15.2	14.8	38.7	38.7	5.1	24.6	44.0
Actuated g/C Ratio	0.14	0.24	0.24	0.10	0.17	0.17	0.16	0.43	0.43	0.06	0.27	0.49
v/c Ratio	1.18	0.05	0.30	0.53	0.17	0.37	1.06	0.92	0.06	0.26	0.65	0.41
Control Delay	153.1	29.4	5.7	53.8	32.3	6.9	95.5	37.4	0.1	49.8	33.8	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	153.1	29.4	5.7	53.8	32.3	6.9	95.5	37.4	0.1	49.8	33.8	6.0
LOS	F	C	A	D	C	A	F	D	A	D	C	A
Approach Delay		97.7			25.6			52.9			24.4	
Approach LOS		F			C			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 89.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 48.3	Intersection LOS: D
Intersection Capacity Utilization 79.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	261	22	141	81	50	141	531	1314	41	43	590	359
Future Volume (veh/h)	261	22	141	81	50	141	531	1314	41	43	590	359
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	269	23	90	84	52	50	547	1355	23	44	608	304
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	240	364	309	105	215	182	540	1481	660	113	1023	682
Arrive On Green	0.15	0.20	0.20	0.06	0.12	0.12	0.17	0.43	0.43	0.04	0.30	0.30
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	3141	3420	1525	2956	3420	1525
Grp Volume(v), veh/h	269	23	90	84	52	50	547	1355	23	44	608	304
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1570	1710	1525	1478	1710	1525
Q Serve(g_s), s	12.4	0.9	4.2	4.3	2.2	2.5	14.4	31.2	0.7	1.2	12.7	11.5
Cycle Q Clear(g_c), s	12.4	0.9	4.2	4.3	2.2	2.5	14.4	31.2	0.7	1.2	12.7	11.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	240	364	309	105	215	182	540	1481	660	113	1023	682
V/C Ratio(X)	1.12	0.06	0.29	0.80	0.24	0.27	1.01	0.92	0.03	0.39	0.59	0.45
Avail Cap(c_a), veh/h	240	905	767	257	924	783	540	1539	687	176	1156	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	27.0	28.3	38.6	33.4	33.6	34.7	22.3	13.7	39.3	25.0	16.0
Incr Delay (d2), s/veh	94.9	0.1	0.5	5.2	0.6	0.8	42.0	8.7	0.0	0.8	0.7	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.8	0.4	1.5	1.8	1.0	0.9	8.1	12.1	0.2	0.4	4.6	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	130.6	27.1	28.8	43.8	34.0	34.4	76.7	31.0	13.7	40.1	25.7	16.4
LnGrp LOS	F	C	C	D	C	C	F	C	B	D	C	B
Approach Vol, veh/h		382			186			1925			956	
Approach Delay, s/veh		100.4			38.5			43.8			23.4	
Approach LOS		F			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	42.8	10.0	23.2	19.0	31.6	17.0	16.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	37.7	13.3	42.1	14.4	28.3	12.4	43.0
Max Q Clear Time (g_c+I1), s	3.2	33.2	6.3	6.2	16.4	14.7	14.4	4.5
Green Ext Time (p_c), s	0.0	3.1	0.0	0.4	0.0	3.9	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	44.1
HCM 6th LOS	D

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	356	913	932	381	229	545
Future Volume (vph)	356	913	932	381	229	545
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	16.0	67.7	36.3	16.0	83.7
Total Split (%)	30.3%	13.3%	56.4%	30.3%	13.3%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min
Act Effct Green (s)	26.4	37.8	61.0	92.7	11.1	77.3
Actuated g/C Ratio	0.23	0.33	0.53	0.81	0.10	0.68
v/c Ratio	0.89	0.92	0.96	0.30	0.68	0.43
Control Delay	66.5	41.9	46.4	3.0	61.8	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.5	41.9	46.4	3.0	61.8	10.1
LOS	E	D	D	A	E	B
Approach Delay	48.8		33.8			25.4
Approach LOS	D		C			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.1	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 37.5	Intersection LOS: D
Intersection Capacity Utilization 89.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	356	913	932	381	229	545
Future Volume (veh/h)	356	913	932	381	229	545
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1976	1976
Adj Flow Rate, veh/h	371	895	971	350	239	568
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	474	975	996	1266	300	1281
Arrive On Green	0.26	0.26	0.52	0.52	0.08	0.65
Sat Flow, veh/h	1810	2834	1900	1610	3651	1976
Grp Volume(v), veh/h	371	895	971	350	239	568
Grp Sat Flow(s),veh/h/ln	1810	1417	1900	1610	1825	1976
Q Serve(g_s), s	22.5	31.0	58.9	7.0	7.6	16.8
Cycle Q Clear(g_c), s	22.5	31.0	58.9	7.0	7.6	16.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	474	975	996	1266	300	1281
V/C Ratio(X)	0.78	0.92	0.97	0.28	0.80	0.44
Avail Cap(c_a), veh/h	474	975	1002	1271	339	1314
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.6	37.2	27.4	3.5	53.4	10.3
Incr Delay (d2), s/veh	7.6	13.0	22.4	0.1	11.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.6	13.4	29.8	5.3	3.8	6.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	48.2	50.2	49.8	3.6	64.7	10.3
LnGrp LOS	D	D	D	A	E	B
Approach Vol, veh/h	1266		1321			807
Approach Delay, s/veh	49.6		37.6			26.4
Approach LOS	D		D			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	14.7	67.3			82.1	36.3
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	11.0	62.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	9.6	60.9			18.8	33.0
Green Ext Time (p_c), s	0.1	1.2			1.9	0.0

Intersection Summary	
HCM 6th Ctrl Delay	39.4
HCM 6th LOS	D

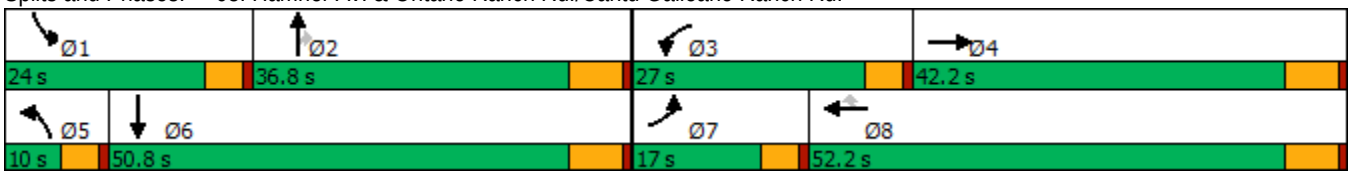
Notes

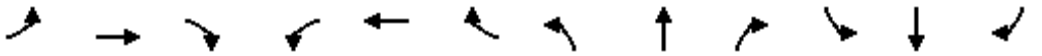
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	105	615	297	943	220	186	763	545	167	228
Future Volume (vph)	105	615	297	943	220	186	763	545	167	228
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.2	9.6	38.2	38.2	9.6	35.2	35.2	9.6	38.2
Total Split (s)	17.0	42.2	27.0	52.2	52.2	10.0	36.8	36.8	24.0	50.8
Total Split (%)	13.1%	32.5%	20.8%	40.2%	40.2%	7.7%	28.3%	28.3%	18.5%	39.1%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	9.2	24.8	16.4	32.0	32.0	6.1	31.8	31.8	11.5	37.2
Actuated g/C Ratio	0.09	0.25	0.16	0.32	0.32	0.06	0.32	0.32	0.11	0.37
v/c Ratio	0.43	0.46	0.68	0.63	0.38	1.15	0.51	0.86	0.55	0.19
Control Delay	51.1	32.6	48.6	31.3	5.2	155.7	30.9	27.9	50.3	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.1	32.6	48.6	31.3	5.2	155.7	30.9	27.9	50.3	17.2
LOS	D	C	D	C	A	F	C	C	D	B
Approach Delay		35.0		30.9			45.3			28.6
Approach LOS		C		C			D			C

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 100.8	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.15	
Intersection Signal Delay: 36.5	Intersection LOS: D
Intersection Capacity Utilization 62.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	615	89	297	943	220	186	763	545	167	228	91
Future Volume (veh/h)	105	615	89	297	943	220	186	763	545	167	228	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	119	699	101	338	1072	250	211	867	612	190	259	103
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	196	1453	204	428	1682	475	200	1936	547	277	1445	531
Arrive On Green	0.06	0.24	0.21	0.14	0.31	0.31	0.07	0.36	0.36	0.09	0.38	0.36
Sat Flow, veh/h	3048	6175	869	3048	5400	1525	3048	5400	1525	3048	3765	1385
Grp Volume(v), veh/h	119	609	191	338	1072	250	211	867	612	190	247	115
Grp Sat Flow(s),veh/h/ln	1524	1800	1644	1524	1800	1525	1524	1800	1525	1524	1800	1549
Q Serve(g_s), s	3.5	8.9	9.3	9.8	15.6	12.3	6.0	11.2	32.8	5.5	4.1	4.7
Cycle Q Clear(g_c), s	3.5	8.9	9.3	9.8	15.6	12.3	6.0	11.2	32.8	5.5	4.1	4.7
Prop In Lane	1.00		0.53	1.00		1.00	1.00		1.00	1.00		0.89
Lane Grp Cap(c), veh/h	196	1270	387	428	1682	475	200	1936	547	277	1381	594
V/C Ratio(X)	0.61	0.48	0.49	0.79	0.64	0.53	1.06	0.45	1.12	0.69	0.18	0.19
Avail Cap(c_a), veh/h	433	2255	686	766	2845	804	200	1936	547	666	1842	793
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.7	30.2	30.8	38.0	27.1	25.9	42.7	22.4	29.3	40.3	18.7	19.5
Incr Delay (d2), s/veh	1.1	0.3	1.0	1.2	0.4	0.9	79.1	0.2	75.5	1.1	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	3.6	3.5	3.5	6.2	4.2	4.3	4.3	22.1	2.0	1.6	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.8	30.4	31.8	39.2	27.5	26.8	121.9	22.6	104.8	41.5	18.7	19.6
LnGrp LOS	D	C	C	D	C	C	F	C	F	D	B	B
Approach Vol, veh/h		919			1660			1690			552	
Approach Delay, s/veh		32.3			29.8			64.8			26.7	
Approach LOS		C			C			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	36.8	16.9	25.5	10.0	39.1	9.9	32.5
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	19.4	30.6	22.4	36.0	5.4	44.6	12.4	46.0
Max Q Clear Time (g_c+I1), s	7.5	34.8	11.8	11.3	8.0	6.7	5.5	17.6
Green Ext Time (p_c), s	0.2	0.0	0.5	4.8	0.0	2.1	0.1	8.7

Intersection Summary	
HCM 6th Ctrl Delay	42.2
HCM 6th LOS	D

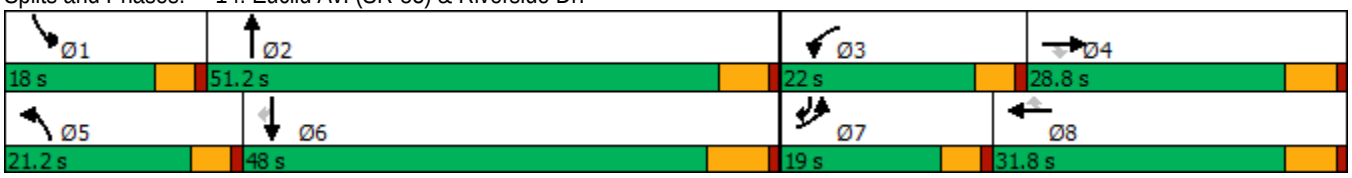
Notes

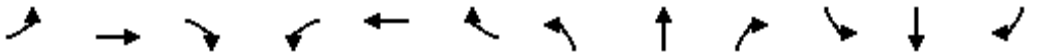
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	163	496	88	203	443	69	87	1307	150	1113	208
Future Volume (vph)	163	496	88	203	443	69	87	1307	150	1113	208
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2	1	6	7
Permitted Phases			4			8					6
Detector Phase	7	4	4	3	8	8	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	9.6	34.5	9.6
Total Split (s)	19.0	28.8	28.8	22.0	31.8	31.8	21.2	51.2	18.0	48.0	19.0
Total Split (%)	15.8%	24.0%	24.0%	18.3%	26.5%	26.5%	17.7%	42.7%	15.0%	40.0%	15.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	Max	None
Act Effct Green (s)	13.9	21.2	21.2	16.8	24.1	24.1	11.0	45.9	12.9	46.7	62.4
Actuated g/C Ratio	0.12	0.18	0.18	0.14	0.21	0.21	0.09	0.39	0.11	0.40	0.53
v/c Ratio	0.89	0.84	0.25	0.91	0.65	0.18	0.60	0.86	0.88	0.59	0.24
Control Delay	94.0	59.3	5.9	90.8	47.7	2.8	67.7	38.1	94.8	30.3	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.0	59.3	5.9	90.8	47.7	2.8	67.7	38.1	94.8	30.3	2.7
LOS	F	E	A	F	D	A	E	D	F	C	A
Approach Delay		60.5			55.6			39.6		33.0	
Approach LOS		E			E			D		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.2	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 43.4	Intersection LOS: D
Intersection Capacity Utilization 86.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	496	88	203	443	69	87	1307	263	150	1113	208
Future Volume (veh/h)	163	496	88	203	443	69	87	1307	263	150	1113	208
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	170	517	67	211	461	56	91	1361	220	156	1159	126
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	194	594	265	235	681	303	112	1654	267	180	2113	830
Arrive On Green	0.12	0.17	0.17	0.15	0.20	0.20	0.07	0.39	0.39	0.11	0.43	0.43
Sat Flow, veh/h	1619	3420	1525	1619	3420	1523	1619	4263	689	1619	4914	1506
Grp Volume(v), veh/h	170	517	67	211	461	56	91	1046	535	156	1159	126
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1523	1619	1638	1676	1619	1638	1506
Q Serve(g_s), s	12.2	17.4	4.5	15.1	14.7	3.6	6.5	33.9	33.9	11.2	20.8	4.9
Cycle Q Clear(g_c), s	12.2	17.4	4.5	15.1	14.7	3.6	6.5	33.9	33.9	11.2	20.8	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.41	1.00		1.00
Lane Grp Cap(c), veh/h	194	594	265	235	681	303	112	1271	650	180	2113	830
V/C Ratio(X)	0.88	0.87	0.25	0.90	0.68	0.18	0.81	0.82	0.82	0.87	0.55	0.15
Avail Cap(c_a), veh/h	197	666	297	239	753	335	228	1271	650	184	2113	830
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	47.5	42.1	49.6	43.8	39.3	54.2	32.5	32.5	51.6	25.1	13.1
Incr Delay (d2), s/veh	31.3	11.0	0.5	31.6	2.1	0.3	5.3	6.1	11.3	31.1	1.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	8.1	1.7	8.0	6.2	1.3	2.7	13.4	14.7	6.0	7.9	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.4	58.5	42.6	81.2	45.9	39.6	59.5	38.6	43.8	82.7	26.1	13.4
LnGrp LOS	F	E	D	F	D	D	E	D	D	F	C	B
Approach Vol, veh/h		754			728			1672			1441	
Approach Delay, s/veh		62.5			55.7			41.4			31.1	
Approach LOS		E			E			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.7	52.3	21.7	26.3	12.8	57.3	18.7	29.3
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	13.4	* 46	17.4	23.0	16.6	41.5	14.4	26.0
Max Q Clear Time (g_c+I1), s	13.2	35.9	17.1	19.4	8.5	22.8	14.2	16.7
Green Ext Time (p_c), s	0.0	6.2	0.0	1.1	0.0	8.1	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	43.9
HCM 6th LOS	D

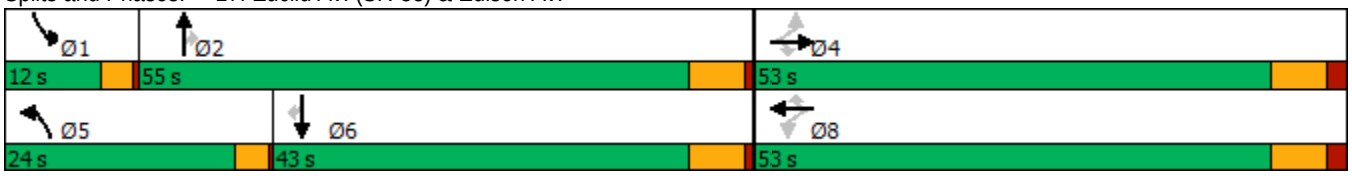
Notes

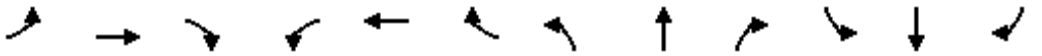
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	298	533	333	47	314	45	194	1413	81	95	1372	197
Future Volume (vph)	298	533	333	47	314	45	194	1413	81	95	1372	197
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	53.0	53.0	53.0	53.0	53.0	53.0	24.0	55.0	55.0	12.0	43.0	43.0
Total Split (%)	44.2%	44.2%	44.2%	44.2%	44.2%	44.2%	20.0%	45.8%	45.8%	10.0%	35.8%	35.8%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	40.0	40.0	40.0	40.0	40.0	40.0	17.2	44.8	44.8	8.6	36.1	36.1
Actuated g/C Ratio	0.36	0.36	0.36	0.36	0.36	0.36	0.16	0.41	0.41	0.08	0.33	0.33
v/c Ratio	1.16	0.86	0.46	0.46	0.51	0.08	0.81	0.74	0.13	0.80	0.90	0.34
Control Delay	139.6	47.0	5.4	43.8	30.8	0.6	70.6	31.1	8.0	93.6	45.0	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	139.6	47.0	5.4	43.8	30.8	0.6	70.6	31.1	8.0	93.6	45.0	11.2
LOS	F	D	A	D	C	A	E	C	A	F	D	B
Approach Delay		58.8			29.0			34.5			43.8	
Approach LOS		E			C			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.2	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 43.0	Intersection LOS: D
Intersection Capacity Utilization 95.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	298	533	333	47	314	45	194	1413	81	95	1372	197
Future Volume (veh/h)	298	533	333	47	314	45	194	1413	81	95	1372	197
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	314	561	269	49	331	41	204	1487	77	100	1444	175
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	318	718	608	143	718	601	229	1890	585	119	1555	483
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.14	0.38	0.38	0.07	0.32	0.32
Sat Flow, veh/h	969	1800	1525	634	1800	1506	1619	4914	1521	1619	4914	1525
Grp Volume(v), veh/h	314	561	269	49	331	41	204	1487	77	100	1444	175
Grp Sat Flow(s),veh/h/ln	969	1800	1525	634	1800	1506	1619	1638	1521	1619	1638	1525
Q Serve(g_s), s	30.4	31.4	14.9	8.4	15.6	1.9	14.3	30.8	3.8	7.0	32.8	10.2
Cycle Q Clear(g_c), s	46.0	31.4	14.9	39.8	15.6	1.9	14.3	30.8	3.8	7.0	32.8	10.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	318	718	608	143	718	601	229	1890	585	119	1555	483
V/C Ratio(X)	0.99	0.78	0.44	0.34	0.46	0.07	0.89	0.79	0.13	0.84	0.93	0.36
Avail Cap(c_a), veh/h	318	718	608	143	718	601	288	2087	646	119	1576	489
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.3	30.3	25.3	47.7	25.6	21.4	48.6	31.3	23.0	52.8	38.2	30.4
Incr Delay (d2), s/veh	47.3	5.6	0.5	1.4	0.5	0.0	20.7	1.9	0.1	36.6	10.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.1	13.9	5.2	1.4	6.5	0.7	6.8	11.5	1.3	3.9	13.6	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.6	35.9	25.8	49.1	26.0	21.5	69.3	33.2	23.1	89.3	48.1	30.9
LnGrp LOS	F	D	C	D	C	C	E	C	C	F	D	C
Approach Vol, veh/h		1144			421			1768			1719	
Approach Delay, s/veh		49.1			28.3			36.9			48.8	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	50.4		53.0	19.9	42.5		53.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	8.5	49.0		46.0	20.5	37.0		46.0				
Max Q Clear Time (g_c+I1), s	9.0	32.8		48.0	16.3	34.8		41.8				
Green Ext Time (p_c), s	0.0	8.7		0.0	0.1	1.7		0.9				

Intersection Summary			
HCM 6th Ctrl Delay		43.0	
HCM 6th LOS		D	

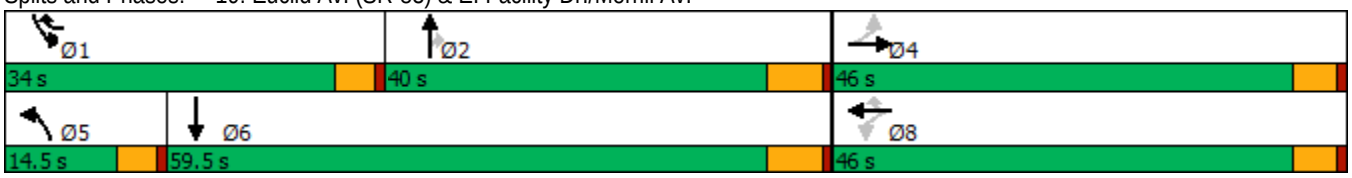
Notes

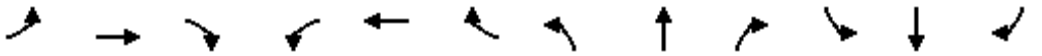
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	12	33	262	2	252	5	1388	275	307	1419
Future Volume (vph)	12	33	262	2	252	5	1388	275	307	1419
Turn Type	Perm	NA	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	1	5	2		1	6
Permitted Phases	4		8		8			2		
Detector Phase	4	4	8	8	1	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	34.0	14.5	40.0	40.0	34.0	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	28.3%	12.1%	33.3%	33.3%	28.3%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	4.5	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		20.2	20.2	20.2	48.9	10.2	34.7	34.7	23.7	60.6
Actuated g/C Ratio		0.21	0.21	0.21	0.52	0.11	0.37	0.37	0.25	0.64
v/c Ratio		0.18	0.54	0.54	0.34	0.03	0.84	0.48	0.83	0.49
Control Delay		25.9	40.8	40.8	12.4	45.6	34.6	20.6	53.0	12.1
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		25.9	40.8	40.8	12.4	45.6	34.6	20.6	53.0	12.1
LOS		C	D	D	B	D	C	C	D	B
Approach Delay		25.9		26.9			32.3			19.4
Approach LOS		C		C			C			B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 94.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 25.9	Intersection LOS: C
Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	33	14	262	2	252	5	1388	275	307	1419	1
Future Volume (veh/h)	12	33	14	262	2	252	5	1388	275	307	1419	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	13	36	14	289	0	267	5	1525	237	337	1559	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	89	203	68	690	0	640	21	1894	588	375	2967	0
Arrive On Green	0.19	0.19	0.19	0.19	0.00	0.19	0.01	0.39	0.39	0.23	0.60	0.00
Sat Flow, veh/h	185	1080	361	2600	0	1525	1619	4914	1525	1619	5076	0
Grp Volume(v), veh/h	63	0	0	289	0	267	5	1525	237	337	1559	0
Grp Sat Flow(s),veh/h/ln	1625	0	0	1300	0	1525	1619	1638	1525	1619	1638	0
Q Serve(g_s), s	0.0	0.0	0.0	5.0	0.0	9.8	0.2	22.0	9.0	16.1	14.7	0.0
Cycle Q Clear(g_c), s	2.4	0.0	0.0	7.4	0.0	9.8	0.2	22.0	9.0	16.1	14.7	0.0
Prop In Lane	0.21		0.22	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	361	0	0	690	0	640	21	1894	588	375	2967	0
V/C Ratio(X)	0.17	0.00	0.00	0.42	0.00	0.42	0.23	0.81	0.40	0.90	0.53	0.00
Avail Cap(c_a), veh/h	866	0	0	1539	0	1139	203	2098	651	600	3302	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.2	0.0	0.0	29.1	0.0	16.2	38.9	21.8	17.8	29.7	9.2	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.2	0.0	0.2	2.1	2.2	0.4	7.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.0	2.3	0.0	3.0	0.1	7.4	2.8	6.3	3.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.3	0.0	0.0	29.2	0.0	16.4	41.0	24.0	18.2	36.9	9.3	0.0
LnGrp LOS	C	A	A	C	A	B	D	C	B	D	A	A
Approach Vol, veh/h		63			556			1767			1896	
Approach Delay, s/veh		27.3			23.1			23.3			14.2	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.9	36.7		20.0	5.5	54.1		20.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	29.5	34.0		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	18.1	24.0		4.4	2.2	16.7		11.8				
Green Ext Time (p_c), s	0.4	6.7		0.2	0.0	13.2		1.0				

Intersection Summary			
HCM 6th Ctrl Delay		19.3	
HCM 6th LOS		B	

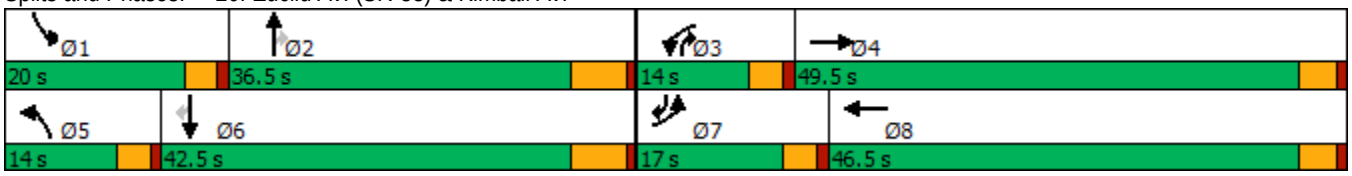
Notes

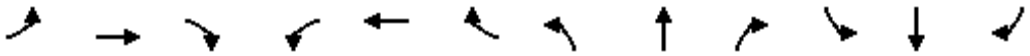
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	390	866	91	383	84	1031	52	480	973	259
Future Volume (vph)	390	866	91	383	84	1031	52	480	973	259
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	17.0	49.5	14.0	46.5	14.0	36.5	14.0	20.0	42.5	17.0
Total Split (%)	14.2%	41.3%	11.7%	38.8%	11.7%	30.4%	11.7%	16.7%	35.4%	14.2%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	13.1	38.0	10.1	35.0	10.1	28.5	44.6	16.1	34.5	49.6
Actuated g/C Ratio	0.12	0.34	0.09	0.31	0.09	0.26	0.40	0.14	0.31	0.45
v/c Ratio	1.16	0.84	0.65	0.55	0.60	0.85	0.08	1.16	0.66	0.33
Control Delay	144.0	41.0	72.3	29.2	68.9	47.2	1.9	138.8	36.3	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	144.0	41.0	72.3	29.2	68.9	47.2	1.9	138.8	36.3	3.8
LOS	F	D	E	C	E	D	A	F	D	A
Approach Delay		71.2		35.1		46.7			60.1	
Approach LOS		E		D		D			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 56.5	Intersection LOS: E
Intersection Capacity Utilization 89.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	390	866	78	91	383	186	84	1031	52	480	973	259
Future Volume (veh/h)	390	866	78	91	383	186	84	1031	52	480	973	259
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	402	893	77	94	395	154	87	1063	39	495	1003	169
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	362	1049	90	143	712	274	141	1263	527	446	1577	676
Arrive On Green	0.12	0.33	0.33	0.09	0.30	0.30	0.09	0.26	0.26	0.15	0.32	0.32
Sat Flow, veh/h	2956	3186	275	1619	2414	929	1619	4914	1525	2956	4914	1524
Grp Volume(v), veh/h	402	479	491	94	278	271	87	1063	39	495	1003	169
Grp Sat Flow(s),veh/h/ln	1478	1710	1750	1619	1710	1633	1619	1638	1525	1478	1638	1524
Q Serve(g_s), s	13.0	27.7	27.7	6.0	14.5	14.9	5.5	21.7	1.8	16.0	18.5	7.4
Cycle Q Clear(g_c), s	13.0	27.7	27.7	6.0	14.5	14.9	5.5	21.7	1.8	16.0	18.5	7.4
Prop In Lane	1.00		0.16	1.00		0.57	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	362	563	576	143	505	482	141	1263	527	446	1577	676
V/C Ratio(X)	1.11	0.85	0.85	0.66	0.55	0.56	0.62	0.84	0.07	1.11	0.64	0.25
Avail Cap(c_a), veh/h	362	726	743	153	677	647	153	1413	573	446	1691	711
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.5	33.2	33.2	46.8	31.5	31.6	46.7	37.3	23.3	45.0	30.7	18.5
Incr Delay (d2), s/veh	80.2	7.7	7.5	6.8	0.4	0.4	4.2	4.4	0.1	76.0	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	12.0	12.2	2.6	5.8	5.6	2.3	8.6	0.6	10.2	6.8	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	126.7	40.8	40.7	53.6	31.8	32.0	50.9	41.7	23.4	121.0	31.4	18.7
LnGrp LOS	F	D	D	D	C	C	D	D	C	F	C	B
Approach Vol, veh/h		1372			643			1189			1667	
Approach Delay, s/veh		65.9			35.1			41.8			56.7	
Approach LOS		E			D			D			E	

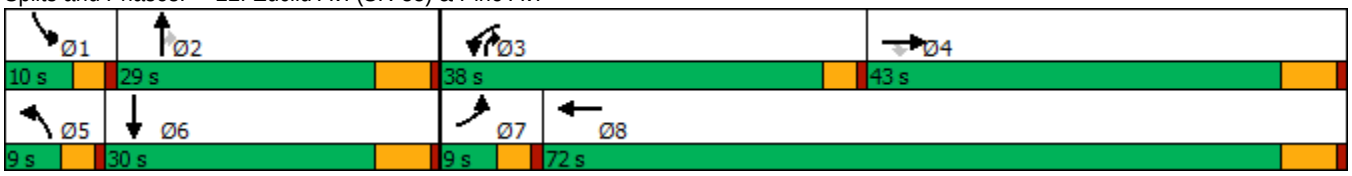
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	33.3	13.4	39.4	13.2	40.0	17.0	35.8
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	16.0	30.5	10.0	45.0	10.0	36.5	13.0	42.0
Max Q Clear Time (g_c+I1), s	18.0	23.7	8.0	29.7	7.5	20.5	15.0	16.9
Green Ext Time (p_c), s	0.0	3.5	0.0	5.1	0.0	6.0	0.0	1.9

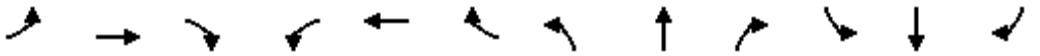
Intersection Summary	
HCM 6th Ctrl Delay	52.8
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	6	494	108	629	79	63	812	1267	148	898
Future Volume (vph)	6	494	108	629	79	63	812	1267	148	898
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	38.0	72.0	9.0	29.0	38.0	10.0	30.0
Total Split (%)	7.5%	35.8%	35.8%	31.7%	60.0%	7.5%	24.2%	31.7%	8.3%	25.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.1	23.3	23.3	26.7	52.6	5.1	21.5	54.3	6.2	22.5
Actuated g/C Ratio	0.05	0.24	0.24	0.27	0.54	0.05	0.22	0.55	0.06	0.23
v/c Ratio	0.07	0.62	0.24	0.80	0.17	0.76	0.77	0.82	1.50	0.82
Control Delay	53.7	37.5	4.2	42.7	7.6	99.7	43.1	20.9	305.1	44.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.7	37.5	4.2	42.7	7.6	99.7	43.1	20.9	305.1	44.2
LOS	D	D	A	D	A	F	D	C	F	D
Approach Delay		31.7			35.8		31.7			81.0
Approach LOS		C			D		C			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 98.1	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.50	
Intersection Signal Delay: 43.7	Intersection LOS: D
Intersection Capacity Utilization 82.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	494	108	629	79	74	63	812	1267	148	898	5
Future Volume (veh/h)	6	494	108	629	79	74	63	812	1267	148	898	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	6	504	0	642	81	74	64	829	876	151	916	5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	13	709		721	384	351	79	1266	1347	109	1391	8
Arrive On Green	0.01	0.21	0.00	0.24	0.44	0.44	0.05	0.26	0.26	0.07	0.28	0.28
Sat Flow, veh/h	1619	3420	1525	2956	866	791	1619	4914	2685	1619	5044	28
Grp Volume(v), veh/h	6	504	0	642	0	155	64	829	876	151	595	326
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1478	0	1658	1619	1638	1342	1619	1638	1795
Q Serve(g_s), s	0.3	12.2	0.0	18.7	0.0	5.1	3.5	13.5	21.6	6.0	14.3	14.4
Cycle Q Clear(g_c), s	0.3	12.2	0.0	18.7	0.0	5.1	3.5	13.5	21.6	6.0	14.3	14.4
Prop In Lane	1.00		1.00	1.00		0.48	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	13	709		721	0	735	79	1266	1347	109	904	495
V/C Ratio(X)	0.48	0.71		0.89	0.00	0.21	0.81	0.65	0.65	1.39	0.66	0.66
Avail Cap(c_a), veh/h	91	1417		1126	0	1225	91	1266	1347	109	904	495
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	32.9	0.0	32.6	0.0	15.3	42.0	29.6	16.5	41.6	28.6	28.6
Incr Delay (d2), s/veh	10.1	1.9	0.0	3.9	0.0	0.2	31.9	1.0	0.9	221.3	1.4	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.9	0.0	6.5	0.0	1.8	2.0	4.9	5.7	8.9	5.2	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.3	34.8	0.0	36.5	0.0	15.5	74.0	30.6	17.3	262.9	30.0	31.2
LnGrp LOS	D	C		D	A	B	E	C	B	F	C	C
Approach Vol, veh/h		510	A		797			1769			1072	
Approach Delay, s/veh		35.0			32.4			25.6			63.2	
Approach LOS		D			C			C			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	29.0	25.8	24.5	8.4	30.6	4.7	45.6
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	6.0	23.0	34.0	37.0	5.0	24.0	5.0	66.0
Max Q Clear Time (g_c+I1), s	8.0	23.6	20.7	14.2	5.5	16.4	2.3	7.1
Green Ext Time (p_c), s	0.0	0.0	1.1	4.3	0.0	2.1	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	37.8
HCM 6th LOS	D

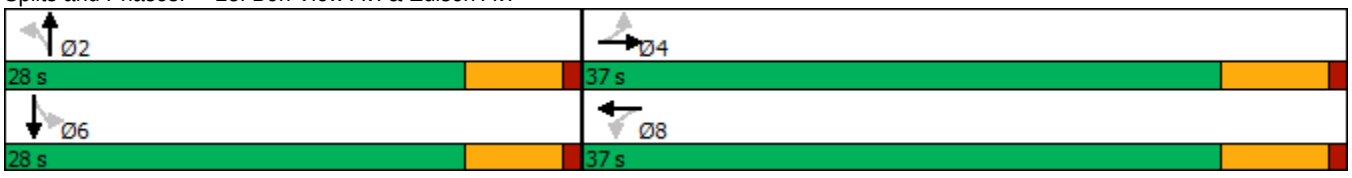
Notes

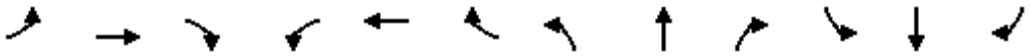
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	77	544	7	354	14	98	19	88
Future Volume (vph)	77	544	7	354	14	98	19	88
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	27.8	27.8	27.8	27.8
Total Split (s)	37.0	37.0	37.0	37.0	28.0	28.0	28.0	28.0
Total Split (%)	56.9%	56.9%	56.9%	56.9%	43.1%	43.1%	43.1%	43.1%
Yellow Time (s)	5.2	5.2	5.2	5.2	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		5.8		5.8
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)		25.9		25.9		12.4		12.4
Actuated g/C Ratio		0.51		0.51		0.25		0.25
v/c Ratio		0.82		0.43		0.31		0.39
Control Delay		21.7		10.0		17.9		16.2
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		21.7		10.0		17.9		16.2
LOS		C		A		B		B
Approach Delay		21.7		10.0		17.9		16.2
Approach LOS		C		A		B		B

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 50.6	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 17.3	Intersection LOS: B
Intersection Capacity Utilization 84.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 23: Bon View Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	544	24	7	354	7	14	98	11	19	88	52
Future Volume (veh/h)	77	544	24	7	354	7	14	98	11	19	88	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	81	573	25	7	373	7	15	103	12	20	93	55
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	158	716	30	91	834	15	116	352	38	118	243	129
Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	130	1497	62	8	1744	32	88	1486	160	95	1024	545
Grp Volume(v), veh/h	679	0	0	387	0	0	130	0	0	168	0	0
Grp Sat Flow(s),veh/h/ln	1689	0	0	1785	0	0	1734	0	0	1665	0	0
Q Serve(g_s), s	7.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.5	0.0	0.0	6.1	0.0	0.0	2.5	0.0	0.0	3.5	0.0	0.0
Prop In Lane	0.12		0.04	0.02		0.02	0.12		0.09	0.12		0.33
Lane Grp Cap(c), veh/h	904	0	0	941	0	0	506	0	0	490	0	0
V/C Ratio(X)	0.75	0.00	0.00	0.41	0.00	0.00	0.26	0.00	0.00	0.34	0.00	0.00
Avail Cap(c_a), veh/h	1316	0	0	1383	0	0	994	0	0	961	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.4	0.0	0.0	7.3	0.0	0.0	13.2	0.0	0.0	13.6	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	0.0	1.2	0.0	0.0	0.8	0.0	0.0	1.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.8	0.0	0.0	7.6	0.0	0.0	13.5	0.0	0.0	14.0	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		679			387			130			168	
Approach Delay, s/veh		10.8			7.6			13.5			14.0	
Approach LOS		B			A			B			B	

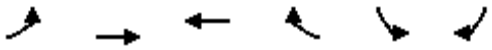
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.8		26.4		15.8		26.4				
Change Period (Y+Rc), s		5.8		6.2		5.8		6.2				
Max Green Setting (Gmax), s		22.2		30.8		22.2		30.8				
Max Q Clear Time (g_c+I1), s		4.5		16.5		5.5		8.1				
Green Ext Time (p_c), s		0.5		3.7		0.7		2.0				

Intersection Summary												
HCM 6th Ctrl Delay			10.6									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	99	721	462	63
Future Volume (vph)	99	721	462	63
Turn Type	Perm	NA	NA	Prot
Protected Phases		4	8	6
Permitted Phases	4			
Detector Phase	4	4	8	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	16.2	16.2	23.2	32.8
Total Split (s)	86.0	86.0	86.0	34.0
Total Split (%)	71.7%	71.7%	71.7%	28.3%
Yellow Time (s)	5.2	5.2	5.2	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0
Total Lost Time (s)		6.2	6.2	5.8
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	Min
Act Effct Green (s)		77.4	77.4	14.2
Actuated g/C Ratio		0.75	0.75	0.14
v/c Ratio		0.75	0.21	0.56
Control Delay		14.2	4.6	36.6
Queue Delay		0.0	0.0	0.0
Total Delay		14.2	4.6	36.6
LOS		B	A	D
Approach Delay		14.2	4.6	36.6
Approach LOS		B	A	D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 13.1	Intersection LOS: B
Intersection Capacity Utilization 84.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 25: Merrill Av. & Bon View Av.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	99	721	462	38	63	74
Future Volume (veh/h)	99	721	462	38	63	74
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	105	767	491	40	67	79
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	160	912	1938	157	132	155
Arrive On Green	0.61	0.61	0.61	0.61	0.18	0.18
Sat Flow, veh/h	144	1507	3293	260	733	864
Grp Volume(v), veh/h	872	0	261	270	147	0
Grp Sat Flow(s),veh/h/ln	1651	0	1710	1753	1608	0
Q Serve(g_s), s	15.5	0.0	4.0	4.0	4.6	0.0
Cycle Q Clear(g_c), s	24.0	0.0	4.0	4.0	4.6	0.0
Prop In Lane	0.12			0.15	0.46	0.54
Lane Grp Cap(c), veh/h	1072	0	1035	1061	289	0
V/C Ratio(X)	0.81	0.00	0.25	0.25	0.51	0.00
Avail Cap(c_a), veh/h	2397	0	2450	2511	814	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.8	0.0	5.1	5.1	20.6	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.1	0.1	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	0.8	0.8	1.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.4	0.0	5.3	5.3	22.0	0.0
LnGrp LOS	B	A	A	A	C	A
Approach Vol, veh/h		872	531		147	
Approach Delay, s/veh		10.4	5.3		22.0	
Approach LOS		B	A		C	

Timer - Assigned Phs			4		6	8
Phs Duration (G+Y+Rc), s			39.9		15.8	39.9
Change Period (Y+Rc), s			6.2		5.8	6.2
Max Green Setting (Gmax), s			79.8		28.2	79.8
Max Q Clear Time (g_c+I1), s			26.0		6.6	6.0
Green Ext Time (p_c), s			7.7		0.4	3.0

Intersection Summary		
HCM 6th Ctrl Delay	9.7	
HCM 6th LOS	A	

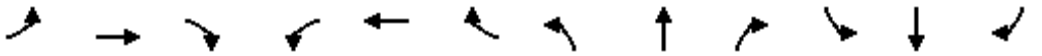
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	457	0	362	714	470	918
Future Volume (vph)	457	0	362	714	470	918
Turn Type	Split	NA	Perm	NA	Prot	NA
Protected Phases	4	4		2	1	6
Permitted Phases			4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	30.8	26.8	9.6	22.8
Total Split (s)	31.0	31.0	31.0	50.0	39.0	89.0
Total Split (%)	25.8%	25.8%	25.8%	41.7%	32.5%	74.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.6	5.8
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	22.2	22.2	22.2	46.3	35.3	86.2
Actuated g/C Ratio	0.18	0.18	0.18	0.39	0.29	0.72
v/c Ratio	0.77	0.77	0.89	0.83	0.95	0.38
Control Delay	62.6	62.9	50.0	38.3	84.2	5.6
Queue Delay	0.0	0.0	0.0	0.0	15.8	0.1
Total Delay	62.6	62.9	50.0	38.3	99.9	5.8
LOS	E	E	D	D	F	A
Approach Delay		57.2		38.3		37.6
Approach LOS		E		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 42.7	Intersection LOS: D
Intersection Capacity Utilization 87.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	457	0	362	0	0	0	0	714	339	470	918	0
Future Volume (veh/h)	457	0	362	0	0	0	0	714	339	470	918	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	491	0	302				0	768	282	505	987	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	738	0	328				0	960	353	518	2525	0
Arrive On Green	0.20	0.00	0.20				0.00	0.37	0.37	0.57	1.00	0.00
Sat Flow, veh/h	3619	0	1610				0	2659	941	1810	3705	0
Grp Volume(v), veh/h	491	0	302				0	541	509	505	987	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1700	1810	1805	0
Q Serve(g_s), s	15.0	0.0	22.1				0.0	32.1	32.1	32.4	0.0	0.0
Cycle Q Clear(g_c), s	15.0	0.0	22.1				0.0	32.1	32.1	32.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.55	1.00		0.00
Lane Grp Cap(c), veh/h	738	0	328				0	676	637	518	2525	0
V/C Ratio(X)	0.67	0.00	0.92				0.00	0.80	0.80	0.97	0.39	0.00
Avail Cap(c_a), veh/h	760	0	338				0	676	637	519	2525	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.74	0.74	0.72	0.72	0.00
Uniform Delay (d), s/veh	44.0	0.0	46.8				0.0	33.5	33.5	25.2	0.0	0.0
Incr Delay (d2), s/veh	2.1	0.0	29.0				0.0	7.3	7.7	27.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	0.0	11.2				0.0	14.7	13.9	12.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.1	0.0	75.8				0.0	40.8	41.2	52.2	0.3	0.0
LnGrp LOS	D	A	E				A	D	D	D	A	A
Approach Vol, veh/h		793						1050			1492	
Approach Delay, s/veh		57.4						41.0			17.9	
Approach LOS		E						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	39.0	50.8		30.3		89.7
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	34.4	44.2		25.2		83.2
Max Q Clear Time (g_c+I1), s	34.4	34.1		24.1		2.0
Green Ext Time (p_c), s	0.0	4.5		0.4		8.0

Intersection Summary		
HCM 6th Ctrl Delay		34.6
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	83	198	10	43	39	443	39	378
Future Volume (vph)	83	198	10	43	39	443	39	378
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Total Split (s)	40.0	40.0	40.0	40.0	80.0	80.0	80.0	80.0
Total Split (%)	33.3%	33.3%	33.3%	33.3%	66.7%	66.7%	66.7%	66.7%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		27.0		27.0		74.0		74.0
Actuated g/C Ratio		0.24		0.24		0.65		0.65
v/c Ratio		0.86		0.24		0.48		0.43
Control Delay		62.3		24.4		12.6		11.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		62.3		24.4		12.6		11.8
LOS		E		C		B		B
Approach Delay		62.3		24.4		12.6		11.8
Approach LOS		E		C		B		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113.4	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 24.5	Intersection LOS: C
Intersection Capacity Utilization 70.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 30: Grove Av. & Chino Rd.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	198	28	10	43	42	39	443	21	39	378	24
Future Volume (veh/h)	83	198	28	10	43	42	39	443	21	39	378	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	86	206	29	10	45	44	41	461	22	41	394	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	125	243	32	53	183	159	97	1037	48	108	994	61
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.67	0.67	0.67	0.67	0.67	0.67
Sat Flow, veh/h	385	1119	149	77	841	734	91	1548	72	107	1484	91
Grp Volume(v), veh/h	321	0	0	99	0	0	524	0	0	460	0	0
Grp Sat Flow(s),veh/h/ln	1654	0	0	1652	0	0	1711	0	0	1682	0	0
Q Serve(g_s), s	15.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	20.7	0.0	0.0	5.5	0.0	0.0	15.1	0.0	0.0	12.6	0.0	0.0
Prop In Lane	0.27		0.09	0.10		0.44	0.08		0.04	0.09		0.05
Lane Grp Cap(c), veh/h	400	0	0	395	0	0	1182	0	0	1163	0	0
V/C Ratio(X)	0.80	0.00	0.00	0.25	0.00	0.00	0.44	0.00	0.00	0.40	0.00	0.00
Avail Cap(c_a), veh/h	546	0	0	537	0	0	1182	0	0	1163	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	41.7	0.0	0.0	35.9	0.0	0.0	8.5	0.0	0.0	8.1	0.0	0.0
Incr Delay (d2), s/veh	6.0	0.0	0.0	0.3	0.0	0.0	1.2	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	0.0	0.0	2.2	0.0	0.0	5.1	0.0	0.0	4.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.7	0.0	0.0	36.2	0.0	0.0	9.7	0.0	0.0	9.1	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		321			99			524			460	
Approach Delay, s/veh		47.7			36.2			9.7			9.1	
Approach LOS		D			D			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		80.0		30.1		80.0		30.1				
Change Period (Y+Rc), s		6.2		6.2		6.2		6.2				
Max Green Setting (Gmax), s		73.8		33.8		73.8		33.8				
Max Q Clear Time (g_c+I1), s		17.1		22.7		14.6		7.5				
Green Ext Time (p_c), s		3.4		1.2		2.9		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			20.0									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	108	155	2	50	21	374	58	280
Future Volume (vph)	108	155	2	50	21	374	58	280
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	43.0	43.0	43.0	43.0	77.0	77.0	77.0	77.0
Total Split (%)	35.8%	35.8%	35.8%	35.8%	64.2%	64.2%	64.2%	64.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.8		5.8		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		31.9		31.9		71.0		71.0
Actuated g/C Ratio		0.28		0.28		0.62		0.62
v/c Ratio		0.90		0.20		0.43		0.44
Control Delay		62.8		21.7		13.7		13.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		62.8		21.7		13.7		13.8
LOS		E		C		B		B
Approach Delay		62.8		21.7		13.7		13.8
Approach LOS		E		C		B		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.9	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 28.1	Intersection LOS: C
Intersection Capacity Utilization 80.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 31: Grove Av. & Schaefer Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	155	95	2	50	41	21	374	34	58	280	59
Future Volume (veh/h)	108	155	95	2	50	41	21	374	34	58	280	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	116	167	102	2	54	44	23	402	37	62	301	63
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	158	193	111	34	247	195	63	977	88	157	739	149
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.63	0.63	0.63	0.63	0.63	0.63
Sat Flow, veh/h	439	729	421	7	932	738	47	1554	139	191	1175	237
Grp Volume(v), veh/h	385	0	0	100	0	0	462	0	0	426	0	0
Grp Sat Flow(s),veh/h/ln	1589	0	0	1678	0	0	1740	0	0	1603	0	0
Q Serve(g_s), s	21.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	26.4	0.0	0.0	5.3	0.0	0.0	14.7	0.0	0.0	13.4	0.0	0.0
Prop In Lane	0.30		0.26	0.02		0.44	0.05		0.08	0.15		0.15
Lane Grp Cap(c), veh/h	462	0	0	477	0	0	1128	0	0	1044	0	0
V/C Ratio(X)	0.83	0.00	0.00	0.21	0.00	0.00	0.41	0.00	0.00	0.41	0.00	0.00
Avail Cap(c_a), veh/h	564	0	0	585	0	0	1128	0	0	1044	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	39.9	0.0	0.0	32.4	0.0	0.0	10.5	0.0	0.0	10.3	0.0	0.0
Incr Delay (d2), s/veh	8.7	0.0	0.0	0.2	0.0	0.0	1.1	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.0	0.0	0.0	2.1	0.0	0.0	5.2	0.0	0.0	4.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.6	0.0	0.0	32.6	0.0	0.0	11.6	0.0	0.0	11.4	0.0	0.0
LnGrp LOS	D	A	A	C	A	A	B	A	A	B	A	A
Approach Vol, veh/h		385			100			462			426	
Approach Delay, s/veh		48.6			32.6			11.6			11.4	
Approach LOS		D			C			B			B	

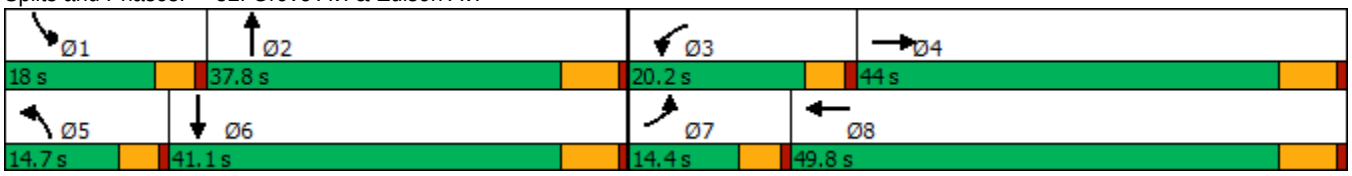
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		77.0		35.6		77.0		35.6				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		70.8		37.2		70.8		37.2				
Max Q Clear Time (g_c+I1), s		16.7		28.4		15.4		7.3				
Green Ext Time (p_c), s		2.8		1.4		2.7		0.5				

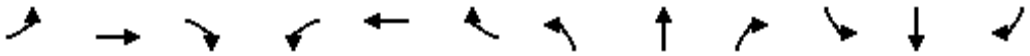
Intersection Summary												
HCM 6th Ctrl Delay			23.5									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	48	484	81	300	52	326	144	222
Future Volume (vph)	48	484	81	300	52	326	144	222
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	9.6	28.2	9.6	28.2
Total Split (s)	14.4	44.0	20.2	49.8	14.7	37.8	18.0	41.1
Total Split (%)	12.0%	36.7%	16.8%	41.5%	12.3%	31.5%	15.0%	34.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	7.6	41.9	10.1	44.2	7.8	20.8	12.7	28.1
Actuated g/C Ratio	0.07	0.40	0.10	0.42	0.07	0.20	0.12	0.27
v/c Ratio	0.44	0.76	0.56	0.51	0.47	0.77	0.79	0.29
Control Delay	61.8	38.6	61.4	27.3	62.3	41.4	75.3	32.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.8	38.6	61.4	27.3	62.3	41.4	75.3	32.0
LOS	E	D	E	C	E	D	E	C
Approach Delay		40.6		33.6		43.3		48.0
Approach LOS		D		C		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 104.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 41.3	Intersection LOS: D
Intersection Capacity Utilization 76.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	484	23	81	300	56	52	326	183	144	222	24
Future Volume (veh/h)	48	484	23	81	300	56	52	326	183	144	222	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	52	520	25	87	323	60	56	351	197	155	239	26
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	64	686	33	108	635	118	70	435	240	182	854	92
Arrive On Green	0.04	0.40	0.40	0.07	0.43	0.43	0.04	0.20	0.20	0.11	0.27	0.27
Sat Flow, veh/h	1619	1703	82	1619	1476	274	1619	2127	1172	1619	3114	335
Grp Volume(v), veh/h	52	0	545	87	0	383	56	281	267	155	130	135
Grp Sat Flow(s),veh/h/ln	1619	0	1785	1619	0	1751	1619	1710	1589	1619	1710	1740
Q Serve(g_s), s	3.2	0.0	26.6	5.4	0.0	16.2	3.5	15.9	16.3	9.5	6.1	6.2
Cycle Q Clear(g_c), s	3.2	0.0	26.6	5.4	0.0	16.2	3.5	15.9	16.3	9.5	6.1	6.2
Prop In Lane	1.00		0.05	1.00		0.16	1.00		0.74	1.00		0.19
Lane Grp Cap(c), veh/h	64	0	719	108	0	753	70	350	325	182	469	477
V/C Ratio(X)	0.81	0.00	0.76	0.80	0.00	0.51	0.80	0.80	0.82	0.85	0.28	0.28
Avail Cap(c_a), veh/h	157	0	719	249	0	753	161	533	495	214	589	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.3	0.0	26.0	46.6	0.0	21.1	48.1	38.4	38.6	44.1	28.9	29.0
Incr Delay (d2), s/veh	8.6	0.0	7.3	5.2	0.0	2.4	7.9	5.1	6.5	21.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	11.7	2.2	0.0	6.5	1.5	6.8	6.6	4.7	2.4	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.9	0.0	33.3	51.8	0.0	23.5	56.0	43.5	45.1	65.2	29.2	29.3
LnGrp LOS	E	A	C	D	A	C	E	D	D	E	C	C
Approach Vol, veh/h		597			470			604			420	
Approach Delay, s/veh		35.4			28.8			45.4			42.5	
Approach LOS		D			C			D			D	

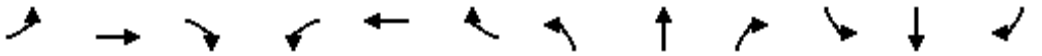
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	26.9	11.4	47.1	9.0	34.0	8.6	49.8
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	13.4	31.6	15.6	37.8	10.1	34.9	9.8	43.6
Max Q Clear Time (g_c+I1), s	11.5	18.3	7.4	28.6	5.5	8.2	5.2	18.2
Green Ext Time (p_c), s	0.0	2.4	0.0	2.1	0.0	1.3	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	38.2
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	156	93	6	19	15	411	23	249
Future Volume (vph)	156	93	6	19	15	411	23	249
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	27.8	27.8	27.8	27.8	92.2	92.2	92.2	92.2
Total Split (%)	23.2%	23.2%	23.2%	23.2%	76.8%	76.8%	76.8%	76.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	6.2	6.2	6.2	6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)	19.7	19.7	19.7	19.7	86.1	86.1	86.1	86.1
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.73	0.73	0.73	0.73
v/c Ratio	0.85	0.61	0.05	0.21	0.02	0.66	0.19	0.14
Control Delay	81.8	47.0	41.8	20.4	5.0	10.2	9.6	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.8	47.0	41.8	20.4	5.0	10.2	9.6	4.3
LOS	F	D	D	C	A	B	A	A
Approach Delay		63.7		22.5		10.1		4.7
Approach LOS		E		C		B		A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.8	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 17.5	Intersection LOS: B
Intersection Capacity Utilization 47.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	93	76	6	19	38	15	411	5	23	249	51
Future Volume (veh/h)	156	93	76	6	19	38	15	411	5	23	249	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	173	103	84	7	21	42	17	1644	6	26	277	57
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.25	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	252	168	137	151	98	196	749	2507	9	195	2032	412
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	1285	917	748	1148	536	1071	1004	3495	13	290	2833	574
Grp Volume(v), veh/h	173	0	187	7	0	63	17	804	846	26	166	168
Grp Sat Flow(s),veh/h/ln	1285	0	1665	1148	0	1607	1004	1710	1798	290	1710	1697
Q Serve(g_s), s	15.9	0.0	12.4	0.7	0.0	4.0	0.6	30.1	30.1	6.3	3.6	3.7
Cycle Q Clear(g_c), s	19.9	0.0	12.4	13.1	0.0	4.0	4.4	30.1	30.1	36.4	3.6	3.7
Prop In Lane	1.00		0.45	1.00		0.67	1.00		0.01	1.00		0.34
Lane Grp Cap(c), veh/h	252	0	304	151	0	293	749	1227	1289	195	1227	1217
V/C Ratio(X)	0.69	0.00	0.61	0.05	0.00	0.21	0.02	0.66	0.66	0.13	0.13	0.14
Avail Cap(c_a), veh/h	253	0	306	152	0	295	749	1227	1289	195	1227	1217
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.1	0.0	45.1	51.1	0.0	41.7	6.0	9.0	9.0	18.8	5.3	5.3
Incr Delay (d2), s/veh	7.5	0.0	3.6	0.1	0.0	0.4	0.1	2.7	2.6	1.4	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	5.3	0.2	0.0	1.6	0.1	9.5	9.9	0.5	1.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.7	0.0	48.7	51.3	0.0	42.0	6.1	11.8	11.7	20.2	5.5	5.6
LnGrp LOS	E	A	D	D	A	D	A	B	B	C	A	A
Approach Vol, veh/h		360			70			1667			360	
Approach Delay, s/veh		53.0			43.0			11.7			6.6	
Approach LOS		D			D			B			A	

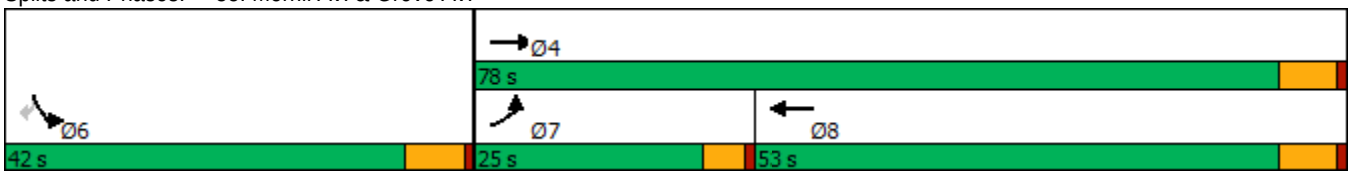
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		92.2		27.7		92.2		27.7				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		86.0		22.0		86.0		22.0				
Max Q Clear Time (g_c+I1), s		32.1		21.9		38.4		15.1				
Green Ext Time (p_c), s		16.4		0.0		2.5		0.1				

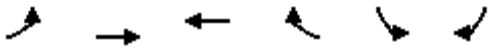
Intersection Summary												
HCM 6th Ctrl Delay			17.9									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	199	594	391	226	105
Future Volume (vph)	199	594	391	226	105
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	28.2	28.2
Total Split (s)	25.0	78.0	53.0	42.0	42.0
Total Split (%)	20.8%	65.0%	44.2%	35.0%	35.0%
Yellow Time (s)	3.6	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	6.2	6.2
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	Max	Max	None	None
Act Effct Green (s)	16.9	72.0	50.5	20.3	20.3
Actuated g/C Ratio	0.16	0.69	0.48	0.19	0.19
v/c Ratio	0.80	0.50	0.77	0.75	0.28
Control Delay	64.8	10.4	31.3	55.2	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	64.8	10.4	31.3	55.2	8.5
LOS	E	B	C	E	A
Approach Delay		24.0	31.3	40.4	
Approach LOS		C	C	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 104.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 29.7	Intersection LOS: C
Intersection Capacity Utilization 77.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	199	594	391	232	226	105
Future Volume (veh/h)	199	594	391	232	226	105
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	207	619	407	242	235	109
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	236	1274	547	325	275	259
Arrive On Green	0.15	0.71	0.52	0.52	0.17	0.17
Sat Flow, veh/h	1619	1800	1058	629	1619	1525
Grp Volume(v), veh/h	207	619	0	649	235	109
Grp Sat Flow(s),veh/h/ln	1619	1800	0	1687	1619	1525
Q Serve(g_s), s	12.7	15.5	0.0	30.6	14.3	6.5
Cycle Q Clear(g_c), s	12.7	15.5	0.0	30.6	14.3	6.5
Prop In Lane	1.00			0.37	1.00	1.00
Lane Grp Cap(c), veh/h	236	1274	0	872	275	259
V/C Ratio(X)	0.88	0.49	0.00	0.74	0.85	0.42
Avail Cap(c_a), veh/h	326	1274	0	872	572	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.4	6.6	0.0	19.2	40.9	37.6
Incr Delay (d2), s/veh	14.2	1.3	0.0	5.7	7.5	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	4.7	0.0	11.8	6.0	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	56.7	7.9	0.0	25.0	48.4	38.7
LnGrp LOS	E	A	A	C	D	D
Approach Vol, veh/h		826	649		344	
Approach Delay, s/veh		20.1	25.0		45.3	
Approach LOS		C	C		D	

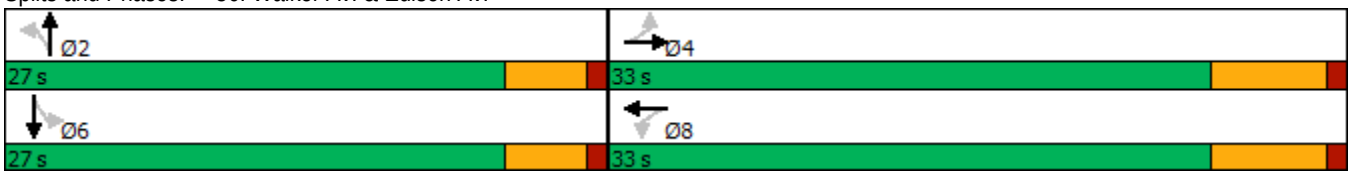
Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			78.0		23.4	19.4	58.6
Change Period (Y+Rc), s			6.2		6.2	4.6	6.2
Max Green Setting (Gmax), s			71.8		35.8	20.4	46.8
Max Q Clear Time (g_c+I1), s			17.5		16.3	14.7	32.6
Green Ext Time (p_c), s			4.0		0.9	0.1	3.4

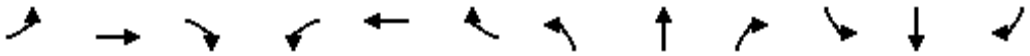
Intersection Summary	
HCM 6th Ctrl Delay	26.6
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	23	773	16	408	3	22	72	15
Future Volume (vph)	23	773	16	408	3	22	72	15
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	26.7	26.7	26.7	26.7
Total Split (s)	33.0	33.0	33.0	33.0	27.0	27.0	27.0	27.0
Total Split (%)	55.0%	55.0%	55.0%	55.0%	45.0%	45.0%	45.0%	45.0%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		4.7		4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		33.2		33.2		12.2		12.2
Actuated g/C Ratio		0.64		0.64		0.24		0.24
v/c Ratio		0.74		0.44		0.20		0.33
Control Delay		17.6		9.3		7.9		17.2
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		17.6		9.3		7.9		17.2
LOS		B		A		A		B
Approach Delay		17.6		9.3		7.9		17.2
Approach LOS		B		A		A		B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 51.9	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 14.4	Intersection LOS: B
Intersection Capacity Utilization 74.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	773	1	16	408	33	3	22	55	72	15	11
Future Volume (veh/h)	23	773	1	16	408	33	3	22	55	72	15	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	24	814	1	17	429	35	3	23	58	76	16	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	91	1006	1	92	913	73	83	93	215	325	65	34
Arrive On Green	0.57	0.57	0.57	0.57	0.57	0.57	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	21	1758	2	21	1596	127	18	476	1102	985	333	172
Grp Volume(v), veh/h	839	0	0	481	0	0	84	0	0	104	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	0	1744	0	0	1596	0	0	1490	0	0
Q Serve(g_s), s	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Cycle Q Clear(g_c), s	17.6	0.0	0.0	7.4	0.0	0.0	2.1	0.0	0.0	2.5	0.0	0.0
Prop In Lane	0.03		0.00	0.04		0.07	0.04		0.69	0.73		0.12
Lane Grp Cap(c), veh/h	1098	0	0	1078	0	0	391	0	0	424	0	0
V/C Ratio(X)	0.76	0.00	0.00	0.45	0.00	0.00	0.21	0.00	0.00	0.25	0.00	0.00
Avail Cap(c_a), veh/h	1098	0	0	1078	0	0	837	0	0	821	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.0	0.0	0.0	5.9	0.0	0.0	16.0	0.0	0.0	16.1	0.0	0.0
Incr Delay (d2), s/veh	5.1	0.0	0.0	1.3	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	0.0	1.6	0.0	0.0	0.7	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.1	0.0	0.0	7.2	0.0	0.0	16.3	0.0	0.0	16.4	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		839			481			84			104	
Approach Delay, s/veh		13.1			7.2			16.3			16.4	
Approach LOS		B			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.8		33.0		13.8		33.0				
Change Period (Y+Rc), s		* 4.7		6.2		* 4.7		6.2				
Max Green Setting (Gmax), s		* 22		26.8		* 22		26.8				
Max Q Clear Time (g_c+I1), s		4.1		19.6		4.5		9.4				
Green Ext Time (p_c), s		0.3		3.1		0.4		2.5				

Intersection Summary		
HCM 6th Ctrl Delay		11.6
HCM 6th LOS		B

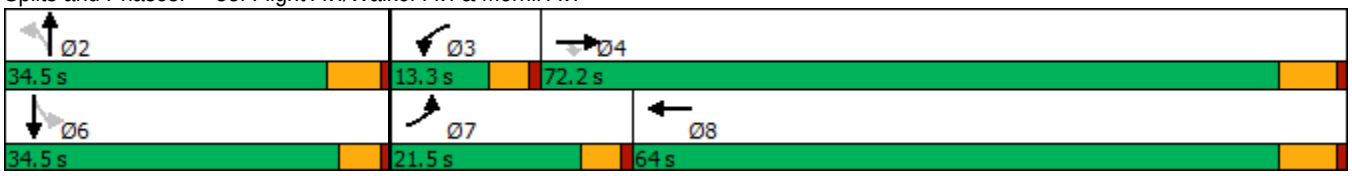
Notes

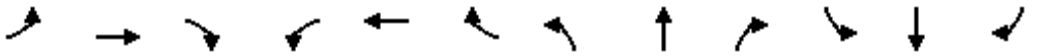
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	Ø6	Ø7
Lane Configurations								
Traffic Volume (vph)	697	124	95	505	101	0		
Future Volume (vph)	697	124	95	505	101	0		
Turn Type	NA	Perm	Prot	NA	Perm	NA		
Protected Phases	4		3	8		2	6	7
Permitted Phases		4			2			
Detector Phase	4	4	3	8	2	2		
Switch Phase								
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0	5.0
Minimum Split (s)	23.2	23.2	9.6	23.2	32.8	32.8	21.6	9.6
Total Split (s)	72.2	72.2	13.3	64.0	34.5	34.5	34.5	21.5
Total Split (%)	60.2%	60.2%	11.1%	53.3%	28.8%	28.8%	29%	18%
Yellow Time (s)	5.2	5.2	3.6	5.2	4.8	4.8	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.2	6.2	4.6	6.2	5.8	5.8		
Lead/Lag	Lag	Lag	Lead	Lag				Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				Yes
Recall Mode	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	66.1	66.1	8.7	79.4	26.8	26.8		
Actuated g/C Ratio	0.56	0.56	0.07	0.67	0.23	0.23		
v/c Ratio	0.76	0.15	0.87	0.24	0.38	0.27		
Control Delay	26.8	7.3	109.7	8.2	42.8	1.2		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	26.8	7.3	109.7	8.2	42.8	1.2		
LOS	C	A	F	A	D	A		
Approach Delay	23.8			24.2		18.7		
Approach LOS	C			C		B		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.2	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 23.2	Intersection LOS: C
Intersection Capacity Utilization 67.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 38: Flight Av./Walker Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	697	124	95	505	0	101	0	139	0	0	0
Future Volume (veh/h)	0	697	124	95	505	0	101	0	139	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	0	766	136	104	555	0	111	0	153	0	0	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.25	0.91	0.91	0.91	0.91	0.91	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	2	1144	970	127	2594	0	273	0	192	0	227	0
Arrive On Green	0.00	0.64	0.64	0.08	0.76	0.00	0.13	0.00	0.13	0.00	0.00	0.00
Sat Flow, veh/h	1619	1800	1525	1619	3510	0	1619	0	1525	0	1800	0
Grp Volume(v), veh/h	0	766	136	104	555	0	111	0	153	0	0	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	0	1619	0	1525	0	1800	0
Q Serve(g_s), s	0.0	28.0	3.7	6.6	4.9	0.0	6.7	0.0	10.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	28.0	3.7	6.6	4.9	0.0	6.7	0.0	10.1	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	2	1144	970	127	2594	0	273	0	192	0	227	0
V/C Ratio(X)	0.00	0.67	0.14	0.82	0.21	0.00	0.41	0.00	0.80	0.00	0.00	0.00
Avail Cap(c_a), veh/h	264	1144	970	136	2594	0	517	0	422	0	518	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	12.0	7.6	47.1	3.6	0.0	42.6	0.0	44.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.1	0.3	27.4	0.2	0.0	1.0	0.0	7.3	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.0	1.1	3.5	1.1	0.0	2.7	0.0	4.1	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	15.1	7.9	74.5	3.8	0.0	43.5	0.0	51.4	0.0	0.0	0.0
LnGrp LOS	A	B	A	E	A	A	D	A	D	A	A	A
Approach Vol, veh/h		902			659			264			0	
Approach Delay, s/veh		14.0			15.0			48.1			0.0	
Approach LOS		B			B			D				

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	18.9	12.7	72.2	18.9	0.0	84.9
Change Period (Y+Rc), s	5.8	4.6	6.2	* 5.8	4.6	6.2
Max Green Setting (Gmax), s	28.7	8.7	66.0	* 30	16.9	57.8
Max Q Clear Time (g_c+I1), s	12.1	8.6	30.0	0.0	0.0	6.9
Green Ext Time (p_c), s	1.0	0.0	5.9	0.0	0.0	3.6

Intersection Summary	
HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

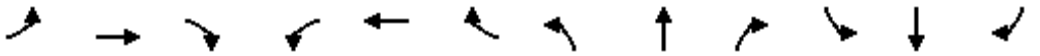
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBL	WBT	NBL	NBT	Ø6
Lane Configurations						
Traffic Volume (vph)	817	11	559	41	0	
Future Volume (vph)	817	11	559	41	0	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4		8		2	6
Permitted Phases		8		2		
Detector Phase	4	8	8	2	2	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	26.6
Total Split (s)	91.0	91.0	91.0	29.0	29.0	29.0
Total Split (%)	75.8%	75.8%	75.8%	24.2%	24.2%	24%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.2	6.2	6.2		6.2	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Max	None	None	None
Act Effct Green (s)	96.5	96.5	96.5		13.2	
Actuated g/C Ratio	0.82	0.82	0.82		0.11	
v/c Ratio	0.34	0.03	0.23		0.39	
Control Delay	4.2	4.2	3.6		36.5	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	4.2	4.2	3.6		36.5	
LOS	A	A	A		D	
Approach Delay	4.2		3.7		36.5	
Approach LOS	A		A		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.2	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.39	
Intersection Signal Delay: 5.3	Intersection LOS: A
Intersection Capacity Utilization 43.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 40: Van Vliet Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	817	19	11	559	0	41	0	20	0	0	0
Future Volume (veh/h)	0	817	19	11	559	0	41	0	20	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	0	928	22	12	635	0	47	0	23	0	0	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	68	2733	65	479	2738	0	129	10	40	0	148	0
Arrive On Green	0.00	0.80	0.80	0.80	0.80	0.00	0.08	0.00	0.08	0.00	0.00	0.00
Sat Flow, veh/h	760	3414	81	566	3510	0	875	127	491	0	1800	0
Grp Volume(v), veh/h	0	465	485	12	635	0	70	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	760	1710	1785	566	1710	0	1493	0	0	0	1800	0
Q Serve(g_s), s	0.0	7.9	7.9	0.6	4.8	0.0	3.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	7.9	7.9	8.5	4.8	0.0	4.7	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.00	0.67		0.33	0.00		0.00
Lane Grp Cap(c), veh/h	68	1369	1429	479	2738	0	180	0	0	0	148	0
V/C Ratio(X)	0.00	0.34	0.34	0.03	0.23	0.00	0.39	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	68	1369	1429	479	2738	0	375	0	0	0	415	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	2.9	2.9	4.1	2.6	0.0	46.7	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.6	0.1	0.2	0.0	1.4	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.6	1.6	0.1	0.9	0.0	1.8	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	3.6	3.5	4.2	2.8	0.0	48.1	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	A	A	A
Approach Vol, veh/h		950			647			70			0	
Approach Delay, s/veh		3.6			2.8			48.1			0.0	
Approach LOS		A			A			D				

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.9		91.0		14.9		91.0				
Change Period (Y+Rc), s		6.2		6.2		* 6.2		6.2				
Max Green Setting (Gmax), s		22.8		84.8		* 24		84.8				
Max Q Clear Time (g_c+I1), s		6.7		9.9		0.0		10.5				
Green Ext Time (p_c), s		0.2		6.2		0.0		4.4				

Intersection Summary		
HCM 6th Ctrl Delay		5.1
HCM 6th LOS		A

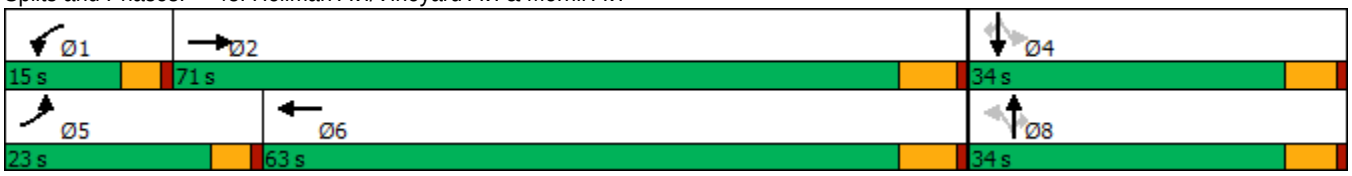
Notes

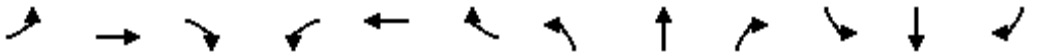
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBL	WBT	NBL	NBR	Ø4	Ø5
Lane Configurations							
Traffic Volume (vph)	836	56	512	58	67		
Future Volume (vph)	836	56	512	58	67		
Turn Type	NA	Prot	NA	Perm	Perm		
Protected Phases	2	1	6			4	5
Permitted Phases				8	8		
Detector Phase	2	1	6	8	8		
Switch Phase							
Minimum Initial (s)	10.0	5.0	10.0	10.0	10.0	10.0	5.0
Minimum Split (s)	28.2	9.6	28.2	27.8	27.8	27.8	9.6
Total Split (s)	71.0	15.0	63.0	34.0	34.0	34.0	23.0
Total Split (%)	59.2%	12.5%	52.5%	28.3%	28.3%	28%	19%
Yellow Time (s)	5.2	3.6	5.2	4.8	4.8	4.8	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.2	4.6	6.2	5.8	5.8		
Lead/Lag	Lag	Lead	Lag				Lead
Lead-Lag Optimize?	Yes	Yes	Yes				Yes
Recall Mode	Max	None	Max	None	None	None	None
Act Effct Green (s)	70.3	7.9	80.6	12.7	12.7		
Actuated g/C Ratio	0.70	0.08	0.80	0.13	0.13		
v/c Ratio	0.39	0.49	0.21	0.39	0.18		
Control Delay	9.8	59.6	3.8	48.7	0.9		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	9.8	59.6	3.8	48.7	0.9		
LOS	A	E	A	D	A		
Approach Delay	9.8		9.3				
Approach LOS	A		A				

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 100.3	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 10.7	Intersection LOS: B
Intersection Capacity Utilization 50.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 43: Hellman Av./Vineyard Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	836	1	56	512	0	58	0	67	0	0	0
Future Volume (veh/h)	0	836	1	56	512	0	58	0	67	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	0	929	1	62	569	0	64	0	74	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	2	2374	3	77	2643	0	240	183	155	75	183	155
Arrive On Green	0.00	0.68	0.68	0.05	0.77	0.00	0.10	0.00	0.10	0.00	0.00	0.00
Sat Flow, veh/h	1619	3506	4	1619	3510	0	1619	1800	1525	1272	1800	1525
Grp Volume(v), veh/h	0	453	477	62	569	0	64	0	74	0	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1799	1619	1710	0	1619	1800	1525	1272	1800	1525
Q Serve(g_s), s	0.0	11.1	11.1	3.6	4.3	0.0	3.5	0.0	4.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	11.1	11.1	3.6	4.3	0.0	3.5	0.0	4.4	0.0	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	1158	1218	77	2643	0	240	183	155	75	183	155
V/C Ratio(X)	0.00	0.39	0.39	0.80	0.22	0.00	0.27	0.00	0.48	0.00	0.00	0.00
Avail Cap(c_a), veh/h	311	1158	1218	176	2643	0	552	530	449	321	530	449
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	6.8	6.8	45.1	3.0	0.0	40.2	0.0	40.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.0	0.9	7.1	0.2	0.0	0.6	0.0	2.3	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.3	3.4	1.5	0.8	0.0	1.4	0.0	1.7	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.8	7.7	52.2	3.2	0.0	40.8	0.0	42.8	0.0	0.0	0.0
LnGrp LOS	A	A	A	D	A	A	D	A	D	A	A	A
Approach Vol, veh/h		930			631			138			0	
Approach Delay, s/veh		7.8			8.0			41.9			0.0	
Approach LOS		A			A			D				

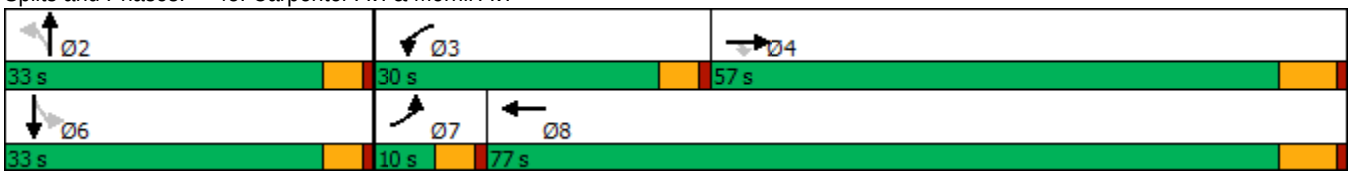
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.2	71.0		15.5	0.0	80.2		15.5				
Change Period (Y+Rc), s	4.6	6.2		5.8	4.6	6.2		5.8				
Max Green Setting (Gmax), s	10.4	64.8		28.2	18.4	56.8		28.2				
Max Q Clear Time (g_c+I1), s	5.6	13.1		0.0	0.0	6.3		6.4				
Green Ext Time (p_c), s	0.0	6.0		0.0	0.0	3.7		0.3				

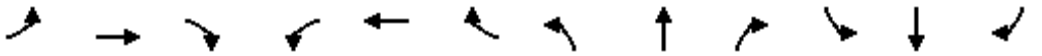
Intersection Summary		
HCM 6th Ctrl Delay		10.6
HCM 6th LOS		B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	5	875	24	44	522	45	5	59	6
Future Volume (vph)	5	875	24	44	522	45	5	59	6
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	26.6	26.6
Total Split (s)	10.0	57.0	57.0	30.0	77.0	33.0	33.0	33.0	33.0
Total Split (%)	8.3%	47.5%	47.5%	25.0%	64.2%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2		4.6		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.1	63.9	63.9	7.4	72.2		14.1		14.1
Actuated g/C Ratio	0.05	0.65	0.65	0.07	0.73		0.14		0.14
v/c Ratio	0.07	0.84	0.03	0.39	0.45		0.71		0.85
Control Delay	50.0	24.3	0.0	53.6	8.1		32.3		103.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	50.0	24.3	0.0	53.6	8.1		32.3		103.2
LOS	D	C	A	D	A		C		F
Approach Delay		23.8			11.6		32.3		103.2
Approach LOS		C			B		C		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 98.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 23.8	Intersection LOS: C
Intersection Capacity Utilization 69.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 45: Carpenter Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	875	24	44	522	8	45	5	148	59	6	2
Future Volume (veh/h)	5	875	24	44	522	8	45	5	148	59	6	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	6	972	27	49	580	9	50	6	164	66	7	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	13	1179	999	63	1209	19	89	20	193	180	17	4
Arrive On Green	0.01	0.65	0.65	0.04	0.68	0.68	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1714	1800	1525	1714	1768	27	289	123	1205	717	105	23
Grp Volume(v), veh/h	6	972	27	49	0	589	220	0	0	75	0	0
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	0	1795	1616	0	0	844	0	0
Q Serve(g_s), s	0.4	41.9	0.6	2.9	0.0	16.0	3.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.4	41.9	0.6	2.9	0.0	16.0	13.5	0.0	0.0	9.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.23		0.75	0.88		0.03
Lane Grp Cap(c), veh/h	13	1179	999	63	0	1227	301	0	0	200	0	0
V/C Ratio(X)	0.46	0.82	0.03	0.78	0.00	0.48	0.73	0.00	0.00	0.37	0.00	0.00
Avail Cap(c_a), veh/h	89	1179	999	421	0	1227	474	0	0	347	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	51.2	13.4	6.3	49.5	0.0	7.7	42.1	0.0	0.0	40.4	0.0	0.0
Incr Delay (d2), s/veh	8.9	6.6	0.1	7.7	0.0	1.3	3.4	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	15.2	0.2	1.3	0.0	5.1	5.7	0.0	0.0	1.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.1	20.0	6.3	57.2	0.0	9.0	45.6	0.0	0.0	41.6	0.0	0.0
LnGrp LOS	E	C	A	E	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1005			638			220			75	
Approach Delay, s/veh		19.9			12.7			45.6			41.6	
Approach LOS		B			B			D			D	

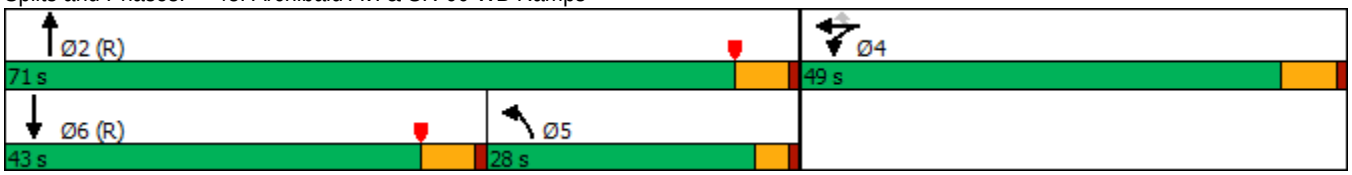
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		21.1	8.4	74.0		21.1	5.4	77.0				
Change Period (Y+Rc), s		4.6	4.6	6.2		4.6	4.6	6.2				
Max Green Setting (Gmax), s		28.4	25.4	50.8		28.4	5.4	70.8				
Max Q Clear Time (g_c+I1), s		15.5	4.9	43.9		11.6	2.4	18.0				
Green Ext Time (p_c), s		1.1	0.0	3.6		0.3	0.0	3.8				

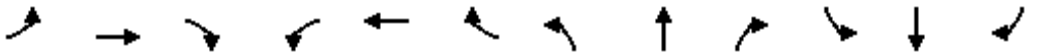
Intersection Summary												
HCM 6th Ctrl Delay			21.3									
HCM 6th LOS			C									

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	6	284	451	547	1181
Future Volume (vph)	6	284	451	547	1181
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	49.0	49.0	28.0	71.0	43.0
Total Split (%)	40.8%	40.8%	23.3%	59.2%	35.8%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	38.9	38.9	20.1	69.3	45.2
Actuated g/C Ratio	0.32	0.32	0.17	0.58	0.38
v/c Ratio	0.81	0.42	0.80	0.19	0.72
Control Delay	48.4	5.8	40.9	2.6	33.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	48.4	5.8	40.9	2.6	33.8
LOS	D	A	D	A	C
Approach Delay	32.0			19.9	33.8
Approach LOS	C			B	C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 29.3	Intersection LOS: C
Intersection Capacity Utilization 76.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	450	6	284	451	547	0	0	1181	489
Future Volume (veh/h)	0	0	0	450	6	284	451	547	0	0	1181	489
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				469	6	151	470	570	0	0	1230	374
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				540	7	486	909	3111	0	0	1457	441
Arrive On Green				0.30	0.30	0.30	0.09	0.20	0.00	0.00	0.29	0.29
Sat Flow, veh/h				1788	23	1610	3510	5358	0	0	5250	1508
Grp Volume(v), veh/h				475	0	151	470	570	0	0	1210	394
Grp Sat Flow(s),veh/h/ln				1811	0	1610	1755	1729	0	0	1634	1590
Q Serve(g_s), s				29.8	0.0	8.7	15.4	11.0	0.0	0.0	27.8	28.0
Cycle Q Clear(g_c), s				29.8	0.0	8.7	15.4	11.0	0.0	0.0	27.8	28.0
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.95
Lane Grp Cap(c), veh/h				547	0	486	909	3111	0	0	1433	465
V/C Ratio(X)				0.87	0.00	0.31	0.52	0.18	0.00	0.00	0.84	0.85
Avail Cap(c_a), veh/h				649	0	577	909	3111	0	0	1520	493
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.62	0.62	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				39.6	0.0	32.3	47.7	23.7	0.0	0.0	39.9	39.9
Incr Delay (d2), s/veh				12.8	0.0	0.8	0.1	0.1	0.0	0.0	6.2	17.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				14.6	0.0	8.6	7.2	4.8	0.0	0.0	11.6	12.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				52.4	0.0	33.0	47.8	23.7	0.0	0.0	46.1	57.2
LnGrp LOS				D	A	C	D	C	A	A	D	E
Approach Vol, veh/h					626			1040			1604	
Approach Delay, s/veh					47.7			34.6			48.8	
Approach LOS					D			C			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	77.8	42.2	36.9	40.9
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	65.2	43.0	24.0	* 37
Max Q Clear Time (g_c+I1), s	13.0	31.8	17.4	30.0
Green Ext Time (p_c), s	3.9	4.4	0.6	5.1

Intersection Summary	
HCM 6th Ctrl Delay	44.1
HCM 6th LOS	D

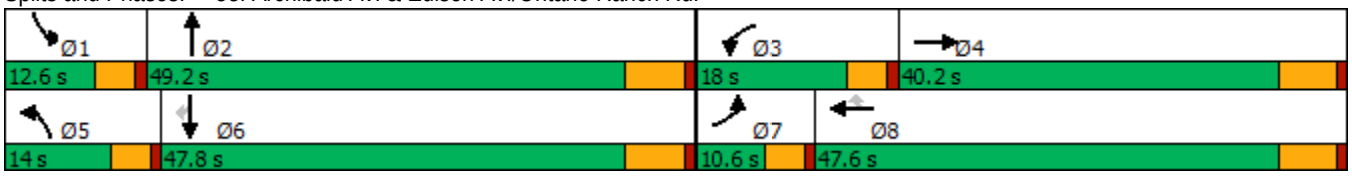
Notes

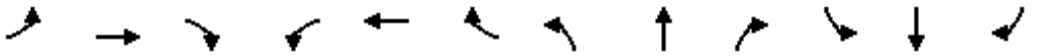
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	628	135	344	234	79	77	692	392	148	911	80
Future Volume (vph)	103	628	135	344	234	79	77	692	392	148	911	80
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	10.6	40.2		18.0	47.6	47.6	14.0	49.2		12.6	47.8	47.8
Total Split (%)	8.8%	33.5%		15.0%	39.7%	39.7%	11.7%	41.0%		10.5%	39.8%	39.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	6.1	25.5	103.5	13.8	33.2	33.2	8.3	33.6	103.5	8.2	36.2	36.2
Actuated g/C Ratio	0.06	0.25	1.00	0.13	0.32	0.32	0.08	0.32	1.00	0.08	0.35	0.35
v/c Ratio	0.61	0.77	0.09	0.91	0.22	0.14	0.61	0.64	0.27	1.20	0.79	0.13
Control Delay	67.7	43.7	0.1	74.6	27.3	2.5	70.7	32.7	0.4	186.8	37.1	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.7	43.7	0.1	74.6	27.3	2.5	70.7	32.7	0.4	186.8	37.1	0.4
LOS	E	D	A	E	C	A	E	C	A	F	D	A
Approach Delay		39.8			49.1			24.3			54.1	
Approach LOS		D			D			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay: 40.9	Intersection LOS: D
Intersection Capacity Utilization 79.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	628	135	344	234	79	77	692	392	148	911	80
Future Volume (veh/h)	103	628	135	344	234	79	77	692	392	148	911	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	106	647	0	355	241	47	79	713	0	153	939	60
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	157	805		411	1099	490	98	1057		137	1139	501
Arrive On Green	0.05	0.24	0.00	0.14	0.32	0.32	0.06	0.31	0.00	0.08	0.33	0.33
Sat Flow, veh/h	2956	3420	1525	2956	3420	1525	1619	3420	1525	1619	3420	1505
Grp Volume(v), veh/h	106	647	0	355	241	47	79	713	0	153	939	60
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1710	1525	1619	1710	1525	1619	1710	1505
Q Serve(g_s), s	3.3	16.8	0.0	11.1	4.9	2.0	4.6	17.2	0.0	8.0	23.8	2.6
Cycle Q Clear(g_c), s	3.3	16.8	0.0	11.1	4.9	2.0	4.6	17.2	0.0	8.0	23.8	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	157	805		411	1099	490	98	1057		137	1139	501
V/C Ratio(X)	0.68	0.80		0.86	0.22	0.10	0.80	0.67		1.12	0.82	0.12
Avail Cap(c_a), veh/h	188	1231		419	1499	669	161	1546		137	1495	658
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	34.0	0.0	39.8	23.4	22.4	43.8	28.5	0.0	43.2	29.0	21.9
Incr Delay (d2), s/veh	4.6	2.3	0.0	15.9	0.1	0.1	5.6	0.8	0.0	111.3	3.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	6.7	0.0	4.7	1.8	0.7	1.9	6.5	0.0	7.2	9.2	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.6	36.3	0.0	55.7	23.5	22.5	49.4	29.2	0.0	154.5	31.9	22.0
LnGrp LOS	D	D		E	C	C	D	C		F	C	C
Approach Vol, veh/h		753	A		643			792	A		1152	
Approach Delay, s/veh		38.1			41.2			31.3			47.7	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	35.7	17.7	28.4	10.3	38.0	9.6	36.6
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	8.0	42.7	13.4	34.0	9.4	41.3	6.0	41.4
Max Q Clear Time (g_c+I1), s	10.0	19.2	13.1	18.8	6.6	25.8	5.3	6.9
Green Ext Time (p_c), s	0.0	4.3	0.0	3.4	0.0	5.3	0.0	1.5

Intersection Summary	
HCM 6th Ctrl Delay	40.4
HCM 6th LOS	D

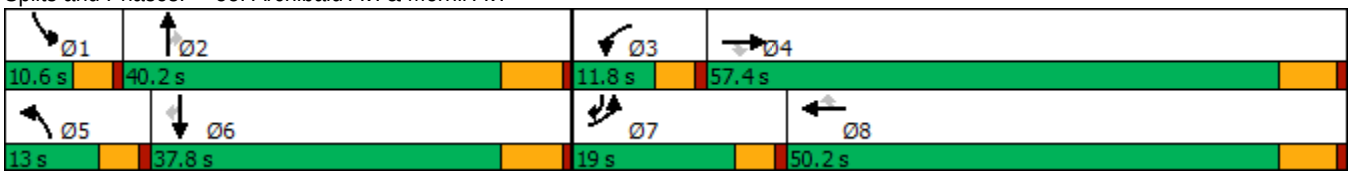
Notes

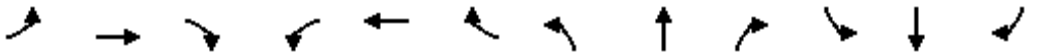
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	393	79	555	50	26	60	175	698	43	78	1072	232
Future Volume (vph)	393	79	555	50	26	60	175	698	43	78	1072	232
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	9.6
Total Split (s)	19.0	57.4	57.4	11.8	50.2	50.2	13.0	40.2	40.2	10.6	37.8	19.0
Total Split (%)	15.8%	47.8%	47.8%	9.8%	41.8%	41.8%	10.8%	33.5%	33.5%	8.8%	31.5%	15.8%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	None
Act Effct Green (s)	15.7	32.5	32.5	6.6	25.2	25.2	8.3	37.4	37.4	5.9	32.3	54.7
Actuated g/C Ratio	0.16	0.33	0.33	0.07	0.25	0.25	0.08	0.38	0.38	0.06	0.32	0.55
v/c Ratio	0.82	0.14	0.90	0.49	0.06	0.12	0.69	0.56	0.07	0.46	1.00	0.27
Control Delay	58.8	23.4	37.9	66.0	26.8	0.5	62.5	31.5	0.2	59.6	63.1	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.8	23.4	37.9	66.0	26.8	0.5	62.5	31.5	0.2	59.6	63.1	10.3
LOS	E	C	D	E	C	A	E	C	A	E	E	B
Approach Delay		44.8			29.7			36.0			54.0	
Approach LOS		D			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 45.5	Intersection LOS: D
Intersection Capacity Utilization 86.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	393	79	555	50	26	60	175	698	43	78	1072	232
Future Volume (veh/h)	393	79	555	50	26	60	175	698	43	78	1072	232
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	405	81	387	52	27	23	180	720	30	80	1105	181
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	471	513	435	66	317	268	246	1291	569	144	1190	759
Arrive On Green	0.15	0.28	0.28	0.04	0.18	0.18	0.08	0.38	0.38	0.05	0.35	0.35
Sat Flow, veh/h	3141	1800	1525	1619	1800	1525	3141	3420	1506	2956	3420	1525
Grp Volume(v), veh/h	405	81	387	52	27	23	180	720	30	80	1105	181
Grp Sat Flow(s),veh/h/ln	1570	1800	1525	1619	1800	1525	1570	1710	1506	1478	1710	1525
Q Serve(g_s), s	11.1	3.0	21.5	2.8	1.1	1.1	4.9	14.7	1.1	2.3	27.5	6.0
Cycle Q Clear(g_c), s	11.1	3.0	21.5	2.8	1.1	1.1	4.9	14.7	1.1	2.3	27.5	6.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	471	513	435	66	317	268	246	1291	569	144	1190	759
V/C Ratio(X)	0.86	0.16	0.89	0.79	0.09	0.09	0.73	0.56	0.05	0.56	0.93	0.24
Avail Cap(c_a), veh/h	512	1044	885	132	897	760	299	1305	575	201	1212	770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.6	23.6	30.2	42.0	30.4	30.4	39.8	21.7	17.5	41.1	27.7	12.6
Incr Delay (d2), s/veh	12.1	0.1	6.4	7.5	0.1	0.1	5.2	0.5	0.0	1.2	12.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	1.2	8.2	1.2	0.5	0.4	2.0	5.2	0.4	0.8	11.8	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.7	23.8	36.7	49.5	30.6	30.6	45.0	22.2	17.5	42.3	40.0	12.8
LnGrp LOS	D	C	D	D	C	C	D	C	B	D	D	B
Approach Vol, veh/h		873			102			930			1366	
Approach Delay, s/veh		41.1			40.2			26.4			36.5	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	39.8	8.2	31.4	11.5	37.2	17.8	21.7
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	6.0	33.7	7.2	51.2	8.4	31.3	14.4	44.0
Max Q Clear Time (g_c+I1), s	4.3	16.7	4.8	23.5	6.9	29.5	13.1	3.1
Green Ext Time (p_c), s	0.0	4.0	0.0	1.7	0.0	1.2	0.1	0.2

Intersection Summary	
HCM 6th Ctrl Delay	35.0
HCM 6th LOS	C

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	460	292	610	448	682	1000
Future Volume (vph)	460	292	610	448	682	1000
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	39.0	30.0	51.0	39.0	30.0	81.0
Total Split (%)	32.5%	25.0%	42.5%	32.5%	25.0%	67.5%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min
Act Effct Green (s)	31.4	60.8	40.8	72.2	24.1	70.3
Actuated g/C Ratio	0.28	0.54	0.36	0.64	0.21	0.63
v/c Ratio	0.93	0.18	0.90	0.44	0.90	0.83
Control Delay	66.9	4.2	51.5	8.9	59.5	23.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.9	4.2	51.5	8.9	59.5	23.8
LOS	E	A	D	A	E	C
Approach Delay	42.5		33.5			38.3
Approach LOS	D		C			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.1	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 37.7	Intersection LOS: D
Intersection Capacity Utilization 90.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	460	292	610	448	682	1000
Future Volume (veh/h)	460	292	610	448	682	1000
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1976	1976
Adj Flow Rate, veh/h	469	248	622	436	696	1020
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	499	1382	700	1025	773	1238
Arrive On Green	0.28	0.28	0.37	0.37	0.21	0.63
Sat Flow, veh/h	1810	2834	1900	1576	3651	1976
Grp Volume(v), veh/h	469	248	622	436	696	1020
Grp Sat Flow(s),veh/h/ln	1810	1417	1900	1576	1825	1976
Q Serve(g_s), s	27.4	5.3	33.3	14.7	20.1	43.2
Cycle Q Clear(g_c), s	27.4	5.3	33.3	14.7	20.1	43.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	499	1382	700	1025	773	1238
V/C Ratio(X)	0.94	0.18	0.89	0.43	0.90	0.82
Avail Cap(c_a), veh/h	563	1482	802	1109	843	1387
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.3	15.6	32.1	9.5	41.6	15.6
Incr Delay (d2), s/veh	21.7	0.0	11.2	0.3	12.1	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.4	1.6	16.3	9.3	9.8	16.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	60.0	15.6	43.3	9.8	53.6	19.0
LnGrp LOS	E	B	D	A	D	B
Approach Vol, veh/h	717		1058			1716
Approach Delay, s/veh	44.6		29.5			33.0
Approach LOS	D		C			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	27.9	45.2			73.1	35.2
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	25.0	45.7			* 76	33.7
Max Q Clear Time (g_c+I1), s	22.1	35.3			45.2	29.4
Green Ext Time (p_c), s	0.8	4.6			4.6	0.4

Intersection Summary	
HCM 6th Ctrl Delay	34.4
HCM 6th LOS	C

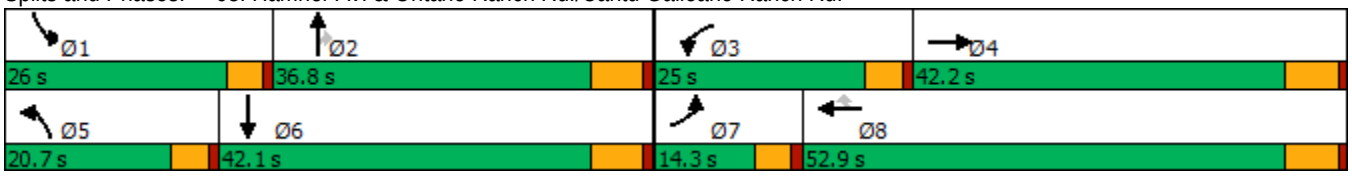
Notes

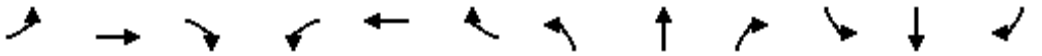
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	101	921	653	512	120	219	423	262	507	894
Future Volume (vph)	101	921	653	512	120	219	423	262	507	894
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.2	9.6	49.2	49.2	9.6	35.2	35.2	9.6	38.2
Total Split (s)	14.3	42.2	25.0	52.9	52.9	20.7	36.8	36.8	26.0	42.1
Total Split (%)	11.0%	32.5%	19.2%	40.7%	40.7%	15.9%	28.3%	28.3%	20.0%	32.4%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	None	Max	None	None	None	None	None	None	None
Act Effct Green (s)	9.8	28.8	20.7	39.6	39.6	12.7	21.1	21.1	21.7	30.1
Actuated g/C Ratio	0.09	0.25	0.18	0.35	0.35	0.11	0.18	0.18	0.19	0.26
v/c Ratio	0.40	0.71	1.24	0.28	0.20	0.67	0.44	0.56	0.92	0.75
Control Delay	57.7	39.5	161.4	28.0	3.9	60.7	42.4	10.6	68.7	42.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.7	39.5	161.4	28.0	3.9	60.7	42.4	10.6	68.7	42.0
LOS	E	D	F	C	A	E	D	B	E	D
Approach Delay		40.9		93.5			37.6			50.9
Approach LOS		D		F			D			D

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 114.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.24	
Intersection Signal Delay: 56.8	Intersection LOS: E
Intersection Capacity Utilization 88.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	921	296	653	512	120	219	423	262	507	894	121
Future Volume (veh/h)	101	921	296	653	512	120	219	423	262	507	894	121
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	105	959	199	680	533	91	228	441	194	528	931	71
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	284	1366	278	598	1826	516	285	925	261	577	1324	101
Arrive On Green	0.14	0.35	0.24	0.29	0.51	0.34	0.14	0.26	0.17	0.28	0.40	0.27
Sat Flow, veh/h	3048	5804	1183	3048	5400	1525	3048	5400	1523	3048	4955	377
Grp Volume(v), veh/h	105	891	267	680	533	91	228	441	194	528	676	326
Grp Sat Flow(s),veh/h/ln	1524	1800	1587	1524	1800	1525	1524	1800	1523	1524	1800	1732
Q Serve(g_s), s	3.2	14.8	15.9	20.4	5.9	4.4	7.5	7.2	12.6	17.4	16.3	16.7
Cycle Q Clear(g_c), s	3.2	14.8	15.9	20.4	5.9	4.4	7.5	7.2	12.6	17.4	16.3	16.7
Prop In Lane	1.00		0.75	1.00		1.00	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	284	1271	373	598	1826	516	285	925	261	577	962	463
V/C Ratio(X)	0.37	0.70	0.72	1.14	0.29	0.18	0.80	0.48	0.74	0.91	0.70	0.71
Avail Cap(c_a), veh/h	284	1870	550	598	2425	685	472	1589	448	627	1243	598
HCM Platoon Ratio	1.50	1.50	1.00	1.50	1.50	1.00	1.50	1.50	1.00	1.50	1.50	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.9	30.5	35.0	36.7	18.4	24.2	43.7	34.7	40.9	36.4	27.7	29.2
Incr Delay (d2), s/veh	3.7	0.7	2.6	80.8	0.1	0.2	2.0	0.4	4.2	16.6	1.2	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	5.4	5.8	12.9	2.2	1.5	2.7	2.9	4.8	6.7	5.8	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.6	31.2	37.6	117.5	18.5	24.4	45.7	35.1	45.1	53.0	29.0	31.8
LnGrp LOS	D	C	D	F	B	C	D	D	D	D	C	C
Approach Vol, veh/h		1263			1304			863			1530	
Approach Delay, s/veh		33.8			70.5			40.1			37.8	
Approach LOS		C			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.3	24.0	25.0	30.7	14.3	34.0	14.3	41.4
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	21.4	30.6	20.4	36.0	16.1	35.9	9.7	46.7
Max Q Clear Time (g_c+I1), s	19.4	14.6	22.4	17.9	9.5	18.7	5.2	7.9
Green Ext Time (p_c), s	0.3	2.9	0.0	6.6	0.2	5.5	0.0	3.8

Intersection Summary	
HCM 6th Ctrl Delay	45.8
HCM 6th LOS	D

APPENDIX 7.10:

OPENING YEAR CUMULATIVE (2025) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

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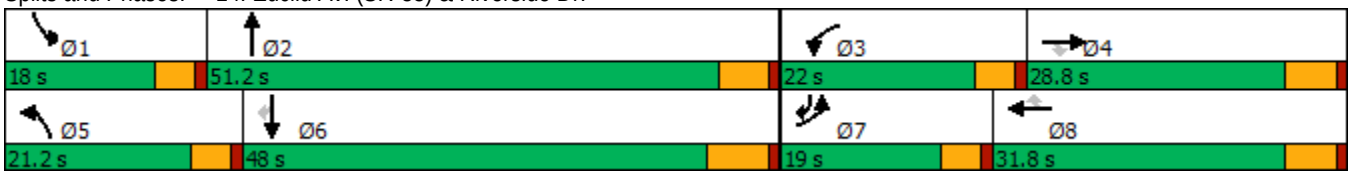
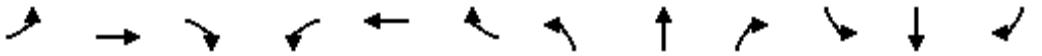
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	172	350	85	214	549	130	86	1164	195	1373	171
Future Volume (vph)	172	350	85	214	549	130	86	1164	195	1373	171
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2	1	6	7
Permitted Phases			4			8					6
Detector Phase	7	4	4	3	8	8	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	9.6	34.5	9.6
Total Split (s)	19.0	28.8	28.8	22.0	31.8	31.8	21.2	51.2	18.0	48.0	19.0
Total Split (%)	15.8%	24.0%	24.0%	18.3%	26.5%	26.5%	17.7%	42.7%	15.0%	40.0%	15.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	Max	None
Act Effct Green (s)	14.3	20.9	20.9	17.4	23.9	23.9	11.0	45.8	13.4	47.1	63.4
Actuated g/C Ratio	0.12	0.18	0.18	0.15	0.20	0.20	0.09	0.39	0.11	0.40	0.54
v/c Ratio	0.92	0.61	0.24	0.95	0.83	0.33	0.61	0.75	1.12	0.74	0.20
Control Delay	99.7	49.3	5.3	96.4	56.5	8.7	68.0	33.7	150.0	33.9	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	99.7	49.3	5.3	96.4	56.5	8.7	68.0	33.7	150.0	33.9	2.6
LOS	F	D	A	F	E	A	E	C	F	C	A
Approach Delay		57.5			59.1			35.8		43.8	
Approach LOS		E			E			D		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.9	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 46.1	Intersection LOS: D
Intersection Capacity Utilization 83.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	350	85	214	549	130	86	1164	177	195	1373	171
Future Volume (veh/h)	172	350	85	214	549	130	86	1164	177	195	1373	171
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	181	368	73	225	578	108	91	1225	146	205	1445	121
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	197	579	258	239	666	297	112	1726	206	184	2124	845
Arrive On Green	0.12	0.17	0.17	0.15	0.19	0.19	0.07	0.39	0.39	0.11	0.43	0.43
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	4450	530	1619	4914	1524
Grp Volume(v), veh/h	181	368	73	225	578	108	91	902	469	205	1445	121
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	1638	1705	1619	1638	1524
Q Serve(g_s), s	13.0	11.8	4.9	16.2	19.3	7.2	6.5	27.5	27.5	13.4	27.9	4.5
Cycle Q Clear(g_c), s	13.0	11.8	4.9	16.2	19.3	7.2	6.5	27.5	27.5	13.4	27.9	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	197	579	258	239	666	297	112	1271	661	184	2124	845
V/C Ratio(X)	0.92	0.64	0.28	0.94	0.87	0.36	0.81	0.71	0.71	1.12	0.68	0.14
Avail Cap(c_a), veh/h	197	666	297	239	753	336	228	1271	661	184	2124	845
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.2	45.7	42.8	49.8	46.1	41.2	54.2	30.5	30.5	52.3	27.0	12.7
Incr Delay (d2), s/veh	40.7	1.6	0.6	42.2	9.7	0.7	5.3	3.4	6.3	100.9	1.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	5.0	1.9	9.2	8.9	2.7	2.7	10.6	11.6	10.5	10.8	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.0	47.3	43.4	92.1	55.8	42.0	59.5	33.9	36.9	153.2	28.7	13.1
LnGrp LOS	F	D	D	F	E	D	E	C	D	F	C	B
Approach Vol, veh/h		622			911			1462			1771	
Approach Delay, s/veh		59.8			63.1			36.4			42.1	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	52.3	22.0	25.8	12.8	57.5	19.0	28.8
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	13.4	* 46	17.4	23.0	16.6	41.5	14.4	26.0
Max Q Clear Time (g_c+I1), s	15.4	29.5	18.2	13.8	8.5	29.9	15.0	21.3
Green Ext Time (p_c), s	0.0	7.4	0.0	1.6	0.0	7.3	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	46.7
HCM 6th LOS	D

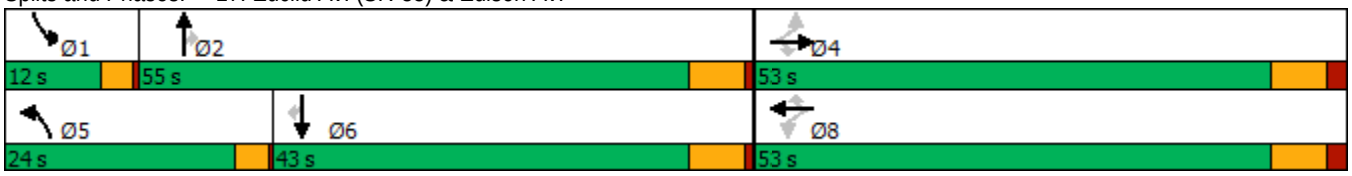
Notes

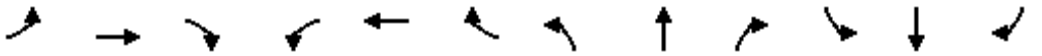
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	297	206	39	478	72	269	1146	44	78	1273	188
Future Volume (vph)	175	297	206	39	478	72	269	1146	44	78	1273	188
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	53.0	53.0	53.0	53.0	53.0	53.0	24.0	55.0	55.0	12.0	43.0	43.0
Total Split (%)	44.2%	44.2%	44.2%	44.2%	44.2%	44.2%	20.0%	45.8%	45.8%	10.0%	35.8%	35.8%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	44.6	44.6	44.6	44.6	44.6	44.6	20.5	48.5	48.5	8.0	36.0	36.0
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.17	0.41	0.41	0.07	0.31	0.31
v/c Ratio	1.11	0.45	0.30	0.14	0.73	0.12	1.00	0.59	0.07	0.74	0.88	0.35
Control Delay	138.1	30.1	4.4	25.7	38.9	3.8	102.6	28.6	2.6	90.8	47.1	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	138.1	30.1	4.4	25.7	38.9	3.8	102.6	28.6	2.6	90.8	47.1	9.8
LOS	F	C	A	C	D	A	F	C	A	F	D	A
Approach Delay		50.1			33.7			41.4			44.7	
Approach LOS		D			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.7	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 42.9	Intersection LOS: D
Intersection Capacity Utilization 100.4%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	297	206	39	478	72	269	1146	44	78	1273	188
Future Volume (veh/h)	175	297	206	39	478	72	269	1146	44	78	1273	188
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	182	309	160	41	498	70	280	1194	38	81	1326	145
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	185	698	591	292	698	591	280	2022	628	100	1477	447
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.17	0.41	0.41	0.06	0.30	0.30
Sat Flow, veh/h	809	1800	1524	886	1800	1524	1619	4914	1525	1619	4914	1489
Grp Volume(v), veh/h	182	309	160	41	498	70	280	1194	38	81	1326	145
Grp Sat Flow(s),veh/h/ln	809	1800	1524	886	1800	1524	1619	1638	1525	1619	1638	1489
Q Serve(g_s), s	18.2	15.1	8.5	4.3	27.8	3.5	20.5	22.4	1.8	5.9	30.7	9.0
Cycle Q Clear(g_c), s	46.0	15.1	8.5	19.3	27.8	3.5	20.5	22.4	1.8	5.9	30.7	9.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	185	698	591	292	698	591	280	2022	628	100	1477	447
V/C Ratio(X)	0.98	0.44	0.27	0.14	0.71	0.12	1.00	0.59	0.06	0.81	0.90	0.32
Avail Cap(c_a), veh/h	185	698	591	292	698	591	280	2029	630	116	1532	464
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.1	26.9	24.9	34.0	30.8	23.3	49.1	27.1	21.1	55.0	39.8	32.2
Incr Delay (d2), s/veh	61.6	0.4	0.2	0.2	3.5	0.1	54.1	0.5	0.0	26.3	7.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	6.3	3.0	0.9	12.1	1.2	12.1	8.2	0.6	3.0	12.5	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	114.7	27.3	25.1	34.2	34.2	23.4	103.1	27.6	21.1	81.2	47.1	32.6
LnGrp LOS	F	C	C	C	C	C	F	C	C	F	D	C
Approach Vol, veh/h		651			609			1512			1552	
Approach Delay, s/veh		51.2			33.0			41.4			47.5	
Approach LOS		D			C			D			D	

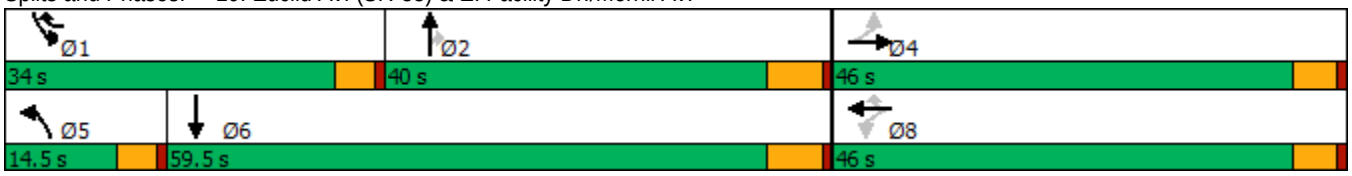
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.8	54.8		53.0	24.0	41.7		53.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	8.5	49.0		46.0	20.5	37.0		46.0				
Max Q Clear Time (g_c+I1), s	7.9	24.4		48.0	22.5	32.7		29.8				
Green Ext Time (p_c), s	0.0	8.2		0.0	0.0	3.0		3.0				

Intersection Summary			
HCM 6th Ctrl Delay		43.9	
HCM 6th LOS		D	

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	4	9	301	53	441	11	1146	316	425	1222
Future Volume (vph)	4	9	301	53	441	11	1146	316	425	1222
Turn Type	Perm	NA	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	1	5	2		1	6
Permitted Phases	4		8		8			2		
Detector Phase	4	4	8	8	1	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	34.0	14.5	40.0	40.0	34.0	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	28.3%	12.1%	33.3%	33.3%	28.3%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	4.5	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		21.9	21.9	21.9	57.0	10.2	30.8	30.8	30.0	62.9
Actuated g/C Ratio		0.22	0.22	0.22	0.58	0.10	0.31	0.31	0.30	0.64
v/c Ratio		0.09	0.68	0.63	0.51	0.07	0.77	0.57	0.89	0.42
Control Delay		16.9	48.5	44.6	14.1	47.3	35.4	21.1	56.9	11.6
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		16.9	48.5	44.6	14.1	47.3	35.4	21.1	56.9	11.6
LOS		B	D	D	B	D	D	C	E	B
Approach Delay		16.9		28.5			32.4			23.0
Approach LOS		B		C			C			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 98.4	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 27.5	Intersection LOS: C
Intersection Capacity Utilization 79.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	9	19	301	53	441	11	1146	316	425	1222	43
Future Volume (veh/h)	4	9	19	301	53	441	11	1146	316	425	1222	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	4	9	19	349	0	428	11	1181	283	438	1260	30
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	66	123	209	770	0	787	43	1532	476	468	2833	67
Arrive On Green	0.23	0.23	0.23	0.23	0.00	0.23	0.03	0.31	0.31	0.29	0.57	0.57
Sat Flow, veh/h	91	542	924	2652	0	1525	1619	4914	1525	1619	4934	117
Grp Volume(v), veh/h	32	0	0	349	0	428	11	1181	283	438	836	454
Grp Sat Flow(s),veh/h/ln	1557	0	0	1326	0	1525	1619	1638	1525	1619	1638	1776
Q Serve(g_s), s	0.0	0.0	0.0	8.8	0.0	17.0	0.6	19.6	14.1	23.7	13.1	13.1
Cycle Q Clear(g_c), s	1.4	0.0	0.0	10.2	0.0	17.0	0.6	19.6	14.1	23.7	13.1	13.1
Prop In Lane	0.12		0.59	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	398	0	0	770	0	787	43	1532	476	468	1881	1020
V/C Ratio(X)	0.08	0.00	0.00	0.45	0.00	0.54	0.25	0.77	0.59	0.94	0.44	0.44
Avail Cap(c_a), veh/h	739	0	0	1380	0	1137	180	1860	577	532	1951	1058
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	0.0	0.0	30.7	0.0	14.6	42.8	28.0	26.1	31.1	10.9	10.9
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.2	0.0	0.2	1.1	1.7	1.2	21.7	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	3.1	0.0	5.0	0.2	7.1	4.7	11.1	3.7	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.4	0.0	0.0	30.8	0.0	14.9	44.0	29.7	27.3	52.8	11.1	11.2
LnGrp LOS	C	A	A	C	A	B	D	C	C	D	B	B
Approach Vol, veh/h		32			777			1475			1728	
Approach Delay, s/veh		27.4			22.0			29.3			21.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	30.5	34.0		25.4	6.9	57.6		25.4				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	29.5	34.0		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	25.7	21.6		3.4	2.6	15.1		19.0				
Green Ext Time (p_c), s	0.3	6.5		0.1	0.0	9.2		1.4				

Intersection Summary			
HCM 6th Ctrl Delay		24.6	
HCM 6th LOS		C	

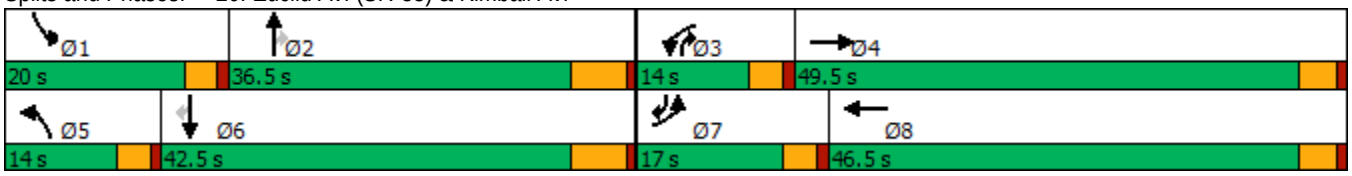
Notes

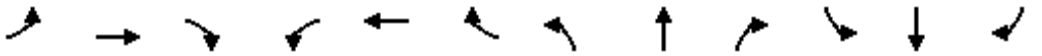
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	147	283	59	836	119	1036	58	245	789	430
Future Volume (vph)	147	283	59	836	119	1036	58	245	789	430
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	17.0	49.5	14.0	46.5	14.0	36.5	14.0	20.0	42.5	17.0
Total Split (%)	14.2%	41.3%	11.7%	38.8%	11.7%	30.4%	11.7%	16.7%	35.4%	14.2%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	11.0	43.9	10.1	39.6	10.1	28.7	44.8	13.3	31.9	45.0
Actuated g/C Ratio	0.10	0.39	0.09	0.36	0.09	0.26	0.40	0.12	0.29	0.40
v/c Ratio	0.52	0.25	0.41	0.92	0.83	0.84	0.09	0.71	0.57	0.68
Control Delay	56.1	23.8	60.3	47.2	92.6	46.6	2.4	59.7	35.8	26.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.1	23.8	60.3	47.2	92.6	46.6	2.4	59.7	35.8	26.5
LOS	E	C	E	D	F	D	A	E	D	C
Approach Delay		33.8		47.9		49.0			37.0	
Approach LOS		C		D		D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 42.9	Intersection LOS: D
Intersection Capacity Utilization 85.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	283	44	59	836	247	119	1036	58	245	789	430
Future Volume (veh/h)	147	283	44	59	836	247	119	1036	58	245	789	430
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	150	289	36	60	853	216	121	1057	47	250	805	310
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	290	1127	139	131	948	240	156	1288	523	310	1329	557
Arrive On Green	0.10	0.37	0.37	0.08	0.35	0.35	0.10	0.26	0.26	0.10	0.27	0.27
Sat Flow, veh/h	2956	3064	378	1619	2703	684	1619	4914	1525	2956	4914	1506
Grp Volume(v), veh/h	150	160	165	60	540	529	121	1057	47	250	805	310
Grp Sat Flow(s),veh/h/ln	1478	1710	1732	1619	1710	1677	1619	1638	1525	1478	1638	1506
Q Serve(g_s), s	4.8	6.5	6.7	3.5	30.0	30.1	7.3	20.3	2.1	8.3	14.3	16.4
Cycle Q Clear(g_c), s	4.8	6.5	6.7	3.5	30.0	30.1	7.3	20.3	2.1	8.3	14.3	16.4
Prop In Lane	1.00		0.22	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	290	629	637	131	600	588	156	1288	523	310	1329	557
V/C Ratio(X)	0.52	0.25	0.26	0.46	0.90	0.90	0.78	0.82	0.09	0.81	0.61	0.56
Avail Cap(c_a), veh/h	383	767	777	161	716	702	161	1494	587	472	1788	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	22.1	22.2	44.0	30.9	30.9	44.3	34.8	22.3	43.9	31.9	25.2
Incr Delay (d2), s/veh	0.5	0.2	0.2	0.9	11.7	12.0	18.3	3.3	0.1	3.2	0.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.5	2.6	1.4	13.4	13.2	3.6	7.8	0.7	3.0	5.3	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.5	22.3	22.4	44.9	42.6	42.9	62.5	38.1	22.4	47.1	32.4	26.0
LnGrp LOS	D	C	C	D	D	D	E	D	C	D	C	C
Approach Vol, veh/h		475			1129			1225			1365	
Approach Delay, s/veh		29.0			42.9			39.9			33.6	
Approach LOS		C			D			D			C	

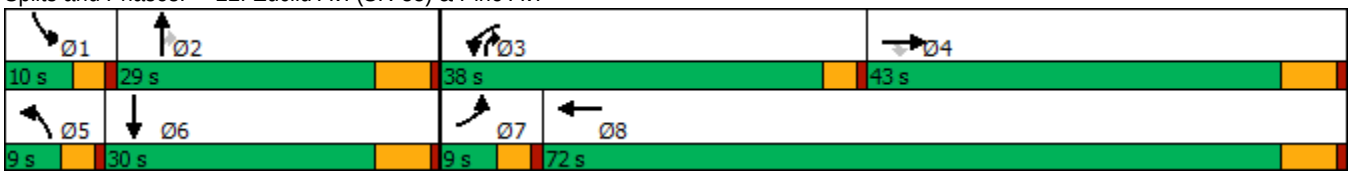
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	32.3	12.1	41.4	13.7	33.1	13.8	39.7
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	16.0	30.5	10.0	45.0	10.0	36.5	13.0	42.0
Max Q Clear Time (g_c+I1), s	10.3	22.3	5.5	8.7	9.3	18.4	6.8	32.1
Green Ext Time (p_c), s	0.2	4.0	0.0	1.8	0.0	5.6	0.1	3.1

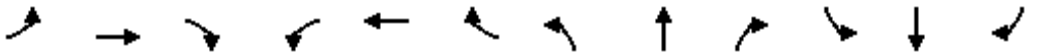
Intersection Summary	
HCM 6th Ctrl Delay	37.4
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	9	199	54	1168	358	63	901	758	66	782
Future Volume (vph)	9	199	54	1168	358	63	901	758	66	782
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	38.0	72.0	9.0	29.0	38.0	10.0	30.0
Total Split (%)	7.5%	35.8%	35.8%	31.7%	60.0%	7.5%	24.2%	31.7%	8.3%	25.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.1	15.6	15.6	34.4	52.5	5.1	22.9	59.3	6.1	23.9
Actuated g/C Ratio	0.05	0.16	0.16	0.35	0.53	0.05	0.23	0.60	0.06	0.24
v/c Ratio	0.11	0.38	0.16	1.18	0.52	0.79	0.82	0.41	0.69	0.70
Control Delay	52.7	38.4	1.0	121.7	16.9	103.3	44.1	1.8	82.3	39.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.7	38.4	1.0	121.7	16.9	103.3	44.1	1.8	82.3	39.0
LOS	D	D	A	F	B	F	D	A	F	D
Approach Delay		31.1			91.8		27.6			42.3
Approach LOS		C			F		C			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99.1	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 54.0	Intersection LOS: D
Intersection Capacity Utilization 84.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	199	54	1168	358	108	63	901	758	66	782	18
Future Volume (veh/h)	9	199	54	1168	358	108	63	901	758	66	782	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	9	205	0	1204	369	109	65	929	525	68	806	15
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	18	340		1149	637	188	80	1136	1651	84	1160	22
Arrive On Green	0.01	0.10	0.00	0.39	0.48	0.48	0.05	0.23	0.23	0.05	0.23	0.23
Sat Flow, veh/h	1619	3420	1525	2956	1335	394	1619	4914	2627	1619	4967	92
Grp Volume(v), veh/h	9	205	0	1204	0	478	65	929	525	68	531	290
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1478	0	1729	1619	1638	1313	1619	1638	1783
Q Serve(g_s), s	0.5	5.0	0.0	34.0	0.0	17.5	3.5	15.7	8.3	3.6	13.0	13.0
Cycle Q Clear(g_c), s	0.5	5.0	0.0	34.0	0.0	17.5	3.5	15.7	8.3	3.6	13.0	13.0
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	18	340		1149	0	825	80	1136	1651	84	765	417
V/C Ratio(X)	0.50	0.60		1.05	0.00	0.58	0.81	0.82	0.32	0.81	0.69	0.70
Avail Cap(c_a), veh/h	93	1447		1149	0	1305	93	1292	1734	111	899	489
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	37.7	0.0	26.7	0.0	16.5	41.1	31.9	7.9	41.0	30.7	30.7
Incr Delay (d2), s/veh	7.5	2.4	0.0	40.0	0.0	0.9	31.2	3.3	0.0	20.6	1.3	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.1	0.0	16.8	0.0	6.1	2.0	5.9	1.8	1.8	4.8	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.5	40.2	0.0	66.7	0.0	17.5	72.4	35.2	7.9	61.6	32.0	33.1
LnGrp LOS	D	D		F	A	B	E	D	A	E	C	C
Approach Vol, veh/h		214	A		1682			1519			889	
Approach Delay, s/veh		40.6			52.7			27.4			34.6	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	26.2	38.0	14.7	8.3	26.4	5.0	47.7
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	6.0	23.0	34.0	37.0	5.0	24.0	5.0	66.0
Max Q Clear Time (g_c+I1), s	5.6	17.7	36.0	7.0	5.5	15.0	2.5	19.5
Green Ext Time (p_c), s	0.0	2.5	0.0	1.7	0.0	2.1	0.0	4.5

Intersection Summary	
HCM 6th Ctrl Delay	39.4
HCM 6th LOS	D

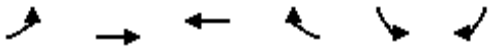
Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	63	670	851	33
Future Volume (vph)	63	670	851	33
Turn Type	Perm	NA	NA	Prot
Protected Phases		4	8	6
Permitted Phases	4			
Detector Phase	4	4	8	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	16.2	16.2	23.2	32.8
Total Split (s)	86.0	86.0	86.0	34.0
Total Split (%)	71.7%	71.7%	71.7%	28.3%
Yellow Time (s)	5.2	5.2	5.2	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0
Total Lost Time (s)		6.2	6.2	5.8
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	Min
Act Effct Green (s)		39.5	39.5	13.2
Actuated g/C Ratio		0.60	0.60	0.20
v/c Ratio		0.86	0.49	0.24
Control Delay		21.4	7.8	16.4
Queue Delay		0.0	0.0	0.0
Total Delay		21.4	7.8	16.4
LOS		C	A	B
Approach Delay		21.4	7.8	16.4
Approach LOS		C	A	B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 66.2	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 13.9	Intersection LOS: B
Intersection Capacity Utilization 91.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 25: Merrill Av. & Bon View Av.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	63	670	851	78	33	51
Future Volume (veh/h)	63	670	851	78	33	51
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	67	713	905	83	35	54
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	124	864	1774	163	124	191
Arrive On Green	0.56	0.56	0.56	0.56	0.20	0.20
Sat Flow, veh/h	83	1543	3257	290	621	958
Grp Volume(v), veh/h	780	0	489	499	90	0
Grp Sat Flow(s),veh/h/ln	1625	0	1710	1748	1597	0
Q Serve(g_s), s	8.9	0.0	8.8	8.8	2.4	0.0
Cycle Q Clear(g_c), s	19.2	0.0	8.8	8.8	2.4	0.0
Prop In Lane	0.09			0.17	0.39	0.60
Lane Grp Cap(c), veh/h	989	0	958	979	319	0
V/C Ratio(X)	0.79	0.00	0.51	0.51	0.28	0.00
Avail Cap(c_a), veh/h	2566	0	2728	2788	900	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.7	0.0	6.8	6.8	17.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	0.4	0.4	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	1.7	1.7	0.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.2	0.0	7.2	7.2	17.4	0.0
LnGrp LOS	B	A	A	A	B	A
Approach Vol, veh/h		780	988		90	
Approach Delay, s/veh		10.2	7.2		17.4	
Approach LOS		B	A		B	

Timer - Assigned Phs			4		6	8
Phs Duration (G+Y+Rc), s			34.2		15.8	34.2
Change Period (Y+Rc), s			6.2		5.8	6.2
Max Green Setting (Gmax), s			79.8		28.2	79.8
Max Q Clear Time (g_c+I1), s			21.2		4.4	10.8
Green Ext Time (p_c), s			6.8		0.2	6.6

Intersection Summary		
HCM 6th Ctrl Delay	8.9	
HCM 6th LOS	A	

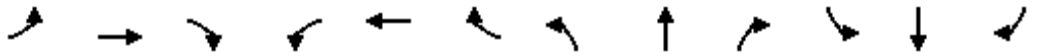
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	695	1	224	770	390	666
Future Volume (vph)	695	1	224	770	390	666
Turn Type	Split	NA	Perm	NA	Prot	NA
Protected Phases	4	4		2	1	6
Permitted Phases			4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	30.8	26.8	9.6	22.8
Total Split (s)	31.0	31.0	31.0	50.0	39.0	89.0
Total Split (%)	25.8%	25.8%	25.8%	41.7%	32.5%	74.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.6	5.8
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	25.2	25.2	25.2	47.5	31.1	83.2
Actuated g/C Ratio	0.21	0.21	0.21	0.40	0.26	0.69
v/c Ratio	1.05	1.05	0.46	0.91	0.91	0.29
Control Delay	106.4	107.0	8.0	42.9	70.7	7.9
Queue Delay	0.0	0.0	0.0	0.9	1.7	0.3
Total Delay	106.4	107.0	8.0	43.8	72.4	8.2
LOS	F	F	A	D	E	A
Approach Delay		82.7		43.8		31.9
Approach LOS		F		D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 51.2	Intersection LOS: D
Intersection Capacity Utilization 88.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	695	1	224	0	0	0	0	770	395	390	666	0
Future Volume (veh/h)	695	1	224	0	0	0	0	770	395	390	666	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	756	0	168				0	837	320	424	724	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	760	0	337				0	1047	400	443	2503	0
Arrive On Green	0.21	0.00	0.21				0.00	0.41	0.41	0.49	1.00	0.00
Sat Flow, veh/h	3619	0	1606				0	2648	974	1810	3705	0
Grp Volume(v), veh/h	756	0	168				0	591	566	424	724	0
Grp Sat Flow(s),veh/h/ln	1810	0	1606				0	1805	1722	1810	1805	0
Q Serve(g_s), s	25.0	0.0	11.1				0.0	34.5	34.6	27.0	0.0	0.0
Cycle Q Clear(g_c), s	25.0	0.0	11.1				0.0	34.5	34.6	27.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.57	1.00		0.00
Lane Grp Cap(c), veh/h	760	0	337				0	741	706	443	2503	0
V/C Ratio(X)	0.99	0.00	0.50				0.00	0.80	0.80	0.96	0.29	0.00
Avail Cap(c_a), veh/h	760	0	337				0	741	706	519	2503	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.63	0.63	0.46	0.46	0.00
Uniform Delay (d), s/veh	47.3	0.0	41.8				0.0	31.0	31.1	30.0	0.0	0.0
Incr Delay (d2), s/veh	31.3	0.0	1.1				0.0	5.7	6.1	15.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.2	0.0	4.4				0.0	15.3	14.7	9.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.6	0.0	43.0				0.0	36.7	37.1	45.5	0.1	0.0
LnGrp LOS	E	A	D				A	D	D	D	A	A
Approach Vol, veh/h		924						1157			1148	
Approach Delay, s/veh		72.1						36.9			16.9	
Approach LOS		E						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	34.0	55.0		31.0		89.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	34.4	44.2		25.2		83.2
Max Q Clear Time (g_c+I1), s	29.0	36.6		27.0		2.0
Green Ext Time (p_c), s	0.4	4.1		0.0		5.2

Intersection Summary		
HCM 6th Ctrl Delay		39.9
HCM 6th LOS		D

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	68	97	11	87	39	359	50	439
Future Volume (vph)	68	97	11	87	39	359	50	439
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Total Split (s)	38.0	38.0	38.0	38.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	31.7%	31.7%	68.3%	68.3%	68.3%	68.3%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		21.4		21.4		76.1		76.1
Actuated g/C Ratio		0.19		0.19		0.69		0.69
v/c Ratio		0.81		0.43		0.41		0.51
Control Delay		63.2		38.7		9.4		11.0
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		63.2		38.7		9.4		11.0
LOS		E		D		A		B
Approach Delay		63.2		38.7		9.4		11.0
Approach LOS		E		D		A		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.9	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 21.4	Intersection LOS: C
Intersection Capacity Utilization 67.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 30: Grove Av. & Chino Rd.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	97	30	11	87	32	39	359	15	50	439	34
Future Volume (veh/h)	68	97	30	11	87	32	39	359	15	50	439	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	76	108	33	12	97	36	43	399	17	56	488	38
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	122	139	39	48	201	70	120	1074	44	124	1043	79
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	465	846	235	68	1227	428	115	1495	62	120	1451	110
Grp Volume(v), veh/h	217	0	0	145	0	0	459	0	0	582	0	0
Grp Sat Flow(s),veh/h/ln	1546	0	0	1722	0	0	1672	0	0	1681	0	0
Q Serve(g_s), s	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.4	0.0	0.0	8.1	0.0	0.0	10.3	0.0	0.0	14.4	0.0	0.0
Prop In Lane	0.35		0.15	0.08		0.25	0.09		0.04	0.10		0.07
Lane Grp Cap(c), veh/h	300	0	0	319	0	0	1238	0	0	1245	0	0
V/C Ratio(X)	0.72	0.00	0.00	0.45	0.00	0.00	0.37	0.00	0.00	0.47	0.00	0.00
Avail Cap(c_a), veh/h	511	0	0	549	0	0	1238	0	0	1245	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.8	0.0	0.0	40.3	0.0	0.0	5.6	0.0	0.0	6.2	0.0	0.0
Incr Delay (d2), s/veh	3.3	0.0	0.0	1.0	0.0	0.0	0.9	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	0.0	3.4	0.0	0.0	3.0	0.0	0.0	4.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.1	0.0	0.0	41.3	0.0	0.0	6.5	0.0	0.0	7.5	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		217			145			459			582	
Approach Delay, s/veh		46.1			41.3			6.5			7.5	
Approach LOS		D			D			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		82.0		23.5		82.0		23.5				
Change Period (Y+Rc), s		6.2		6.2		6.2		6.2				
Max Green Setting (Gmax), s		75.8		31.8		75.8		31.8				
Max Q Clear Time (g_c+I1), s		12.3		16.4		16.4		10.1				
Green Ext Time (p_c), s		2.9		0.9		3.9		0.6				

Intersection Summary												
HCM 6th Ctrl Delay			16.6									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	47	50	38	109	40	297	45	354
Future Volume (vph)	47	50	38	109	40	297	45	354
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	41.0	41.0	41.0	41.0	79.0	79.0	79.0	79.0
Total Split (%)	34.2%	34.2%	34.2%	34.2%	65.8%	65.8%	65.8%	65.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.8		5.8		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		18.0		18.0		73.1		73.1
Actuated g/C Ratio		0.17		0.17		0.71		0.71
v/c Ratio		0.67		0.75		0.33		0.42
Control Delay		51.9		54.2		7.4		8.2
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		51.9		54.2		7.4		8.2
LOS		D		D		A		A
Approach Delay		51.9		54.2		7.4		8.2
Approach LOS		D		D		A		A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.1	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 20.8	Intersection LOS: C
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 31: Grove Av. & Schaefer Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	50	29	38	109	43	40	297	11	45	354	46
Future Volume (veh/h)	47	50	29	38	109	43	40	297	11	45	354	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	52	56	32	42	121	48	44	330	12	50	393	51
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	108	105	49	80	159	58	147	1066	38	132	1004	126
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.73	0.73	0.73	0.73	0.73	0.73
Sat Flow, veh/h	389	694	321	244	1046	380	146	1465	52	127	1378	173
Grp Volume(v), veh/h	140	0	0	211	0	0	386	0	0	494	0	0
Grp Sat Flow(s),veh/h/ln	1404	0	0	1670	0	0	1663	0	0	1679	0	0
Q Serve(g_s), s	0.0	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.3	0.0	0.0	12.2	0.0	0.0	7.5	0.0	0.0	10.5	0.0	0.0
Prop In Lane	0.37		0.23	0.20		0.23	0.11		0.03	0.10		0.10
Lane Grp Cap(c), veh/h	263	0	0	297	0	0	1251	0	0	1262	0	0
V/C Ratio(X)	0.53	0.00	0.00	0.71	0.00	0.00	0.31	0.00	0.00	0.39	0.00	0.00
Avail Cap(c_a), veh/h	560	0	0	621	0	0	1251	0	0	1262	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	39.6	0.0	0.0	41.0	0.0	0.0	4.7	0.0	0.0	5.1	0.0	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.0	3.1	0.0	0.0	0.6	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	5.1	0.0	0.0	2.1	0.0	0.0	2.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	0.0	0.0	44.2	0.0	0.0	5.4	0.0	0.0	6.0	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		140			211			386			494	
Approach Delay, s/veh		41.3			44.2			5.4			6.0	
Approach LOS		D			D			A			A	

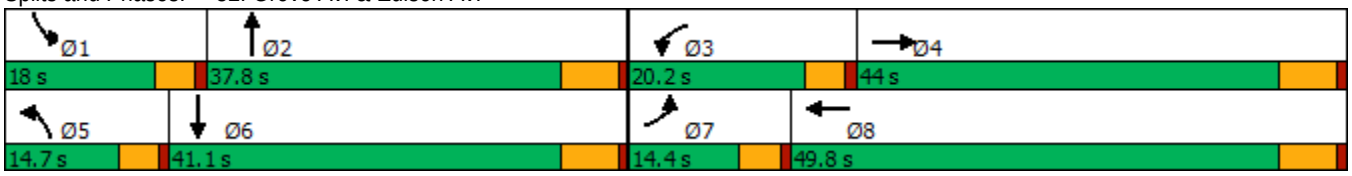
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		79.0		21.0		79.0		21.0				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		72.8		35.2		72.8		35.2				
Max Q Clear Time (g_c+I1), s		9.5		11.3		12.5		14.2				
Green Ext Time (p_c), s		2.4		0.7		3.2		1.0				

Intersection Summary												
HCM 6th Ctrl Delay			16.4									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	37	226	274	557	31	237	65	292
Future Volume (vph)	37	226	274	557	31	237	65	292
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	9.6	28.2	9.6	28.2
Total Split (s)	14.4	44.0	20.2	49.8	14.7	37.8	18.0	41.1
Total Split (%)	12.0%	36.7%	16.8%	41.5%	12.3%	31.5%	15.0%	34.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	7.0	38.2	15.8	51.4	6.7	15.2	8.7	19.2
Actuated g/C Ratio	0.07	0.39	0.16	0.53	0.07	0.16	0.09	0.20
v/c Ratio	0.35	0.43	1.15	0.69	0.31	0.65	0.49	0.53
Control Delay	54.1	25.5	143.2	26.6	53.1	40.4	56.0	37.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.1	25.5	143.2	26.6	53.1	40.4	56.0	37.7
LOS	D	C	F	C	D	D	E	D
Approach Delay		29.0		63.5		41.5		40.7
Approach LOS		C		E		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.15	
Intersection Signal Delay: 49.3	Intersection LOS: D
Intersection Capacity Utilization 69.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	226	44	274	557	34	31	237	86	65	292	31
Future Volume (veh/h)	37	226	44	274	557	34	31	237	86	65	292	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	41	248	48	301	612	37	34	260	95	71	321	34
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	57	592	115	270	901	54	51	354	126	89	520	55
Arrive On Green	0.04	0.40	0.40	0.17	0.54	0.54	0.03	0.14	0.14	0.05	0.17	0.17
Sat Flow, veh/h	1619	1465	284	1619	1680	102	1619	2471	881	1619	3123	328
Grp Volume(v), veh/h	41	0	296	301	0	649	34	178	177	71	175	180
Grp Sat Flow(s),veh/h/ln	1619	0	1749	1619	0	1782	1619	1710	1641	1619	1710	1741
Q Serve(g_s), s	2.3	0.0	11.3	15.6	0.0	24.9	1.9	9.3	9.7	4.1	8.9	9.0
Cycle Q Clear(g_c), s	2.3	0.0	11.3	15.6	0.0	24.9	1.9	9.3	9.7	4.1	8.9	9.0
Prop In Lane	1.00		0.16	1.00		0.06	1.00		0.54	1.00		0.19
Lane Grp Cap(c), veh/h	57	0	707	270	0	955	51	245	235	89	285	290
V/C Ratio(X)	0.72	0.00	0.42	1.11	0.00	0.68	0.67	0.73	0.75	0.80	0.61	0.62
Avail Cap(c_a), veh/h	170	0	707	270	0	955	175	578	555	232	638	650
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.7	0.0	20.0	39.0	0.0	15.8	44.8	38.3	38.5	43.7	36.2	36.2
Incr Delay (d2), s/veh	6.3	0.0	1.8	89.0	0.0	3.9	5.6	4.1	4.8	6.1	2.1	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	4.5	12.5	0.0	9.5	0.8	3.9	4.0	1.7	3.6	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.0	0.0	21.8	128.0	0.0	19.7	50.4	42.4	43.3	49.8	38.3	38.4
LnGrp LOS	D	A	C	F	A	B	D	D	D	D	D	D
Approach Vol, veh/h		337			950			389			426	
Approach Delay, s/veh		25.3			54.0			43.5			40.3	
Approach LOS		C			D			D			D	

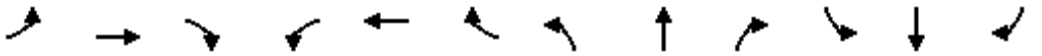
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	19.6	20.2	44.0	7.5	21.8	7.9	56.3
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	13.4	31.6	15.6	37.8	10.1	34.9	9.8	43.6
Max Q Clear Time (g_c+I1), s	6.1	11.7	17.6	13.3	3.9	11.0	4.3	26.9
Green Ext Time (p_c), s	0.0	1.7	0.0	1.5	0.0	1.7	0.0	3.5

Intersection Summary	
HCM 6th Ctrl Delay	44.7
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	40	37	13	92	68	381	39	485
Future Volume (vph)	40	37	13	92	68	381	39	485
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	27.8	27.8	27.8	27.8	92.2	92.2	92.2	92.2
Total Split (%)	23.2%	23.2%	23.2%	23.2%	76.8%	76.8%	76.8%	76.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	6.2	6.2	6.2	6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)	14.0	14.0	14.0	14.0	88.8	88.8	88.8	88.8
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.77	0.77	0.77	0.77
v/c Ratio	0.36	0.26	0.09	0.57	0.14	0.16	0.07	0.25
Control Delay	52.8	37.2	43.8	53.6	4.8	3.8	4.2	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.8	37.2	43.8	53.6	4.8	3.8	4.2	3.9
LOS	D	D	D	D	A	A	A	A
Approach Delay		44.0		52.6		4.0		3.9
Approach LOS		D		D		A		A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.8	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 11.4	Intersection LOS: B
Intersection Capacity Utilization 50.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	37	15	13	92	21	68	381	12	39	485	103
Future Volume (veh/h)	40	37	15	13	92	21	68	381	12	39	485	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	44	41	16	14	101	23	75	419	13	43	533	113
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	131	151	59	183	173	40	604	2608	81	741	2164	457
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.77	0.77	0.77	0.77	0.77	0.77
Sat Flow, veh/h	1216	1232	481	1292	1419	323	753	3386	105	917	2810	593
Grp Volume(v), veh/h	44	0	57	14	0	124	75	211	221	43	324	322
Grp Sat Flow(s),veh/h/ln	1216	0	1713	1292	0	1742	753	1710	1781	917	1710	1693
Q Serve(g_s), s	4.0	0.0	3.4	1.1	0.0	7.5	3.5	3.6	3.6	1.4	6.0	6.0
Cycle Q Clear(g_c), s	11.5	0.0	3.4	4.5	0.0	7.5	9.5	3.6	3.6	5.1	6.0	6.0
Prop In Lane	1.00		0.28	1.00		0.19	1.00		0.06	1.00		0.35
Lane Grp Cap(c), veh/h	131	0	210	183	0	213	604	1317	1372	741	1317	1304
V/C Ratio(X)	0.33	0.00	0.27	0.08	0.00	0.58	0.12	0.16	0.16	0.06	0.25	0.25
Avail Cap(c_a), veh/h	222	0	338	280	0	343	604	1317	1372	741	1317	1304
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	44.5	46.5	0.0	46.3	5.0	3.4	3.4	4.0	3.6	3.6
Incr Delay (d2), s/veh	1.5	0.0	0.7	0.2	0.0	2.5	0.4	0.3	0.3	0.1	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	1.4	0.4	0.0	3.3	0.5	0.9	0.9	0.2	1.5	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.2	0.0	45.2	46.7	0.0	48.8	5.4	3.6	3.6	4.2	4.1	4.1
LnGrp LOS	D	A	D	D	A	D	A	A	A	A	A	A
Approach Vol, veh/h		101			138			507			689	
Approach Delay, s/veh		48.7			48.6			3.9			4.1	
Approach LOS		D			D			A			A	

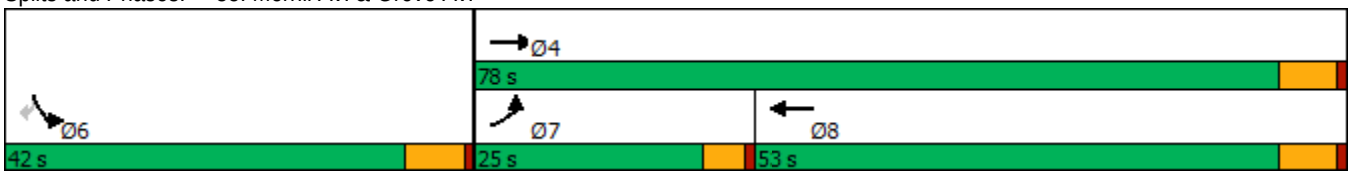
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		92.2		19.5		92.2		19.5				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		86.0		22.0		86.0		22.0				
Max Q Clear Time (g_c+I1), s		11.5		13.5		8.0		9.5				
Green Ext Time (p_c), s		2.9		0.2		4.1		0.4				

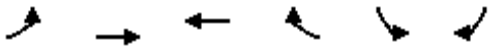
Intersection Summary												
HCM 6th Ctrl Delay			11.4									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	146	588	786	385	120
Future Volume (vph)	146	588	786	385	120
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	28.2	28.2
Total Split (s)	25.0	78.0	53.0	42.0	42.0
Total Split (%)	20.8%	65.0%	44.2%	35.0%	35.0%
Yellow Time (s)	3.6	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	6.2	6.2
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	Max	Max	None	None
Act Effct Green (s)	14.9	71.9	52.4	31.8	31.8
Actuated g/C Ratio	0.13	0.62	0.45	0.27	0.27
v/c Ratio	0.73	0.54	0.81	0.90	0.24
Control Delay	69.1	15.7	32.3	64.8	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	69.1	15.7	32.3	64.8	6.7
LOS	E	B	C	E	A
Approach Delay		26.3	32.3	51.0	
Approach LOS		C	C	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 34.4	Intersection LOS: C
Intersection Capacity Utilization 83.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	146	588	786	405	385	120
Future Volume (veh/h)	146	588	786	405	385	120
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	151	606	810	418	397	124
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	177	1129	1045	536	428	404
Arrive On Green	0.11	0.63	0.48	0.48	0.26	0.26
Sat Flow, veh/h	1619	1800	2277	1122	1619	1525
Grp Volume(v), veh/h	151	606	632	596	397	124
Grp Sat Flow(s),veh/h/ln	1619	1800	1710	1598	1619	1525
Q Serve(g_s), s	10.5	21.7	35.1	35.5	27.4	7.5
Cycle Q Clear(g_c), s	10.5	21.7	35.1	35.5	27.4	7.5
Prop In Lane	1.00			0.70	1.00	1.00
Lane Grp Cap(c), veh/h	177	1129	817	764	428	404
V/C Ratio(X)	0.85	0.54	0.77	0.78	0.93	0.31
Avail Cap(c_a), veh/h	288	1129	817	764	506	477
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.1	12.0	24.8	24.9	41.0	33.7
Incr Delay (d2), s/veh	6.7	1.8	7.1	7.8	21.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	8.0	14.5	13.8	12.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	56.8	13.8	31.8	32.6	62.3	34.1
LnGrp LOS	E	B	C	C	E	C
Approach Vol, veh/h		757	1228		521	
Approach Delay, s/veh		22.4	32.2		55.6	
Approach LOS		C	C		E	

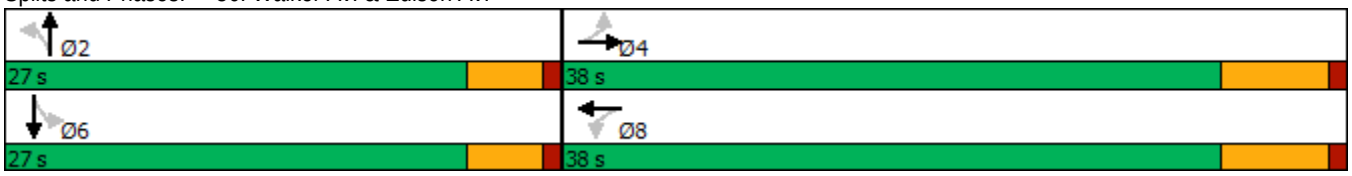
Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	78.0	36.5	17.1	60.9
Change Period (Y+Rc), s	6.2	6.2	4.6	6.2
Max Green Setting (Gmax), s	71.8	35.8	20.4	46.8
Max Q Clear Time (g_c+I1), s	23.7	29.4	12.5	37.5
Green Ext Time (p_c), s	3.9	0.9	0.1	4.9

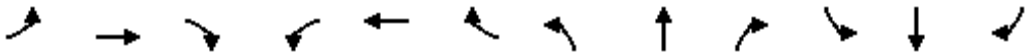
Intersection Summary	
HCM 6th Ctrl Delay	34.1
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	19	318	124	643	5	20	28	19
Future Volume (vph)	19	318	124	643	5	20	28	19
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	26.7	26.7	26.7	26.7
Total Split (s)	38.0	38.0	38.0	38.0	27.0	27.0	27.0	27.0
Total Split (%)	58.5%	58.5%	58.5%	58.5%	41.5%	41.5%	41.5%	41.5%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		4.7		4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		44.2		44.2		12.3		12.3
Actuated g/C Ratio		0.76		0.76		0.21		0.21
v/c Ratio		0.28		0.79		0.09		0.19
Control Delay		6.4		18.5		15.1		16.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		6.4		18.5		15.1		16.8
LOS		A		B		B		B
Approach Delay		6.4		18.5		15.1		16.8
Approach LOS		A		B		B		B

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 58.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 15.3	Intersection LOS: B
Intersection Capacity Utilization 95.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	318	10	124	643	156	5	20	8	28	19	13
Future Volume (veh/h)	19	318	10	124	643	156	5	20	8	28	19	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	19	324	10	127	656	159	5	20	8	29	19	13
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	98	1063	32	188	759	176	98	172	60	184	105	49
Arrive On Green	0.64	0.64	0.64	0.64	0.64	0.64	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	34	1672	50	166	1193	276	106	1178	411	530	721	339
Grp Volume(v), veh/h	353	0	0	942	0	0	33	0	0	61	0	0
Grp Sat Flow(s),veh/h/ln	1755	0	0	1635	0	0	1696	0	0	1590	0	0
Q Serve(g_s), s	0.0	0.0	0.0	17.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.5	0.0	0.0	24.4	0.0	0.0	0.8	0.0	0.0	1.6	0.0	0.0
Prop In Lane	0.05		0.03	0.13		0.17	0.15		0.24	0.48		0.21
Lane Grp Cap(c), veh/h	1193	0	0	1122	0	0	330	0	0	338	0	0
V/C Ratio(X)	0.30	0.00	0.00	0.84	0.00	0.00	0.10	0.00	0.00	0.18	0.00	0.00
Avail Cap(c_a), veh/h	1193	0	0	1122	0	0	827	0	0	799	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.1	0.0	0.0	7.6	0.0	0.0	18.6	0.0	0.0	18.9	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	7.6	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	5.0	0.0	0.0	0.3	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.8	0.0	0.0	15.2	0.0	0.0	18.7	0.0	0.0	19.2	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h		353			942			33			61	
Approach Delay, s/veh		4.8			15.2			18.7			19.2	
Approach LOS		A			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		12.0		38.0		12.0		38.0				
Change Period (Y+Rc), s		* 4.7		6.2		* 4.7		6.2				
Max Green Setting (Gmax), s		* 22		31.8		* 22		31.8				
Max Q Clear Time (g_c+I1), s		2.8		6.5		3.6		26.4				
Green Ext Time (p_c), s		0.1		2.0		0.2		3.0				

Intersection Summary												
HCM 6th Ctrl Delay			12.8									
HCM 6th LOS			B									

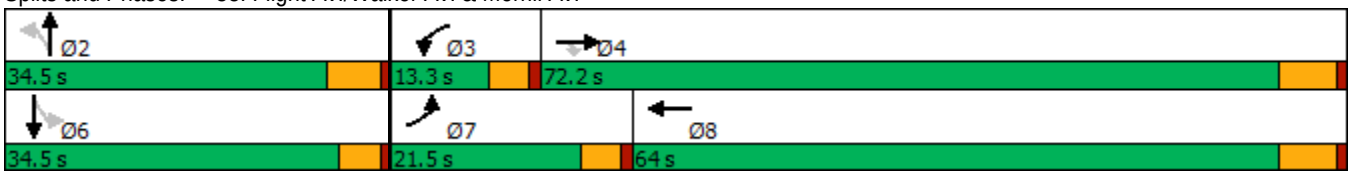
Notes

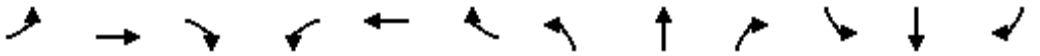
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	210	653	110	131	938	142	11	15	3
Future Volume (vph)	210	653	110	131	938	142	11	15	3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.2	23.2	9.6	23.2	32.8	32.8	21.6	21.6
Total Split (s)	21.5	72.2	72.2	13.3	64.0	34.5	34.5	34.5	34.5
Total Split (%)	17.9%	60.2%	60.2%	11.1%	53.3%	28.8%	28.8%	28.8%	28.8%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	4.8	4.8	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	5.8	5.8		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	16.7	66.2	66.2	8.7	58.3	18.9	18.9		20.1
Actuated g/C Ratio	0.15	0.60	0.60	0.08	0.53	0.17	0.17		0.18
v/c Ratio	0.89	0.62	0.12	1.06	0.57	0.73	0.34		0.25
Control Delay	82.4	18.6	5.5	147.7	20.0	64.5	11.5		14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	82.4	18.6	5.5	147.7	20.0	64.5	11.5		14.7
LOS	F	B	A	F	C	E	B		B
Approach Delay		30.9			35.0		40.4		14.7
Approach LOS		C			C		D		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 33.2	Intersection LOS: C
Intersection Capacity Utilization 73.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 38: Flight Av./Walker Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	653	110	131	938	50	142	11	108	15	3	63
Future Volume (veh/h)	210	653	110	131	938	50	142	11	108	15	3	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	216	673	113	135	967	52	146	11	111	15	3	65
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	242	1093	926	130	1774	95	242	22	226	63	28	188
Arrive On Green	0.15	0.61	0.61	0.08	0.54	0.54	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1619	1800	1525	1619	3301	177	1279	139	1407	148	176	1172
Grp Volume(v), veh/h	216	673	113	135	501	518	146	0	122	83	0	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	1768	1279	0	1547	1496	0	0
Q Serve(g_s), s	14.2	25.5	3.4	8.7	20.8	20.8	6.7	0.0	7.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.2	25.5	3.4	8.7	20.8	20.8	14.6	0.0	7.8	7.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.10	1.00		0.91	0.18		0.78
Lane Grp Cap(c), veh/h	242	1093	926	130	919	951	242	0	248	279	0	0
V/C Ratio(X)	0.89	0.62	0.12	1.04	0.54	0.54	0.60	0.00	0.49	0.30	0.00	0.00
Avail Cap(c_a), veh/h	252	1093	926	130	919	951	375	0	408	449	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	45.4	13.4	9.1	50.0	16.4	16.4	45.1	0.0	41.6	40.5	0.0	0.0
Incr Delay (d2), s/veh	28.8	2.6	0.3	90.8	2.3	2.2	2.4	0.0	1.5	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	9.5	1.1	6.6	7.8	8.0	3.9	0.0	3.0	2.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.2	16.0	9.3	140.8	18.8	18.7	47.5	0.0	43.1	41.0	0.0	0.0
LnGrp LOS	E	B	A	F	B	B	D	A	D	D	A	A
Approach Vol, veh/h		1002			1154			268			83	
Approach Delay, s/veh		27.8			33.0			45.5			41.0	
Approach LOS		C			C			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.2	13.3	72.2		23.2	20.8	64.7				
Change Period (Y+Rc), s		5.8	4.6	6.2		* 5.8	4.6	6.2				
Max Green Setting (Gmax), s		28.7	8.7	66.0		* 30	16.9	57.8				
Max Q Clear Time (g_c+I1), s		16.6	10.7	27.5		9.8	16.2	22.8				
Green Ext Time (p_c), s		0.8	0.0	4.9		0.4	0.0	6.6				

Intersection Summary	
HCM 6th Ctrl Delay	32.5
HCM 6th LOS	C

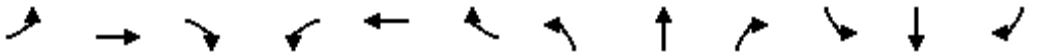
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	109	601	28	1068	18	0	13	0
Future Volume (vph)	109	601	28	1068	18	0	13	0
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	26.6	26.6
Total Split (s)	91.0	91.0	91.0	91.0	29.0	29.0	29.0	29.0
Total Split (%)	75.8%	75.8%	75.8%	75.8%	24.2%	24.2%	24.2%	24.2%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.2	6.2	6.2	6.2		6.2		4.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)	94.1	94.1	94.1	94.1		12.3		13.6
Actuated g/C Ratio	0.83	0.83	0.83	0.83		0.11		0.12
v/c Ratio	0.40	0.26	0.06	0.44		0.30		0.24
Control Delay	9.6	3.5	4.0	4.6		25.1		21.8
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	9.6	3.5	4.0	4.6		25.1		21.8
LOS	A	A	A	A		C		C
Approach Delay		4.4		4.6		25.1		21.8
Approach LOS		A		A		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.44	
Intersection Signal Delay: 5.4	Intersection LOS: A
Intersection Capacity Utilization 64.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 40: Van Vliet Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	601	64	28	1068	45	18	0	35	13	0	33
Future Volume (veh/h)	109	601	64	28	1068	45	18	0	35	13	0	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	120	660	70	31	1174	49	20	0	38	14	0	36
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	366	2477	262	582	2656	111	76	16	90	66	16	99
Arrive On Green	0.79	0.79	0.79	0.79	0.79	0.79	0.09	0.00	0.09	0.09	0.00	0.09
Sat Flow, veh/h	438	3120	331	696	3345	140	341	183	997	249	179	1101
Grp Volume(v), veh/h	120	361	369	31	600	623	58	0	0	50	0	0
Grp Sat Flow(s),veh/h/ln	438	1710	1741	696	1710	1775	1521	0	0	1529	0	0
Q Serve(g_s), s	12.8	5.9	5.9	1.3	11.9	11.9	0.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	24.7	5.9	5.9	7.2	11.9	11.9	3.7	0.0	0.0	3.1	0.0	0.0
Prop In Lane	1.00		0.19	1.00		0.08	0.34		0.66	0.28		0.72
Lane Grp Cap(c), veh/h	366	1358	1382	582	1358	1409	182	0	0	180	0	0
V/C Ratio(X)	0.33	0.27	0.27	0.05	0.44	0.44	0.32	0.00	0.00	0.28	0.00	0.00
Avail Cap(c_a), veh/h	366	1358	1382	582	1358	1409	365	0	0	386	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.4	2.9	2.9	3.8	3.5	3.5	45.9	0.0	0.0	45.7	0.0	0.0
Incr Delay (d2), s/veh	2.4	0.5	0.5	0.2	1.0	1.0	1.0	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.2	1.3	0.2	2.5	2.6	1.4	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.8	3.4	3.3	4.0	4.5	4.5	46.9	0.0	0.0	46.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	A
Approach Vol, veh/h		850			1254			58			50	
Approach Delay, s/veh		4.3			4.5			46.9			46.5	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.8		91.0		15.8		91.0				
Change Period (Y+Rc), s		6.2		6.2		* 6.2		6.2				
Max Green Setting (Gmax), s		22.8		84.8		* 24		84.8				
Max Q Clear Time (g_c+I1), s		5.7		26.7		5.1		13.9				
Green Ext Time (p_c), s		0.2		6.9		0.2		9.8				

Intersection Summary												
HCM 6th Ctrl Delay			6.5									
HCM 6th LOS			A									

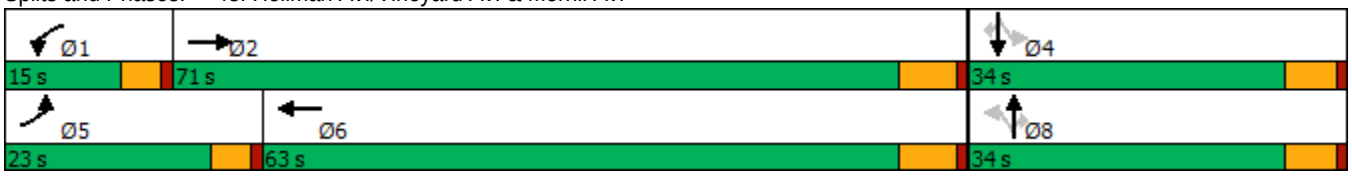
Notes

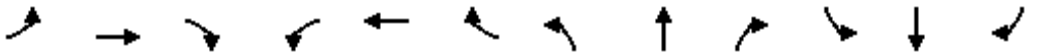
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	101	547	43	959	152	11	36	19	3	30
Future Volume (vph)	101	547	43	959	152	11	36	19	3	30
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	1	6		8			4	
Permitted Phases					8		8	4		4
Detector Phase	5	2	1	6	8	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	28.2	9.6	28.2	27.8	27.8	27.8	27.8	27.8	27.8
Total Split (s)	23.0	71.0	15.0	63.0	34.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	19.2%	59.2%	12.5%	52.5%	28.3%	28.3%	28.3%	28.3%	28.3%	28.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	5.8	5.8	5.8	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	Max	None	Max	None	None	None	None	None	None
Act Effct Green (s)	11.6	66.6	7.5	60.2	18.7	18.7	18.7	18.7	18.7	18.7
Actuated g/C Ratio	0.11	0.62	0.07	0.56	0.17	0.17	0.17	0.17	0.17	0.17
v/c Ratio	0.63	0.28	0.41	0.58	0.73	0.04	0.11	0.09	0.01	0.09
Control Delay	62.7	11.4	61.2	18.4	61.1	36.5	0.6	37.7	36.0	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.7	11.4	61.2	18.4	61.1	36.5	0.6	37.7	36.0	0.5
LOS	E	B	E	B	E	D	A	D	D	A
Approach Delay		19.4		20.1		48.7			16.0	
Approach LOS		B		C		D			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.3	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 22.6	Intersection LOS: C
Intersection Capacity Utilization 66.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 43: Hellman Av./Vineyard Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	547	1	43	959	64	152	11	36	19	3	30
Future Volume (veh/h)	101	547	1	43	959	64	152	11	36	19	3	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	109	588	1	46	1031	69	163	12	39	20	3	32
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	134	2277	4	58	1963	131	264	265	224	256	265	224
Arrive On Green	0.08	0.65	0.65	0.04	0.60	0.60	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1619	3503	6	1619	3253	218	1318	1800	1525	1299	1800	1525
Grp Volume(v), veh/h	109	287	302	46	542	558	163	12	39	20	3	32
Grp Sat Flow(s),veh/h/ln	1619	1710	1799	1619	1710	1761	1318	1800	1525	1299	1800	1525
Q Serve(g_s), s	6.6	7.0	7.0	2.8	18.3	18.3	12.0	0.6	2.2	1.3	0.1	1.8
Cycle Q Clear(g_c), s	6.6	7.0	7.0	2.8	18.3	18.3	12.2	0.6	2.2	1.9	0.1	1.8
Prop In Lane	1.00		0.00	1.00		0.12	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	134	1112	1170	58	1032	1063	264	265	224	256	265	224
V/C Ratio(X)	0.81	0.26	0.26	0.79	0.53	0.53	0.62	0.05	0.17	0.08	0.01	0.14
Avail Cap(c_a), veh/h	299	1112	1170	169	1032	1063	443	509	432	432	509	432
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	7.3	7.3	47.7	11.5	11.5	41.5	36.5	37.2	37.3	36.3	37.0
Incr Delay (d2), s/veh	4.5	0.6	0.5	8.4	1.9	1.9	2.3	0.1	0.4	0.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	2.2	2.3	1.2	6.3	6.4	3.9	0.2	0.8	0.4	0.1	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.4	7.9	7.9	56.0	13.4	13.3	43.8	36.6	37.6	37.4	36.3	37.3
LnGrp LOS	D	A	A	E	B	B	D	D	D	D	D	D
Approach Vol, veh/h		698			1146			214			55	
Approach Delay, s/veh		14.4			15.1			42.3			37.3	
Approach LOS		B			B			D			D	

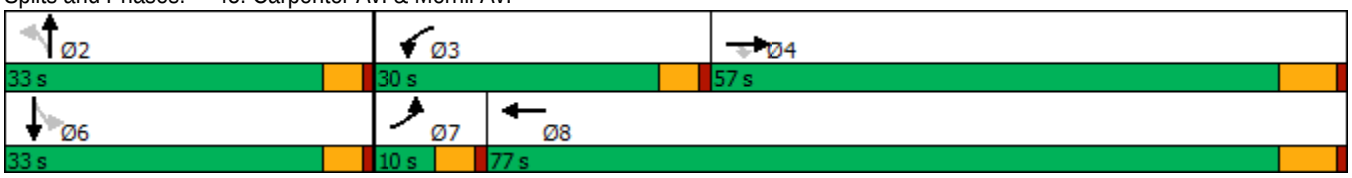
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	71.0		20.5	12.8	66.4		20.5				
Change Period (Y+Rc), s	4.6	6.2		5.8	4.6	6.2		5.8				
Max Green Setting (Gmax), s	10.4	64.8		28.2	18.4	56.8		28.2				
Max Q Clear Time (g_c+I1), s	4.8	9.0		3.9	8.6	20.3		14.2				
Green Ext Time (p_c), s	0.0	3.3		0.1	0.1	7.5		0.5				

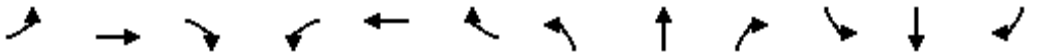
Intersection Summary												
HCM 6th Ctrl Delay			18.2									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	58	511	34	243	1018	23	0	139	0
Future Volume (vph)	58	511	34	243	1018	23	0	139	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	26.6	26.6
Total Split (s)	10.0	57.0	57.0	30.0	77.0	33.0	33.0	33.0	33.0
Total Split (%)	8.3%	47.5%	47.5%	25.0%	64.2%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2		4.6		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.4	56.9	56.9	19.6	71.0		15.1		15.1
Actuated g/C Ratio	0.05	0.53	0.53	0.18	0.66		0.14		0.14
v/c Ratio	0.72	0.57	0.04	0.83	0.99		0.49		0.85
Control Delay	93.6	22.3	0.1	64.2	42.9		14.8		50.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	93.6	22.3	0.1	64.2	42.9		14.8		50.9
LOS	F	C	A	E	D		B		D
Approach Delay		27.9			46.8		14.8		50.9
Approach LOS		C			D		B		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 39.9	Intersection LOS: D
Intersection Capacity Utilization 102.3%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 45: Carpenter Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	511	34	243	1018	81	23	0	132	139	0	25
Future Volume (veh/h)	58	511	34	243	1018	81	23	0	132	139	0	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	62	544	36	259	1083	86	24	0	140	148	0	27
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	79	913	774	287	1035	82	65	17	265	226	3	31
Arrive On Green	0.05	0.51	0.51	0.17	0.63	0.63	0.19	0.00	0.19	0.19	0.00	0.19
Sat Flow, veh/h	1714	1800	1525	1714	1646	131	151	90	1407	886	16	164
Grp Volume(v), veh/h	62	544	36	259	0	1169	164	0	0	175	0	0
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	0	1776	1648	0	0	1066	0	0
Q Serve(g_s), s	4.0	24.0	1.3	16.7	0.0	70.8	0.0	0.0	0.0	8.2	0.0	0.0
Cycle Q Clear(g_c), s	4.0	24.0	1.3	16.7	0.0	70.8	10.4	0.0	0.0	18.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.07	0.15		0.85	0.85		0.15
Lane Grp Cap(c), veh/h	79	913	774	287	0	1117	347	0	0	260	0	0
V/C Ratio(X)	0.79	0.60	0.05	0.90	0.00	1.05	0.47	0.00	0.00	0.67	0.00	0.00
Avail Cap(c_a), veh/h	82	913	774	387	0	1117	443	0	0	343	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	53.2	19.6	14.0	45.9	0.0	20.9	41.4	0.0	0.0	45.6	0.0	0.0
Incr Delay (d2), s/veh	34.3	2.9	0.1	16.4	0.0	39.8	1.0	0.0	0.0	3.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	9.8	0.5	8.1	0.0	35.9	4.3	0.0	0.0	5.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.5	22.5	14.1	62.3	0.0	60.7	42.4	0.0	0.0	48.9	0.0	0.0
LnGrp LOS	F	C	B	E	A	F	D	A	A	D	A	A
Approach Vol, veh/h		642			1428			164			175	
Approach Delay, s/veh		28.3			61.0			42.4			48.9	
Approach LOS		C			E			D			D	

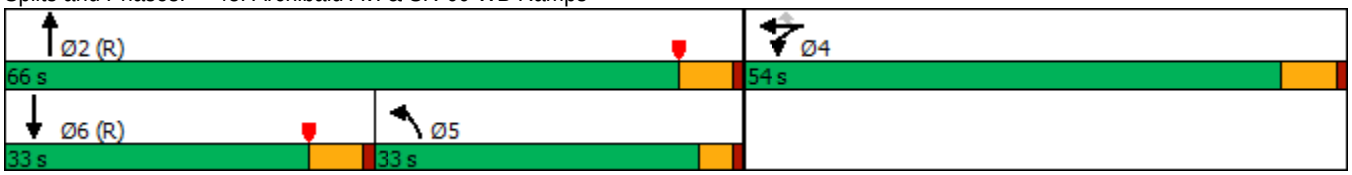
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.8	23.5	63.3		25.8	9.8	77.0				
Change Period (Y+Rc), s		4.6	4.6	6.2		4.6	4.6	6.2				
Max Green Setting (Gmax), s		28.4	25.4	50.8		28.4	5.4	70.8				
Max Q Clear Time (g_c+I1), s		12.4	18.7	26.0		20.6	6.0	72.8				
Green Ext Time (p_c), s		0.8	0.2	3.2		0.6	0.0	0.0				

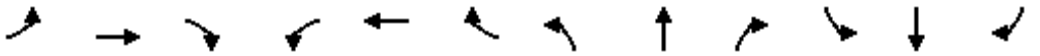
Intersection Summary												
HCM 6th Ctrl Delay			50.1									
HCM 6th LOS			D									

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	4	530	716	1136	445
Future Volume (vph)	4	530	716	1136	445
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	54.0	54.0	33.0	66.0	33.0
Total Split (%)	45.0%	45.0%	27.5%	55.0%	27.5%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	49.1	49.1	30.9	59.1	24.1
Actuated g/C Ratio	0.41	0.41	0.26	0.49	0.20
v/c Ratio	0.87	0.81	0.86	0.48	0.54
Control Delay	46.1	37.5	41.2	11.7	39.6
Queue Delay	0.0	0.0	1.2	0.5	0.0
Total Delay	46.1	37.5	42.4	12.2	39.6
LOS	D	D	D	B	D
Approach Delay	42.1			23.8	39.6
Approach LOS	D			C	D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 32.3	Intersection LOS: C
Intersection Capacity Utilization 78.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	588	4	530	716	1136	0	0	445	211
Future Volume (veh/h)	0	0	0	588	4	530	716	1136	0	0	445	211
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				639	4	393	778	1235	0	0	484	219
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				695	4	622	1035	2673	0	0	843	276
Arrive On Green				0.39	0.39	0.39	0.10	0.17	0.00	0.00	0.17	0.17
Sat Flow, veh/h				1799	11	1610	3510	5358	0	0	5168	1605
Grp Volume(v), veh/h				643	0	393	778	1235	0	0	484	219
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1729	0	0	1634	1605
Q Serve(g_s), s				40.6	0.0	23.8	25.9	25.7	0.0	0.0	10.9	15.7
Cycle Q Clear(g_c), s				40.6	0.0	23.8	25.9	25.7	0.0	0.0	10.9	15.7
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				699	0	622	1035	2673	0	0	843	276
V/C Ratio(X)				0.92	0.00	0.63	0.75	0.46	0.00	0.00	0.57	0.79
Avail Cap(c_a), veh/h				724	0	644	1035	2673	0	0	1111	364
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.42	0.42	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				35.0	0.0	29.9	49.9	34.8	0.0	0.0	45.6	47.6
Incr Delay (d2), s/veh				17.4	0.0	2.8	1.2	0.2	0.0	0.0	2.8	20.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				20.2	0.0	21.6	12.3	11.9	0.0	0.0	4.5	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				52.5	0.0	32.7	51.1	35.1	0.0	0.0	48.5	68.1
LnGrp LOS				D	A	C	D	D	A	A	D	E
Approach Vol, veh/h					1036			2013			703	
Approach Delay, s/veh					45.0			41.2			54.6	
Approach LOS					D			D			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	67.6	52.4	41.2	26.4
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	60.2	48.0	29.0	* 27
Max Q Clear Time (g_c+I1), s	27.7	42.6	27.9	17.7
Green Ext Time (p_c), s	9.8	3.8	0.3	3.0

Intersection Summary	
HCM 6th Ctrl Delay	44.8
HCM 6th LOS	D

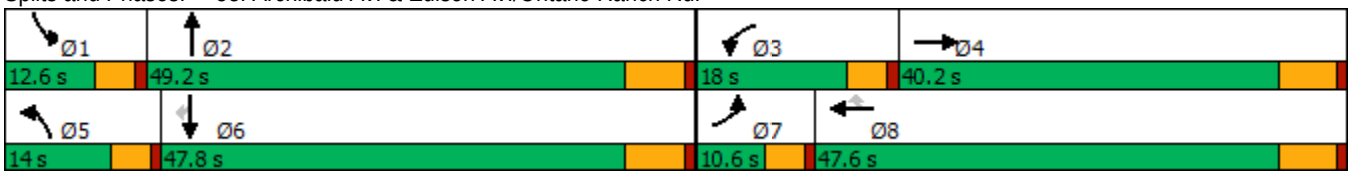
Notes

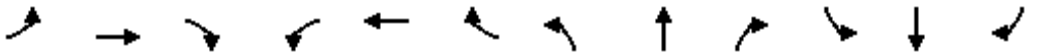
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	254	46	514	645	150	177	1128	456	70	568	162
Future Volume (vph)	43	254	46	514	645	150	177	1128	456	70	568	162
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	10.6	40.2		18.0	47.6	47.6	14.0	49.2		12.6	47.8	47.8
Total Split (%)	8.8%	33.5%		15.0%	39.7%	39.7%	11.7%	41.0%		10.5%	39.8%	39.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.8	18.6	99.3	13.9	31.5	31.5	9.7	39.5	99.3	7.5	34.4	34.4
Actuated g/C Ratio	0.06	0.19	1.00	0.14	0.32	0.32	0.10	0.40	1.00	0.08	0.35	0.35
v/c Ratio	0.26	0.41	0.03	1.29	0.61	0.26	1.15	0.86	0.31	0.59	0.50	0.27
Control Delay	54.4	38.0	0.0	183.2	33.9	5.8	162.2	36.3	0.5	69.7	27.3	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.4	38.0	0.0	183.2	33.9	5.8	162.2	36.3	0.5	69.7	27.3	6.2
LOS	D	D	A	F	C	A	F	D	A	E	C	A
Approach Delay		35.0			89.3			39.7			26.7	
Approach LOS		D			F			D			C	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 99.3		
Natural Cycle: 115		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 1.29		
Intersection Signal Delay: 52.3	Intersection LOS: D	
Intersection Capacity Utilization 81.2%	ICU Level of Service D	
Analysis Period (min) 15		

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	254	46	514	645	150	177	1128	456	70	568	162
Future Volume (veh/h)	43	254	46	514	645	150	177	1128	456	70	568	162
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	44	262	0	530	665	101	182	1163	0	72	586	134
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	111	470		455	868	387	175	1373		90	1193	532
Arrive On Green	0.04	0.14	0.00	0.15	0.25	0.25	0.11	0.40	0.00	0.06	0.35	0.35
Sat Flow, veh/h	2956	3420	1525	2956	3420	1525	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	44	262	0	530	665	101	182	1163	0	72	586	134
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1710	1525	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	1.3	6.2	0.0	13.4	15.7	4.6	9.4	26.8	0.0	3.8	11.7	5.5
Cycle Q Clear(g_c), s	1.3	6.2	0.0	13.4	15.7	4.6	9.4	26.8	0.0	3.8	11.7	5.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	111	470		455	868	387	175	1373		90	1193	532
V/C Ratio(X)	0.40	0.56		1.16	0.77	0.26	1.04	0.85		0.80	0.49	0.25
Avail Cap(c_a), veh/h	204	1336		455	1627	726	175	1678		149	1623	724
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	35.1	0.0	36.8	30.1	25.9	38.8	23.6	0.0	40.6	22.3	20.2
Incr Delay (d2), s/veh	0.8	1.0	0.0	95.5	1.4	0.4	79.1	3.6	0.0	6.2	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.5	0.0	10.5	6.1	1.6	7.3	9.9	0.0	1.6	4.2	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.7	36.1	0.0	132.3	31.5	26.3	117.9	27.2	0.0	46.8	22.6	20.5
LnGrp LOS	D	D		F	C	C	F	C		D	C	C
Approach Vol, veh/h		306	A		1296			1345	A		792	
Approach Delay, s/veh		36.9			72.3			39.5			24.4	
Approach LOS		D			E			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	41.4	18.0	18.2	14.0	36.9	7.9	28.3
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	8.0	42.7	13.4	34.0	9.4	41.3	6.0	41.4
Max Q Clear Time (g_c+I1), s	5.8	28.8	15.4	8.2	11.4	13.7	3.3	17.7
Green Ext Time (p_c), s	0.0	6.1	0.0	1.4	0.0	3.9	0.0	4.4

Intersection Summary	
HCM 6th Ctrl Delay	47.5
HCM 6th LOS	D

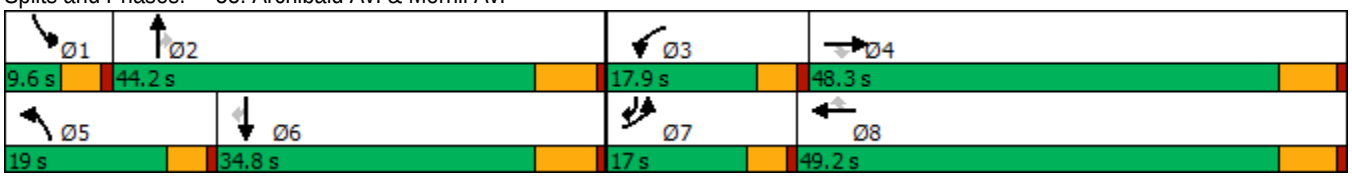
Notes

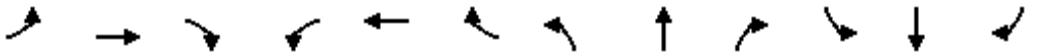
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	298	24	175	81	55	141	646	1314	41	43	590	482
Future Volume (vph)	298	24	175	81	55	141	646	1314	41	43	590	482
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	9.6
Total Split (s)	17.0	48.3	48.3	17.9	49.2	49.2	19.0	44.2	44.2	9.6	34.8	17.0
Total Split (%)	14.2%	40.3%	40.3%	14.9%	41.0%	41.0%	15.8%	36.8%	36.8%	8.0%	29.0%	14.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	None
Act Effct Green (s)	12.7	21.4	21.4	8.9	15.2	15.2	14.8	38.7	38.7	5.1	24.6	44.0
Actuated g/C Ratio	0.14	0.24	0.24	0.10	0.17	0.17	0.16	0.43	0.43	0.06	0.27	0.49
v/c Ratio	1.35	0.06	0.36	0.53	0.19	0.37	1.29	0.92	0.06	0.26	0.65	0.53
Control Delay	214.5	29.4	6.6	53.8	32.6	6.9	178.8	37.4	0.1	49.8	33.8	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	214.5	29.4	6.6	53.8	32.6	6.9	178.8	37.4	0.1	49.8	33.8	6.7
LOS	F	C	A	D	C	A	F	D	A	D	C	A
Approach Delay		132.4			25.8			82.3			22.7	
Approach LOS		F			C			F			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 89.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.35	
Intersection Signal Delay: 67.6	Intersection LOS: E
Intersection Capacity Utilization 82.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	298	24	175	81	55	141	646	1314	41	43	590	482
Future Volume (veh/h)	298	24	175	81	55	141	646	1314	41	43	590	482
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	307	25	125	84	57	50	666	1355	23	44	608	431
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	240	365	309	105	215	182	540	1481	660	113	1023	682
Arrive On Green	0.15	0.20	0.20	0.06	0.12	0.12	0.17	0.43	0.43	0.04	0.30	0.30
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	3141	3420	1525	2956	3420	1525
Grp Volume(v), veh/h	307	25	125	84	57	50	666	1355	23	44	608	431
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1570	1710	1525	1478	1710	1525
Q Serve(g_s), s	12.4	0.9	6.0	4.3	2.4	2.5	14.4	31.2	0.7	1.2	12.7	18.2
Cycle Q Clear(g_c), s	12.4	0.9	6.0	4.3	2.4	2.5	14.4	31.2	0.7	1.2	12.7	18.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	240	365	309	105	215	182	540	1481	660	113	1023	682
V/C Ratio(X)	1.28	0.07	0.40	0.80	0.27	0.27	1.23	0.92	0.03	0.39	0.59	0.63
Avail Cap(c_a), veh/h	240	905	767	257	924	783	540	1539	687	176	1156	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	27.0	29.0	38.6	33.5	33.6	34.7	22.3	13.7	39.3	25.0	17.8
Incr Delay (d2), s/veh	154.4	0.1	0.9	5.2	0.7	0.8	120.4	8.7	0.0	0.8	0.7	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.8	0.4	2.2	1.8	1.1	0.9	14.0	12.1	0.2	0.4	4.6	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	190.1	27.1	29.9	43.8	34.2	34.4	155.1	31.0	13.7	40.1	25.7	19.4
LnGrp LOS	F	C	C	D	C	C	F	C	B	D	C	B
Approach Vol, veh/h		457			191			2044			1083	
Approach Delay, s/veh		137.3			38.5			71.2			23.8	
Approach LOS		F			D			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	42.8	10.0	23.2	19.0	31.6	17.0	16.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	37.7	13.3	42.1	14.4	28.3	12.4	43.0
Max Q Clear Time (g_c+I1), s	3.2	33.2	6.3	8.0	16.4	20.2	14.4	4.5
Green Ext Time (p_c), s	0.0	3.1	0.0	0.5	0.0	3.2	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	64.0
HCM 6th LOS	E

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	356	1006	954	381	257	551
Future Volume (vph)	356	1006	954	381	257	551
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	16.0	67.7	36.3	16.0	83.7
Total Split (%)	30.3%	13.3%	56.4%	30.3%	13.3%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min
Act Effct Green (s)	26.5	37.8	62.5	94.3	11.0	78.8
Actuated g/C Ratio	0.23	0.33	0.54	0.82	0.10	0.68
v/c Ratio	0.90	1.03	0.97	0.30	0.78	0.43
Control Delay	68.4	66.5	48.6	3.1	68.1	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.4	66.5	48.6	3.1	68.1	10.1
LOS	E	E	D	A	E	B
Approach Delay	67.0		35.6			28.5
Approach LOS	E		D			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 46.2	Intersection LOS: D
Intersection Capacity Utilization 94.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	356	1006	954	381	257	551
Future Volume (veh/h)	356	1006	954	381	257	551
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1976	1976
Adj Flow Rate, veh/h	371	992	994	350	268	574
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	469	987	991	1257	325	1289
Arrive On Green	0.26	0.26	0.52	0.52	0.09	0.65
Sat Flow, veh/h	1810	2834	1900	1610	3651	1976
Grp Volume(v), veh/h	371	992	994	350	268	574
Grp Sat Flow(s),veh/h/ln	1810	1417	1900	1610	1825	1976
Q Serve(g_s), s	22.9	31.0	62.4	7.3	8.6	17.0
Cycle Q Clear(g_c), s	22.9	31.0	62.4	7.3	8.6	17.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	469	987	991	1257	325	1289
V/C Ratio(X)	0.79	1.01	1.00	0.28	0.82	0.45
Avail Cap(c_a), veh/h	469	987	991	1257	336	1300
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.3	39.0	28.6	3.7	53.6	10.2
Incr Delay (d2), s/veh	8.3	29.9	29.4	0.1	14.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.8	17.6	33.2	5.5	4.5	6.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	49.6	68.9	58.0	3.8	68.4	10.3
LnGrp LOS	D	F	F	A	E	B
Approach Vol, veh/h	1363		1344			842
Approach Delay, s/veh	63.7		43.9			28.8
Approach LOS	E		D			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	15.7	67.7			83.4	36.3
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	11.0	62.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	10.6	64.4			19.0	33.0
Green Ext Time (p_c), s	0.0	0.0			1.9	0.0

Intersection Summary	
HCM 6th Ctrl Delay	47.9
HCM 6th LOS	D

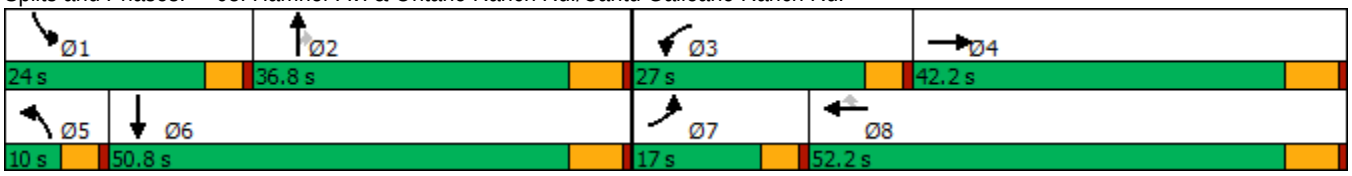
Notes

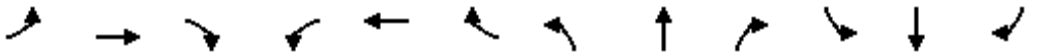
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	107	661	297	1097	220	186	763	545	167	228
Future Volume (vph)	107	661	297	1097	220	186	763	545	167	228
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.2	9.6	38.2	38.2	9.6	35.2	35.2	9.6	38.2
Total Split (s)	17.0	42.2	27.0	52.2	52.2	10.0	36.8	36.8	24.0	50.8
Total Split (%)	13.1%	32.5%	20.8%	40.2%	40.2%	7.7%	28.3%	28.3%	18.5%	39.1%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	9.5	30.0	17.0	37.5	37.5	6.1	32.1	32.1	12.0	37.9
Actuated g/C Ratio	0.09	0.28	0.16	0.35	0.35	0.06	0.30	0.30	0.11	0.35
v/c Ratio	0.46	0.43	0.70	0.66	0.36	1.22	0.54	0.88	0.56	0.20
Control Delay	54.8	31.8	52.5	31.6	4.7	184.8	34.5	32.4	53.9	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.8	31.8	52.5	31.6	4.7	184.8	34.5	32.4	53.9	19.0
LOS	D	C	D	C	A	F	C	C	D	B
Approach Delay		34.7		31.8			52.4			30.9
Approach LOS		C		C			D			C

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 107.3	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.22	
Intersection Signal Delay: 39.2	Intersection LOS: D
Intersection Capacity Utilization 63.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	661	89	297	1097	220	186	763	545	167	228	96
Future Volume (veh/h)	107	661	89	297	1097	220	186	763	545	167	228	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	122	751	101	338	1247	250	211	867	612	190	259	109
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	196	1672	220	423	1850	523	189	1828	516	272	1355	526
Arrive On Green	0.06	0.27	0.25	0.14	0.34	0.34	0.06	0.34	0.34	0.09	0.37	0.34
Sat Flow, veh/h	3048	6233	819	3048	5400	1525	3048	5400	1525	3048	3704	1436
Grp Volume(v), veh/h	122	648	204	338	1247	250	211	867	612	190	251	117
Grp Sat Flow(s),veh/h/ln	1524	1800	1652	1524	1800	1525	1524	1800	1525	1524	1800	1540
Q Serve(g_s), s	3.8	9.7	10.1	10.4	19.1	12.5	6.0	12.3	32.8	5.9	4.6	5.2
Cycle Q Clear(g_c), s	3.8	9.7	10.1	10.4	19.1	12.5	6.0	12.3	32.8	5.9	4.6	5.2
Prop In Lane	1.00		0.50	1.00		1.00	1.00		1.00	1.00		0.93
Lane Grp Cap(c), veh/h	196	1448	443	423	1850	523	189	1828	516	272	1317	563
V/C Ratio(X)	0.62	0.45	0.46	0.80	0.67	0.48	1.12	0.47	1.19	0.70	0.19	0.21
Avail Cap(c_a), veh/h	409	2129	652	724	2687	759	189	1828	516	629	1739	744
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.2	29.5	30.1	40.4	27.2	25.0	45.4	25.2	32.0	42.9	20.9	21.8
Incr Delay (d2), s/veh	1.2	0.2	0.7	1.3	0.4	0.7	100.7	0.2	101.6	1.2	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.9	3.8	3.8	7.6	4.3	4.8	4.9	25.5	2.1	1.8	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	29.7	30.8	41.7	27.7	25.7	146.2	25.4	133.6	44.1	21.0	22.0
LnGrp LOS	D	C	C	D	C	C	F	C	F	D	C	C
Approach Vol, veh/h		974			1835			1690			558	
Approach Delay, s/veh		31.9			30.0			79.7			29.1	
Approach LOS		C			C			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	36.8	17.5	30.0	10.0	39.4	10.2	37.2
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	19.4	30.6	22.4	36.0	5.4	44.6	12.4	46.0
Max Q Clear Time (g_c+I1), s	7.9	34.8	12.4	12.1	8.0	7.2	5.8	21.1
Green Ext Time (p_c), s	0.2	0.0	0.4	5.1	0.0	2.2	0.1	9.9

Intersection Summary			
HCM 6th Ctrl Delay		46.9	
HCM 6th LOS		D	

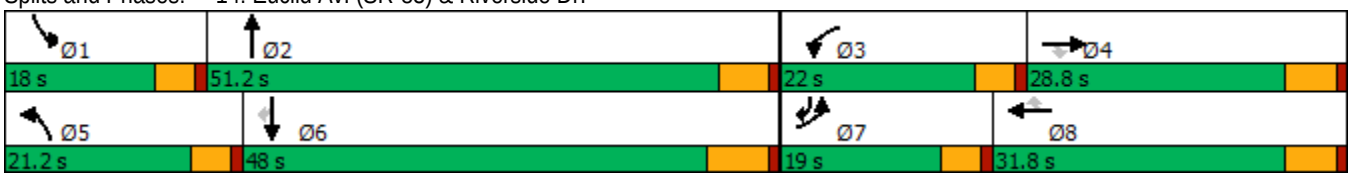
Notes

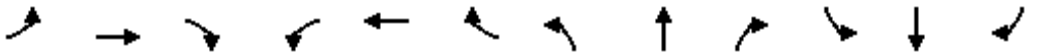
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	163	496	96	203	443	69	108	1437	150	1163	208
Future Volume (vph)	163	496	96	203	443	69	108	1437	150	1163	208
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2	1	6	7
Permitted Phases			4			8					6
Detector Phase	7	4	4	3	8	8	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	9.6	34.5	9.6
Total Split (s)	19.0	28.8	28.8	22.0	31.8	31.8	21.2	51.2	18.0	48.0	19.0
Total Split (%)	15.8%	24.0%	24.0%	18.3%	26.5%	26.5%	17.7%	42.7%	15.0%	40.0%	15.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	Max	None
Act Effct Green (s)	13.9	21.2	21.2	16.8	24.1	24.1	12.2	45.9	12.9	45.4	61.2
Actuated g/C Ratio	0.12	0.18	0.18	0.14	0.21	0.21	0.10	0.39	0.11	0.39	0.52
v/c Ratio	0.89	0.84	0.27	0.91	0.65	0.18	0.67	0.93	0.88	0.64	0.25
Control Delay	94.0	59.3	7.4	90.8	47.7	2.8	70.2	44.1	94.8	32.0	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.0	59.3	7.4	90.8	47.7	2.8	70.2	44.1	94.8	32.0	4.2
LOS	F	E	A	F	D	A	E	D	F	C	A
Approach Delay		60.2			55.6			45.7		34.4	
Approach LOS		E			E			D		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.2	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 45.9	Intersection LOS: D
Intersection Capacity Utilization 88.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	496	96	203	443	69	108	1437	263	150	1163	208
Future Volume (veh/h)	163	496	96	203	443	69	108	1437	263	150	1163	208
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	170	517	75	211	461	56	112	1497	220	156	1211	126
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	194	595	265	235	681	303	135	1678	246	180	2042	809
Arrive On Green	0.12	0.17	0.17	0.14	0.20	0.20	0.08	0.39	0.39	0.11	0.42	0.42
Sat Flow, veh/h	1619	3420	1525	1619	3420	1523	1619	4327	635	1619	4914	1506
Grp Volume(v), veh/h	170	517	75	211	461	56	112	1133	584	156	1211	126
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1523	1619	1638	1686	1619	1638	1506
Q Serve(g_s), s	12.2	17.4	5.0	15.1	14.7	3.6	8.0	38.2	38.3	11.2	22.6	5.0
Cycle Q Clear(g_c), s	12.2	17.4	5.0	15.1	14.7	3.6	8.0	38.2	38.3	11.2	22.6	5.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	194	595	265	235	681	303	135	1271	654	180	2042	809
V/C Ratio(X)	0.88	0.87	0.28	0.90	0.68	0.18	0.83	0.89	0.89	0.87	0.59	0.16
Avail Cap(c_a), veh/h	197	666	297	239	753	335	228	1271	654	184	2042	809
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	47.5	42.4	49.6	43.8	39.3	53.3	33.8	33.8	51.6	26.8	13.9
Incr Delay (d2), s/veh	31.3	11.0	0.6	31.6	2.1	0.3	4.9	9.7	17.0	31.1	1.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	8.1	1.9	8.0	6.2	1.3	3.3	15.6	17.4	6.0	8.7	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.4	58.5	42.9	81.3	45.9	39.6	58.2	43.5	50.9	82.7	28.0	14.3
LnGrp LOS	F	E	D	F	D	D	E	D	D	F	C	B
Approach Vol, veh/h		762			728			1829			1493	
Approach Delay, s/veh		62.3			55.7			46.8			32.6	
Approach LOS		E			E			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.7	52.3	21.7	26.3	14.4	55.6	18.7	29.3
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	13.4	* 46	17.4	23.0	16.6	41.5	14.4	26.0
Max Q Clear Time (g_c+I1), s	13.2	40.3	17.1	19.4	10.0	24.6	14.2	16.7
Green Ext Time (p_c), s	0.0	4.1	0.0	1.2	0.1	8.0	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	46.2
HCM 6th LOS	D

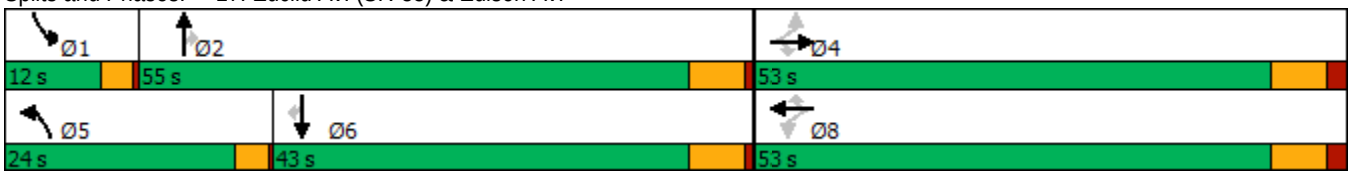
Notes

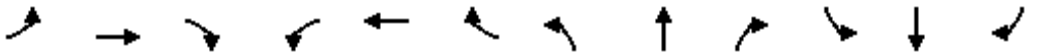
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	298	533	366	47	314	45	278	1585	81	95	1438	197
Future Volume (vph)	298	533	366	47	314	45	278	1585	81	95	1438	197
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	53.0	53.0	53.0	53.0	53.0	53.0	24.0	55.0	55.0	12.0	43.0	43.0
Total Split (%)	44.2%	44.2%	44.2%	44.2%	44.2%	44.2%	20.0%	45.8%	45.8%	10.0%	35.8%	35.8%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	46.0	46.0	46.0	46.0	46.0	46.0	20.5	49.0	49.0	8.5	37.0	37.0
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.17	0.41	0.41	0.07	0.31	0.31
v/c Ratio	1.09	0.81	0.48	0.40	0.48	0.07	1.07	0.83	0.13	0.88	1.00	0.36
Control Delay	115.6	44.1	6.3	38.7	30.9	0.6	120.2	36.3	7.8	111.8	64.6	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	115.6	44.1	6.3	38.7	30.9	0.6	120.2	36.3	7.8	111.8	64.6	12.2
LOS	F	D	A	D	C	A	F	D	A	F	E	B
Approach Delay		50.4			28.4			47.2			61.3	
Approach LOS		D			C			D			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 51.1	Intersection LOS: D
Intersection Capacity Utilization 102.4%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	298	533	366	47	314	45	278	1585	81	95	1438	197
Future Volume (veh/h)	298	533	366	47	314	45	278	1585	81	95	1438	197
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	314	561	303	49	331	41	293	1668	77	100	1514	175
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	297	690	585	124	690	577	277	2007	621	115	1515	470
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.17	0.41	0.41	0.07	0.31	0.31
Sat Flow, veh/h	969	1800	1525	614	1800	1506	1619	4914	1522	1619	4914	1525
Grp Volume(v), veh/h	314	561	303	49	331	41	293	1668	77	100	1514	175
Grp Sat Flow(s),veh/h/ln	969	1800	1525	614	1800	1506	1619	1638	1522	1619	1638	1525
Q Serve(g_s), s	29.3	33.5	18.3	9.3	16.7	2.1	20.5	36.5	3.8	7.3	37.0	10.8
Cycle Q Clear(g_c), s	46.0	33.5	18.3	42.8	16.7	2.1	20.5	36.5	3.8	7.3	37.0	10.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	297	690	585	124	690	577	277	2007	621	115	1515	470
V/C Ratio(X)	1.06	0.81	0.52	0.40	0.48	0.07	1.06	0.83	0.12	0.87	1.00	0.37
Avail Cap(c_a), veh/h	297	690	585	124	690	577	277	2007	621	115	1515	470
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.3	33.1	28.5	52.3	28.0	23.5	49.7	31.8	22.1	55.2	41.5	32.4
Incr Delay (d2), s/veh	68.2	7.4	0.8	2.0	0.5	0.1	70.6	3.1	0.1	45.6	22.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.5	15.3	6.6	1.5	7.0	0.7	13.3	13.8	1.3	4.3	17.1	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	116.5	40.5	29.3	54.4	28.5	23.5	120.4	34.9	22.2	100.8	64.4	32.9
LnGrp LOS	F	D	C	D	C	C	F	C	C	F	E	C
Approach Vol, veh/h		1178			421			2038			1789	
Approach Delay, s/veh		57.9			31.0			46.7			63.4	
Approach LOS		E			C			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	55.0		53.0	24.0	43.0		53.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	8.5	49.0		46.0	20.5	37.0		46.0				
Max Q Clear Time (g_c+I1), s	9.3	38.5		48.0	22.5	39.0		44.8				
Green Ext Time (p_c), s	0.0	7.1		0.0	0.0	0.0		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		53.4
HCM 6th LOS		D

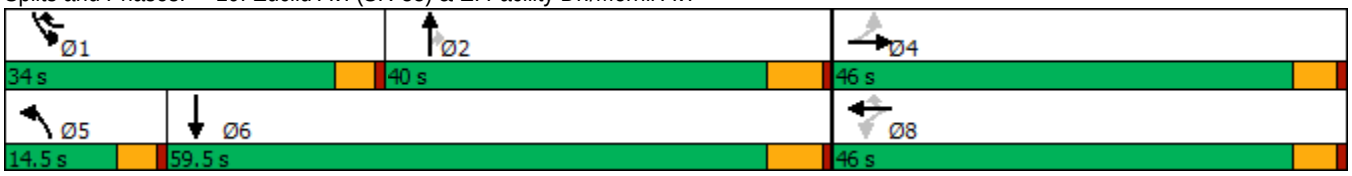
Notes

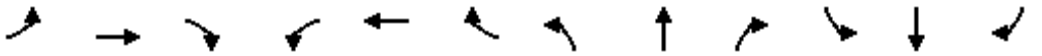
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	12	33	379	2	515	5	1388	320	408	1419
Future Volume (vph)	12	33	379	2	515	5	1388	320	408	1419
Turn Type	Perm	NA	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	1	5	2		1	6
Permitted Phases	4		8		8			2		
Detector Phase	4	4	8	8	1	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	34.0	14.5	40.0	40.0	34.0	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	28.3%	12.1%	33.3%	33.3%	28.3%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	4.5	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		23.5	23.5	23.5	58.3	10.1	34.3	34.3	29.7	66.0
Actuated g/C Ratio		0.23	0.23	0.23	0.57	0.10	0.33	0.33	0.29	0.64
v/c Ratio		0.17	0.74	0.74	0.65	0.03	0.93	0.60	0.96	0.50
Control Delay		25.6	52.8	52.4	18.2	47.6	45.9	25.3	71.9	13.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		25.6	52.8	52.4	18.2	47.6	45.9	25.3	71.9	13.0
LOS		C	D	D	B	D	D	C	E	B
Approach Delay		25.6		32.8			42.1			26.2
Approach LOS		C		C			D			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 33.6	Intersection LOS: C
Intersection Capacity Utilization 84.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	33	14	379	2	515	5	1388	320	408	1419	1
Future Volume (veh/h)	12	33	14	379	2	515	5	1388	320	408	1419	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	13	36	14	417	0	556	5	1525	287	448	1559	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	104	271	96	896	0	845	21	1505	467	430	2748	0
Arrive On Green	0.29	0.29	0.29	0.29	0.00	0.29	0.01	0.31	0.31	0.27	0.56	0.00
Sat Flow, veh/h	225	939	333	2600	0	1525	1619	4914	1525	1619	5076	0
Grp Volume(v), veh/h	63	0	0	417	0	556	5	1525	287	448	1559	0
Grp Sat Flow(s),veh/h/ln	1497	0	0	1300	0	1525	1619	1638	1525	1619	1638	0
Q Serve(g_s), s	0.0	0.0	0.0	11.2	0.0	28.4	0.3	34.0	17.8	29.5	22.7	0.0
Cycle Q Clear(g_c), s	3.0	0.0	0.0	14.2	0.0	28.4	0.3	34.0	17.8	29.5	22.7	0.0
Prop In Lane	0.21		0.22	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	471	0	0	896	0	845	21	1505	467	430	2748	0
V/C Ratio(X)	0.13	0.00	0.00	0.47	0.00	0.66	0.24	1.01	0.61	1.04	0.57	0.00
Avail Cap(c_a), veh/h	586	0	0	1107	0	969	146	1505	467	430	2748	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.2	0.0	0.0	32.9	0.0	17.4	54.3	38.5	32.9	40.8	15.8	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	0.9	2.2	26.5	2.4	54.5	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	4.5	0.0	8.9	0.1	16.3	6.5	17.4	7.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	0.0	0.0	33.1	0.0	18.2	56.4	65.0	35.3	95.3	16.1	0.0
LnGrp LOS	C	A	A	C	A	B	E	F	D	F	B	A
Approach Vol, veh/h		63			973			1817			2007	
Approach Delay, s/veh		29.2			24.6			60.3			33.7	
Approach LOS		C			C			E			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	34.0	40.0		37.0	5.9	68.1		37.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	29.5	34.0		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	31.5	36.0		5.0	2.3	24.7		30.4				
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	12.0		1.6				

Intersection Summary			
HCM 6th Ctrl Delay		41.8	
HCM 6th LOS		D	

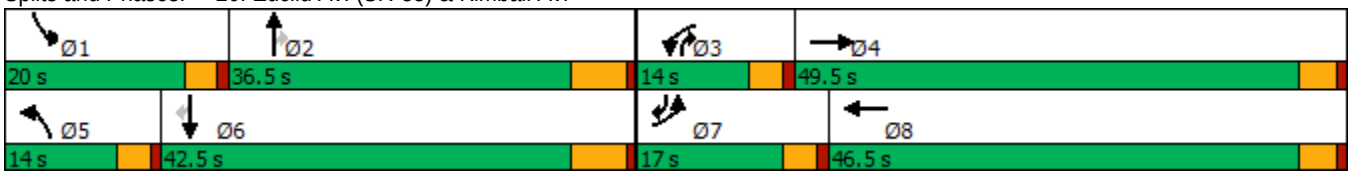
Notes

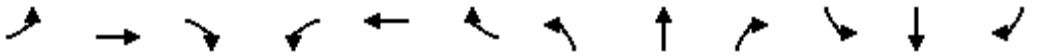
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	393	866	91	383	84	1073	52	480	1083	266
Future Volume (vph)	393	866	91	383	84	1073	52	480	1083	266
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	17.0	49.5	14.0	46.5	14.0	36.5	14.0	20.0	42.5	17.0
Total Split (%)	14.2%	41.3%	11.7%	38.8%	11.7%	30.4%	11.7%	16.7%	35.4%	14.2%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	13.1	38.1	10.1	35.1	10.1	29.3	45.3	16.1	35.3	50.4
Actuated g/C Ratio	0.12	0.34	0.09	0.31	0.09	0.26	0.40	0.14	0.31	0.45
v/c Ratio	1.18	0.84	0.65	0.55	0.60	0.86	0.08	1.17	0.72	0.33
Control Delay	150.9	41.6	73.1	29.4	69.6	48.1	1.9	142.6	37.8	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	150.9	41.6	73.1	29.4	69.6	48.1	1.9	142.6	37.8	4.1
LOS	F	D	E	C	E	D	A	F	D	A
Approach Delay		73.7		35.5		47.6			60.4	
Approach LOS		E		D		D			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.1	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 57.6	Intersection LOS: E
Intersection Capacity Utilization 90.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	393	866	78	91	383	186	84	1073	52	480	1083	266
Future Volume (veh/h)	393	866	78	91	383	186	84	1073	52	480	1083	266
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	405	893	77	94	395	154	87	1106	39	495	1116	176
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	359	1046	90	142	711	274	140	1288	533	441	1597	680
Arrive On Green	0.12	0.33	0.33	0.09	0.29	0.29	0.09	0.26	0.26	0.15	0.33	0.33
Sat Flow, veh/h	2956	3186	275	1619	2414	929	1619	4914	1525	2956	4914	1524
Grp Volume(v), veh/h	405	479	491	94	278	271	87	1106	39	495	1116	176
Grp Sat Flow(s),veh/h/ln	1478	1710	1750	1619	1710	1633	1619	1638	1525	1478	1638	1524
Q Serve(g_s), s	13.0	28.0	28.0	6.0	14.7	15.0	5.6	23.0	1.8	16.0	21.3	7.7
Cycle Q Clear(g_c), s	13.0	28.0	28.0	6.0	14.7	15.0	5.6	23.0	1.8	16.0	21.3	7.7
Prop In Lane	1.00		0.16	1.00		0.57	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	359	562	575	142	504	481	140	1288	533	441	1597	680
V/C Ratio(X)	1.13	0.85	0.85	0.66	0.55	0.56	0.62	0.86	0.07	1.12	0.70	0.26
Avail Cap(c_a), veh/h	359	718	735	151	670	640	151	1399	568	441	1674	704
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	33.6	33.6	47.3	31.8	31.9	47.3	37.7	23.3	45.6	31.6	18.6
Incr Delay (d2), s/veh	87.4	8.0	7.8	7.2	0.4	0.4	4.5	5.3	0.1	80.3	1.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	12.2	12.4	2.6	5.8	5.7	2.3	9.2	0.6	10.4	7.9	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	134.5	41.6	41.4	54.6	32.2	32.3	51.8	42.9	23.3	125.9	32.8	18.8
LnGrp LOS	F	D	D	D	C	C	D	D	C	F	C	B
Approach Vol, veh/h		1375			643			1232			1787	
Approach Delay, s/veh		68.9			35.5			42.9			57.2	
Approach LOS		E			D			D			E	

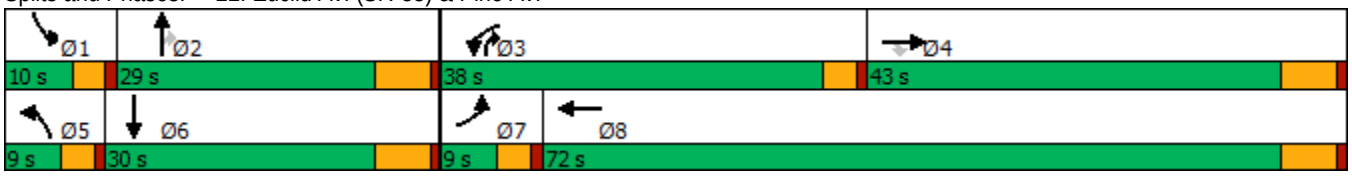
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	34.1	13.4	39.7	13.2	40.8	17.0	36.1
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	16.0	30.5	10.0	45.0	10.0	36.5	13.0	42.0
Max Q Clear Time (g_c+I1), s	18.0	25.0	8.0	30.0	7.6	23.3	15.0	17.0
Green Ext Time (p_c), s	0.0	3.1	0.0	5.0	0.0	6.1	0.0	1.9

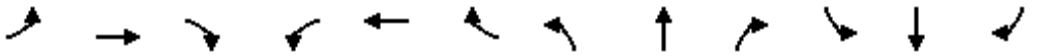
Intersection Summary	
HCM 6th Ctrl Delay	54.1
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	6	494	108	629	79	63	854	1267	148	1008
Future Volume (vph)	6	494	108	629	79	63	854	1267	148	1008
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	38.0	72.0	9.0	29.0	38.0	10.0	30.0
Total Split (%)	7.5%	35.8%	35.8%	31.7%	60.0%	7.5%	24.2%	31.7%	8.3%	25.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.1	23.3	23.3	26.7	52.5	5.1	23.4	56.2	6.1	24.4
Actuated g/C Ratio	0.05	0.23	0.23	0.27	0.53	0.05	0.23	0.56	0.06	0.24
v/c Ratio	0.07	0.63	0.24	0.81	0.17	0.78	0.76	0.81	1.54	0.86
Control Delay	53.8	38.3	4.2	44.1	7.6	104.0	42.4	20.4	321.9	46.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.8	38.3	4.2	44.1	7.6	104.0	42.4	20.4	321.9	46.3
LOS	D	D	A	D	A	F	D	C	F	D
Approach Delay		32.4			36.9		31.4			81.4
Approach LOS		C			D		C			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99.8	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.54	
Intersection Signal Delay: 44.7	Intersection LOS: D
Intersection Capacity Utilization 82.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	494	108	629	79	74	63	854	1267	148	1008	5
Future Volume (veh/h)	6	494	108	629	79	74	63	854	1267	148	1008	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	6	504	0	642	81	74	64	871	876	151	1029	5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	13	709		721	384	351	79	1266	1347	109	1392	7
Arrive On Green	0.01	0.21	0.00	0.24	0.44	0.44	0.05	0.26	0.26	0.07	0.28	0.28
Sat Flow, veh/h	1619	3420	1525	2956	866	791	1619	4914	2685	1619	5047	25
Grp Volume(v), veh/h	6	504	0	642	0	155	64	871	876	151	668	366
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1478	0	1658	1619	1638	1342	1619	1638	1796
Q Serve(g_s), s	0.3	12.2	0.0	18.7	0.0	5.1	3.5	14.3	21.6	6.0	16.6	16.6
Cycle Q Clear(g_c), s	0.3	12.2	0.0	18.7	0.0	5.1	3.5	14.3	21.6	6.0	16.6	16.6
Prop In Lane	1.00		1.00	1.00		0.48	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	13	709		721	0	735	79	1266	1347	109	904	495
V/C Ratio(X)	0.48	0.71		0.89	0.00	0.21	0.81	0.69	0.65	1.39	0.74	0.74
Avail Cap(c_a), veh/h	91	1417		1126	0	1225	91	1266	1347	109	904	495
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	32.9	0.0	32.6	0.0	15.3	42.0	29.9	16.5	41.6	29.4	29.4
Incr Delay (d2), s/veh	10.1	1.9	0.0	3.9	0.0	0.2	31.9	1.3	0.9	221.3	2.9	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.9	0.0	6.5	0.0	1.8	2.0	5.2	5.7	8.9	6.2	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.3	34.8	0.0	36.5	0.0	15.5	74.0	31.2	17.3	262.9	32.3	34.5
LnGrp LOS	D	C		D	A	B	E	C	B	F	C	C
Approach Vol, veh/h		510	A		797			1811			1185	
Approach Delay, s/veh		35.0			32.4			26.0			62.4	
Approach LOS		D			C			C			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	29.0	25.8	24.5	8.4	30.6	4.7	45.6
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	6.0	23.0	34.0	37.0	5.0	24.0	5.0	66.0
Max Q Clear Time (g_c+I1), s	8.0	23.6	20.7	14.2	5.5	18.6	2.3	7.1
Green Ext Time (p_c), s	0.0	0.0	1.1	4.3	0.0	2.0	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	38.3
HCM 6th LOS	D

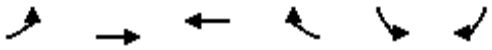
Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	99	867	842	66
Future Volume (vph)	99	867	842	66
Turn Type	Perm	NA	NA	Prot
Protected Phases		4	8	6
Permitted Phases	4			
Detector Phase	4	4	8	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	16.2	16.2	23.2	32.8
Total Split (s)	86.0	86.0	86.0	34.0
Total Split (%)	71.7%	71.7%	71.7%	28.3%
Yellow Time (s)	5.2	5.2	5.2	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0
Total Lost Time (s)		6.2	6.2	5.8
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	Min
Act Effct Green (s)		80.0	80.0	14.4
Actuated g/C Ratio		0.75	0.75	0.14
v/c Ratio		0.94	0.37	0.58
Control Delay		31.1	5.6	38.7
Queue Delay		0.0	0.0	0.0
Total Delay		31.1	5.6	38.7
LOS		C	A	D
Approach Delay		31.1	5.6	38.7
Approach LOS		C	A	D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 106.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 20.3	Intersection LOS: C
Intersection Capacity Utilization 103.8%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 25: Merrill Av. & Bon View Av.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	99	867	842	45	66	74
Future Volume (veh/h)	99	867	842	45	66	74
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	105	922	896	48	70	79
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	139	1020	2344	126	99	112
Arrive On Green	0.71	0.71	0.71	0.71	0.13	0.13
Sat Flow, veh/h	122	1437	3391	177	751	848
Grp Volume(v), veh/h	1027	0	464	480	150	0
Grp Sat Flow(s),veh/h/ln	1559	0	1710	1768	1610	0
Q Serve(g_s), s	29.9	0.0	8.2	8.2	6.8	0.0
Cycle Q Clear(g_c), s	41.0	0.0	8.2	8.2	6.8	0.0
Prop In Lane	0.10			0.10	0.47	0.53
Lane Grp Cap(c), veh/h	1159	0	1214	1255	212	0
V/C Ratio(X)	0.89	0.00	0.38	0.38	0.71	0.00
Avail Cap(c_a), veh/h	1671	0	1799	1860	598	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.5	0.0	4.4	4.4	31.5	0.0
Incr Delay (d2), s/veh	4.4	0.0	0.2	0.2	4.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	0.0	1.5	1.6	2.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.9	0.0	4.6	4.6	35.8	0.0
LnGrp LOS	B	A	A	A	D	A
Approach Vol, veh/h		1027	944		150	
Approach Delay, s/veh		12.9	4.6		35.8	
Approach LOS		B	A		D	

Timer - Assigned Phs		4		6	8
Phs Duration (G+Y+Rc), s		60.1		15.8	60.1
Change Period (Y+Rc), s		6.2		5.8	6.2
Max Green Setting (Gmax), s		79.8		28.2	79.8
Max Q Clear Time (g_c+I1), s		43.0		8.8	10.2
Green Ext Time (p_c), s		10.9		0.4	6.2

Intersection Summary	
HCM 6th Ctrl Delay	10.8
HCM 6th LOS	B

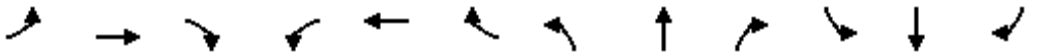
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	457	0	370	756	470	932
Future Volume (vph)	457	0	370	756	470	932
Turn Type	Split	NA	Perm	NA	Prot	NA
Protected Phases	4	4		2	1	6
Permitted Phases			4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	30.8	26.8	9.6	22.8
Total Split (s)	31.0	31.0	31.0	50.0	39.0	89.0
Total Split (%)	25.8%	25.8%	25.8%	41.7%	32.5%	74.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.6	5.8
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	22.6	22.6	22.6	46.3	35.0	85.8
Actuated g/C Ratio	0.19	0.19	0.19	0.39	0.29	0.72
v/c Ratio	0.76	0.76	0.91	0.88	0.96	0.39
Control Delay	61.4	61.7	54.1	41.5	86.3	5.8
Queue Delay	0.0	0.0	0.0	0.0	17.6	0.2
Total Delay	61.4	61.7	54.1	41.5	104.0	5.9
LOS	E	E	D	D	F	A
Approach Delay		58.2		41.5		38.8
Approach LOS		E		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 44.5	Intersection LOS: D
Intersection Capacity Utilization 89.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	457	0	370	0	0	0	0	756	353	470	932	0
Future Volume (veh/h)	457	0	370	0	0	0	0	756	353	470	932	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	491	0	311				0	813	297	505	1002	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	752	0	334				0	952	347	518	2511	0
Arrive On Green	0.21	0.00	0.21				0.00	0.37	0.37	0.57	1.00	0.00
Sat Flow, veh/h	3619	0	1610				0	2664	937	1810	3705	0
Grp Volume(v), veh/h	491	0	311				0	571	539	505	1002	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1701	1810	1805	0
Q Serve(g_s), s	14.9	0.0	22.8				0.0	34.9	35.0	32.4	0.0	0.0
Cycle Q Clear(g_c), s	14.9	0.0	22.8				0.0	34.9	35.0	32.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.55	1.00		0.00
Lane Grp Cap(c), veh/h	752	0	334				0	669	631	518	2511	0
V/C Ratio(X)	0.65	0.00	0.93				0.00	0.85	0.85	0.97	0.40	0.00
Avail Cap(c_a), veh/h	760	0	338				0	669	631	519	2511	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.69	0.69	0.70	0.70	0.00
Uniform Delay (d), s/veh	43.6	0.0	46.7				0.0	34.7	34.8	25.2	0.0	0.0
Incr Delay (d2), s/veh	2.0	0.0	31.3				0.0	9.4	10.0	26.6	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	0.0	11.7				0.0	16.3	15.5	12.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.6	0.0	78.0				0.0	44.2	44.8	51.8	0.3	0.0
LnGrp LOS	D	A	E				A	D	D	D	A	A
Approach Vol, veh/h		802						1110			1507	
Approach Delay, s/veh		58.1						44.5			17.6	
Approach LOS		E						D			B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	39.0	50.3		30.7		89.3						
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8						
Max Green Setting (Gmax), s	34.4	44.2		25.2		83.2						
Max Q Clear Time (g_c+I1), s	34.4	37.0		24.8		2.0						
Green Ext Time (p_c), s	0.0	3.8		0.2		8.2						

Intersection Summary			
HCM 6th Ctrl Delay			35.8
HCM 6th LOS			D

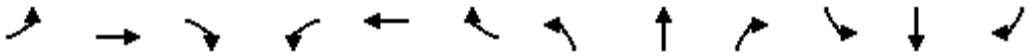
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	83	198	10	43	39	513	39	405
Future Volume (vph)	83	198	10	43	39	513	39	405
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Total Split (s)	38.0	38.0	38.0	38.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	31.7%	31.7%	68.3%	68.3%	68.3%	68.3%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		27.1		27.1		76.0		76.0
Actuated g/C Ratio		0.23		0.23		0.66		0.66
v/c Ratio		0.87		0.25		0.54		0.45
Control Delay		65.2		25.3		13.4		11.9
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		65.2		25.3		13.4		11.9
LOS		E		C		B		B
Approach Delay		65.2		25.3		13.4		11.9
Approach LOS		E		C		B		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.5	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 24.7	Intersection LOS: C
Intersection Capacity Utilization 74.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 30: Grove Av. & Chino Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	198	28	10	43	42	39	513	21	39	405	24
Future Volume (veh/h)	83	198	28	10	43	42	39	513	21	39	405	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	86	206	29	10	45	44	41	534	22	41	422	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	124	241	32	52	181	158	86	1066	43	102	1006	58
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.67	0.67	0.67	0.67	0.67	0.67
Sat Flow, veh/h	387	1118	149	77	839	733	77	1580	63	99	1492	86
Grp Volume(v), veh/h	321	0	0	99	0	0	597	0	0	488	0	0
Grp Sat Flow(s),veh/h/ln	1654	0	0	1649	0	0	1721	0	0	1677	0	0
Q Serve(g_s), s	15.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	21.2	0.0	0.0	5.6	0.0	0.0	18.3	0.0	0.0	13.8	0.0	0.0
Prop In Lane	0.27		0.09	0.10		0.44	0.07		0.04	0.08		0.05
Lane Grp Cap(c), veh/h	397	0	0	390	0	0	1195	0	0	1166	0	0
V/C Ratio(X)	0.81	0.00	0.00	0.25	0.00	0.00	0.50	0.00	0.00	0.42	0.00	0.00
Avail Cap(c_a), veh/h	506	0	0	497	0	0	1195	0	0	1166	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.7	0.0	0.0	36.8	0.0	0.0	8.9	0.0	0.0	8.2	0.0	0.0
Incr Delay (d2), s/veh	7.5	0.0	0.0	0.3	0.0	0.0	1.5	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	0.0	0.0	2.2	0.0	0.0	6.2	0.0	0.0	4.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.2	0.0	0.0	37.1	0.0	0.0	10.4	0.0	0.0	9.3	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	B	A	A	A	A	A
Approach Vol, veh/h		321			99			597			488	
Approach Delay, s/veh		50.2			37.1			10.4			9.3	
Approach LOS		D			D			B			A	

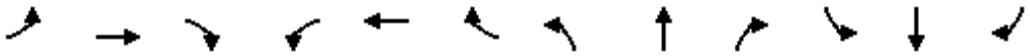
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		82.0		30.4		82.0		30.4				
Change Period (Y+Rc), s		6.2		6.2		6.2		6.2				
Max Green Setting (Gmax), s		75.8		31.8		75.8		31.8				
Max Q Clear Time (g_c+I1), s		20.3		23.2		15.8		7.6				
Green Ext Time (p_c), s		4.0		1.1		3.2		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			20.3									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	108	155	2	50	28	444	58	307
Future Volume (vph)	108	155	2	50	28	444	58	307
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	41.0	41.0	41.0	41.0	79.0	79.0	79.0	79.0
Total Split (%)	34.2%	34.2%	34.2%	34.2%	65.8%	65.8%	65.8%	65.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.8		5.8		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		32.1		32.1		72.9		72.9
Actuated g/C Ratio		0.27		0.27		0.62		0.62
v/c Ratio		0.92		0.21		0.51		0.47
Control Delay		67.3		22.8		14.7		14.0
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		67.3		22.8		14.7		14.0
LOS		E		C		B		B
Approach Delay		67.3		22.8		14.7		14.0
Approach LOS		E		C		B		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 28.8	Intersection LOS: C
Intersection Capacity Utilization 80.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 31: Grove Av. & Schaefer Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	155	98	2	50	41	28	444	34	58	307	59
Future Volume (veh/h)	108	155	98	2	50	41	28	444	34	58	307	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	116	167	105	2	54	44	30	477	37	62	330	63
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	156	191	113	34	246	195	68	986	75	147	757	140
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.63	0.63	0.63	0.63	0.63	0.63
Sat Flow, veh/h	437	722	430	7	934	739	56	1561	118	176	1198	221
Grp Volume(v), veh/h	388	0	0	100	0	0	544	0	0	455	0	0
Grp Sat Flow(s),veh/h/ln	1589	0	0	1680	0	0	1735	0	0	1595	0	0
Q Serve(g_s), s	21.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	27.3	0.0	0.0	5.4	0.0	0.0	18.7	0.0	0.0	15.0	0.0	0.0
Prop In Lane	0.30		0.27	0.02		0.44	0.06		0.07	0.14		0.14
Lane Grp Cap(c), veh/h	460	0	0	475	0	0	1129	0	0	1043	0	0
V/C Ratio(X)	0.84	0.00	0.00	0.21	0.00	0.00	0.48	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	525	0	0	544	0	0	1129	0	0	1043	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	41.0	0.0	0.0	33.2	0.0	0.0	11.2	0.0	0.0	10.5	0.0	0.0
Incr Delay (d2), s/veh	10.8	0.0	0.0	0.2	0.0	0.0	1.5	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.6	0.0	0.0	2.2	0.0	0.0	6.7	0.0	0.0	5.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.8	0.0	0.0	33.4	0.0	0.0	12.7	0.0	0.0	11.9	0.0	0.0
LnGrp LOS	D	A	A	C	A	A	B	A	A	B	A	A
Approach Vol, veh/h		388			100			544			455	
Approach Delay, s/veh		51.8			33.4			12.7			11.9	
Approach LOS		D			C			B			B	

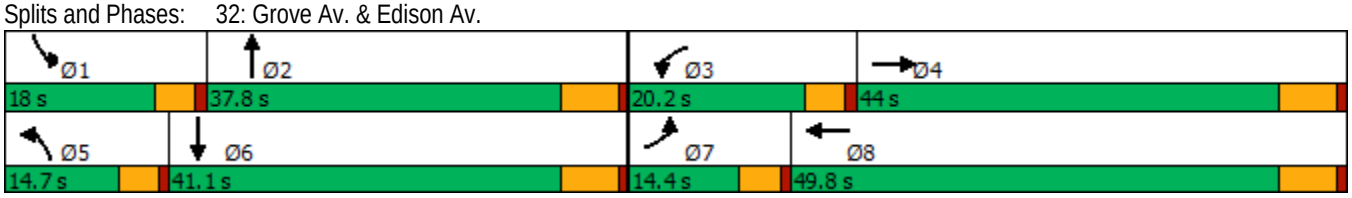
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		79.0		36.2		79.0		36.2				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		72.8		35.2		72.8		35.2				
Max Q Clear Time (g_c+I1), s		20.7		29.3		17.0		7.4				
Green Ext Time (p_c), s		3.5		1.1		3.0		0.5				

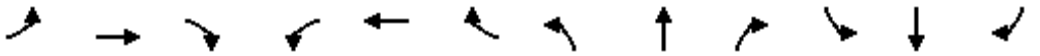
Intersection Summary												
HCM 6th Ctrl Delay			24.1									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	48	484	165	300	52	396	144	249
Future Volume (vph)	48	484	165	300	52	396	144	249
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	9.6	28.2	9.6	28.2
Total Split (s)	14.4	44.0	20.2	49.8	14.7	37.8	18.0	41.1
Total Split (%)	12.0%	36.7%	16.8%	41.5%	12.3%	31.5%	15.0%	34.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	7.9	37.9	14.7	47.0	8.1	29.4	12.8	36.3
Actuated g/C Ratio	0.07	0.33	0.13	0.40	0.07	0.25	0.11	0.31
v/c Ratio	0.48	0.93	0.87	0.54	0.50	0.90	0.88	0.28
Control Delay	68.1	63.9	87.7	31.3	69.0	45.5	93.5	31.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.1	63.9	87.7	31.3	69.0	45.5	93.5	31.3
LOS	E	E	F	C	E	D	F	C
Approach Delay		64.2		49.1		46.9		52.8
Approach LOS		E		D		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 52.6	Intersection LOS: D
Intersection Capacity Utilization 90.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	484	23	165	300	56	52	396	401	144	249	24
Future Volume (veh/h)	48	484	23	165	300	56	52	396	401	144	249	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	52	520	25	177	323	60	56	426	431	155	268	26
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	65	542	26	201	594	110	70	455	405	179	1050	101
Arrive On Green	0.04	0.32	0.32	0.12	0.40	0.40	0.04	0.27	0.27	0.11	0.33	0.33
Sat Flow, veh/h	1619	1703	82	1619	1476	274	1619	1710	1525	1619	3152	303
Grp Volume(v), veh/h	52	0	545	177	0	383	56	426	431	155	144	150
Grp Sat Flow(s),veh/h/ln	1619	0	1785	1619	0	1751	1619	1710	1525	1619	1710	1745
Q Serve(g_s), s	3.8	0.0	35.6	12.8	0.0	19.9	4.1	29.0	31.6	11.2	7.3	7.4
Cycle Q Clear(g_c), s	3.8	0.0	35.6	12.8	0.0	19.9	4.1	29.0	31.6	11.2	7.3	7.4
Prop In Lane	1.00		0.05	1.00		0.16	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	65	0	568	201	0	704	70	455	405	179	569	581
V/C Ratio(X)	0.80	0.00	0.96	0.88	0.00	0.54	0.80	0.94	1.06	0.87	0.25	0.26
Avail Cap(c_a), veh/h	133	0	568	212	0	704	138	455	405	182	569	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.6	0.0	39.8	51.2	0.0	27.2	56.4	42.7	43.6	52.0	28.9	28.9
Incr Delay (d2), s/veh	8.3	0.0	29.1	29.5	0.0	3.0	7.7	27.2	62.4	31.2	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	19.3	6.6	0.0	8.4	1.8	15.0	18.3	5.9	2.9	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.9	0.0	68.9	80.7	0.0	30.2	64.1	69.8	106.0	83.3	29.1	29.2
LnGrp LOS	E	A	E	F	A	C	E	E	F	F	C	C
Approach Vol, veh/h		597			560			913			449	
Approach Delay, s/veh		68.6			46.2			86.6			47.8	
Approach LOS		E			D			F			D	

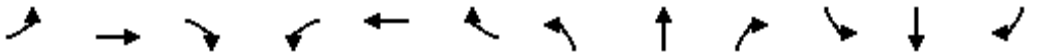
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.7	37.8	19.4	44.0	9.7	45.8	9.4	54.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	13.4	31.6	15.6	37.8	10.1	34.9	9.8	43.6
Max Q Clear Time (g_c+I1), s	13.2	33.6	14.8	37.6	6.1	9.4	5.8	21.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.1	0.0	1.4	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	66.4
HCM 6th LOS	E

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	156	93	6	19	15	699	23	361
Future Volume (vph)	156	93	6	19	15	699	23	361
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	27.8	27.8	27.8	27.8	92.2	92.2	92.2	92.2
Total Split (%)	23.2%	23.2%	23.2%	23.2%	76.8%	76.8%	76.8%	76.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	6.2	6.2	6.2	6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)	19.7	19.7	19.7	19.7	86.1	86.1	86.1	86.1
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.73	0.73	0.73	0.73
v/c Ratio	0.85	0.61	0.05	0.23	0.03	1.12	0.46	0.19
Control Delay	81.8	47.0	41.8	40.9	5.1	79.1	38.9	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.8	47.0	41.8	40.9	5.1	79.1	38.9	5.0
LOS	F	D	D	D	A	E	D	A
Approach Delay		63.7		41.0		78.7		6.8
Approach LOS		E		D		E		A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 67.2	Intersection LOS: E
Intersection Capacity Utilization 47.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	93	76	6	19	38	15	699	5	23	361	51
Future Volume (veh/h)	156	93	76	6	19	38	15	699	5	23	361	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	173	103	84	7	21	42	17	2796	6	26	401	57
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.25	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	252	168	137	151	98	196	663	2511	5	60	2158	305
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	1285	917	748	1148	536	1071	896	3501	8	93	3009	425
Grp Volume(v), veh/h	173	0	187	7	0	63	17	1365	1437	26	227	231
Grp Sat Flow(s),veh/h/ln	1285	0	1665	1148	0	1607	896	1710	1799	93	1710	1724
Q Serve(g_s), s	15.9	0.0	12.4	0.7	0.0	4.0	0.8	86.0	86.0	0.0	5.2	5.3
Cycle Q Clear(g_c), s	19.9	0.0	12.4	13.1	0.0	4.0	6.0	86.0	86.0	86.0	5.2	5.3
Prop In Lane	1.00		0.45	1.00		0.67	1.00		0.00	1.00		0.25
Lane Grp Cap(c), veh/h	252	0	304	151	0	293	663	1227	1290	60	1227	1236
V/C Ratio(X)	0.69	0.00	0.61	0.05	0.00	0.21	0.03	1.11	1.11	0.43	0.18	0.19
Avail Cap(c_a), veh/h	253	0	306	152	0	295	663	1227	1290	60	1227	1236
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.1	0.0	45.1	51.1	0.0	41.7	6.5	16.9	16.9	59.9	5.5	5.5
Incr Delay (d2), s/veh	7.5	0.0	3.6	0.1	0.0	0.4	0.1	62.6	62.4	21.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	5.3	0.2	0.0	1.6	0.1	45.8	48.1	1.1	1.6	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.7	0.0	48.7	51.3	0.0	42.0	6.6	79.5	79.3	81.1	5.9	5.9
LnGrp LOS	E	A	D	D	A	D	A	F	F	F	A	A
Approach Vol, veh/h		360			70			2819			484	
Approach Delay, s/veh		53.0			43.0			79.0			9.9	
Approach LOS		D			D			E			A	

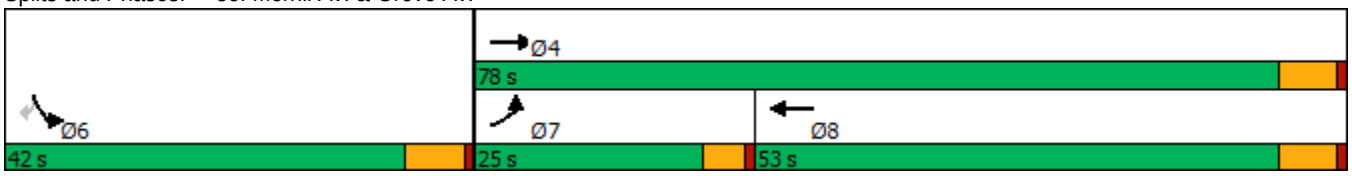
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		92.2		27.7		92.2		27.7				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		86.0		22.0		86.0		22.0				
Max Q Clear Time (g_c+I1), s		88.0		21.9		88.0		15.1				
Green Ext Time (p_c), s		0.0		0.0		0.0		0.1				

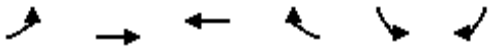
Intersection Summary												
HCM 6th Ctrl Delay			66.8									
HCM 6th LOS			E									

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	220	722	724	373	159
Future Volume (vph)	220	722	724	373	159
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	28.2	28.2
Total Split (s)	25.0	78.0	53.0	42.0	42.0
Total Split (%)	20.8%	65.0%	44.2%	35.0%	35.0%
Yellow Time (s)	3.6	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	6.2	6.2
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	Max	Max	None	None
Act Effct Green (s)	18.7	71.9	48.7	31.2	31.2
Actuated g/C Ratio	0.16	0.62	0.42	0.27	0.27
v/c Ratio	0.88	0.67	0.88	0.89	0.31
Control Delay	80.2	18.8	35.9	64.0	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	80.2	18.8	35.9	64.0	6.3
LOS	F	B	D	E	A
Approach Delay		33.2	35.9	46.8	
Approach LOS		C	D	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 37.1	Intersection LOS: D
Intersection Capacity Utilization 88.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	220	722	724	492	373	159
Future Volume (veh/h)	220	722	724	492	373	159
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	229	752	754	512	389	166
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	254	1134	847	569	422	398
Arrive On Green	0.16	0.63	0.43	0.43	0.26	0.26
Sat Flow, veh/h	1619	1800	2048	1316	1619	1525
Grp Volume(v), veh/h	229	752	658	608	389	166
Grp Sat Flow(s),veh/h/ln	1619	1800	1710	1563	1619	1525
Q Serve(g_s), s	15.8	30.2	40.4	41.2	26.6	10.3
Cycle Q Clear(g_c), s	15.8	30.2	40.4	41.2	26.6	10.3
Prop In Lane	1.00			0.84	1.00	1.00
Lane Grp Cap(c), veh/h	254	1134	740	677	422	398
V/C Ratio(X)	0.90	0.66	0.89	0.90	0.92	0.42
Avail Cap(c_a), veh/h	290	1134	740	677	509	479
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	13.4	29.8	30.0	41.0	34.9
Incr Delay (d2), s/veh	25.2	3.1	14.9	17.2	20.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	11.2	18.2	17.3	12.4	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	72.3	16.4	44.7	47.2	61.0	35.6
LnGrp LOS	E	B	D	D	E	D
Approach Vol, veh/h		981	1266		555	
Approach Delay, s/veh		29.5	45.9		53.4	
Approach LOS		C	D		D	

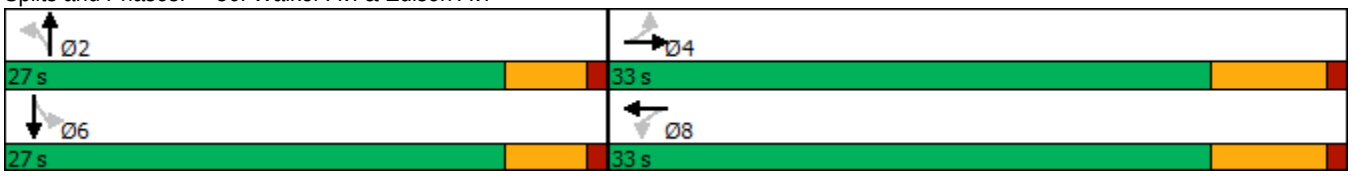
Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	78.0	35.9	22.5	55.5
Change Period (Y+Rc), s	6.2	6.2	4.6	6.2
Max Green Setting (Gmax), s	71.8	35.8	20.4	46.8
Max Q Clear Time (g_c+I1), s	32.2	28.6	17.8	43.2
Green Ext Time (p_c), s	5.3	1.1	0.1	2.4

Intersection Summary	
HCM 6th Ctrl Delay	41.6
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	23	991	16	492	3	22	72	15
Future Volume (vph)	23	991	16	492	3	22	72	15
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	26.7	26.7	26.7	26.7
Total Split (s)	33.0	33.0	33.0	33.0	27.0	27.0	27.0	27.0
Total Split (%)	55.0%	55.0%	55.0%	55.0%	45.0%	45.0%	45.0%	45.0%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		4.7		4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		33.2		33.2		12.2		12.2
Actuated g/C Ratio		0.64		0.64		0.24		0.24
v/c Ratio		0.94		0.52		0.20		0.33
Control Delay		34.2		10.9		9.2		17.2
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		34.2		10.9		9.2		17.2
LOS		C		B		A		B
Approach Delay		34.2		10.9		9.2		17.2
Approach LOS		C		B		A		B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 51.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 24.8	Intersection LOS: C
Intersection Capacity Utilization 87.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	991	1	16	492	33	3	22	55	72	15	11
Future Volume (veh/h)	23	991	1	16	492	33	3	22	55	72	15	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	24	1043	1	17	518	35	3	23	58	76	16	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	88	1010	1	90	934	62	83	93	215	325	65	34
Arrive On Green	0.57	0.57	0.57	0.57	0.57	0.57	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	16	1764	2	18	1632	108	18	476	1102	985	333	172
Grp Volume(v), veh/h	1068	0	0	570	0	0	84	0	0	104	0	0
Grp Sat Flow(s),veh/h/ln	1782	0	0	1758	0	0	1596	0	0	1490	0	0
Q Serve(g_s), s	11.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Cycle Q Clear(g_c), s	26.8	0.0	0.0	9.4	0.0	0.0	2.1	0.0	0.0	2.5	0.0	0.0
Prop In Lane	0.02		0.00	0.03		0.06	0.04		0.69	0.73		0.12
Lane Grp Cap(c), veh/h	1098	0	0	1085	0	0	391	0	0	424	0	0
V/C Ratio(X)	0.97	0.00	0.00	0.53	0.00	0.00	0.21	0.00	0.00	0.25	0.00	0.00
Avail Cap(c_a), veh/h	1098	0	0	1085	0	0	837	0	0	821	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.5	0.0	0.0	6.3	0.0	0.0	16.0	0.0	0.0	16.1	0.0	0.0
Incr Delay (d2), s/veh	21.3	0.0	0.0	1.8	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.2	0.0	0.0	2.0	0.0	0.0	0.7	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.8	0.0	0.0	8.1	0.0	0.0	16.3	0.0	0.0	16.4	0.0	0.0
LnGrp LOS	C	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		1068			570			84			104	
Approach Delay, s/veh		31.8			8.1			16.3			16.4	
Approach LOS		C			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.8		33.0		13.8		33.0				
Change Period (Y+Rc), s		* 4.7		6.2		* 4.7		6.2				
Max Green Setting (Gmax), s		* 22		26.8		* 22		26.8				
Max Q Clear Time (g_c+I1), s		4.1		28.8		4.5		11.4				
Green Ext Time (p_c), s		0.3		0.0		0.4		3.0				

Intersection Summary		
HCM 6th Ctrl Delay		22.8
HCM 6th LOS		C

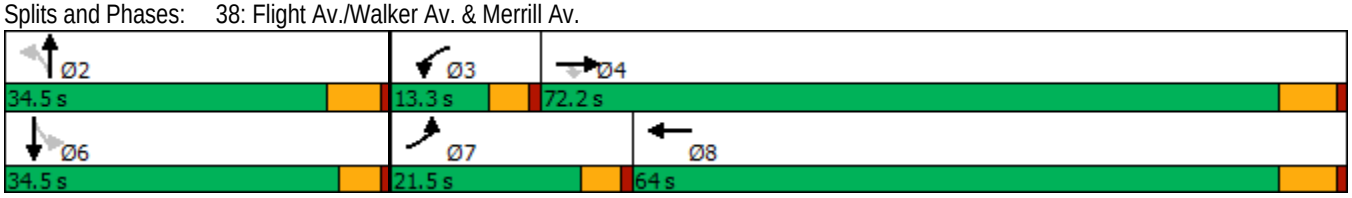
Notes

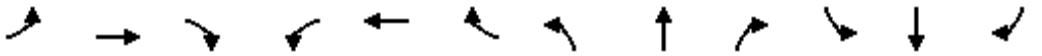
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	100	873	124	95	840	101	5	55	14
Future Volume (vph)	100	873	124	95	840	101	5	55	14
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.2	23.2	9.6	23.2	32.8	32.8	21.6	21.6
Total Split (s)	21.5	72.2	72.2	13.3	64.0	34.5	34.5	34.5	34.5
Total Split (%)	17.9%	60.2%	60.2%	11.1%	53.3%	28.8%	28.8%	28.8%	28.8%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	4.8	4.8	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	5.8	5.8		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	12.2	66.1	66.1	8.7	62.6	26.8	26.8		28.0
Actuated g/C Ratio	0.10	0.56	0.56	0.07	0.53	0.23	0.23		0.24
v/c Ratio	0.66	0.95	0.15	0.87	0.56	0.93	0.34		0.75
Control Delay	69.8	45.2	7.3	109.7	20.9	109.2	8.5		35.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	69.8	45.2	7.3	109.7	20.9	109.2	8.5		35.1
LOS	E	D	A	F	C	F	A		D
Approach Delay		43.2			29.2		50.0		35.1
Approach LOS		D			C		D		D

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 118.2			
Natural Cycle: 110			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 37.6		Intersection LOS: D	
Intersection Capacity Utilization 102.2%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 38: Flight Av./Walker Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	873	124	95	840	21	101	5	139	55	14	258
Future Volume (veh/h)	100	873	124	95	840	21	101	5	139	55	14	258
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	110	959	136	104	923	84	111	5	153	60	15	266
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.25	0.91	0.91	0.91	0.91	0.91	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	133	980	831	116	1694	154	152	12	366	77	27	244
Arrive On Green	0.08	0.54	0.54	0.07	0.53	0.53	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1619	1800	1525	1619	3170	288	1054	49	1484	169	110	989
Grp Volume(v), veh/h	110	959	136	104	498	509	111	0	158	341	0	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	1748	1054	0	1533	1267	0	0
Q Serve(g_s), s	8.1	62.9	5.4	7.7	23.2	23.2	0.0	0.0	10.5	19.4	0.0	0.0
Cycle Q Clear(g_c), s	8.1	62.9	5.4	7.7	23.2	23.2	29.9	0.0	10.5	29.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.17	1.00		0.97	0.18		0.78
Lane Grp Cap(c), veh/h	133	980	831	116	914	934	152	0	378	348	0	0
V/C Ratio(X)	0.83	0.98	0.16	0.89	0.54	0.54	0.73	0.00	0.42	0.98	0.00	0.00
Avail Cap(c_a), veh/h	226	980	831	116	914	934	152	0	378	348	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	54.8	26.9	13.8	55.8	18.5	18.5	48.2	0.0	38.3	47.8	0.0	0.0
Incr Delay (d2), s/veh	5.0	24.0	0.4	51.1	2.3	2.3	16.5	0.0	0.7	43.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	30.2	1.8	4.7	9.0	9.1	4.0	0.0	3.9	14.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.8	50.9	14.2	106.9	20.9	20.8	64.7	0.0	39.1	90.9	0.0	0.0
LnGrp LOS	E	D	B	F	C	C	E	A	D	F	A	A
Approach Vol, veh/h		1205			1111			269			341	
Approach Delay, s/veh		47.6			28.9			49.6			90.9	
Approach LOS		D			C			D			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		35.7	13.3	72.2		35.7	14.5	71.0				
Change Period (Y+Rc), s		5.8	4.6	6.2		* 5.8	4.6	6.2				
Max Green Setting (Gmax), s		28.7	8.7	66.0		* 30	16.9	57.8				
Max Q Clear Time (g_c+I1), s		31.9	9.7	64.9		31.9	10.1	25.2				
Green Ext Time (p_c), s		0.0	0.0	0.7		0.0	0.1	6.5				

Intersection Summary		
HCM 6th Ctrl Delay		45.7
HCM 6th LOS		D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	51	997	11	783	41	0	48	0
Future Volume (vph)	51	997	11	783	41	0	48	0
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	26.6	26.6
Total Split (s)	91.0	91.0	91.0	91.0	29.0	29.0	29.0	29.0
Total Split (%)	75.8%	75.8%	75.8%	75.8%	24.2%	24.2%	24.2%	24.2%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.2	6.2	6.2	6.2		6.2		4.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)	86.3	86.3	86.3	86.3		13.8		15.4
Actuated g/C Ratio	0.77	0.77	0.77	0.77		0.12		0.14
v/c Ratio	0.15	0.44	0.04	0.35		0.62		0.71
Control Delay	5.4	5.6	4.6	5.0		52.1		36.3
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	5.4	5.6	4.6	5.0		52.1		36.3
LOS	A	A	A	A		D		D
Approach Delay		5.6		5.0		52.1		36.3
Approach LOS		A		A		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.5	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 9.3	Intersection LOS: A
Intersection Capacity Utilization 63.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 40: Van Vliet Av. & Merrill Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	997	19	11	783	18	41	0	20	48	0	132
Future Volume (veh/h)	51	997	19	11	783	18	41	0	20	48	0	132
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	58	1133	22	12	890	20	47	0	23	55	0	150
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	446	2546	49	350	2537	57	143	10	49	92	11	172
Arrive On Green	0.74	0.74	0.74	0.74	0.74	0.74	0.15	0.00	0.15	0.15	0.00	0.15
Sat Flow, veh/h	588	3431	67	467	3419	77	605	65	328	347	76	1153
Grp Volume(v), veh/h	58	565	590	12	445	465	70	0	0	205	0	0
Grp Sat Flow(s),veh/h/ln	588	1710	1788	467	1710	1786	998	0	0	1576	0	0
Q Serve(g_s), s	4.4	14.5	14.5	1.2	10.4	10.4	0.0	0.0	0.0	6.9	0.0	0.0
Cycle Q Clear(g_c), s	14.7	14.5	14.5	15.7	10.4	10.4	7.4	0.0	0.0	14.4	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.04	0.67		0.33	0.27		0.73
Lane Grp Cap(c), veh/h	446	1269	1327	350	1269	1325	202	0	0	276	0	0
V/C Ratio(X)	0.13	0.44	0.45	0.03	0.35	0.35	0.35	0.00	0.00	0.74	0.00	0.00
Avail Cap(c_a), veh/h	446	1269	1327	350	1269	1325	269	0	0	371	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.7	5.7	5.7	8.7	5.1	5.1	44.2	0.0	0.0	47.3	0.0	0.0
Incr Delay (d2), s/veh	0.6	1.1	1.1	0.2	0.8	0.7	1.0	0.0	0.0	5.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.1	4.3	0.1	2.9	3.0	1.8	0.0	0.0	6.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.3	6.8	6.8	8.9	5.9	5.9	45.2	0.0	0.0	52.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1213			922			70			205	
Approach Delay, s/veh		6.9			5.9			45.2			52.7	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		23.3		91.0		23.3		91.0				
Change Period (Y+Rc), s		6.2		6.2		* 6.2		6.2				
Max Green Setting (Gmax), s		22.8		84.8		* 24		84.8				
Max Q Clear Time (g_c+I1), s		9.4		16.7		16.4		17.7				
Green Ext Time (p_c), s		0.2		9.4		0.7		6.1				

Intersection Summary		
HCM 6th Ctrl Delay		11.5
HCM 6th LOS		B

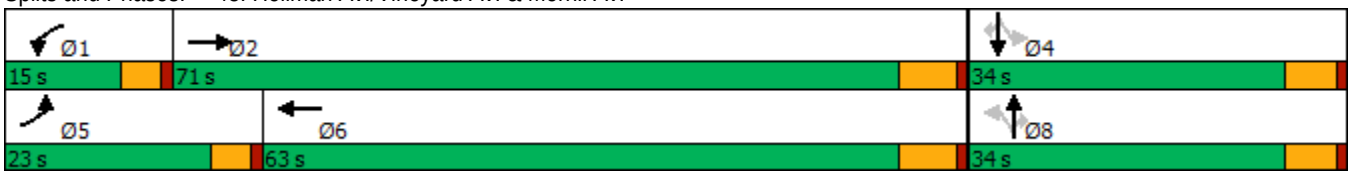
Notes

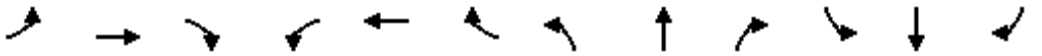
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	49	1015	56	628	58	5	67	68	14	126
Future Volume (vph)	49	1015	56	628	58	5	67	68	14	126
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	1	6		8			4	
Permitted Phases					8		8	4		4
Detector Phase	5	2	1	6	8	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	27.8	27.8	27.8	27.8	27.8	27.8
Total Split (s)	23.0	71.0	15.0	63.0	34.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	19.2%	59.2%	12.5%	52.5%	28.3%	28.3%	28.3%	28.3%	28.3%	28.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	5.8	5.8	5.8	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	Max	None	Max	None	None	None	None	None	None
Act Effct Green (s)	7.9	67.4	8.0	67.5	13.2	13.2	13.2	13.2	13.2	13.2
Actuated g/C Ratio	0.08	0.65	0.08	0.65	0.13	0.13	0.13	0.13	0.13	0.13
v/c Ratio	0.44	0.51	0.50	0.33	0.40	0.03	0.25	0.47	0.07	0.44
Control Delay	57.3	11.6	60.4	9.6	48.7	38.8	4.4	51.4	39.7	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.3	11.6	60.4	9.6	48.7	38.8	4.4	51.4	39.7	11.4
LOS	E	B	E	A	D	D	A	D	D	B
Approach Delay		13.7		13.6		25.6			26.4	
Approach LOS		B		B		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.2	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 15.7	Intersection LOS: B
Intersection Capacity Utilization 61.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 43: Hellman Av./Vineyard Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	1015	1	56	628	26	58	5	67	68	14	126
Future Volume (veh/h)	49	1015	1	56	628	26	58	5	67	68	14	126
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	54	1128	1	62	698	29	64	6	74	76	16	140
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	67	2333	2	77	2247	93	202	210	178	218	210	178
Arrive On Green	0.04	0.67	0.67	0.05	0.67	0.67	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1619	3506	3	1619	3346	139	1181	1800	1525	1265	1800	1525
Grp Volume(v), veh/h	54	550	579	62	357	370	64	6	74	76	16	140
Grp Sat Flow(s),veh/h/ln	1619	1710	1799	1619	1710	1775	1181	1800	1525	1265	1800	1525
Q Serve(g_s), s	3.2	15.5	15.5	3.7	8.4	8.4	5.0	0.3	4.4	5.5	0.8	8.7
Cycle Q Clear(g_c), s	3.2	15.5	15.5	3.7	8.4	8.4	5.7	0.3	4.4	5.8	0.8	8.7
Prop In Lane	1.00		0.00	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	67	1138	1197	77	1148	1192	202	210	178	218	210	178
V/C Ratio(X)	0.81	0.48	0.48	0.80	0.31	0.31	0.32	0.03	0.42	0.35	0.08	0.79
Avail Cap(c_a), veh/h	306	1138	1197	173	1148	1192	406	521	442	437	521	442
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.3	8.0	8.0	45.9	6.6	6.6	40.9	38.1	39.9	40.7	38.4	41.9
Incr Delay (d2), s/veh	8.1	1.5	1.4	7.1	0.7	0.7	0.9	0.1	1.6	1.0	0.2	7.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.7	5.0	1.6	2.5	2.6	1.4	0.1	1.7	1.7	0.3	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.4	9.5	9.4	53.0	7.3	7.3	41.8	38.2	41.5	41.7	38.5	49.4
LnGrp LOS	D	A	A	D	A	A	D	D	D	D	D	D
Approach Vol, veh/h		1183			789			144			232	
Approach Delay, s/veh		11.5			10.9			41.5			46.1	
Approach LOS		B			B			D			D	

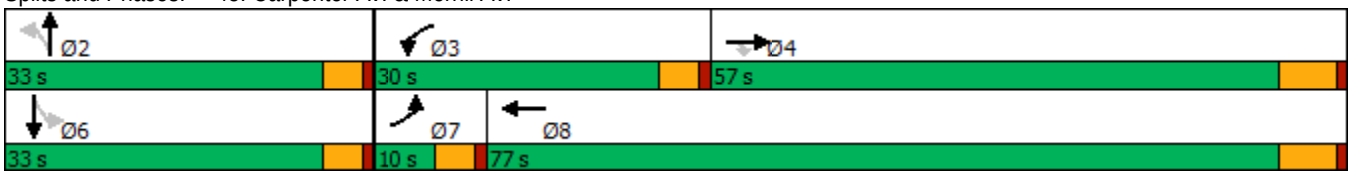
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.2	71.0		17.1	8.6	71.6		17.1				
Change Period (Y+Rc), s	4.6	6.2		5.8	4.6	6.2		5.8				
Max Green Setting (Gmax), s	10.4	64.8		28.2	18.4	56.8		28.2				
Max Q Clear Time (g_c+I1), s	5.7	17.5		10.7	5.2	10.4		7.7				
Green Ext Time (p_c), s	0.0	7.9		0.7	0.0	4.3		0.4				

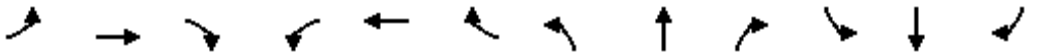
Intersection Summary			
HCM 6th Ctrl Delay		16.6	
HCM 6th LOS		B	

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	26	1101	24	44	609	45	5	100	6
Future Volume (vph)	26	1101	24	44	609	45	5	100	6
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	26.6	26.6
Total Split (s)	10.0	57.0	57.0	30.0	77.0	33.0	33.0	33.0	33.0
Total Split (%)	8.3%	47.5%	47.5%	25.0%	64.2%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2		4.6		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.3	66.9	66.9	7.8	71.5		22.6		22.6
Actuated g/C Ratio	0.05	0.60	0.60	0.07	0.65		0.20		0.20
v/c Ratio	0.35	1.12	0.03	0.41	0.61		0.57		0.90
Control Delay	66.9	92.5	0.0	61.8	16.3		25.1		80.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	66.9	92.5	0.0	61.8	16.3		25.1		80.9
LOS	E	F	A	E	B		C		F
Approach Delay		90.0			19.3		25.1		80.9
Approach LOS		F			B		C		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.6	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 61.6	Intersection LOS: E
Intersection Capacity Utilization 92.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 45: Carpenter Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	1101	24	44	609	24	45	5	148	100	6	58
Future Volume (veh/h)	26	1101	24	44	609	24	45	5	148	100	6	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	29	1223	27	49	677	27	50	6	164	111	7	64
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	46	1136	963	62	1102	44	93	24	226	168	20	74
Arrive On Green	0.03	0.63	0.63	0.04	0.64	0.64	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1714	1800	1525	1714	1719	69	275	126	1173	600	104	382
Grp Volume(v), veh/h	29	1223	27	49	0	704	220	0	0	182	0	0
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	0	1788	1574	0	0	1085	0	0
Q Serve(g_s), s	1.9	69.7	0.7	3.1	0.0	25.8	0.0	0.0	0.0	4.3	0.0	0.0
Cycle Q Clear(g_c), s	1.9	69.7	0.7	3.1	0.0	25.8	14.4	0.0	0.0	18.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.04	0.23		0.75	0.61		0.35
Lane Grp Cap(c), veh/h	46	1136	963	62	0	1146	344	0	0	262	0	0
V/C Ratio(X)	0.63	1.08	0.03	0.79	0.00	0.61	0.64	0.00	0.00	0.69	0.00	0.00
Avail Cap(c_a), veh/h	84	1136	963	394	0	1146	439	0	0	348	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	53.2	20.4	7.6	52.8	0.0	11.7	41.8	0.0	0.0	43.8	0.0	0.0
Incr Delay (d2), s/veh	5.3	49.8	0.1	7.8	0.0	2.5	2.0	0.0	0.0	3.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	38.9	0.2	1.4	0.0	9.2	5.8	0.0	0.0	5.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.5	70.1	7.7	60.6	0.0	14.2	43.8	0.0	0.0	47.6	0.0	0.0
LnGrp LOS	E	F	A	E	A	B	D	A	A	D	A	A
Approach Vol, veh/h		1279			753			220			182	
Approach Delay, s/veh		68.6			17.2			43.8			47.6	
Approach LOS		E			B			D			D	

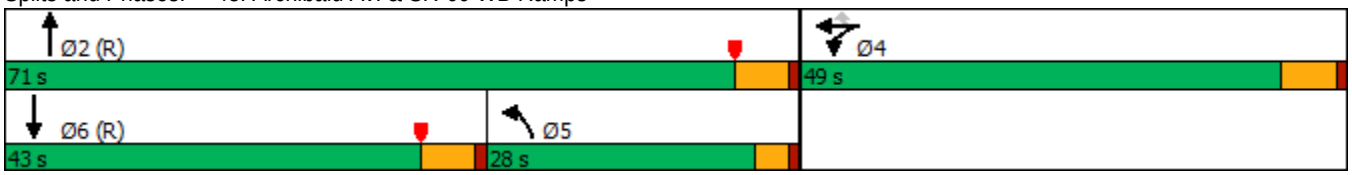
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.9	8.6	75.9		25.9	7.5	77.0				
Change Period (Y+Rc), s		4.6	4.6	6.2		4.6	4.6	6.2				
Max Green Setting (Gmax), s		28.4	25.4	50.8		28.4	5.4	70.8				
Max Q Clear Time (g_c+I1), s		16.4	5.1	71.7		20.7	3.9	27.8				
Green Ext Time (p_c), s		1.0	0.0	0.0		0.6	0.0	4.9				

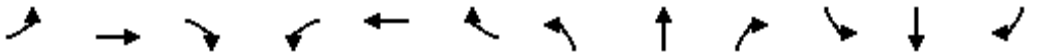
Intersection Summary												
HCM 6th Ctrl Delay			48.9									
HCM 6th LOS			D									

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	6	284	451	554	1184
Future Volume (vph)	6	284	451	554	1184
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	49.0	49.0	28.0	71.0	43.0
Total Split (%)	40.8%	40.8%	23.3%	59.2%	35.8%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	40.7	40.7	20.1	67.5	43.4
Actuated g/C Ratio	0.34	0.34	0.17	0.56	0.36
v/c Ratio	0.84	0.41	0.80	0.20	0.75
Control Delay	49.6	5.9	39.2	2.9	35.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	49.6	5.9	39.2	2.9	35.5
LOS	D	A	D	A	D
Approach Delay	33.6			19.2	35.5
Approach LOS	C			B	D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 30.3	Intersection LOS: C
Intersection Capacity Utilization 78.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	489	6	284	451	554	0	0	1184	489
Future Volume (veh/h)	0	0	0	489	6	284	451	554	0	0	1184	489
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				509	6	151	470	577	0	0	1233	374
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				572	7	515	846	3018	0	0	1459	441
Arrive On Green				0.32	0.32	0.32	0.08	0.19	0.00	0.00	0.29	0.29
Sat Flow, veh/h				1789	21	1610	3510	5358	0	0	5253	1505
Grp Volume(v), veh/h				515	0	151	470	577	0	0	1212	395
Grp Sat Flow(s),veh/h/ln				1811	0	1610	1755	1729	0	0	1634	1590
Q Serve(g_s), s				32.4	0.0	8.4	15.5	11.2	0.0	0.0	27.9	28.1
Cycle Q Clear(g_c), s				32.4	0.0	8.4	15.5	11.2	0.0	0.0	27.9	28.1
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.95
Lane Grp Cap(c), veh/h				579	0	515	846	3018	0	0	1435	465
V/C Ratio(X)				0.89	0.00	0.29	0.56	0.19	0.00	0.00	0.84	0.85
Avail Cap(c_a), veh/h				649	0	577	846	3018	0	0	1520	493
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.54	0.54	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				38.8	0.0	30.6	49.0	24.8	0.0	0.0	39.9	39.9
Incr Delay (d2), s/veh				15.0	0.0	0.7	0.3	0.1	0.0	0.0	6.3	17.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				16.2	0.0	8.5	7.3	4.9	0.0	0.0	11.6	12.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				53.8	0.0	31.3	49.3	24.9	0.0	0.0	46.1	57.3
LnGrp LOS				D	A	C	D	C	A	A	D	E
Approach Vol, veh/h					666			1047			1607	
Approach Delay, s/veh					48.7			35.8			48.9	
Approach LOS					D			D			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	75.6	44.4	34.7	40.9
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	65.2	43.0	24.0	* 37
Max Q Clear Time (g_c+I1), s	13.2	34.4	17.5	30.1
Green Ext Time (p_c), s	4.0	3.9	0.6	5.1

Intersection Summary	
HCM 6th Ctrl Delay	44.7
HCM 6th LOS	D

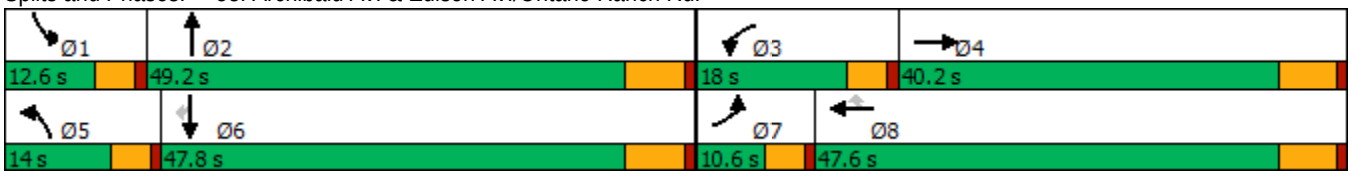
Notes

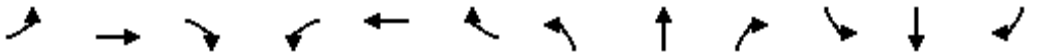
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	776	135	364	291	79	77	760	446	148	937	107
Future Volume (vph)	173	776	135	364	291	79	77	760	446	148	937	107
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	10.6	40.2		18.0	47.6	47.6	14.0	49.2		12.6	47.8	47.8
Total Split (%)	8.8%	33.5%		15.0%	39.7%	39.7%	11.7%	41.0%		10.5%	39.8%	39.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	6.1	30.2	110.0	13.6	37.7	37.7	8.4	35.7	110.0	8.1	38.2	38.2
Actuated g/C Ratio	0.06	0.27	1.00	0.12	0.34	0.34	0.08	0.32	1.00	0.07	0.35	0.35
v/c Ratio	1.09	0.85	0.09	1.03	0.26	0.14	0.64	0.71	0.30	1.29	0.81	0.18
Control Delay	147.2	48.5	0.1	103.3	27.6	2.4	76.6	36.3	0.5	220.5	40.4	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	147.2	48.5	0.1	103.3	27.6	2.4	76.6	36.3	0.5	220.5	40.4	2.0
LOS	F	D	A	F	C	A	E	D	A	F	D	A
Approach Delay		58.2			62.5			26.2			59.4	
Approach LOS		E			E			C			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.29	
Intersection Signal Delay: 49.7	Intersection LOS: D
Intersection Capacity Utilization 85.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	173	776	135	364	291	79	77	760	446	148	937	107
Future Volume (veh/h)	173	776	135	364	291	79	77	760	446	148	937	107
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	178	800	0	375	300	47	79	784	0	153	966	88
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	169	929		378	1171	522	98	1076		124	1130	497
Arrive On Green	0.06	0.27	0.00	0.13	0.34	0.34	0.06	0.31	0.00	0.08	0.33	0.33
Sat Flow, veh/h	2956	3420	1525	2956	3420	1525	1619	3420	1525	1619	3420	1505
Grp Volume(v), veh/h	178	800	0	375	300	47	79	784	0	153	966	88
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1710	1525	1619	1710	1525	1619	1710	1505
Q Serve(g_s), s	6.0	23.3	0.0	13.3	6.6	2.2	5.0	21.3	0.0	8.0	27.6	4.4
Cycle Q Clear(g_c), s	6.0	23.3	0.0	13.3	6.6	2.2	5.0	21.3	0.0	8.0	27.6	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	169	929		378	1171	522	98	1076		124	1130	497
V/C Ratio(X)	1.05	0.86		0.99	0.26	0.09	0.80	0.73		1.24	0.85	0.18
Avail Cap(c_a), veh/h	169	1111		378	1352	603	145	1395		124	1349	594
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	36.2	0.0	45.6	24.8	23.4	48.6	31.9	0.0	48.3	32.7	24.9
Incr Delay (d2), s/veh	83.2	6.1	0.0	43.7	0.1	0.1	10.8	1.4	0.0	157.8	4.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	9.9	0.0	6.9	2.5	0.8	2.2	8.3	0.0	8.5	11.2	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	132.5	42.4	0.0	89.3	24.9	23.4	59.3	33.3	0.0	206.1	37.5	25.1
LnGrp LOS	F	D		F	C	C	E	C		F	D	C
Approach Vol, veh/h		978	A		722			863	A		1207	
Approach Delay, s/veh		58.8			58.3			35.7			58.0	
Approach LOS		E			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	39.4	18.0	34.6	10.9	41.1	10.6	42.0
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	8.0	42.7	13.4	34.0	9.4	41.3	6.0	41.4
Max Q Clear Time (g_c+I1), s	10.0	23.3	15.3	25.3	7.0	29.6	8.0	8.6
Green Ext Time (p_c), s	0.0	4.5	0.0	3.2	0.0	4.8	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	53.1
HCM 6th LOS	D

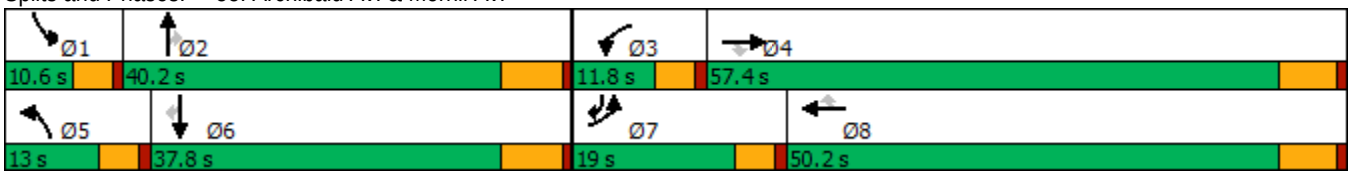
Notes

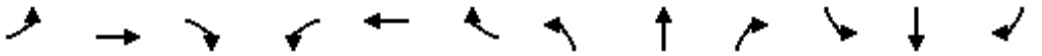
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	514	86	694	50	29	60	229	698	43	78	1072	278
Future Volume (vph)	514	86	694	50	29	60	229	698	43	78	1072	278
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	9.6
Total Split (s)	19.0	57.4	57.4	11.8	50.2	50.2	13.0	40.2	40.2	10.6	37.8	19.0
Total Split (%)	15.8%	47.8%	47.8%	9.8%	41.8%	41.8%	10.8%	33.5%	33.5%	8.8%	31.5%	15.8%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	None
Act Effct Green (s)	19.2	46.0	46.0	6.7	35.2	35.2	8.5	37.0	37.0	5.8	31.8	57.6
Actuated g/C Ratio	0.17	0.41	0.41	0.06	0.31	0.31	0.08	0.33	0.33	0.05	0.28	0.51
v/c Ratio	0.99	0.12	0.96	0.55	0.05	0.11	1.00	0.64	0.07	0.53	1.15	0.34
Control Delay	87.8	21.4	48.1	76.3	25.0	0.4	112.2	38.8	0.2	68.0	116.6	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.8	21.4	48.1	76.3	25.0	0.4	112.2	38.8	0.2	68.0	116.6	12.8
LOS	F	C	D	E	C	A	F	D	A	E	F	B
Approach Delay		62.1			32.9			54.4			93.7	
Approach LOS		E			C			D			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.15	
Intersection Signal Delay: 70.9	Intersection LOS: E
Intersection Capacity Utilization 95.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	514	86	694	50	29	60	229	698	43	78	1072	278
Future Volume (veh/h)	514	86	694	50	29	60	229	698	43	78	1072	278
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	530	89	530	52	30	23	236	720	30	80	1105	229
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	431	671	568	64	495	420	252	1148	505	127	1021	665
Arrive On Green	0.14	0.37	0.37	0.04	0.28	0.28	0.08	0.34	0.34	0.04	0.30	0.30
Sat Flow, veh/h	3141	1800	1525	1619	1800	1525	3141	3420	1506	2956	3420	1525
Grp Volume(v), veh/h	530	89	530	52	30	23	236	720	30	80	1105	229
Grp Sat Flow(s),veh/h/ln	1570	1800	1525	1619	1800	1525	1570	1710	1506	1478	1710	1525
Q Serve(g_s), s	14.4	3.4	35.0	3.3	1.3	1.2	7.8	18.6	1.4	2.8	31.3	10.4
Cycle Q Clear(g_c), s	14.4	3.4	35.0	3.3	1.3	1.2	7.8	18.6	1.4	2.8	31.3	10.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	431	671	568	64	495	420	252	1148	505	127	1021	665
V/C Ratio(X)	1.23	0.13	0.93	0.81	0.06	0.05	0.94	0.63	0.06	0.63	1.08	0.34
Avail Cap(c_a), veh/h	431	879	745	111	755	640	252	1148	505	169	1021	665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.2	21.7	31.6	49.9	28.0	28.0	48.0	29.3	23.6	49.3	36.8	19.6
Incr Delay (d2), s/veh	121.8	0.1	15.7	8.6	0.1	0.1	39.6	1.1	0.0	1.9	53.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	1.4	14.8	1.5	0.6	0.4	4.3	7.2	0.5	1.0	19.5	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	167.0	21.8	47.4	58.5	28.1	28.0	87.5	30.4	23.7	51.2	89.9	19.9
LnGrp LOS	F	C	D	E	C	C	F	C	C	D	F	B
Approach Vol, veh/h		1149			105			986			1414	
Approach Delay, s/veh		100.6			43.1			43.9			76.4	
Approach LOS		F			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	41.7	8.8	45.3	13.0	37.8	19.0	35.0
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	6.0	33.7	7.2	51.2	8.4	31.3	14.4	44.0
Max Q Clear Time (g_c+I1), s	4.8	20.6	5.3	37.0	9.8	33.3	16.4	3.3
Green Ext Time (p_c), s	0.0	3.6	0.0	2.1	0.0	0.0	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	74.3
HCM 6th LOS	E

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	460	335	621	448	793	1028
Future Volume (vph)	460	335	621	448	793	1028
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	39.0	30.0	51.0	39.0	30.0	81.0
Total Split (%)	32.5%	25.0%	42.5%	32.5%	25.0%	67.5%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min
Act Effct Green (s)	31.5	62.1	41.5	73.0	25.2	72.0
Actuated g/C Ratio	0.28	0.55	0.36	0.64	0.22	0.63
v/c Ratio	0.94	0.21	0.92	0.44	1.01	0.85
Control Delay	69.4	5.6	54.4	9.2	79.9	25.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.4	5.6	54.4	9.2	79.9	25.0
LOS	E	A	D	A	E	C
Approach Delay	42.5		35.5			48.9
Approach LOS	D		D			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113.9	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 43.6	Intersection LOS: D
Intersection Capacity Utilization 93.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	460	335	621	448	793	1028
Future Volume (veh/h)	460	335	621	448	793	1028
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1976	1976
Adj Flow Rate, veh/h	469	292	634	436	809	1049
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	497	1402	699	1022	804	1249
Arrive On Green	0.27	0.27	0.37	0.37	0.22	0.63
Sat Flow, veh/h	1810	2834	1900	1576	3651	1976
Grp Volume(v), veh/h	469	292	634	436	809	1049
Grp Sat Flow(s),veh/h/ln	1810	1417	1900	1576	1825	1976
Q Serve(g_s), s	28.8	6.6	35.9	15.5	25.0	47.3
Cycle Q Clear(g_c), s	28.8	6.6	35.9	15.5	25.0	47.3
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	497	1402	699	1022	804	1249
V/C Ratio(X)	0.94	0.21	0.91	0.43	1.01	0.84
Avail Cap(c_a), veh/h	537	1465	765	1077	804	1322
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	16.2	34.1	10.0	44.3	16.4
Incr Delay (d2), s/veh	24.0	0.0	14.1	0.3	33.4	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.4	2.0	18.1	9.8	14.3	18.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	64.3	16.2	48.1	10.4	77.6	20.8
LnGrp LOS	E	B	D	B	F	C
Approach Vol, veh/h	761		1070			1858
Approach Delay, s/veh	45.8		32.7			45.5
Approach LOS	D		C			D

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	30.0	47.1			77.1	36.5
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	25.0	45.7			* 76	33.7
Max Q Clear Time (g_c+I1), s	27.0	37.9			49.3	30.8
Green Ext Time (p_c), s	0.0	3.8			4.8	0.4

Intersection Summary	
HCM 6th Ctrl Delay	41.9
HCM 6th LOS	D

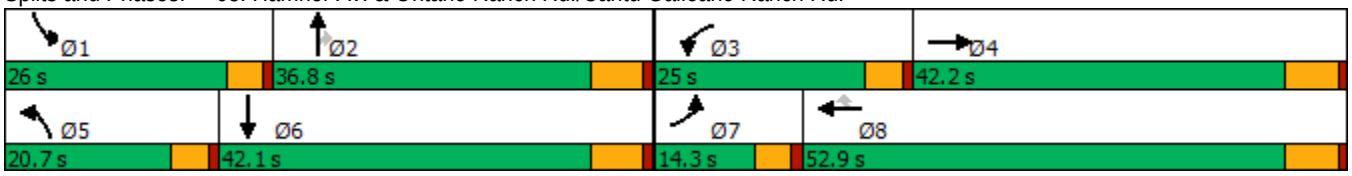
Notes

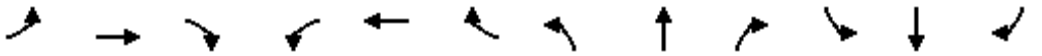
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	108	1101	653	581	120	219	423	262	507	894
Future Volume (vph)	108	1101	653	581	120	219	423	262	507	894
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.2	9.6	49.2	49.2	9.6	35.2	35.2	9.6	38.2
Total Split (s)	14.3	42.2	25.0	52.9	52.9	20.7	36.8	36.8	26.0	42.1
Total Split (%)	11.0%	32.5%	19.2%	40.7%	40.7%	15.9%	28.3%	28.3%	20.0%	32.4%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	None	Max	None	None	None	None	None	None	None
Act Effct Green (s)	9.8	32.3	20.6	43.1	43.1	13.0	22.2	22.2	21.6	30.8
Actuated g/C Ratio	0.08	0.27	0.17	0.36	0.36	0.11	0.19	0.19	0.18	0.26
v/c Ratio	0.45	0.75	1.29	0.31	0.19	0.69	0.44	0.56	0.95	0.76
Control Delay	60.8	41.2	183.1	28.1	3.8	63.3	43.7	10.9	77.5	44.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.8	41.2	183.1	28.1	3.8	63.3	43.7	10.9	77.5	44.0
LOS	E	D	F	C	A	E	D	B	E	D
Approach Delay		42.6		100.7			38.9			55.2
Approach LOS		D		F			D			E

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 118.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.29	
Intersection Signal Delay: 60.5	Intersection LOS: E
Intersection Capacity Utilization 91.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	1101	296	653	581	120	219	423	262	507	894	124
Future Volume (veh/h)	108	1101	296	653	581	120	219	423	262	507	894	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	112	1147	199	680	605	91	228	441	194	528	931	74
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	271	1540	265	571	1920	542	282	913	257	573	1305	103
Arrive On Green	0.13	0.39	0.26	0.28	0.53	0.36	0.14	0.25	0.17	0.28	0.40	0.26
Sat Flow, veh/h	3048	5985	1029	3048	5400	1525	3048	5400	1523	3048	4938	391
Grp Volume(v), veh/h	112	1034	312	680	605	91	228	441	194	528	678	327
Grp Sat Flow(s),veh/h/ln	1524	1800	1615	1524	1800	1525	1524	1800	1523	1524	1800	1729
Q Serve(g_s), s	3.7	18.0	19.0	20.4	6.8	4.5	7.9	7.6	13.2	18.3	17.3	17.7
Cycle Q Clear(g_c), s	3.7	18.0	19.0	20.4	6.8	4.5	7.9	7.6	13.2	18.3	17.3	17.7
Prop In Lane	1.00		0.64	1.00		1.00	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	271	1390	416	571	1920	542	282	913	257	573	951	457
V/C Ratio(X)	0.41	0.74	0.75	1.19	0.32	0.17	0.81	0.48	0.75	0.92	0.71	0.72
Avail Cap(c_a), veh/h	271	1785	534	571	2316	654	451	1517	428	599	1187	570
HCM Platoon Ratio	1.50	1.50	1.00	1.50	1.50	1.00	1.50	1.50	1.00	1.50	1.50	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	30.3	34.8	39.1	18.0	24.0	45.9	36.6	43.1	38.3	29.4	31.0
Incr Delay (d2), s/veh	4.6	1.3	4.4	102.4	0.1	0.1	2.4	0.4	4.4	18.9	1.5	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	6.4	7.1	14.5	2.5	1.5	2.8	3.1	5.1	7.2	6.3	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.1	31.6	39.1	141.6	18.1	24.2	48.3	37.0	47.5	57.2	30.9	34.2
LnGrp LOS	D	C	D	F	B	C	D	D	D	E	C	C
Approach Vol, veh/h		1458			1376			863			1533	
Approach Delay, s/veh		34.6			79.5			42.3			40.7	
Approach LOS		C			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.1	24.6	25.0	34.2	14.7	35.0	14.3	44.9
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	21.4	30.6	20.4	36.0	16.1	35.9	9.7	46.7
Max Q Clear Time (g_c+I1), s	20.3	15.2	22.4	21.0	9.9	19.7	5.7	8.8
Green Ext Time (p_c), s	0.2	2.9	0.0	7.0	0.2	5.4	0.1	4.3

Intersection Summary	
HCM 6th Ctrl Delay	49.5
HCM 6th LOS	D

APPENDIX 8.1:

OPENING YEAR CUMULATIVE (2026) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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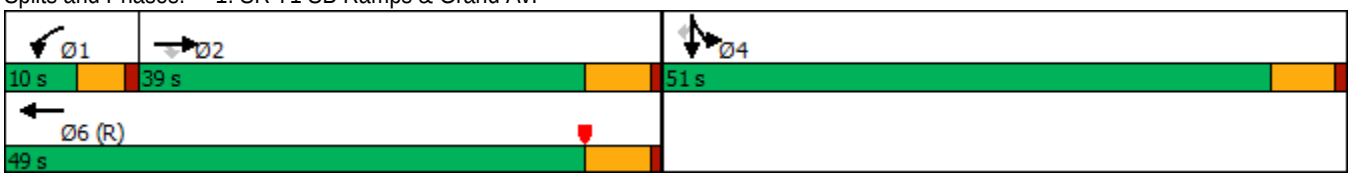
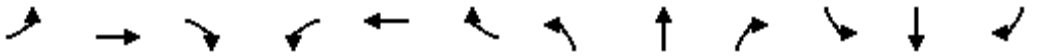
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	847	229	72	1522	934	5	353
Future Volume (vph)	847	229	72	1522	934	5	353
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	39.0	39.0	10.0	49.0	51.0	51.0	51.0
Total Split (%)	39.0%	39.0%	10.0%	49.0%	51.0%	51.0%	51.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None
Act Effct Green (s)	41.5	41.5	6.3	49.9	42.1	42.1	42.1
Actuated g/C Ratio	0.42	0.42	0.06	0.50	0.42	0.42	0.42
v/c Ratio	0.46	0.33	0.38	0.69	0.76	0.77	0.57
Control Delay	23.7	4.1	43.3	30.3	31.6	32.0	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.7	4.1	43.3	30.3	31.6	32.0	20.0
LOS	C	A	D	C	C	C	B
Approach Delay	19.6			30.9		28.6	
Approach LOS	B			C		C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 27.1	Intersection LOS: C
Intersection Capacity Utilization 62.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	847	229	72	1522	0	0	0	0	934	5	353
Future Volume (veh/h)	0	847	229	72	1522	0	0	0	0	934	5	353
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	996	180	85	1791	0				1103	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85				0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1861	578	180	2334	0				1299	0	
Arrive On Green	0.00	0.36	0.36	0.05	0.45	0.00				0.36	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	996	180	85	1791	0				1103	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	15.2	8.1	2.4	29.0	0.0				28.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	15.2	8.1	2.4	29.0	0.0				28.1	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1861	578	180	2334	0				1299	0	
V/C Ratio(X)	0.00	0.54	0.31	0.47	0.77	0.00				0.85	0.00	
Avail Cap(c_a), veh/h	0	1861	578	211	2334	0				1701	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.25	0.25	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	25.4	23.2	46.1	23.1	0.0				29.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	1.4	0.2	0.6	0.0				3.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.0	3.1	1.0	10.8	0.0				11.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	26.6	24.6	46.3	23.7	0.0				32.9	0.0	0.0
LnGrp LOS	A	C	C	D	C	A				C	A	
Approach Vol, veh/h		1176			1876						1103	A
Approach Delay, s/veh		26.3			24.8						32.9	
Approach LOS		C			C						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.1	39.9		39.9		49.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	5.4	33.2		45.2		43.2
Max Q Clear Time (g_c+I1), s	4.4	17.2		30.1		31.0
Green Ext Time (p_c), s	0.0	6.3		4.0		8.6

Intersection Summary		
HCM 6th Ctrl Delay		27.3
HCM 6th LOS		C

Notes

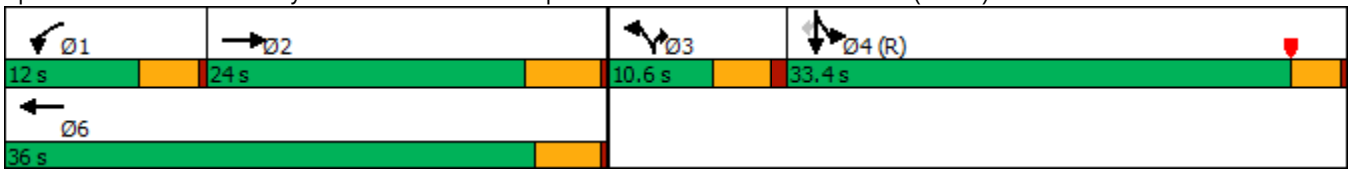
User approved volume balancing among the lanes for turning movement.

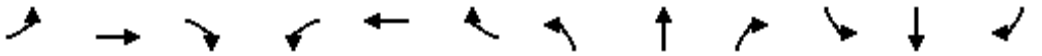
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	801	223	328	21	330	731	30	45
Future Volume (vph)	801	223	328	21	330	731	30	45
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	24.0	12.0	36.0	10.6	10.6	33.4	33.4	33.4
Total Split (%)	30.0%	15.0%	45.0%	13.3%	13.3%	41.8%	41.8%	41.8%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	19.0	13.9	37.4	6.1	6.1	24.0	24.0	24.0
Actuated g/C Ratio	0.24	0.17	0.47	0.08	0.08	0.30	0.30	0.30
v/c Ratio	1.00	0.73	0.20	0.15	1.10	0.76	0.75	0.08
Control Delay	62.7	49.9	18.4	37.3	100.9	34.6	34.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.7	49.9	18.4	37.3	100.9	34.6	34.3	0.3
LOS	E	D	B	D	F	C	C	A
Approach Delay	62.7		31.2				32.5	
Approach LOS	E		C				C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 51.0	Intersection LOS: D
Intersection Capacity Utilization 76.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	801	36	223	328	0	21	0	330	731	30	45
Future Volume (veh/h)	0	801	36	223	328	0	21	0	330	731	30	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	817	28	228	335	0	21	0	268	768	0	30
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	846	29	181	1399		0	0	0	1832	0	815
Arrive On Green	0.00	0.24	0.24	0.03	0.13	0.00	0.00	0.00	0.00	0.51	0.00	0.51
Sat Flow, veh/h	0	3656	122	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	414	431	228	335	0		0.0		768	0	30
Grp Sat Flow(s),veh/h/ln	0	1805	1878	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	18.2	18.2	8.0	6.7	0.0				10.6	0.0	0.7
Cycle Q Clear(g_c), s	0.0	18.2	18.2	8.0	6.7	0.0				10.6	0.0	0.7
Prop In Lane	0.00		0.06	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	429	446	181	1399					1832	0	815
V/C Ratio(X)	0.00	0.97	0.97	1.26	0.24					0.42	0.00	0.04
Avail Cap(c_a), veh/h	0	429	446	181	1421					1832	0	815
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.91	0.91	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	30.2	30.2	38.7	24.3	0.0				12.4	0.0	9.9
Incr Delay (d2), s/veh	0.0	34.4	33.6	151.0	0.1	0.0				0.7	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.3	11.6	11.2	2.8	0.0				3.8	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	64.6	63.8	189.7	24.3	0.0				13.1	0.0	10.0
LnGrp LOS	A	E	E	F	C					B	A	B
Approach Vol, veh/h		845			563	A					798	
Approach Delay, s/veh		64.2			91.3						13.0	
Approach LOS		E			F						B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	12.0	24.0		44.0		36.0						
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5						
Max Green Setting (Gmax), s	8.0	19.0		29.9		* 32						
Max Q Clear Time (g_c+I1), s	10.0	20.2		12.6		8.7						
Green Ext Time (p_c), s	0.0	0.0		2.8		1.5						

Intersection Summary												
HCM 6th Ctrl Delay			52.6									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

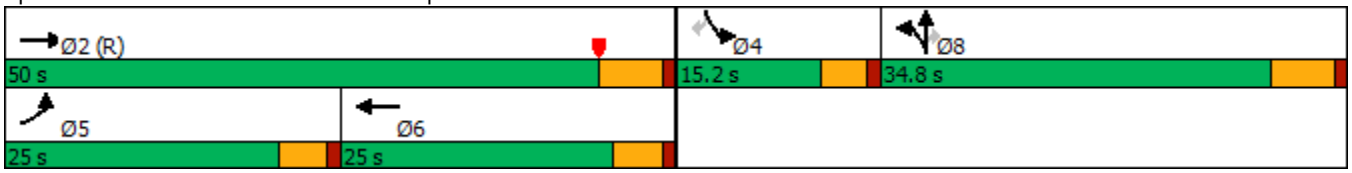
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

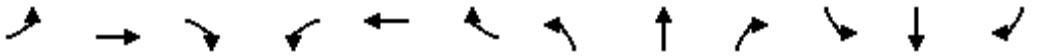
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	366	1217	199	1214	538	80	75	47	770
Future Volume (vph)	366	1217	199	1214	538	80	75	47	770
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.6	34.8		14.7	34.8	34.8	34.8	9.5	9.5
Total Split (s)	25.0	50.0		25.0	34.8	34.8	34.8	15.2	15.2
Total Split (%)	25.0%	50.0%		25.0%	34.8%	34.8%	34.8%	15.2%	15.2%
Yellow Time (s)	3.6	4.8		3.7	4.8	4.8	4.8	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8		-0.7	-1.8	-1.8	-1.8	-0.5	-0.5
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	Max	Max	Max	None	None
Act Effct Green (s)	21.0	46.0	100.0	21.0	31.3	31.3	31.3	10.7	10.7
Actuated g/C Ratio	0.21	0.46	1.00	0.21	0.31	0.31	0.31	0.11	0.11
v/c Ratio	1.05	0.55	0.13	0.99	0.62	0.62	0.14	0.26	0.96
Control Delay	101.4	18.8	0.1	61.3	35.6	35.6	1.8	44.5	33.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.4	18.8	0.1	61.3	35.6	35.6	1.8	44.5	33.6
LOS	F	B	A	E	D	D	A	D	C
Approach Delay		33.7		61.3		31.9			
Approach LOS		C		E		C			

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 41.1	Intersection LOS: D
Intersection Capacity Utilization 72.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	366	1217	199	0	1214	29	538	80	75	47	0	770
Future Volume (veh/h)	366	1217	199	0	1214	29	538	80	75	47	0	770
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	398	1323	0	0	1320	32	647	0	42	51	0	561
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	380	3174		0	2321	56	1115	0	496	0	0	0
Arrive On Green	0.21	0.61	0.00	0.00	0.35	0.34	0.31	0.00	0.31	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6879	160	3619	0	1610		0	
Grp Volume(v), veh/h	398	1323	0	0	978	374	647	0	42		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1871	1810	0	1610			
Q Serve(g_s), s	21.0	13.3	0.0	0.0	16.2	16.2	15.1	0.0	1.9			
Cycle Q Clear(g_c), s	21.0	13.3	0.0	0.0	16.2	16.2	15.1	0.0	1.9			
Prop In Lane	1.00		1.00	0.00		0.09	1.00		1.00			
Lane Grp Cap(c), veh/h	380	3174		0	1721	657	1115	0	496			
V/C Ratio(X)	1.05	0.42		0.00	0.57	0.57	0.58	0.00	0.08			
Avail Cap(c_a), veh/h	380	3174		0	1721	657	1115	0	496			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.80	0.80	0.00	0.00	0.87	0.87	1.00	0.00	1.00			
Uniform Delay (d), s/veh	39.5	10.1	0.0	0.0	26.3	26.3	29.2	0.0	24.6			
Incr Delay (d2), s/veh	54.2	0.3	0.0	0.0	0.4	1.0	2.2	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	14.6	4.4	0.0	0.0	6.1	7.2	6.5	0.0	0.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.7	10.4	0.0	0.0	26.7	27.4	31.4	0.0	24.9			
LnGrp LOS	F	B		A	C	C	C	A	C			
Approach Vol, veh/h		1721	A		1352			689				
Approach Delay, s/veh		29.7			26.9			31.0				
Approach LOS		C			C			C				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		65.2			25.0	40.2		34.8				
Change Period (Y+Rc), s		5.8			4.6	* 5.8		5.8				
Max Green Setting (Gmax), s		44.2			20.4	* 20		29.0				
Max Q Clear Time (g_c+I1), s		15.3			23.0	18.2		17.1				
Green Ext Time (p_c), s		10.4			0.0	1.5		2.1				

Intersection Summary		
HCM 6th Ctrl Delay		28.9
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

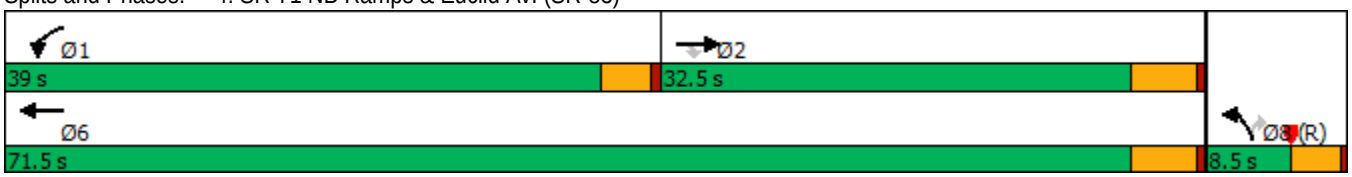
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	780	331	881	1162	49	859
Future Volume (vph)	780	331	881	1162	49	859
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	32.5	32.5	39.0	71.5	8.5	8.5
Total Split (%)	40.6%	40.6%	48.8%	89.4%	10.6%	10.6%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max
Act Effct Green (s)	24.5	24.5	35.5	63.5	8.5	8.5
Actuated g/C Ratio	0.31	0.31	0.44	0.79	0.11	0.11
v/c Ratio	0.75	0.56	1.17	0.43	0.14	1.25
Control Delay	25.4	10.4	114.5	3.0	35.8	135.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.4	10.4	114.5	3.0	35.8	135.0
LOS	C	B	F	A	D	F
Approach Delay	21.0			51.0	129.7	
Approach LOS	C			D	F	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.25	
Intersection Signal Delay: 60.4	Intersection LOS: E
Intersection Capacity Utilization 85.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	780	331	881	1162	49	859
Future Volume (veh/h)	780	331	881	1162	49	859
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	830	0	937	1236	52	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1028		803	2788	449	
Arrive On Green	0.09	0.00	0.44	0.77	0.13	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	830	0	937	1236	52	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	18.0	0.0	35.5	9.5	1.0	0.0
Cycle Q Clear(g_c), s	18.0	0.0	35.5	9.5	1.0	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1028		803	2788	449	
V/C Ratio(X)	0.81		1.17	0.44	0.12	
Avail Cap(c_a), veh/h	1264		803	3023	449	
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.18	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.1	0.0	22.3	3.2	30.9	0.0
Incr Delay (d2), s/veh	0.6	0.0	88.4	0.1	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	0.0	31.8	1.1	0.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.7	0.0	110.7	3.3	31.4	0.0
LnGrp LOS	C		F	A	C	
Approach Vol, veh/h	830	A		2173	52	A
Approach Delay, s/veh	34.7			49.6	31.4	
Approach LOS	C			D	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	39.0	27.3				66.3	13.7
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	35.5	28.0				67.0	5.0
Max Q Clear Time (g_c+I1), s	37.5	20.0				11.5	3.0
Green Ext Time (p_c), s	0.0	2.7				10.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	45.2
HCM 6th LOS	D

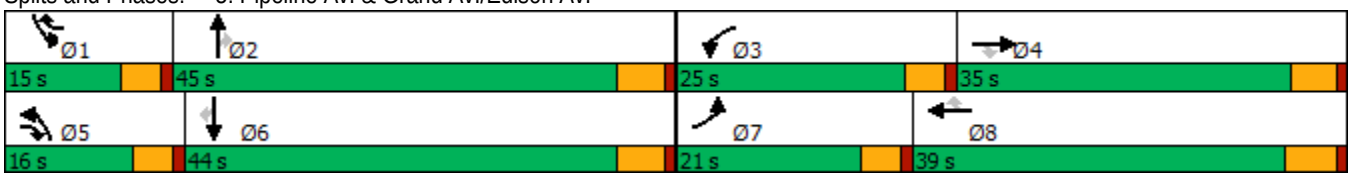
Notes

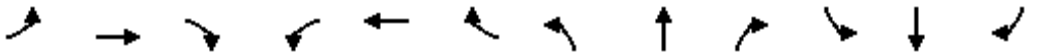
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	924	163	172	919	49	163	224	113	69	364	77
Future Volume (vph)	121	924	163	172	919	49	163	224	113	69	364	77
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	21.0	35.0	16.0	25.0	39.0	15.0	16.0	45.0	45.0	15.0	44.0	44.0
Total Split (%)	17.5%	29.2%	13.3%	20.8%	32.5%	12.5%	13.3%	37.5%	37.5%	12.5%	36.7%	36.7%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None
Act Effct Green (s)	8.7	34.2	43.9	10.2	35.6	44.2	9.8	22.5	22.5	8.6	19.0	19.0
Actuated g/C Ratio	0.10	0.38	0.49	0.11	0.40	0.49	0.11	0.25	0.25	0.10	0.21	0.21
v/c Ratio	0.41	0.51	0.20	0.50	0.48	0.07	0.52	0.27	0.25	0.46	0.52	0.19
Control Delay	44.4	24.4	3.3	44.0	23.0	3.3	45.9	28.5	6.7	51.3	33.4	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	24.4	3.3	44.0	23.0	3.3	45.9	28.5	6.7	51.3	33.4	3.4
LOS	D	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		23.6			25.3			29.3			31.3	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 89.4	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay: 26.2	Intersection LOS: C
Intersection Capacity Utilization 61.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	924	163	172	919	49	163	224	113	69	364	77
Future Volume (veh/h)	121	924	163	172	919	49	163	224	113	69	364	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	125	953	125	177	947	36	168	231	47	71	375	45
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	217	2049	752	279	2190	749	259	751	334	100	664	291
Arrive On Green	0.07	0.42	0.41	0.09	0.45	0.43	0.09	0.22	0.22	0.06	0.19	0.19
Sat Flow, veh/h	3141	4914	1505	3141	4914	1522	2956	3420	1519	1619	3420	1498
Grp Volume(v), veh/h	125	953	125	177	947	36	168	231	47	71	375	45
Grp Sat Flow(s),veh/h/ln	1570	1638	1505	1570	1638	1522	1478	1710	1519	1619	1710	1498
Q Serve(g_s), s	3.0	11.0	3.6	4.3	10.4	1.0	4.3	4.4	2.0	3.4	7.8	2.0
Cycle Q Clear(g_c), s	3.0	11.0	3.6	4.3	10.4	1.0	4.3	4.4	2.0	3.4	7.8	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	217	2049	752	279	2190	749	259	751	334	100	664	291
V/C Ratio(X)	0.58	0.47	0.17	0.63	0.43	0.05	0.65	0.31	0.14	0.71	0.57	0.15
Avail Cap(c_a), veh/h	680	2049	752	840	2190	749	452	1785	793	227	1742	763
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.4	16.6	10.8	34.6	15.0	10.4	34.7	25.6	24.7	36.2	28.7	26.3
Incr Delay (d2), s/veh	0.9	0.8	0.5	0.9	0.6	0.1	1.0	0.2	0.2	3.4	0.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.9	1.1	1.6	3.5	0.3	1.5	1.7	0.7	1.4	3.1	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.3	17.3	11.3	35.5	15.6	10.5	35.7	25.9	24.9	39.6	29.4	26.5
LnGrp LOS	D	B	B	D	B	B	D	C	C	D	C	C
Approach Vol, veh/h		1203			1160			446			491	
Approach Delay, s/veh		18.7			18.5			29.5			30.6	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	21.3	11.0	37.5	10.9	19.2	9.4	39.0
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	10.4	39.6	20.4	* 30	11.4	38.6	16.4	33.2
Max Q Clear Time (g_c+I1), s	5.4	6.4	6.3	13.0	6.3	9.8	5.0	12.4
Green Ext Time (p_c), s	0.0	1.6	0.2	6.5	0.1	2.5	0.1	6.2

Intersection Summary	
HCM 6th Ctrl Delay	21.8
HCM 6th LOS	C

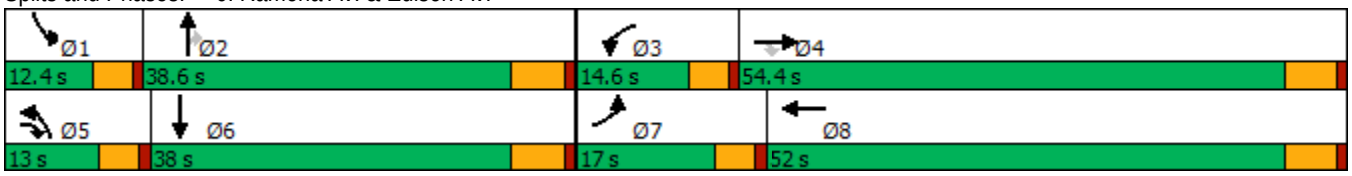
Notes

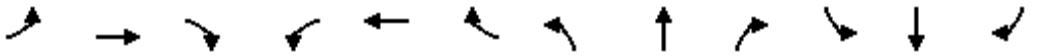
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	105	876	63	55	1061	47	327	62	54	481
Future Volume (vph)	105	876	63	55	1061	47	327	62	54	481
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	17.0	54.4	13.0	14.6	52.0	13.0	38.6	38.6	12.4	38.0
Total Split (%)	14.2%	45.3%	10.8%	12.2%	43.3%	10.8%	32.2%	32.2%	10.3%	31.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None
Act Effct Green (s)	11.4	54.0	61.8	8.6	48.7	7.8	27.8	27.8	7.7	27.6
Actuated g/C Ratio	0.10	0.49	0.56	0.08	0.45	0.07	0.25	0.25	0.07	0.25
v/c Ratio	0.70	0.58	0.05	0.48	0.84	0.45	0.42	0.15	0.53	0.75
Control Delay	71.4	24.6	3.4	64.2	35.0	64.9	35.9	2.3	70.1	43.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.4	24.6	3.4	64.2	35.0	64.9	35.9	2.3	70.1	43.1
LOS	E	C	A	E	D	E	D	A	E	D
Approach Delay		28.0			36.4		34.3			45.4
Approach LOS		C			D		C			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.4	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 35.2	Intersection LOS: D
Intersection Capacity Utilization 74.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	876	63	55	1061	74	47	327	62	54	481	98
Future Volume (veh/h)	105	876	63	55	1061	74	47	327	62	54	481	98
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1700	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	117	973	66	61	1179	78	52	363	38	60	534	97
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	151	1733	1343	85	1517	100	74	799	355	84	692	125
Arrive On Green	0.09	0.51	0.49	0.05	0.47	0.45	0.05	0.23	0.23	0.05	0.24	0.22
Sat Flow, veh/h	1619	3420	2480	1619	3253	215	1619	3420	1522	1619	2886	522
Grp Volume(v), veh/h	117	973	66	61	619	638	52	363	38	60	316	315
Grp Sat Flow(s),veh/h/ln	1619	1710	1240	1619	1710	1758	1619	1710	1522	1619	1710	1698
Q Serve(g_s), s	7.3	20.2	1.3	3.8	31.2	31.3	3.3	9.4	2.0	3.8	17.7	17.9
Cycle Q Clear(g_c), s	7.3	20.2	1.3	3.8	31.2	31.3	3.3	9.4	2.0	3.8	17.7	17.9
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	151	1733	1343	85	797	820	74	799	355	84	410	407
V/C Ratio(X)	0.78	0.56	0.05	0.72	0.78	0.78	0.71	0.45	0.11	0.72	0.77	0.77
Avail Cap(c_a), veh/h	204	1733	1343	167	797	820	142	1149	511	132	565	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	17.5	11.2	48.0	23.0	23.1	48.5	33.8	31.0	48.1	36.5	36.8
Incr Delay (d2), s/veh	8.2	1.3	0.1	4.1	7.3	7.2	4.6	0.4	0.1	4.2	4.3	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	7.5	0.3	1.6	13.0	13.4	1.4	3.8	0.7	1.6	7.5	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.8	18.8	11.2	52.2	30.3	30.3	53.0	34.2	31.1	52.3	40.8	41.4
LnGrp LOS	D	B	B	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		1156			1318			453			691	
Approach Delay, s/veh		21.9			31.3			36.1			42.1	
Approach LOS		C			C			D			D	

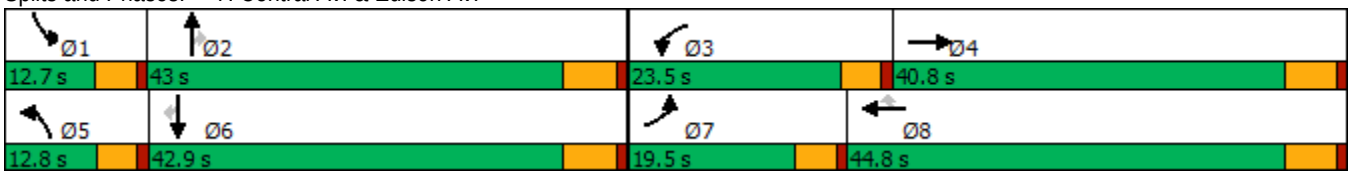
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	28.1	9.4	56.2	8.7	28.7	13.6	52.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	7.8	32.8	10.0	48.6	8.4	32.2	12.4	46.2
Max Q Clear Time (g_c+I1), s	5.8	11.4	5.8	22.2	5.3	19.9	9.3	33.3
Green Ext Time (p_c), s	0.0	2.2	0.0	7.2	0.0	2.8	0.0	6.2

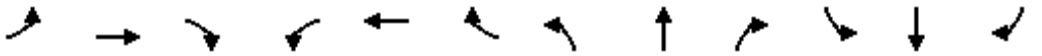
Intersection Summary	
HCM 6th Ctrl Delay	31.0
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	161	524	344	1087	126	83	858	335	92	1010	272
Future Volume (vph)	161	524	344	1087	126	83	858	335	92	1010	272
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	19.5	40.8	23.5	44.8	44.8	12.8	43.0	43.0	12.7	42.9	42.9
Total Split (%)	16.3%	34.0%	19.6%	37.3%	37.3%	10.7%	35.8%	35.8%	10.6%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	14.7	38.1	17.4	40.8	40.8	8.5	38.8	38.8	8.6	38.9	38.9
Actuated g/C Ratio	0.12	0.32	0.15	0.34	0.34	0.07	0.33	0.33	0.07	0.33	0.33
v/c Ratio	0.84	0.56	0.78	0.97	0.22	0.75	0.80	0.55	0.82	0.94	0.50
Control Delay	84.9	35.7	61.3	58.0	6.7	90.9	43.3	15.6	100.5	55.4	22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.9	35.7	61.3	58.0	6.7	90.9	43.3	15.6	100.5	55.4	22.4
LOS	F	D	E	E	A	F	D	B	F	E	C
Approach Delay		46.3		54.6			39.1			51.9	
Approach LOS		D		D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 48.6	Intersection LOS: D
Intersection Capacity Utilization 89.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	524	62	344	1087	126	83	858	335	92	1010	272
Future Volume (veh/h)	161	524	62	344	1087	126	83	858	335	92	1010	272
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	168	546	59	358	1132	103	86	894	167	96	1052	225
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	199	1033	111	425	1176	518	113	1110	488	119	1122	493
Arrive On Green	0.12	0.33	0.32	0.14	0.34	0.34	0.07	0.32	0.32	0.07	0.33	0.33
Sat Flow, veh/h	1619	3114	336	3141	3420	1505	1619	3420	1503	1619	3420	1504
Grp Volume(v), veh/h	168	299	306	358	1132	103	86	894	167	96	1052	225
Grp Sat Flow(s),veh/h/ln	1619	1710	1740	1570	1710	1505	1619	1710	1503	1619	1710	1504
Q Serve(g_s), s	12.0	16.8	16.9	13.2	38.5	5.7	6.2	28.4	10.0	6.9	35.4	14.0
Cycle Q Clear(g_c), s	12.0	16.8	16.9	13.2	38.5	5.7	6.2	28.4	10.0	6.9	35.4	14.0
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	199	567	577	425	1176	518	113	1110	488	119	1122	493
V/C Ratio(X)	0.84	0.53	0.53	0.84	0.96	0.20	0.76	0.81	0.34	0.81	0.94	0.46
Avail Cap(c_a), veh/h	212	567	577	516	1176	518	120	1125	494	119	1122	493
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	32.1	32.3	50.0	38.2	27.4	54.2	36.6	30.4	54.1	38.7	31.5
Incr Delay (d2), s/veh	22.7	3.5	3.5	8.7	18.6	0.9	20.1	4.3	0.4	30.6	14.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	7.2	7.4	5.5	18.3	2.1	3.1	12.0	3.6	3.8	16.4	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.6	35.6	35.8	58.8	56.8	28.3	74.3	41.0	30.8	84.7	53.1	32.2
LnGrp LOS	E	D	D	E	E	C	E	D	C	F	D	C
Approach Vol, veh/h		773			1593			1147			1373	
Approach Delay, s/veh		43.9			55.4			42.0			51.9	
Approach LOS		D			E			D			D	

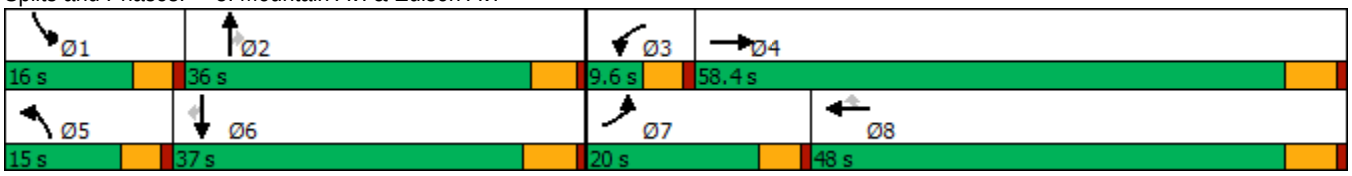
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	42.5	20.1	43.3	12.3	42.9	18.6	44.8
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	8.1	37.2	18.9	35.0	8.2	37.1	14.9	39.0
Max Q Clear Time (g_c+I1), s	8.9	30.4	15.2	18.9	8.2	37.4	14.0	40.5
Green Ext Time (p_c), s	0.0	3.4	0.3	3.0	0.0	0.0	0.0	0.0

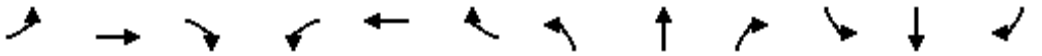
Intersection Summary	
HCM 6th Ctrl Delay	49.4
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	153	587	11	1111	117	92	168	45	112	86	287
Future Volume (vph)	153	587	11	1111	117	92	168	45	112	86	287
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	20.0	58.4	9.6	48.0	48.0	15.0	36.0	36.0	16.0	37.0	37.0
Total Split (%)	16.7%	48.7%	8.0%	40.0%	40.0%	12.5%	30.0%	30.0%	13.3%	30.8%	30.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	14.3	61.0	5.6	44.4	44.4	9.9	18.0	18.0	11.1	19.2	19.2
Actuated g/C Ratio	0.14	0.59	0.05	0.43	0.43	0.10	0.17	0.17	0.11	0.18	0.18
v/c Ratio	0.75	0.24	0.14	0.83	0.18	0.65	0.59	0.13	0.71	0.28	0.66
Control Delay	65.9	11.8	54.8	33.9	3.0	67.3	47.6	0.7	69.2	38.7	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.9	11.8	54.8	33.9	3.0	67.3	47.6	0.7	69.2	38.7	17.7
LOS	E	B	D	C	A	E	D	A	E	D	B
Approach Delay		22.4		31.2			46.6			33.4	
Approach LOS		C		C			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.9	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 30.8	Intersection LOS: C
Intersection Capacity Utilization 71.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	587	44	11	1111	117	92	168	45	112	86	287
Future Volume (veh/h)	153	587	44	11	1111	117	92	168	45	112	86	287
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	166	638	44	12	1208	116	100	183	19	122	93	174
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	204	2664	182	33	1582	705	133	251	213	158	292	242
Arrive On Green	0.13	0.57	0.55	0.02	0.46	0.46	0.08	0.14	0.14	0.10	0.16	0.16
Sat Flow, veh/h	1619	4689	321	1619	3420	1524	1619	1800	1525	1619	1800	1497
Grp Volume(v), veh/h	166	444	238	12	1208	116	100	183	19	122	93	174
Grp Sat Flow(s),veh/h/ln	1619	1638	1734	1619	1710	1524	1619	1800	1525	1619	1800	1497
Q Serve(g_s), s	9.6	6.5	6.6	0.7	28.1	4.2	5.8	9.3	1.0	7.0	4.4	10.6
Cycle Q Clear(g_c), s	9.6	6.5	6.6	0.7	28.1	4.2	5.8	9.3	1.0	7.0	4.4	10.6
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	204	1861	985	33	1582	705	133	251	213	158	292	242
V/C Ratio(X)	0.81	0.24	0.24	0.36	0.76	0.16	0.75	0.73	0.09	0.77	0.32	0.72
Avail Cap(c_a), veh/h	271	1861	985	95	1582	705	186	602	510	203	620	516
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.7	10.3	10.4	46.3	21.4	15.0	43.0	39.5	35.9	42.2	35.4	38.0
Incr Delay (d2), s/veh	9.8	0.3	0.6	2.4	3.6	0.5	5.8	4.0	0.2	9.5	0.6	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	2.1	2.4	0.3	10.8	1.4	2.5	4.3	0.4	3.1	1.9	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.6	10.6	11.0	48.7	24.9	15.5	48.8	43.5	36.1	51.7	36.1	42.0
LnGrp LOS	D	B	B	D	C	B	D	D	D	D	D	D
Approach Vol, veh/h		848			1336			302			389	
Approach Delay, s/veh		18.6			24.3			44.8			43.6	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	18.1	6.0	58.4	11.9	19.5	16.1	48.3
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	11.4	* 31	5.0	52.6	10.4	31.2	15.4	42.2
Max Q Clear Time (g_c+I1), s	9.0	11.3	2.7	8.6	7.8	12.6	11.6	30.1
Green Ext Time (p_c), s	0.0	0.9	0.0	4.4	0.0	0.9	0.1	6.4

Intersection Summary	
HCM 6th Ctrl Delay	27.4
HCM 6th LOS	C

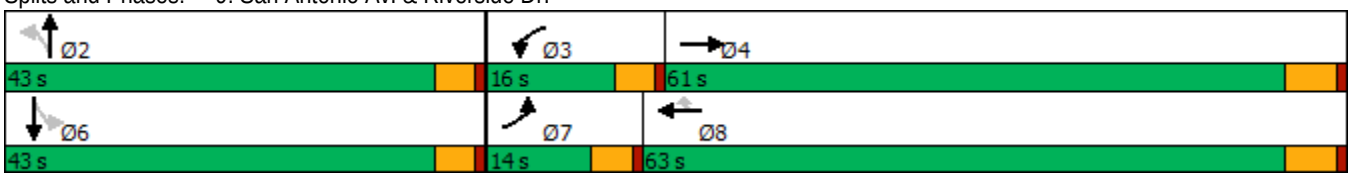
Notes

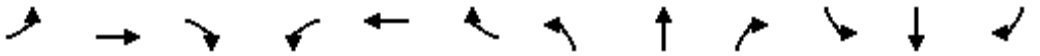
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	18	529	38	917	6	126	2	22	7
Future Volume (vph)	18	529	38	917	6	126	2	22	7
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	14.0	61.0	16.0	63.0	63.0	43.0	43.0	43.0	43.0
Total Split (%)	11.7%	50.8%	13.3%	52.5%	52.5%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	6.5	61.5	7.6	64.6	64.6	17.2	17.2	17.2	17.2
Actuated g/C Ratio	0.07	0.65	0.08	0.69	0.69	0.18	0.18	0.18	0.18
v/c Ratio	0.17	0.29	0.32	0.42	0.01	0.61	0.17	0.11	0.20
Control Delay	47.7	9.2	49.1	9.2	0.0	47.2	10.8	32.4	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.7	9.2	49.1	9.2	0.0	47.2	10.8	32.4	11.9
LOS	D	A	D	A	A	D	B	C	B
Approach Delay		10.3		10.7			36.8		17.3
Approach LOS		B		B			D		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 94.1	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 13.4	Intersection LOS: B
Intersection Capacity Utilization 55.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	529	63	38	917	6	126	2	48	22	7	55
Future Volume (veh/h)	18	529	63	38	917	6	126	2	48	22	7	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	19	569	64	41	986	5	135	2	29	24	8	42
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	45	2032	228	69	2293	1000	261	16	238	277	41	217
Arrive On Green	0.03	0.66	0.64	0.04	0.67	0.67	0.17	0.17	0.16	0.17	0.17	0.16
Sat Flow, veh/h	1619	3100	348	1619	3420	1492	1300	99	1439	1320	250	1313
Grp Volume(v), veh/h	19	313	320	41	986	5	135	0	31	24	0	50
Grp Sat Flow(s),veh/h/ln	1619	1710	1737	1619	1710	1492	1300	0	1538	1320	0	1564
Q Serve(g_s), s	1.0	6.8	6.9	2.2	11.8	0.1	8.8	0.0	1.5	1.4	0.0	2.4
Cycle Q Clear(g_c), s	1.0	6.8	6.9	2.2	11.8	0.1	11.2	0.0	1.5	2.9	0.0	2.4
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.94	1.00		0.84
Lane Grp Cap(c), veh/h	45	1121	1139	69	2293	1000	261	0	254	277	0	259
V/C Ratio(X)	0.42	0.28	0.28	0.59	0.43	0.00	0.52	0.00	0.12	0.09	0.00	0.19
Avail Cap(c_a), veh/h	184	1121	1139	221	2293	1000	622	0	681	644	0	693
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.1	6.4	6.5	41.4	6.7	4.8	36.5	0.0	31.5	32.5	0.0	31.9
Incr Delay (d2), s/veh	2.3	0.6	0.6	3.0	0.6	0.0	1.6	0.0	0.2	0.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.1	2.1	0.9	3.3	0.0	2.9	0.0	0.6	0.5	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.4	7.0	7.1	44.3	7.3	4.8	38.1	0.0	31.7	32.7	0.0	32.2
LnGrp LOS	D	A	A	D	A	A	D	A	C	C	A	C
Approach Vol, veh/h		652			1032			166			74	
Approach Delay, s/veh		8.1			8.8			36.9			32.4	
Approach LOS		A			A			D			C	

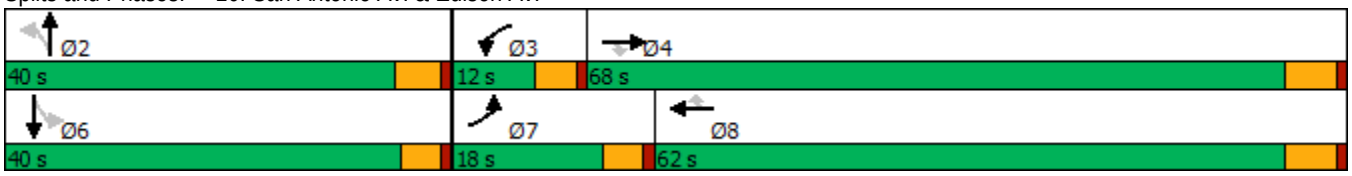
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.6	7.8	61.7		18.6	6.5	63.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		38.4	11.4	55.2		38.4	9.4	57.2				
Max Q Clear Time (g_c+I1), s		13.2	4.2	8.9		4.9	3.0	13.8				
Green Ext Time (p_c), s		0.6	0.0	3.8		0.3	0.0	7.8				

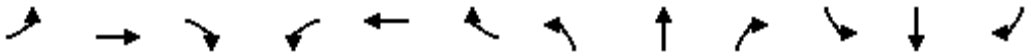
Intersection Summary												
HCM 6th Ctrl Delay			11.9									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	51	665	30	3	992	23	46	80	18	41
Future Volume (vph)	51	665	30	3	992	23	46	80	18	41
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	18.0	68.0	68.0	12.0	62.0	62.0	40.0	40.0	40.0	40.0
Total Split (%)	15.0%	56.7%	56.7%	10.0%	51.7%	51.7%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	8.4	68.9	68.9	5.9	60.4	60.4		16.9		16.9
Actuated g/C Ratio	0.09	0.72	0.72	0.06	0.63	0.63		0.18		0.18
v/c Ratio	0.39	0.29	0.03	0.05	0.50	0.02		0.67		0.53
Control Delay	51.4	6.6	0.9	48.7	12.5	0.0		50.5		26.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	51.4	6.6	0.9	48.7	12.5	0.0		50.5		26.5
LOS	D	A	A	D	B	A		D		C
Approach Delay		9.4			12.3			50.5		26.5
Approach LOS		A			B			D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 95.7	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 15.0	Intersection LOS: B
Intersection Capacity Utilization 61.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	665	30	3	992	23	46	80	15	18	41	102
Future Volume (veh/h)	51	665	30	3	992	23	46	80	15	18	41	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1000	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	55	723	25	3	1078	25	50	87	7	20	45	72
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	78	2438	1086	10	2308	1030	119	158	11	66	86	117
Arrive On Green	0.05	0.71	0.71	0.01	0.67	0.67	0.14	0.14	0.13	0.14	0.14	0.13
Sat Flow, veh/h	1619	3420	1523	952	3420	1525	455	1105	80	146	623	852
Grp Volume(v), veh/h	55	723	25	3	1078	25	144	0	0	137	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1523	952	1710	1525	1639	0	0	1620	0	0
Q Serve(g_s), s	3.0	6.9	0.4	0.3	13.4	0.5	0.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.0	6.9	0.4	0.3	13.4	0.5	7.1	0.0	0.0	6.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.35		0.05	0.15		0.53
Lane Grp Cap(c), veh/h	78	2438	1086	10	2308	1030	288	0	0	269	0	0
V/C Ratio(X)	0.70	0.30	0.02	0.29	0.47	0.02	0.50	0.00	0.00	0.51	0.00	0.00
Avail Cap(c_a), veh/h	252	2438	1086	85	2308	1030	693	0	0	676	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.1	4.7	3.8	44.1	6.9	4.8	36.0	0.0	0.0	36.6	0.0	0.0
Incr Delay (d2), s/veh	4.2	0.3	0.0	5.8	0.7	0.0	1.3	0.0	0.0	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.8	0.1	0.1	3.8	0.1	3.0	0.0	0.0	2.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.3	5.0	3.8	49.9	7.6	4.9	37.3	0.0	0.0	38.1	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		803			1106			144			137	
Approach Delay, s/veh		7.8			7.7			37.3			38.1	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.8	5.0	68.0		16.8	8.4	64.6				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		34.9	7.4	62.2		* 35	13.4	56.2				
Max Q Clear Time (g_c+I1), s		9.1	2.3	8.9		8.9	5.0	15.4				
Green Ext Time (p_c), s		0.8	0.0	5.3		0.8	0.0	8.9				

Intersection Summary	
HCM 6th Ctrl Delay	11.6
HCM 6th LOS	B

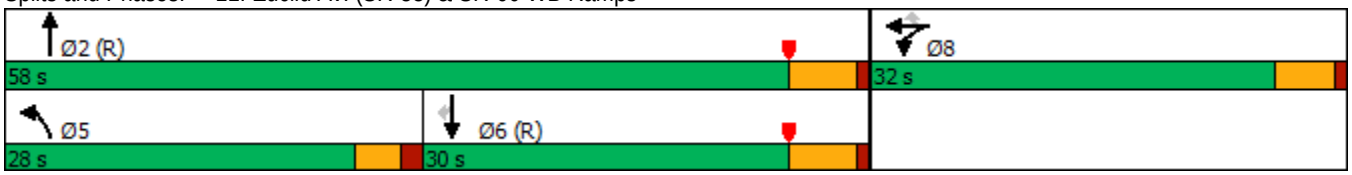
Notes

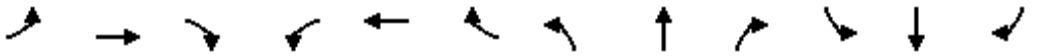
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	761	6	469	456	1043	1101	539
Future Volume (vph)	761	6	469	456	1043	1101	539
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	32.0	32.0	32.0	28.0	58.0	30.0	30.0
Total Split (%)	35.6%	35.6%	35.6%	31.1%	64.4%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	26.3	26.3	26.3	24.2	53.2	24.5	24.5
Actuated g/C Ratio	0.29	0.29	0.29	0.27	0.59	0.27	0.27
v/c Ratio	0.91	0.94	0.80	1.00	0.52	1.19	0.68
Control Delay	54.8	60.4	36.5	48.5	21.3	128.1	7.3
Queue Delay	0.0	0.0	0.0	0.0	3.4	0.0	0.0
Total Delay	54.8	60.4	36.5	48.5	24.7	128.1	7.3
LOS	D	E	D	D	C	F	A
Approach Delay		51.0			31.9	88.4	
Approach LOS		D			C	F	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.19	
Intersection Signal Delay: 58.5	Intersection LOS: E
Intersection Capacity Utilization 139.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	761	6	469	456	1043	0	0	1101	539
Future Volume (veh/h)	0	0	0	761	6	469	456	1043	0	0	1101	539
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				899	0	189	485	1110	0	0	1171	345
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				989	0	440	472	2202	0	0	1079	481
Arrive On Green				0.27	0.00	0.27	0.52	1.00	0.00	0.00	0.30	0.30
Sat Flow, veh/h				3619	0	1610	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				899	0	189	485	1110	0	0	1171	345
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1610
Q Serve(g_s), s				21.6	0.0	8.7	23.5	0.0	0.0	0.0	26.9	17.2
Cycle Q Clear(g_c), s				21.6	0.0	8.7	23.5	0.0	0.0	0.0	26.9	17.2
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				989	0	440	472	2202	0	0	1079	481
V/C Ratio(X)				0.91	0.00	0.43	1.03	0.50	0.00	0.00	1.09	0.72
Avail Cap(c_a), veh/h				1086	0	483	472	2202	0	0	1079	481
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.17	0.17	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.6	0.0	26.9	21.5	0.0	0.0	0.0	31.5	28.2
Incr Delay (d2), s/veh				10.0	0.0	0.2	24.3	0.1	0.0	0.0	53.6	8.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				10.1	0.0	3.2	8.7	0.0	0.0	0.0	18.9	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				41.6	0.0	27.2	45.8	0.1	0.0	0.0	85.1	37.0
LnGrp LOS				D	A	C	F	A	A	A	F	D
Approach Vol, veh/h					1088			1595			1516	
Approach Delay, s/veh					39.1			14.0			74.2	
Approach LOS					D			B			E	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	60.4		28.0	32.4		29.6						
Change Period (Y+Rc), s	5.5		4.5	5.5		5.0						
Max Green Setting (Gmax), s	52.5		23.5	24.5		27.0						
Max Q Clear Time (g_c+I1), s	2.0		25.5	28.9		23.6						
Green Ext Time (p_c), s	14.9		0.0	0.0		1.0						

Intersection Summary		
HCM 6th Ctrl Delay	42.2	
HCM 6th LOS	D	

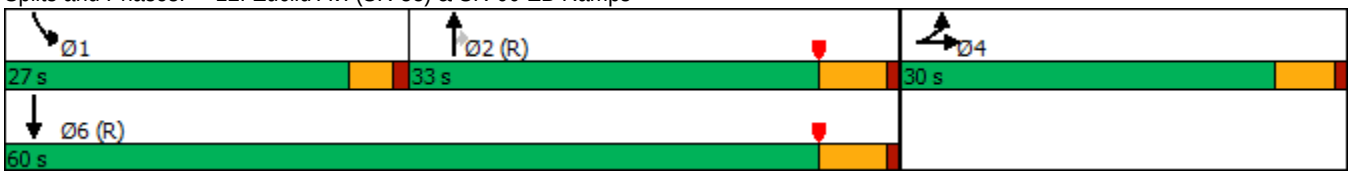
Notes

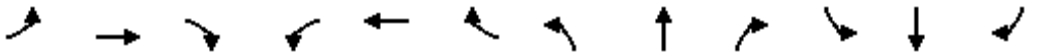
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	463	2	1037	788	417	1444
Future Volume (vph)	463	2	1037	788	417	1444
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	30.0	30.0	33.0	33.0	27.0	60.0
Total Split (%)	33.3%	33.3%	36.7%	36.7%	30.0%	66.7%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	25.0	25.0	27.7	27.7	22.8	54.5
Actuated g/C Ratio	0.28	0.28	0.31	0.31	0.25	0.61
v/c Ratio	0.92	1.15	0.98	0.91	0.96	0.70
Control Delay	58.8	118.9	55.2	24.0	59.7	7.0
Queue Delay	34.7	1.3	0.0	0.0	0.0	1.4
Total Delay	93.5	120.2	55.2	24.0	59.7	8.3
LOS	F	F	E	C	E	A
Approach Delay		108.0	41.8			19.9
Approach LOS		F	D			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.15	
Intersection Signal Delay: 46.1	Intersection LOS: D
Intersection Capacity Utilization 139.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	463	2	450	0	0	0	0	1037	788	417	1444	0
Future Volume (veh/h)	463	2	450	0	0	0	0	1037	788	417	1444	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	454	48	419				0	1092	630	439	1520	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	503	47	408				0	1103	478	462	2186	0
Arrive On Green	0.28	0.28	0.28				0.00	0.31	0.31	0.34	0.81	0.00
Sat Flow, veh/h	1810	168	1468				0	3705	1566	1810	3705	0
Grp Volume(v), veh/h	454	0	467				0	1092	630	439	1520	0
Grp Sat Flow(s),veh/h/ln	1810	0	1636				0	1805	1566	1810	1805	0
Q Serve(g_s), s	21.8	0.0	25.0				0.0	27.1	27.5	21.3	16.8	0.0
Cycle Q Clear(g_c), s	21.8	0.0	25.0				0.0	27.1	27.5	21.3	16.8	0.0
Prop In Lane	1.00		0.90				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	503	0	454				0	1103	478	462	2186	0
V/C Ratio(X)	0.90	0.00	1.03				0.00	0.99	1.32	0.95	0.70	0.00
Avail Cap(c_a), veh/h	503	0	454				0	1103	478	462	2186	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.33	1.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.60	0.60	0.37	0.37	0.00
Uniform Delay (d), s/veh	31.3	0.0	32.5				0.0	31.1	31.2	29.1	5.1	0.0
Incr Delay (d2), s/veh	19.1	0.0	49.5				0.0	18.8	151.4	14.8	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.4	0.0	15.3				0.0	13.8	29.8	9.7	3.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.4	0.0	82.0				0.0	49.9	182.7	44.0	5.8	0.0
LnGrp LOS	D	A	F				A	D	F	D	A	A
Approach Vol, veh/h		921						1722			1959	
Approach Delay, s/veh		66.4						98.5			14.3	
Approach LOS		E						F			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	27.0	33.0		30.0		60.0
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	23.0	27.5		25.0		54.5
Max Q Clear Time (g_c+I1), s	23.3	29.5		27.0		18.8
Green Ext Time (p_c), s	0.0	0.0		0.0		20.5

Intersection Summary	
HCM 6th Ctrl Delay	56.2
HCM 6th LOS	E

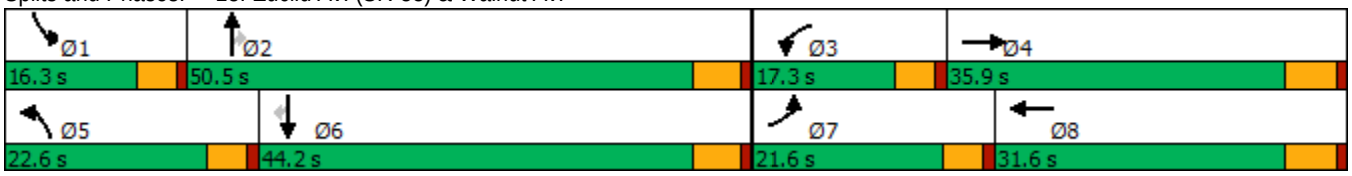
Notes

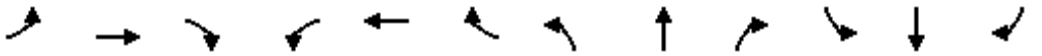
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	130	331	83	353	144	1406	52	172	1510	68
Future Volume (vph)	130	331	83	353	144	1406	52	172	1510	68
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	21.6	35.9	17.3	31.6	22.6	50.5	50.5	16.3	44.2	44.2
Total Split (%)	18.0%	29.9%	14.4%	26.3%	18.8%	42.1%	42.1%	13.6%	36.8%	36.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	13.2	27.9	9.9	22.2	14.1	45.4	45.4	10.3	41.6	41.6
Actuated g/C Ratio	0.12	0.25	0.09	0.20	0.13	0.41	0.41	0.09	0.37	0.37
v/c Ratio	0.72	0.57	0.61	0.85	0.75	0.74	0.08	0.67	0.87	0.11
Control Delay	69.6	36.9	68.9	46.7	70.2	32.2	0.2	63.0	40.4	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.6	36.9	68.9	46.7	70.2	32.2	0.2	63.0	40.4	0.3
LOS	E	D	E	D	E	C	A	E	D	A
Approach Delay		44.1		49.4		34.6			41.1	
Approach LOS		D		D		C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 40.4	Intersection LOS: D
Intersection Capacity Utilization 83.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	331	128	83	353	234	144	1406	52	172	1510	68
Future Volume (veh/h)	130	331	128	83	353	234	144	1406	52	172	1510	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	137	348	99	87	372	206	152	1480	37	181	1589	51
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	163	632	177	108	438	239	179	2079	645	234	1926	597
Arrive On Green	0.10	0.24	0.24	0.07	0.21	0.21	0.11	0.42	0.42	0.08	0.39	0.39
Sat Flow, veh/h	1619	2637	740	1619	2134	1163	1619	4914	1524	2956	4914	1524
Grp Volume(v), veh/h	137	224	223	87	297	281	152	1480	37	181	1589	51
Grp Sat Flow(s),veh/h/ln	1619	1710	1667	1619	1710	1587	1619	1638	1524	1478	1638	1524
Q Serve(g_s), s	8.9	12.2	12.5	5.6	17.8	18.2	9.8	26.5	1.5	6.4	31.0	2.2
Cycle Q Clear(g_c), s	8.9	12.2	12.5	5.6	17.8	18.2	9.8	26.5	1.5	6.4	31.0	2.2
Prop In Lane	1.00		0.44	1.00		0.73	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	163	410	399	108	351	326	179	2079	645	234	1926	597
V/C Ratio(X)	0.84	0.55	0.56	0.81	0.85	0.86	0.85	0.71	0.06	0.77	0.83	0.09
Avail Cap(c_a), veh/h	258	483	471	193	414	384	273	2079	645	325	1926	597
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	35.5	35.6	49.1	40.7	40.9	46.5	25.4	18.2	48.1	29.1	20.4
Incr Delay (d2), s/veh	7.1	1.1	1.2	5.3	13.2	16.0	9.1	2.1	0.2	4.6	4.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	5.0	5.0	2.4	8.5	8.3	4.3	10.1	0.5	2.5	12.2	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.2	36.6	36.8	54.3	53.9	56.9	55.7	27.5	18.3	52.7	33.3	20.7
LnGrp LOS	D	D	D	D	D	E	E	C	B	D	C	C
Approach Vol, veh/h		584			665			1669			1821	
Approach Delay, s/veh		40.8			55.2			29.8			34.9	
Approach LOS		D			E			C			C	

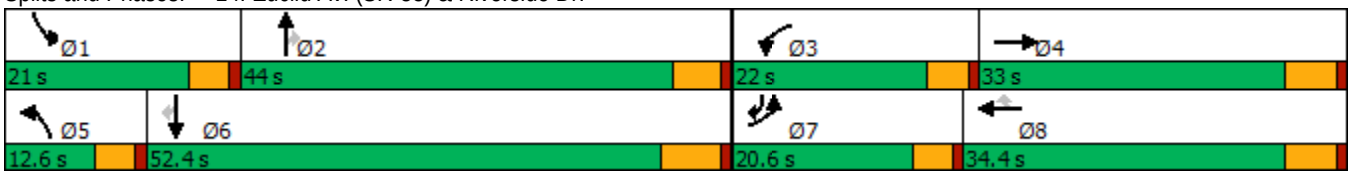
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	50.5	11.7	31.3	16.4	47.2	15.3	27.7
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	11.7	45.1	12.7	30.1	18.0	38.8	17.0	25.8
Max Q Clear Time (g_c+I1), s	8.4	28.5	7.6	14.5	11.8	33.0	10.9	20.2
Green Ext Time (p_c), s	0.1	9.3	0.0	2.1	0.1	4.4	0.1	1.6

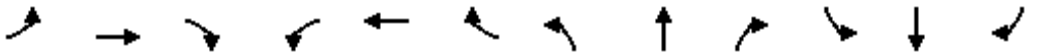
Intersection Summary	
HCM 6th Ctrl Delay	36.7
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	176	357	219	560	132	84	1162	181	199	1300	175
Future Volume (vph)	176	357	219	560	132	84	1162	181	199	1300	175
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	20.6	33.0	22.0	34.4	34.4	12.6	44.0	44.0	21.0	52.4	20.6
Total Split (%)	17.2%	27.5%	18.3%	28.7%	28.7%	10.5%	36.7%	36.7%	17.5%	43.7%	17.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None
Act Effct Green (s)	15.4	27.2	17.4	29.2	29.2	7.9	38.6	38.6	16.4	46.0	63.3
Actuated g/C Ratio	0.13	0.23	0.14	0.24	0.24	0.07	0.32	0.32	0.14	0.38	0.53
v/c Ratio	0.90	1.12	0.99	0.71	0.28	0.84	1.11	0.32	0.95	1.04	0.22
Control Delay	92.3	125.1	107.3	47.1	5.7	107.1	101.6	9.5	100.9	73.4	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.3	125.1	107.3	47.1	5.7	107.1	101.6	9.5	100.9	73.4	8.1
LOS	F	F	F	D	A	F	F	A	F	E	A
Approach Delay		115.6		55.6			90.2			69.9	
Approach LOS		F		E			F			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 79.3	Intersection LOS: E
Intersection Capacity Utilization 101.3%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	357	73	219	560	132	84	1162	181	199	1300	175
Future Volume (veh/h)	176	357	73	219	560	132	84	1162	181	199	1300	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	185	376	61	231	589	110	88	1223	151	209	1368	125
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	208	339	55	233	819	365	107	1090	486	219	1327	788
Arrive On Green	0.13	0.22	0.22	0.14	0.24	0.24	0.07	0.32	0.32	0.14	0.39	0.39
Sat Flow, veh/h	1619	1511	245	1619	3420	1525	1619	3420	1525	1619	3420	1524
Grp Volume(v), veh/h	185	0	437	231	589	110	88	1223	151	209	1368	125
Grp Sat Flow(s),veh/h/ln	1619	0	1756	1619	1710	1525	1619	1710	1525	1619	1710	1524
Q Serve(g_s), s	13.6	0.0	27.2	17.3	19.2	7.2	6.5	38.6	9.1	15.5	47.0	5.2
Cycle Q Clear(g_c), s	13.6	0.0	27.2	17.3	19.2	7.2	6.5	38.6	9.1	15.5	47.0	5.2
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	208	0	394	233	819	365	107	1090	486	219	1327	788
V/C Ratio(X)	0.89	0.00	1.11	0.99	0.72	0.30	0.82	1.12	0.31	0.95	1.03	0.16
Avail Cap(c_a), veh/h	214	0	394	233	819	365	107	1090	486	219	1327	788
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.9	0.0	47.0	51.8	42.3	37.7	55.8	41.2	31.2	52.0	37.1	15.4
Incr Delay (d2), s/veh	31.5	0.0	77.9	56.9	3.1	0.5	36.2	67.3	1.7	47.2	32.9	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	0.0	20.0	10.5	8.2	2.7	3.6	25.3	3.5	9.0	24.7	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.4	0.0	124.8	108.7	45.4	38.2	92.1	108.5	32.8	99.1	70.0	15.8
LnGrp LOS	F	A	F	F	D	D	F	F	C	F	F	B
Approach Vol, veh/h		622			930			1462			1702	
Approach Delay, s/veh		112.5			60.2			99.7			69.6	
Approach LOS		F			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	45.1	22.0	33.0	12.6	53.5	20.2	34.8
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	16.4	* 39	17.4	27.2	8.0	45.9	16.0	28.6
Max Q Clear Time (g_c+I1), s	17.5	40.6	19.3	29.2	8.5	49.0	15.6	21.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	82.7
HCM 6th LOS	F

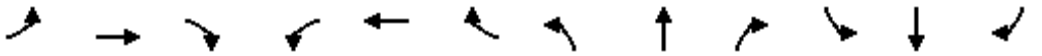
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	119	190	48	83	173	58	1245	148	64	1396	106
Future Volume (vph)	119	190	48	83	173	58	1245	148	64	1396	106
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	44.0	44.0	44.0	44.0	44.0	15.0	60.0	60.0	16.0	61.0	61.0
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	12.5%	50.0%	50.0%	13.3%	50.8%	50.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	30.1	30.1	30.1		30.1	8.2	56.3	56.3	8.6	55.4	55.4
Actuated g/C Ratio	0.28	0.28	0.28		0.28	0.08	0.52	0.52	0.08	0.51	0.51
v/c Ratio	0.63	0.40	0.11		0.92	0.51	0.75	0.19	0.53	0.85	0.14
Control Delay	49.6	34.6	3.5		67.6	66.5	26.6	11.0	66.2	31.5	6.5
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.6	34.6	3.5		67.6	66.5	26.6	11.0	66.2	31.5	6.5
LOS	D	C	A		E	E	C	B	E	C	A
Approach Delay		35.4			67.6		26.6			31.2	
Approach LOS		D			E		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 32.9	Intersection LOS: C
Intersection Capacity Utilization 92.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	190	48	83	173	58	58	1245	148	64	1396	106
Future Volume (veh/h)	119	190	48	83	173	58	58	1245	148	64	1396	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	127	202	35	88	184	50	62	1324	133	68	1485	82
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	228	505	428	122	223	56	77	1743	778	85	1759	768
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.05	0.51	0.51	0.05	0.51	0.51
Sat Flow, veh/h	1100	1800	1524	282	795	198	1619	3420	1525	1619	3420	1494
Grp Volume(v), veh/h	127	202	35	322	0	0	62	1324	133	68	1485	82
Grp Sat Flow(s),veh/h/ln	1100	1800	1524	1275	0	0	1619	1710	1525	1619	1710	1494
Q Serve(g_s), s	0.0	9.8	1.8	17.2	0.0	0.0	4.1	33.3	5.0	4.5	40.1	3.0
Cycle Q Clear(g_c), s	25.6	9.8	1.8	27.0	0.0	0.0	4.1	33.3	5.0	4.5	40.1	3.0
Prop In Lane	1.00		1.00	0.27		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	228	505	428	400	0	0	77	1743	778	85	1759	768
V/C Ratio(X)	0.56	0.40	0.08	0.80	0.00	0.00	0.80	0.76	0.17	0.80	0.84	0.11
Avail Cap(c_a), veh/h	310	640	541	514	0	0	157	1743	778	172	1759	768
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.0	31.3	28.5	38.8	0.0	0.0	50.7	21.1	14.2	50.4	22.4	13.4
Incr Delay (d2), s/veh	2.1	0.5	0.1	7.1	0.0	0.0	7.0	3.2	0.5	6.4	5.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	4.1	0.7	8.7	0.0	0.0	1.7	12.3	1.7	1.9	15.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.1	31.8	28.6	45.9	0.0	0.0	57.7	24.3	14.6	56.8	27.6	13.7
LnGrp LOS	D	C	C	D	A	A	E	C	B	E	C	B
Approach Vol, veh/h		364			322			1519			1635	
Approach Delay, s/veh		34.1			45.9			24.8			28.1	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.2	61.3		36.0	9.7	61.8		36.0				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	11.4	* 55		38.2	10.4	54.5		38.2				
Max Q Clear Time (g_c+I1), s	6.5	35.3		27.6	6.1	42.1		29.0				
Green Ext Time (p_c), s	0.0	9.0		1.2	0.0	7.6		1.2				

Intersection Summary			
HCM 6th Ctrl Delay		28.8	
HCM 6th LOS		C	

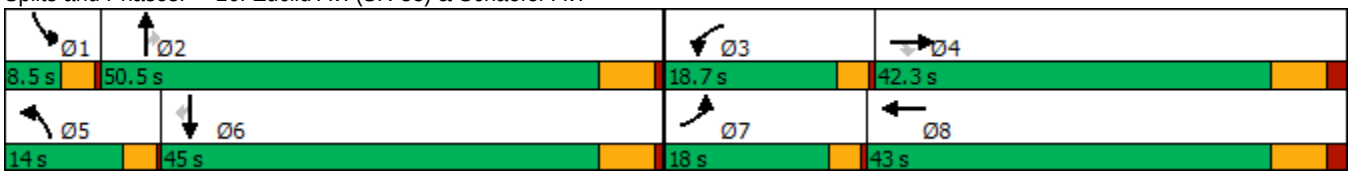
Notes

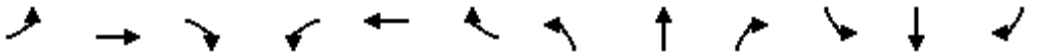
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	176	83	75	161	203	122	1208	40	33	1298	140
Future Volume (vph)	176	83	75	161	203	122	1208	40	33	1298	140
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	18.0	42.3	42.3	18.7	43.0	14.0	50.5	50.5	8.5	45.0	45.0
Total Split (%)	15.0%	35.3%	35.3%	15.6%	35.8%	11.7%	42.1%	42.1%	7.1%	37.5%	37.5%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	14.6	20.1	20.1	14.1	19.6	10.6	48.4	48.4	5.0	39.2	39.2
Actuated g/C Ratio	0.14	0.19	0.19	0.14	0.19	0.10	0.46	0.46	0.05	0.38	0.38
v/c Ratio	0.84	0.26	0.21	0.79	0.69	0.80	0.82	0.06	0.45	1.08	0.23
Control Delay	75.3	37.0	2.8	70.2	49.1	81.0	31.5	0.1	69.8	83.3	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.3	37.0	2.8	70.2	49.1	81.0	31.5	0.1	69.8	83.3	7.2
LOS	E	D	A	E	D	F	C	A	E	F	A
Approach Delay		49.5			58.1		35.0			75.7	
Approach LOS		D			E		D			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 104.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 55.7	Intersection LOS: E
Intersection Capacity Utilization 87.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	83	75	161	203	13	122	1208	40	33	1298	140
Future Volume (veh/h)	176	83	75	161	203	13	122	1208	40	33	1298	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	189	89	62	173	218	12	131	1299	33	35	1396	117
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	218	310	263	202	274	15	157	1595	711	51	1370	609
Arrive On Green	0.13	0.17	0.17	0.12	0.16	0.16	0.10	0.47	0.47	0.03	0.40	0.40
Sat Flow, veh/h	1619	1800	1525	1619	1690	93	1619	3420	1525	1619	3420	1522
Grp Volume(v), veh/h	189	89	62	173	0	230	131	1299	33	35	1396	117
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1783	1619	1710	1525	1619	1710	1522
Q Serve(g_s), s	11.1	4.2	3.4	10.2	0.0	12.1	7.7	31.8	1.1	2.1	39.0	4.9
Cycle Q Clear(g_c), s	11.1	4.2	3.4	10.2	0.0	12.1	7.7	31.8	1.1	2.1	39.0	4.9
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	218	310	263	202	0	289	157	1595	711	51	1370	609
V/C Ratio(X)	0.87	0.29	0.24	0.86	0.00	0.79	0.83	0.81	0.05	0.69	1.02	0.19
Avail Cap(c_a), veh/h	241	653	553	253	0	659	175	1595	711	83	1370	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.3	35.1	34.8	41.8	0.0	39.2	43.2	22.4	14.2	46.7	29.2	19.0
Incr Delay (d2), s/veh	23.5	0.4	0.3	17.6	0.0	3.7	23.4	3.4	0.0	6.0	29.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	1.8	1.2	4.9	0.0	5.3	3.9	11.7	0.4	0.9	19.5	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.8	35.5	35.1	59.3	0.0	42.9	66.6	25.7	14.2	52.7	58.4	19.1
LnGrp LOS	E	D	D	E	A	D	E	C	B	D	F	B
Approach Vol, veh/h		340			403			1463			1548	
Approach Delay, s/veh		51.7			50.0			29.1			55.3	
Approach LOS		D			D			C			E	

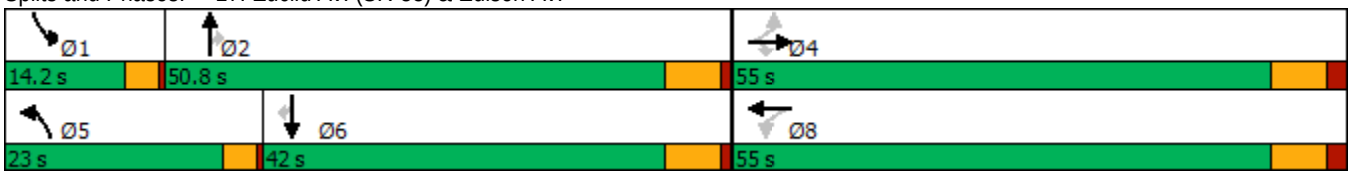
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	51.4	15.6	23.8	13.0	45.0	16.6	22.8
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	44.5	15.2	35.3	10.5	39.0	14.5	36.0
Max Q Clear Time (g_c+I1), s	4.1	33.8	12.2	6.2	9.7	41.0	13.1	14.1
Green Ext Time (p_c), s	0.0	5.9	0.1	0.5	0.0	0.0	0.0	0.9

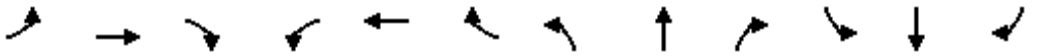
Intersection Summary	
HCM 6th Ctrl Delay	44.2
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	179	307	147	41	488	257	1137	45	80	1167	192
Future Volume (vph)	179	307	147	41	488	257	1137	45	80	1167	192
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	55.0	55.0	55.0	55.0	55.0	23.0	50.8	50.8	14.2	42.0	42.0
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	19.2%	42.3%	42.3%	11.8%	35.0%	35.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	48.0	48.0	48.0	48.0	48.0	19.5	48.1	48.1	9.3	36.0	36.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.16	0.40	0.40	0.08	0.30	0.30
v/c Ratio	1.48	0.44	0.22	0.14	0.83	1.02	0.86	0.07	0.66	1.19	0.38
Control Delay	281.8	28.7	4.4	24.5	43.2	111.3	41.9	3.0	78.1	131.2	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	281.8	28.7	4.4	24.5	43.2	111.3	41.9	3.0	78.1	131.2	15.5
LOS	F	C	A	C	D	F	D	A	E	F	B
Approach Delay		94.5			41.9		53.1			112.8	
Approach LOS		F			D		D			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.48	
Intersection Signal Delay: 78.7	Intersection LOS: E
Intersection Capacity Utilization 113.0%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	307	147	41	488	74	257	1137	45	80	1167	192
Future Volume (veh/h)	179	307	147	41	488	74	257	1137	45	80	1167	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	186	320	98	43	508	72	268	1184	39	83	1216	149
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	144	720	610	311	617	87	263	1366	609	102	1026	447
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.16	0.40	0.40	0.06	0.30	0.30
Sat Flow, veh/h	800	1800	1524	929	1542	219	1619	3420	1525	1619	3420	1489
Grp Volume(v), veh/h	186	320	98	43	0	580	268	1184	39	83	1216	149
Grp Sat Flow(s),veh/h/ln	800	1800	1524	929	0	1760	1619	1710	1525	1619	1710	1489
Q Serve(g_s), s	12.6	15.6	4.9	4.3	0.0	35.4	19.5	38.2	1.9	6.1	36.0	9.3
Cycle Q Clear(g_c), s	48.0	15.6	4.9	19.8	0.0	35.4	19.5	38.2	1.9	6.1	36.0	9.3
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	144	720	610	311	0	704	263	1366	609	102	1026	447
V/C Ratio(X)	1.29	0.44	0.16	0.14	0.00	0.82	1.02	0.87	0.06	0.81	1.19	0.33
Avail Cap(c_a), veh/h	144	720	610	311	0	704	263	1366	609	144	1026	447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.3	26.3	23.1	33.5	0.0	32.2	50.3	33.1	22.2	55.5	42.0	32.7
Incr Delay (d2), s/veh	172.6	0.4	0.1	0.2	0.0	7.9	60.4	6.2	0.0	14.1	93.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.2	6.5	1.7	1.0	0.0	15.7	11.9	15.7	0.6	2.8	27.5	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	228.9	26.7	23.2	33.7	0.0	40.1	110.6	39.3	22.3	69.6	135.4	33.1
LnGrp LOS	F	C	C	C	A	D	F	D	C	E	F	C
Approach Vol, veh/h		604			623			1491			1448	
Approach Delay, s/veh		88.4			39.6			51.7			121.1	
Approach LOS		F			D			D			F	

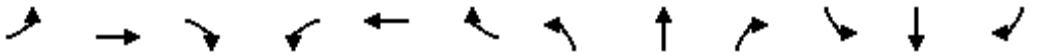
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.1	53.9		55.0	23.0	42.0		55.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	10.7	44.8		48.0	19.5	36.0		48.0				
Max Q Clear Time (g_c+I1), s	8.1	40.2		50.0	21.5	38.0		37.4				
Green Ext Time (p_c), s	0.0	2.9		0.0	0.0	0.0		2.7				

Intersection Summary												
HCM 6th Ctrl Delay			79.3									
HCM 6th LOS			E									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	76	29	186	37	173	201	1361	14	85	1324	46
Future Volume (vph)	76	29	186	37	173	201	1361	14	85	1324	46
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	46.8	46.8	46.8	46.8	46.8	24.0	63.5	63.5	9.7	49.2	49.2
Total Split (%)	39.0%	39.0%	39.0%	39.0%	39.0%	20.0%	52.9%	52.9%	8.1%	41.0%	41.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	19.4	19.4	19.4	19.4	19.4	16.2	54.3	54.3	6.3	44.4	44.4
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.17	0.58	0.58	0.07	0.47	0.47
v/c Ratio	0.55	0.08	0.41	0.15	0.64	0.74	0.71	0.02	0.81	0.84	0.06
Control Delay	48.3	29.5	7.0	31.0	39.7	55.7	18.7	0.0	94.1	30.3	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.3	29.5	7.0	31.0	39.7	55.7	18.7	0.0	94.1	30.3	1.7
LOS	D	C	A	C	D	E	B	A	F	C	A
Approach Delay		20.1			38.5		23.3			33.1	
Approach LOS		C			D		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 94.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 28.1	Intersection LOS: C
Intersection Capacity Utilization 85.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	29	186	37	173	59	201	1361	14	85	1324	46
Future Volume (veh/h)	76	29	186	37	173	59	201	1361	14	85	1324	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	78	30	104	38	177	52	205	1389	13	87	1351	36
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	198	394	334	336	293	86	242	1858	829	108	1576	702
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.15	0.54	0.54	0.07	0.46	0.46
Sat Flow, veh/h	1105	1800	1525	1205	1337	393	1619	3420	1525	1619	3420	1524
Grp Volume(v), veh/h	78	30	104	38	0	229	205	1389	13	87	1351	36
Grp Sat Flow(s),veh/h/ln	1105	1800	1525	1205	0	1729	1619	1710	1525	1619	1710	1524
Q Serve(g_s), s	5.6	1.1	4.7	2.1	0.0	9.8	10.1	25.6	0.3	4.3	28.8	1.1
Cycle Q Clear(g_c), s	15.3	1.1	4.7	3.2	0.0	9.8	10.1	25.6	0.3	4.3	28.8	1.1
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	198	394	334	336	0	379	242	1858	829	108	1576	702
V/C Ratio(X)	0.39	0.08	0.31	0.11	0.00	0.60	0.85	0.75	0.02	0.81	0.86	0.05
Avail Cap(c_a), veh/h	523	924	783	690	0	888	406	2416	1078	123	1818	810
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	25.4	26.8	26.6	0.0	28.8	33.9	14.4	8.6	37.7	19.7	12.2
Incr Delay (d2), s/veh	0.9	0.1	0.4	0.1	0.0	1.2	6.4	0.9	0.0	27.0	3.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.4	1.6	0.6	0.0	3.9	4.0	7.7	0.1	2.4	10.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.6	25.4	27.2	26.8	0.0	29.9	40.3	15.3	8.6	64.6	23.5	12.2
LnGrp LOS	D	C	C	C	A	C	D	B	A	E	C	B
Approach Vol, veh/h		212			267			1607			1474	
Approach Delay, s/veh		30.4			29.5			18.5			25.7	
Approach LOS		C			C			B			C	

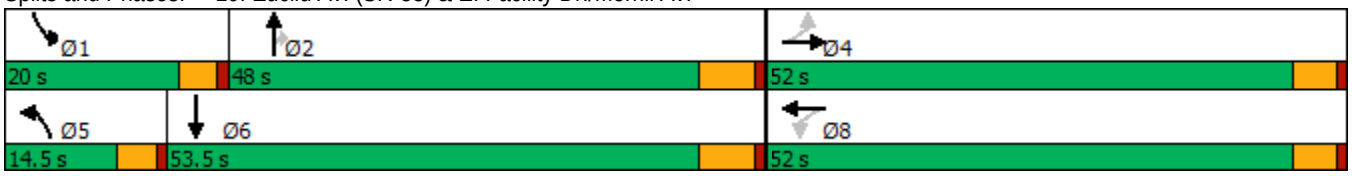
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	50.1		22.7	15.7	43.4		22.7				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	6.2	57.8		42.0	20.5	43.5		42.0				
Max Q Clear Time (g_c+I1), s	6.3	27.6		17.3	12.1	30.8		11.8				
Green Ext Time (p_c), s	0.0	11.0		0.6	0.2	6.9		1.1				

Intersection Summary												
HCM 6th Ctrl Delay			23.0									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	4	9	277	55	11	1182	222	212	1261
Future Volume (vph)	4	9	277	55	11	1182	222	212	1261
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	52.0	52.0	52.0	52.0	14.5	48.0	48.0	20.0	53.5
Total Split (%)	43.3%	43.3%	43.3%	43.3%	12.1%	40.0%	40.0%	16.7%	44.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		47.0		47.0	10.0	42.0	42.0	15.5	59.1
Actuated g/C Ratio		0.39		0.39	0.08	0.35	0.35	0.13	0.49
v/c Ratio		0.05		1.24	0.08	1.02	0.38	1.05	0.80
Control Delay		12.9		152.6	52.4	69.6	18.1	127.3	30.9
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		12.9		152.6	52.4	69.6	18.1	127.3	30.9
LOS		B		F	D	E	B	F	C
Approach Delay		12.9		152.6		61.4			44.4
Approach LOS		B		F		E			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.24	
Intersection Signal Delay: 71.7	Intersection LOS: E
Intersection Capacity Utilization 111.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	9	19	277	55	384	11	1182	222	212	1261	44
Future Volume (veh/h)	4	9	19	277	55	384	11	1182	222	212	1261	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	4	9	19	286	57	369	11	1219	186	219	1300	31
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	87	194	361	278	47	305	41	1197	534	209	1548	37
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.03	0.35	0.35	0.13	0.45	0.45
Sat Flow, veh/h	136	494	921	603	120	778	1619	3420	1525	1619	3412	81
Grp Volume(v), veh/h	32	0	0	712	0	0	11	1219	186	219	651	680
Grp Sat Flow(s),veh/h/ln	1551	0	0	1500	0	0	1619	1710	1525	1619	1710	1783
Q Serve(g_s), s	0.0	0.0	0.0	45.5	0.0	0.0	0.8	42.0	10.8	15.5	40.3	40.4
Cycle Q Clear(g_c), s	1.5	0.0	0.0	47.0	0.0	0.0	0.8	42.0	10.8	15.5	40.3	40.4
Prop In Lane	0.12		0.59	0.40		0.52	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	641	0	0	630	0	0	41	1197	534	209	776	809
V/C Ratio(X)	0.05	0.00	0.00	1.13	0.00	0.00	0.27	1.02	0.35	1.05	0.84	0.84
Avail Cap(c_a), veh/h	641	0	0	630	0	0	135	1197	534	209	776	809
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.7	0.0	0.0	37.9	0.0	0.0	57.4	39.0	28.9	52.2	28.9	29.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	77.6	0.0	0.0	1.3	30.7	0.4	75.2	8.2	7.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	31.4	0.0	0.0	0.3	21.4	3.8	10.4	16.7	17.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.7	0.0	0.0	115.5	0.0	0.0	58.6	69.7	29.3	127.4	37.1	36.9
LnGrp LOS	C	A	A	F	A	A	E	F	C	F	D	D
Approach Vol, veh/h		32			712			1416			1550	
Approach Delay, s/veh		22.7			115.5			64.3			49.8	
Approach LOS		C			F			E			D	

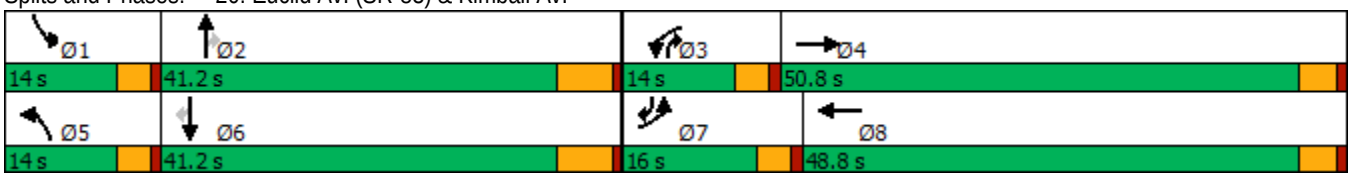
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.0	48.0		52.0	7.6	60.4		52.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	15.5	42.0		47.0	10.0	47.5		47.0				
Max Q Clear Time (g_c+I1), s	17.5	44.0		3.5	2.8	42.4		49.0				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	3.2		0.0				

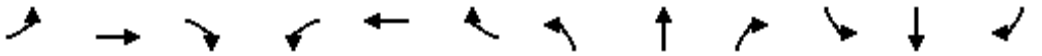
Intersection Summary												
HCM 6th Ctrl Delay			67.7									
HCM 6th LOS			E									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	146	292	62	856	124	972	62	254	786	436
Future Volume (vph)	146	292	62	856	124	972	62	254	786	436
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	16.0	50.8	14.0	48.8	14.0	41.2	14.0	14.0	41.2	16.0
Total Split (%)	13.3%	42.3%	11.7%	40.7%	11.7%	34.3%	11.7%	11.7%	34.3%	13.3%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	10.8	45.6	10.0	41.8	10.0	35.3	51.3	10.0	35.3	48.1
Actuated g/C Ratio	0.09	0.39	0.09	0.36	0.09	0.30	0.44	0.09	0.30	0.41
v/c Ratio	0.55	0.26	0.46	0.94	0.92	0.96	0.09	1.02	0.77	0.67
Control Delay	59.0	24.0	63.1	49.6	111.3	60.2	5.4	115.3	43.6	27.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.0	24.0	63.1	49.6	111.3	60.2	5.4	115.3	43.6	27.3
LOS	E	C	E	D	F	E	A	F	D	C
Approach Delay		34.6		50.3		62.8			51.1	
Approach LOS		C		D		E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 52.2	Intersection LOS: D
Intersection Capacity Utilization 94.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	292	46	62	856	254	124	972	62	254	786	436
Future Volume (veh/h)	146	292	46	62	856	254	124	972	62	254	786	436
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	149	298	38	63	873	223	127	992	51	259	802	316
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	260	1110	140	124	949	242	144	1052	586	262	1052	597
Arrive On Green	0.09	0.36	0.36	0.08	0.35	0.35	0.09	0.31	0.31	0.09	0.31	0.31
Sat Flow, veh/h	2956	3055	386	1619	2697	689	1619	3420	1525	2956	3420	1506
Grp Volume(v), veh/h	149	166	170	63	553	543	127	992	51	259	802	316
Grp Sat Flow(s),veh/h/ln	1478	1710	1731	1619	1710	1676	1619	1710	1525	1478	1710	1506
Q Serve(g_s), s	5.5	7.7	7.8	4.2	35.0	35.0	8.7	31.9	2.4	9.9	23.9	18.1
Cycle Q Clear(g_c), s	5.5	7.7	7.8	4.2	35.0	35.0	8.7	31.9	2.4	9.9	23.9	18.1
Prop In Lane	1.00		0.22	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	260	621	629	124	602	590	144	1052	586	262	1052	597
V/C Ratio(X)	0.57	0.27	0.27	0.51	0.92	0.92	0.88	0.94	0.09	0.99	0.76	0.53
Avail Cap(c_a), veh/h	315	702	710	144	672	658	144	1067	592	262	1067	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.4	25.3	25.4	50.1	35.0	35.0	50.8	38.1	22.1	51.3	35.3	26.1
Incr Delay (d2), s/veh	0.7	0.2	0.2	1.2	16.0	16.4	41.9	15.6	0.1	52.1	3.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	3.0	3.1	1.7	16.4	16.1	5.1	14.6	0.8	5.4	9.7	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.2	25.5	25.6	51.3	51.0	51.4	92.8	53.7	22.2	103.4	38.6	26.9
LnGrp LOS	D	C	C	D	D	D	F	D	C	F	D	C
Approach Vol, veh/h		485			1159			1170			1377	
Approach Delay, s/veh		33.1			51.2			56.6			48.1	
Approach LOS		C			D			E			D	

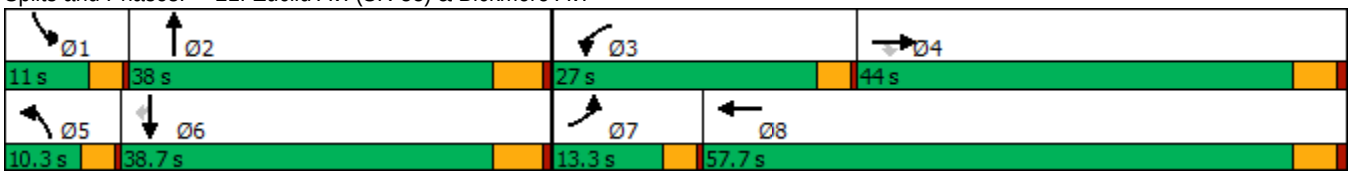
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	40.7	12.6	45.5	14.0	40.7	13.9	44.2
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	10.0	35.2	10.0	46.3	10.0	35.2	12.0	44.3
Max Q Clear Time (g_c+I1), s	11.9	33.9	6.2	9.8	10.7	25.9	7.5	37.0
Green Ext Time (p_c), s	0.0	0.8	0.0	1.8	0.0	4.0	0.1	2.7

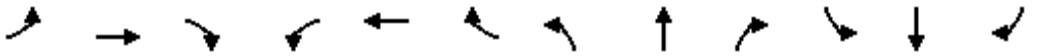
Intersection Summary	
HCM 6th Ctrl Delay	49.6
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	74	15	42	219	240	84	779	55	714	222
Future Volume (vph)	74	15	42	219	240	84	779	55	714	222
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	13.3	44.0	44.0	27.0	57.7	10.3	38.0	11.0	38.7	38.7
Total Split (%)	11.1%	36.7%	36.7%	22.5%	48.1%	8.6%	31.7%	9.2%	32.3%	32.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	8.7	19.3	19.3	20.4	30.6	7.5	32.3	7.2	28.8	28.8
Actuated g/C Ratio	0.10	0.21	0.21	0.22	0.33	0.08	0.35	0.08	0.31	0.31
v/c Ratio	0.54	0.04	0.11	0.68	0.82	0.71	0.76	0.48	0.74	0.38
Control Delay	60.3	29.9	0.5	48.7	38.5	77.8	35.4	61.5	34.9	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.3	29.9	0.5	48.7	38.5	77.8	35.4	61.5	34.9	5.9
LOS	E	C	A	D	D	E	D	E	C	A
Approach Delay		37.5			41.9		39.3		29.8	
Approach LOS		D			D		D		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 91.5	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 36.4	Intersection LOS: D
Intersection Capacity Utilization 74.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	15	42	219	240	195	84	779	37	55	714	222
Future Volume (veh/h)	74	15	42	219	240	195	84	779	37	55	714	222
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	82	17	43	243	267	178	93	866	34	61	793	199
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	102	347	294	287	310	207	115	1046	41	83	998	445
Arrive On Green	0.06	0.19	0.19	0.18	0.31	0.31	0.07	0.31	0.31	0.05	0.29	0.29
Sat Flow, veh/h	1619	1800	1525	1619	1007	672	1619	3355	132	1619	3420	1525
Grp Volume(v), veh/h	82	17	43	243	0	445	93	441	459	61	793	199
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1679	1619	1710	1776	1619	1710	1525
Q Serve(g_s), s	3.3	0.5	1.5	9.5	0.0	16.4	3.7	15.7	15.7	2.4	14.0	7.0
Cycle Q Clear(g_c), s	3.3	0.5	1.5	9.5	0.0	16.4	3.7	15.7	15.7	2.4	14.0	7.0
Prop In Lane	1.00		1.00	1.00		0.40	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	102	347	294	287	0	516	115	533	554	83	998	445
V/C Ratio(X)	0.81	0.05	0.15	0.85	0.00	0.86	0.81	0.83	0.83	0.74	0.79	0.45
Avail Cap(c_a), veh/h	242	1070	907	580	0	1349	168	847	880	185	1730	772
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	21.6	22.0	26.1	0.0	21.4	30.0	20.9	20.9	30.7	21.4	18.9
Incr Delay (d2), s/veh	5.6	0.0	0.1	2.6	0.0	1.7	10.5	1.9	1.8	4.7	0.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.2	0.5	3.5	0.0	5.9	1.6	5.4	5.6	0.9	4.7	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.9	21.6	22.1	28.8	0.0	23.1	40.5	22.8	22.8	35.4	22.0	19.2
LnGrp LOS	D	C	C	C	A	C	D	C	C	D	C	B
Approach Vol, veh/h		142			688			993			1053	
Approach Delay, s/veh		30.0			25.1			24.4			22.2	
Approach LOS		C			C			C			C	

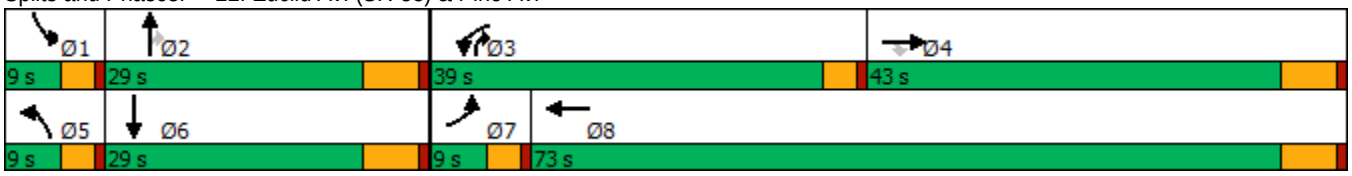
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	26.0	15.1	17.6	8.2	24.6	7.6	25.2
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	7.5	32.5	23.5	39.0	6.8	33.2	9.8	52.7
Max Q Clear Time (g_c+I1), s	4.4	17.7	11.5	3.5	5.7	16.0	5.3	18.4
Green Ext Time (p_c), s	0.0	2.6	0.3	0.1	0.0	3.1	0.0	1.8

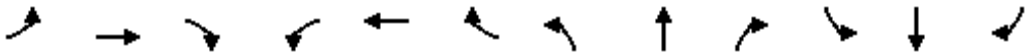
Intersection Summary	
HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	9	204	55	1199	367	65	831	776	71	774
Future Volume (vph)	9	204	55	1199	367	65	831	776	71	774
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	39.0	73.0	9.0	29.0	39.0	9.0	29.0
Total Split (%)	7.5%	35.8%	35.8%	32.5%	60.8%	7.5%	24.2%	32.5%	7.5%	24.2%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.0	19.9	19.9	35.2	57.6	5.0	23.2	60.4	5.0	23.2
Actuated g/C Ratio	0.05	0.19	0.19	0.34	0.56	0.05	0.22	0.58	0.05	0.22
v/c Ratio	0.12	0.61	0.14	1.23	0.52	0.86	1.12	0.76	0.94	1.07
Control Delay	54.7	45.1	0.7	144.6	16.0	119.1	109.1	13.1	136.3	92.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.7	45.1	0.7	144.6	16.0	119.1	109.1	13.1	136.3	92.0
LOS	D	D	A	F	B	F	F	B	F	F
Approach Delay		36.3			107.4		65.0			95.7
Approach LOS		D			F		E			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.23	
Intersection Signal Delay: 85.1	Intersection LOS: F
Intersection Capacity Utilization 97.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	204	55	1199	367	120	65	831	776	71	774	18
Future Volume (veh/h)	9	204	55	1199	367	120	65	831	776	71	774	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	9	210	0	1236	378	122	67	857	544	73	798	15
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	18	267		1062	647	209	83	807	900	83	811	15
Arrive On Green	0.01	0.15	0.00	0.36	0.50	0.50	0.05	0.24	0.24	0.05	0.24	0.24
Sat Flow, veh/h	1619	1800	1525	2956	1304	421	1619	3420	1493	1619	3434	65
Grp Volume(v), veh/h	9	210	0	1236	0	500	67	857	544	73	397	416
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1724	1619	1710	1493	1619	1710	1788
Q Serve(g_s), s	0.5	11.0	0.0	35.0	0.0	20.0	4.0	23.0	22.6	4.4	22.5	22.5
Cycle Q Clear(g_c), s	0.5	11.0	0.0	35.0	0.0	20.0	4.0	23.0	22.6	4.4	22.5	22.5
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	18	267		1062	0	856	83	807	900	83	404	422
V/C Ratio(X)	0.50	0.79		1.16	0.00	0.58	0.81	1.06	0.60	0.88	0.98	0.98
Avail Cap(c_a), veh/h	83	684		1062	0	1186	83	807	900	83	404	422
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.9	40.0	0.0	31.2	0.0	17.4	45.7	37.2	12.6	45.9	37.0	37.0
Incr Delay (d2), s/veh	7.8	7.2	0.0	84.3	0.0	0.9	39.9	49.3	0.8	58.7	40.4	39.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.2	0.0	23.7	0.0	7.1	2.4	14.3	6.3	3.0	13.2	13.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.7	47.2	0.0	115.5	0.0	18.3	85.6	86.5	13.4	104.6	77.5	76.6
LnGrp LOS	E	D		F	A	B	F	F	B	F	E	E
Approach Vol, veh/h		219	A		1736			1468			886	
Approach Delay, s/veh		47.5			87.5			59.4			79.3	
Approach LOS		D			F			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	29.0	39.0	20.4	9.0	29.0	5.1	54.4
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.0	23.0	35.0	37.0	5.0	23.0	5.0	67.0
Max Q Clear Time (g_c+I1), s	6.4	25.0	37.0	13.0	6.0	24.5	2.5	22.0
Green Ext Time (p_c), s	0.0	0.0	0.0	1.5	0.0	0.0	0.0	4.8

Intersection Summary	
HCM 6th Ctrl Delay	74.2
HCM 6th LOS	E

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	53.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	284	16	21	581	18	20	84	15	21	112	50
Future Vol, veh/h	55	284	16	21	581	18	20	84	15	21	112	50
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	60	312	18	23	638	20	22	92	16	23	123	55
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	21.5	90.3	13.5	14.9
HCM LOS	C	F	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	15%	3%	11%
Vol Thru, %	71%	80%	94%	61%
Vol Right, %	13%	5%	3%	27%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	119	355	620	183
LT Vol	20	55	21	21
Through Vol	84	284	581	112
RT Vol	15	16	18	50
Lane Flow Rate	131	390	681	201
Geometry Grp	1	1	1	1
Degree of Util (X)	0.265	0.669	1.101	0.389
Departure Headway (Hd)	7.716	6.455	5.82	7.327
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	468	562	620	495
Service Time	5.716	4.455	3.914	5.327
HCM Lane V/C Ratio	0.28	0.694	1.098	0.406
HCM Control Delay	13.5	21.5	90.3	14.9
HCM Lane LOS	B	C	F	B
HCM 95th-tile Q	1.1	5	20.2	1.8

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	21	62	3	1	255	22	19	63	3	33	63	56
Future Vol, veh/h	21	62	3	1	255	22	19	63	3	33	63	56
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	23	67	3	1	274	24	20	68	3	35	68	60
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.7	10.5	8.9	9.1
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	24%	0%	22%
Vol Thru, %	74%	72%	92%	41%
Vol Right, %	4%	3%	8%	37%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	85	86	278	152
LT Vol	19	21	1	33
Through Vol	63	62	255	63
RT Vol	3	3	22	56
Lane Flow Rate	91	92	299	163
Geometry Grp	1	1	1	1
Degree of Util (X)	0.128	0.126	0.381	0.216
Departure Headway (Hd)	5.057	4.905	4.588	4.764
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	705	726	780	749
Service Time	3.122	2.968	2.635	2.822
HCM Lane V/C Ratio	0.129	0.127	0.383	0.218
HCM Control Delay	8.9	8.7	10.5	9.1
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.4	0.4	1.8	0.8

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	69	355	775	81	30	54
Future Vol, veh/h	69	355	775	81	30	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	73	378	824	86	32	57

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	910	0	-	0	1391	867
Stage 1	-	-	-	-	867	-
Stage 2	-	-	-	-	524	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	757	-	-	-	233	431
Stage 1	-	-	-	-	415	-
Stage 2	-	-	-	-	598	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	757	-	-	-	205	431
Mov Cap-2 Maneuver	-	-	-	-	205	-
Stage 1	-	-	-	-	364	-
Stage 2	-	-	-	-	598	-

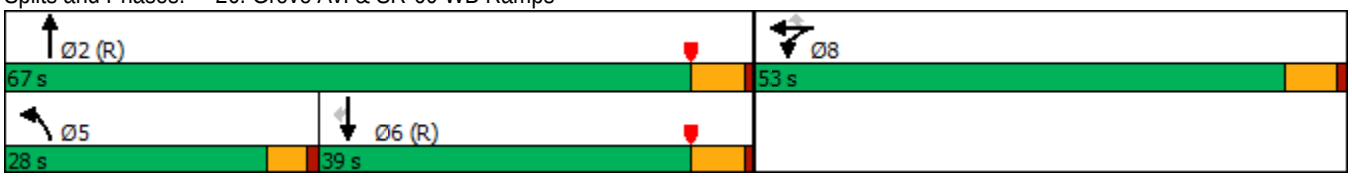
Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	21.3
HCM LOS			C

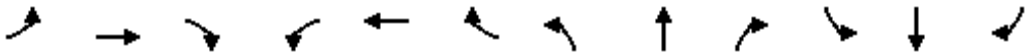
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	757	-	-	-	309
HCM Lane V/C Ratio	0.097	-	-	-	0.289
HCM Control Delay (s)	10.3	0	-	-	21.3
HCM Lane LOS	B	A	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	1.2

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	625	291	1193	776	636
Future Volume (vph)	0	625	291	1193	776	636
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	53.0	53.0	28.0	67.0	39.0	39.0
Total Split (%)	44.2%	44.2%	23.3%	55.8%	32.5%	32.5%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	47.2	47.2	22.6	61.2	34.0	34.0
Actuated g/C Ratio	0.39	0.39	0.19	0.51	0.28	0.28
v/c Ratio	0.42	1.01	0.93	0.70	0.82	0.74
Control Delay	28.8	69.4	63.0	25.4	48.4	8.0
Queue Delay	0.0	0.0	0.0	3.6	0.0	0.0
Total Delay	28.8	69.4	63.0	29.0	48.4	8.0
LOS	C	E	E	C	D	A
Approach Delay	57.0			35.7	30.2	
Approach LOS	E			D	C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 38.7	Intersection LOS: D
Intersection Capacity Utilization 109.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	275	0	625	291	1193	0	0	776	636
Future Volume (veh/h)	0	0	0	275	0	625	291	1193	0	0	776	636
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				299	0	550	316	1297	0	0	843	580
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				657	0	585	336	1950	0	0	1141	506
Arrive On Green				0.36	0.00	0.36	0.37	1.00	0.00	0.00	0.32	0.32
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1603
Grp Volume(v), veh/h				299	0	550	316	1297	0	0	843	580
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1603
Q Serve(g_s), s				15.1	0.0	39.6	20.2	0.0	0.0	0.0	25.0	37.9
Cycle Q Clear(g_c), s				15.1	0.0	39.6	20.2	0.0	0.0	0.0	25.0	37.9
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				657	0	585	336	1950	0	0	1141	506
V/C Ratio(X)				0.45	0.00	0.94	0.94	0.67	0.00	0.00	0.74	1.15
Avail Cap(c_a), veh/h				712	0	633	353	1950	0	0	1141	506
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				29.1	0.0	37.0	37.0	0.0	0.0	0.0	36.6	41.0
Incr Delay (d2), s/veh				0.5	0.0	21.4	5.1	0.2	0.0	0.0	4.3	86.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.4	0.0	18.3	7.2	0.0	0.0	0.0	11.3	26.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				29.6	0.0	58.4	42.2	0.2	0.0	0.0	40.9	127.6
LnGrp LOS				C	A	E	D	A	A	A	D	F
Approach Vol, veh/h					849			1613			1423	
Approach Delay, s/veh					48.3			8.4			76.3	
Approach LOS					D			A			E	

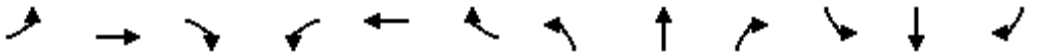
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		70.6			26.9	43.7		49.4				
Change Period (Y+Rc), s		5.8			4.6	5.8		5.8				
Max Green Setting (Gmax), s		61.2			23.4	33.2		47.2				
Max Q Clear Time (g_c+I1), s		2.0			22.2	39.9		41.6				
Green Ext Time (p_c), s		12.3			0.1	0.0		1.9				

Intersection Summary		
HCM 6th Ctrl Delay	42.0	
HCM 6th LOS	D	

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	1	212	776	397	654
Future Volume (vph)	1	212	776	397	654
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	48.0	48.0	43.0	29.0	72.0
Total Split (%)	40.0%	40.0%	35.8%	24.2%	60.0%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	42.2	42.2	37.2	24.4	66.2
Actuated g/C Ratio	0.35	0.35	0.31	0.20	0.55
v/c Ratio	1.21	0.34	1.15	1.18	0.36
Control Delay	145.4	8.0	115.9	153.8	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	145.4	8.0	115.9	153.8	13.9
LOS	F	A	F	F	B
Approach Delay	113.8		115.9		66.8
Approach LOS	F		F		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.21	
Intersection Signal Delay: 98.9	Intersection LOS: F
Intersection Capacity Utilization 109.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	709	1	212	0	0	0	0	776	400	397	654	0
Future Volume (veh/h)	709	1	212	0	0	0	0	776	400	397	654	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	771	1	155				0	843	326	432	711	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	636	1	565				0	789	304	368	1992	0
Arrive On Green	0.35	0.35	0.35				0.00	0.31	0.31	0.41	1.00	0.00
Sat Flow, veh/h	1807	2	1607				0	2639	981	1810	3705	0
Grp Volume(v), veh/h	772	0	155				0	598	571	432	711	0
Grp Sat Flow(s),veh/h/ln	1810	0	1607				0	1805	1720	1810	1805	0
Q Serve(g_s), s	42.2	0.0	8.3				0.0	37.2	37.2	24.4	0.0	0.0
Cycle Q Clear(g_c), s	42.2	0.0	8.3				0.0	37.2	37.2	24.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.57	1.00		0.00
Lane Grp Cap(c), veh/h	636	0	565				0	560	533	368	1992	0
V/C Ratio(X)	1.21	0.00	0.27				0.00	1.07	1.07	1.17	0.36	0.00
Avail Cap(c_a), veh/h	636	0	565				0	560	533	368	1992	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.61	0.61	0.46	0.46	0.00
Uniform Delay (d), s/veh	38.9	0.0	27.9				0.0	41.4	41.4	35.6	0.0	0.0
Incr Delay (d2), s/veh	109.9	0.0	0.3				0.0	49.6	51.6	91.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	37.1	0.0	3.1				0.0	23.4	22.7	17.2	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	148.8	0.0	28.2				0.0	91.0	93.0	127.0	0.2	0.0
LnGrp LOS	F	A	C				A	F	F	F	A	A
Approach Vol, veh/h		927						1169			1143	
Approach Delay, s/veh		128.7						92.0			48.1	
Approach LOS		F						F			D	

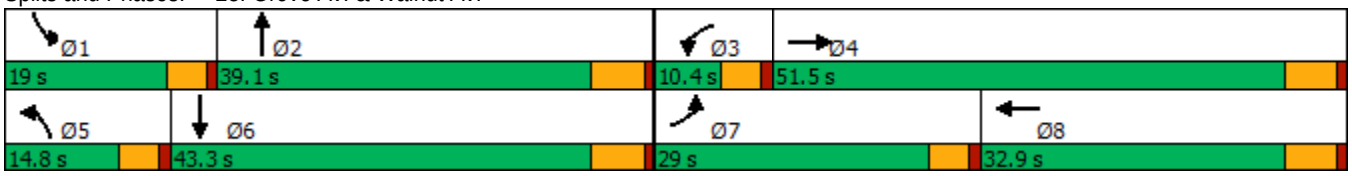
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	29.0	43.0		48.0		72.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	24.4	37.2		42.2		66.2
Max Q Clear Time (g_c+I1), s	26.4	39.2		44.2		2.0
Green Ext Time (p_c), s	0.0	0.0		0.0		5.1

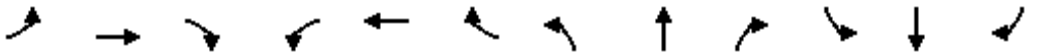
Intersection Summary		
HCM 6th Ctrl Delay		87.0
HCM 6th LOS		F

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	203	216	20	216	55	667	102	597
Future Volume (vph)	203	216	20	216	55	667	102	597
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	29.0	51.5	10.4	32.9	14.8	39.1	19.0	43.3
Total Split (%)	24.2%	42.9%	8.7%	27.4%	12.3%	32.6%	15.8%	36.1%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	18.9	36.8	5.5	16.8	8.0	34.3	11.3	39.9
Actuated g/C Ratio	0.18	0.36	0.05	0.16	0.08	0.33	0.11	0.39
v/c Ratio	0.80	0.27	0.28	0.74	0.52	0.70	0.68	0.64
Control Delay	61.9	21.8	60.1	32.3	63.6	36.1	65.5	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.9	21.8	60.1	32.3	63.6	36.1	65.5	30.9
LOS	E	C	E	C	E	D	E	C
Approach Delay		38.7		33.6		38.2		35.2
Approach LOS		D		C		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.5	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 36.5	Intersection LOS: D
Intersection Capacity Utilization 71.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	216	63	20	216	206	55	667	15	102	597	118
Future Volume (veh/h)	203	216	63	20	216	206	55	667	15	102	597	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	239	254	59	24	254	171	65	785	17	120	702	103
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	270	884	201	40	353	229	81	1193	26	146	1164	171
Arrive On Green	0.17	0.32	0.32	0.02	0.18	0.18	0.05	0.35	0.35	0.09	0.39	0.39
Sat Flow, veh/h	1619	2757	628	1619	1981	1284	1619	3422	74	1619	2992	439
Grp Volume(v), veh/h	239	156	157	24	218	207	65	392	410	120	401	404
Grp Sat Flow(s),veh/h/ln	1619	1710	1675	1619	1710	1556	1619	1710	1786	1619	1710	1720
Q Serve(g_s), s	13.9	6.6	6.8	1.4	11.6	12.2	3.8	18.7	18.7	7.0	18.0	18.1
Cycle Q Clear(g_c), s	13.9	6.6	6.8	1.4	11.6	12.2	3.8	18.7	18.7	7.0	18.0	18.1
Prop In Lane	1.00		0.37	1.00		0.83	1.00		0.04	1.00		0.25
Lane Grp Cap(c), veh/h	270	548	537	40	305	277	81	596	623	146	665	669
V/C Ratio(X)	0.88	0.28	0.29	0.60	0.71	0.75	0.80	0.66	0.66	0.82	0.60	0.60
Avail Cap(c_a), veh/h	410	811	794	97	481	437	171	596	623	242	665	669
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	24.5	24.6	46.5	37.3	37.5	45.3	26.5	26.5	43.1	23.5	23.5
Incr Delay (d2), s/veh	10.0	0.3	0.3	5.3	3.1	4.0	6.7	5.6	5.4	4.3	4.0	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	2.5	2.6	0.6	4.9	4.7	1.6	8.0	8.3	2.9	7.4	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.2	24.8	24.9	51.9	40.4	41.5	52.0	32.1	31.9	47.3	27.5	27.5
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		552			449			867			925	
Approach Delay, s/veh		35.4			41.6			33.5			30.1	
Approach LOS		D			D			C			C	

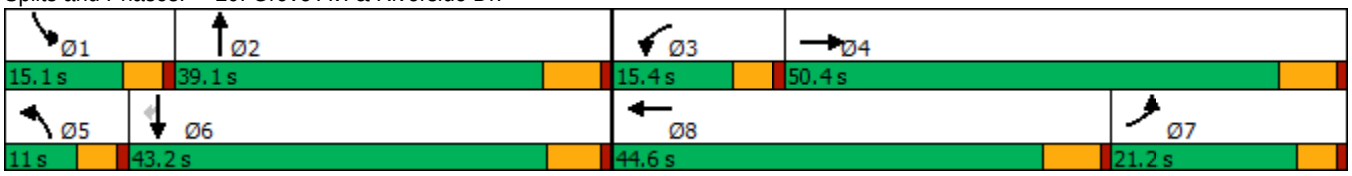
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	39.4	7.0	36.7	9.4	43.3	20.7	23.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	33.3	5.8	45.7	10.2	37.5	24.4	27.1
Max Q Clear Time (g_c+I1), s	9.0	20.7	3.4	8.8	5.8	20.1	15.9	14.2
Green Ext Time (p_c), s	0.1	3.7	0.0	1.7	0.0	4.3	0.2	1.9

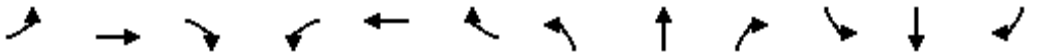
Intersection Summary	
HCM 6th Ctrl Delay	34.0
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	165	426	70	846	25	365	94	356	187
Future Volume (vph)	165	426	70	846	25	365	94	356	187
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	21.2	50.4	15.4	44.6	11.0	39.1	15.1	43.2	43.2
Total Split (%)	17.7%	42.0%	12.8%	37.2%	9.2%	32.6%	12.6%	36.0%	36.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	15.5	47.0	9.1	38.4	5.9	32.9	9.8	41.2	41.2
Actuated g/C Ratio	0.13	0.40	0.08	0.32	0.05	0.28	0.08	0.35	0.35
v/c Ratio	0.86	0.72	0.63	0.99	0.35	0.95	0.78	0.63	0.31
Control Delay	85.7	38.3	75.6	65.2	67.0	72.0	88.9	39.2	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.7	38.3	75.6	65.2	67.0	72.0	88.9	39.2	5.4
LOS	F	D	E	E	E	E	F	D	A
Approach Delay		50.8		65.8		71.8		36.6	
Approach LOS		D		E		E		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.3	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 56.6	Intersection LOS: E
Intersection Capacity Utilization 87.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	426	34	70	846	132	25	365	56	94	356	187
Future Volume (veh/h)	165	426	34	70	846	132	25	365	56	94	356	187
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	183	473	31	78	940	121	28	406	40	104	396	122
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	207	675	44	97	980	126	41	446	44	126	593	502
Arrive On Green	0.13	0.40	0.40	0.06	0.32	0.32	0.03	0.28	0.28	0.08	0.33	0.33
Sat Flow, veh/h	1619	1671	110	1619	3041	391	1619	1609	159	1619	1800	1525
Grp Volume(v), veh/h	183	0	504	78	528	533	28	0	446	104	396	122
Grp Sat Flow(s),veh/h/ln	1619	0	1780	1619	1710	1723	1619	0	1767	1619	1800	1525
Q Serve(g_s), s	13.2	0.0	28.0	5.7	36.0	36.0	2.0	0.0	29.0	7.5	22.5	4.5
Cycle Q Clear(g_c), s	13.2	0.0	28.0	5.7	36.0	36.0	2.0	0.0	29.0	7.5	22.5	4.5
Prop In Lane	1.00		0.06	1.00		0.23	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	207	0	719	97	551	555	41	0	490	126	593	502
V/C Ratio(X)	0.88	0.00	0.70	0.81	0.96	0.96	0.68	0.00	0.91	0.83	0.67	0.24
Avail Cap(c_a), veh/h	226	0	719	147	553	557	87	0	490	143	593	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	0.0	29.4	55.2	39.5	39.5	57.4	0.0	41.5	54.0	34.3	12.4
Incr Delay (d2), s/veh	27.9	0.0	3.0	9.5	28.2	28.2	7.2	0.0	23.7	25.6	5.9	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	0.0	11.8	2.5	18.5	18.7	0.9	0.0	15.2	3.9	10.4	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.8	0.0	32.5	64.7	67.7	67.7	64.6	0.0	65.2	79.6	40.1	13.6
LnGrp LOS	E	A	C	E	E	E	E	A	E	E	D	B
Approach Vol, veh/h		687			1139			474			622	
Approach Delay, s/veh		44.8			67.5			65.2			41.5	
Approach LOS		D			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	39.1	11.7	54.2	7.6	45.3	21.4	44.5
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	10.5	32.9	10.8	44.2	6.4	* 37	16.6	* 38
Max Q Clear Time (g_c+I1), s	9.5	31.0	7.7	30.0	4.0	24.5	15.2	38.0
Green Ext Time (p_c), s	0.0	0.5	0.0	2.4	0.0	2.1	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	56.3
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	34.5
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	69	99	30	11	89	33	40	351	15	51	396	34
Future Vol, veh/h	69	99	30	11	89	33	40	351	15	51	396	34
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	77	110	33	12	99	37	44	390	17	57	440	38
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	16.7	14.2	32.3	49.4
HCM LOS	C	B	D	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	35%	8%	11%
Vol Thru, %	86%	50%	67%	82%
Vol Right, %	4%	15%	25%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	406	198	133	481
LT Vol	40	69	11	51
Through Vol	351	99	89	396
RT Vol	15	30	33	34
Lane Flow Rate	451	220	148	534
Geometry Grp	1	1	1	1
Degree of Util (X)	0.816	0.456	0.314	0.94
Departure Headway (Hd)	6.513	7.455	7.661	6.335
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	559	482	467	577
Service Time	4.535	5.523	5.739	4.354
HCM Lane V/C Ratio	0.807	0.456	0.317	0.925
HCM Control Delay	32.3	16.7	14.2	49.4
HCM Lane LOS	D	C	B	E
HCM 95th-tile Q	8.1	2.3	1.3	12.2

Intersection	
Intersection Delay, s/veh	18.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	48	51	25	39	111	44	38	288	11	46	310	47
Future Vol, veh/h	48	51	25	39	111	44	38	288	11	46	310	47
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	53	57	28	43	123	49	42	320	12	51	344	52
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.3	13.8	18.2	22.2
HCM LOS	B	B	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	39%	20%	11%
Vol Thru, %	85%	41%	57%	77%
Vol Right, %	3%	20%	23%	12%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	337	124	194	403
LT Vol	38	48	39	46
Through Vol	288	51	111	310
RT Vol	11	25	44	47
Lane Flow Rate	374	138	216	448
Geometry Grp	1	1	1	1
Degree of Util (X)	0.618	0.261	0.392	0.718
Departure Headway (Hd)	5.94	6.826	6.541	5.77
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	607	525	550	627
Service Time	3.985	4.889	4.594	3.813
HCM Lane V/C Ratio	0.616	0.263	0.393	0.715
HCM Control Delay	18.2	12.3	13.8	22.2
HCM Lane LOS	C	B	B	C
HCM 95th-tile Q	4.2	1	1.9	6

Intersection	
Intersection Delay, s/veh	216.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	37	230	49	112	568	35	33	227	38	66	247	32
Future Vol, veh/h	37	230	49	112	568	35	33	227	38	66	247	32
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	41	253	54	123	624	38	36	249	42	73	271	35
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	52.4	432.5	48.3	64.1
HCM LOS	F	F	E	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	12%	16%	19%
Vol Thru, %	76%	73%	79%	72%
Vol Right, %	13%	16%	5%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	298	316	715	345
LT Vol	33	37	112	66
Through Vol	227	230	568	247
RT Vol	38	49	35	32
Lane Flow Rate	327	347	786	379
Geometry Grp	1	1	1	1
Degree of Util (X)	0.806	0.843	1.896	0.911
Departure Headway (Hd)	11.347	11.016	8.686	11.013
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	321	333	424	334
Service Time	9.347	9.016	6.686	9.013
HCM Lane V/C Ratio	1.019	1.042	1.854	1.135
HCM Control Delay	48.3	52.4	432.5	64.1
HCM Lane LOS	E	F	F	F
HCM 95th-tile Q	6.7	7.5	52.1	8.9

Intersection	
Int Delay, s/veh	11.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	42	37	15	13	94	22	69	322	13	43	271	112
Future Vol, veh/h	42	37	15	13	94	22	69	322	13	43	271	112
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	46	41	16	14	103	24	76	354	14	47	298	123

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1031	974	360	995	1028	361	421	0	0	368	0	0
Stage 1	454	454	-	513	513	-	-	-	-	-	-	-
Stage 2	577	520	-	482	515	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	213	254	689	226	236	688	1149	-	-	1202	-	-
Stage 1	589	573	-	548	539	-	-	-	-	-	-	-
Stage 2	506	535	-	569	538	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	113	221	689	171	205	688	1149	-	-	1202	-	-
Mov Cap-2 Maneuver	113	221	-	171	205	-	-	-	-	-	-	-
Stage 1	540	543	-	503	494	-	-	-	-	-	-	-
Stage 2	354	491	-	487	510	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	55.7	43.7	1.4	0.8
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1149	-	-	168	228	1202	-	-
HCM Lane V/C Ratio	0.066	-	-	0.615	0.622	0.039	-	-
HCM Control Delay (s)	8.4	0	-	55.7	43.7	8.1	0	-
HCM Lane LOS	A	A	-	F	E	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	3.4	3.7	0.1	-	-

Intersection	
Intersection Delay, s/veh	195.3
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	95	320	726	308	193	106
Future Vol, veh/h	95	320	726	308	193	106
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	98	330	748	318	199	109
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	24.7	314.6	19.7
HCM LOS	C	F	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	0%	65%
Vol Thru, %	77%	70%	0%
Vol Right, %	0%	30%	35%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	415	1034	299
LT Vol	95	0	193
Through Vol	320	726	0
RT Vol	0	308	106
Lane Flow Rate	428	1066	308
Geometry Grp	1	1	1
Degree of Util (X)	0.709	1.65	0.555
Departure Headway (Hd)	6.806	5.571	7.621
Convergence, Y/N	Yes	Yes	Yes
Cap	535	661	478
Service Time	4.806	3.571	5.621
HCM Lane V/C Ratio	0.8	1.613	0.644
HCM Control Delay	24.7	314.6	19.7
HCM Lane LOS	C	F	C
HCM 95th-tile Q	5.7	59.3	3.3

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	19	274	10	127	489	159	5	21	9	29	20	13
Future Vol, veh/h	19	274	10	127	489	159	5	21	9	29	20	13
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	19	280	10	130	499	162	5	21	9	30	20	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	661	0	0	291	0	0	1181	1245	286	1178	1169	580
Stage 1	-	-	-	-	-	-	324	324	-	840	840	-
Stage 2	-	-	-	-	-	-	857	921	-	338	329	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	937	-	-	1282	-	-	168	176	758	169	195	518
Stage 1	-	-	-	-	-	-	692	653	-	363	384	-
Stage 2	-	-	-	-	-	-	355	352	-	681	650	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	937	-	-	1281	-	-	127	143	757	127	159	518
Mov Cap-2 Maneuver	-	-	-	-	-	-	127	143	-	127	159	-
Stage 1	-	-	-	-	-	-	675	637	-	354	321	-
Stage 2	-	-	-	-	-	-	270	294	-	635	634	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	1.3	30.4	40.4
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	177	937	-	-	1281	-	-	163
HCM Lane V/C Ratio	0.202	0.021	-	-	0.101	-	-	0.388
HCM Control Delay (s)	30.4	8.9	0	-	8.1	0	-	40.4
HCM Lane LOS	D	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	0.7	0.1	-	-	0.3	-	-	1.7

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	79	0	0	96	26	0	0	0	139	0	42
Future Vol, veh/h	11	79	0	0	96	26	0	0	0	139	0	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16965	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	13	96	0	0	117	32	0	0	0	170	0	51

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	149	0	-	-	-	0			255	255	133
Stage 1	-	-	-	-	-	-			133	133	-
Stage 2	-	-	-	-	-	-			122	122	-
Critical Hdwy	4.1	-	-	-	-	-			6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-			5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.4	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-			3.5	4	3.3
Pot Cap-1 Maneuver	1445	-	0	0	-	-			738	652	922
Stage 1	-	-	0	0	-	-			898	790	-
Stage 2	-	-	0	0	-	-			908	799	-
Platoon blocked, %		-			-	-					
Mov Cap-1 Maneuver	1445	-	-	-	-	-			731	0	922
Mov Cap-2 Maneuver	-	-	-	-	-	-			731	0	-
Stage 1	-	-	-	-	-	-			889	0	-
Stage 2	-	-	-	-	-	-			908	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1445	-	-	-	768
HCM Lane V/C Ratio	0.009	-	-	-	0.287
HCM Control Delay (s)	7.5	0	-	-	11.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	1.2

Intersection	
Int Delay, s/veh	10.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑			✣				
Traffic Vol, veh/h	0	400	113	134	838	0	145	0	110	0	0	0
Future Vol, veh/h	0	400	113	134	838	0	145	0	110	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	412	116	138	864	0	149	0	113	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	528	0	0	1552	1552	412
Stage 1	-	-	-	-	-	-	412	412	-
Stage 2	-	-	-	-	-	-	1140	1140	-
Critical Hdwy	-	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	1049	-	0	~ 126	115	644
Stage 1	0	-	-	-	-	0	673	598	-
Stage 2	0	-	-	-	-	0	308	278	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1049	-	-	~ 109	0	644
Mov Cap-2 Maneuver	-	-	-	-	-	-	212	0	-
Stage 1	-	-	-	-	-	-	673	0	-
Stage 2	-	-	-	-	-	-	267	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	64.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	298	-	-	1049	-
HCM Lane V/C Ratio	0.882	-	-	0.132	-
HCM Control Delay (s)	64.7	-	-	9	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	8	-	-	0.5	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	440	70	28	953	0	20	0	36	0	0	0
Future Vol, veh/h	0	440	70	28	953	0	20	0	36	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	484	77	31	1047	0	22	0	40	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	561	0	0	1632	1632	281
Stage 1	-	-	-	-	-	-	523	523	-
Stage 2	-	-	-	-	-	-	1109	1109	-
Critical Hdwy	-	-	-	4.1	-	-	6.6	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	1020	-	0	103	102	722
Stage 1	0	-	-	-	-	0	565	534	-
Stage 2	0	-	-	-	-	0	318	288	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1020	-	-	100	0	722
Mov Cap-2 Maneuver	-	-	-	-	-	-	222	0	-
Stage 1	-	-	-	-	-	-	565	0	-
Stage 2	-	-	-	-	-	-	308	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	15.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	400	-	-	1020	-
HCM Lane V/C Ratio	0.154	-	-	0.03	-
HCM Control Delay (s)	15.6	-	-	8.6	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	474	2	49	826	0	156	0	40	0	0	0
Future Vol, veh/h	0	474	2	49	826	0	156	0	40	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	200	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	510	2	53	888	0	168	0	43	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	512	0	0	1505	-	256
Stage 1	-	-	-	-	-	-	511	-	-
Stage 2	-	-	-	-	-	-	994	-	-
Critical Hdwy	-	-	-	4.1	-	-	6.6	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	-	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	-	3.3
Pot Cap-1 Maneuver	0	-	-	1064	-	0	~ 124	0	749
Stage 1	0	-	-	-	-	0	573	0	-
Stage 2	0	-	-	-	-	0	361	0	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1064	-	-	~ 118	0	749
Mov Cap-2 Maneuver	-	-	-	-	-	-	245	0	-
Stage 1	-	-	-	-	-	-	573	0	-
Stage 2	-	-	-	-	-	-	343	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	39.1
HCM LOS			E

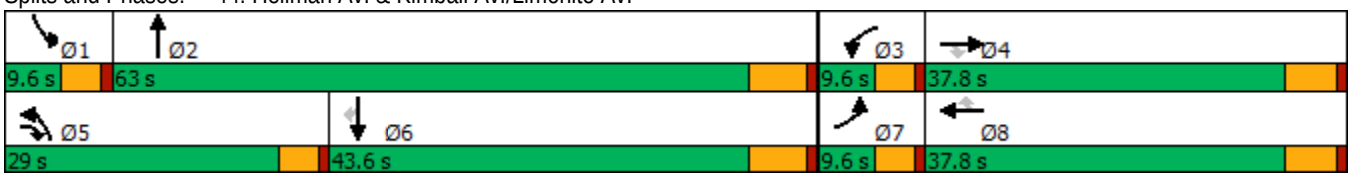
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	245	749	-	-	1064	-
HCM Lane V/C Ratio	0.685	0.057	-	-	0.05	-
HCM Control Delay (s)	46.5	10.1	-	-	8.6	-
HCM Lane LOS	E	B	-	-	A	-
HCM 95th %tile Q(veh)	4.5	0.2	-	-	0.2	-

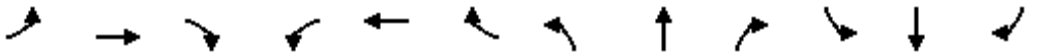
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	50	8	342	2	2	876	223	36	23	
Future Volume (vph)	50	8	342	2	2	876	223	36	23	
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	NA	Perm	
Protected Phases	7	4	5	3	8	5	2	6		1
Permitted Phases			4						6	
Detector Phase	7	4	5	3	8	5	2	6	6	
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	10.0	5.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	9.6	43.2	43.2	43.2	9.6
Total Split (s)	9.6	37.8	29.0	9.6	37.8	29.0	63.0	43.6	43.6	9.6
Total Split (%)	8.0%	31.5%	24.2%	8.0%	31.5%	24.2%	52.5%	36.3%	36.3%	8%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	5.2	5.2	5.2	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	4.6	6.2	6.2	6.2	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	None	None	Max	Max	None	None	None
Act Effct Green (s)	9.2	13.5	61.5	5.1	13.5	44.5	64.5	22.0	22.0	
Actuated g/C Ratio	0.11	0.16	0.71	0.06	0.16	0.51	0.74	0.25	0.25	
v/c Ratio	0.31	0.03	0.30	0.01	0.00	1.11	0.10	0.04	0.05	
Control Delay	45.9	31.6	2.2	46.5	31.5	97.3	6.0	23.1	0.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	45.9	31.6	2.2	46.5	31.5	97.3	6.0	23.1	0.2	
LOS	D	C	A	D	C	F	A	C	A	
Approach Delay		8.3			39.0		78.4	14.2		
Approach LOS		A			D		E	B		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 86.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 58.0	Intersection LOS: E
Intersection Capacity Utilization 84.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	8	342	2	2	0	876	223	6	0	36	23
Future Volume (veh/h)	50	8	342	2	2	0	876	223	6	0	36	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	53	8	360	2	2	0	922	235	6	0	38	24
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	65	358	708	8	552	246	430	2105	54	2	1034	461
Arrive On Green	0.04	0.20	0.20	0.00	0.16	0.00	0.27	0.62	0.62	0.00	0.30	0.30
Sat Flow, veh/h	1619	1800	1525	2956	3420	1525	1619	3408	87	1619	3420	1525
Grp Volume(v), veh/h	53	8	360	2	2	0	922	118	123	0	38	24
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	1710	1525	1619	1710	1784	1619	1710	1525
Q Serve(g_s), s	3.0	0.3	15.2	0.1	0.0	0.0	24.4	2.6	2.6	0.0	0.7	1.0
Cycle Q Clear(g_c), s	3.0	0.3	15.2	0.1	0.0	0.0	24.4	2.6	2.6	0.0	0.7	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	65	358	708	8	552	246	430	1056	1102	2	1034	461
V/C Ratio(X)	0.81	0.02	0.51	0.25	0.00	0.00	2.15	0.11	0.11	0.00	0.04	0.05
Avail Cap(c_a), veh/h	88	626	936	161	1190	531	430	1056	1102	88	1391	620
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	43.8	29.6	17.3	45.8	32.3	0.0	33.8	7.2	7.2	0.0	22.6	22.7
Incr Delay (d2), s/veh	24.7	0.0	0.6	5.9	0.0	0.0	523.5	0.2	0.2	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.1	4.9	0.0	0.0	0.0	71.2	0.8	0.9	0.0	0.3	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.4	29.7	17.8	51.7	32.4	0.0	557.3	7.4	7.4	0.0	22.6	22.8
LnGrp LOS	E	C	B	D	C	A	F	A	A	A	C	C
Approach Vol, veh/h		421			4			1163			62	
Approach Delay, s/veh		24.4			42.0			443.3			22.7	
Approach LOS		C			D			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	63.0	4.8	24.1	29.0	34.0	8.3	20.6
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	5.0	56.8	5.0	32.0	24.4	37.4	5.0	32.0
Max Q Clear Time (g_c+I1), s	0.0	4.6	2.1	17.2	26.4	3.0	5.0	2.0
Green Ext Time (p_c), s	0.0	1.2	0.0	1.1	0.0	0.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	319.7
HCM 6th LOS	F

Intersection	
Intersection Delay, s/veh	240.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	469	35	253	841	46	23	0	136	130	0	11
Future Vol, veh/h	11	469	35	253	841	46	23	0	136	130	0	11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	12	499	37	269	895	49	24	0	145	138	0	12
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

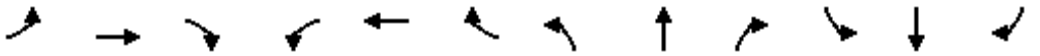
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	63.1	379.1	16.6	18.1
HCM LOS	F	F	C	C

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	14%	100%	0%	0%	100%	0%	92%
Vol Thru, %	0%	0%	100%	0%	0%	95%	0%
Vol Right, %	86%	0%	0%	100%	0%	5%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	159	11	469	35	253	887	141
LT Vol	23	11	0	0	253	0	130
Through Vol	0	0	469	0	0	841	0
RT Vol	136	0	0	35	0	46	11
Lane Flow Rate	169	12	499	37	269	944	150
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.369	0.025	0.988	0.067	0.615	2.012	0.366
Departure Headway (Hd)	8.852	8.62	8.104	7.382	8.229	7.676	9.836
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	409	418	454	488	441	481	369
Service Time	6.552	6.32	5.804	5.082	5.929	5.376	7.536
HCM Lane V/C Ratio	0.413	0.029	1.099	0.076	0.61	1.963	0.407
HCM Control Delay	16.6	11.5	68.2	10.6	23.2	480.6	18.1
HCM Lane LOS	C	B	F	B	C	F	C
HCM 95th-tile Q	1.7	0.1	12.5	0.2	4	64.8	1.6

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	4	540	731	1158	450
Future Volume (vph)	4	540	731	1158	450
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (%)	32.2%	32.2%	31.1%	67.8%	36.7%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	23.0	23.0	35.0	55.2	16.2
Actuated g/C Ratio	0.26	0.26	0.39	0.61	0.18
v/c Ratio	1.24	1.22	1.16	0.40	0.60
Control Delay	155.3	145.2	113.3	19.7	29.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	155.3	145.2	113.3	19.7	29.4
LOS	F	F	F	B	C
Approach Delay	150.1			55.9	29.4
Approach LOS	F			E	C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.24	
Intersection Signal Delay: 78.5	Intersection LOS: E
Intersection Capacity Utilization 94.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	510	4	540	731	1158	0	0	450	215
Future Volume (veh/h)	0	0	0	510	4	540	731	1158	0	0	450	215
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				567	4	413	812	1287	0	0	500	229
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				459	3	411	637	3181	0	0	964	316
Arrive On Green				0.26	0.26	0.26	0.70	1.00	0.00	0.00	0.20	0.20
Sat Flow, veh/h				1797	13	1610	1810	5358	0	0	5168	1606
Grp Volume(v), veh/h				571	0	413	812	1287	0	0	500	229
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1729	0	0	1634	1606
Q Serve(g_s), s				23.0	0.0	23.0	31.7	0.0	0.0	0.0	8.2	12.0
Cycle Q Clear(g_c), s				23.0	0.0	23.0	31.7	0.0	0.0	0.0	8.2	12.0
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				463	0	411	637	3181	0	0	964	316
V/C Ratio(X)				1.23	0.00	1.00	1.27	0.40	0.00	0.00	0.52	0.72
Avail Cap(c_a), veh/h				463	0	411	637	3181	0	0	1481	485
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.5	0.0	33.5	13.3	0.0	0.0	0.0	32.3	33.9
Incr Delay (d2), s/veh				123.0	0.0	45.3	124.6	0.0	0.0	0.0	2.0	13.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				25.2	0.0	23.1	26.4	0.0	0.0	0.0	3.2	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				156.5	0.0	78.8	137.9	0.0	0.0	0.0	34.3	47.4
LnGrp LOS				F	A	F	F	A	A	A	C	D
Approach Vol, veh/h					984			2099			729	
Approach Delay, s/veh					123.9			53.4			38.4	
Approach LOS					F			D			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	61.0	29.0	37.5	23.5
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	55.2	23.0	24.0	* 27
Max Q Clear Time (g_c+I1), s	2.0	25.0	33.7	14.0
Green Ext Time (p_c), s	11.4	0.0	0.0	3.7

Intersection Summary	
HCM 6th Ctrl Delay	68.7
HCM 6th LOS	E

Notes

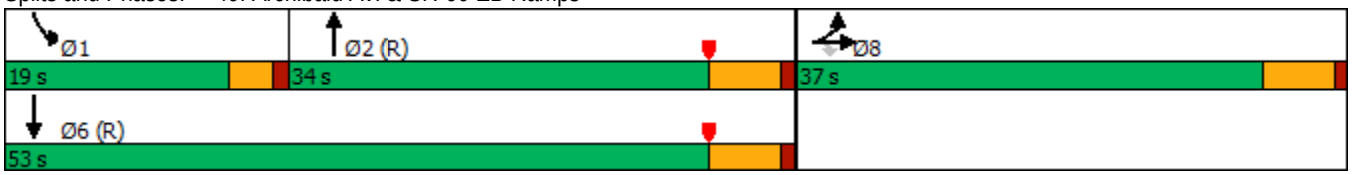
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

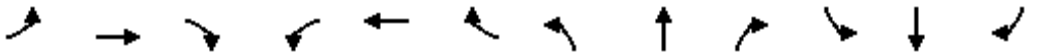
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	3	567	1481	175	786
Future Volume (vph)	3	567	1481	175	786
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (%)	41.1%	41.1%	37.8%	21.1%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	30.4	30.4	31.4	12.6	48.0
Actuated g/C Ratio	0.34	0.34	0.35	0.14	0.53
v/c Ratio	0.72	0.95	1.11dr	0.74	0.30
Control Delay	33.5	50.1	55.3	42.9	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	50.1	55.3	42.9	24.8
LOS	C	D	E	D	C
Approach Delay	43.1		55.3		28.1
Approach LOS	D		E		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 46.0	Intersection LOS: D
Intersection Capacity Utilization 94.0%	ICU Level of Service F
Analysis Period (min) 15	

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	408	3	567	0	0	0	0	1481	686	175	786	0
Future Volume (veh/h)	408	3	567	0	0	0	0	1481	686	175	786	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	434	3	386				0	1576	499	186	836	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	504	3	452				0	2078	658	224	3063	0
Arrive On Green	0.28	0.28	0.28				0.00	0.42	0.42	0.04	0.19	0.00
Sat Flow, veh/h	1798	12	1610				0	5189	1558	1810	5358	0
Grp Volume(v), veh/h	437	0	386				0	1569	506	186	836	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1578	1810	1729	0
Q Serve(g_s), s	20.6	0.0	20.4				0.0	24.5	24.5	9.2	12.3	0.0
Cycle Q Clear(g_c), s	20.6	0.0	20.4				0.0	24.5	24.5	9.2	12.3	0.0
Prop In Lane	0.99		1.00				0.00		0.99	1.00		0.00
Lane Grp Cap(c), veh/h	508	0	452				0	2069	666	224	3063	0
V/C Ratio(X)	0.86	0.00	0.85				0.00	0.76	0.76	0.83	0.27	0.00
Avail Cap(c_a), veh/h	628	0	558				0	2069	666	302	3063	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.36	0.36	0.76	0.76	0.00
Uniform Delay (d), s/veh	30.7	0.0	30.6				0.0	22.1	22.1	42.2	19.8	0.0
Incr Delay (d2), s/veh	9.9	0.0	10.4				0.0	1.0	3.0	7.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	0.0	8.6				0.0	8.4	8.5	4.6	5.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.6	0.0	41.1				0.0	23.1	25.1	50.1	20.0	0.0
LnGrp LOS	D	A	D				A	C	C	D	B	A
Approach Vol, veh/h		823						2075			1022	
Approach Delay, s/veh		40.8						23.6			25.5	
Approach LOS		D						C			C	

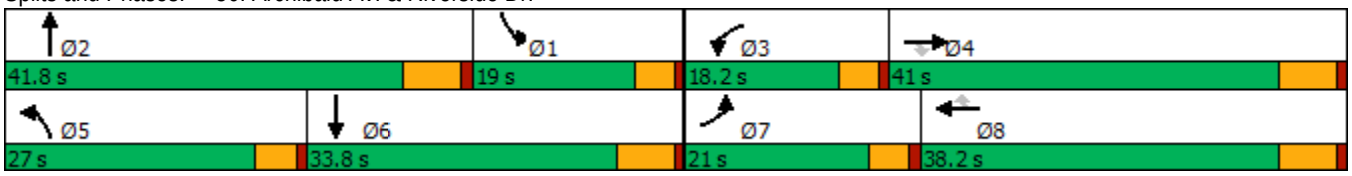
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	15.2	43.8				59.0		31.0				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	15.0	28.2				47.2		31.2				
Max Q Clear Time (g_c+I1), s	11.2	26.5				14.3		22.6				
Green Ext Time (p_c), s	0.1	1.5				5.7		2.6				

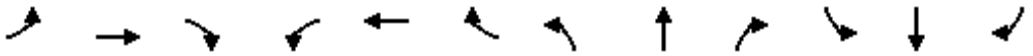
Intersection Summary			
HCM 6th Ctrl Delay			27.7
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	261	336	278	101	519	190	367	1226	146	653
Future Volume (vph)	261	336	278	101	519	190	367	1226	146	653
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.0	41.0	41.0	18.2	38.2	38.2	27.0	41.8	19.0	33.8
Total Split (%)	17.5%	34.2%	34.2%	15.2%	31.8%	31.8%	22.5%	34.8%	15.8%	28.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	16.5	29.6	29.6	10.9	24.0	24.0	22.5	34.8	13.7	26.0
Actuated g/C Ratio	0.15	0.27	0.27	0.10	0.22	0.22	0.20	0.31	0.12	0.23
v/c Ratio	1.16	0.39	0.48	0.68	0.74	0.42	1.19	0.89	0.78	0.84
Control Delay	150.7	35.1	6.5	70.6	47.2	7.6	151.3	44.8	74.1	45.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	150.7	35.1	6.5	70.6	47.2	7.6	151.3	44.8	74.1	45.2
LOS	F	D	A	E	D	A	F	D	E	D
Approach Delay		60.6			40.8			68.5		49.2
Approach LOS		E			D			E		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.19	
Intersection Signal Delay: 57.1	Intersection LOS: E
Intersection Capacity Utilization 93.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	261	336	278	101	519	190	367	1226	55	146	653	267
Future Volume (veh/h)	261	336	278	101	519	190	367	1226	55	146	653	267
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	278	357	162	107	552	120	390	1304	56	155	695	206
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	246	970	425	130	726	317	336	1492	64	181	861	251
Arrive On Green	0.15	0.28	0.28	0.08	0.21	0.21	0.21	0.31	0.31	0.11	0.23	0.23
Sat Flow, veh/h	1619	3420	1498	1619	3420	1495	1619	4831	207	1619	3773	1103
Grp Volume(v), veh/h	278	357	162	107	552	120	390	884	476	155	602	299
Grp Sat Flow(s),veh/h/ln	1619	1710	1498	1619	1710	1495	1619	1638	1762	1619	1638	1600
Q Serve(g_s), s	16.4	9.0	9.4	7.0	16.4	5.3	22.4	27.6	27.6	10.1	18.8	19.1
Cycle Q Clear(g_c), s	16.4	9.0	9.4	7.0	16.4	5.3	22.4	27.6	27.6	10.1	18.8	19.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		0.69
Lane Grp Cap(c), veh/h	246	970	425	130	726	317	336	1012	544	181	747	365
V/C Ratio(X)	1.13	0.37	0.38	0.82	0.76	0.38	1.16	0.87	0.87	0.86	0.81	0.82
Avail Cap(c_a), veh/h	246	1103	483	204	1014	443	336	1080	581	216	838	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.8	30.9	31.0	48.9	39.9	18.5	42.8	35.3	35.3	47.1	39.4	39.5
Incr Delay (d2), s/veh	96.9	0.2	0.6	7.2	2.2	0.7	100.3	7.7	13.3	21.4	5.3	11.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.9	3.6	3.3	3.0	6.7	2.6	17.8	11.3	13.0	5.0	7.7	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	142.7	31.2	31.6	56.1	42.1	19.2	143.0	43.0	48.6	68.4	44.7	50.9
LnGrp LOS	F	C	C	E	D	B	F	D	D	E	D	D
Approach Vol, veh/h		797			779			1750			1056	
Approach Delay, s/veh		70.2			40.5			66.8			49.9	
Approach LOS		E			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.3	39.5	13.3	36.8	27.0	30.8	21.0	29.1
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	14.4	* 36	13.6	34.8	22.4	27.6	16.4	32.0
Max Q Clear Time (g_c+I1), s	12.1	29.6	9.0	11.4	24.4	21.1	18.4	18.4
Green Ext Time (p_c), s	0.0	3.8	0.0	2.5	0.0	2.8	0.0	3.1

Intersection Summary	
HCM 6th Ctrl Delay	58.7
HCM 6th LOS	E

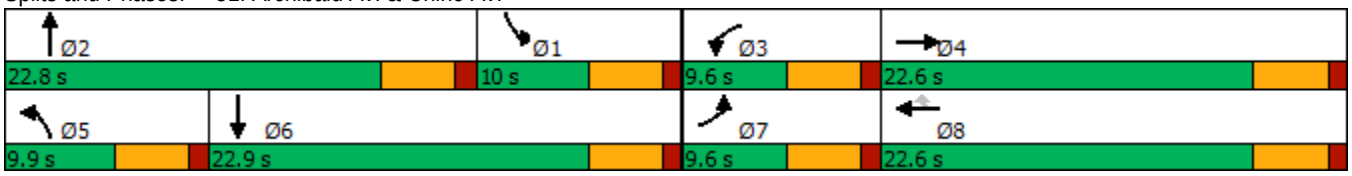
Notes

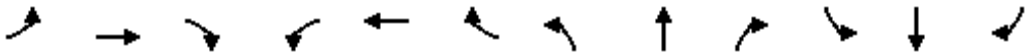
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	105	3	80	5	269	117	1210	127	871
Future Volume (vph)	105	3	80	5	269	117	1210	127	871
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	9.6	22.6	9.6	22.6	22.6	9.9	22.8	10.0	22.9
Total Split (%)	14.8%	34.8%	14.8%	34.8%	34.8%	15.2%	35.1%	15.4%	35.2%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	5.0	10.5	9.5	8.6	8.6	5.3	18.3	5.4	18.4
Actuated g/C Ratio	0.09	0.19	0.17	0.15	0.15	0.09	0.33	0.10	0.33
v/c Ratio	0.79	0.11	0.32	0.02	0.63	0.84	0.86	0.89	0.88
Control Delay	67.3	9.3	30.4	18.6	10.4	72.1	25.8	81.1	30.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.3	9.3	30.4	18.6	10.4	72.1	25.8	81.1	30.2
LOS	E	A	C	B	B	E	C	F	C
Approach Delay		53.8		15.0			29.8		36.5
Approach LOS		D		B			C		D

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 55.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 31.5	Intersection LOS: C
Intersection Capacity Utilization 61.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	3	29	80	5	269	117	1210	40	127	871	27
Future Volume (veh/h)	105	3	29	80	5	269	117	1210	40	127	871	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	115	3	14	88	5	159	129	1330	42	140	957	28
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	142	37	173	113	210	178	159	1628	51	170	1151	34
Arrive On Green	0.09	0.13	0.13	0.07	0.12	0.12	0.10	0.33	0.33	0.11	0.34	0.34
Sat Flow, veh/h	1619	276	1286	1619	1800	1525	1619	4893	155	1619	3393	99
Grp Volume(v), veh/h	115	0	17	88	5	159	129	890	482	140	482	503
Grp Sat Flow(s),veh/h/ln	1619	0	1562	1619	1800	1525	1619	1638	1772	1619	1710	1782
Q Serve(g_s), s	3.6	0.0	0.5	2.7	0.1	3.6	4.0	12.8	12.8	4.4	13.3	13.3
Cycle Q Clear(g_c), s	3.6	0.0	0.5	2.7	0.1	3.6	4.0	12.8	12.8	4.4	13.3	13.3
Prop In Lane	1.00		0.82	1.00		1.00	1.00		0.09	1.00		0.06
Lane Grp Cap(c), veh/h	142	0	210	113	210	178	159	1090	590	170	580	605
V/C Ratio(X)	0.81	0.00	0.08	0.78	0.02	0.89	0.81	0.82	0.82	0.82	0.83	0.83
Avail Cap(c_a), veh/h	157	0	547	157	630	534	167	1160	627	170	609	634
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.0	0.0	19.5	23.5	20.1	10.3	22.7	15.7	15.7	22.5	15.6	15.6
Incr Delay (d2), s/veh	24.4	0.0	0.2	15.2	0.0	14.1	24.1	4.4	7.9	26.7	9.2	8.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.2	1.4	0.0	2.3	2.3	4.0	4.9	2.6	5.3	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.4	0.0	19.6	38.8	20.2	24.4	46.8	20.2	23.6	49.2	24.8	24.5
LnGrp LOS	D	A	B	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		132			252			1501			1125	
Approach Delay, s/veh		43.8			29.4			23.6			27.7	
Approach LOS		D			C			C			C	

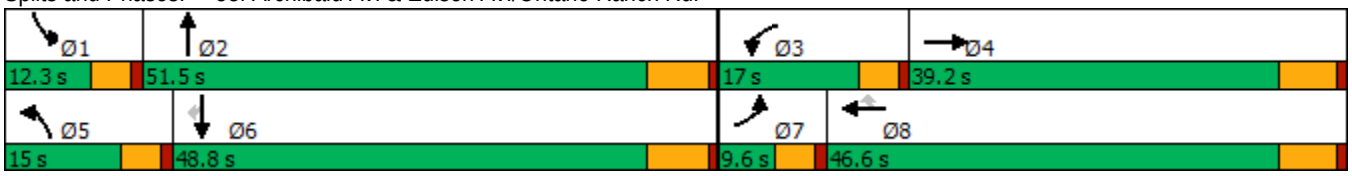
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	21.7	8.2	11.5	9.7	22.0	9.1	10.6
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	5.4	18.2	5.0	18.0	5.3	18.3	5.0	18.0
Max Q Clear Time (g_c+I1), s	6.4	14.8	4.7	2.5	6.0	15.3	5.6	5.6
Green Ext Time (p_c), s	0.0	2.3	0.0	0.0	0.0	1.6	0.0	0.4

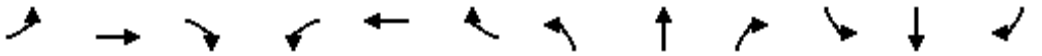
Intersection Summary	
HCM 6th Ctrl Delay	26.5
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	225	47	476	545	153	180	1135	451	72	522	111
Future Volume (vph)	28	225	47	476	545	153	180	1135	451	72	522	111
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	9.6	39.2		17.0	46.6	46.6	15.0	51.5		12.3	48.8	48.8
Total Split (%)	8.0%	32.7%		14.2%	38.8%	38.8%	12.5%	42.9%		10.3%	40.7%	40.7%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.2	25.4	107.4	12.9	37.9	37.9	10.8	42.0	107.4	7.5	35.5	35.5
Actuated g/C Ratio	0.05	0.24	1.00	0.12	0.35	0.35	0.10	0.39	1.00	0.07	0.33	0.33
v/c Ratio	0.20	0.29	0.03	1.39	0.89	0.25	1.15	0.88	0.31	0.66	0.48	0.19
Control Delay	58.6	34.8	0.0	228.7	52.2	7.5	162.9	40.7	0.5	81.7	30.2	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.6	34.8	0.0	228.7	52.2	7.5	162.9	40.7	0.5	81.7	30.2	2.3
LOS	E	C	A	F	D	A	F	D	A	F	C	A
Approach Delay		31.6			117.9			42.9			31.0	
Approach LOS		C			F			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.39	
Intersection Signal Delay: 62.3	Intersection LOS: E
Intersection Capacity Utilization 90.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	225	47	476	545	153	180	1135	451	72	522	111
Future Volume (veh/h)	28	225	47	476	545	153	180	1135	451	72	522	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	29	232	0	491	562	104	186	1170	0	74	538	81
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	79	851		336	604	512	155	1298		92	1166	520
Arrive On Green	0.03	0.25	0.00	0.11	0.34	0.34	0.10	0.38	0.00	0.06	0.34	0.34
Sat Flow, veh/h	2956	3420	1525	2956	1800	1525	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	29	232	0	491	562	104	186	1170	0	74	538	81
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1800	1525	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	1.1	6.0	0.0	12.4	32.9	5.3	10.4	35.2	0.0	4.9	13.4	4.0
Cycle Q Clear(g_c), s	1.1	6.0	0.0	12.4	32.9	5.3	10.4	35.2	0.0	4.9	13.4	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	79	851		336	604	512	155	1298		92	1166	520
V/C Ratio(X)	0.37	0.27		1.46	0.93	0.20	1.20	0.90		0.80	0.46	0.16
Avail Cap(c_a), veh/h	136	1036		336	667	565	155	1412		114	1327	592
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.1	33.0	0.0	48.3	35.0	25.8	49.3	31.9	0.0	50.8	28.1	25.0
Incr Delay (d2), s/veh	1.0	0.2	0.0	222.7	18.7	0.2	137.6	7.8	0.0	22.5	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.4	0.0	14.8	16.5	1.9	9.9	14.6	0.0	2.5	5.1	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.2	33.2	0.0	271.0	53.6	26.0	186.9	39.7	0.0	73.3	28.4	25.1
LnGrp LOS	D	C		F	D	C	F	D		E	C	C
Approach Vol, veh/h		261	A		1157			1356	A		693	
Approach Delay, s/veh		35.4			143.4			59.9			32.8	
Approach LOS		D			F			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	47.9	17.0	33.3	15.0	43.7	7.5	42.8
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	7.7	45.0	12.4	33.0	10.4	42.3	5.0	40.4
Max Q Clear Time (g_c+I1), s	6.9	37.2	14.4	8.0	12.4	15.4	3.1	34.9
Green Ext Time (p_c), s	0.0	4.2	0.0	1.2	0.0	3.4	0.0	1.7

Intersection Summary	
HCM 6th Ctrl Delay	80.5
HCM 6th LOS	F

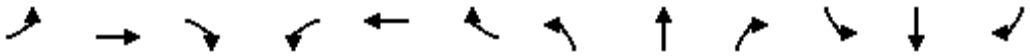
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	17	1749	9	26	1019
Future Volume (vph)	12	17	1749	9	26	1019
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.5	9.5	32.5	32.5	9.6	16.5
Total Split (s)	9.5	9.5	41.4	41.4	9.6	51.0
Total Split (%)	13.6%	13.6%	59.1%	59.1%	13.7%	72.9%
Yellow Time (s)	3.5	3.5	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	6.5	6.5	4.6	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max
Act Effct Green (s)	5.1	5.1	54.7	54.7	5.1	56.4
Actuated g/C Ratio	0.08	0.08	0.90	0.90	0.08	0.93
v/c Ratio	0.05	0.04	0.61	0.01	0.21	0.35
Control Delay	26.3	0.2	7.8	4.8	30.0	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.3	0.2	7.8	4.8	30.0	2.3
LOS	C	A	A	A	C	A
Approach Delay			7.7			3.0
Approach LOS			A			A

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 60.8	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 6.0	Intersection LOS: A
Intersection Capacity Utilization 64.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	12	0	17	0	1749	9	26	1019	0
Future Volume (veh/h)	0	0	0	12	0	17	0	1749	9	26	1019	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1700	0	1800	0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h				13	0	7	0	1881	7	28	1096	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				75	0	64	0	2293	1023	51	2677	0
Arrive On Green				0.02	0.00	0.02	0.00	0.67	0.67	0.03	0.78	0.00
Sat Flow, veh/h				3141	0	2685	0	3510	1525	1619	3510	0
Grp Volume(v), veh/h				13	0	7	0	1881	7	28	1096	0
Grp Sat Flow(s),veh/h/ln				1570	0	1342	0	1710	1525	1619	1710	0
Q Serve(g_s), s				0.2	0.0	0.1	0.0	22.9	0.1	1.0	5.8	0.0
Cycle Q Clear(g_c), s				0.2	0.0	0.1	0.0	22.9	0.1	1.0	5.8	0.0
Prop In Lane				1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				75	0	64	0	2293	1023	51	2677	0
V/C Ratio(X)				0.17	0.00	0.11	0.00	0.82	0.01	0.55	0.41	0.00
Avail Cap(c_a), veh/h				276	0	236	0	2293	1023	142	2677	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				27.2	0.0	27.2	0.0	6.9	3.1	27.1	2.0	0.0
Incr Delay (d2), s/veh				1.1	0.0	0.7	0.0	3.4	0.0	3.4	0.5	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.1	0.0	0.0	0.0	3.6	0.0	0.4	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.3	0.0	27.9	0.0	10.3	3.1	30.6	2.4	0.0
LnGrp LOS				C	A	C	A	B	A	C	A	A
Approach Vol, veh/h					20			1888			1124	
Approach Delay, s/veh					28.2			10.3			3.1	
Approach LOS					C			B			A	

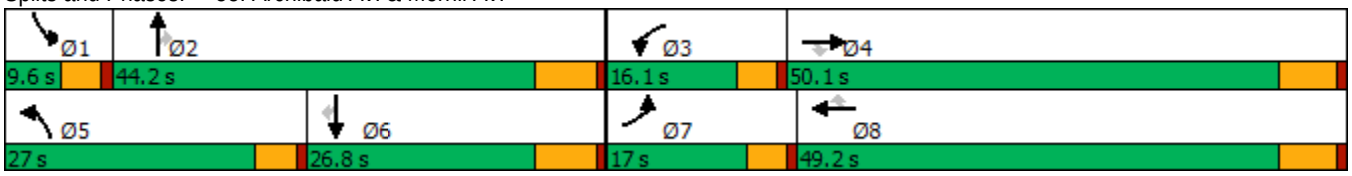
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	6.4	44.6				51.0		5.9				
Change Period (Y+Rc), s	4.6	6.5				6.5		4.5				
Max Green Setting (Gmax), s	5.0	34.9				44.5		5.0				
Max Q Clear Time (g_c+I1), s	3.0	24.9				7.8		2.2				
Green Ext Time (p_c), s	0.0	7.7				8.1		0.0				

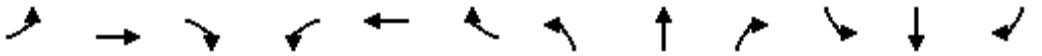
Intersection Summary		
HCM 6th Ctrl Delay		7.8
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	23	149	83	52	144	554	1344	41	44	607	381
Future Volume (vph)	270	23	149	83	52	144	554	1344	41	44	607	381
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	17.0	50.1	50.1	16.1	49.2	49.2	27.0	44.2	44.2	9.6	26.8	26.8
Total Split (%)	14.2%	41.8%	41.8%	13.4%	41.0%	41.0%	22.5%	36.8%	36.8%	8.0%	22.3%	22.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	12.6	21.4	21.4	8.7	15.3	15.3	22.8	42.5	42.5	5.1	20.6	20.6
Actuated g/C Ratio	0.13	0.23	0.23	0.09	0.16	0.16	0.24	0.45	0.45	0.05	0.22	0.22
v/c Ratio	1.28	0.06	0.33	0.57	0.18	0.39	1.46	0.89	0.06	0.28	0.83	0.78
Control Delay	191.9	29.2	6.4	57.9	33.1	7.2	248.3	34.7	0.1	50.8	46.9	28.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	191.9	29.2	6.4	57.9	33.1	7.2	248.3	34.7	0.1	50.8	46.9	28.2
LOS	F	C	A	E	C	A	F	C	A	D	D	C
Approach Delay		120.7			27.2			95.0			40.1	
Approach LOS		F			C			F			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 93.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.46	
Intersection Signal Delay: 77.6	Intersection LOS: E
Intersection Capacity Utilization 89.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	23	149	83	52	144	554	1344	41	44	607	381
Future Volume (veh/h)	270	23	149	83	52	144	554	1344	41	44	607	381
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	278	24	99	86	54	53	571	1386	23	45	626	327
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	231	344	292	107	207	175	417	1547	690	113	797	355
Arrive On Green	0.14	0.19	0.19	0.07	0.11	0.11	0.26	0.45	0.45	0.04	0.23	0.23
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	1619	3420	1525	2956	3420	1525
Grp Volume(v), veh/h	278	24	99	86	54	53	571	1386	23	45	626	327
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1710	1525	1478	1710	1525
Q Serve(g_s), s	12.4	1.0	4.9	4.6	2.4	2.8	22.4	32.4	0.7	1.3	14.9	18.2
Cycle Q Clear(g_c), s	12.4	1.0	4.9	4.6	2.4	2.8	22.4	32.4	0.7	1.3	14.9	18.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	231	344	292	107	207	175	417	1547	690	113	797	355
V/C Ratio(X)	1.20	0.07	0.34	0.80	0.26	0.30	1.37	0.90	0.03	0.40	0.79	0.92
Avail Cap(c_a), veh/h	231	909	770	214	890	754	417	1547	690	170	798	356
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.3	28.8	30.4	40.0	35.1	35.3	32.3	21.9	13.2	40.8	31.3	32.6
Incr Delay (d2), s/veh	125.5	0.1	0.7	5.1	0.7	1.0	180.7	7.2	0.0	0.8	5.2	28.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	0.4	1.8	1.9	1.1	1.0	28.8	12.3	0.2	0.5	6.1	9.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	162.7	28.9	31.1	45.2	35.8	36.2	213.0	29.2	13.3	41.7	36.5	61.0
LnGrp LOS	F	C	C	D	D	D	F	C	B	D	D	E
Approach Vol, veh/h		401			193			1980			998	
Approach Delay, s/veh		122.2			40.1			82.0			44.8	
Approach LOS		F			D			F			D	

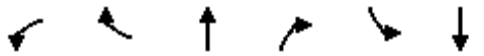
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	45.8	10.4	22.8	27.0	26.8	17.0	16.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	37.7	11.5	43.9	22.4	20.3	12.4	43.0
Max Q Clear Time (g_c+I1), s	3.3	34.4	6.6	6.9	24.4	20.2	14.4	4.8
Green Ext Time (p_c), s	0.0	2.3	0.0	0.4	0.0	0.1	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	73.8
HCM 6th LOS	E

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	370	943	956	397	237	558
Future Volume (vph)	370	943	956	397	237	558
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	27.0	56.7	36.3	27.0	83.7
Total Split (%)	30.3%	22.5%	47.3%	30.3%	22.5%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min
Act Effct Green (s)	27.3	49.6	51.5	84.1	22.0	78.8
Actuated g/C Ratio	0.23	0.43	0.44	0.72	0.19	0.68
v/c Ratio	0.91	1.39	1.19	0.34	0.72	0.45
Control Delay	69.9	210.1	127.1	3.8	58.5	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.9	210.1	127.1	3.8	58.5	10.7
LOS	E	F	F	A	E	B
Approach Delay	170.6		90.9			24.9
Approach LOS	F		F			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.39	
Intersection Signal Delay: 106.0	Intersection LOS: F
Intersection Capacity Utilization 117.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	370	943	956	397	237	558
Future Volume (veh/h)	370	943	956	397	237	558
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	385	926	996	367	247	581
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	485	678	844	1146	278	1217
Arrive On Green	0.27	0.27	0.44	0.44	0.15	0.64
Sat Flow, veh/h	1810	1610	1900	1610	1810	1900
Grp Volume(v), veh/h	385	926	996	367	247	581
Grp Sat Flow(s),veh/h/ln	1810	1610	1900	1610	1810	1900
Q Serve(g_s), s	22.9	31.0	51.4	9.8	15.5	18.3
Cycle Q Clear(g_c), s	22.9	31.0	51.4	9.8	15.5	18.3
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	485	678	844	1146	278	1217
V/C Ratio(X)	0.79	1.37	1.18	0.32	0.89	0.48
Avail Cap(c_a), veh/h	485	678	844	1146	344	1292
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	33.5	32.2	6.2	48.0	10.8
Incr Delay (d2), s/veh	8.2	173.8	93.4	0.2	20.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.8	50.1	43.3	6.7	8.2	6.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	47.6	207.3	125.6	6.4	68.7	10.9
LnGrp LOS	D	F	F	A	E	B
Approach Vol, veh/h	1311		1363			828
Approach Delay, s/veh	160.4		93.5			28.1
Approach LOS	F		F			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	22.8	56.7			79.5	36.3
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	22.0	51.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	17.5	53.4			20.3	33.0
Green Ext Time (p_c), s	0.3	0.0			2.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	103.1
HCM 6th LOS	F

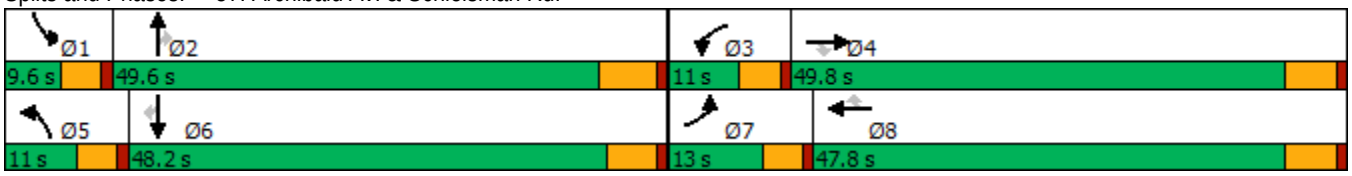
Notes

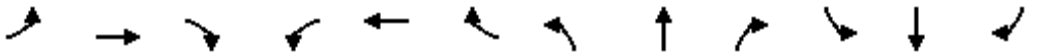
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	530	452	155	285	819	162	298	913	247	120	513	539
Future Volume (vph)	530	452	155	285	819	162	298	913	247	120	513	539
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	49.8	49.8	11.0	47.8	47.8	11.0	49.6	49.6	9.6	48.2	48.2
Total Split (%)	10.8%	41.5%	41.5%	9.2%	39.8%	39.8%	9.2%	41.3%	41.3%	8.0%	40.2%	40.2%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	8.4	44.1	44.1	6.4	42.1	42.1	6.4	40.1	40.1	5.0	39.5	39.5
Actuated g/C Ratio	0.07	0.38	0.38	0.05	0.36	0.36	0.05	0.34	0.34	0.04	0.34	0.34
v/c Ratio	2.34	0.26	0.24	1.65	0.49	0.28	1.72	0.57	0.37	0.89	0.33	0.93
Control Delay	638.6	26.1	4.7	351.1	30.6	11.2	381.5	32.6	4.9	105.6	29.1	50.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	638.6	26.1	4.7	351.1	30.6	11.2	381.5	32.6	4.9	105.6	29.1	50.6
LOS	F	C	A	F	C	B	F	C	A	F	C	D
Approach Delay		308.8			100.3			99.2			46.8	
Approach LOS		F			F			F			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.34	
Intersection Signal Delay: 134.6	Intersection LOS: F
Intersection Capacity Utilization 82.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	530	452	155	285	819	162	298	913	247	120	513	539
Future Volume (veh/h)	530	452	155	285	819	162	298	913	247	120	513	539
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	589	502	108	317	910	103	331	1014	201	133	570	477
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	253	1957	598	193	1868	573	193	1780	553	151	1718	526
Arrive On Green	0.07	0.38	0.38	0.05	0.36	0.36	0.05	0.34	0.34	0.04	0.33	0.33
Sat Flow, veh/h	3510	5187	1584	3510	5187	1590	3510	5187	1610	3510	5187	1588
Grp Volume(v), veh/h	589	502	108	317	910	103	331	1014	201	133	570	477
Grp Sat Flow(s),veh/h/ln	1755	1729	1584	1755	1729	1590	1755	1729	1610	1755	1729	1588
Q Serve(g_s), s	8.4	7.8	5.3	6.4	15.9	5.2	6.4	18.6	10.9	4.4	9.6	33.5
Cycle Q Clear(g_c), s	8.4	7.8	5.3	6.4	15.9	5.2	6.4	18.6	10.9	4.4	9.6	33.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	253	1957	598	193	1868	573	193	1780	553	151	1718	526
V/C Ratio(X)	2.33	0.26	0.18	1.65	0.49	0.18	1.72	0.57	0.36	0.88	0.33	0.91
Avail Cap(c_a), veh/h	253	1957	598	193	1868	573	193	1930	599	151	1904	583
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.1	25.0	24.3	55.1	29.0	25.5	55.1	31.3	28.7	55.5	29.3	37.3
Incr Delay (d2), s/veh	610.5	0.3	0.7	312.6	0.9	0.7	344.2	0.3	0.4	40.3	0.1	17.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.0	3.1	2.0	11.1	6.5	2.0	11.9	7.4	4.1	2.7	3.8	14.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	664.6	25.4	24.9	367.7	29.9	26.2	399.3	31.6	29.1	95.9	29.4	54.2
LnGrp LOS	F	C	C	F	C	C	F	C	C	F	C	D
Approach Vol, veh/h		1199			1330			1546			1180	
Approach Delay, s/veh		339.3			110.1			110.0			46.9	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	46.2	11.0	49.8	11.0	44.8	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.0	43.4	6.4	44.0	6.4	* 43	8.4	42.0
Max Q Clear Time (g_c+I1), s	6.4	20.6	8.4	9.8	8.4	35.5	10.4	17.9
Green Ext Time (p_c), s	0.0	7.4	0.0	3.7	0.0	3.1	0.0	6.5

Intersection Summary	
HCM 6th Ctrl Delay	148.2
HCM 6th LOS	F

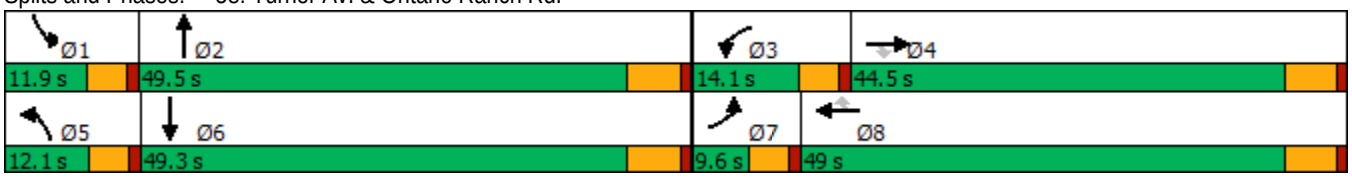
Notes

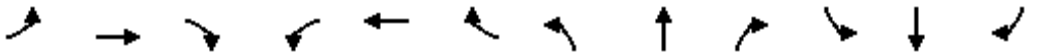
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	30	644	37	48	1231	20	64	27	38	17
Future Volume (vph)	30	644	37	48	1231	20	64	27	38	17
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	9.6	44.5	44.5	14.1	49.0	49.0	12.1	49.5	11.9	49.3
Total Split (%)	8.0%	37.1%	37.1%	11.8%	40.8%	40.8%	10.1%	41.3%	9.9%	41.1%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	5.2	48.9	48.9	7.2	50.6	50.6	7.2	18.0	6.5	15.1
Actuated g/C Ratio	0.06	0.57	0.57	0.08	0.58	0.58	0.08	0.21	0.08	0.17
v/c Ratio	0.34	0.37	0.05	0.40	0.68	0.02	0.53	0.20	0.35	0.28
Control Delay	55.9	18.4	0.1	51.8	22.3	0.1	58.3	16.3	52.4	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.9	18.4	0.1	51.8	22.3	0.1	58.3	16.3	52.4	12.9
LOS	E	B	A	D	C	A	E	B	D	B
Approach Delay		19.0			23.1			36.6		25.2
Approach LOS		B			C			D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 86.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 22.7	Intersection LOS: C
Intersection Capacity Utilization 64.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	644	37	48	1231	20	64	27	41	38	17	67
Future Volume (veh/h)	30	644	37	48	1231	20	64	27	41	38	17	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	33	716	30	53	1368	13	71	30	33	42	19	51
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	52	1792	799	70	1828	815	88	108	119	61	52	141
Arrive On Green	0.03	0.52	0.52	0.04	0.53	0.53	0.05	0.14	0.14	0.04	0.12	0.12
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	783	862	1619	432	1159
Grp Volume(v), veh/h	33	716	30	53	1368	13	71	0	63	42	0	70
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	0	1645	1619	0	1591
Q Serve(g_s), s	1.6	10.2	0.8	2.6	25.1	0.3	3.5	0.0	2.8	2.1	0.0	3.3
Cycle Q Clear(g_c), s	1.6	10.2	0.8	2.6	25.1	0.3	3.5	0.0	2.8	2.1	0.0	3.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.52	1.00		0.73
Lane Grp Cap(c), veh/h	52	1792	799	70	1828	815	88	0	227	61	0	193
V/C Ratio(X)	0.63	0.40	0.04	0.76	0.75	0.02	0.81	0.00	0.28	0.69	0.00	0.36
Avail Cap(c_a), veh/h	100	1792	799	190	1828	815	150	0	889	146	0	857
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.6	11.6	9.3	38.3	14.6	8.8	37.8	0.0	31.2	38.4	0.0	32.6
Incr Delay (d2), s/veh	4.6	0.7	0.1	6.2	2.9	0.0	6.4	0.0	0.7	5.0	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.4	0.2	1.1	8.6	0.1	1.5	0.0	1.1	0.9	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.2	12.3	9.4	44.5	17.4	8.9	44.2	0.0	31.9	43.4	0.0	33.8
LnGrp LOS	D	B	A	D	B	A	D	A	C	D	A	C
Approach Vol, veh/h		779			1434			134			112	
Approach Delay, s/veh		13.5			18.4			38.4			37.4	
Approach LOS		B			B			D			D	

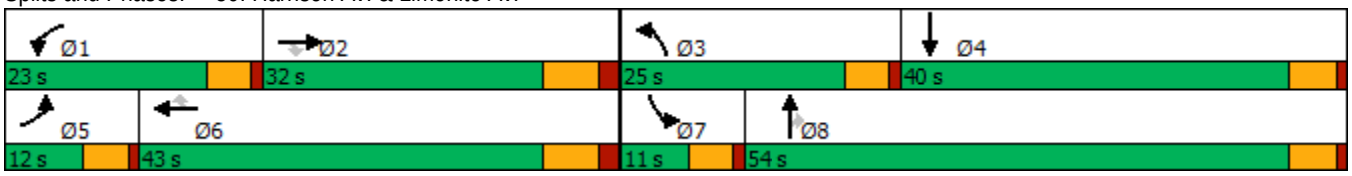
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	16.9	8.1	48.1	9.0	15.6	7.2	49.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	7.3	43.7	9.5	38.7	7.5	43.5	5.0	43.2
Max Q Clear Time (g_c+I1), s	4.1	4.8	4.6	12.2	5.5	5.3	3.6	27.1
Green Ext Time (p_c), s	0.0	0.3	0.0	4.8	0.0	0.3	0.0	8.4

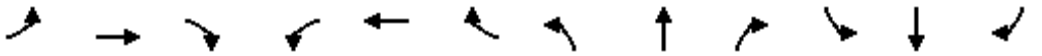
Intersection Summary	
HCM 6th Ctrl Delay	18.8
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	47	563	24	157	1061	24	166	118	234	29	125
Future Volume (vph)	47	563	24	157	1061	24	166	118	234	29	125
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	12.0	32.0	32.0	23.0	43.0	43.0	25.0	54.0	54.0	11.0	40.0
Total Split (%)	10.0%	26.7%	26.7%	19.2%	35.8%	35.8%	20.8%	45.0%	45.0%	9.2%	33.3%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	6.4	18.0	18.0	12.0	29.2	29.2	12.6	29.1	29.1	5.8	16.7
Actuated g/C Ratio	0.08	0.22	0.22	0.14	0.35	0.35	0.15	0.35	0.35	0.07	0.20
v/c Ratio	0.36	0.52	0.05	0.63	0.61	0.04	0.64	0.19	0.34	0.24	0.58
Control Delay	52.3	32.5	0.2	49.7	26.7	0.1	48.5	23.1	4.6	51.0	34.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	32.5	0.2	49.7	26.7	0.1	48.5	23.1	4.6	51.0	34.2
LOS	D	C	A	D	C	A	D	C	A	D	C
Approach Delay		32.7			29.1			22.9			36.2
Approach LOS		C			C			C			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 83.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 29.4	Intersection LOS: C
Intersection Capacity Utilization 64.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 59: Harrison Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	563	24	157	1061	24	166	118	234	29	125	86
Future Volume (veh/h)	47	563	24	157	1061	24	166	118	234	29	125	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	49	586	18	164	1105	23	173	123	126	30	130	61
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	82	1354	407	207	1710	518	217	460	389	59	189	88
Arrive On Green	0.05	0.26	0.26	0.11	0.33	0.33	0.12	0.24	0.24	0.03	0.15	0.15
Sat Flow, veh/h	1810	5187	1559	1810	5187	1571	1810	1900	1606	1810	1223	574
Grp Volume(v), veh/h	49	586	18	164	1105	23	173	123	126	30	0	191
Grp Sat Flow(s),veh/h/ln	1810	1729	1559	1810	1729	1571	1810	1900	1606	1810	0	1797
Q Serve(g_s), s	1.7	6.0	0.5	5.6	11.5	0.6	5.9	3.3	4.1	1.0	0.0	6.4
Cycle Q Clear(g_c), s	1.7	6.0	0.5	5.6	11.5	0.6	5.9	3.3	4.1	1.0	0.0	6.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	82	1354	407	207	1710	518	217	460	389	59	0	277
V/C Ratio(X)	0.59	0.43	0.04	0.79	0.65	0.04	0.80	0.27	0.32	0.51	0.00	0.69
Avail Cap(c_a), veh/h	199	2038	613	512	2935	889	569	1454	1229	171	0	980
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.8	19.6	17.6	27.4	18.2	14.5	27.2	19.5	19.8	30.3	0.0	25.5
Incr Delay (d2), s/veh	2.5	0.2	0.0	2.6	0.4	0.0	2.5	0.3	0.5	2.6	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.1	0.2	2.3	3.8	0.2	2.4	1.3	1.4	0.5	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.3	19.8	17.6	30.0	18.6	14.5	29.8	19.9	20.3	32.8	0.0	28.5
LnGrp LOS	C	B	B	C	B	B	C	B	C	C	A	C
Approach Vol, veh/h		653			1292			422			221	
Approach Delay, s/veh		20.7			20.0			24.1			29.1	
Approach LOS		C			B			C			C	

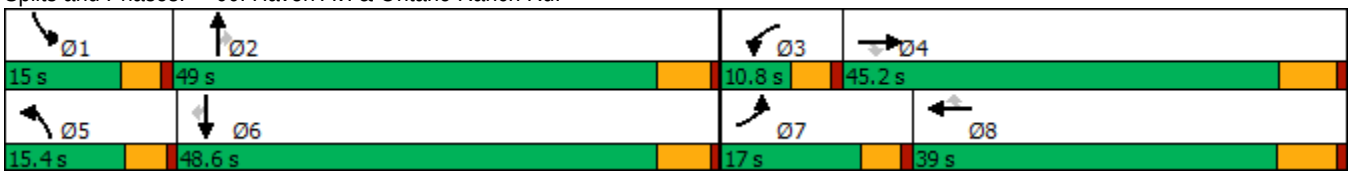
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	23.6	12.6	15.1	7.9	28.0	7.1	20.7
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	18.0	25.0	20.0	34.7	7.0	36.0	6.0	48.7
Max Q Clear Time (g_c+I1), s	7.6	8.0	7.9	8.4	3.7	13.5	3.0	6.1
Green Ext Time (p_c), s	0.1	3.3	0.1	1.0	0.0	7.4	0.0	1.0

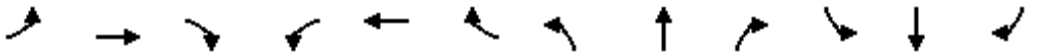
Intersection Summary	
HCM 6th Ctrl Delay	21.6
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	675	32	24	1037	91	69	211	87	132	64	79
Future Volume (vph)	152	675	32	24	1037	91	69	211	87	132	64	79
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	17.0	45.2	45.2	10.8	39.0	39.0	15.4	49.0	49.0	15.0	48.6	48.6
Total Split (%)	14.2%	37.7%	37.7%	9.0%	32.5%	32.5%	12.8%	40.8%	40.8%	12.5%	40.5%	40.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	12.5	46.4	46.4	5.7	32.9	32.9	8.2	19.8	19.8	10.5	24.2	24.2
Actuated g/C Ratio	0.13	0.48	0.48	0.06	0.34	0.34	0.08	0.20	0.20	0.11	0.25	0.25
v/c Ratio	0.78	0.31	0.04	0.28	0.96	0.16	0.54	0.61	0.21	0.80	0.15	0.17
Control Delay	69.0	18.9	0.1	55.4	51.3	1.6	59.8	41.8	1.3	77.2	30.5	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.0	18.9	0.1	55.4	51.3	1.6	59.8	41.8	1.3	77.2	30.5	0.7
LOS	E	B	A	E	D	A	E	D	A	E	C	A
Approach Delay		27.1			47.5			35.5			44.3	
Approach LOS		C			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 38.9	Intersection LOS: D
Intersection Capacity Utilization 77.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	675	32	24	1037	91	69	211	87	132	64	79
Future Volume (veh/h)	152	675	32	24	1037	91	69	211	87	132	64	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	162	718	21	26	1103	52	73	224	43	140	68	51
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	193	2284	709	43	1275	569	91	284	240	169	370	314
Arrive On Green	0.12	0.46	0.46	0.03	0.37	0.37	0.06	0.16	0.16	0.10	0.21	0.21
Sat Flow, veh/h	1619	4914	1525	1619	3420	1525	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	162	718	21	26	1103	52	73	224	43	140	68	51
Grp Sat Flow(s),veh/h/ln	1619	1638	1525	1619	1710	1525	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	8.5	8.0	0.7	1.4	26.0	1.9	3.9	10.4	2.1	7.4	2.7	2.4
Cycle Q Clear(g_c), s	8.5	8.0	0.7	1.4	26.0	1.9	3.9	10.4	2.1	7.4	2.7	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	193	2284	709	43	1275	569	91	284	240	169	370	314
V/C Ratio(X)	0.84	0.31	0.03	0.60	0.87	0.09	0.80	0.79	0.18	0.83	0.18	0.16
Avail Cap(c_a), veh/h	230	2284	709	115	1275	569	201	892	756	193	884	749
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	14.6	12.7	42.0	25.3	17.8	40.7	35.3	31.8	38.3	28.6	28.5
Incr Delay (d2), s/veh	18.0	0.4	0.1	4.8	8.0	0.3	6.0	4.9	0.4	20.2	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	2.6	0.2	0.6	10.5	0.7	1.6	4.7	0.7	3.7	1.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.6	15.0	12.7	46.8	33.3	18.1	46.7	40.3	32.2	58.5	28.8	28.7
LnGrp LOS	E	B	B	D	C	B	D	D	C	E	C	C
Approach Vol, veh/h		901			1181			340			259	
Approach Delay, s/veh		22.2			33.0			40.6			44.9	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	19.5	6.9	47.0	9.5	23.7	15.0	39.0
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	10.4	43.2	6.2	* 39	10.8	42.8	12.4	32.5
Max Q Clear Time (g_c+I1), s	9.4	12.4	3.4	10.0	5.9	4.7	10.5	28.0
Green Ext Time (p_c), s	0.0	1.3	0.0	4.8	0.0	0.5	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	31.5
HCM 6th LOS	C

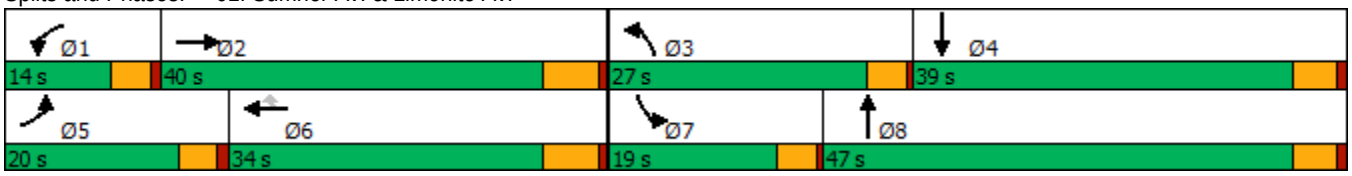
Notes

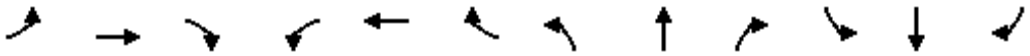
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	266	606	121	857	36	199	422	107	211
Future Volume (vph)	266	606	121	857	36	199	422	107	211
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	20.0	40.0	14.0	34.0	34.0	27.0	47.0	19.0	39.0
Total Split (%)	16.7%	33.3%	11.7%	28.3%	28.3%	22.5%	39.2%	15.8%	32.5%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	10.9	25.2	7.2	21.5	21.5	14.0	22.6	9.4	15.3
Actuated g/C Ratio	0.13	0.31	0.09	0.26	0.26	0.17	0.27	0.11	0.19
v/c Ratio	0.59	0.42	0.41	0.66	0.07	0.67	0.57	0.53	0.52
Control Delay	42.8	25.2	45.4	31.8	0.2	46.6	28.2	49.6	19.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.8	25.2	45.4	31.8	0.2	46.6	28.2	49.6	19.7
LOS	D	C	D	C	A	D	C	D	B
Approach Delay		30.3		32.3			33.1		26.2
Approach LOS		C		C			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 82.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 31.0	Intersection LOS: C
Intersection Capacity Utilization 62.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 61: Sumner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	266	606	33	121	857	36	199	422	123	107	211	173
Future Volume (veh/h)	266	606	33	121	857	36	199	422	123	107	211	173
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	274	625	28	125	884	33	205	435	53	110	218	81
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	393	1649	74	213	1415	433	255	657	80	143	365	132
Arrive On Green	0.11	0.32	0.32	0.06	0.27	0.27	0.14	0.20	0.20	0.08	0.14	0.14
Sat Flow, veh/h	3510	5090	227	3510	5187	1590	1810	3241	393	1810	2599	937
Grp Volume(v), veh/h	274	424	229	125	884	33	205	241	247	110	149	150
Grp Sat Flow(s),veh/h/ln	1755	1729	1859	1755	1729	1590	1810	1805	1829	1810	1805	1731
Q Serve(g_s), s	4.4	5.5	5.6	2.0	8.7	0.9	6.4	7.2	7.3	3.5	4.5	4.7
Cycle Q Clear(g_c), s	4.4	5.5	5.6	2.0	8.7	0.9	6.4	7.2	7.3	3.5	4.5	4.7
Prop In Lane	1.00		0.12	1.00		1.00	1.00		0.21	1.00		0.54
Lane Grp Cap(c), veh/h	393	1120	602	213	1415	433	255	366	371	143	254	243
V/C Ratio(X)	0.70	0.38	0.38	0.59	0.62	0.08	0.80	0.66	0.67	0.77	0.59	0.62
Avail Cap(c_a), veh/h	932	2014	1083	571	2488	762	713	1299	1316	465	1051	1008
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.0	15.2	15.2	26.7	18.6	15.8	24.3	21.4	21.5	26.4	23.5	23.6
Incr Delay (d2), s/veh	0.8	0.2	0.4	1.0	0.5	0.1	2.3	1.5	1.5	3.3	1.6	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.8	1.9	0.8	2.9	0.3	2.6	2.8	2.8	1.5	1.8	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.8	15.4	15.6	27.7	19.1	15.8	26.5	22.9	23.0	29.7	25.1	25.5
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		927			1042			693			409	
Approach Delay, s/veh		18.5			20.0			24.0			26.5	
Approach LOS		B			B			C			C	

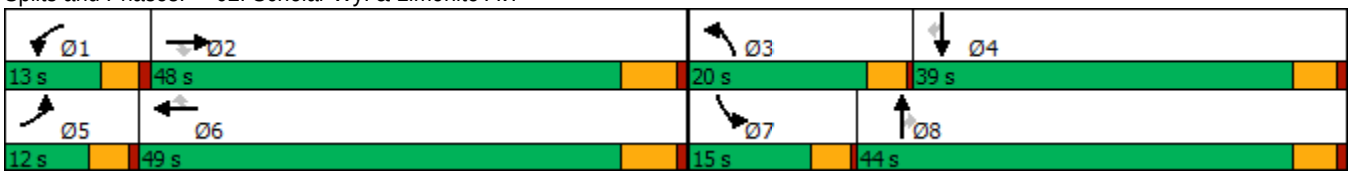
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	24.9	12.2	13.2	11.0	21.9	8.6	16.8
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	9.5	34.0	23.0	34.0	15.5	28.0	15.0	42.0
Max Q Clear Time (g_c+I1), s	4.0	7.6	8.4	6.7	6.4	10.7	5.5	9.3
Green Ext Time (p_c), s	0.1	3.8	0.1	1.2	0.2	5.2	0.0	2.1

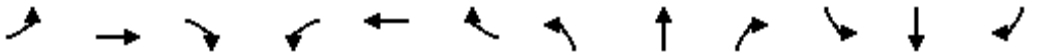
Intersection Summary	
HCM 6th Ctrl Delay	21.3
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	853	71	45	805	28	109	194	110	56	213	31
Future Volume (vph)	34	853	71	45	805	28	109	194	110	56	213	31
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	12.0	48.0	48.0	13.0	49.0	49.0	20.0	44.0	44.0	15.0	39.0	39.0
Total Split (%)	10.0%	40.0%	40.0%	10.8%	40.8%	40.8%	16.7%	36.7%	36.7%	12.5%	32.5%	32.5%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.3	28.1	28.1	6.7	28.5	28.5	10.1	16.8	16.8	7.4	14.6	14.6
Actuated g/C Ratio	0.09	0.39	0.39	0.09	0.39	0.39	0.14	0.23	0.23	0.10	0.20	0.20
v/c Ratio	0.24	0.66	0.11	0.30	0.62	0.04	0.47	0.48	0.26	0.33	0.32	0.08
Control Delay	46.2	24.2	0.8	46.1	22.9	0.1	43.4	31.7	7.4	45.0	30.0	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.2	24.2	0.8	46.1	22.9	0.1	43.4	31.7	7.4	45.0	30.0	0.4
LOS	D	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		23.3			23.4			28.3			29.7	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 72.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 24.9	Intersection LOS: C
Intersection Capacity Utilization 63.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	853	71	45	805	28	109	194	110	56	213	31
Future Volume (veh/h)	34	853	71	45	805	28	109	194	110	56	213	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	37	927	43	49	875	19	118	211	78	61	232	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	56	1329	592	69	1353	604	153	396	335	79	604	257
Arrive On Green	0.03	0.37	0.37	0.04	0.37	0.37	0.08	0.21	0.21	0.04	0.17	0.17
Sat Flow, veh/h	1810	3610	1609	1810	3610	1610	1810	1900	1608	1810	3610	1535
Grp Volume(v), veh/h	37	927	43	49	875	19	118	211	78	61	232	32
Grp Sat Flow(s),veh/h/ln	1810	1805	1609	1810	1805	1610	1810	1900	1608	1810	1805	1535
Q Serve(g_s), s	1.2	12.4	1.0	1.5	11.4	0.4	3.6	5.6	2.3	1.9	3.3	1.0
Cycle Q Clear(g_c), s	1.2	12.4	1.0	1.5	11.4	0.4	3.6	5.6	2.3	1.9	3.3	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	56	1329	592	69	1353	604	153	396	335	79	604	257
V/C Ratio(X)	0.66	0.70	0.07	0.72	0.65	0.03	0.77	0.53	0.23	0.78	0.38	0.12
Avail Cap(c_a), veh/h	238	2660	1185	270	2723	1215	508	1300	1100	349	2153	916
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	15.3	11.7	27.1	14.7	11.3	25.6	20.1	18.8	27.0	21.1	20.2
Incr Delay (d2), s/veh	4.8	0.7	0.1	5.1	0.5	0.0	3.1	0.8	0.3	6.0	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.0	0.3	0.7	3.6	0.1	1.6	2.3	0.8	0.9	1.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.1	16.0	11.7	32.2	15.2	11.3	28.6	20.9	19.0	33.0	21.4	20.3
LnGrp LOS	C	B	B	C	B	B	C	C	B	C	C	C
Approach Vol, veh/h		1007			943			407			325	
Approach Delay, s/veh		16.4			16.0			22.8			23.5	
Approach LOS		B			B			C			C	

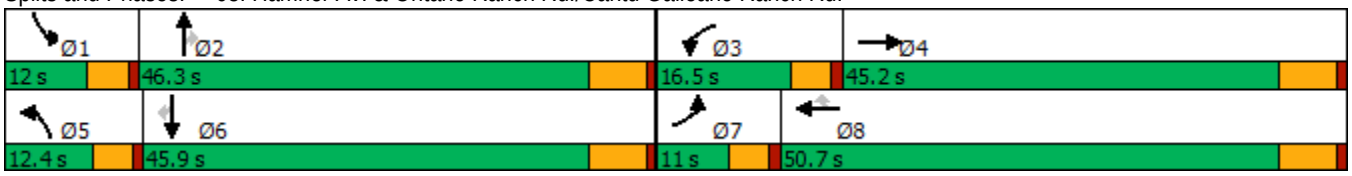
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	27.0	8.8	14.5	6.3	27.4	6.5	16.9
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	8.5	42.0	16.0	34.0	7.5	43.0	11.0	39.0
Max Q Clear Time (g_c+I1), s	3.5	14.4	5.6	5.3	3.2	13.4	3.9	7.6
Green Ext Time (p_c), s	0.0	6.5	0.1	1.3	0.0	6.1	0.0	1.1

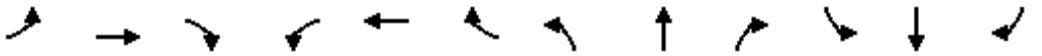
Intersection Summary	
HCM 6th Ctrl Delay	18.1
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	107	630	303	973	224	190	778	556	170	233	93
Future Volume (vph)	107	630	303	973	224	190	778	556	170	233	93
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	11.0	45.2	16.5	50.7	50.7	12.4	46.3	46.3	12.0	45.9	45.9
Total Split (%)	9.2%	37.7%	13.8%	42.3%	42.3%	10.3%	38.6%	38.6%	10.0%	38.3%	38.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.4	36.9	11.9	42.4	42.4	7.8	40.1	40.1	7.4	39.7	39.7
Actuated g/C Ratio	0.05	0.31	0.10	0.36	0.36	0.07	0.34	0.34	0.06	0.34	0.34
v/c Ratio	0.76	0.43	1.16	0.90	0.38	1.11	0.53	0.98	1.05	0.23	0.17
Control Delay	84.7	31.4	148.7	46.6	10.3	147.6	33.1	58.0	132.7	29.3	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.7	31.4	148.7	46.6	10.3	147.6	33.1	58.0	132.7	29.3	1.8
LOS	F	C	F	D	B	F	C	E	F	C	A
Approach Delay		38.3		61.8			56.4			59.5	
Approach LOS		D		E			E			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 55.2	Intersection LOS: E
Intersection Capacity Utilization 72.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	630	91	303	973	224	190	778	556	170	233	93
Future Volume (veh/h)	107	630	91	303	973	224	190	778	556	170	233	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	122	716	103	344	1106	255	216	884	625	193	265	106
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	161	1716	241	299	1222	545	196	1677	521	186	1156	515
Arrive On Green	0.05	0.31	0.31	0.10	0.36	0.36	0.07	0.34	0.34	0.06	0.34	0.34
Sat Flow, veh/h	2956	5526	778	2956	3420	1525	2956	4914	1525	2956	3420	1524
Grp Volume(v), veh/h	122	599	220	344	1106	255	216	884	625	193	265	106
Grp Sat Flow(s),veh/h/ln	1478	1548	1660	1478	1710	1525	1478	1638	1525	1478	1710	1524
Q Serve(g_s), s	4.8	12.0	12.4	11.9	36.1	15.2	7.8	17.0	40.1	7.4	6.5	5.8
Cycle Q Clear(g_c), s	4.8	12.0	12.4	11.9	36.1	15.2	7.8	17.0	40.1	7.4	6.5	5.8
Prop In Lane	1.00		0.47	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	1442	515	299	1222	545	196	1677	521	186	1156	515
V/C Ratio(X)	0.76	0.42	0.43	1.15	0.91	0.47	1.10	0.53	1.20	1.04	0.23	0.21
Avail Cap(c_a), veh/h	161	1542	551	299	1296	578	196	1677	521	186	1156	515
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.8	32.1	32.2	52.8	35.9	29.1	54.8	31.1	38.7	55.0	27.9	27.7
Incr Delay (d2), s/veh	16.8	0.2	0.6	98.5	9.0	0.6	93.7	0.3	107.5	75.8	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	4.3	4.8	8.3	15.5	5.4	5.4	6.4	29.5	4.6	2.6	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.5	32.3	32.7	151.3	44.8	29.8	148.5	31.4	146.2	130.9	28.0	27.9
LnGrp LOS	E	C	C	F	D	C	F	C	F	F	C	C
Approach Vol, veh/h		941			1705			1725			564	
Approach Delay, s/veh		37.5			64.0			87.6			63.2	
Approach LOS		D			E			F			E	

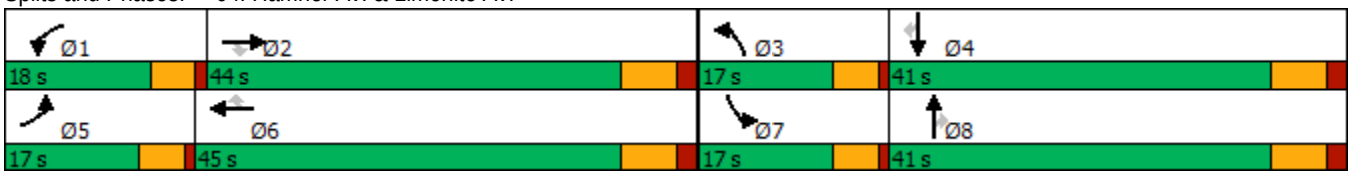
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	46.3	16.5	42.7	12.4	45.9	11.0	48.2
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	7.4	40.1	11.9	39.0	7.8	39.7	6.4	44.5
Max Q Clear Time (g_c+I1), s	9.4	42.1	13.9	14.4	9.8	8.5	6.8	38.1
Green Ext Time (p_c), s	0.0	0.0	0.0	4.9	0.0	1.8	0.0	3.9

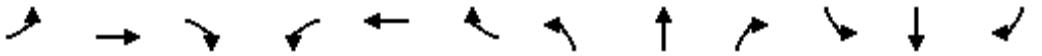
Intersection Summary	
HCM 6th Ctrl Delay	67.1
HCM 6th LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	639	53	194	547	94	194	767	280	175	412	128
Future Volume (vph)	193	639	53	194	547	94	194	767	280	175	412	128
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	17.0	44.0	44.0	18.0	45.0	45.0	17.0	41.0	41.0	17.0	41.0	41.0
Total Split (%)	14.2%	36.7%	36.7%	15.0%	37.5%	37.5%	14.2%	34.2%	34.2%	14.2%	34.2%	34.2%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	9.6	25.5	25.5	9.7	25.6	25.6	9.6	28.7	28.7	9.1	28.3	28.3
Actuated g/C Ratio	0.10	0.26	0.26	0.10	0.26	0.26	0.10	0.29	0.29	0.09	0.29	0.29
v/c Ratio	0.60	0.50	0.11	0.59	0.62	0.19	0.60	0.54	0.45	0.57	0.29	0.24
Control Delay	52.8	32.8	0.4	52.1	35.6	3.7	52.8	31.3	7.9	52.5	28.6	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.8	32.8	0.4	52.1	35.6	3.7	52.8	31.3	7.9	52.5	28.6	6.5
LOS	D	C	A	D	D	A	D	C	A	D	C	A
Approach Delay		35.2			35.8			29.4			30.5	
Approach LOS		D			D			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.8	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 32.5	Intersection LOS: C
Intersection Capacity Utilization 60.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 64: Hamner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	639	53	194	547	94	194	767	280	175	412	128
Future Volume (veh/h)	193	639	53	194	547	94	194	767	280	175	412	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	205	680	43	206	582	74	206	816	200	186	438	96
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	288	1341	416	290	935	417	289	1494	463	268	1462	454
Arrive On Green	0.08	0.26	0.26	0.08	0.26	0.26	0.08	0.29	0.29	0.08	0.28	0.28
Sat Flow, veh/h	3510	5187	1608	3510	3610	1610	3510	5187	1608	3510	5187	1610
Grp Volume(v), veh/h	205	680	43	206	582	74	206	816	200	186	438	96
Grp Sat Flow(s),veh/h/ln	1755	1729	1608	1755	1805	1610	1755	1729	1608	1755	1729	1610
Q Serve(g_s), s	4.6	9.1	1.7	4.7	11.6	2.9	4.7	10.8	8.2	4.2	5.4	3.7
Cycle Q Clear(g_c), s	4.6	9.1	1.7	4.7	11.6	2.9	4.7	10.8	8.2	4.2	5.4	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	288	1341	416	290	935	417	289	1494	463	268	1462	454
V/C Ratio(X)	0.71	0.51	0.10	0.71	0.62	0.18	0.71	0.55	0.43	0.69	0.30	0.21
Avail Cap(c_a), veh/h	517	2356	731	560	1684	751	517	2165	671	517	2165	672
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.4	25.8	23.0	36.4	26.7	23.4	36.4	24.5	23.6	36.7	22.9	22.3
Incr Delay (d2), s/veh	1.2	0.6	0.2	1.2	1.5	0.4	1.2	0.7	1.4	1.2	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	3.5	0.6	1.9	4.8	1.1	1.9	4.1	3.0	1.7	2.1	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.7	26.4	23.2	37.6	28.1	23.9	37.7	25.2	24.9	37.9	23.2	22.8
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		928			862			1222			720	
Approach Delay, s/veh		28.7			30.0			27.2			26.9	
Approach LOS		C			C			C			C	

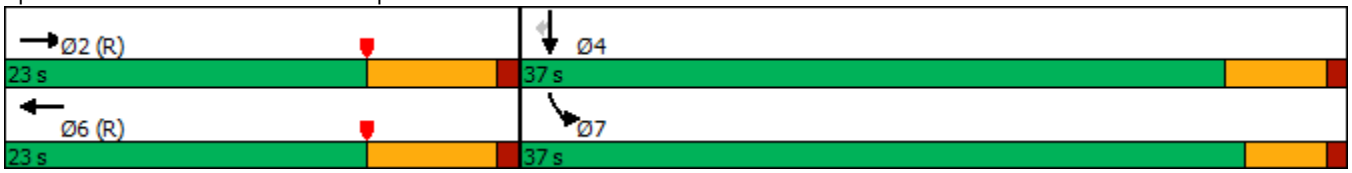
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	28.1	11.7	30.0	11.7	28.1	11.2	30.5
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	13.0	37.0	12.0	34.0	12.0	38.0	12.0	34.0
Max Q Clear Time (g_c+I1), s	6.7	11.1	6.7	7.4	6.6	13.6	6.2	12.8
Green Ext Time (p_c), s	0.1	8.6	0.1	5.9	0.1	7.4	0.1	10.6

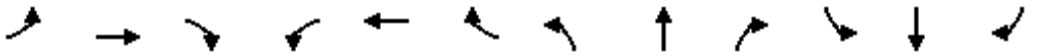
Intersection Summary	
HCM 6th Ctrl Delay	28.2
HCM 6th LOS	C

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1113	365	591	201	356	0	1302
Future Volume (vph)	1113	365	591	201	356	0	1302
Turn Type	NA	Free	NA	Free	Prot	NA	Perm
Protected Phases	2		6		7	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		7	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		9.6	10.5	10.5
Total Split (s)	23.0		23.0		37.0	37.0	37.0
Total Split (%)	38.3%		38.3%		61.7%	61.7%	61.7%
Yellow Time (s)	5.8		5.8		3.6	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8		6.8		4.6	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Min		None	Min	Min
Act Effct Green (s)	16.2	60.0	16.2	60.0	32.4	31.5	31.5
Actuated g/C Ratio	0.27	1.00	0.27	1.00	0.54	0.52	0.52
v/c Ratio	0.88	0.25	0.67	0.14	0.38	0.93	0.88
Control Delay	30.6	0.4	20.5	0.2	9.6	33.0	26.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.6	0.4	20.5	0.2	9.6	33.0	26.6
LOS	C	A	C	A	A	C	C
Approach Delay	23.1		15.3			25.9	
Approach LOS	C		B			C	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 53 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 22.7	Intersection LOS: C
Intersection Capacity Utilization 80.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	✣	↱
Traffic Volume (veh/h)	0	1113	365	0	591	201	0	0	0	356	0	1302
Future Volume (veh/h)	0	1113	365	0	591	201	0	0	0	356	0	1302
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1237	0	0	657	0				264	0	1291
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1780		0	1239					845	0	1503
Arrive On Green	0.00	0.34	0.00	0.00	0.34	0.00				0.47	0.00	0.47
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1237	0	0	657	0				264	0	1291
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	12.3	0.0	0.0	8.8	0.0				5.5	0.0	21.4
Cycle Q Clear(g_c), s	0.0	12.3	0.0	0.0	8.8	0.0				5.5	0.0	21.4
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1780		0	1239					845	0	1503
V/C Ratio(X)	0.00	0.69		0.00	0.53					0.31	0.00	0.86
Avail Cap(c_a), veh/h	0	1780		0	1239					977	0	1739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.64	0.00	0.00	0.91	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	17.0	0.0	0.0	15.8	0.0				10.0	0.0	14.2
Incr Delay (d2), s/veh	0.0	1.5	0.0	0.0	1.5	0.0				0.2	0.0	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.1	0.0	0.0	3.1	0.0				1.7	0.0	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	18.4	0.0	0.0	17.3	0.0				10.2	0.0	18.3
LnGrp LOS	A	B		A	B					B	A	B
Approach Vol, veh/h		1237	A		657	A					1555	
Approach Delay, s/veh		18.4			17.3						16.9	
Approach LOS		B			B						B	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		27.4		32.6		27.4						
Change Period (Y+Rc), s		6.8		4.6		6.8						
Max Green Setting (Gmax), s		16.2		32.4		16.2						
Max Q Clear Time (g_c+I1), s		14.3		23.4		10.8						
Green Ext Time (p_c), s		1.3		4.6		1.8						

Intersection Summary		
HCM 6th Ctrl Delay		17.6
HCM 6th LOS		B

Notes

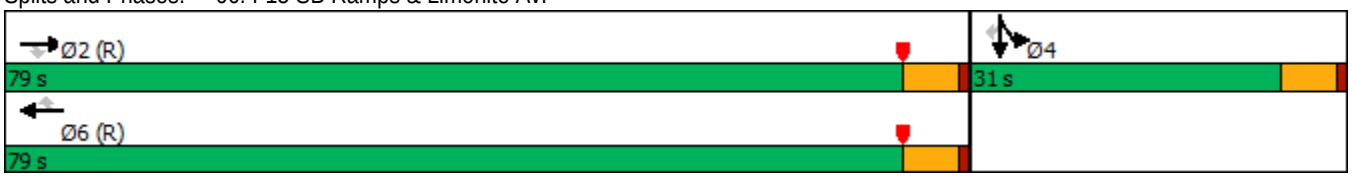
User approved volume balancing among the lanes for turning movement.

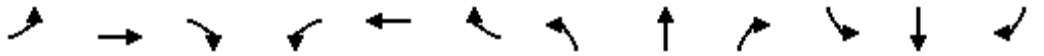
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1226	630	802	728	165	0	470
Future Volume (vph)	1226	630	802	728	165	0	470
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		4	4	
Permitted Phases		2		6			4
Detector Phase	2	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	36.5	36.5	23.5	23.5	23.5
Total Split (s)	79.0	79.0	79.0	79.0	31.0	31.0	31.0
Total Split (%)	71.8%	71.8%	71.8%	71.8%	28.2%	28.2%	28.2%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	Min	Min
Act Effct Green (s)	87.4	87.4	87.4	87.4	11.6	11.6	11.6
Actuated g/C Ratio	0.79	0.79	0.79	0.79	0.11	0.11	0.11
v/c Ratio	0.32	0.48	0.21	0.54	0.49	0.49	0.81
Control Delay	3.7	1.5	4.7	5.3	54.0	54.0	24.0
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	3.7	1.5	4.7	5.4	54.0	54.0	24.0
LOS	A	A	A	A	D	D	C
Approach Delay	3.0		5.0			31.8	
Approach LOS	A		A			C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 8.3	Intersection LOS: A
Intersection Capacity Utilization 52.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	↰	↱↱
Traffic Volume (veh/h)	0	1226	630	0	802	728	0	0	0	165	0	470
Future Volume (veh/h)	0	1226	630	0	802	728	0	0	0	165	0	470
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1304	548	0	853	774				176	0	202
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	4220	1310	0	4220	1310				313	0	274
Arrive On Green	0.00	0.81	0.81	0.00	1.00	1.00				0.09	0.00	0.09
Sat Flow, veh/h	0	5358	1610	0	5358	1610				3619	0	3173
Grp Volume(v), veh/h	0	1304	548	0	853	774				176	0	202
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1610				1810	0	1587
Q Serve(g_s), s	0.0	6.9	10.6	0.0	0.0	0.0				5.1	0.0	6.8
Cycle Q Clear(g_c), s	0.0	6.9	10.6	0.0	0.0	0.0				5.1	0.0	6.8
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	4220	1310	0	4220	1310				313	0	274
V/C Ratio(X)	0.00	0.31	0.42	0.00	0.20	0.59				0.56	0.00	0.74
Avail Cap(c_a), veh/h	0	4220	1310	0	4220	1310				839	0	736
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.94	0.94				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	2.6	2.9	0.0	0.0	0.0				48.3	0.0	49.0
Incr Delay (d2), s/veh	0.0	0.2	1.0	0.0	0.1	1.8				0.6	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.3	2.2	0.0	0.0	0.7				2.3	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	2.7	3.9	0.0	0.1	1.8				48.9	0.0	50.5
LnGrp LOS	A	A	A	A	A	A				D	A	D
Approach Vol, veh/h		1852			1627						378	
Approach Delay, s/veh		3.1			0.9						49.7	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		95.0		15.0		95.0						
Change Period (Y+Rc), s		5.5		5.5		5.5						
Max Green Setting (Gmax), s		73.5		25.5		73.5						
Max Q Clear Time (g_c+I1), s		12.6		8.8		2.0						
Green Ext Time (p_c), s		8.5		0.7		5.9						

Intersection Summary	
HCM 6th Ctrl Delay	6.7
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	555	914	404	513	279	331
Future Volume (vph)	555	914	404	513	279	331
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	32.0	15.0	13.0	45.0	15.0	15.0
Total Split (%)	53.3%	25.0%	21.7%	75.0%	25.0%	25.0%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.0	6.0	7.3	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max
Act Effct Green (s)	24.7	41.0	7.0	37.7	9.0	9.0
Actuated g/C Ratio	0.41	0.68	0.12	0.63	0.15	0.15
v/c Ratio	0.29	0.91	1.09	0.17	0.74	0.53
Control Delay	9.7	20.2	100.1	4.8	26.4	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.7	20.2	100.1	4.8	26.4	9.6
LOS	A	C	F	A	C	A
Approach Delay	16.2			46.8	21.1	
Approach LOS	B			D	C	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 26.6	Intersection LOS: C
Intersection Capacity Utilization 78.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	555	914	404	513	279	331
Future Volume (veh/h)	555	914	404	513	279	331
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	610	670	444	564	346	175
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2135	904	410	3259	543	242
Arrive On Green	0.69	0.69	0.12	0.63	0.15	0.15
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	610	670	444	564	346	175
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	2.7	19.1	7.0	2.7	5.4	6.2
Cycle Q Clear(g_c), s	2.7	19.1	7.0	2.7	5.4	6.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2135	904	410	3259	543	242
V/C Ratio(X)	0.29	0.74	1.08	0.17	0.64	0.72
Avail Cap(c_a), veh/h	2135	904	410	3259	543	242
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.55	0.55	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.9	5.3	26.5	4.6	24.0	24.3
Incr Delay (d2), s/veh	0.2	3.0	68.9	0.0	5.6	17.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.5	6.5	0.5	2.5	3.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.1	8.3	95.4	4.7	29.6	41.5
LnGrp LOS	A	A	F	A	C	D
Approach Vol, veh/h	1280			1008	521	
Approach Delay, s/veh	7.3			44.7	33.6	
Approach LOS	A			D	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.0	32.0				45.0	15.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	7.0	24.7				37.7	9.0
Max Q Clear Time (g_c+I1), s	9.0	21.1				4.7	8.2
Green Ext Time (p_c), s	0.0	2.1				3.6	0.2

Intersection Summary	
HCM 6th Ctrl Delay	25.6
HCM 6th LOS	C

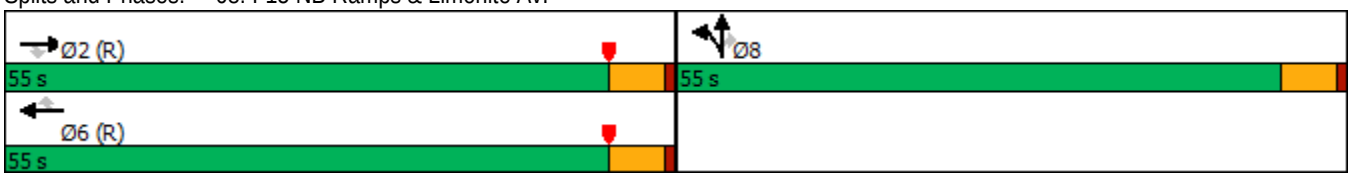
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	575	816	1238	434	291	0	353
Future Volume (vph)	575	816	1238	434	291	0	353
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		8	8	
Permitted Phases		2		6			8
Detector Phase	2	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	55.0	55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None
Act Effct Green (s)	82.7	82.7	82.7	82.7	16.3	16.3	16.3
Actuated g/C Ratio	0.75	0.75	0.75	0.75	0.15	0.15	0.15
v/c Ratio	0.15	0.60	0.33	0.34	0.59	0.60	0.52
Control Delay	3.8	5.1	5.3	1.3	52.3	52.5	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.8	5.1	5.3	1.3	52.3	52.5	8.8
LOS	A	A	A	A	D	D	A
Approach Delay	4.6		4.2			28.5	
Approach LOS	A		A			C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 8.6	Intersection LOS: A
Intersection Capacity Utilization 55.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱	↰	↕	↱↱			
Traffic Volume (veh/h)	0	575	816	0	1238	434	291	0	353	0	0	0
Future Volume (veh/h)	0	575	816	0	1238	434	291	0	353	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	0	599	850	0	1290	332	303	0	154			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	0	4076	1265	0	4076	1265	413	0	362			
Arrive On Green	0.00	1.00	1.00	0.00	0.79	0.79	0.11	0.00	0.11			
Sat Flow, veh/h	0	5358	1610	0	5358	1610	3619	0	3169			
Grp Volume(v), veh/h	0	599	850	0	1290	332	303	0	154			
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1610	1810	0	1585			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	7.8	6.1	8.9	0.0	5.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	7.8	6.1	8.9	0.0	5.0			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	4076	1265	0	4076	1265	413	0	362			
V/C Ratio(X)	0.00	0.15	0.67	0.00	0.32	0.26	0.73	0.00	0.43			
Avail Cap(c_a), veh/h	0	4076	1265	0	4076	1265	1629	0	1426			
HCM Platoon Ratio	1.00	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.95	0.95	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	3.4	3.2	47.1	0.0	45.4			
Incr Delay (d2), s/veh	0.0	0.1	2.7	0.0	0.2	0.5	2.5	0.0	0.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.0	0.0	1.8	1.4	4.0	0.0	1.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.1	2.7	0.0	3.6	3.7	49.6	0.0	46.2			
LnGrp LOS	A	A	A	A	A	A	D	A	D			
Approach Vol, veh/h		1449			1622			457				
Approach Delay, s/veh		1.6			3.6			48.5				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		91.9				91.9		18.1				
Change Period (Y+Rc), s		5.5				5.5		5.5				
Max Green Setting (Gmax), s		49.5				49.5		49.5				
Max Q Clear Time (g_c+I1), s		2.0				9.8		10.9				
Green Ext Time (p_c), s		4.7				7.4		1.7				
Intersection Summary												
HCM 6th Ctrl Delay			8.6									
HCM 6th LOS			A									

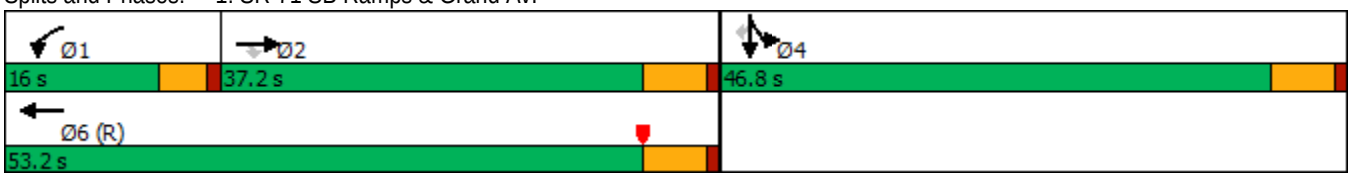
Notes

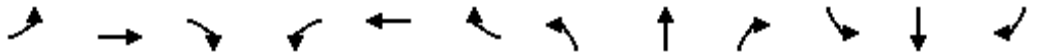
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1512	600	321	1458	946	1	505
Future Volume (vph)	1512	600	321	1458	946	1	505
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	37.2	37.2	16.0	53.2	46.8	46.8	46.8
Total Split (%)	37.2%	37.2%	16.0%	53.2%	46.8%	46.8%	46.8%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None
Act Effct Green (s)	35.1	35.1	12.5	51.6	40.4	40.4	40.4
Actuated g/C Ratio	0.35	0.35	0.12	0.52	0.40	0.40	0.40
v/c Ratio	0.98	0.72	0.86	0.64	0.80	0.81	0.85
Control Delay	49.5	8.4	48.4	22.5	36.0	36.1	35.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	8.4	48.4	22.5	36.0	36.1	35.7
LOS	D	A	D	C	D	D	D
Approach Delay	37.8			27.1		36.0	
Approach LOS	D			C		D	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 33.8	Intersection LOS: C
Intersection Capacity Utilization 82.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1512	600	321	1458	0	0	0	0	946	1	505
Future Volume (veh/h)	0	1512	600	321	1458	0	0	0	0	946	1	505
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1779	617	378	1715	0				1114	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85				0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1722	535	421	2552	0				1295	0	
Arrive On Green	0.00	0.33	0.33	0.12	0.49	0.00				0.36	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	1779	617	378	1715	0				1114	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	33.2	33.2	10.6	25.1	0.0				28.6	0.0	0.0
Cycle Q Clear(g_c), s	0.0	33.2	33.2	10.6	25.1	0.0				28.6	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1722	535	421	2552	0				1295	0	
V/C Ratio(X)	0.00	1.03	1.15	0.90	0.67	0.00				0.86	0.00	
Avail Cap(c_a), veh/h	0	1722	535	421	2552	0				1549	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	33.4	33.4	43.4	19.3	0.0				29.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	30.7	89.0	2.6	0.1	0.0				4.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	17.8	25.2	4.6	9.0	0.0				12.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	64.1	122.4	46.0	19.4	0.0				34.3	0.0	0.0
LnGrp LOS	A	F	F	D	B	A				C	A	
Approach Vol, veh/h		2396			2093						1114	A
Approach Delay, s/veh		79.1			24.2						34.3	
Approach LOS		E			C						C	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	16.0	37.2		39.8		53.2						
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8						
Max Green Setting (Gmax), s	11.4	31.4		41.0		47.4						
Max Q Clear Time (g_c+I1), s	12.6	35.2		30.6		27.1						
Green Ext Time (p_c), s	0.0	0.0		3.4		11.9						

Intersection Summary		
HCM 6th Ctrl Delay		49.7
HCM 6th LOS		D

Notes

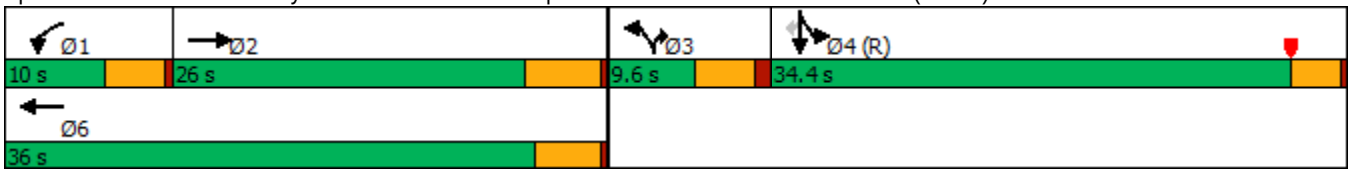
User approved volume balancing among the lanes for turning movement.

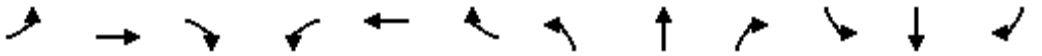
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	980	138	308	20	169	757	75	77
Future Volume (vph)	980	138	308	20	169	757	75	77
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	26.0	10.0	36.0	9.6	9.6	34.4	34.4	34.4
Total Split (%)	32.5%	12.5%	45.0%	12.0%	12.0%	43.0%	43.0%	43.0%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	22.2	9.6	36.3	5.1	5.1	26.1	26.1	26.1
Actuated g/C Ratio	0.28	0.12	0.45	0.06	0.06	0.33	0.33	0.33
v/c Ratio	1.09	0.67	0.20	0.18	0.72	0.78	0.76	0.13
Control Delay	87.2	49.7	25.8	39.5	27.3	33.8	33.1	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.2	49.7	25.8	39.5	27.3	33.8	33.1	1.0
LOS	F	D	C	D	C	C	C	A
Approach Delay	87.2		33.2				30.7	
Approach LOS	F		C				C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 53.8	Intersection LOS: D
Intersection Capacity Utilization 77.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	980	67	138	308	0	20	0	169	757	75	77
Future Volume (veh/h)	0	980	67	138	308	0	20	0	169	757	75	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	1021	58	144	321	0	21	0	117	845	0	53
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	911	52	136	1399		0	0	0	1832	0	815
Arrive On Green	0.00	0.26	0.26	0.02	0.13	0.00	0.00	0.00	0.00	0.51	0.00	0.51
Sat Flow, veh/h	0	3567	197	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	531	548	144	321	0		0.0		845	0	53
Grp Sat Flow(s),veh/h/ln	0	1805	1864	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	21.0	21.0	6.0	6.4	0.0				12.0	0.0	1.3
Cycle Q Clear(g_c), s	0.0	21.0	21.0	6.0	6.4	0.0				12.0	0.0	1.3
Prop In Lane	0.00		0.11	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	474	489	136	1399					1832	0	815
V/C Ratio(X)	0.00	1.12	1.12	1.06	0.23					0.46	0.00	0.07
Avail Cap(c_a), veh/h	0	474	489	136	1421					1832	0	815
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.71	0.71	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.5	29.5	39.0	24.2	0.0				12.7	0.0	10.1
Incr Delay (d2), s/veh	0.0	78.4	77.9	82.2	0.0	0.0				0.8	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	18.6	19.1	5.7	2.6	0.0				4.3	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	107.9	107.4	121.2	24.2	0.0				13.6	0.0	10.2
LnGrp LOS	A	F	F	F	C					B	A	B
Approach Vol, veh/h		1079			465	A					898	
Approach Delay, s/veh		107.7			54.2						13.4	
Approach LOS		F			D						B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.0	26.0		44.0		36.0
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5
Max Green Setting (Gmax), s	6.0	21.0		30.9		* 32
Max Q Clear Time (g_c+I1), s	8.0	23.0		14.0		8.4
Green Ext Time (p_c), s	0.0	0.0		3.2		1.5

Intersection Summary	
HCM 6th Ctrl Delay	62.8
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

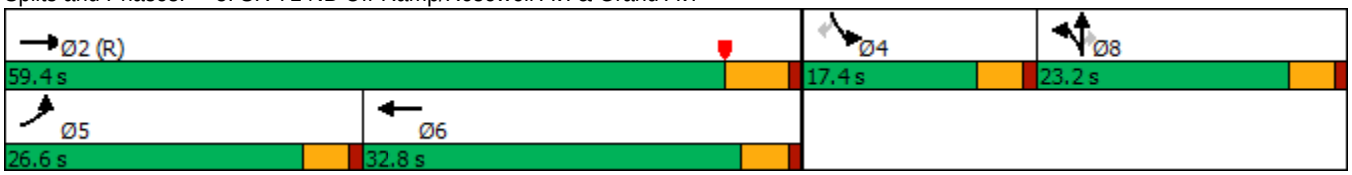
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

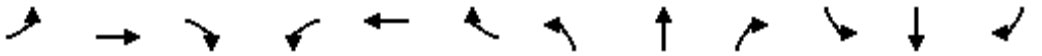
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	397	1719	342	1762	410	149	232	176	864
Future Volume (vph)	397	1719	342	1762	410	149	232	176	864
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	34.8		14.7	21.5	21.5	21.5	9.5	9.5
Total Split (s)	26.6	59.4		32.8	23.2	23.2	23.2	17.4	17.4
Total Split (%)	26.6%	59.4%		32.8%	23.2%	23.2%	23.2%	17.4%	17.4%
Yellow Time (s)	3.5	4.8		3.7	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.8		4.7	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	22.1	53.6	100.0	28.1	18.7	18.7	18.7	12.9	12.9
Actuated g/C Ratio	0.22	0.54	1.00	0.28	0.19	0.19	0.19	0.13	0.13
v/c Ratio	1.09	0.67	0.23	1.09	0.79	1.08	0.62	0.82	1.01
Control Delay	98.6	21.8	0.1	84.4	58.1	112.5	25.3	70.8	46.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	98.6	21.8	0.1	84.4	58.1	112.5	25.3	70.8	46.4
LOS	F	C	A	F	E	F	C	E	D
Approach Delay		31.2		84.4		70.9			
Approach LOS		C		F		E			

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 55.5	Intersection LOS: E
Intersection Capacity Utilization 88.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	397	1719	342	0	1762	72	410	149	232	176	0	864
Future Volume (veh/h)	397	1719	342	0	1762	72	410	149	232	176	0	864
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	432	1868	0	0	1915	78	304	361	111	191	0	621
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	400	3683		0	2882	117	338	355	301	0	0	0
Arrive On Green	0.22	0.71	0.00	0.00	0.44	0.44	0.19	0.19	0.19	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6756	264	1810	1900	1610		0	
Grp Volume(v), veh/h	432	1868	0	0	1446	547	304	361	111		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1852	1810	1900	1610			
Q Serve(g_s), s	22.1	16.3	0.0	0.0	23.3	23.3	16.4	18.7	6.0			
Cycle Q Clear(g_c), s	22.1	16.3	0.0	0.0	23.3	23.3	16.4	18.7	6.0			
Prop In Lane	1.00		1.00	0.00		0.14	1.00		1.00			
Lane Grp Cap(c), veh/h	400	3683		0	2176	822	338	355	301			
V/C Ratio(X)	1.08	0.51		0.00	0.66	0.66	0.90	1.02	0.37			
Avail Cap(c_a), veh/h	400	3683		0	2176	822	338	355	301			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.24	0.24	0.00	0.00	0.51	0.51	1.00	1.00	1.00			
Uniform Delay (d), s/veh	39.0	6.6	0.0	0.0	21.9	21.9	39.7	40.7	35.5			
Incr Delay (d2), s/veh	47.2	0.1	0.0	0.0	0.4	1.0	24.8	51.9	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	14.5	4.4	0.0	0.0	8.5	9.8	9.3	13.4	2.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.2	6.7	0.0	0.0	22.3	23.0	64.5	92.5	35.8			
LnGrp LOS	F	A		A	C	C	E	F	D			
Approach Vol, veh/h		2300	A		1993			776				
Approach Delay, s/veh		21.6			22.5			73.4				
Approach LOS		C			C			E				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		76.8			26.6	50.2		23.2				
Change Period (Y+Rc), s		5.8			4.5	* 5.8		4.5				
Max Green Setting (Gmax), s		53.6			22.1	* 28		18.7				
Max Q Clear Time (g_c+I1), s		18.3			24.1	25.3		20.7				
Green Ext Time (p_c), s		18.1			0.0	2.5		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		29.9
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

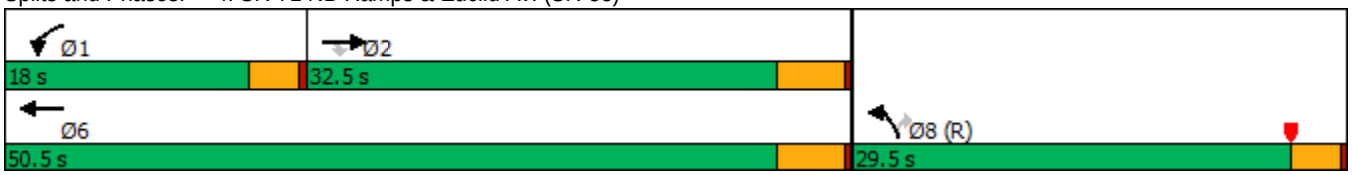
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	975	172	429	1258	146	1156
Future Volume (vph)	975	172	429	1258	146	1156
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	32.5	32.5	18.0	50.5	29.5	29.5
Total Split (%)	40.6%	40.6%	22.5%	63.1%	36.9%	36.9%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max
Act Effct Green (s)	27.6	27.6	14.5	45.6	26.4	26.4
Actuated g/C Ratio	0.34	0.34	0.18	0.57	0.33	0.33
v/c Ratio	0.91	0.32	1.53	0.71	0.15	1.71
Control Delay	28.4	7.9	279.4	14.8	19.5	342.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.4	7.9	279.4	14.8	19.5	342.2
LOS	C	A	F	B	B	F
Approach Delay	25.3			82.1	306.0	
Approach LOS	C			F	F	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.71	
Intersection Signal Delay: 136.8	Intersection LOS: F
Intersection Capacity Utilization 105.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	975	172	429	1258	146	1156
Future Volume (veh/h)	975	172	429	1258	146	1156
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	1134	0	499	1463	170	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1200		328	2012	1203	
Arrive On Green	0.66	0.00	0.18	0.56	0.34	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	1134	0	499	1463	170	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	22.7	0.0	14.5	24.1	2.7	0.0
Cycle Q Clear(g_c), s	22.7	0.0	14.5	24.1	2.7	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1200		328	2012	1203	
V/C Ratio(X)	0.95		1.52	0.73	0.14	
Avail Cap(c_a), veh/h	1264		328	2076	1203	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.16	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.8	0.0	32.8	13.2	18.2	0.0
Incr Delay (d2), s/veh	3.1	0.0	249.7	1.3	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	28.4	7.5	1.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.8	0.0	282.5	14.5	18.4	0.0
LnGrp LOS	B		F	B	B	
Approach Vol, veh/h	1134	A		1962	170	A
Approach Delay, s/veh	15.8			82.6	18.4	
Approach LOS	B			F	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	18.0	31.1				49.1	30.9
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	14.5	28.0				46.0	26.0
Max Q Clear Time (g_c+I1), s	16.5	24.7				26.1	4.7
Green Ext Time (p_c), s	0.0	1.9				9.7	0.3

Intersection Summary	
HCM 6th Ctrl Delay	56.1
HCM 6th LOS	E

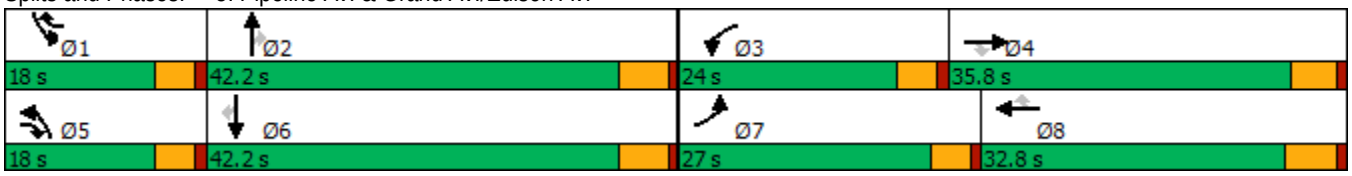
Notes

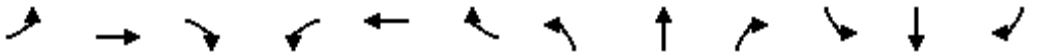
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	285	1137	258	253	971	93	308	473	184	143	594	170
Future Volume (vph)	285	1137	258	253	971	93	308	473	184	143	594	170
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	27.0	35.8	18.0	24.0	32.8	18.0	18.0	42.2	42.2	18.0	42.2	42.2
Total Split (%)	22.5%	29.8%	15.0%	20.0%	27.3%	15.0%	15.0%	35.2%	35.2%	15.0%	35.2%	35.2%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None
Act Effct Green (s)	15.5	32.1	46.2	14.3	30.9	44.2	14.1	29.1	29.1	13.3	28.3	28.3
Actuated g/C Ratio	0.15	0.31	0.44	0.14	0.29	0.42	0.13	0.28	0.28	0.13	0.27	0.27
v/c Ratio	0.68	0.83	0.40	0.65	0.74	0.15	0.85	0.55	0.35	0.77	0.71	0.35
Control Delay	50.9	41.1	15.5	51.4	38.5	4.7	66.7	34.9	6.0	70.7	39.2	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.9	41.1	15.5	51.4	38.5	4.7	66.7	34.9	6.0	70.7	39.2	6.2
LOS	D	D	B	D	D	A	E	C	A	E	D	A
Approach Delay		38.8			38.6			39.5			38.0	
Approach LOS		D			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 105	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 38.7	Intersection LOS: D
Intersection Capacity Utilization 76.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	285	1137	258	253	971	93	308	473	184	143	594	170
Future Volume (veh/h)	285	1137	258	253	971	93	308	473	184	143	594	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	313	1249	218	278	1067	64	338	520	115	157	653	111
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	399	1563	686	362	1539	641	407	959	428	193	897	390
Arrive On Green	0.13	0.32	0.31	0.12	0.31	0.30	0.14	0.28	0.28	0.12	0.26	0.26
Sat Flow, veh/h	3141	4914	1522	3141	4914	1524	2956	3420	1525	1619	3420	1487
Grp Volume(v), veh/h	313	1249	218	278	1067	64	338	520	115	157	653	111
Grp Sat Flow(s),veh/h/ln	1570	1638	1522	1570	1638	1524	1478	1710	1525	1619	1710	1487
Q Serve(g_s), s	9.7	23.2	9.2	8.6	19.1	2.5	11.1	12.9	5.9	9.5	17.4	5.9
Cycle Q Clear(g_c), s	9.7	23.2	9.2	8.6	19.1	2.5	11.1	12.9	5.9	9.5	17.4	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	399	1563	686	362	1539	641	407	959	428	193	897	390
V/C Ratio(X)	0.78	0.80	0.32	0.77	0.69	0.10	0.83	0.54	0.27	0.81	0.73	0.28
Avail Cap(c_a), veh/h	722	1563	686	628	1539	641	414	1306	583	227	1306	568
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	31.2	17.6	42.9	30.1	17.5	42.0	30.5	28.0	42.9	33.6	29.4
Incr Delay (d2), s/veh	1.3	4.4	1.2	1.3	2.6	0.3	12.4	0.5	0.3	14.8	1.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	9.5	3.2	3.3	7.4	0.9	4.6	5.2	2.1	4.5	7.1	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.6	35.6	18.8	44.3	32.7	17.8	54.4	31.0	28.3	57.8	34.8	29.8
LnGrp LOS	D	D	B	D	C	B	D	C	C	E	C	C
Approach Vol, veh/h		1780			1409			973			921	
Approach Delay, s/veh		34.9			34.3			38.8			38.1	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	32.0	15.5	36.5	17.8	30.2	16.7	35.3
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	13.4	36.8	19.4	* 31	13.4	36.8	22.4	27.0
Max Q Clear Time (g_c+I1), s	11.5	14.9	10.6	25.2	13.1	19.4	11.7	21.1
Green Ext Time (p_c), s	0.0	3.6	0.3	3.8	0.0	4.2	0.4	3.3

Intersection Summary	
HCM 6th Ctrl Delay	36.1
HCM 6th LOS	D

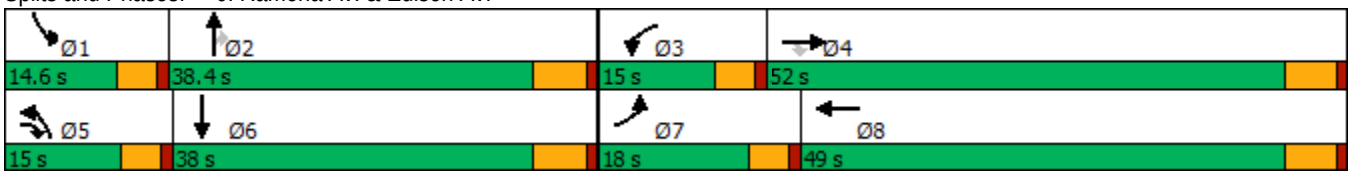
Notes

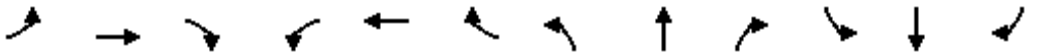
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	122	1226	122	94	998	99	468	79	67	432
Future Volume (vph)	122	1226	122	94	998	99	468	79	67	432
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	18.0	52.0	15.0	15.0	49.0	15.0	38.4	38.4	14.6	38.0
Total Split (%)	15.0%	43.3%	12.5%	12.5%	40.8%	12.5%	32.0%	32.0%	12.2%	31.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None
Act Effct Green (s)	12.6	48.2	62.6	10.2	45.8	10.4	30.4	30.4	9.1	26.9
Actuated g/C Ratio	0.11	0.43	0.56	0.09	0.41	0.09	0.27	0.27	0.08	0.24
v/c Ratio	0.75	0.93	0.09	0.72	0.86	0.74	0.56	0.18	0.58	0.75
Control Delay	74.5	44.1	2.8	77.4	39.0	79.5	38.5	4.7	68.7	43.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.5	44.1	2.8	77.4	39.0	79.5	38.5	4.7	68.7	43.7
LOS	E	D	A	E	D	E	D	A	E	D
Approach Delay		43.2			42.1		40.6			46.4
Approach LOS		D			D		D			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.8	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 43.0	Intersection LOS: D
Intersection Capacity Utilization 77.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	1226	122	94	998	71	99	468	79	67	432	110
Future Volume (veh/h)	122	1226	122	94	998	71	99	468	79	67	432	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1700	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	137	1378	113	106	1121	78	111	526	67	75	485	103
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	171	1545	1341	138	1399	97	143	853	380	102	629	133
Arrive On Green	0.11	0.45	0.44	0.09	0.43	0.41	0.09	0.25	0.25	0.06	0.22	0.21
Sat Flow, veh/h	1619	3420	2536	1619	3244	226	1619	3420	1525	1619	2810	593
Grp Volume(v), veh/h	137	1378	113	106	591	608	111	526	67	75	294	294
Grp Sat Flow(s),veh/h/ln	1619	1710	1268	1619	1710	1759	1619	1710	1525	1619	1710	1693
Q Serve(g_s), s	8.8	39.3	2.3	6.8	31.9	32.0	7.1	14.5	3.7	4.8	17.1	17.4
Cycle Q Clear(g_c), s	8.8	39.3	2.3	6.8	31.9	32.0	7.1	14.5	3.7	4.8	17.1	17.4
Prop In Lane	1.00		1.00	1.00		0.13	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	171	1545	1341	138	737	759	143	853	380	102	383	379
V/C Ratio(X)	0.80	0.89	0.08	0.77	0.80	0.80	0.78	0.62	0.18	0.73	0.77	0.78
Avail Cap(c_a), veh/h	213	1545	1341	168	737	759	168	1108	494	162	547	542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.4	26.7	12.3	47.6	26.2	26.4	47.4	35.4	31.3	48.9	38.6	39.0
Incr Delay (d2), s/veh	12.6	8.2	0.1	12.6	8.9	8.7	14.4	0.7	0.2	3.8	4.1	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	16.3	0.6	3.1	13.8	14.2	3.3	5.9	1.3	2.0	7.3	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.0	34.9	12.5	60.2	35.2	35.1	61.7	36.1	31.5	52.7	42.7	43.4
LnGrp LOS	E	C	B	E	D	D	E	D	C	D	D	D
Approach Vol, veh/h		1628			1305			704			663	
Approach Delay, s/veh		35.4			37.2			39.7			44.2	
Approach LOS		D			D			D			D	

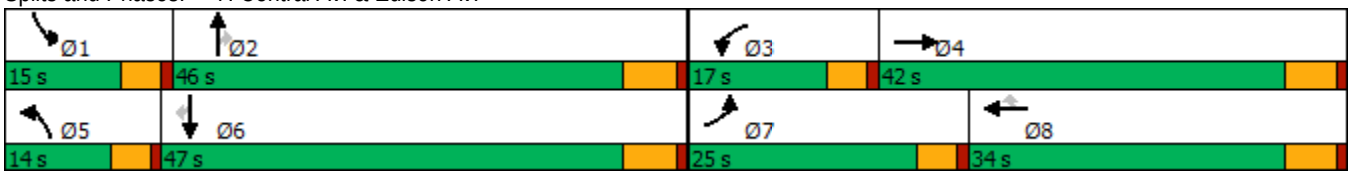
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	30.5	13.0	52.0	13.4	27.8	15.2	49.8
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.0	32.6	10.4	46.2	10.4	32.2	13.4	43.2
Max Q Clear Time (g_c+I1), s	6.8	16.5	8.8	41.3	9.1	19.4	10.8	34.0
Green Ext Time (p_c), s	0.0	3.0	0.0	3.5	0.0	2.6	0.0	4.8

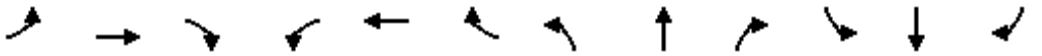
Intersection Summary	
HCM 6th Ctrl Delay	38.0
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	238	950	278	685	106	96	1094	449	123	877	148
Future Volume (vph)	238	950	278	685	106	96	1094	449	123	877	148
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	25.0	42.0	17.0	34.0	34.0	14.0	46.0	46.0	15.0	47.0	47.0
Total Split (%)	20.8%	35.0%	14.2%	28.3%	28.3%	11.7%	38.3%	38.3%	12.5%	39.2%	39.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	20.2	38.0	12.8	30.7	30.7	9.6	42.0	42.0	10.9	43.3	43.3
Actuated g/C Ratio	0.17	0.32	0.11	0.26	0.26	0.08	0.35	0.35	0.09	0.36	0.36
v/c Ratio	0.90	1.00	0.86	0.81	0.22	0.77	0.94	0.68	0.87	0.73	0.24
Control Delay	83.7	68.4	76.3	50.2	3.0	89.5	53.1	21.3	100.0	37.5	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.7	68.4	76.3	50.2	3.0	89.5	53.1	21.3	100.0	37.5	5.3
LOS	F	E	E	D	A	F	D	C	F	D	A
Approach Delay		71.3		52.4			46.6			40.1	
Approach LOS		E		D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.7	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 52.5	Intersection LOS: D
Intersection Capacity Utilization 92.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	950	94	278	685	106	96	1094	449	123	877	148
Future Volume (veh/h)	238	950	94	278	685	106	96	1094	449	123	877	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	245	979	93	287	706	98	99	1128	382	127	904	119
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	275	998	95	340	873	389	128	1197	525	148	1241	553
Arrive On Green	0.17	0.32	0.30	0.11	0.26	0.26	0.08	0.35	0.35	0.09	0.36	0.36
Sat Flow, veh/h	1619	3152	299	3141	3420	1525	1619	3420	1499	1619	3420	1524
Grp Volume(v), veh/h	245	531	541	287	706	98	99	1128	382	127	904	119
Grp Sat Flow(s),veh/h/ln	1619	1710	1741	1570	1710	1525	1619	1710	1499	1619	1710	1524
Q Serve(g_s), s	17.8	36.9	37.0	10.8	23.3	6.1	7.2	38.4	26.7	9.3	27.5	6.5
Cycle Q Clear(g_c), s	17.8	36.9	37.0	10.8	23.3	6.1	7.2	38.4	26.7	9.3	27.5	6.5
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	275	542	551	340	873	389	128	1197	525	148	1241	553
V/C Ratio(X)	0.89	0.98	0.98	0.84	0.81	0.25	0.78	0.94	0.73	0.86	0.73	0.22
Avail Cap(c_a), veh/h	283	542	551	340	873	389	135	1197	525	148	1241	553
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	40.6	40.8	52.5	41.9	35.6	54.2	37.8	34.0	53.7	33.1	26.4
Incr Delay (d2), s/veh	26.2	34.2	33.9	16.5	8.0	1.5	20.6	14.4	5.1	34.5	2.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	19.9	20.3	4.9	10.4	2.4	3.6	17.6	10.0	5.1	11.2	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.9	74.8	74.7	69.0	49.9	37.1	74.9	52.2	39.1	88.2	35.3	26.6
LnGrp LOS	E	E	E	E	D	D	E	D	D	F	D	C
Approach Vol, veh/h		1317			1091			1609			1150	
Approach Delay, s/veh		74.8			53.8			50.5			40.3	
Approach LOS		E			D			D			D	

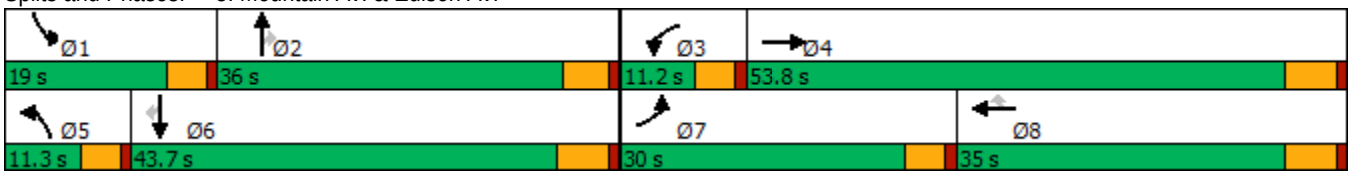
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	46.0	17.0	42.0	13.5	47.5	24.4	34.6
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.4	40.2	12.4	36.2	9.4	41.2	20.4	28.2
Max Q Clear Time (g_c+I1), s	11.3	40.4	12.8	39.0	9.2	29.5	19.8	25.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.8	0.0	1.3

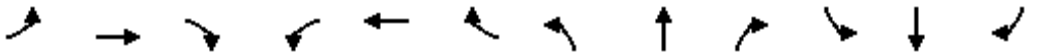
Intersection Summary	
HCM 6th Ctrl Delay	55.1
HCM 6th LOS	E

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	225	1236	38	746	99	41	101	31	121	186	234
Future Volume (vph)	225	1236	38	746	99	41	101	31	121	186	234
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	30.0	53.8	11.2	35.0	35.0	11.3	36.0	36.0	19.0	43.7	43.7
Total Split (%)	25.0%	44.8%	9.3%	29.2%	29.2%	9.4%	30.0%	30.0%	15.8%	36.4%	36.4%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	17.9	51.5	6.8	35.4	35.4	6.9	15.2	15.2	12.9	22.1	22.1
Actuated g/C Ratio	0.19	0.55	0.07	0.38	0.38	0.07	0.16	0.16	0.14	0.24	0.24
v/c Ratio	0.75	0.51	0.34	0.59	0.14	0.36	0.35	0.08	0.56	0.45	0.44
Control Delay	53.4	17.2	55.7	29.4	0.4	56.2	40.8	0.4	52.6	35.7	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.4	17.2	55.7	29.4	0.4	56.2	40.8	0.4	52.6	35.7	6.8
LOS	D	B	E	C	A	E	D	A	D	D	A
Approach Delay		22.5		27.3			37.2			26.9	
Approach LOS		C		C			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 93.9	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 25.4	Intersection LOS: C
Intersection Capacity Utilization 66.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	1236	88	38	746	99	41	101	31	121	186	234
Future Volume (veh/h)	225	1236	88	38	746	99	41	101	31	121	186	234
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	230	1261	88	39	761	89	42	103	17	123	190	174
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	272	2559	179	66	1435	640	69	234	194	160	349	296
Arrive On Green	0.17	0.55	0.53	0.04	0.42	0.42	0.04	0.13	0.13	0.10	0.19	0.19
Sat Flow, veh/h	1619	4680	327	1619	3420	1525	1619	1800	1492	1619	1800	1525
Grp Volume(v), veh/h	230	883	466	39	761	89	42	103	17	123	190	174
Grp Sat Flow(s),veh/h/ln	1619	1638	1730	1619	1710	1525	1619	1800	1492	1619	1800	1525
Q Serve(g_s), s	12.5	15.2	15.3	2.2	15.1	3.3	2.3	4.8	0.9	6.7	8.7	9.5
Cycle Q Clear(g_c), s	12.5	15.2	15.3	2.2	15.1	3.3	2.3	4.8	0.9	6.7	8.7	9.5
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	272	1791	946	66	1435	640	69	234	194	160	349	296
V/C Ratio(X)	0.84	0.49	0.49	0.59	0.53	0.14	0.61	0.44	0.09	0.77	0.54	0.59
Avail Cap(c_a), veh/h	462	1791	946	128	1435	640	130	632	524	267	785	665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	12.8	12.9	42.9	19.7	16.3	42.9	36.6	34.9	40.0	33.1	33.4
Incr Delay (d2), s/veh	2.8	1.0	1.8	3.0	1.4	0.5	3.2	1.3	0.2	2.9	1.3	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	5.0	5.6	0.9	5.7	1.1	1.0	2.2	0.3	2.7	3.7	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.5	13.8	14.8	46.0	21.1	16.7	46.1	37.9	35.1	42.9	34.4	35.3
LnGrp LOS	D	B	B	D	C	B	D	D	D	D	C	D
Approach Vol, veh/h		1579			889			162			487	
Approach Delay, s/veh		17.8			21.8			39.7			36.8	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	16.5	7.7	53.8	7.9	21.7	19.3	42.2
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	* 31	6.6	48.0	6.7	37.9	25.4	29.2
Max Q Clear Time (g_c+I1), s	8.7	6.8	4.2	17.3	4.3	11.5	14.5	17.1
Green Ext Time (p_c), s	0.1	0.5	0.0	10.2	0.0	1.5	0.2	4.0

Intersection Summary	
HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

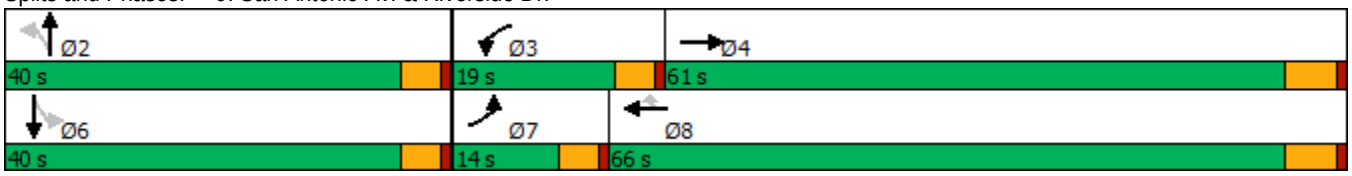
Notes

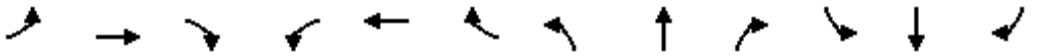
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	33	870	64	808	26	98	17	13	8
Future Volume (vph)	33	870	64	808	26	98	17	13	8
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	14.0	61.0	19.0	66.0	66.0	40.0	40.0	40.0	40.0
Total Split (%)	11.7%	50.8%	15.8%	55.0%	55.0%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	7.3	62.9	9.0	66.9	66.9	15.6	15.6	15.6	15.6
Actuated g/C Ratio	0.07	0.64	0.09	0.68	0.68	0.16	0.16	0.16	0.16
v/c Ratio	0.28	0.48	0.45	0.36	0.03	0.52	0.22	0.07	0.15
Control Delay	50.7	11.7	52.6	8.9	0.8	46.4	16.4	34.4	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.7	11.7	52.6	8.9	0.8	46.4	16.4	34.4	15.5
LOS	D	B	D	A	A	D	B	C	B
Approach Delay		13.0		11.8			34.7		20.2
Approach LOS		B		B			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.7	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay: 14.3	Intersection LOS: B
Intersection Capacity Utilization 57.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	870	125	64	808	26	98	17	45	13	8	33
Future Volume (veh/h)	33	870	125	64	808	26	98	17	45	13	8	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	34	906	124	67	842	27	102	18	23	14	8	11
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	63	2056	281	94	2400	1070	233	88	113	213	85	117
Arrive On Green	0.04	0.68	0.66	0.06	0.70	0.70	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1619	3013	412	1619	3420	1524	1337	716	914	1305	686	944
Grp Volume(v), veh/h	34	514	516	67	842	27	102	0	41	14	0	19
Grp Sat Flow(s),veh/h/ln	1619	1710	1715	1619	1710	1524	1337	0	1630	1305	0	1630
Q Serve(g_s), s	1.8	12.1	12.2	3.6	8.6	0.5	6.5	0.0	2.0	0.9	0.0	0.9
Cycle Q Clear(g_c), s	1.8	12.1	12.2	3.6	8.6	0.5	7.4	0.0	2.0	2.9	0.0	0.9
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.56	1.00		0.58
Lane Grp Cap(c), veh/h	63	1167	1171	94	2400	1070	233	0	201	213	0	201
V/C Ratio(X)	0.54	0.44	0.44	0.71	0.35	0.03	0.44	0.00	0.20	0.07	0.00	0.09
Avail Cap(c_a), veh/h	183	1167	1171	275	2400	1070	612	0	664	584	0	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.7	6.4	6.5	40.9	5.2	4.0	37.6	0.0	35.0	36.1	0.0	34.5
Incr Delay (d2), s/veh	2.7	1.2	1.2	3.7	0.4	0.0	1.3	0.0	0.5	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.5	3.6	1.5	2.2	0.1	2.2	0.0	0.8	0.3	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.4	7.6	7.7	44.5	5.6	4.0	38.9	0.0	35.5	36.2	0.0	34.7
LnGrp LOS	D	A	A	D	A	A	D	A	D	D	A	C
Approach Vol, veh/h		1064			936			143			33	
Approach Delay, s/veh		8.8			8.4			37.9			35.3	
Approach LOS		A			A			D			D	

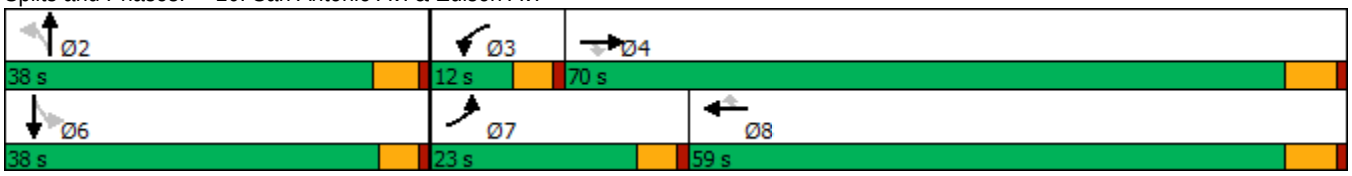
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.9	9.1	64.3		14.9	7.4	66.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		35.4	14.4	55.2		35.4	9.4	60.2				
Max Q Clear Time (g_c+I1), s		9.4	5.6	14.2		4.9	3.8	10.6				
Green Ext Time (p_c), s		0.5	0.0	7.3		0.1	0.0	6.4				

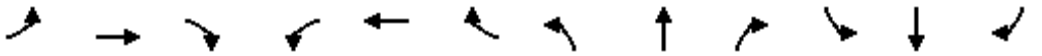
Intersection Summary												
HCM 6th Ctrl Delay			10.9									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	91	1185	42	7	803	19	24	33	13	45
Future Volume (vph)	91	1185	42	7	803	19	24	33	13	45
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	23.0	70.0	70.0	12.0	59.0	59.0	38.0	38.0	38.0	38.0
Total Split (%)	19.2%	58.3%	58.3%	10.0%	49.2%	49.2%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	10.7	71.8	71.8	6.3	61.0	61.0		14.5		14.5
Actuated g/C Ratio	0.11	0.74	0.74	0.07	0.63	0.63		0.15		0.15
v/c Ratio	0.54	0.50	0.04	0.11	0.39	0.02		0.32		0.44
Control Delay	52.1	7.7	1.6	49.6	11.4	0.1		35.1		29.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	52.1	7.7	1.6	49.6	11.4	0.1		35.1		29.0
LOS	D	A	A	D	B	A		D		C
Approach Delay		10.6			11.4			35.1		29.0
Approach LOS		B			B			D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.4	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay: 12.5	Intersection LOS: B
Intersection Capacity Utilization 57.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	1185	42	7	803	19	24	33	11	13	45	55
Future Volume (veh/h)	91	1185	42	7	803	19	24	33	11	13	45	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1000	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	97	1261	44	7	854	17	26	35	8	14	48	29
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	131	2499	1115	15	2275	1015	107	124	23	63	113	61
Arrive On Green	0.08	0.73	0.73	0.02	0.67	0.67	0.12	0.12	0.11	0.12	0.12	0.11
Sat Flow, veh/h	1619	3420	1525	952	3420	1525	435	1022	191	148	984	529
Grp Volume(v), veh/h	97	1261	44	7	854	17	69	0	0	91	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	952	1710	1525	1649	0	0	1661	0	0
Q Serve(g_s), s	5.3	14.2	0.7	0.7	10.1	0.3	0.0	0.0	0.0	0.2	0.0	0.0
Cycle Q Clear(g_c), s	5.3	14.2	0.7	0.7	10.1	0.3	3.2	0.0	0.0	4.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.38		0.12	0.15		0.32
Lane Grp Cap(c), veh/h	131	2499	1115	15	2275	1015	254	0	0	238	0	0
V/C Ratio(X)	0.74	0.50	0.04	0.47	0.38	0.02	0.27	0.00	0.00	0.38	0.00	0.00
Avail Cap(c_a), veh/h	341	2499	1115	84	2275	1015	654	0	0	663	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	40.6	5.2	3.4	44.1	6.7	5.1	36.4	0.0	0.0	37.4	0.0	0.0
Incr Delay (d2), s/veh	3.1	0.7	0.1	8.4	0.5	0.0	0.6	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	3.4	0.2	0.2	2.9	0.1	1.4	0.0	0.0	1.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.6	5.9	3.4	52.5	7.2	5.1	37.0	0.0	0.0	38.4	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1402			878			69			91	
Approach Delay, s/veh		8.5			7.5			37.0			38.4	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.9	5.4	70.0		14.9	11.3	64.1				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		32.9	7.4	64.2		* 33	18.4	53.2				
Max Q Clear Time (g_c+I1), s		5.2	2.7	16.2		6.5	7.3	12.1				
Green Ext Time (p_c), s		0.3	0.0	11.7		0.5	0.1	6.4				

Intersection Summary												
HCM 6th Ctrl Delay			10.0									
HCM 6th LOS			B									

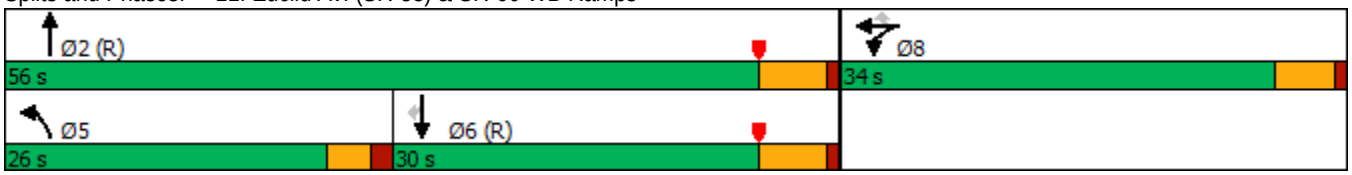
Notes

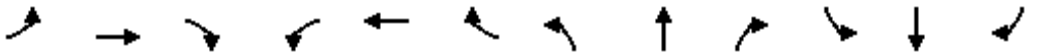
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	708	7	450	397	1204	1120	543
Future Volume (vph)	708	7	450	397	1204	1120	543
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	34.0	34.0	34.0	26.0	56.0	30.0	30.0
Total Split (%)	37.8%	37.8%	37.8%	28.9%	62.2%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	26.2	26.2	26.2	22.3	53.3	26.5	26.5
Actuated g/C Ratio	0.29	0.29	0.29	0.25	0.59	0.29	0.29
v/c Ratio	0.84	0.86	0.76	0.93	0.59	1.10	0.65
Control Delay	45.9	47.4	32.4	37.1	24.6	91.7	6.4
Queue Delay	0.0	0.0	0.0	0.0	6.5	0.0	0.0
Total Delay	45.9	47.4	32.4	37.1	31.2	91.7	6.4
LOS	D	D	C	D	C	F	A
Approach Delay		42.2			32.6	63.8	
Approach LOS		D			C	E	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 46.9	Intersection LOS: D
Intersection Capacity Utilization 106.0%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	708	7	450	397	1204	0	0	1120	543
Future Volume (veh/h)	0	0	0	708	7	450	397	1204	0	0	1120	543
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				830	0	194	414	1254	0	0	1167	361
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				937	0	416	432	2255	0	0	1212	540
Arrive On Green				0.26	0.00	0.26	0.48	1.00	0.00	0.00	0.34	0.34
Sat Flow, veh/h				3619	0	1608	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				830	0	194	414	1254	0	0	1167	361
Grp Sat Flow(s),veh/h/ln				1810	0	1608	1810	1805	0	0	1805	1610
Q Serve(g_s), s				19.9	0.0	9.2	19.8	0.0	0.0	0.0	28.6	17.3
Cycle Q Clear(g_c), s				19.9	0.0	9.2	19.8	0.0	0.0	0.0	28.6	17.3
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				937	0	416	432	2255	0	0	1212	540
V/C Ratio(X)				0.89	0.00	0.47	0.96	0.56	0.00	0.00	0.96	0.67
Avail Cap(c_a), veh/h				1166	0	518	432	2255	0	0	1212	540
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.14	0.14	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				32.1	0.0	28.1	23.1	0.0	0.0	0.0	29.3	25.6
Incr Delay (d2), s/veh				6.3	0.0	0.3	8.4	0.1	0.0	0.0	18.4	6.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.9	0.0	3.3	6.3	0.0	0.0	0.0	14.5	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				38.3	0.0	28.4	31.5	0.1	0.0	0.0	47.8	32.0
LnGrp LOS				D	A	C	C	A	A	A	D	C
Approach Vol, veh/h					1024			1668			1528	
Approach Delay, s/veh					36.5			7.9			44.0	
Approach LOS					D			A			D	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	61.7		26.0	35.7		28.3						
Change Period (Y+Rc), s	5.5		4.5	5.5		5.0						
Max Green Setting (Gmax), s	50.5		21.5	24.5		29.0						
Max Q Clear Time (g_c+I1), s	2.0		21.8	30.6		21.9						
Green Ext Time (p_c), s	17.9		0.0	0.0		1.4						

Intersection Summary		
HCM 6th Ctrl Delay	27.9	
HCM 6th LOS	C	

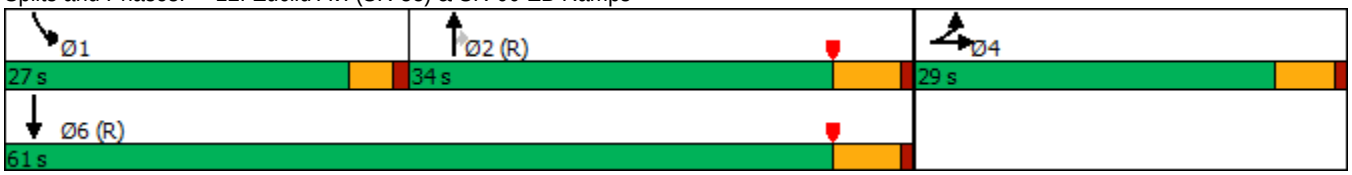
Notes

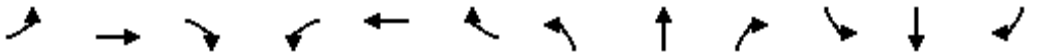
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	459	3	1142	721	414	1414
Future Volume (vph)	459	3	1142	721	414	1414
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	29.0	29.0	34.0	34.0	27.0	61.0
Total Split (%)	32.2%	32.2%	37.8%	37.8%	30.0%	67.8%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	24.0	24.0	29.1	29.1	22.4	55.5
Actuated g/C Ratio	0.27	0.27	0.32	0.32	0.25	0.62
v/c Ratio	0.92	1.10	1.00	0.80	0.94	0.65
Control Delay	60.3	104.6	57.7	13.1	57.2	6.0
Queue Delay	49.9	4.6	0.0	0.0	0.0	0.8
Total Delay	110.2	109.2	57.7	13.1	57.2	6.8
LOS	F	F	E	B	E	A
Approach Delay		109.7	40.4			18.2
Approach LOS		F	D			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 45.1	Intersection LOS: D
Intersection Capacity Utilization 106.0%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	459	3	436	0	0	0	0	1142	721	414	1414	0
Future Volume (veh/h)	459	3	436	0	0	0	0	1142	721	414	1414	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	424	64	378				0	1165	542	422	1443	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	483	64	375				0	1179	513	444	2226	0
Arrive On Green	0.27	0.27	0.27				0.00	0.33	0.33	0.49	1.00	0.00
Sat Flow, veh/h	1810	238	1408				0	3705	1571	1810	3705	0
Grp Volume(v), veh/h	424	0	442				0	1165	542	422	1443	0
Grp Sat Flow(s),veh/h/ln	1810	0	1647				0	1805	1571	1810	1805	0
Q Serve(g_s), s	20.2	0.0	24.0				0.0	28.9	29.4	20.0	0.0	0.0
Cycle Q Clear(g_c), s	20.2	0.0	24.0				0.0	28.9	29.4	20.0	0.0	0.0
Prop In Lane	1.00		0.86				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	483	0	439				0	1179	513	444	2226	0
V/C Ratio(X)	0.88	0.00	1.01				0.00	0.99	1.06	0.95	0.65	0.00
Avail Cap(c_a), veh/h	483	0	439				0	1179	513	462	2226	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.32	0.32	0.52	0.52	0.00
Uniform Delay (d), s/veh	31.6	0.0	33.0				0.0	30.1	30.3	22.4	0.0	0.0
Incr Delay (d2), s/veh	16.2	0.0	44.6				0.0	12.3	38.9	18.4	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	0.0	14.3				0.0	13.6	15.8	7.5	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.8	0.0	77.6				0.0	42.4	69.2	40.7	0.8	0.0
LnGrp LOS	D	A	F				A	D	F	D	A	A
Approach Vol, veh/h		866						1707			1865	
Approach Delay, s/veh		63.0						50.9			9.8	
Approach LOS		E						D			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	26.1	34.9		29.0		61.0
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	23.0	28.5		24.0		55.5
Max Q Clear Time (g_c+I1), s	22.0	31.4		26.0		2.0
Green Ext Time (p_c), s	0.1	0.0		0.0		23.2

Intersection Summary	
HCM 6th Ctrl Delay	36.0
HCM 6th LOS	D

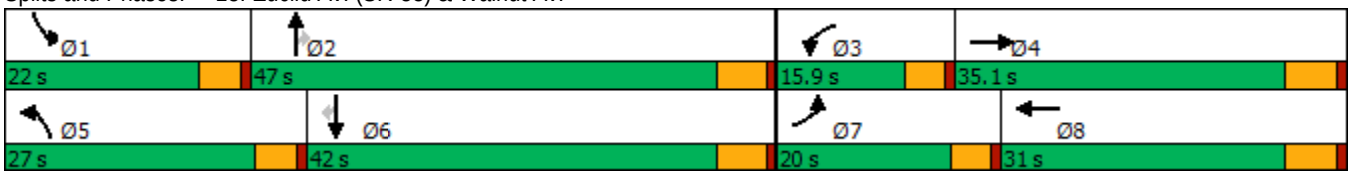
Notes

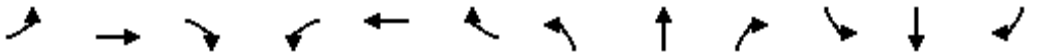
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	118	408	77	408	208	1563	82	291	1355	161
Future Volume (vph)	118	408	77	408	208	1563	82	291	1355	161
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	20.0	35.1	15.9	31.0	27.0	47.0	47.0	22.0	42.0	42.0
Total Split (%)	16.7%	29.3%	13.3%	25.8%	22.5%	39.2%	39.2%	18.3%	35.0%	35.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	12.3	28.4	9.2	22.9	18.7	41.9	41.9	15.1	38.4	38.4
Actuated g/C Ratio	0.11	0.25	0.08	0.20	0.17	0.37	0.37	0.13	0.34	0.34
v/c Ratio	0.72	0.70	0.63	0.86	0.83	0.91	0.14	0.78	0.86	0.28
Control Delay	71.9	41.7	72.4	54.4	71.2	43.5	3.4	62.6	42.7	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.9	41.7	72.4	54.4	71.2	43.5	3.4	62.6	42.7	7.7
LOS	E	D	E	D	E	D	A	E	D	A
Approach Delay		46.9		56.5		44.8			42.8	
Approach LOS		D		E		D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 45.9	Intersection LOS: D
Intersection Capacity Utilization 83.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	408	154	77	408	154	208	1563	82	291	1355	161
Future Volume (veh/h)	118	408	154	77	408	154	208	1563	82	291	1355	161
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	126	434	141	82	434	138	221	1663	60	310	1441	117
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	151	589	189	102	514	162	249	1915	594	366	1768	548
Arrive On Green	0.09	0.23	0.23	0.06	0.20	0.20	0.15	0.39	0.39	0.12	0.36	0.36
Sat Flow, veh/h	1619	2534	815	1619	2544	801	1619	4914	1523	2956	4914	1524
Grp Volume(v), veh/h	126	291	284	82	290	282	221	1663	60	310	1441	117
Grp Sat Flow(s),veh/h/ln	1619	1710	1639	1619	1710	1635	1619	1638	1523	1478	1638	1524
Q Serve(g_s), s	8.2	16.8	17.1	5.3	17.4	17.7	14.3	33.3	2.7	11.0	28.4	5.7
Cycle Q Clear(g_c), s	8.2	16.8	17.1	5.3	17.4	17.7	14.3	33.3	2.7	11.0	28.4	5.7
Prop In Lane	1.00		0.50	1.00		0.49	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	151	397	381	102	345	330	249	1915	594	366	1768	548
V/C Ratio(X)	0.83	0.73	0.74	0.81	0.84	0.85	0.89	0.87	0.10	0.85	0.82	0.21
Avail Cap(c_a), veh/h	234	469	450	171	404	386	340	1915	594	482	1768	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.6	37.9	38.0	49.4	40.9	41.1	44.3	30.0	20.7	45.8	31.0	23.7
Incr Delay (d2), s/veh	8.1	4.8	5.5	5.5	13.0	15.0	15.6	5.7	0.3	8.4	4.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	7.3	7.2	2.2	8.3	8.2	6.6	13.4	1.0	4.3	11.3	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.7	42.7	43.5	54.9	54.0	56.1	59.8	35.7	21.0	54.1	35.2	24.6
LnGrp LOS	E	D	D	D	D	E	E	D	C	D	D	C
Approach Vol, veh/h		701			654			1944			1868	
Approach Delay, s/veh		45.4			55.0			38.0			37.7	
Approach LOS		D			D			D			D	

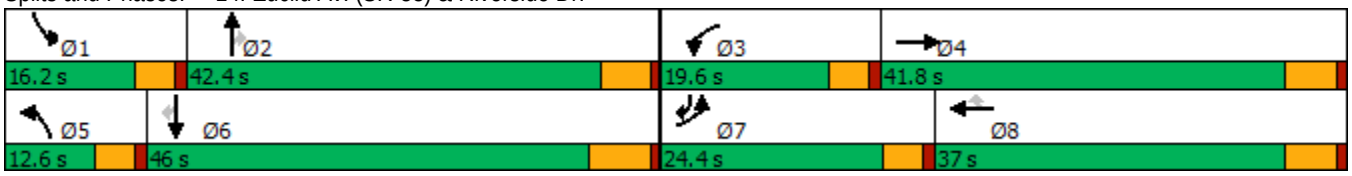
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	47.0	11.3	30.6	21.0	43.8	14.6	27.3
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	17.4	41.6	11.3	29.3	22.4	36.6	15.4	25.2
Max Q Clear Time (g_c+I1), s	13.0	35.3	7.3	19.1	16.3	30.4	10.2	19.7
Green Ext Time (p_c), s	0.3	4.9	0.0	2.3	0.2	4.5	0.1	1.5

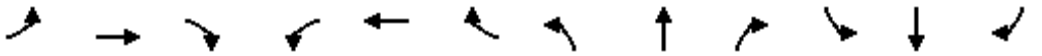
Intersection Summary	
HCM 6th Ctrl Delay	41.0
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	167	505	208	451	71	91	1359	268	153	1150	212
Future Volume (vph)	167	505	208	451	71	91	1359	268	153	1150	212
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	24.4	41.8	19.6	37.0	37.0	12.6	42.4	42.4	16.2	46.0	24.4
Total Split (%)	20.3%	34.8%	16.3%	30.8%	30.8%	10.5%	35.3%	35.3%	13.5%	38.3%	20.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None
Act Effct Green (s)	16.3	36.0	15.0	34.7	34.7	8.0	37.0	37.0	11.6	39.5	57.7
Actuated g/C Ratio	0.14	0.30	0.12	0.29	0.29	0.07	0.31	0.31	0.10	0.33	0.48
v/c Ratio	0.79	1.17	1.08	0.48	0.14	0.89	1.34	0.47	1.02	1.06	0.28
Control Delay	74.6	131.1	135.6	37.9	0.5	116.7	195.4	14.7	130.9	84.9	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.6	131.1	135.6	37.9	0.5	116.7	195.4	14.7	130.9	84.9	8.0
LOS	E	F	F	D	A	F	F	B	F	F	A
Approach Delay		118.8		62.1			163.0			78.8	
Approach LOS		F		E			F			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.34	
Intersection Signal Delay: 113.3	Intersection LOS: F
Intersection Capacity Utilization 112.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	505	91	208	451	71	91	1359	268	153	1150	212
Future Volume (veh/h)	167	505	91	208	451	71	91	1359	268	153	1150	212
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	174	526	70	217	470	58	95	1416	225	159	1198	130
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	198	462	62	201	1021	455	107	1045	466	155	1147	692
Arrive On Green	0.12	0.30	0.30	0.12	0.30	0.30	0.07	0.31	0.31	0.10	0.34	0.34
Sat Flow, veh/h	1619	1556	207	1619	3420	1524	1619	3420	1525	1619	3420	1506
Grp Volume(v), veh/h	174	0	596	217	470	58	95	1416	225	159	1198	130
Grp Sat Flow(s),veh/h/ln	1619	0	1763	1619	1710	1524	1619	1710	1525	1619	1710	1506
Q Serve(g_s), s	12.8	0.0	36.0	15.0	13.5	3.4	7.0	37.0	14.6	11.6	40.6	6.2
Cycle Q Clear(g_c), s	12.8	0.0	36.0	15.0	13.5	3.4	7.0	37.0	14.6	11.6	40.6	6.2
Prop In Lane	1.00		0.12	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	198	0	524	201	1021	455	107	1045	466	155	1147	692
V/C Ratio(X)	0.88	0.00	1.14	1.08	0.46	0.13	0.89	1.36	0.48	1.03	1.04	0.19
Avail Cap(c_a), veh/h	265	0	524	201	1021	455	107	1045	466	155	1147	692
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.2	0.0	42.6	53.1	34.5	31.0	56.1	42.0	34.3	54.8	40.2	19.5
Incr Delay (d2), s/veh	18.0	0.0	83.0	87.1	0.3	0.1	52.2	166.1	3.6	79.1	39.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	27.1	10.8	5.5	1.2	4.3	38.7	5.7	8.1	22.6	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.2	0.0	125.5	140.2	34.9	31.1	108.3	208.2	37.8	133.8	79.3	20.1
LnGrp LOS	E	A	F	F	C	C	F	F	D	F	F	C
Approach Vol, veh/h		770			745			1736			1487	
Approach Delay, s/veh		113.0			65.2			180.6			80.0	
Approach LOS		F			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	43.5	19.6	41.8	12.6	47.1	19.4	42.0
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	11.6	* 37	15.0	36.0	8.0	39.5	19.8	31.2
Max Q Clear Time (g_c+I1), s	13.6	39.0	17.0	38.0	9.0	42.6	14.8	15.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.6

Intersection Summary	
HCM 6th Ctrl Delay	119.9
HCM 6th LOS	F

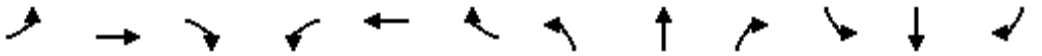
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	106	314	59	87	124	51	1598	253	28	1300	79
Future Volume (vph)	106	314	59	87	124	51	1598	253	28	1300	79
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	44.0	44.0	44.0	44.0	44.0	12.4	65.0	65.0	11.0	63.6	63.6
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	10.3%	54.2%	54.2%	9.2%	53.0%	53.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	33.2	33.2	33.2		33.2	7.0	62.5	62.5	5.9	58.1	58.1
Actuated g/C Ratio	0.29	0.29	0.29		0.29	0.06	0.55	0.55	0.05	0.51	0.51
v/c Ratio	0.41	0.64	0.13		1.01	0.56	0.91	0.32	0.36	0.80	0.11
Control Delay	37.4	40.9	5.8		102.6	75.3	33.6	13.2	66.5	29.0	5.5
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.4	40.9	5.8		102.6	75.3	33.6	13.2	66.5	29.0	5.5
LOS	D	D	A		F	E	C	B	E	C	A
Approach Delay		35.8			102.6		32.0			28.4	
Approach LOS		D			F		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 35.1	Intersection LOS: D
Intersection Capacity Utilization 91.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	314	59	87	124	10	51	1598	253	28	1300	79
Future Volume (veh/h)	106	314	59	87	124	10	51	1598	253	28	1300	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	114	338	40	94	133	7	55	1718	201	30	1398	52
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	287	562	476	128	164	8	69	1763	770	43	1709	747
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.04	0.52	0.52	0.03	0.50	0.50
Sat Flow, veh/h	1198	1800	1525	271	526	25	1619	3420	1494	1619	3420	1494
Grp Volume(v), veh/h	114	338	40	234	0	0	55	1718	201	30	1398	52
Grp Sat Flow(s),veh/h/ln	1198	1800	1525	821	0	0	1619	1710	1494	1619	1710	1494
Q Serve(g_s), s	0.0	18.4	2.1	15.5	0.0	0.0	3.9	56.8	8.7	2.1	40.1	2.1
Cycle Q Clear(g_c), s	15.8	18.4	2.1	34.0	0.0	0.0	3.9	56.8	8.7	2.1	40.1	2.1
Prop In Lane	1.00		1.00	0.40		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	287	562	476	300	0	0	69	1763	770	43	1709	747
V/C Ratio(X)	0.40	0.60	0.08	0.78	0.00	0.00	0.80	0.97	0.26	0.69	0.82	0.07
Avail Cap(c_a), veh/h	307	593	502	323	0	0	109	1763	770	89	1709	747
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.9	33.8	28.2	43.3	0.0	0.0	55.1	27.4	15.7	56.0	24.6	15.0
Incr Delay (d2), s/veh	0.9	1.6	0.1	10.9	0.0	0.0	8.8	16.2	0.8	7.2	4.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	8.0	0.8	7.3	0.0	0.0	1.7	24.0	2.9	0.9	15.4	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.8	35.3	28.3	54.2	0.0	0.0	63.9	43.6	16.6	63.2	29.0	15.2
LnGrp LOS	C	D	C	D	A	A	E	D	B	E	C	B
Approach Vol, veh/h		492			234			1974			1480	
Approach Delay, s/veh		34.4			54.2			41.4			29.2	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	66.3		42.0	9.5	64.5		42.0				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	6.4	* 60		38.2	7.8	57.1		38.2				
Max Q Clear Time (g_c+I1), s	4.1	58.8		20.4	5.9	42.1		36.0				
Green Ext Time (p_c), s	0.0	0.9		2.2	0.0	8.0		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		37.0	
HCM 6th LOS		D	

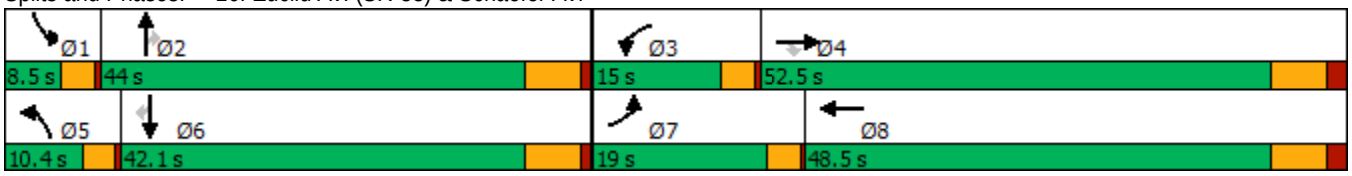
Notes

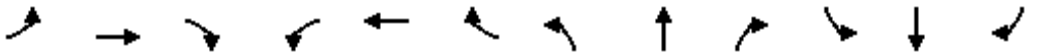
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	321	316	210	87	74	103	1523	91	32	1326	128
Future Volume (vph)	321	316	210	87	74	103	1523	91	32	1326	128
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	19.0	52.5	52.5	15.0	48.5	10.4	44.0	44.0	8.5	42.1	42.1
Total Split (%)	15.8%	43.8%	43.8%	12.5%	40.4%	8.7%	36.7%	36.7%	7.1%	35.1%	35.1%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	15.7	25.7	25.7	10.6	17.6	7.0	42.2	42.2	5.1	36.5	36.5
Actuated g/C Ratio	0.16	0.27	0.27	0.11	0.18	0.07	0.44	0.44	0.05	0.38	0.38
v/c Ratio	1.24	0.67	0.40	0.50	0.31	0.90	1.03	0.12	0.38	1.04	0.20
Control Delay	174.2	39.9	9.1	53.9	29.3	108.5	62.7	2.0	61.9	67.9	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	174.2	39.9	9.1	53.9	29.3	108.5	62.7	2.0	61.9	67.9	5.3
LOS	F	D	A	D	C	F	E	A	E	E	A
Approach Delay		83.1			40.6		62.2			62.4	
Approach LOS		F			D		E			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.9	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.24	
Intersection Signal Delay: 65.5	Intersection LOS: E
Intersection Capacity Utilization 92.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	321	316	210	87	74	28	103	1523	91	32	1326	128
Future Volume (veh/h)	321	316	210	87	74	28	103	1523	91	32	1326	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	324	319	171	88	75	23	104	1538	74	32	1339	99
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	275	380	322	158	184	56	123	1509	673	49	1354	604
Arrive On Green	0.17	0.21	0.21	0.10	0.14	0.14	0.08	0.44	0.44	0.03	0.40	0.40
Sat Flow, veh/h	1619	1800	1525	1619	1322	405	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	324	319	171	88	0	98	104	1538	74	32	1339	99
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1727	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	15.5	15.5	9.1	4.7	0.0	4.7	5.8	40.2	2.6	1.8	35.4	3.8
Cycle Q Clear(g_c), s	15.5	15.5	9.1	4.7	0.0	4.7	5.8	40.2	2.6	1.8	35.4	3.8
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	275	380	322	158	0	240	123	1509	673	49	1354	604
V/C Ratio(X)	1.18	0.84	0.53	0.56	0.00	0.41	0.85	1.02	0.11	0.65	0.99	0.16
Avail Cap(c_a), veh/h	275	898	761	204	0	786	123	1509	673	89	1354	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.8	34.5	31.9	39.2	0.0	35.8	41.6	25.5	15.0	43.7	27.3	17.8
Incr Delay (d2), s/veh	111.0	3.8	1.0	1.1	0.0	0.8	38.2	28.2	0.1	5.2	21.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.3	6.8	3.3	1.8	0.0	1.9	3.5	19.6	0.8	0.7	16.5	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	148.8	38.2	33.0	40.4	0.0	36.7	79.8	53.6	15.0	49.0	49.1	17.9
LnGrp LOS	F	D	C	D	A	D	E	F	B	D	D	B
Approach Vol, veh/h		814			186			1716			1470	
Approach Delay, s/veh		81.1			38.4			53.6			47.0	
Approach LOS		F			D			D			D	

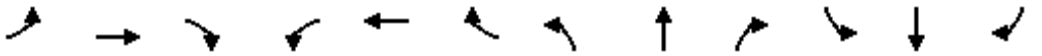
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	46.2	12.4	26.3	10.4	42.1	19.0	19.7
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	38.0	11.5	45.5	6.9	36.1	15.5	41.5
Max Q Clear Time (g_c+I1), s	3.8	42.2	6.7	17.5	7.8	37.4	17.5	6.7
Green Ext Time (p_c), s	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	55.9
HCM 6th LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	304	546	342	48	324	202	1471	83	97	1417	200
Future Volume (vph)	304	546	342	48	324	202	1471	83	97	1417	200
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	17.0	54.8	54.8	13.2	51.0	51.0
Total Split (%)	43.3%	43.3%	43.3%	43.3%	43.3%	14.2%	45.7%	45.7%	11.0%	42.5%	42.5%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	45.0	45.0	45.0	45.0	45.0	13.5	49.2	49.2	9.3	45.0	45.0
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.11	0.41	0.41	0.08	0.38	0.38
v/c Ratio	1.36	0.85	0.51	0.48	0.58	1.18	1.10	0.13	0.82	1.16	0.33
Control Delay	219.8	48.2	15.0	47.0	33.8	168.8	92.5	8.0	97.5	117.5	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	219.8	48.2	15.0	47.0	33.8	168.8	92.5	8.0	97.5	117.5	13.3
LOS	F	D	B	D	C	F	F	A	F	F	B
Approach Delay		82.4			35.3		97.3			104.2	
Approach LOS		F			D		F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.36	
Intersection Signal Delay: 91.0	Intersection LOS: F
Intersection Capacity Utilization 113.6%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	304	546	342	48	324	46	202	1471	83	97	1417	200
Future Volume (veh/h)	304	546	342	48	324	46	202	1471	83	97	1417	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	320	575	278	51	341	42	213	1548	79	102	1492	179
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	253	675	572	111	588	72	182	1407	626	123	1282	572
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.11	0.41	0.41	0.08	0.38	0.38
Sat Flow, veh/h	960	1800	1525	621	1569	193	1619	3420	1522	1619	3420	1525
Grp Volume(v), veh/h	320	575	278	51	0	383	213	1548	79	102	1492	179
Grp Sat Flow(s),veh/h/ln	960	1800	1525	621	0	1762	1619	1710	1522	1619	1710	1525
Q Serve(g_s), s	24.2	35.2	16.7	9.8	0.0	20.8	13.5	49.4	3.9	7.5	45.0	10.0
Cycle Q Clear(g_c), s	45.0	35.2	16.7	45.0	0.0	20.8	13.5	49.4	3.9	7.5	45.0	10.0
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	253	675	572	111	0	661	182	1407	626	123	1283	572
V/C Ratio(X)	1.26	0.85	0.49	0.46	0.00	0.58	1.17	1.10	0.13	0.83	1.16	0.31
Avail Cap(c_a), veh/h	253	675	572	111	0	661	182	1407	626	131	1283	572
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	34.4	28.7	55.1	0.0	29.9	53.3	35.3	21.9	54.7	37.5	26.6
Incr Delay (d2), s/veh	146.1	10.2	0.6	3.0	0.0	1.3	119.7	56.4	0.1	30.0	82.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.8	16.5	6.0	1.6	0.0	8.7	11.3	29.7	1.3	3.9	31.9	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	196.9	44.6	29.3	58.1	0.0	31.2	172.9	91.7	22.0	84.6	119.9	26.9
LnGrp LOS	F	D	C	E	A	C	F	F	C	F	F	C
Approach Vol, veh/h		1173			434			1840			1773	
Approach Delay, s/veh		82.5			34.4			98.1			108.5	
Approach LOS		F			C			F			F	

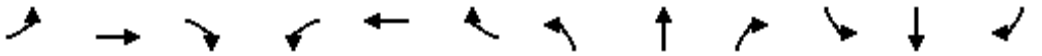
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.6	55.4		52.0	17.0	51.0		52.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	9.7	48.8		45.0	13.5	45.0		45.0				
Max Q Clear Time (g_c+I1), s	9.5	51.4		47.0	15.5	47.0		47.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			92.9									
HCM 6th LOS			F									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	43	180	242	9	24	134	1493	20	71	1590	71
Future Volume (vph)	43	180	242	9	24	134	1493	20	71	1590	71
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	46.8	46.8	46.8	46.8	46.8	14.0	63.2	63.2	10.0	59.2	59.2
Total Split (%)	39.0%	39.0%	39.0%	39.0%	39.0%	11.7%	52.7%	52.7%	8.3%	49.3%	49.3%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	18.7	18.7	18.7	18.7	18.7	10.6	58.2	58.2	6.6	54.2	54.2
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19	0.11	0.60	0.60	0.07	0.55	0.55
v/c Ratio	0.22	0.59	0.68	0.07	0.30	0.86	0.82	0.02	0.74	0.94	0.09
Control Delay	33.7	41.9	26.9	30.3	12.4	85.1	22.2	1.0	84.6	33.4	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.7	41.9	26.9	30.3	12.4	85.1	22.2	1.0	84.6	33.4	4.1
LOS	C	D	C	C	B	F	C	A	F	C	A
Approach Delay		33.3			13.9		27.1			34.3	
Approach LOS		C			B		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 30.6	Intersection LOS: C
Intersection Capacity Utilization 79.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	180	242	9	24	75	134	1493	20	71	1590	71
Future Volume (veh/h)	43	180	242	9	24	75	134	1493	20	71	1590	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	48	202	156	10	27	81	151	1678	21	80	1787	68
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	187	264	224	121	58	174	181	2156	962	99	1984	867
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.11	0.63	0.63	0.06	0.58	0.58
Sat Flow, veh/h	1233	1800	1525	982	396	1189	1619	3420	1525	1619	3420	1494
Grp Volume(v), veh/h	48	202	156	10	0	108	151	1678	21	80	1787	68
Grp Sat Flow(s),veh/h/ln	1233	1800	1525	982	0	1586	1619	1710	1525	1619	1710	1494
Q Serve(g_s), s	3.2	9.3	8.4	0.9	0.0	5.4	7.9	30.8	0.4	4.2	39.8	1.7
Cycle Q Clear(g_c), s	8.6	9.3	8.4	10.2	0.0	5.4	7.9	30.8	0.4	4.2	39.8	1.7
Prop In Lane	1.00		1.00	1.00		0.75	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	187	264	224	121	0	232	181	2156	962	99	1984	867
V/C Ratio(X)	0.26	0.77	0.70	0.08	0.00	0.46	0.84	0.78	0.02	0.80	0.90	0.08
Avail Cap(c_a), veh/h	604	873	739	453	0	769	196	2270	1012	121	2112	922
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.8	35.5	35.1	40.4	0.0	33.9	37.7	11.6	6.0	40.1	16.0	8.0
Incr Delay (d2), s/veh	0.5	3.5	2.9	0.2	0.0	1.1	23.6	1.7	0.0	24.8	5.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	4.2	3.1	0.2	0.0	2.0	4.1	8.6	0.1	2.2	12.9	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.3	39.0	38.1	40.7	0.0	34.9	61.3	13.3	6.0	65.0	21.5	8.0
LnGrp LOS	D	D	D	D	A	C	E	B	A	E	C	A
Approach Vol, veh/h		406			118			1850			1935	
Approach Delay, s/veh		38.6			35.4			17.2			22.9	
Approach LOS		D			D			B			C	

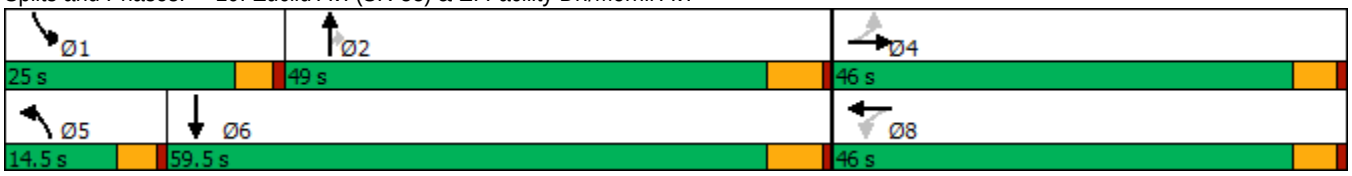
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.8	60.3		17.5	13.2	56.0		17.5				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	6.5	57.5		42.0	10.5	53.5		42.0				
Max Q Clear Time (g_c+I1), s	6.2	32.8		11.3	9.9	41.8		12.2				
Green Ext Time (p_c), s	0.0	13.1		1.4	0.0	8.5		0.5				

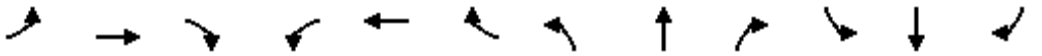
Intersection Summary												
HCM 6th Ctrl Delay			22.2									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	13	33	274	2	5	1433	283	316	1462
Future Volume (vph)	13	33	274	2	5	1433	283	316	1462
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	14.5	49.0	49.0	25.0	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	12.1%	40.8%	40.8%	20.8%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		41.0		41.0	10.0	43.0	43.0	20.5	65.1
Actuated g/C Ratio		0.34		0.34	0.08	0.36	0.36	0.17	0.54
v/c Ratio		0.12		1.19	0.04	1.29	0.51	1.26	0.87
Control Delay		22.5		138.7	51.4	168.5	23.3	184.8	30.6
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		22.5		138.7	51.4	168.5	23.3	184.8	30.6
LOS		C		F	D	F	C	F	C
Approach Delay		22.5		138.7		144.3			58.0
Approach LOS		C		F		F			E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.29	
Intersection Signal Delay: 104.4	Intersection LOS: F
Intersection Capacity Utilization 114.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	33	14	274	2	265	5	1433	283	316	1462	1
Future Volume (veh/h)	13	33	14	274	2	265	5	1433	283	316	1462	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	14	36	14	301	2	281	5	1575	246	347	1607	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	129	317	115	304	2	241	21	1226	547	277	1766	0
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.01	0.36	0.36	0.17	0.52	0.00
Sat Flow, veh/h	270	929	336	757	5	707	1619	3420	1525	1619	3510	0
Grp Volume(v), veh/h	64	0	0	584	0	0	5	1575	246	347	1607	0
Grp Sat Flow(s),veh/h/ln	1535	0	0	1468	0	0	1619	1710	1525	1619	1710	0
Q Serve(g_s), s	0.0	0.0	0.0	38.0	0.0	0.0	0.4	43.0	14.8	20.5	51.4	0.0
Cycle Q Clear(g_c), s	3.0	0.0	0.0	41.0	0.0	0.0	0.4	43.0	14.8	20.5	51.4	0.0
Prop In Lane	0.22		0.22	0.52		0.48	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	561	0	0	547	0	0	21	1226	547	277	1766	0
V/C Ratio(X)	0.11	0.00	0.00	1.07	0.00	0.00	0.24	1.29	0.45	1.25	0.91	0.00
Avail Cap(c_a), veh/h	561	0	0	547	0	0	135	1226	547	277	1766	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.0	0.0	0.0	40.9	0.0	0.0	58.7	38.5	29.5	49.7	26.5	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	57.7	0.0	0.0	2.2	134.6	0.6	140.7	7.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	24.6	0.0	0.0	0.2	39.5	5.2	18.7	20.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.0	0.0	0.0	98.6	0.0	0.0	60.9	173.1	30.0	190.4	33.9	0.0
LnGrp LOS	C	A	A	F	A	A	E	F	C	F	C	A
Approach Vol, veh/h		64			584			1826			1954	
Approach Delay, s/veh		27.0			98.6			153.6			61.7	
Approach LOS		C			F			F			E	

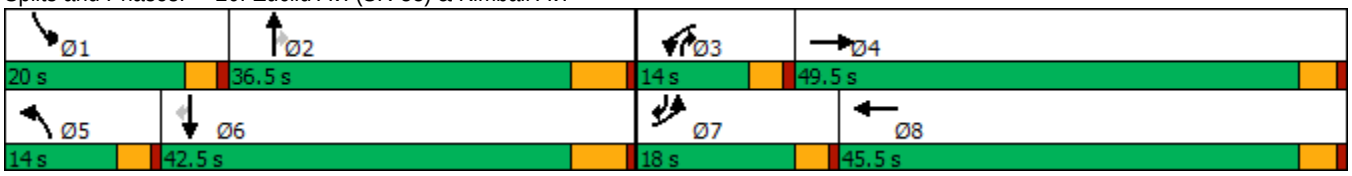
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.0	49.0		46.0	6.0	68.0		46.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	20.5	43.0		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	22.5	45.0		5.0	2.4	53.4		43.0				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	0.1		0.0				

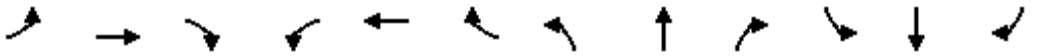
Intersection Summary			
HCM 6th Ctrl Delay		104.0	
HCM 6th LOS		F	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	399	886	96	395	88	1067	54	492	1011	265
Future Volume (vph)	399	886	96	395	88	1067	54	492	1011	265
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	18.0	49.5	14.0	45.5	14.0	36.5	14.0	20.0	42.5	18.0
Total Split (%)	15.0%	41.3%	11.7%	37.9%	11.7%	30.4%	11.7%	16.7%	35.4%	15.0%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	14.0	39.2	10.0	35.2	10.0	30.6	46.6	16.0	36.6	52.6
Actuated g/C Ratio	0.12	0.34	0.09	0.31	0.09	0.27	0.41	0.14	0.32	0.46
v/c Ratio	1.14	0.86	0.70	0.58	0.65	1.20	0.08	1.23	0.95	0.33
Control Delay	135.7	43.1	78.3	30.9	73.4	139.6	2.1	163.8	57.1	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	135.7	43.1	78.3	30.9	73.4	139.6	2.1	163.8	57.1	4.8
LOS	F	D	E	C	E	F	A	F	E	A
Approach Delay		70.1		37.5		128.6			78.9	
Approach LOS		E		D		F			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.23	
Intersection Signal Delay: 82.8	Intersection LOS: F
Intersection Capacity Utilization 100.5%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	399	886	83	96	395	194	88	1067	54	492	1011	265
Future Volume (veh/h)	399	886	83	96	395	194	88	1067	54	492	1011	265
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	411	913	83	99	407	162	91	1100	41	507	1042	175
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	371	1053	96	138	700	275	136	935	547	424	1137	698
Arrive On Green	0.13	0.33	0.33	0.09	0.29	0.29	0.08	0.27	0.27	0.14	0.33	0.33
Sat Flow, veh/h	2956	3170	288	1619	2397	943	1619	3420	1525	2956	3420	1524
Grp Volume(v), veh/h	411	493	503	99	289	280	91	1100	41	507	1042	175
Grp Sat Flow(s),veh/h/ln	1478	1710	1748	1619	1710	1630	1619	1710	1525	1478	1710	1524
Q Serve(g_s), s	14.0	30.2	30.2	6.6	16.1	16.4	6.1	30.5	2.0	16.0	32.6	7.8
Cycle Q Clear(g_c), s	14.0	30.2	30.2	6.6	16.1	16.4	6.1	30.5	2.0	16.0	32.6	7.8
Prop In Lane	1.00		0.16	1.00		0.58	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	371	568	580	138	499	476	136	935	547	424	1137	698
V/C Ratio(X)	1.11	0.87	0.87	0.72	0.58	0.59	0.67	1.18	0.07	1.20	0.92	0.25
Avail Cap(c_a), veh/h	371	690	705	145	628	599	145	935	547	424	1137	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.8	35.0	35.0	49.7	33.6	33.8	49.6	40.5	23.6	47.8	35.8	18.5
Incr Delay (d2), s/veh	79.3	9.8	9.6	12.4	0.4	0.4	7.9	90.8	0.1	109.2	11.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	13.4	13.7	3.1	6.4	6.3	2.6	23.7	0.7	12.0	14.3	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	128.1	44.8	44.6	62.1	34.0	34.2	57.5	131.4	23.6	157.0	47.3	18.7
LnGrp LOS	F	D	D	E	C	C	E	F	C	F	D	B
Approach Vol, veh/h		1407			668			1232			1724	
Approach Delay, s/veh		69.0			38.3			122.3			76.7	
Approach LOS		E			D			F			E	

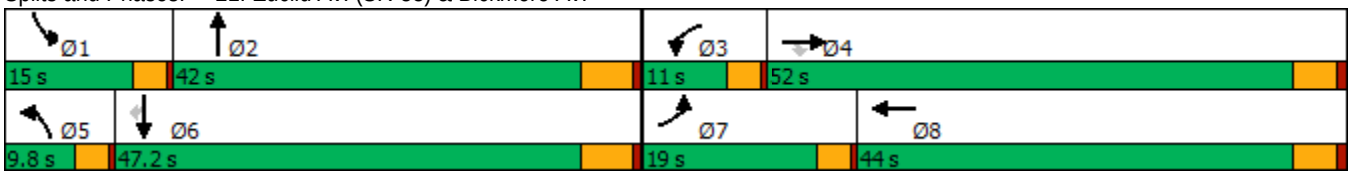
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	36.5	13.5	41.6	13.4	43.1	18.0	37.1
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	16.0	30.5	10.0	45.0	10.0	36.5	14.0	41.0
Max Q Clear Time (g_c+I1), s	18.0	32.5	8.6	32.2	8.1	34.6	16.0	18.4
Green Ext Time (p_c), s	0.0	0.0	0.0	4.8	0.0	1.2	0.0	1.9

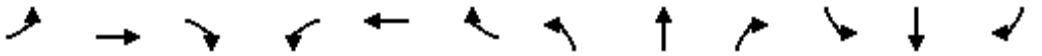
Intersection Summary	
HCM 6th Ctrl Delay	80.6
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	199	130	126	63	34	50	787	136	881	181
Future Volume (vph)	199	130	126	63	34	50	787	136	881	181
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	19.0	52.0	52.0	11.0	44.0	9.8	42.0	15.0	47.2	47.2
Total Split (%)	15.8%	43.3%	43.3%	9.2%	36.7%	8.2%	35.0%	12.5%	39.3%	39.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	16.0	22.1	22.1	7.2	11.1	6.2	30.5	11.9	38.2	38.2
Actuated g/C Ratio	0.18	0.25	0.25	0.08	0.13	0.07	0.35	0.14	0.44	0.44
v/c Ratio	0.73	0.31	0.28	0.52	0.46	0.48	0.83	0.68	0.64	0.25
Control Delay	53.0	29.6	6.1	57.9	17.2	58.7	34.3	56.4	24.2	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.0	29.6	6.1	57.9	17.2	58.7	34.3	56.4	24.2	4.8
LOS	D	C	A	E	B	E	C	E	C	A
Approach Delay		33.3			31.0		35.6		25.0	
Approach LOS		C			C		D		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 87.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 30.4	Intersection LOS: C
Intersection Capacity Utilization 70.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	130	126	63	34	87	50	787	114	136	881	181
Future Volume (veh/h)	199	130	126	63	34	87	50	787	114	136	881	181
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	216	141	122	68	37	67	54	855	101	148	958	165
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	260	368	312	91	58	105	80	1040	123	183	1373	613
Arrive On Green	0.16	0.20	0.20	0.06	0.10	0.10	0.05	0.34	0.34	0.11	0.40	0.40
Sat Flow, veh/h	1619	1800	1525	1619	574	1039	1619	3081	364	1619	3420	1525
Grp Volume(v), veh/h	216	141	122	68	0	104	54	475	481	148	958	165
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1613	1619	1710	1734	1619	1710	1525
Q Serve(g_s), s	7.8	4.1	4.2	2.5	0.0	3.8	2.0	15.4	15.4	5.4	14.1	4.4
Cycle Q Clear(g_c), s	7.8	4.1	4.2	2.5	0.0	3.8	2.0	15.4	15.4	5.4	14.1	4.4
Prop In Lane	1.00		1.00	1.00		0.64	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	260	368	312	91	0	162	80	578	586	183	1373	613
V/C Ratio(X)	0.83	0.38	0.39	0.75	0.00	0.64	0.68	0.82	0.82	0.81	0.70	0.27
Avail Cap(c_a), veh/h	413	1394	1181	200	0	1036	168	1028	1043	307	2350	1048
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	20.8	20.9	28.2	0.0	26.2	28.4	18.4	18.4	26.3	15.1	12.2
Incr Delay (d2), s/veh	4.0	0.2	0.3	4.5	0.0	1.6	3.7	1.1	1.1	3.2	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	1.6	1.4	1.0	0.0	1.4	0.8	4.9	5.0	1.9	4.1	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.7	21.1	21.2	32.7	0.0	27.8	32.1	19.6	19.5	29.5	15.3	12.3
LnGrp LOS	C	C	C	C	A	C	C	B	B	C	B	B
Approach Vol, veh/h		479			172			1010			1271	
Approach Delay, s/veh		24.5			29.8			20.2			16.6	
Approach LOS		C			C			C			B	

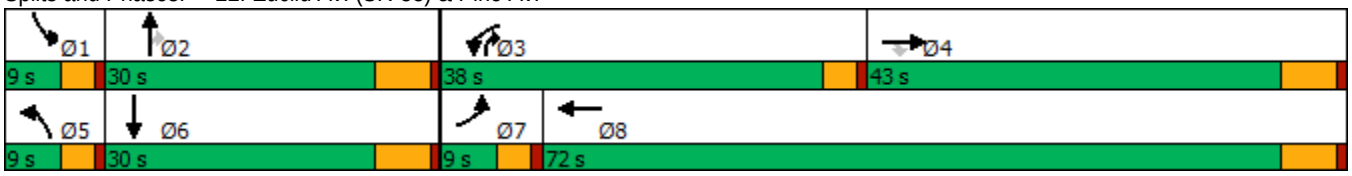
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	26.0	6.9	17.4	6.5	29.9	13.2	11.1
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	11.5	36.5	7.5	47.0	6.3	41.7	15.5	39.0
Max Q Clear Time (g_c+I1), s	7.4	17.4	4.5	6.2	4.0	16.1	9.8	5.8
Green Ext Time (p_c), s	0.1	3.1	0.0	0.6	0.0	4.1	0.1	0.3

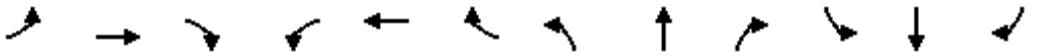
Intersection Summary	
HCM 6th Ctrl Delay	19.9
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	6	506	112	648	82	65	837	1301	162	931
Future Volume (vph)	6	506	112	648	82	65	837	1301	162	931
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	38.0	72.0	9.0	30.0	38.0	9.0	30.0
Total Split (%)	7.5%	35.8%	35.8%	31.7%	60.0%	7.5%	25.0%	31.7%	7.5%	25.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.0	36.0	36.0	34.0	72.2	5.0	24.0	64.0	5.0	24.0
Actuated g/C Ratio	0.04	0.30	0.30	0.29	0.61	0.04	0.20	0.54	0.04	0.20
v/c Ratio	0.09	0.95	0.20	0.79	0.16	0.97	1.24	1.52	2.43	1.39
Control Delay	58.3	68.9	4.1	47.1	6.9	160.8	159.6	265.4	714.8	219.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.3	68.9	4.1	47.1	6.9	160.8	159.6	265.4	714.8	219.4
LOS	E	E	A	D	A	F	F	F	F	F
Approach Delay		57.2			39.0		222.2			292.4
Approach LOS		E			D		F			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.43	
Intersection Signal Delay: 185.3	Intersection LOS: F
Intersection Capacity Utilization 134.8%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	506	112	648	82	81	65	837	1301	162	931	5
Future Volume (veh/h)	6	506	112	648	82	81	65	837	1301	162	931	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	6	516	0	661	84	81	66	854	911	165	950	5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	12	558		722	460	444	74	747	706	74	762	4
Arrive On Green	0.01	0.31	0.00	0.24	0.55	0.55	0.05	0.22	0.22	0.05	0.22	0.22
Sat Flow, veh/h	1619	1800	1525	2956	842	812	1619	3420	1525	1619	3488	18
Grp Volume(v), veh/h	6	516	0	661	0	165	66	854	911	165	466	489
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1654	1619	1710	1525	1619	1710	1797
Q Serve(g_s), s	0.4	30.5	0.0	23.9	0.0	5.5	4.5	24.0	24.0	5.0	24.0	24.0
Cycle Q Clear(g_c), s	0.4	30.5	0.0	23.9	0.0	5.5	4.5	24.0	24.0	5.0	24.0	24.0
Prop In Lane	1.00		1.00	1.00		0.49	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	12	558		722	0	904	74	747	706	74	373	392
V/C Ratio(X)	0.49	0.92		0.92	0.00	0.18	0.90	1.14	1.29	2.24	1.25	1.25
Avail Cap(c_a), veh/h	74	606		914	0	993	74	747	706	74	373	392
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.3	36.7	0.0	40.4	0.0	12.6	52.2	43.0	29.5	52.5	43.0	43.0
Incr Delay (d2), s/veh	10.6	19.9	0.0	10.4	0.0	0.1	68.9	80.1	141.4	599.2	131.8	130.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	15.7	0.0	9.2	0.0	1.9	3.1	17.8	44.3	14.2	23.2	24.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.9	56.6	0.0	50.8	0.0	12.7	121.1	123.1	171.0	651.7	174.7	173.9
LnGrp LOS	E	E		D	A	B	F	F	F	F	F	F
Approach Vol, veh/h		522	A		826			1831			1120	
Approach Delay, s/veh		56.7			43.2			146.8			244.6	
Approach LOS		E			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	30.0	30.8	40.1	9.0	30.0	4.8	66.1
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.0	24.0	34.0	37.0	5.0	24.0	5.0	66.0
Max Q Clear Time (g_c+I1), s	7.0	26.0	25.9	32.5	6.5	26.0	2.4	7.5
Green Ext Time (p_c), s	0.0	0.0	0.9	1.6	0.0	0.0	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	141.4
HCM 6th LOS	F

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	53.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	78	557	25	7	365	7	14	101	11	19	90	53
Future Vol, veh/h	78	557	25	7	365	7	14	101	11	19	90	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	82	586	26	7	384	7	15	106	12	20	95	56
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	90.4	21.1	13.3	13.8
HCM LOS	F	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	12%	2%	12%
Vol Thru, %	80%	84%	96%	56%
Vol Right, %	9%	4%	2%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	126	660	379	162
LT Vol	14	78	7	19
Through Vol	101	557	365	90
RT Vol	11	25	7	53
Lane Flow Rate	133	695	399	171
Geometry Grp	1	1	1	1
Degree of Util (X)	0.265	1.103	0.669	0.328
Departure Headway (Hd)	7.591	5.713	6.291	7.298
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	476	632	578	496
Service Time	5.591	3.789	4.291	5.298
HCM Lane V/C Ratio	0.279	1.1	0.69	0.345
HCM Control Delay	13.3	90.4	21.1	13.8
HCM Lane LOS	B	F	C	B
HCM 95th-tile Q	1.1	20.5	5	1.4

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	300	5	2	83	10	6	91	8	23	71	16
Future Vol, veh/h	20	300	5	2	83	10	6	91	8	23	71	16
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	23	345	6	2	95	11	7	105	9	26	82	18
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.1	8.9	9.4	9.4
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	6%	2%	21%
Vol Thru, %	87%	92%	87%	65%
Vol Right, %	8%	2%	11%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	105	325	95	110
LT Vol	6	20	2	23
Through Vol	91	300	83	71
RT Vol	8	5	10	16
Lane Flow Rate	121	374	109	126
Geometry Grp	1	1	1	1
Degree of Util (X)	0.174	0.484	0.149	0.181
Departure Headway (Hd)	5.185	4.669	4.926	5.166
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	686	766	721	688
Service Time	3.269	2.729	3.007	3.25
HCM Lane V/C Ratio	0.176	0.488	0.151	0.183
HCM Control Delay	9.4	12.1	8.9	9.4
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.6	2.7	0.5	0.7

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	103	742	479	40	68	81
Future Vol, veh/h	103	742	479	40	68	81
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	110	789	510	43	72	86

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	553	0	-	0	1541	532
Stage 1	-	-	-	-	532	-
Stage 2	-	-	-	-	1009	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1027	-	-	-	197	621
Stage 1	-	-	-	-	593	-
Stage 2	-	-	-	-	355	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1027	-	-	-	159	621
Mov Cap-2 Maneuver	-	-	-	-	159	-
Stage 1	-	-	-	-	480	-
Stage 2	-	-	-	-	355	-

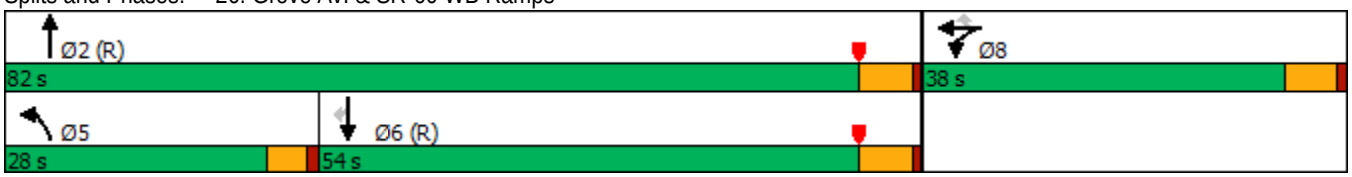
Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	36.4
HCM LOS			E

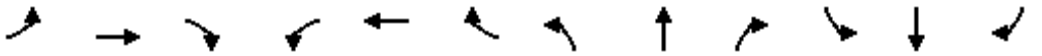
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1027	-	-	-	267
HCM Lane V/C Ratio	0.107	-	-	-	0.594
HCM Control Delay (s)	8.9	0	-	-	36.4
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0.4	-	-	-	3.5

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	377	228	967	1094	730
Future Volume (vph)	0	377	228	967	1094	730
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	38.0	38.0	28.0	82.0	54.0	54.0
Total Split (%)	31.7%	31.7%	23.3%	68.3%	45.0%	45.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	27.3	27.3	19.3	81.1	57.1	57.1
Actuated g/C Ratio	0.23	0.23	0.16	0.68	0.48	0.48
v/c Ratio	0.82	0.83	0.82	0.41	0.66	0.68
Control Delay	59.9	43.9	47.4	12.6	28.2	6.6
Queue Delay	3.6	0.0	0.0	0.6	0.1	0.0
Total Delay	63.5	43.9	47.4	13.2	28.3	6.6
LOS	E	D	D	B	C	A
Approach Delay	52.9			19.7	19.6	
Approach LOS	D			B	B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 25.9	Intersection LOS: C
Intersection Capacity Utilization 97.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	323	0	377	228	967	0	0	1094	730
Future Volume (veh/h)	0	0	0	323	0	377	228	967	0	0	1094	730
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				336	0	213	238	1007	0	0	1140	585
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				382	0	340	262	2499	0	0	1838	802
Arrive On Green				0.21	0.00	0.21	0.29	1.00	0.00	0.00	0.51	0.51
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1575
Grp Volume(v), veh/h				336	0	213	238	1007	0	0	1140	585
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1575
Q Serve(g_s), s				21.6	0.0	14.4	15.2	0.0	0.0	0.0	27.2	34.8
Cycle Q Clear(g_c), s				21.6	0.0	14.4	15.2	0.0	0.0	0.0	27.2	34.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				382	0	340	262	2499	0	0	1838	802
V/C Ratio(X)				0.88	0.00	0.63	0.91	0.40	0.00	0.00	0.62	0.73
Avail Cap(c_a), veh/h				486	0	432	353	2499	0	0	1838	802
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				45.9	0.0	43.0	41.9	0.0	0.0	0.0	21.1	23.0
Incr Delay (d2), s/veh				14.2	0.0	1.9	2.3	0.0	0.0	0.0	1.6	5.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				10.9	0.0	5.8	5.7	0.0	0.0	0.0	11.0	13.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				60.0	0.0	44.9	44.2	0.0	0.0	0.0	22.7	28.8
LnGrp LOS				E	A	D	D	A	A	A	C	C
Approach Vol, veh/h					549			1245			1725	
Approach Delay, s/veh					54.2			8.5			24.8	
Approach LOS					D			A			C	

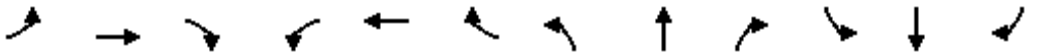
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		88.9			22.0	66.9		31.1				
Change Period (Y+Rc), s		5.8			4.6	5.8		5.8				
Max Green Setting (Gmax), s		76.2			23.4	48.2		32.2				
Max Q Clear Time (g_c+I1), s		2.0			17.2	36.8		23.6				
Green Ext Time (p_c), s		8.2			0.2	7.1		1.7				

Intersection Summary												
HCM 6th Ctrl Delay			23.6									
HCM 6th LOS			C									

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	370	729	480	937
Future Volume (vph)	0	370	729	480	937
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	38.0	38.0	44.0	38.0	82.0
Total Split (%)	31.7%	31.7%	36.7%	31.7%	68.3%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	32.2	32.2	38.2	33.4	76.2
Actuated g/C Ratio	0.27	0.27	0.32	0.28	0.64
v/c Ratio	1.04	0.75	1.02	1.03	0.44
Control Delay	93.5	36.2	71.1	98.1	8.6
Queue Delay	0.0	0.0	0.0	8.3	0.2
Total Delay	93.5	36.2	71.1	106.4	8.7
LOS	F	D	E	F	A
Approach Delay	68.1		71.1		41.8
Approach LOS	E		E		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 57.9	Intersection LOS: E
Intersection Capacity Utilization 97.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	466	0	370	0	0	0	0	729	347	480	937	0
Future Volume (veh/h)	466	0	370	0	0	0	0	729	347	480	937	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	501	0	311				0	784	290	516	1008	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	486	0	432				0	814	301	504	2292	0
Arrive On Green	0.27	0.00	0.27				0.00	0.32	0.32	0.56	1.00	0.00
Sat Flow, veh/h	1810	0	1610				0	2652	945	1810	3705	0
Grp Volume(v), veh/h	501	0	311				0	553	521	516	1008	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1698	1810	1805	0
Q Serve(g_s), s	32.2	0.0	21.0				0.0	36.1	36.2	33.4	0.0	0.0
Cycle Q Clear(g_c), s	32.2	0.0	21.0				0.0	36.1	36.2	33.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.56	1.00		0.00
Lane Grp Cap(c), veh/h	486	0	432				0	575	540	504	2292	0
V/C Ratio(X)	1.03	0.00	0.72				0.00	0.96	0.96	1.02	0.44	0.00
Avail Cap(c_a), veh/h	486	0	432				0	575	540	504	2292	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.72	0.72	0.70	0.70	0.00
Uniform Delay (d), s/veh	43.9	0.0	39.8				0.0	40.2	40.2	26.6	0.0	0.0
Incr Delay (d2), s/veh	49.3	0.0	5.7				0.0	24.0	25.1	39.9	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.5	0.0	8.7				0.0	19.1	18.2	14.3	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.2	0.0	45.5				0.0	64.2	65.3	66.5	0.4	0.0
LnGrp LOS	F	A	D				A	E	E	F	A	A
Approach Vol, veh/h		812						1074			1524	
Approach Delay, s/veh		74.9						64.7			22.8	
Approach LOS		E						E			C	

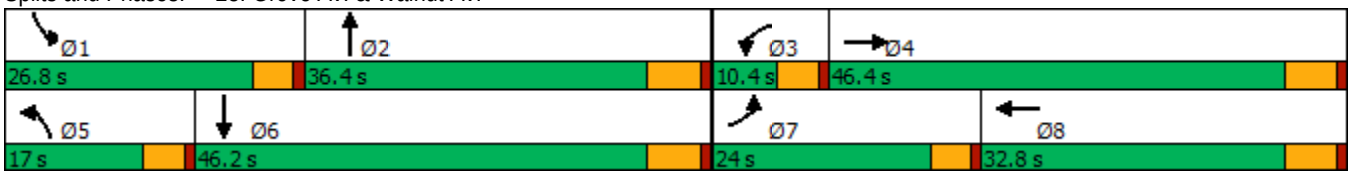
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	38.0	44.0		38.0		82.0						
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8						
Max Green Setting (Gmax), s	33.4	38.2		32.2		76.2						
Max Q Clear Time (g_c+I1), s	35.4	38.2		34.2		2.0						
Green Ext Time (p_c), s	0.0	0.0		0.0		8.3						

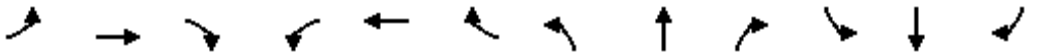
Intersection Summary												
HCM 6th Ctrl Delay			48.4									
HCM 6th LOS			D									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	167	325	20	176	92	653	192	772
Future Volume (vph)	167	325	20	176	92	653	192	772
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	24.0	46.4	10.4	32.8	17.0	36.4	26.8	46.2
Total Split (%)	20.0%	38.7%	8.7%	27.3%	14.2%	30.3%	22.3%	38.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	14.4	29.4	5.5	13.9	9.7	33.4	16.0	42.2
Actuated g/C Ratio	0.15	0.30	0.06	0.14	0.10	0.34	0.16	0.43
v/c Ratio	0.74	0.43	0.23	0.57	0.61	0.62	0.77	0.70
Control Delay	61.4	28.2	56.6	26.5	62.4	32.7	60.8	28.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.4	28.2	56.6	26.5	62.4	32.7	60.8	28.8
LOS	E	C	E	C	E	C	E	C
Approach Delay		37.8		28.3		36.2		34.1
Approach LOS		D		C		D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 98.9	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 34.8	Intersection LOS: C
Intersection Capacity Utilization 72.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	325	88	20	176	138	92	653	28	192	772	190
Future Volume (veh/h)	167	325	88	20	176	138	92	653	28	192	772	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	174	339	77	21	183	109	96	680	19	200	804	130
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	205	644	144	37	267	151	119	1269	35	233	1307	211
Arrive On Green	0.13	0.23	0.23	0.02	0.13	0.13	0.07	0.37	0.37	0.14	0.44	0.44
Sat Flow, veh/h	1619	2775	622	1619	2092	1180	1619	3398	95	1619	2948	477
Grp Volume(v), veh/h	174	207	209	21	148	144	96	342	357	200	466	468
Grp Sat Flow(s),veh/h/ln	1619	1710	1688	1619	1710	1562	1619	1710	1783	1619	1710	1714
Q Serve(g_s), s	9.6	9.6	9.9	1.2	7.5	8.1	5.3	14.3	14.3	11.0	19.0	19.0
Cycle Q Clear(g_c), s	9.6	9.6	9.9	1.2	7.5	8.1	5.3	14.3	14.3	11.0	19.0	19.0
Prop In Lane	1.00		0.37	1.00		0.76	1.00		0.05	1.00		0.28
Lane Grp Cap(c), veh/h	205	397	392	37	218	200	119	639	666	233	758	760
V/C Ratio(X)	0.85	0.52	0.53	0.57	0.68	0.72	0.81	0.54	0.54	0.86	0.62	0.62
Avail Cap(c_a), veh/h	345	762	752	103	507	463	220	639	666	394	758	760
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.9	30.6	30.7	44.1	37.9	38.2	41.6	22.4	22.4	38.1	19.4	19.4
Incr Delay (d2), s/veh	4.1	1.1	1.1	5.2	3.6	4.9	4.7	3.2	3.1	4.2	3.7	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	3.9	3.9	0.5	3.2	3.2	2.2	5.8	6.0	4.4	7.5	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.0	31.6	31.8	49.3	41.6	43.1	46.3	25.6	25.4	42.3	23.1	23.1
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		590			313			795			1134	
Approach Delay, s/veh		35.0			42.8			28.0			26.5	
Approach LOS		D			D			C			C	

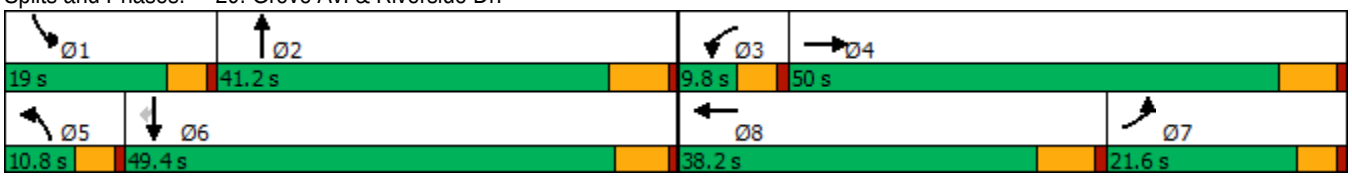
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.7	39.8	6.7	26.9	11.3	46.2	16.2	17.4
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	22.2	30.6	5.8	40.6	12.4	40.4	19.4	27.0
Max Q Clear Time (g_c+I1), s	13.0	16.3	3.2	11.9	7.3	21.0	11.6	10.1
Green Ext Time (p_c), s	0.2	3.3	0.0	2.3	0.0	5.4	0.1	1.4

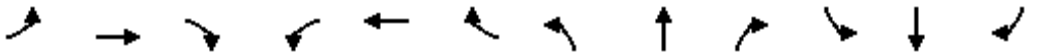
Intersection Summary	
HCM 6th Ctrl Delay	30.5
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	183	648	44	609	25	442	172	391	192
Future Volume (vph)	183	648	44	609	25	442	172	391	192
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	21.6	50.0	9.8	38.2	10.8	41.2	19.0	49.4	49.4
Total Split (%)	18.0%	41.7%	8.2%	31.8%	9.0%	34.3%	15.8%	41.2%	41.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	17.1	43.8	5.2	29.8	5.8	35.0	14.2	47.9	47.9
Actuated g/C Ratio	0.15	0.37	0.04	0.25	0.05	0.30	0.12	0.41	0.41
v/c Ratio	0.82	1.04	0.66	0.88	0.33	1.03	0.92	0.56	0.27
Control Delay	76.1	84.1	96.9	54.4	66.5	88.5	99.5	32.3	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.1	84.1	96.9	54.4	66.5	88.5	99.5	32.3	4.5
LOS	E	F	F	D	E	F	F	C	A
Approach Delay		82.4		56.9		87.5		40.5	
Approach LOS		F		E		F		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.8	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 65.8	Intersection LOS: E
Intersection Capacity Utilization 100.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	648	21	44	609	118	25	442	82	172	391	192
Future Volume (veh/h)	183	648	21	44	609	118	25	442	82	172	391	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	191	675	21	46	634	77	26	460	68	179	407	143
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	253	639	20	57	718	87	39	451	67	196	704	596
Arrive On Green	0.16	0.37	0.37	0.04	0.23	0.23	0.02	0.29	0.29	0.12	0.39	0.39
Sat Flow, veh/h	1619	1735	54	1619	3070	372	1619	1533	227	1619	1800	1525
Grp Volume(v), veh/h	191	0	696	46	353	358	26	0	528	179	407	143
Grp Sat Flow(s),veh/h/ln	1619	0	1789	1619	1710	1732	1619	0	1759	1619	1800	1525
Q Serve(g_s), s	13.4	0.0	43.8	3.4	23.7	23.8	1.9	0.0	35.0	13.0	21.2	4.3
Cycle Q Clear(g_c), s	13.4	0.0	43.8	3.4	23.7	23.8	1.9	0.0	35.0	13.0	21.2	4.3
Prop In Lane	1.00		0.03	1.00		0.21	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	253	0	658	57	400	405	39	0	517	196	704	596
V/C Ratio(X)	0.76	0.00	1.06	0.81	0.88	0.88	0.66	0.00	1.02	0.91	0.58	0.24
Avail Cap(c_a), veh/h	253	0	658	71	460	466	84	0	517	196	704	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.0	0.0	37.6	57.0	44.0	44.0	57.6	0.0	42.0	51.7	28.5	8.0
Incr Delay (d2), s/veh	11.0	0.0	51.1	34.0	16.4	16.5	6.9	0.0	44.8	40.2	3.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	27.2	1.9	11.4	11.6	0.8	0.0	20.8	7.3	9.4	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.1	0.0	88.7	91.0	60.4	60.6	64.5	0.0	86.8	91.8	32.0	8.9
LnGrp LOS	E	A	F	F	E	E	E	A	F	F	C	A
Approach Vol, veh/h		887			757			554			729	
Approach Delay, s/veh		82.3			62.3			85.7			42.1	
Approach LOS		F			E			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	41.2	8.8	50.0	7.5	52.7	24.8	34.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	14.4	35.0	5.2	43.8	6.2	* 44	17.0	* 32
Max Q Clear Time (g_c+I1), s	15.0	37.0	5.4	45.8	3.9	23.2	15.4	25.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.6	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	67.8
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	47.8
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	84	202	29	10	44	43	40	456	21	40	387	24
Future Vol, veh/h	84	202	29	10	44	43	40	456	21	40	387	24
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	88	210	30	10	46	45	42	475	22	42	403	25
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	25.8	14.1	69	46
HCM LOS	D	B	F	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	27%	10%	9%
Vol Thru, %	88%	64%	45%	86%
Vol Right, %	4%	9%	44%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	517	315	97	451
LT Vol	40	84	10	40
Through Vol	456	202	44	387
RT Vol	21	29	43	24
Lane Flow Rate	539	328	101	470
Geometry Grp	1	1	1	1
Degree of Util (X)	1.014	0.688	0.236	0.904
Departure Headway (Hd)	6.78	7.551	8.523	6.924
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	533	476	424	521
Service Time	4.848	5.626	6.523	4.996
HCM Lane V/C Ratio	1.011	0.689	0.238	0.902
HCM Control Delay	69	25.8	14.1	46
HCM Lane LOS	F	D	B	E
HCM 95th-tile Q	14.6	5.2	0.9	10.5

Intersection	
Intersection Delay, s/veh	37.1
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	110	159	97	2	51	41	21	386	34	59	288	60
Future Vol, veh/h	110	159	97	2	51	41	21	386	34	59	288	60
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	118	171	104	2	55	44	23	415	37	63	310	65
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	31.8	13.9	46.1	37.4
HCM LOS	D	B	E	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	30%	2%	14%
Vol Thru, %	88%	43%	54%	71%
Vol Right, %	8%	27%	44%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	441	366	94	407
LT Vol	21	110	2	59
Through Vol	386	159	51	288
RT Vol	34	97	41	60
Lane Flow Rate	474	394	101	438
Geometry Grp	1	1	1	1
Degree of Util (X)	0.906	0.784	0.235	0.844
Departure Headway (Hd)	6.882	7.172	8.359	6.946
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	526	504	433	521
Service Time	4.96	5.247	6.359	5.026
HCM Lane V/C Ratio	0.901	0.782	0.233	0.841
HCM Control Delay	46.1	31.8	13.9	37.4
HCM Lane LOS	E	D	B	E
HCM 95th-tile Q	10.6	7.1	0.9	8.7

Intersection	
Intersection Delay, s/veh	264
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	49	494	26	84	306	57	58	337	192	146	228	25
Future Vol, veh/h	49	494	26	84	306	57	58	337	192	146	228	25
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	53	531	28	90	329	61	62	362	206	157	245	27
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	329.5	189.4	338.2	145.2
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	9%	19%	37%
Vol Thru, %	57%	87%	68%	57%
Vol Right, %	33%	5%	13%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	587	569	447	399
LT Vol	58	49	84	146
Through Vol	337	494	306	228
RT Vol	192	26	57	25
Lane Flow Rate	631	612	481	429
Geometry Grp	1	1	1	1
Degree of Util (X)	1.652	1.629	1.276	1.148
Departure Headway (Hd)	12.663	13.002	14.336	14.947
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	297	288	260	249
Service Time	10.663	11.002	12.336	12.947
HCM Lane V/C Ratio	2.125	2.125	1.85	1.723
HCM Control Delay	338.2	329.5	189.4	145.2
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	29.2	27.8	16.1	12.7

Intersection	
Int Delay, s/veh	1576

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	166	95	78	6	20	42	16	422	5	24	256	54
Future Vol, veh/h	166	95	78	6	20	42	16	422	5	24	256	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	25	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	184	106	87	7	22	47	18	1688	6	27	284	60

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2130	2098	314	2192	2125	1691	344	0	0	1694	0	0
Stage 1	368	368	-	1727	1727	-	-	-	-	-	-	-
Stage 2	1762	1730	-	465	398	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 37	~ 53	731	33	51	117	1226	-	-	382	-	-
Stage 1	656	625	-	114	145	-	-	-	-	-	-	-
Stage 2	~ 109	144	-	581	606	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 9	~ 36	731	-	35	117	1226	-	-	382	-	-
Mov Cap-2 Maneuver	~ 9	~ 36	-	-	35	-	-	-	-	-	-	-
Stage 1	491	570	-	85	109	-	-	-	-	-	-	-
Stage 2	~ 39	108	-	381	553	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 10603.5		0.1	1.1
HCM LOS	F	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1226	-	-	16	-	382	-	-
HCM Lane V/C Ratio	0.015	-	-	23.542	-	0.07	-	-
HCM Control Delay (s)	8	0	-	$ 10603.5	-	15.1	0	-
HCM Lane LOS	A	A	-	F	-	C	A	-
HCM 95th %tile Q(veh)	0	-	-	48	-	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	155.8
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	203	616	407	240	232	107
Future Vol, veh/h	203	616	407	240	232	107
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	211	642	424	250	242	111
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	250.6	104.1	25.6
HCM LOS	F	F	D

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	0%	68%
Vol Thru, %	75%	63%	0%
Vol Right, %	0%	37%	32%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	819	647	339
LT Vol	203	0	232
Through Vol	616	407	0
RT Vol	0	240	107
Lane Flow Rate	853	674	353
Geometry Grp	1	1	1
Degree of Util (X)	1.495	1.13	0.675
Departure Headway (Hd)	6.548	6.677	7.817
Convergence, Y/N	Yes	Yes	Yes
Cap	563	546	466
Service Time	4.548	4.677	5.817
HCM Lane V/C Ratio	1.515	1.234	0.758
HCM Control Delay	250.6	104.1	25.6
HCM Lane LOS	F	F	D
HCM 95th-tile Q	41.5	20.1	4.9

Intersection	
Int Delay, s/veh	15.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	23	793	1	17	417	34	3	22	56	73	15	11
Future Vol, veh/h	23	793	1	17	417	34	3	22	56	73	15	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	24	835	1	18	439	36	3	23	59	77	16	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	475	0	0	836	0	0	1391	1395	836	1418	1377	457
Stage 1	-	-	-	-	-	-	884	884	-	493	493	-
Stage 2	-	-	-	-	-	-	507	511	-	925	884	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1098	-	-	807	-	-	121	143	370	116	146	608
Stage 1	-	-	-	-	-	-	343	366	-	562	550	-
Stage 2	-	-	-	-	-	-	552	540	-	325	366	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1098	-	-	807	-	-	102	133	370	80	136	608
Mov Cap-2 Maneuver	-	-	-	-	-	-	102	133	-	80	136	-
Stage 1	-	-	-	-	-	-	329	351	-	539	534	-
Stage 2	-	-	-	-	-	-	510	524	-	245	351	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	28.9	203.2
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	234	1098	-	-	807	-	-	95
HCM Lane V/C Ratio	0.364	0.022	-	-	0.022	-	-	1.097
HCM Control Delay (s)	28.9	8.4	0	-	9.6	0	-	203.2
HCM Lane LOS	D	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	1.6	0.1	-	-	0.1	-	-	6.9

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	82	0	0	64	35	0	0	0	24	0	3
Future Vol, veh/h	45	82	0	0	64	35	0	0	0	24	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16965	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	49	89	0	0	70	38	0	0	0	26	0	3

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	108	0	-	-	-	0			276	276	89
Stage 1	-	-	-	-	-	-			89	89	-
Stage 2	-	-	-	-	-	-			187	187	-
Critical Hdwy	4.1	-	-	-	-	-			6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-			5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.4	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-			3.5	4	3.3
Pot Cap-1 Maneuver	1495	-	0	0	-	-			718	635	975
Stage 1	-	-	0	0	-	-			940	825	-
Stage 2	-	-	0	0	-	-			850	749	-
Platoon blocked, %		-			-	-					
Mov Cap-1 Maneuver	1495	-	-	-	-	-			694	0	975
Mov Cap-2 Maneuver	-	-	-	-	-	-			694	0	-
Stage 1	-	-	-	-	-	-			908	0	-
Stage 2	-	-	-	-	-	-			850	0	-

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1495	-	-	-	717
HCM Lane V/C Ratio	0.033	-	-	-	0.041
HCM Control Delay (s)	7.5	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	9.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑			✣				
Traffic Vol, veh/h	0	723	127	97	527	0	104	0	142	0	0	0
Future Vol, veh/h	0	723	127	97	527	0	104	0	142	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	25	91	91	91	91	91	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	795	140	107	579	0	114	0	156	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	935	0	0	1588	1588	795
Stage 1	-	-	-	-	-	-	795	795	-
Stage 2	-	-	-	-	-	-	793	793	-
Critical Hdwy	-	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	741	-	0	120	109	391
Stage 1	0	-	-	-	-	0	448	402	-
Stage 2	0	-	-	-	-	0	449	403	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	741	-	-	~ 103	0	391
Mov Cap-2 Maneuver	-	-	-	-	-	-	235	0	-
Stage 1	-	-	-	-	-	-	448	0	-
Stage 2	-	-	-	-	-	-	384	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	64.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	305	-	-	741	-
HCM Lane V/C Ratio	0.886	-	-	0.144	-
HCM Control Delay (s)	64.5	-	-	10.7	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	8.1	-	-	0.5	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	844	21	11	580	0	45	0	20	0	0	0
Future Vol, veh/h	0	844	21	11	580	0	45	0	20	0	0	0
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	959	24	13	659	0	51	0	23	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	984	0	0	1657	1657	493
Stage 1	-	-	-	-	-	-	972	972	-
Stage 2	-	-	-	-	-	-	685	685	-
Critical Hdwy	-	-	-	4.1	-	-	6.6	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	710	-	0	99	99	527
Stage 1	0	-	-	-	-	0	332	333	-
Stage 2	0	-	-	-	-	0	504	451	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	709	-	-	97	0	526
Mov Cap-2 Maneuver	-	-	-	-	-	-	223	0	-
Stage 1	-	-	-	-	-	-	332	0	-
Stage 2	-	-	-	-	-	-	495	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	23.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	271	-	-	709	-
HCM Lane V/C Ratio	0.273	-	-	0.018	-
HCM Control Delay (s)	23.2	-	-	10.2	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	1.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	863	1	62	530	0	60	0	74	0	0	0
Future Vol, veh/h	0	863	1	62	530	0	60	0	74	0	0	0
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	200	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	959	1	69	589	0	67	0	82	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	961	0	0	1688	-	481
Stage 1	-	-	-	-	-	-	961	-	-
Stage 2	-	-	-	-	-	-	727	-	-
Critical Hdwy	-	-	-	4.1	-	-	6.6	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	-	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	-	3.3
Pot Cap-1 Maneuver	0	-	-	724	-	0	95	0	537
Stage 1	0	-	-	-	-	0	337	0	-
Stage 2	0	-	-	-	-	0	482	0	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	723	-	-	86	0	536
Mov Cap-2 Maneuver	-	-	-	-	-	-	212	0	-
Stage 1	-	-	-	-	-	-	337	0	-
Stage 2	-	-	-	-	-	-	436	0	-

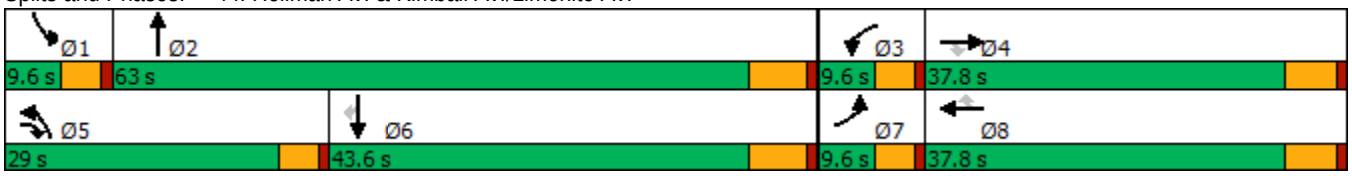
Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	20.4
HCM LOS			C

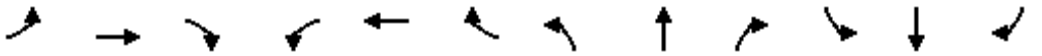
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	212	536	-	-	723	-
HCM Lane V/C Ratio	0.314	0.153	-	-	0.095	-
HCM Control Delay (s)	29.6	12.9	-	-	10.5	-
HCM Lane LOS	D	B	-	-	B	-
HCM 95th %tile Q(veh)	1.3	0.5	-	-	0.3	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	28	4	860	7	10	297	77	68	134	
Future Volume (vph)	28	4	860	7	10	297	77	68	134	
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	NA	Perm	
Protected Phases	7	4	5	3	8	5	2	6		1
Permitted Phases			4						6	
Detector Phase	7	4	5	3	8	5	2	6	6	
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	10.0	5.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	9.6	43.2	43.2	43.2	9.6
Total Split (s)	9.6	37.8	29.0	9.6	37.8	29.0	63.0	43.6	43.6	9.6
Total Split (%)	8.0%	31.5%	24.2%	8.0%	31.5%	24.2%	52.5%	36.3%	36.3%	8%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	5.2	5.2	5.2	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	4.6	6.2	6.2	6.2	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	None	None	Max	Max	Min	Min	None
Act Effct Green (s)	5.3	15.3	35.7	5.3	13.6	26.1	66.6	30.9	30.9	
Actuated g/C Ratio	0.07	0.19	0.45	0.07	0.17	0.33	0.84	0.39	0.39	
v/c Ratio	0.27	0.01	0.79	0.04	0.02	0.59	0.03	0.05	0.20	
Control Delay	50.6	29.5	8.1	46.4	31.7	33.4	6.3	21.0	5.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	50.6	29.5	8.1	46.4	31.7	33.4	6.3	21.0	5.0	
LOS	D	C	A	D	C	C	A	C	A	
Approach Delay		9.5			37.4		27.7	10.4		
Approach LOS		A			D		C	B		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 79.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 14.5	Intersection LOS: B
Intersection Capacity Utilization 81.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	4	860	7	10	0	297	77	2	0	68	134
Future Volume (veh/h)	28	4	860	7	10	0	297	77	2	0	68	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	29	4	905	7	11	0	313	81	2	0	72	141
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	44	542	809	26	967	431	372	1822	45	2	894	399
Arrive On Green	0.03	0.30	0.30	0.01	0.28	0.00	0.23	0.53	0.53	0.00	0.26	0.26
Sat Flow, veh/h	1619	1800	1525	2956	3420	1525	1619	3411	84	1619	3420	1525
Grp Volume(v), veh/h	29	4	905	7	11	0	313	40	43	0	72	141
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	1710	1525	1619	1710	1785	1619	1710	1525
Q Serve(g_s), s	1.9	0.2	32.0	0.3	0.2	0.0	19.6	1.2	1.2	0.0	1.7	8.0
Cycle Q Clear(g_c), s	1.9	0.2	32.0	0.3	0.2	0.0	19.6	1.2	1.2	0.0	1.7	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	44	542	809	26	967	431	372	913	953	2	894	399
V/C Ratio(X)	0.66	0.01	1.12	0.27	0.01	0.00	0.84	0.04	0.04	0.00	0.08	0.35
Avail Cap(c_a), veh/h	76	542	809	139	1029	459	372	913	953	76	1203	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	51.2	26.0	25.0	52.4	27.4	0.0	39.1	11.8	11.8	0.0	29.6	32.0
Incr Delay (d2), s/veh	6.2	0.0	69.5	2.0	0.0	0.0	20.2	0.1	0.1	0.0	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.1	33.4	0.1	0.1	0.0	9.4	0.4	0.5	0.0	0.7	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.5	26.0	94.4	54.4	27.5	0.0	59.3	11.9	11.9	0.0	29.7	32.5
LnGrp LOS	E	C	F	D	C	A	E	B	B	A	C	C
Approach Vol, veh/h		938			18			396			213	
Approach Delay, s/veh		93.0			37.9			49.4			31.5	
Approach LOS		F			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	63.0	5.5	37.8	29.0	34.0	7.5	35.9
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	5.0	56.8	5.0	32.0	24.4	37.4	5.0	32.0
Max Q Clear Time (g_c+I1), s	0.0	3.2	2.3	34.0	21.6	10.0	3.9	2.2
Green Ext Time (p_c), s	0.0	0.4	0.0	0.0	0.1	0.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	73.0
HCM 6th LOS	E

Intersection	
Intersection Delay, s/veh	267.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	908	25	46	544	8	46	5	155	60	6	2
Future Vol, veh/h	5	908	25	46	544	8	46	5	155	60	6	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	6	1009	28	51	604	9	51	6	172	67	7	2
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

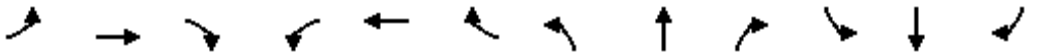
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	413.4	153	20.1	16.3
HCM LOS	F	F	C	C

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	22%	100%	0%	0%	100%	0%	88%
Vol Thru, %	2%	0%	100%	0%	0%	99%	9%
Vol Right, %	75%	0%	0%	100%	0%	1%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	206	5	908	25	46	552	68
LT Vol	46	5	0	0	46	0	60
Through Vol	5	0	908	0	0	544	6
RT Vol	155	0	0	25	0	8	2
Lane Flow Rate	229	6	1009	28	51	613	76
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.479	0.011	1.894	0.047	0.113	1.266	0.189
Departure Headway (Hd)	9.2	7.654	7.139	6.419	9.457	8.927	11.04
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	394	470	515	561	381	411	327
Service Time	6.9	5.354	4.839	4.119	7.157	6.627	8.74
HCM Lane V/C Ratio	0.581	0.013	1.959	0.05	0.134	1.491	0.232
HCM Control Delay	20.1	10.4	426.7	9.4	13.4	164.6	16.3
HCM Lane LOS	C	B	F	A	B	F	C
HCM 95th-tile Q	2.5	0	62.1	0.1	0.4	22.1	0.7

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	6	290	463	559	1206
Future Volume (vph)	6	290	463	559	1206
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (%)	32.2%	32.2%	31.1%	67.8%	36.7%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	23.0	23.0	24.0	55.2	27.2
Actuated g/C Ratio	0.26	0.26	0.27	0.61	0.30
v/c Ratio	1.05	0.47	1.00	0.18	0.91
Control Delay	91.4	6.1	83.0	20.8	36.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	91.4	6.1	83.0	20.8	36.1
LOS	F	A	F	C	D
Approach Delay	58.8			49.0	36.1
Approach LOS	E			D	D

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 44.8	Intersection LOS: D
Intersection Capacity Utilization 90.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	462	6	290	463	559	0	0	1206	499
Future Volume (veh/h)	0	0	0	462	6	290	463	559	0	0	1206	499
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				481	6	157	482	582	0	0	1256	385
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				457	6	411	537	3395	0	0	1459	445
Arrive On Green				0.26	0.26	0.26	0.59	1.00	0.00	0.00	0.29	0.29
Sat Flow, veh/h				1788	22	1610	1810	5358	0	0	5238	1518
Grp Volume(v), veh/h				487	0	157	482	582	0	0	1238	403
Grp Sat Flow(s),veh/h/ln				1811	0	1610	1810	1729	0	0	1634	1588
Q Serve(g_s), s				23.0	0.0	7.2	20.9	0.0	0.0	0.0	21.5	21.6
Cycle Q Clear(g_c), s				23.0	0.0	7.2	20.9	0.0	0.0	0.0	21.5	21.6
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.96
Lane Grp Cap(c), veh/h				463	0	411	537	3395	0	0	1439	466
V/C Ratio(X)				1.05	0.00	0.38	0.90	0.17	0.00	0.00	0.86	0.86
Avail Cap(c_a), veh/h				463	0	411	537	3395	0	0	1481	480
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.52	0.52	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.5	0.0	27.6	17.1	0.0	0.0	0.0	30.1	30.1
Incr Delay (d2), s/veh				56.3	0.0	1.2	10.2	0.1	0.0	0.0	7.0	18.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				16.6	0.0	7.0	6.1	0.0	0.0	0.0	8.7	10.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				89.8	0.0	28.9	27.3	0.1	0.0	0.0	37.0	48.9
LnGrp LOS				F	A	C	C	A	A	A	D	D
Approach Vol, veh/h					644			1064			1641	
Approach Delay, s/veh					75.0			12.4			39.9	
Approach LOS					E			B			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	64.7	29.0	32.5	32.2
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	55.2	23.0	24.0	* 27
Max Q Clear Time (g_c+I1), s	2.0	25.0	22.9	23.6
Green Ext Time (p_c), s	4.0	0.0	0.1	2.8

Intersection Summary	
HCM 6th Ctrl Delay	37.9
HCM 6th LOS	D

Notes

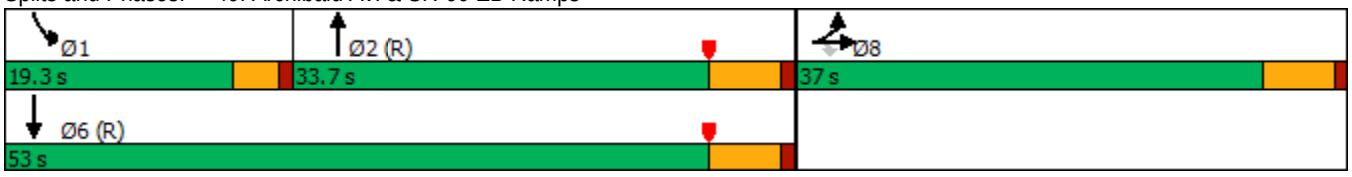
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

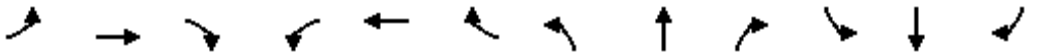
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	625	905	424	1244
Future Volume (vph)	0	625	905	424	1244
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	10.8	10.8	25.8	9.0	25.8
Total Split (s)	37.0	37.0	33.7	19.3	53.0
Total Split (%)	41.1%	41.1%	37.4%	21.4%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	31.2	31.2	27.9	15.3	47.2
Actuated g/C Ratio	0.35	0.35	0.31	0.17	0.52
v/c Ratio	0.19	1.06	1.04dr	1.44	0.48
Control Delay	21.7	81.1	28.2	231.0	22.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	81.1	28.2	231.0	22.0
LOS	C	F	C	F	C
Approach Delay	71.8		28.2		75.2
Approach LOS	E		C		E

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.44	
Intersection Signal Delay: 56.2	Intersection LOS: E
Intersection Capacity Utilization 90.6%	ICU Level of Service E
Analysis Period (min) 15	

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	0	625	0	0	0	0	905	642	424	1244	0
Future Volume (veh/h)	116	0	625	0	0	0	0	905	642	424	1244	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	121	0	401				0	943	494	442	1296	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	500	0	445				0	1863	610	308	3084	0
Arrive On Green	0.28	0.00	0.28				0.00	0.38	0.38	0.06	0.20	0.00
Sat Flow, veh/h	1810	0	1610				0	5168	1606	1810	5358	0
Grp Volume(v), veh/h	121	0	401				0	943	494	442	1296	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1606	1810	1729	0
Q Serve(g_s), s	4.7	0.0	21.6				0.0	13.3	24.8	15.3	19.7	0.0
Cycle Q Clear(g_c), s	4.7	0.0	21.6				0.0	13.3	24.8	15.3	19.7	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	500	0	445				0	1863	610	308	3084	0
V/C Ratio(X)	0.24	0.00	0.90				0.00	0.51	0.81	1.44	0.42	0.00
Avail Cap(c_a), veh/h	627	0	558				0	1863	610	308	3084	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.45	0.45	0.30	0.30	0.00
Uniform Delay (d), s/veh	25.2	0.0	31.4				0.0	21.4	25.0	42.5	22.6	0.0
Incr Delay (d2), s/veh	0.2	0.0	15.3				0.0	0.4	5.3	202.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	9.6				0.0	4.6	9.3	24.6	8.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.5	0.0	46.6				0.0	21.9	30.3	244.7	22.7	0.0
LnGrp LOS	C	A	D				A	C	C	F	C	A
Approach Vol, veh/h		522						1437			1738	
Approach Delay, s/veh		41.7						24.7			79.2	
Approach LOS		D						C			E	

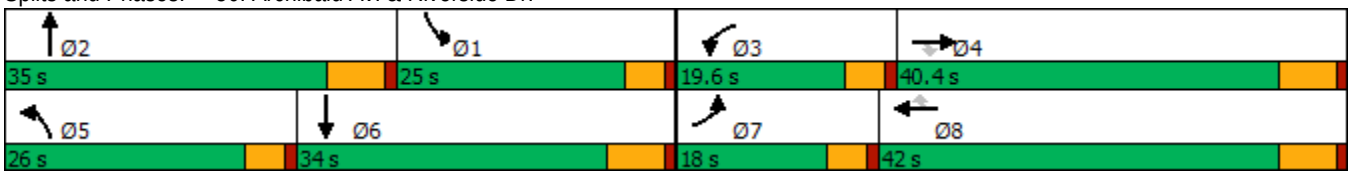
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	19.3	40.0				59.3		30.7				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	15.3	27.9				47.2		31.2				
Max Q Clear Time (g_c+I1), s	17.3	26.8				21.7		23.6				
Green Ext Time (p_c), s	0.0	0.9				9.3		1.3				

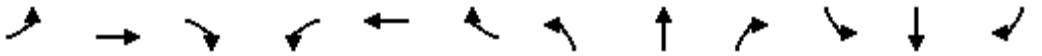
Intersection Summary			
HCM 6th Ctrl Delay			52.7
HCM 6th LOS			D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	246	686	383	165	489	128	315	761	313	1013
Future Volume (vph)	246	686	383	165	489	128	315	761	313	1013
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	18.0	40.4	40.4	19.6	42.0	42.0	26.0	35.0	25.0	34.0
Total Split (%)	15.0%	33.7%	33.7%	16.3%	35.0%	35.0%	21.7%	29.2%	20.8%	28.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	13.4	30.8	30.8	14.4	31.7	31.7	21.5	26.1	23.2	27.9
Actuated g/C Ratio	0.12	0.27	0.27	0.12	0.27	0.27	0.19	0.22	0.20	0.24
v/c Ratio	1.41	0.81	0.59	0.88	0.56	0.25	1.12	0.80	1.03	1.16
Control Delay	249.9	47.6	7.0	90.7	38.4	3.4	133.9	48.2	106.2	120.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	249.9	47.6	7.0	90.7	38.4	3.4	133.9	48.2	106.2	120.1
LOS	F	D	A	F	D	A	F	D	F	F
Approach Delay		73.7			43.8			71.9		117.4
Approach LOS		E			D			E		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.1	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.41	
Intersection Signal Delay: 82.8	Intersection LOS: F
Intersection Capacity Utilization 96.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 50: Archibald Av. & Riverside Dr.





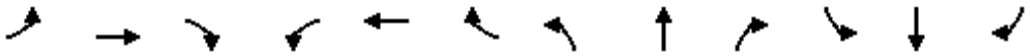
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	246	686	383	165	489	128	315	761	64	313	1013	269
Future Volume (veh/h)	246	686	383	165	489	128	315	761	64	313	1013	269
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	262	730	250	176	520	77	335	810	59	333	1078	222
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	190	873	381	201	896	398	304	995	72	330	993	204
Arrive On Green	0.12	0.26	0.26	0.12	0.26	0.26	0.19	0.21	0.21	0.20	0.24	0.24
Sat Flow, veh/h	1619	3420	1491	1619	3420	1520	1619	4669	339	1619	4076	839
Grp Volume(v), veh/h	262	730	250	176	520	77	335	567	302	333	866	434
Grp Sat Flow(s),veh/h/ln	1619	1710	1491	1619	1710	1520	1619	1638	1732	1619	1638	1639
Q Serve(g_s), s	13.4	23.1	17.1	12.2	15.1	2.6	21.4	18.8	18.9	23.3	27.8	27.8
Cycle Q Clear(g_c), s	13.4	23.1	17.1	12.2	15.1	2.6	21.4	18.8	18.9	23.3	27.8	27.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		0.51
Lane Grp Cap(c), veh/h	190	873	381	201	896	398	304	698	369	330	798	399
V/C Ratio(X)	1.38	0.84	0.66	0.88	0.58	0.19	1.10	0.81	0.82	1.01	1.09	1.09
Avail Cap(c_a), veh/h	190	1025	447	213	1073	477	304	827	437	330	798	399
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.3	40.2	38.0	49.1	36.6	10.9	46.3	42.7	42.8	45.4	43.1	43.1
Incr Delay (d2), s/veh	199.4	5.4	2.7	28.6	0.6	0.2	82.2	5.3	10.0	51.5	57.4	70.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.7	9.8	6.2	6.3	6.1	1.6	15.1	7.8	8.8	13.6	17.0	18.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	249.8	45.6	40.7	77.7	37.2	11.1	128.5	48.0	52.8	96.9	100.6	113.3
LnGrp LOS	F	D	D	E	D	B	F	D	D	F	F	F
Approach Vol, veh/h		1242			773			1204			1633	
Approach Delay, s/veh		87.7			43.8			71.6			103.2	
Approach LOS		F			D			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.5	30.5	18.8	35.3	26.0	34.0	18.0	36.1
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	20.4	* 29	15.0	34.2	21.4	27.8	13.4	35.8
Max Q Clear Time (g_c+I1), s	25.3	20.9	14.2	25.1	23.4	29.8	15.4	17.1
Green Ext Time (p_c), s	0.0	3.1	0.0	3.6	0.0	0.0	0.0	3.1

Intersection Summary	
HCM 6th Ctrl Delay	81.9
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	1	6	24	0	122	21	937	45	157	1245	14
Future Volume (veh/h)	23	1	6	24	0	122	21	937	45	157	1245	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	26	1	5	27	0	52	23	1041	41	174	1383	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	50	19	96	52	135	114	45	1580	62	220	1503	16
Arrive On Green	0.03	0.07	0.07	0.03	0.00	0.07	0.03	0.33	0.33	0.14	0.43	0.43
Sat Flow, veh/h	1619	261	1304	1619	1800	1525	1619	4850	191	1619	3466	38
Grp Volume(v), veh/h	26	0	6	27	0	52	23	703	379	174	682	716
Grp Sat Flow(s),veh/h/ln	1619	0	1565	1619	1800	1525	1619	1638	1765	1619	1710	1793
Q Serve(g_s), s	0.7	0.0	0.2	0.7	0.0	0.9	0.6	7.8	7.9	4.4	16.0	16.0
Cycle Q Clear(g_c), s	0.7	0.0	0.2	0.7	0.0	0.9	0.6	7.8	7.9	4.4	16.0	16.0
Prop In Lane	1.00		0.83	1.00		1.00	1.00		0.11	1.00		0.02
Lane Grp Cap(c), veh/h	50	0	116	52	135	114	45	1067	575	220	742	778
V/C Ratio(X)	0.52	0.00	0.05	0.52	0.00	0.45	0.51	0.66	0.66	0.79	0.92	0.92
Avail Cap(c_a), veh/h	190	0	662	190	761	645	190	1431	771	220	747	784
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.3	0.0	18.3	20.3	0.0	7.2	20.4	12.3	12.3	17.8	11.4	11.4
Incr Delay (d2), s/veh	8.0	0.0	0.2	7.8	0.0	2.8	8.5	0.7	1.3	17.5	16.5	16.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.1	0.3	0.0	0.5	0.3	1.9	2.1	2.3	6.7	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.3	0.0	18.5	28.1	0.0	10.0	28.9	13.0	13.6	35.3	27.8	27.4
LnGrp LOS	C	A	B	C	A	B	C	B	B	D	C	C
Approach Vol, veh/h		32			79			1105			1572	
Approach Delay, s/veh		26.4			16.2			13.6			28.5	
Approach LOS		C			B			B			C	

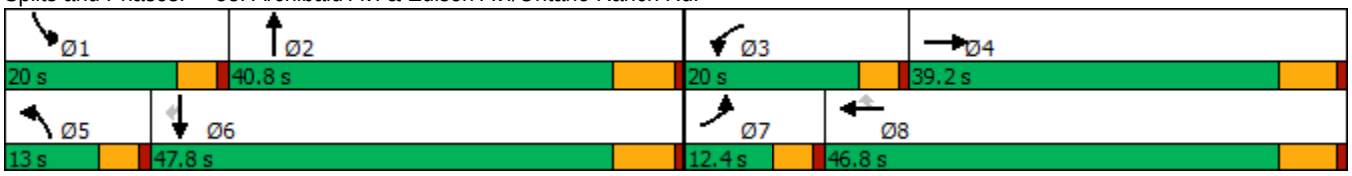
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	18.5	6.0	7.7	5.8	23.1	5.9	7.8
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	5.0	18.6	5.0	18.0	5.0	18.6	5.0	18.0
Max Q Clear Time (g_c+I1), s	6.4	9.9	2.7	2.2	2.6	18.0	2.7	2.9
Green Ext Time (p_c), s	0.0	4.0	0.0	0.0	0.0	0.4	0.0	0.1

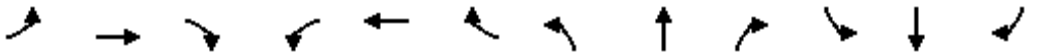
Intersection Summary	
HCM 6th Ctrl Delay	22.2
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	643	138	355	240	81	78	718	409	150	935	82
Future Volume (vph)	106	643	138	355	240	81	78	718	409	150	935	82
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	12.4	39.2		20.0	46.8	46.8	13.0	40.8		20.0	47.8	47.8
Total Split (%)	10.3%	32.7%		16.7%	39.0%	39.0%	10.8%	34.0%		16.7%	39.8%	39.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	7.3	26.4	106.9	15.6	34.8	34.8	7.9	29.1	106.9	13.4	37.4	37.4
Actuated g/C Ratio	0.07	0.25	1.00	0.15	0.33	0.33	0.07	0.27	1.00	0.13	0.35	0.35
v/c Ratio	0.55	0.79	0.09	0.85	0.42	0.14	0.67	0.79	0.28	0.76	0.81	0.14
Control Delay	62.3	45.6	0.1	66.0	32.1	0.5	78.9	43.8	0.5	71.8	39.0	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.3	45.6	0.1	66.0	32.1	0.5	78.9	43.8	0.5	71.8	39.0	0.5
LOS	E	D	A	E	C	A	E	D	A	E	D	A
Approach Delay		40.5			46.1			31.3			40.5	
Approach LOS		D			D			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 106.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 38.7	Intersection LOS: D
Intersection Capacity Utilization 81.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	643	138	355	240	81	78	718	409	150	935	82
Future Volume (veh/h)	106	643	138	355	240	81	78	718	409	150	935	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	109	663	0	366	247	50	80	740	0	155	964	63
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	160	810		422	586	497	99	972		183	1149	501
Arrive On Green	0.05	0.24	0.00	0.14	0.33	0.33	0.06	0.28	0.00	0.11	0.34	0.34
Sat Flow, veh/h	2956	3420	1525	2956	1800	1525	1619	3420	1525	1619	3420	1491
Grp Volume(v), veh/h	109	663	0	366	247	50	80	740	0	155	964	63
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1800	1525	1619	1710	1525	1619	1710	1491
Q Serve(g_s), s	3.6	18.0	0.0	11.9	10.5	2.2	4.8	19.4	0.0	9.2	25.6	2.9
Cycle Q Clear(g_c), s	3.6	18.0	0.0	11.9	10.5	2.2	4.8	19.4	0.0	9.2	25.6	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	160	810		422	586	497	99	972		183	1149	501
V/C Ratio(X)	0.68	0.82		0.87	0.42	0.10	0.80	0.76		0.85	0.84	0.13
Avail Cap(c_a), veh/h	235	1149		463	744	630	138	1194		254	1438	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	35.5	0.0	41.2	25.9	23.1	45.5	32.1	0.0	42.7	30.2	22.6
Incr Delay (d2), s/veh	1.9	3.2	0.0	13.9	0.5	0.1	14.3	2.3	0.0	12.9	3.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	7.4	0.0	4.9	4.3	0.8	2.2	7.6	0.0	4.1	10.1	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.6	38.7	0.0	55.0	26.4	23.2	59.8	34.4	0.0	55.6	33.9	22.7
LnGrp LOS	D	D		E	C	C	E	C		E	C	C
Approach Vol, veh/h		772	A		663			820	A		1182	
Approach Delay, s/veh		40.0			42.0			36.9			36.1	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	34.4	18.6	29.5	10.6	39.5	9.9	38.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	15.4	34.3	15.4	33.0	8.4	41.3	7.8	40.6
Max Q Clear Time (g_c+I1), s	11.2	21.4	13.9	20.0	6.8	27.6	5.6	12.5
Green Ext Time (p_c), s	0.1	3.5	0.1	3.2	0.0	5.1	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	38.3
HCM 6th LOS	D

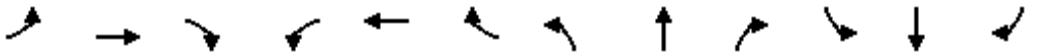
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	11	1193	1	10	1417
Future Volume (vph)	2	11	1193	1	10	1417
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.5	9.5	32.5	32.5	9.6	16.5
Total Split (s)	10.0	10.0	40.0	40.0	10.0	50.0
Total Split (%)	14.3%	14.3%	57.1%	57.1%	14.3%	71.4%
Yellow Time (s)	3.5	3.5	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	6.5	6.5	4.6	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max
Act Effct Green (s)	5.6	5.6	56.7	56.7	5.2	58.5
Actuated g/C Ratio	0.09	0.09	0.90	0.90	0.08	0.92
v/c Ratio	0.01	0.03	0.41	0.00	0.08	0.48
Control Delay	26.5	0.1	4.9	6.0	28.3	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	0.1	4.9	6.0	28.3	3.2
LOS	C	A	A	A	C	A
Approach Delay			4.9			3.4
Approach LOS			A			A

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 63.3	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.48	
Intersection Signal Delay: 4.1	Intersection LOS: A
Intersection Capacity Utilization 53.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	2	0	11	0	1193	1	10	1417	0
Future Volume (veh/h)	0	0	0	2	0	11	0	1193	1	10	1417	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1700	0	1800	0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h				2	0	3	0	1269	1	11	1507	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				21	0	18	0	2377	1059	23	2711	0
Arrive On Green				0.01	0.00	0.01	0.00	0.69	0.69	0.01	0.79	0.00
Sat Flow, veh/h				3141	0	2685	0	3510	1524	1619	3510	0
Grp Volume(v), veh/h				2	0	3	0	1269	1	11	1507	0
Grp Sat Flow(s),veh/h/ln				1570	0	1342	0	1710	1524	1619	1710	0
Q Serve(g_s), s				0.0	0.0	0.1	0.0	9.9	0.0	0.4	9.0	0.0
Cycle Q Clear(g_c), s				0.0	0.0	0.1	0.0	9.9	0.0	0.4	9.0	0.0
Prop In Lane				1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				21	0	18	0	2377	1059	23	2711	0
V/C Ratio(X)				0.10	0.00	0.17	0.00	0.53	0.00	0.48	0.56	0.00
Avail Cap(c_a), veh/h				315	0	269	0	2377	1059	159	2711	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				27.1	0.0	27.1	0.0	4.1	2.6	26.8	2.1	0.0
Incr Delay (d2), s/veh				1.9	0.0	4.3	0.0	0.9	0.0	5.8	0.8	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.0	0.0	0.0	0.0	0.9	0.0	0.2	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				29.0	0.0	31.4	0.0	4.9	2.6	32.6	2.9	0.0
LnGrp LOS				C	A	C	A	A	A	C	A	A
Approach Vol, veh/h					5			1270			1518	
Approach Delay, s/veh					30.4			4.9			3.1	
Approach LOS					C			A			A	

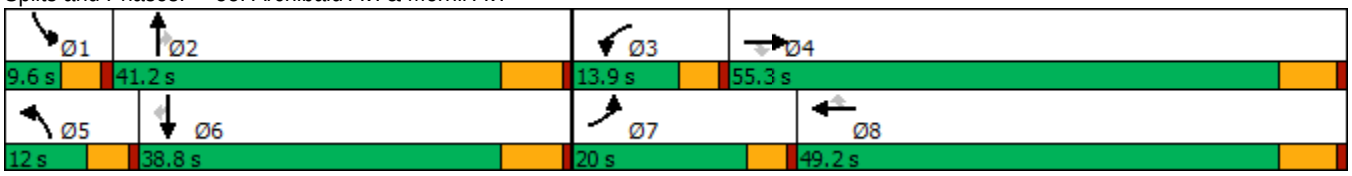
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	5.4	44.6				50.0		4.9				
Change Period (Y+Rc), s	4.6	6.5				6.5		4.5				
Max Green Setting (Gmax), s	5.4	33.5				43.5		5.5				
Max Q Clear Time (g_c+I1), s	2.4	11.9				11.0		2.1				
Green Ext Time (p_c), s	0.0	8.5				12.7		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		4.0
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	415	81	580	51	27	61	185	718	44	80	1098	242
Future Volume (vph)	415	81	580	51	27	61	185	718	44	80	1098	242
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	20.0	55.3	55.3	13.9	49.2	49.2	12.0	41.2	41.2	9.6	38.8	38.8
Total Split (%)	16.7%	46.1%	46.1%	11.6%	41.0%	41.0%	10.0%	34.3%	34.3%	8.0%	32.3%	32.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	17.0	35.2	35.2	7.5	27.5	27.5	7.6	38.4	38.4	5.2	33.3	33.3
Actuated g/C Ratio	0.16	0.34	0.34	0.07	0.27	0.27	0.07	0.37	0.37	0.05	0.32	0.32
v/c Ratio	1.62	0.14	0.91	0.45	0.06	0.12	1.62	0.58	0.07	0.56	1.03	0.42
Control Delay	327.4	23.6	39.9	63.5	26.7	0.5	344.7	33.1	0.2	68.5	72.3	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	327.4	23.6	39.9	63.5	26.7	0.5	344.7	33.1	0.2	68.5	72.3	15.5
LOS	F	C	D	E	C	A	F	C	A	E	E	B
Approach Delay		149.5			28.8			92.6			62.4	
Approach LOS		F			C			F			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.62	
Intersection Signal Delay: 95.2	Intersection LOS: F
Intersection Capacity Utilization 90.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	415	81	580	51	27	61	185	718	44	80	1098	242
Future Volume (veh/h)	415	81	580	51	27	61	185	718	44	80	1098	242
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	428	84	413	53	28	24	191	740	31	82	1132	191
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	267	540	458	65	316	268	128	1292	569	139	1182	527
Arrive On Green	0.16	0.30	0.30	0.04	0.18	0.18	0.08	0.38	0.38	0.05	0.35	0.35
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	1619	3420	1506	2956	3420	1525
Grp Volume(v), veh/h	428	84	413	53	28	24	191	740	31	82	1132	191
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1710	1506	1478	1710	1525
Q Serve(g_s), s	15.4	3.2	24.3	3.0	1.2	1.2	7.4	16.0	1.2	2.5	30.2	8.7
Cycle Q Clear(g_c), s	15.4	3.2	24.3	3.0	1.2	1.2	7.4	16.0	1.2	2.5	30.2	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	267	540	458	65	316	268	128	1292	569	139	1182	527
V/C Ratio(X)	1.60	0.16	0.90	0.81	0.09	0.09	1.49	0.57	0.05	0.59	0.96	0.36
Avail Cap(c_a), veh/h	267	946	802	161	829	702	128	1292	569	158	1183	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	24.0	31.4	44.5	32.2	32.2	43.0	23.1	18.5	43.6	29.9	22.9
Incr Delay (d2), s/veh	288.3	0.1	7.4	8.6	0.1	0.1	256.6	0.6	0.0	2.1	17.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	27.1	1.3	9.5	1.4	0.5	0.5	11.9	5.8	0.4	0.9	13.8	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	327.3	24.1	38.8	53.1	32.3	32.4	299.6	23.7	18.5	45.7	46.9	23.3
LnGrp LOS	F	C	D	D	C	C	F	C	B	D	D	C
Approach Vol, veh/h		925			105			962			1405	
Approach Delay, s/veh		170.9			42.8			78.3			43.6	
Approach LOS		F			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	41.8	8.4	34.2	12.0	38.8	20.0	22.6
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	34.7	9.3	49.1	7.4	32.3	15.4	43.0
Max Q Clear Time (g_c+I1), s	4.5	18.0	5.0	26.3	9.4	32.2	17.4	3.2
Green Ext Time (p_c), s	0.0	4.1	0.0	1.8	0.0	0.0	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	88.1
HCM 6th LOS	F

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	480	302	626	467	708	1026
Future Volume (vph)	480	302	626	467	708	1026
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	37.0	46.7	36.3	37.0	83.7
Total Split (%)	30.3%	30.8%	38.9%	30.3%	30.8%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min
Act Effct Green (s)	31.0	68.3	41.4	72.4	32.0	78.7
Actuated g/C Ratio	0.26	0.57	0.34	0.60	0.27	0.66
v/c Ratio	1.05	0.32	0.98	0.49	1.50	0.84
Control Delay	99.2	10.2	69.0	12.0	269.0	23.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	99.2	10.2	69.0	12.0	269.0	23.8
LOS	F	B	E	B	F	C
Approach Delay	64.8		44.7			123.9
Approach LOS	E		D			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.50	
Intersection Signal Delay: 87.1	Intersection LOS: F
Intersection Capacity Utilization 111.8%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	480	302	626	467	708	1026
Future Volume (veh/h)	480	302	626	467	708	1026
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	490	258	639	456	722	1047
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	467	845	655	960	483	1241
Arrive On Green	0.26	0.26	0.34	0.34	0.27	0.65
Sat Flow, veh/h	1810	1610	1900	1576	1810	1900
Grp Volume(v), veh/h	490	258	639	456	722	1047
Grp Sat Flow(s),veh/h/ln	1810	1610	1900	1576	1810	1900
Q Serve(g_s), s	31.0	10.9	39.8	19.4	32.0	51.1
Cycle Q Clear(g_c), s	31.0	10.9	39.8	19.4	32.0	51.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	467	845	655	960	483	1241
V/C Ratio(X)	1.05	0.31	0.97	0.48	1.50	0.84
Avail Cap(c_a), veh/h	467	845	656	960	483	1246
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	16.1	38.8	13.3	44.0	16.1
Incr Delay (d2), s/veh	54.8	0.1	28.9	0.4	234.0	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.3	3.7	22.6	11.7	44.8	19.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	99.3	16.2	67.6	13.7	278.0	21.2
LnGrp LOS	F	B	E	B	F	C
Approach Vol, veh/h	748		1095			1769
Approach Delay, s/veh	70.7		45.2			126.0
Approach LOS	E		D			F

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	37.0	46.7			83.7	36.3
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	32.0	41.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	34.0	41.8			53.1	33.0
Green Ext Time (p_c), s	0.0	0.0			4.7	0.0

Intersection Summary	
HCM 6th Ctrl Delay	90.1
HCM 6th LOS	F

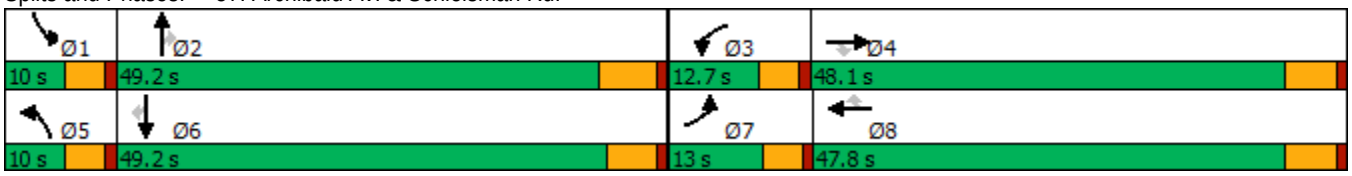
Notes

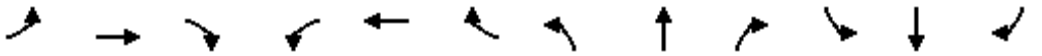
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	518	1161	227	123	379	67	234	693	125	190	762	451
Future Volume (vph)	518	1161	227	123	379	67	234	693	125	190	762	451
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	48.1	48.1	12.7	47.8	47.8	10.0	49.2	49.2	10.0	49.2	49.2
Total Split (%)	10.8%	40.1%	40.1%	10.6%	39.8%	39.8%	8.3%	41.0%	41.0%	8.3%	41.0%	41.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	8.5	43.3	43.3	7.4	42.3	42.3	5.4	25.3	25.3	5.4	26.1	26.1
Actuated g/C Ratio	0.08	0.42	0.42	0.07	0.41	0.41	0.05	0.25	0.25	0.05	0.25	0.25
v/c Ratio	1.84	0.54	0.30	0.50	0.18	0.09	1.29	0.55	0.26	1.05	0.59	0.69
Control Delay	419.7	24.7	8.6	54.9	20.8	1.2	206.3	34.9	6.3	128.6	35.0	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	419.7	24.7	8.6	54.9	20.8	1.2	206.3	34.9	6.3	128.6	35.0	13.8
LOS	F	C	A	D	C	A	F	C	A	F	D	B
Approach Delay		130.2			25.9			69.7			40.9	
Approach LOS		F			C			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.84	
Intersection Signal Delay: 79.8	Intersection LOS: E
Intersection Capacity Utilization 90.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	518	1161	227	123	379	67	234	693	125	190	762	451
Future Volume (veh/h)	518	1161	227	123	379	67	234	693	125	190	762	451
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	529	1185	150	126	387	42	239	707	91	194	778	346
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	276	2174	675	186	2041	633	178	1446	449	178	1446	447
Arrive On Green	0.08	0.42	0.42	0.05	0.39	0.39	0.05	0.28	0.28	0.05	0.28	0.28
Sat Flow, veh/h	3510	5187	1610	3510	5187	1608	3510	5187	1610	3510	5187	1605
Grp Volume(v), veh/h	529	1185	150	126	387	42	239	707	91	194	778	346
Grp Sat Flow(s),veh/h/ln	1755	1729	1610	1755	1729	1608	1755	1729	1610	1755	1729	1605
Q Serve(g_s), s	8.4	18.4	6.4	3.8	5.2	1.7	5.4	12.2	4.6	5.4	13.6	21.2
Cycle Q Clear(g_c), s	8.4	18.4	6.4	3.8	5.2	1.7	5.4	12.2	4.6	5.4	13.6	21.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	276	2174	675	186	2041	633	178	1446	449	178	1446	447
V/C Ratio(X)	1.92	0.55	0.22	0.68	0.19	0.07	1.35	0.49	0.20	1.09	0.54	0.77
Avail Cap(c_a), veh/h	276	2174	675	266	2041	633	178	2089	649	178	2128	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	23.3	19.9	49.6	21.2	20.2	50.7	32.2	29.4	50.7	32.7	35.4
Incr Delay (d2), s/veh	425.0	1.0	0.8	1.6	0.2	0.2	188.3	0.3	0.2	94.4	0.3	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.9	7.2	2.4	1.6	2.0	0.7	6.9	4.8	1.7	4.6	5.4	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	474.2	24.3	20.6	51.2	21.4	20.4	238.9	32.4	29.7	145.1	33.0	38.8
LnGrp LOS	F	C	C	D	C	C	F	C	C	F	C	D
Approach Vol, veh/h		1864			555			1037			1318	
Approach Delay, s/veh		151.7			28.1			79.8			51.0	
Approach LOS		F			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	36.0	10.3	50.5	10.0	36.0	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.4	43.0	8.1	42.3	5.4	* 44	8.4	42.0
Max Q Clear Time (g_c+I1), s	7.4	14.2	5.8	20.4	7.4	23.2	10.4	7.2
Green Ext Time (p_c), s	0.0	4.9	0.0	8.7	0.0	6.0	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	93.9
HCM 6th LOS	F

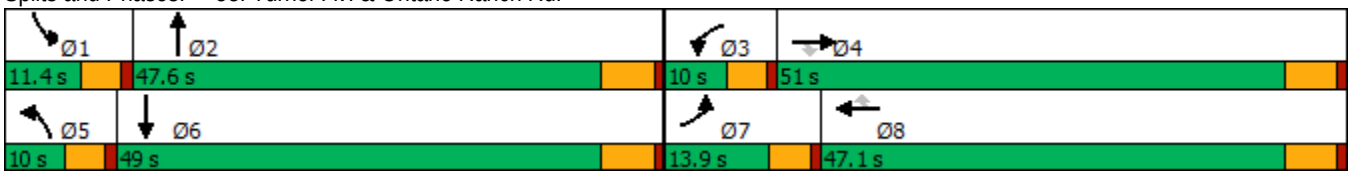
Notes

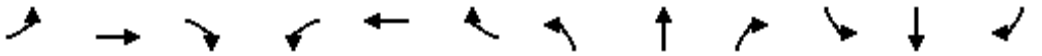
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	49	1274	44	35	700	14	29	8	30	8
Future Volume (vph)	49	1274	44	35	700	14	29	8	30	8
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	13.9	51.0	51.0	10.0	47.1	47.1	10.0	47.6	11.4	49.0
Total Split (%)	11.6%	42.5%	42.5%	8.3%	39.3%	39.3%	8.3%	39.7%	9.5%	40.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	7.9	58.5	58.5	6.2	57.0	57.0	6.2	16.8	6.8	17.5
Actuated g/C Ratio	0.09	0.69	0.69	0.07	0.68	0.68	0.07	0.20	0.08	0.21
v/c Ratio	0.36	0.59	0.04	0.32	0.33	0.01	0.27	0.16	0.25	0.10
Control Delay	49.3	17.9	0.1	52.6	15.1	0.0	51.4	12.0	49.3	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	17.9	0.1	52.6	15.1	0.0	51.4	12.0	49.3	14.5
LOS	D	B	A	D	B	A	D	B	D	B
Approach Delay		18.5			16.6			26.2		31.4
Approach LOS		B			B			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 84.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 18.5	Intersection LOS: B
Intersection Capacity Utilization 62.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	1274	44	35	700	14	29	8	44	30	8	24
Future Volume (veh/h)	49	1274	44	35	700	14	29	8	44	30	8	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	54	1400	36	38	769	12	32	9	29	33	9	12
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	82	1967	877	69	1940	865	63	55	176	64	103	138
Arrive On Green	0.05	0.58	0.58	0.04	0.57	0.57	0.04	0.15	0.12	0.04	0.15	0.13
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	372	1199	1619	699	933
Grp Volume(v), veh/h	54	1400	36	38	769	12	32	0	38	33	0	21
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	0	1571	1619	0	1632
Q Serve(g_s), s	2.7	24.1	0.8	1.9	10.3	0.3	1.6	0.0	1.8	1.6	0.0	0.9
Cycle Q Clear(g_c), s	2.7	24.1	0.8	1.9	10.3	0.3	1.6	0.0	1.8	1.6	0.0	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.76	1.00		0.57
Lane Grp Cap(c), veh/h	82	1967	877	69	1940	865	63	0	231	64	0	241
V/C Ratio(X)	0.66	0.71	0.04	0.55	0.40	0.01	0.51	0.00	0.16	0.51	0.00	0.09
Avail Cap(c_a), veh/h	196	1967	877	119	1940	865	119	0	838	147	0	899
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.1	12.5	7.6	38.4	9.9	7.7	38.5	0.0	31.1	38.5	0.0	30.5
Incr Delay (d2), s/veh	3.3	2.2	0.1	2.5	0.6	0.0	2.3	0.0	0.3	2.4	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	7.8	0.2	0.8	3.3	0.1	0.6	0.0	0.6	0.7	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	14.7	7.6	40.9	10.5	7.7	40.8	0.0	31.4	40.8	0.0	30.7
LnGrp LOS	D	B	A	D	B	A	D	A	C	D	A	C
Approach Vol, veh/h		1490			819			70			54	
Approach Delay, s/veh		15.5			11.9			35.7			36.9	
Approach LOS		B			B			D			D	

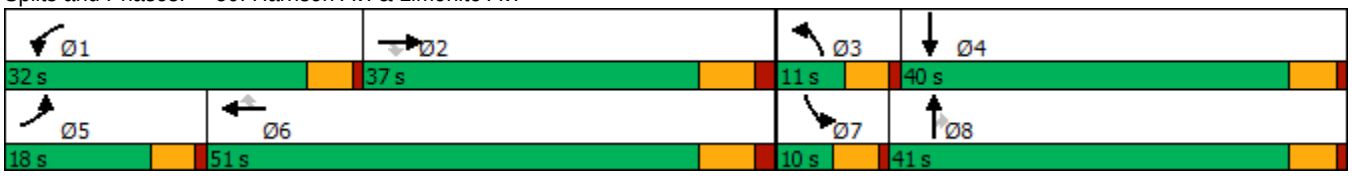
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	16.0	7.5	51.0	7.2	16.1	8.1	50.4
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	6.8	41.8	5.4	45.2	5.4	43.2	9.3	41.3
Max Q Clear Time (g_c+I1), s	3.6	3.8	3.9	26.1	3.6	2.9	4.7	12.3
Green Ext Time (p_c), s	0.0	0.2	0.0	9.7	0.0	0.1	0.0	5.3

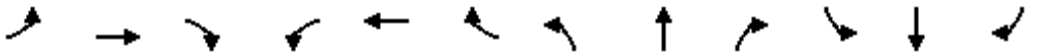
Intersection Summary	
HCM 6th Ctrl Delay	15.3
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	87	1026	61	232	707	6	40	49	173	18	51
Future Volume (vph)	87	1026	61	232	707	6	40	49	173	18	51
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	18.0	37.0	37.0	32.0	51.0	51.0	11.0	41.0	41.0	10.0	40.0
Total Split (%)	15.0%	30.8%	30.8%	26.7%	42.5%	42.5%	9.2%	34.2%	34.2%	8.3%	33.3%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	8.4	24.0	24.0	15.2	34.1	34.1	6.0	14.1	14.1	5.6	11.6
Actuated g/C Ratio	0.11	0.32	0.32	0.20	0.45	0.45	0.08	0.19	0.19	0.07	0.15
v/c Ratio	0.44	0.64	0.10	0.66	0.31	0.01	0.28	0.14	0.40	0.14	0.30
Control Delay	45.8	26.9	0.3	40.9	17.0	0.0	48.1	29.7	8.2	47.7	25.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.8	26.9	0.3	40.9	17.0	0.0	48.1	29.7	8.2	47.7	25.4
LOS	D	C	A	D	B	A	D	C	A	D	C
Approach Delay		26.9			22.8			18.3			29.2
Approach LOS		C			C			B			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 75.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 24.5	Intersection LOS: C
Intersection Capacity Utilization 56.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 59: Harrison Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	1026	61	232	707	6	40	49	173	18	51	35
Future Volume (veh/h)	87	1026	61	232	707	6	40	49	173	18	51	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	89	1047	57	237	721	4	41	50	92	18	52	27
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	118	1641	509	289	2132	662	75	232	194	39	120	63
Arrive On Green	0.07	0.32	0.32	0.16	0.41	0.41	0.04	0.12	0.12	0.02	0.10	0.10
Sat Flow, veh/h	1810	5187	1610	1810	5187	1610	1810	1900	1588	1810	1178	612
Grp Volume(v), veh/h	89	1047	57	237	721	4	41	50	92	18	0	79
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1610	1810	1900	1588	1810	0	1790
Q Serve(g_s), s	2.8	10.1	1.5	7.4	5.6	0.1	1.3	1.4	3.2	0.6	0.0	2.4
Cycle Q Clear(g_c), s	2.8	10.1	1.5	7.4	5.6	0.1	1.3	1.4	3.2	0.6	0.0	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	118	1641	509	289	2132	662	75	232	194	39	0	183
V/C Ratio(X)	0.75	0.64	0.11	0.82	0.34	0.01	0.55	0.22	0.47	0.46	0.00	0.43
Avail Cap(c_a), veh/h	401	2651	823	832	3889	1207	185	1156	966	154	0	1058
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.0	17.2	14.2	23.8	11.8	10.2	27.6	23.2	24.0	28.4	0.0	24.7
Incr Delay (d2), s/veh	3.6	0.4	0.1	2.2	0.1	0.0	2.3	0.5	1.8	3.1	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	3.3	0.5	2.9	1.6	0.0	0.6	0.6	1.1	0.3	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.6	17.6	14.3	26.0	11.9	10.2	29.9	23.7	25.8	31.4	0.0	26.4
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	A	C
Approach Vol, veh/h		1193			962			183			97	
Approach Delay, s/veh		18.4			15.4			26.1			27.3	
Approach LOS		B			B			C			C	

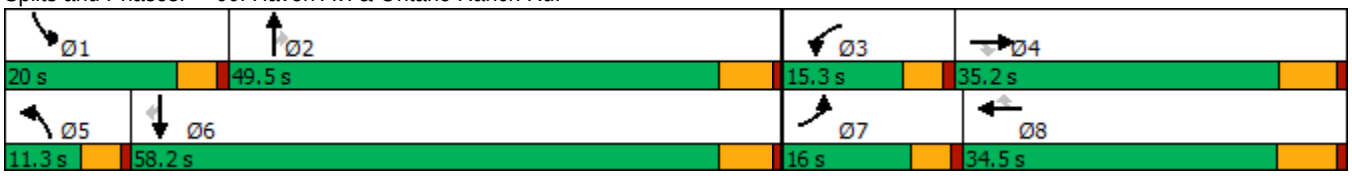
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.4	25.6	7.4	11.3	8.8	31.1	6.3	12.5
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	27.0	30.0	6.0	34.7	13.0	44.0	5.0	35.7
Max Q Clear Time (g_c+I1), s	9.4	12.1	3.3	4.4	4.8	7.6	2.6	5.2
Green Ext Time (p_c), s	0.2	6.4	0.0	0.3	0.0	4.9	0.0	0.5

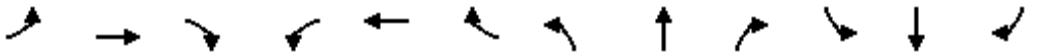
Intersection Summary	
HCM 6th Ctrl Delay	18.2
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	1048	74	68	610	144	32	99	26	186	291	127
Future Volume (vph)	136	1048	74	68	610	144	32	99	26	186	291	127
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	16.0	35.2	35.2	15.3	34.5	34.5	11.3	49.5	49.5	20.0	58.2	58.2
Total Split (%)	13.3%	29.3%	29.3%	12.8%	28.8%	28.8%	9.4%	41.3%	41.3%	16.7%	48.5%	48.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2	-2.2	-0.6	-2.5	-2.5	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	11.9	37.5	37.5	8.6	31.5	31.5	6.7	17.9	17.9	15.9	27.5	27.5
Actuated g/C Ratio	0.13	0.42	0.42	0.10	0.35	0.35	0.07	0.20	0.20	0.18	0.31	0.31
v/c Ratio	0.66	0.53	0.11	0.46	0.53	0.24	0.28	0.29	0.06	0.68	0.55	0.24
Control Delay	57.0	25.6	0.3	52.5	28.3	6.1	50.9	32.7	0.3	51.2	29.7	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.0	25.6	0.3	52.5	28.3	6.1	50.9	32.7	0.3	51.2	29.7	5.0
LOS	E	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		27.5			26.4			31.0			31.1	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 89.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 28.2	Intersection LOS: C
Intersection Capacity Utilization 59.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	1048	74	68	610	144	32	99	26	186	291	127
Future Volume (veh/h)	136	1048	74	68	610	144	32	99	26	186	291	127
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	142	1092	46	71	635	76	33	103	13	194	303	59
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	184	2134	662	100	1321	589	65	269	228	240	463	393
Arrive On Green	0.11	0.43	0.43	0.06	0.39	0.39	0.04	0.15	0.15	0.15	0.26	0.26
Sat Flow, veh/h	1619	4914	1525	1619	3420	1525	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	142	1092	46	71	635	76	33	103	13	194	303	59
Grp Sat Flow(s),veh/h/ln	1619	1638	1525	1619	1710	1525	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	6.7	12.8	1.4	3.4	11.1	2.5	1.6	4.1	0.6	9.2	11.9	2.4
Cycle Q Clear(g_c), s	6.7	12.8	1.4	3.4	11.1	2.5	1.6	4.1	0.6	9.2	11.9	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	184	2134	662	100	1321	589	65	269	228	240	463	393
V/C Ratio(X)	0.77	0.51	0.07	0.71	0.48	0.13	0.51	0.38	0.06	0.81	0.65	0.15
Avail Cap(c_a), veh/h	246	2134	662	232	1321	589	150	1037	879	328	1235	1047
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	16.2	13.0	36.4	18.3	15.7	37.1	30.3	28.8	32.6	26.2	22.7
Incr Delay (d2), s/veh	6.9	0.9	0.2	3.4	1.3	0.5	2.3	0.9	0.1	7.3	1.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	4.2	0.4	1.3	3.9	0.8	0.6	1.7	0.2	3.8	4.8	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.9	17.1	13.2	39.8	19.5	16.1	39.4	31.2	28.9	39.8	27.8	22.8
LnGrp LOS	D	B	B	D	B	B	D	C	C	D	C	C
Approach Vol, veh/h		1280			782			149			556	
Approach Delay, s/veh		19.6			21.0			32.8			31.5	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	15.8	8.9	38.6	7.2	24.3	13.0	34.5
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	15.4	43.7	10.7	* 29	6.7	52.4	11.4	28.0
Max Q Clear Time (g_c+I1), s	11.2	6.1	5.4	14.8	3.6	13.9	8.7	13.1
Green Ext Time (p_c), s	0.1	0.5	0.0	6.0	0.0	1.9	0.0	3.4

Intersection Summary	
HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Notes

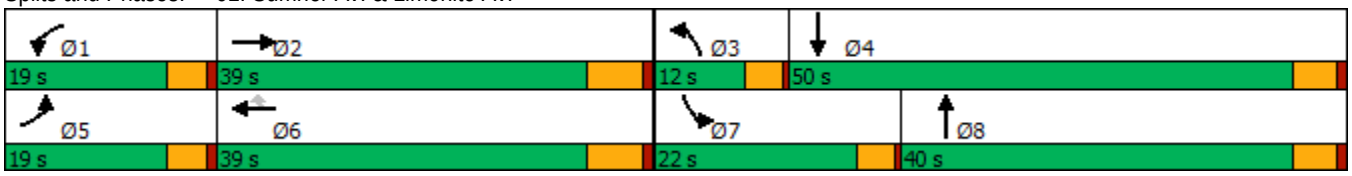
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

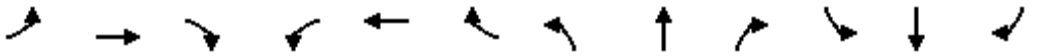
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	239	838	237	691	50	50	238	129	492
Future Volume (vph)	239	838	237	691	50	50	238	129	492
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	19.0	39.0	19.0	39.0	39.0	12.0	40.0	22.0	50.0
Total Split (%)	15.8%	32.5%	15.8%	32.5%	32.5%	10.0%	33.3%	18.3%	41.7%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	10.3	23.4	10.3	23.3	23.3	6.4	17.2	10.7	26.3
Actuated g/C Ratio	0.12	0.28	0.12	0.28	0.28	0.08	0.21	0.13	0.32
v/c Ratio	0.56	0.66	0.56	0.49	0.09	0.37	0.50	0.57	0.64
Control Delay	43.3	29.7	43.3	27.6	0.3	51.5	22.2	48.5	26.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.3	29.7	43.3	27.6	0.3	51.5	22.2	48.5	26.1
LOS	D	C	D	C	A	D	C	D	C
Approach Delay		32.5		30.0			25.5		29.5
Approach LOS		C		C			C		C

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 82.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 30.2 — Intersection LOS: C
Intersection Capacity Utilization 65.2% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 61: Sumner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	239	838	92	237	691	50	50	238	156	129	492	217
Future Volume (veh/h)	239	838	92	237	691	50	50	238	156	129	492	217
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	246	864	83	244	712	44	52	245	90	133	507	126
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	359	1370	131	356	1473	457	70	507	181	171	722	178
Arrive On Green	0.10	0.28	0.28	0.10	0.28	0.28	0.04	0.20	0.20	0.09	0.25	0.25
Sat Flow, veh/h	3510	4814	461	3510	5187	1610	1810	2593	925	1810	2868	709
Grp Volume(v), veh/h	246	620	327	244	712	44	52	168	167	133	318	315
Grp Sat Flow(s),veh/h/ln	1755	1729	1817	1755	1729	1610	1810	1805	1713	1810	1805	1772
Q Serve(g_s), s	4.1	9.4	9.5	4.0	6.9	1.2	1.7	5.0	5.2	4.3	9.6	9.7
Cycle Q Clear(g_c), s	4.1	9.4	9.5	4.0	6.9	1.2	1.7	5.0	5.2	4.3	9.6	9.7
Prop In Lane	1.00		0.25	1.00		1.00	1.00		0.54	1.00		0.40
Lane Grp Cap(c), veh/h	359	984	517	356	1473	457	70	353	335	171	454	446
V/C Ratio(X)	0.69	0.63	0.63	0.68	0.48	0.10	0.74	0.48	0.50	0.78	0.70	0.71
Avail Cap(c_a), veh/h	845	1894	995	845	2841	882	240	1048	995	541	1348	1324
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	18.8	18.8	26.1	17.9	15.9	28.7	21.5	21.6	26.7	20.5	20.5
Incr Delay (d2), s/veh	0.9	0.7	1.3	0.9	0.2	0.1	5.7	0.7	0.9	2.8	1.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	3.2	3.5	1.5	2.3	0.4	0.8	1.9	1.9	1.8	3.6	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.0	19.5	20.1	27.0	18.1	16.0	34.4	22.2	22.5	29.5	22.0	22.1
LnGrp LOS	C	B	C	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		1193			1000			387			766	
Approach Delay, s/veh		21.2			20.2			24.0			23.3	
Approach LOS		C			C			C			C	

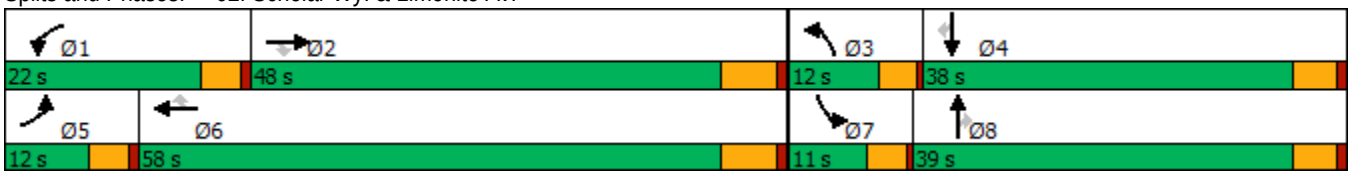
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	23.1	6.3	20.2	10.7	23.1	9.7	16.8
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	14.5	33.0	8.0	45.0	14.5	33.0	18.0	35.0
Max Q Clear Time (g_c+I1), s	6.0	11.5	3.7	11.7	6.1	8.9	6.3	7.2
Green Ext Time (p_c), s	0.2	5.6	0.0	3.0	0.2	4.6	0.1	1.4

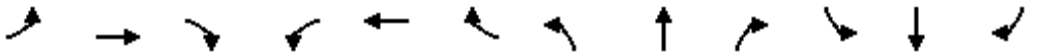
Intersection Summary	
HCM 6th Ctrl Delay	21.7
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	1040	47	137	907	62	48	105	140	32	147	33
Future Volume (vph)	44	1040	47	137	907	62	48	105	140	32	147	33
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	12.0	48.0	48.0	22.0	58.0	58.0	12.0	39.0	39.0	11.0	38.0	38.0
Total Split (%)	10.0%	40.0%	40.0%	18.3%	48.3%	48.3%	10.0%	32.5%	32.5%	9.2%	31.7%	31.7%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.3	32.8	32.8	11.3	43.2	43.2	6.5	12.9	12.9	5.8	12.4	12.4
Actuated g/C Ratio	0.08	0.41	0.41	0.14	0.54	0.54	0.08	0.16	0.16	0.07	0.16	0.16
v/c Ratio	0.33	0.74	0.07	0.57	0.49	0.07	0.35	0.36	0.39	0.26	0.28	0.09
Control Delay	50.2	26.0	0.2	47.2	16.1	1.9	50.2	36.4	9.1	49.8	33.8	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.2	26.0	0.2	47.2	16.1	1.9	50.2	36.4	9.1	49.8	33.8	0.5
LOS	D	C	A	D	B	A	D	D	A	D	C	A
Approach Delay		25.8			19.2			25.6			31.0	
Approach LOS		C			B			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 79.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 23.5	Intersection LOS: C
Intersection Capacity Utilization 63.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	1040	47	137	907	62	48	105	140	32	147	33
Future Volume (veh/h)	44	1040	47	137	907	62	48	105	140	32	147	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	47	1106	36	146	965	42	51	112	69	34	156	28
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	66	1525	680	187	1767	788	69	218	185	52	381	165
Arrive On Green	0.04	0.42	0.42	0.10	0.49	0.49	0.04	0.11	0.11	0.03	0.11	0.11
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	1900	1610	1810	3610	1570
Grp Volume(v), veh/h	47	1106	36	146	965	42	51	112	69	34	156	28
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1900	1610	1810	1805	1570
Q Serve(g_s), s	1.5	15.1	0.8	4.6	11.0	0.8	1.6	3.3	2.3	1.1	2.4	1.0
Cycle Q Clear(g_c), s	1.5	15.1	0.8	4.6	11.0	0.8	1.6	3.3	2.3	1.1	2.4	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	66	1525	680	187	1767	788	69	218	185	52	381	165
V/C Ratio(X)	0.71	0.73	0.05	0.78	0.55	0.05	0.73	0.51	0.37	0.65	0.41	0.17
Avail Cap(c_a), veh/h	230	2568	1145	536	3179	1418	245	1094	927	215	2018	877
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	14.2	10.1	25.8	10.5	7.9	28.1	24.6	24.2	28.4	24.7	24.1
Incr Delay (d2), s/veh	5.2	0.7	0.0	2.7	0.3	0.0	5.5	1.4	0.9	4.9	0.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	4.7	0.2	1.9	3.1	0.2	0.8	1.4	0.9	0.5	1.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.4	14.9	10.1	28.5	10.8	7.9	33.6	26.0	25.1	33.3	25.2	24.4
LnGrp LOS	C	B	B	C	B	A	C	C	C	C	C	C
Approach Vol, veh/h		1189			1153			232			218	
Approach Delay, s/veh		15.5			12.9			27.4			26.4	
Approach LOS		B			B			C			C	

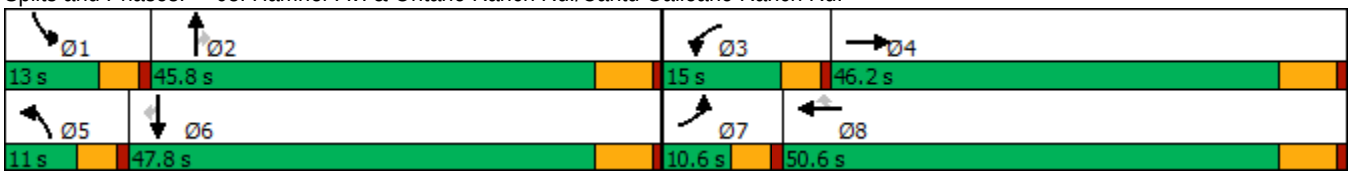
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	30.9	6.3	11.2	6.6	34.9	5.7	11.8
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	17.5	42.0	8.0	33.0	7.5	52.0	7.0	34.0
Max Q Clear Time (g_c+I1), s	6.6	17.1	3.6	4.4	3.5	13.0	3.1	5.3
Green Ext Time (p_c), s	0.1	7.9	0.0	0.8	0.0	7.3	0.0	0.6

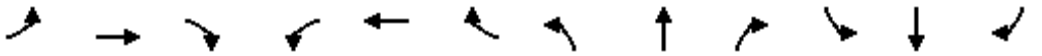
Intersection Summary	
HCM 6th Ctrl Delay	16.2
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	103	951	666	527	123	223	432	268	517	912	124
Future Volume (vph)	103	951	666	527	123	223	432	268	517	912	124
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	10.6	46.2	15.0	50.6	50.6	11.0	45.8	45.8	13.0	47.8	47.8
Total Split (%)	8.8%	38.5%	12.5%	42.2%	42.2%	9.2%	38.2%	38.2%	10.8%	39.8%	39.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2	-2.2
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.6	33.4	11.2	37.9	37.9	7.1	35.4	35.4	9.1	37.4	37.4
Actuated g/C Ratio	0.06	0.32	0.11	0.36	0.36	0.07	0.34	0.34	0.09	0.36	0.36
v/c Ratio	0.58	0.67	2.22	0.45	0.20	1.17	0.27	0.46	2.11	0.78	0.21
Control Delay	64.3	31.4	585.4	27.4	5.0	161.8	26.3	16.0	539.8	36.0	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.3	31.4	585.4	27.4	5.0	161.8	26.3	16.0	539.8	36.0	7.1
LOS	E	C	F	C	A	F	C	B	F	D	A
Approach Delay		33.9		307.8			56.0			201.5	
Approach LOS		C		F			E			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 105.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.22	
Intersection Signal Delay: 158.4	Intersection LOS: F
Intersection Capacity Utilization 90.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	951	302	666	527	123	223	432	268	517	912	124
Future Volume (veh/h)	103	951	302	666	527	123	223	432	268	517	912	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	107	991	258	694	549	94	232	450	200	539	950	74
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	174	1489	382	333	1213	541	212	1623	503	273	1200	535
Arrive On Green	0.06	0.30	0.28	0.11	0.35	0.35	0.07	0.33	0.33	0.09	0.35	0.35
Sat Flow, veh/h	2956	4947	1268	2956	3420	1525	2956	4914	1524	2956	3420	1524
Grp Volume(v), veh/h	107	929	320	694	549	94	232	450	200	539	950	74
Grp Sat Flow(s),veh/h/ln	1478	1548	1572	1478	1710	1525	1478	1638	1524	1478	1710	1524
Q Serve(g_s), s	3.5	17.1	17.6	11.0	12.0	4.1	7.0	6.6	9.9	9.0	24.4	3.2
Cycle Q Clear(g_c), s	3.5	17.1	17.6	11.0	12.0	4.1	7.0	6.6	9.9	9.0	24.4	3.2
Prop In Lane	1.00		0.81	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	174	1398	473	333	1213	541	212	1623	503	273	1200	535
V/C Ratio(X)	0.61	0.66	0.68	2.08	0.45	0.17	1.09	0.28	0.40	1.98	0.79	0.14
Avail Cap(c_a), veh/h	200	2007	679	333	1632	728	212	2104	653	273	1534	684
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.9	29.8	30.8	43.3	24.2	21.7	45.3	24.1	25.2	44.3	28.5	21.6
Incr Delay (d2), s/veh	2.4	0.5	1.7	497.8	0.3	0.2	89.4	0.1	0.5	453.0	2.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	5.9	6.4	26.8	4.5	1.4	5.1	2.4	3.4	20.3	9.5	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.2	30.4	32.5	541.1	24.5	21.8	134.7	24.2	25.7	497.3	30.7	21.7
LnGrp LOS	D	C	C	F	C	C	F	C	C	F	C	C
Approach Vol, veh/h		1356			1337			882			1563	
Approach Delay, s/veh		32.2			292.5			53.6			191.2	
Approach LOS		C			F			D			F	

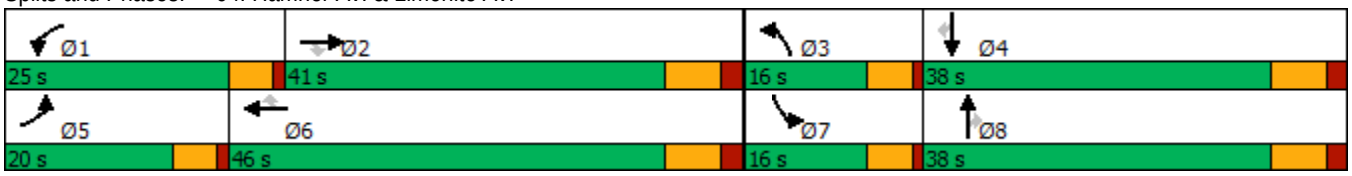
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	36.2	15.0	33.4	11.0	38.2	9.8	38.6
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	8.4	39.6	10.4	40.0	6.4	41.6	6.0	44.4
Max Q Clear Time (g_c+I1), s	11.0	11.9	13.0	19.6	9.0	26.4	5.5	14.0
Green Ext Time (p_c), s	0.0	3.4	0.0	7.6	0.0	5.5	0.0	3.7

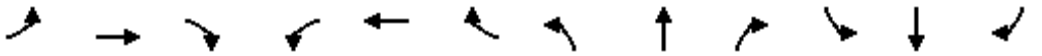
Intersection Summary	
HCM 6th Ctrl Delay	152.0
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	321	718	100	409	561	165	225	643	199	208	694	246
Future Volume (vph)	321	718	100	409	561	165	225	643	199	208	694	246
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	20.0	41.0	41.0	25.0	46.0	46.0	16.0	38.0	38.0	16.0	38.0	38.0
Total Split (%)	16.7%	34.2%	34.2%	20.8%	38.3%	38.3%	13.3%	31.7%	31.7%	13.3%	31.7%	31.7%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	13.0	26.1	26.1	16.0	29.2	29.2	9.9	26.4	26.4	9.5	26.1	26.1
Actuated g/C Ratio	0.13	0.25	0.25	0.16	0.28	0.28	0.10	0.26	0.26	0.09	0.25	0.25
v/c Ratio	0.75	0.56	0.21	0.77	0.56	0.30	0.69	0.50	0.37	0.66	0.54	0.43
Control Delay	56.8	35.8	4.3	53.5	34.2	5.9	58.9	34.9	6.8	58.1	35.8	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.8	35.8	4.3	53.5	34.2	5.9	58.9	34.9	6.8	58.1	35.8	6.7
LOS	E	D	A	D	C	A	E	C	A	E	D	A
Approach Delay		38.9			37.0			34.7			33.6	
Approach LOS		D			D			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.7	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 36.1	Intersection LOS: D
Intersection Capacity Utilization 67.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 64: Hamner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	321	718	100	409	561	165	225	643	199	208	694	246
Future Volume (veh/h)	321	718	100	409	561	165	225	643	199	208	694	246
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	331	740	82	422	578	125	232	663	121	214	715	191
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	409	1295	401	503	998	438	308	1326	403	290	1299	396
Arrive On Green	0.12	0.25	0.25	0.14	0.28	0.28	0.09	0.26	0.26	0.08	0.25	0.25
Sat Flow, veh/h	3510	5187	1606	3510	3610	1586	3510	5187	1577	3510	5187	1580
Grp Volume(v), veh/h	331	740	82	422	578	125	232	663	121	214	715	191
Grp Sat Flow(s),veh/h/ln	1755	1729	1606	1755	1805	1586	1755	1729	1577	1755	1729	1580
Q Serve(g_s), s	8.2	11.1	3.6	10.4	12.3	5.5	5.8	9.7	5.5	5.3	10.7	9.2
Cycle Q Clear(g_c), s	8.2	11.1	3.6	10.4	12.3	5.5	5.8	9.7	5.5	5.3	10.7	9.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	409	1295	401	503	998	438	308	1326	403	290	1299	396
V/C Ratio(X)	0.81	0.57	0.20	0.84	0.58	0.29	0.75	0.50	0.30	0.74	0.55	0.48
Avail Cap(c_a), veh/h	590	1976	612	787	1577	693	433	1801	548	433	1801	549
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.5	29.3	26.5	37.2	27.8	25.4	39.8	28.4	26.8	40.0	29.1	28.5
Incr Delay (d2), s/veh	3.4	0.9	0.5	2.6	1.1	0.8	2.6	0.6	0.9	1.4	0.8	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	4.4	1.4	4.4	5.1	2.0	2.5	3.8	2.0	2.2	4.2	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.9	30.2	27.0	39.9	29.0	26.1	42.3	29.0	27.7	41.4	29.9	30.5
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1153			1125			1016			1120	
Approach Delay, s/veh		33.3			32.7			31.9			32.2	
Approach LOS		C			C			C			C	

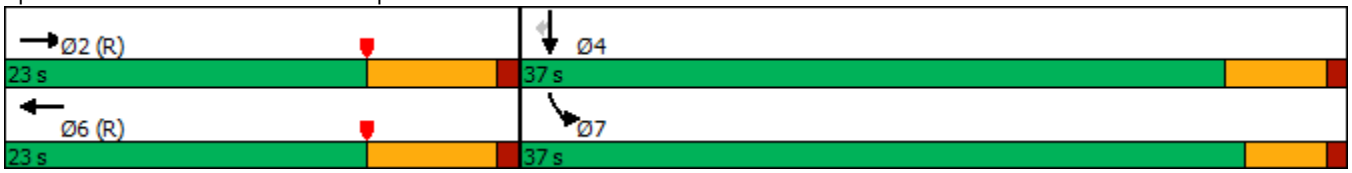
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	29.3	12.8	29.4	15.4	31.7	12.4	29.8
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	20.0	34.0	11.0	31.0	15.0	39.0	11.0	31.0
Max Q Clear Time (g_c+I1), s	12.4	13.1	7.8	12.7	10.2	14.3	7.3	11.7
Green Ext Time (p_c), s	0.4	8.7	0.1	8.6	0.2	7.8	0.1	7.8

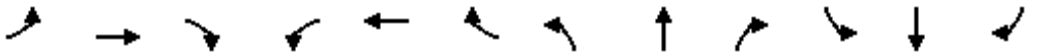
Intersection Summary	
HCM 6th Ctrl Delay	32.5
HCM 6th LOS	C

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1278	563	514	480	333	0	1116
Future Volume (vph)	1278	563	514	480	333	0	1116
Turn Type	NA	Free	NA	Free	Prot	NA	Perm
Protected Phases	2		6		7	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		7	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		9.6	10.5	10.5
Total Split (s)	23.0		23.0		37.0	37.0	37.0
Total Split (%)	38.3%		38.3%		61.7%	61.7%	61.7%
Yellow Time (s)	5.8		5.8		3.6	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-2.8		-2.8		-0.6	-1.5	-1.5
Total Lost Time (s)	4.0		4.0		4.0	4.0	4.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Min		None	Min	Min
Act Effct Green (s)	19.0	60.0	19.0	60.0	33.0	33.0	33.0
Actuated g/C Ratio	0.32	1.00	0.32	1.00	0.55	0.55	0.55
v/c Ratio	0.80	0.36	0.46	0.31	0.33	0.69	0.65
Control Delay	23.5	0.6	15.3	0.9	8.6	12.8	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.5	0.6	15.3	0.9	8.6	12.8	11.6
LOS	C	A	B	A	A	B	B
Approach Delay	16.5		8.3			11.5	
Approach LOS	B		A			B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 53 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 12.9	Intersection LOS: B
Intersection Capacity Utilization 66.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	✣	↱
Traffic Volume (veh/h)	0	1278	563	0	514	480	0	0	0	333	0	1116
Future Volume (veh/h)	0	1278	563	0	514	480	0	0	0	333	0	1116
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1318	0	0	530	0				229	0	942
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2575		0	1792					670	0	1240
Arrive On Green	0.00	0.50	0.00	0.00	0.50	0.00				0.37	0.00	0.39
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1318	0	0	530	0				229	0	942
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	10.3	0.0	0.0	5.2	0.0				5.5	0.0	15.3
Cycle Q Clear(g_c), s	0.0	10.3	0.0	0.0	5.2	0.0				5.5	0.0	15.3
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2575		0	1792					670	0	1240
V/C Ratio(X)	0.00	0.51		0.00	0.30					0.34	0.00	0.76
Avail Cap(c_a), veh/h	0	2575		0	1792					995	0	1819
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.09	0.00	0.00	0.96	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.2	0.0	0.0	8.9	0.0				13.6	0.0	16.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.4	0.0				0.3	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.7	0.0	0.0	1.5	0.0				1.9	0.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	10.3	0.0	0.0	9.3	0.0				13.9	0.0	17.1
LnGrp LOS	A	B		A	A					B	A	B
Approach Vol, veh/h		1318	A		530	A					1171	
Approach Delay, s/veh		10.3			9.3						16.5	
Approach LOS		B			A						B	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		33.8		26.2		33.8						
Change Period (Y+Rc), s		6.8		4.6		6.8						
Max Green Setting (Gmax), s		16.2		32.4		16.2						
Max Q Clear Time (g_c+I1), s		12.3		17.3		7.2						
Green Ext Time (p_c), s		2.6		4.4		2.1						

Intersection Summary		
HCM 6th Ctrl Delay		12.5
HCM 6th LOS		B

Notes

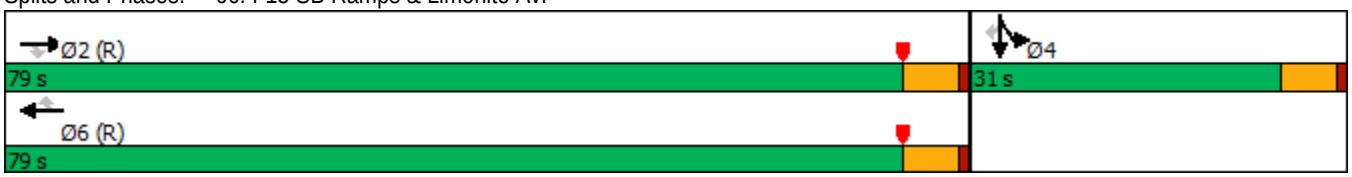
User approved volume balancing among the lanes for turning movement.

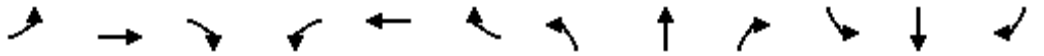
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1318	682	1150	589	148	1	493
Future Volume (vph)	1318	682	1150	589	148	1	493
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		4	4	
Permitted Phases		2		6			4
Detector Phase	2	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	36.5	36.5	23.5	23.5	23.5
Total Split (s)	79.0	79.0	79.0	79.0	31.0	31.0	31.0
Total Split (%)	71.8%	71.8%	71.8%	71.8%	28.2%	28.2%	28.2%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	Min	Min
Act Effct Green (s)	81.3	81.3	81.3	81.3	17.7	17.7	17.7
Actuated g/C Ratio	0.74	0.74	0.74	0.74	0.16	0.16	0.16
v/c Ratio	0.35	0.51	0.31	0.45	0.27	0.28	0.82
Control Delay	5.8	1.9	6.7	5.7	41.0	41.2	38.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.8	1.9	6.7	5.7	41.0	41.2	38.4
LOS	A	A	A	A	D	D	D
Approach Delay	4.5		6.4			39.1	
Approach LOS	A		A			D	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 10.3	Intersection LOS: B
Intersection Capacity Utilization 55.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	↰	↱↱
Traffic Volume (veh/h)	0	1318	682	0	1150	589	0	0	0	148	1	493
Future Volume (veh/h)	0	1318	682	0	1150	589	0	0	0	148	1	493
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1345	550	0	1173	601				152	0	269
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	4117	1278	0	4117	1278				385	0	342
Arrive On Green	0.00	0.79	0.79	0.00	1.00	1.00				0.11	0.00	0.11
Sat Flow, veh/h	0	5358	1610	0	5358	1610				3619	0	3220
Grp Volume(v), veh/h	0	1345	550	0	1173	601				152	0	269
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1610				1810	0	1610
Q Serve(g_s), s	0.0	7.9	11.8	0.0	0.0	0.0				4.3	0.0	9.0
Cycle Q Clear(g_c), s	0.0	7.9	11.8	0.0	0.0	0.0				4.3	0.0	9.0
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	4117	1278	0	4117	1278				385	0	342
V/C Ratio(X)	0.00	0.33	0.43	0.00	0.28	0.47				0.40	0.00	0.79
Avail Cap(c_a), veh/h	0	4117	1278	0	4117	1278				839	0	747
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.89	0.89				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	3.2	3.6	0.0	0.0	0.0				45.9	0.0	47.9
Incr Delay (d2), s/veh	0.0	0.2	1.1	0.0	0.2	1.1				0.2	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	2.7	0.0	0.1	0.4				1.9	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	3.4	4.6	0.0	0.2	1.1				46.1	0.0	49.5
LnGrp LOS	A	A	A	A	A	A				D	A	D
Approach Vol, veh/h		1895			1774						421	
Approach Delay, s/veh		3.7			0.5						48.2	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		92.8		17.2		92.8						
Change Period (Y+Rc), s		5.5		5.5		5.5						
Max Green Setting (Gmax), s		73.5		25.5		73.5						
Max Q Clear Time (g_c+I1), s		13.8		11.0		2.0						
Green Ext Time (p_c), s		8.9		0.7		7.6						

Intersection Summary												
HCM 6th Ctrl Delay			6.9									
HCM 6th LOS			A									

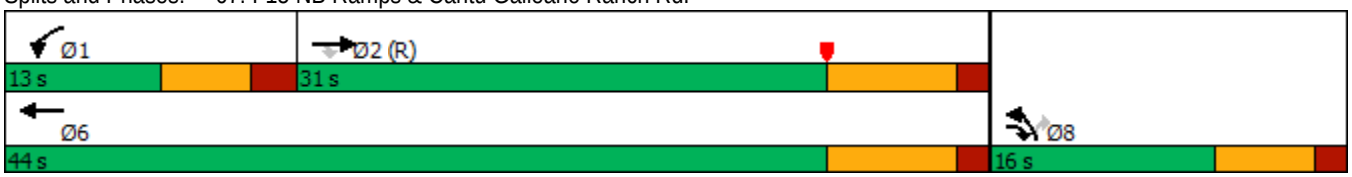
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	736	911	335	778	220	262
Future Volume (vph)	736	911	335	778	220	262
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	31.0	16.0	13.0	44.0	16.0	16.0
Total Split (%)	51.7%	26.7%	21.7%	73.3%	26.7%	26.7%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	-3.3	-2.0	-2.0	-3.3	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max
Act Effct Green (s)	27.0	43.0	9.0	40.0	12.0	12.0
Actuated g/C Ratio	0.45	0.72	0.15	0.67	0.20	0.20
v/c Ratio	0.33	0.82	0.67	0.24	0.45	0.38
Control Delay	7.1	13.3	31.5	4.2	16.0	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.1	13.3	31.5	4.2	16.0	7.2
LOS	A	B	C	A	B	A
Approach Delay	10.5			12.4	13.2	
Approach LOS	B			B	B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 11.6	Intersection LOS: B
Intersection Capacity Utilization 72.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	736	911	335	778	220	262
Future Volume (veh/h)	736	911	335	778	220	262
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	775	743	353	819	267	135
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2334	1012	527	3458	724	322
Arrive On Green	0.75	0.72	0.15	0.67	0.20	0.20
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	775	743	353	819	267	135
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	3.0	22.3	5.7	3.7	3.8	4.4
Cycle Q Clear(g_c), s	3.0	22.3	5.7	3.7	3.8	4.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2334	1012	527	3458	724	322
V/C Ratio(X)	0.33	0.73	0.67	0.24	0.37	0.42
Avail Cap(c_a), veh/h	2334	1012	527	3458	724	322
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.63	0.63	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.5	4.1	24.1	4.0	20.7	21.0
Incr Delay (d2), s/veh	0.2	3.0	6.7	0.0	1.4	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.6	2.5	0.6	1.6	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.7	7.2	30.8	4.0	22.2	24.9
LnGrp LOS	A	A	C	A	C	C
Approach Vol, veh/h	1518			1172	402	
Approach Delay, s/veh	5.9			12.1	23.1	
Approach LOS	A			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.0	31.0				44.0	16.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	7.0	23.7				36.7	10.0
Max Q Clear Time (g_c+I1), s	7.7	24.3				5.7	6.4
Green Ext Time (p_c), s	0.0	0.0				5.5	0.5

Intersection Summary	
HCM 6th Ctrl Delay	10.5
HCM 6th LOS	B

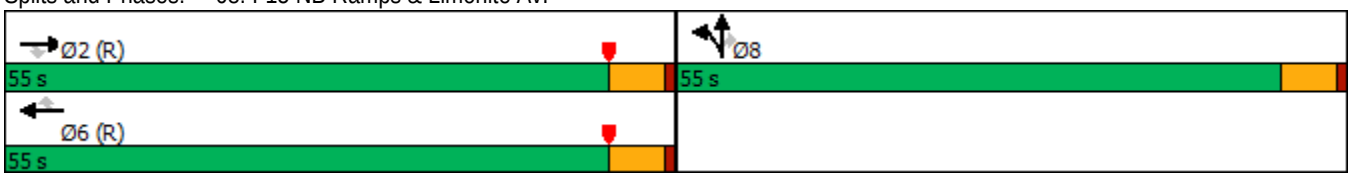
Notes

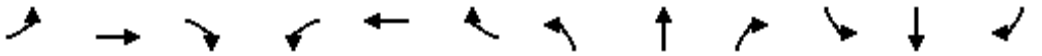
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	919	546	1270	213	468	2	870
Future Volume (vph)	919	546	1270	213	468	2	870
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		8	8	
Permitted Phases		2		6			8
Detector Phase	2	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	55.0	55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None
Act Effct Green (s)	58.4	58.4	58.4	58.4	40.6	40.6	40.6
Actuated g/C Ratio	0.53	0.53	0.53	0.53	0.37	0.37	0.37
v/c Ratio	0.34	0.49	0.47	0.23	0.37	0.38	0.79
Control Delay	15.6	5.5	17.9	3.0	25.9	25.9	31.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	5.5	17.9	3.0	25.9	25.9	31.3
LOS	B	A	B	A	C	C	C
Approach Delay	11.8		15.7			29.4	
Approach LOS	B		B			C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 18.7	Intersection LOS: B
Intersection Capacity Utilization 57.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱	↰	↕	↱↱			
Traffic Volume (veh/h)	0	919	546	0	1270	213	468	2	870	0	0	0
Future Volume (veh/h)	0	919	546	0	1270	213	468	2	870	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	0	928	552	0	1283	124	474	0	586			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	0	3466	1076	0	3466	1075	839	0	736			
Arrive On Green	0.00	1.00	1.00	0.00	0.67	0.67	0.23	0.00	0.23			
Sat Flow, veh/h	0	5358	1610	0	5358	1609	3619	0	3176			
Grp Volume(v), veh/h	0	928	552	0	1283	124	474	0	586			
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1609	1810	0	1588			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	12.0	3.0	12.7	0.0	19.1			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	12.0	3.0	12.7	0.0	19.1			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3466	1076	0	3466	1075	839	0	736			
V/C Ratio(X)	0.00	0.27	0.51	0.00	0.37	0.12	0.56	0.00	0.80			
Avail Cap(c_a), veh/h	0	3466	1076	0	3466	1075	1629	0	1429			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.95	0.95	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	8.0	6.6	37.3	0.0	39.8			
Incr Delay (d2), s/veh	0.0	0.2	1.7	0.0	0.3	0.2	0.6	0.0	2.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.5	0.0	3.9	0.9	5.5	0.0	7.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.2	1.7	0.0	8.4	6.8	37.9	0.0	41.8			
LnGrp LOS	A	A	A	A	A	A	D	A	D			
Approach Vol, veh/h		1480			1407			1060				
Approach Delay, s/veh		0.7			8.2			40.1				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		79.0				79.0		31.0				
Change Period (Y+Rc), s		5.5				5.5		5.5				
Max Green Setting (Gmax), s		49.5				49.5		49.5				
Max Q Clear Time (g_c+I1), s		2.0				14.0		21.1				
Green Ext Time (p_c), s		5.6				6.7		4.4				

Intersection Summary	
HCM 6th Ctrl Delay	14.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

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APPENDIX 8.2:

OPENING YEAR CUMULATIVE (2026) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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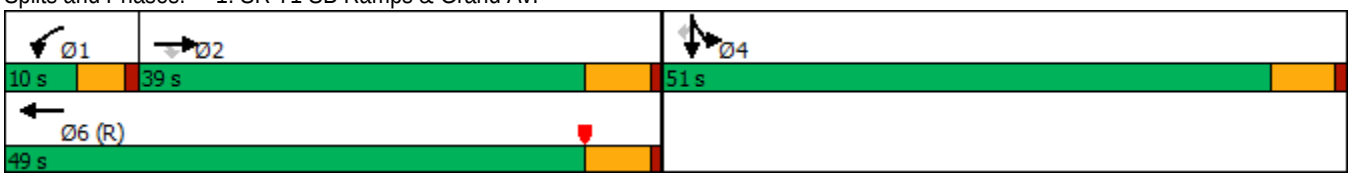
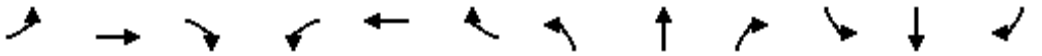
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	856	229	72	1525	1019	5	353
Future Volume (vph)	856	229	72	1525	1019	5	353
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	39.0	39.0	10.0	49.0	51.0	51.0	51.0
Total Split (%)	39.0%	39.0%	10.0%	49.0%	51.0%	51.0%	51.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None
Act Effct Green (s)	40.1	40.1	6.0	48.2	43.8	43.8	43.8
Actuated g/C Ratio	0.40	0.40	0.06	0.48	0.44	0.44	0.44
v/c Ratio	0.48	0.33	0.40	0.72	0.80	0.80	0.55
Control Delay	24.6	4.1	44.1	31.2	32.8	33.3	18.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	4.1	44.1	31.2	32.8	33.3	18.9
LOS	C	A	D	C	C	C	B
Approach Delay	20.3			31.8		29.4	
Approach LOS	C			C		C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 27.9	Intersection LOS: C
Intersection Capacity Utilization 64.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱	↰↰	↑↑↑					↰	↲	↱
Traffic Volume (veh/h)	0	856	229	72	1525	0	0	0	0	1019	5	353
Future Volume (veh/h)	0	856	229	72	1525	0	0	0	0	1019	5	353
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1007	180	85	1794	0				1203	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85				0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1861	578	180	2334	0				1394	0	
Arrive On Green	0.00	0.36	0.36	0.05	0.45	0.00				0.39	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	1007	180	85	1794	0				1203	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	15.4	8.1	2.4	29.1	0.0				30.6	0.0	0.0
Cycle Q Clear(g_c), s	0.0	15.4	8.1	2.4	29.1	0.0				30.6	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1861	578	180	2334	0				1394	0	
V/C Ratio(X)	0.00	0.54	0.31	0.47	0.77	0.00				0.86	0.00	
Avail Cap(c_a), veh/h	0	1861	578	211	2334	0				1701	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.24	0.24	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	25.5	23.2	46.1	23.1	0.0				28.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	1.4	0.2	0.6	0.0				4.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.1	3.1	1.0	10.8	0.0				13.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	26.7	24.6	46.3	23.7	0.0				32.4	0.0	0.0
LnGrp LOS	A	C	C	D	C	A				C	A	
Approach Vol, veh/h		1187			1879						1203	A
Approach Delay, s/veh		26.3			24.8						32.4	
Approach LOS		C			C						C	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	9.1	39.9		42.5		49.0						
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8						
Max Green Setting (Gmax), s	5.4	33.2		45.2		43.2						
Max Q Clear Time (g_c+I1), s	4.4	17.4		32.6		31.1						
Green Ext Time (p_c), s	0.0	6.4		4.1		8.6						

Intersection Summary			
HCM 6th Ctrl Delay		27.4	
HCM 6th LOS		C	

Notes

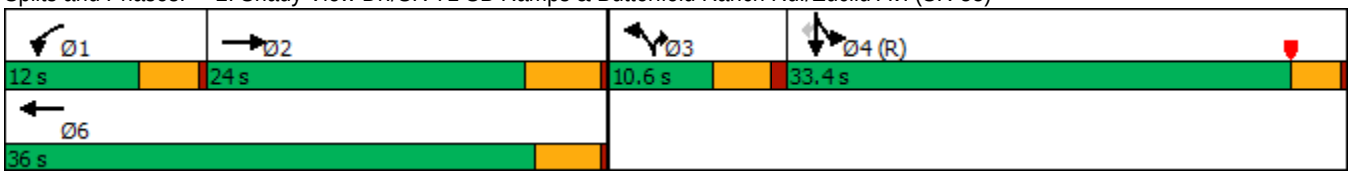
User approved volume balancing among the lanes for turning movement.

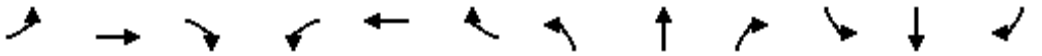
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	810	223	331	21	330	731	30	45
Future Volume (vph)	810	223	331	21	330	731	30	45
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	24.0	12.0	36.0	10.6	10.6	33.4	33.4	33.4
Total Split (%)	30.0%	15.0%	45.0%	13.3%	13.3%	41.8%	41.8%	41.8%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	19.0	13.9	37.4	6.1	6.1	24.0	24.0	24.0
Actuated g/C Ratio	0.24	0.17	0.47	0.08	0.08	0.30	0.30	0.30
v/c Ratio	1.01	0.73	0.20	0.15	1.11	0.76	0.75	0.08
Control Delay	65.4	49.7	18.7	37.3	102.2	34.6	34.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.4	49.7	18.7	37.3	102.2	34.6	34.3	0.3
LOS	E	D	B	D	F	C	C	A
Approach Delay	65.4		31.1				32.5	
Approach LOS	E		C				C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 52.2	Intersection LOS: D
Intersection Capacity Utilization 76.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	810	36	223	331	0	21	0	330	731	30	45
Future Volume (veh/h)	0	810	36	223	331	0	21	0	330	731	30	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	827	28	228	338	0	21	0	268	768	0	30
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	846	29	181	1399		0	0	0	1832	0	815
Arrive On Green	0.00	0.24	0.24	0.03	0.13	0.00	0.00	0.00	0.00	0.51	0.00	0.51
Sat Flow, veh/h	0	3658	121	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	419	436	228	338	0		0.0		768	0	30
Grp Sat Flow(s),veh/h/ln	0	1805	1878	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	18.4	18.4	8.0	6.7	0.0				10.6	0.0	0.7
Cycle Q Clear(g_c), s	0.0	18.4	18.4	8.0	6.7	0.0				10.6	0.0	0.7
Prop In Lane	0.00		0.06	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	429	446	181	1399					1832	0	815
V/C Ratio(X)	0.00	0.98	0.98	1.26	0.24					0.42	0.00	0.04
Avail Cap(c_a), veh/h	0	429	446	181	1421					1832	0	815
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.90	0.90	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	30.3	30.3	38.7	24.3	0.0				12.4	0.0	9.9
Incr Delay (d2), s/veh	0.0	37.3	36.5	150.7	0.1	0.0				0.7	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.7	12.1	11.2	2.8	0.0				3.8	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	67.6	66.8	189.4	24.4	0.0				13.1	0.0	10.0
LnGrp LOS	A	E	E	F	C					B	A	B
Approach Vol, veh/h		855			566	A					798	
Approach Delay, s/veh		67.2			90.8						13.0	
Approach LOS		E			F						B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	12.0	24.0		44.0		36.0						
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5						
Max Green Setting (Gmax), s	8.0	19.0		29.9		* 32						
Max Q Clear Time (g_c+I1), s	10.0	20.4		12.6		8.7						
Green Ext Time (p_c), s	0.0	0.0		2.8		1.6						

Intersection Summary			
HCM 6th Ctrl Delay		53.7	
HCM 6th LOS		D	

Notes

User approved volume balancing among the lanes for turning movement.

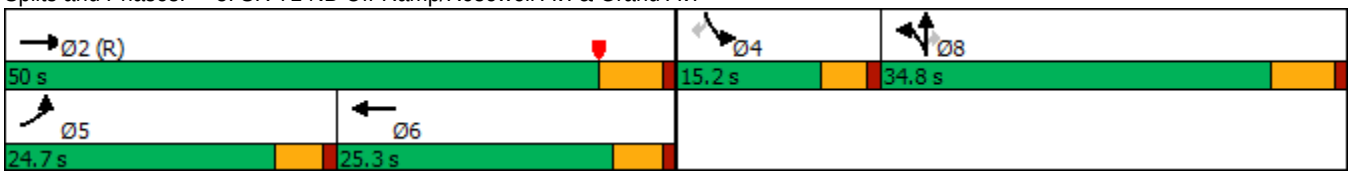
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

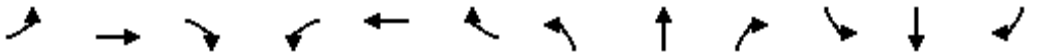
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	366	1312	199	1217	538	80	75	47	770
Future Volume (vph)	366	1312	199	1217	538	80	75	47	770
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.6	34.8		14.7	34.8	34.8	34.8	9.5	9.5
Total Split (s)	24.7	50.0		25.3	34.8	34.8	34.8	15.2	15.2
Total Split (%)	24.7%	50.0%		25.3%	34.8%	34.8%	34.8%	15.2%	15.2%
Yellow Time (s)	3.6	4.8		3.7	4.8	4.8	4.8	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8		-0.7	-1.8	-1.8	-1.8	-0.5	-0.5
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	Max	Max	Max	None	None
Act Effct Green (s)	20.7	46.0	100.0	21.3	31.2	31.2	31.2	10.8	10.8
Actuated g/C Ratio	0.21	0.46	1.00	0.21	0.31	0.31	0.31	0.11	0.11
v/c Ratio	1.07	0.60	0.13	0.99	0.62	0.63	0.14	0.26	0.97
Control Delay	104.8	18.9	0.1	62.2	35.7	35.7	1.8	44.4	35.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	104.8	18.9	0.1	62.2	35.7	35.7	1.8	44.4	35.3
LOS	F	B	A	E	D	D	A	D	D
Approach Delay		33.7		62.2		32.0			
Approach LOS		C		E		C			

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 41.6	Intersection LOS: D
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	366	1312	199	0	1217	52	538	80	75	47	0	770
Future Volume (veh/h)	366	1312	199	0	1217	52	538	80	75	47	0	770
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	398	1426	0	0	1323	57	647	0	42	51	0	561
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	375	3174		0	2292	99	1115	0	496	0	0	0
Arrive On Green	0.21	0.61	0.00	0.00	0.35	0.35	0.31	0.00	0.31	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6739	278	3619	0	1610		0	
Grp Volume(v), veh/h	398	1426	0	0	1001	379	647	0	42		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1850	1810	0	1610			
Q Serve(g_s), s	20.7	14.7	0.0	0.0	16.6	16.6	15.1	0.0	1.9			
Cycle Q Clear(g_c), s	20.7	14.7	0.0	0.0	16.6	16.6	15.1	0.0	1.9			
Prop In Lane	1.00		1.00	0.00		0.15	1.00		1.00			
Lane Grp Cap(c), veh/h	375	3174		0	1735	655	1115	0	496			
V/C Ratio(X)	1.06	0.45		0.00	0.58	0.58	0.58	0.00	0.08			
Avail Cap(c_a), veh/h	375	3174		0	1735	655	1115	0	496			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.77	0.77	0.00	0.00	0.87	0.87	1.00	0.00	1.00			
Uniform Delay (d), s/veh	39.7	10.4	0.0	0.0	26.2	26.3	29.2	0.0	24.6			
Incr Delay (d2), s/veh	58.4	0.4	0.0	0.0	0.4	1.1	2.2	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	14.8	4.8	0.0	0.0	6.3	7.3	6.5	0.0	0.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	98.1	10.7	0.0	0.0	26.6	27.4	31.4	0.0	24.9			
LnGrp LOS	F	B		A	C	C	C	A	C			
Approach Vol, veh/h		1824	A		1380			689				
Approach Delay, s/veh		29.8			26.8			31.0				
Approach LOS		C			C			C				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		65.2			24.7	40.5		34.8				
Change Period (Y+Rc), s		5.8			4.6	* 5.8		5.8				
Max Green Setting (Gmax), s		44.2			20.1	* 21		29.0				
Max Q Clear Time (g_c+I1), s		16.7			22.7	18.6		17.1				
Green Ext Time (p_c), s		11.2			0.0	1.5		2.1				

Intersection Summary		
HCM 6th Ctrl Delay		29.0
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

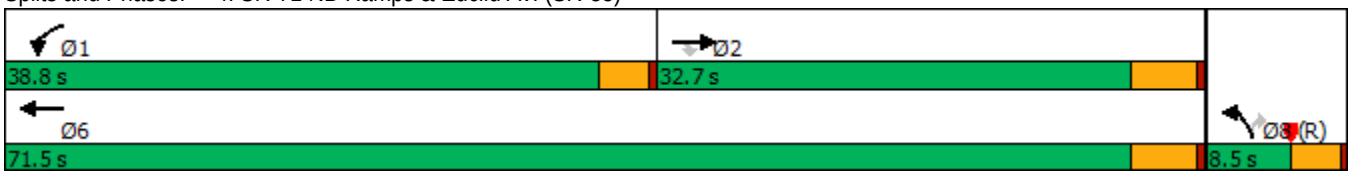
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	789	331	881	1206	49	1013
Future Volume (vph)	789	331	881	1206	49	1013
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	32.7	32.7	38.8	71.5	8.5	8.5
Total Split (%)	40.9%	40.9%	48.5%	89.4%	10.6%	10.6%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max
Act Effct Green (s)	24.7	24.7	35.3	63.5	8.5	8.5
Actuated g/C Ratio	0.31	0.31	0.44	0.79	0.11	0.11
v/c Ratio	0.75	0.56	1.18	0.45	0.14	1.47
Control Delay	25.3	10.3	117.0	3.0	35.8	236.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.3	10.3	117.0	3.0	35.8	236.8
LOS	C	B	F	A	D	F
Approach Delay	20.9			51.1	227.5	
Approach LOS	C			D	F	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.47	
Intersection Signal Delay: 87.1	Intersection LOS: F
Intersection Capacity Utilization 91.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	789	331	881	1206	49	1013
Future Volume (veh/h)	789	331	881	1206	49	1013
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	839	0	937	1283	52	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1038		798	2789	448	
Arrive On Green	0.09	0.00	0.44	0.77	0.13	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	839	0	937	1283	52	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	18.2	0.0	35.3	10.0	1.0	0.0
Cycle Q Clear(g_c), s	18.2	0.0	35.3	10.0	1.0	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1038		798	2789	448	
V/C Ratio(X)	0.81		1.17	0.46	0.12	
Avail Cap(c_a), veh/h	1273		798	3023	448	
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.16	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.0	0.0	22.4	3.2	30.9	0.0
Incr Delay (d2), s/veh	0.5	0.0	91.1	0.1	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	0.0	32.2	1.1	0.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.5	0.0	113.5	3.3	31.4	0.0
LnGrp LOS	C		F	A	C	
Approach Vol, veh/h	839	A		2220	52	A
Approach Delay, s/veh	34.5			49.8	31.4	
Approach LOS	C			D	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	38.8	27.5				66.3	13.7
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	35.3	28.2				67.0	5.0
Max Q Clear Time (g_c+I1), s	37.3	20.2				12.0	3.0
Green Ext Time (p_c), s	0.0	2.8				11.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	45.4
HCM 6th LOS	D

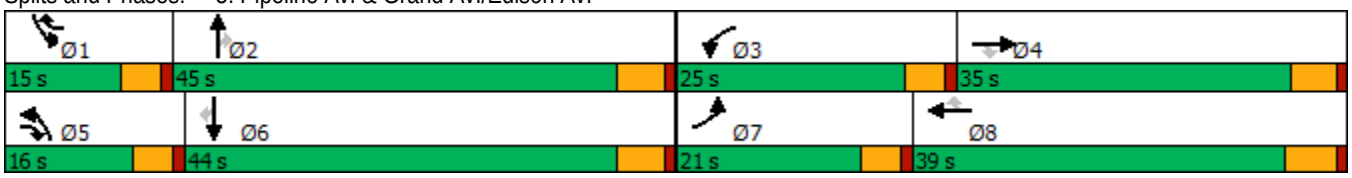
Notes

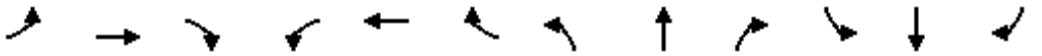
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	1019	163	172	945	49	163	224	113	69	364	77
Future Volume (vph)	121	1019	163	172	945	49	163	224	113	69	364	77
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	21.0	35.0	16.0	25.0	39.0	15.0	16.0	45.0	45.0	15.0	44.0	44.0
Total Split (%)	17.5%	29.2%	13.3%	20.8%	32.5%	12.5%	13.3%	37.5%	37.5%	12.5%	36.7%	36.7%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None
Act Effct Green (s)	8.7	34.2	43.9	10.2	35.6	44.2	9.8	22.5	22.5	8.6	19.0	19.0
Actuated g/C Ratio	0.10	0.38	0.49	0.11	0.40	0.49	0.11	0.25	0.25	0.10	0.21	0.21
v/c Ratio	0.41	0.56	0.20	0.50	0.50	0.07	0.52	0.27	0.25	0.46	0.52	0.19
Control Delay	44.4	25.2	3.3	44.0	23.2	3.3	45.9	28.5	6.7	51.3	33.4	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	25.2	3.3	44.0	23.2	3.3	45.9	28.5	6.7	51.3	33.4	3.4
LOS	D	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		24.3			25.5			29.3			31.3	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 89.4	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 26.4	Intersection LOS: C
Intersection Capacity Utilization 61.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	1019	163	172	945	49	163	224	113	69	364	77
Future Volume (veh/h)	121	1019	163	172	945	49	163	224	113	69	364	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	125	1051	125	177	974	36	168	231	47	71	375	45
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	217	2049	752	279	2190	749	259	751	334	100	664	291
Arrive On Green	0.07	0.42	0.41	0.09	0.45	0.43	0.09	0.22	0.22	0.06	0.19	0.19
Sat Flow, veh/h	3141	4914	1505	3141	4914	1522	2956	3420	1519	1619	3420	1498
Grp Volume(v), veh/h	125	1051	125	177	974	36	168	231	47	71	375	45
Grp Sat Flow(s),veh/h/ln	1570	1638	1505	1570	1638	1522	1478	1710	1519	1619	1710	1498
Q Serve(g_s), s	3.0	12.5	3.6	4.3	10.8	1.0	4.3	4.4	2.0	3.4	7.8	2.0
Cycle Q Clear(g_c), s	3.0	12.5	3.6	4.3	10.8	1.0	4.3	4.4	2.0	3.4	7.8	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	217	2049	752	279	2190	749	259	751	334	100	664	291
V/C Ratio(X)	0.58	0.51	0.17	0.63	0.44	0.05	0.65	0.31	0.14	0.71	0.57	0.15
Avail Cap(c_a), veh/h	680	2049	752	840	2190	749	452	1785	793	227	1742	763
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.4	17.0	10.8	34.6	15.1	10.4	34.7	25.6	24.7	36.2	28.7	26.3
Incr Delay (d2), s/veh	0.9	0.9	0.5	0.9	0.7	0.1	1.0	0.2	0.2	3.4	0.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	4.5	1.1	1.6	3.6	0.3	1.5	1.7	0.7	1.4	3.1	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.3	17.9	11.3	35.5	15.7	10.5	35.7	25.9	24.9	39.6	29.4	26.5
LnGrp LOS	D	B	B	D	B	B	D	C	C	D	C	C
Approach Vol, veh/h		1301			1187			446			491	
Approach Delay, s/veh		19.0			18.5			29.5			30.6	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	21.3	11.0	37.5	10.9	19.2	9.4	39.0
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	10.4	39.6	20.4	* 30	11.4	38.6	16.4	33.2
Max Q Clear Time (g_c+I1), s	5.4	6.4	6.3	14.5	6.3	9.8	5.0	12.8
Green Ext Time (p_c), s	0.0	1.6	0.2	6.8	0.1	2.5	0.1	6.4

Intersection Summary	
HCM 6th Ctrl Delay	21.9
HCM 6th LOS	C

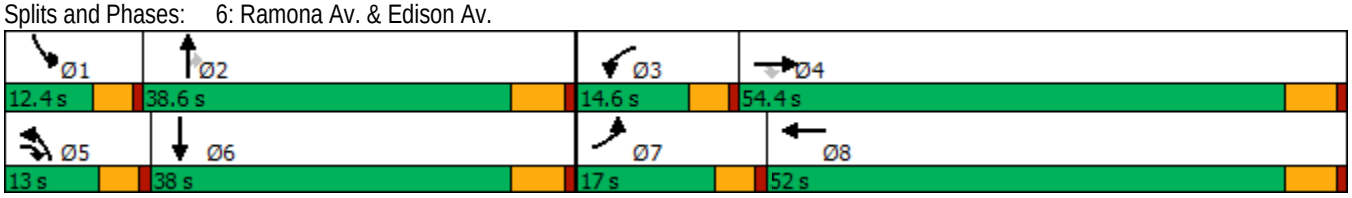
Notes

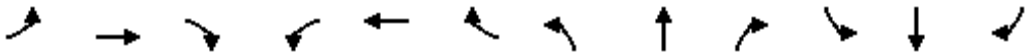
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	105	971	63	55	1087	47	327	62	54	481
Future Volume (vph)	105	971	63	55	1087	47	327	62	54	481
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	17.0	54.4	13.0	14.6	52.0	13.0	38.6	38.6	12.4	38.0
Total Split (%)	14.2%	45.3%	10.8%	12.2%	43.3%	10.8%	32.2%	32.2%	10.3%	31.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None
Act Effct Green (s)	11.4	54.0	61.8	8.6	48.7	7.8	27.8	27.8	7.7	27.6
Actuated g/C Ratio	0.10	0.49	0.56	0.08	0.45	0.07	0.25	0.25	0.07	0.25
v/c Ratio	0.70	0.64	0.05	0.48	0.85	0.45	0.42	0.15	0.53	0.75
Control Delay	71.4	26.1	3.4	64.2	36.2	64.9	35.9	2.3	70.1	43.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.4	26.1	3.4	64.2	36.2	64.9	35.9	2.3	70.1	43.1
LOS	E	C	A	E	D	E	D	A	E	D
Approach Delay		29.0			37.4		34.3			45.4
Approach LOS		C			D		C			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.4	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 35.7	Intersection LOS: D
Intersection Capacity Utilization 75.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	971	63	55	1087	74	47	327	62	54	481	98
Future Volume (veh/h)	105	971	63	55	1087	74	47	327	62	54	481	98
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1700	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	117	1079	66	61	1208	78	52	363	38	60	534	97
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	151	1733	1343	85	1519	98	74	799	355	84	692	125
Arrive On Green	0.09	0.51	0.49	0.05	0.47	0.45	0.05	0.23	0.23	0.05	0.24	0.22
Sat Flow, veh/h	1619	3420	2480	1619	3259	210	1619	3420	1522	1619	2886	522
Grp Volume(v), veh/h	117	1079	66	61	633	653	52	363	38	60	316	315
Grp Sat Flow(s),veh/h/ln	1619	1710	1240	1619	1710	1759	1619	1710	1522	1619	1710	1698
Q Serve(g_s), s	7.3	23.4	1.3	3.8	32.3	32.5	3.3	9.4	2.0	3.8	17.7	17.9
Cycle Q Clear(g_c), s	7.3	23.4	1.3	3.8	32.3	32.5	3.3	9.4	2.0	3.8	17.7	17.9
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	151	1733	1343	85	797	820	74	799	355	84	410	407
V/C Ratio(X)	0.78	0.62	0.05	0.72	0.79	0.80	0.71	0.45	0.11	0.72	0.77	0.77
Avail Cap(c_a), veh/h	204	1733	1343	167	797	820	142	1149	511	132	565	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	18.3	11.2	48.0	23.3	23.4	48.5	33.8	31.0	48.1	36.5	36.8
Incr Delay (d2), s/veh	8.2	1.7	0.1	4.1	8.0	7.9	4.6	0.4	0.1	4.2	4.3	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	8.7	0.3	1.6	13.5	14.0	1.4	3.8	0.7	1.6	7.5	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.8	20.0	11.2	52.2	31.3	31.3	53.0	34.2	31.1	52.3	40.8	41.4
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		1262			1347			453			691	
Approach Delay, s/veh		22.7			32.3			36.1			42.1	
Approach LOS		C			C			D			D	

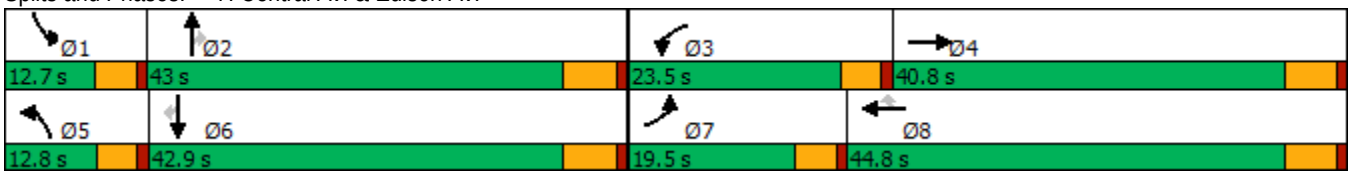
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	28.1	9.4	56.2	8.7	28.7	13.6	52.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	7.8	32.8	10.0	48.6	8.4	32.2	12.4	46.2
Max Q Clear Time (g_c+I1), s	5.8	11.4	5.8	25.4	5.3	19.9	9.3	34.5
Green Ext Time (p_c), s	0.0	2.2	0.0	7.9	0.0	2.8	0.0	6.0

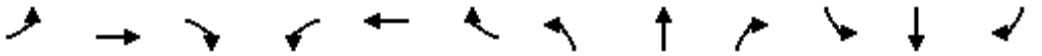
Intersection Summary	
HCM 6th Ctrl Delay	31.3
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	161	619	344	1113	129	83	858	335	101	1010	272
Future Volume (vph)	161	619	344	1113	129	83	858	335	101	1010	272
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	19.5	40.8	23.5	44.8	44.8	12.8	43.0	43.0	12.7	42.9	42.9
Total Split (%)	16.3%	34.0%	19.6%	37.3%	37.3%	10.7%	35.8%	35.8%	10.6%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	14.7	38.1	17.4	40.8	40.8	8.5	38.7	38.7	8.7	38.9	38.9
Actuated g/C Ratio	0.12	0.32	0.15	0.34	0.34	0.07	0.33	0.33	0.07	0.33	0.33
v/c Ratio	0.84	0.65	0.78	0.99	0.22	0.75	0.80	0.55	0.89	0.94	0.50
Control Delay	84.9	38.1	61.3	62.8	7.1	90.9	43.4	15.6	112.8	55.4	22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.9	38.1	61.3	62.8	7.1	90.9	43.4	15.6	112.8	55.4	22.4
LOS	F	D	E	E	A	F	D	B	F	E	C
Approach Delay		47.1		58.0			39.2			53.1	
Approach LOS		D		E			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.9	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 50.1	Intersection LOS: D
Intersection Capacity Utilization 90.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	619	62	344	1113	129	83	858	335	101	1010	272
Future Volume (veh/h)	161	619	62	344	1113	129	83	858	335	101	1010	272
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	168	645	59	358	1159	106	86	894	167	105	1052	225
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	199	1051	96	425	1176	518	113	1110	488	119	1122	493
Arrive On Green	0.12	0.33	0.32	0.14	0.34	0.34	0.07	0.32	0.32	0.07	0.33	0.33
Sat Flow, veh/h	1619	3168	289	3141	3420	1505	1619	3420	1503	1619	3420	1504
Grp Volume(v), veh/h	168	348	356	358	1159	106	86	894	167	105	1052	225
Grp Sat Flow(s),veh/h/ln	1619	1710	1748	1570	1710	1505	1619	1710	1503	1619	1710	1504
Q Serve(g_s), s	12.0	20.2	20.3	13.2	39.9	5.9	6.2	28.4	10.0	7.6	35.4	14.0
Cycle Q Clear(g_c), s	12.0	20.2	20.3	13.2	39.9	5.9	6.2	28.4	10.0	7.6	35.4	14.0
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	199	567	580	425	1176	518	113	1110	488	119	1122	493
V/C Ratio(X)	0.84	0.61	0.61	0.84	0.99	0.20	0.76	0.81	0.34	0.88	0.94	0.46
Avail Cap(c_a), veh/h	212	567	580	516	1176	518	120	1125	494	119	1122	493
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	33.2	33.4	50.0	38.6	27.5	54.2	36.6	30.4	54.5	38.7	31.5
Incr Delay (d2), s/veh	22.7	4.9	4.8	8.7	22.9	0.9	20.1	4.3	0.4	47.6	14.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	8.8	9.1	5.5	19.6	2.2	3.1	12.0	3.6	4.6	16.4	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.6	38.1	38.2	58.8	61.5	28.4	74.3	41.0	30.8	102.1	53.1	32.2
LnGrp LOS	E	D	D	E	E	C	E	D	C	F	D	C
Approach Vol, veh/h		872			1623			1147			1382	
Approach Delay, s/veh		45.0			58.8			42.0			53.4	
Approach LOS		D			E			D			D	

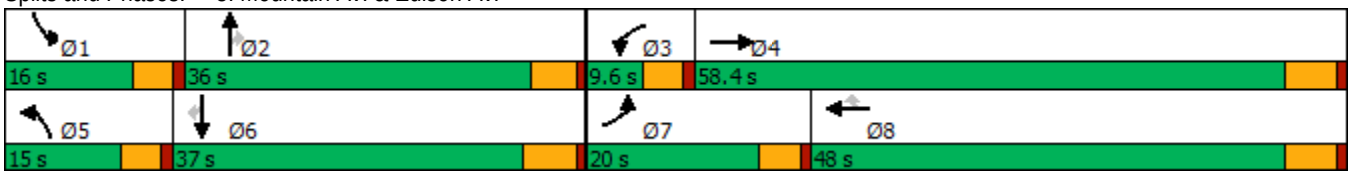
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	42.5	20.1	43.3	12.3	42.9	18.6	44.8
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	8.1	37.2	18.9	35.0	8.2	37.1	14.9	39.0
Max Q Clear Time (g_c+I1), s	9.6	30.4	15.2	22.3	8.2	37.4	14.0	41.9
Green Ext Time (p_c), s	0.0	3.4	0.3	3.2	0.0	0.0	0.0	0.0

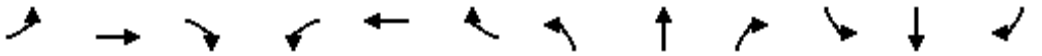
Intersection Summary	
HCM 6th Ctrl Delay	51.1
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	153	691	11	1139	120	92	168	45	121	86	287
Future Volume (vph)	153	691	11	1139	120	92	168	45	121	86	287
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	20.0	58.4	9.6	48.0	48.0	15.0	36.0	36.0	16.0	37.0	37.0
Total Split (%)	16.7%	48.7%	8.0%	40.0%	40.0%	12.5%	30.0%	30.0%	13.3%	30.8%	30.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	14.3	60.9	5.6	44.3	44.3	9.9	18.0	18.0	11.5	19.5	19.5
Actuated g/C Ratio	0.14	0.58	0.05	0.43	0.43	0.10	0.17	0.17	0.11	0.19	0.19
v/c Ratio	0.75	0.28	0.14	0.85	0.18	0.65	0.59	0.13	0.75	0.28	0.66
Control Delay	66.2	12.3	54.8	35.3	3.2	67.6	47.8	0.7	72.0	38.5	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.2	12.3	54.8	35.3	3.2	67.6	47.8	0.7	72.0	38.5	17.7
LOS	E	B	D	D	A	E	D	A	E	D	B
Approach Delay		21.6		32.5			46.8			34.6	
Approach LOS		C		C			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 104.2	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 31.0	Intersection LOS: C
Intersection Capacity Utilization 72.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	691	44	11	1139	120	92	168	45	121	86	287
Future Volume (veh/h)	153	691	44	11	1139	120	92	168	45	121	86	287
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	166	751	44	12	1238	119	100	183	19	132	93	174
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	204	2673	156	33	1566	698	133	250	212	168	303	252
Arrive On Green	0.13	0.56	0.54	0.02	0.46	0.46	0.08	0.14	0.14	0.10	0.17	0.17
Sat Flow, veh/h	1619	4742	277	1619	3420	1524	1619	1800	1525	1619	1800	1497
Grp Volume(v), veh/h	166	518	277	12	1238	119	100	183	19	132	93	174
Grp Sat Flow(s),veh/h/ln	1619	1638	1743	1619	1710	1524	1619	1800	1525	1619	1800	1497
Q Serve(g_s), s	9.6	7.9	8.0	0.7	29.7	4.4	5.8	9.4	1.0	7.7	4.4	10.6
Cycle Q Clear(g_c), s	9.6	7.9	8.0	0.7	29.7	4.4	5.8	9.4	1.0	7.7	4.4	10.6
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	204	1846	982	33	1566	698	133	250	212	168	303	252
V/C Ratio(X)	0.81	0.28	0.28	0.36	0.79	0.17	0.75	0.73	0.09	0.79	0.31	0.69
Avail Cap(c_a), veh/h	268	1846	982	94	1566	698	184	597	506	201	615	512
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.1	10.9	11.0	46.7	22.2	15.4	43.3	39.8	36.2	42.2	35.2	37.8
Incr Delay (d2), s/veh	10.2	0.4	0.7	2.5	4.2	0.5	6.2	4.1	0.2	12.7	0.6	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	2.6	2.9	0.3	11.5	1.5	2.5	4.4	0.4	3.5	1.9	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.3	11.3	11.7	49.1	26.4	15.9	49.5	43.9	36.4	54.9	35.8	41.2
LnGrp LOS	D	B	B	D	C	B	D	D	D	D	D	D
Approach Vol, veh/h		961			1369			302			399	
Approach Delay, s/veh		18.3			25.7			45.3			44.5	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	18.1	6.0	58.4	11.9	20.2	16.2	48.2
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	11.4	* 31	5.0	52.6	10.4	31.2	15.4	42.2
Max Q Clear Time (g_c+I1), s	9.7	11.4	2.7	10.0	7.8	12.6	11.6	31.7
Green Ext Time (p_c), s	0.0	0.9	0.0	5.3	0.0	0.9	0.1	6.0

Intersection Summary	
HCM 6th Ctrl Delay	27.8
HCM 6th LOS	C

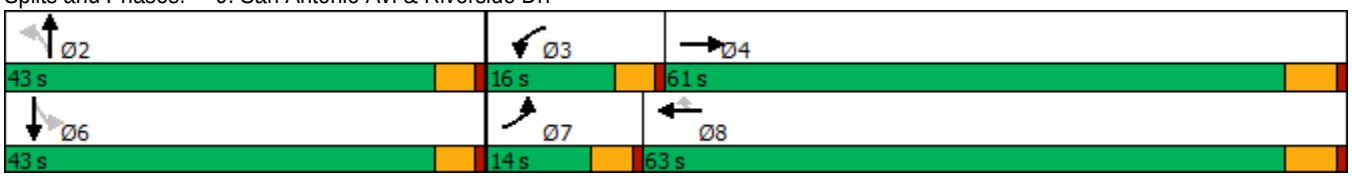
Notes

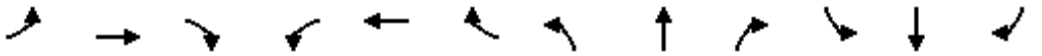
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	18	538	38	920	11	126	2	41	7
Future Volume (vph)	18	538	38	920	11	126	2	41	7
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	14.0	61.0	16.0	63.0	63.0	43.0	43.0	43.0	43.0
Total Split (%)	11.7%	50.8%	13.3%	52.5%	52.5%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	6.5	61.5	7.6	64.5	64.5	17.2	17.2	17.2	17.2
Actuated g/C Ratio	0.07	0.65	0.08	0.69	0.69	0.18	0.18	0.18	0.18
v/c Ratio	0.17	0.29	0.32	0.42	0.01	0.61	0.17	0.20	0.20
Control Delay	47.7	9.2	49.1	9.2	0.0	47.2	10.8	33.9	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.7	9.2	49.1	9.2	0.0	47.2	10.8	33.9	11.9
LOS	D	A	D	A	A	D	B	C	B
Approach Delay		10.3		10.6			36.8		20.6
Approach LOS		B		B			D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 94.1	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 13.6	Intersection LOS: B
Intersection Capacity Utilization 55.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	538	63	38	920	11	126	2	48	41	7	55
Future Volume (veh/h)	18	538	63	38	920	11	126	2	48	41	7	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	19	578	64	41	989	11	135	2	29	44	8	42
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	45	2035	225	69	2292	1000	261	16	238	278	41	217
Arrive On Green	0.03	0.66	0.63	0.04	0.67	0.67	0.17	0.17	0.16	0.17	0.17	0.16
Sat Flow, veh/h	1619	3105	343	1619	3420	1492	1300	99	1439	1320	250	1313
Grp Volume(v), veh/h	19	318	324	41	989	11	135	0	31	44	0	50
Grp Sat Flow(s),veh/h/ln	1619	1710	1738	1619	1710	1492	1300	0	1538	1320	0	1564
Q Serve(g_s), s	1.0	6.9	7.0	2.2	11.8	0.2	8.8	0.0	1.5	2.6	0.0	2.4
Cycle Q Clear(g_c), s	1.0	6.9	7.0	2.2	11.8	0.2	11.2	0.0	1.5	4.1	0.0	2.4
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.94	1.00		0.84
Lane Grp Cap(c), veh/h	45	1121	1139	69	2292	1000	261	0	255	278	0	259
V/C Ratio(X)	0.42	0.28	0.28	0.59	0.43	0.01	0.52	0.00	0.12	0.16	0.00	0.19
Avail Cap(c_a), veh/h	184	1121	1139	221	2292	1000	622	0	681	644	0	693
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.1	6.4	6.5	41.4	6.7	4.8	36.5	0.0	31.5	33.0	0.0	31.9
Incr Delay (d2), s/veh	2.3	0.6	0.6	3.0	0.6	0.0	1.6	0.0	0.2	0.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.1	2.2	0.9	3.3	0.1	2.9	0.0	0.6	0.8	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.4	7.1	7.1	44.4	7.3	4.8	38.1	0.0	31.7	33.3	0.0	32.2
LnGrp LOS	D	A	A	D	A	A	D	A	C	C	A	C
Approach Vol, veh/h		661			1041			166			94	
Approach Delay, s/veh		8.2			8.8			36.9			32.7	
Approach LOS		A			A			D			C	

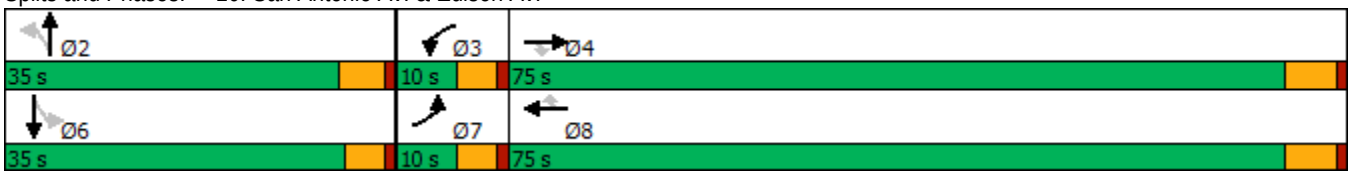
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.6	7.8	61.7		18.6	6.5	63.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		38.4	11.4	55.2		38.4	9.4	57.2				
Max Q Clear Time (g_c+I1), s		13.2	4.2	9.0		6.1	3.0	13.8				
Green Ext Time (p_c), s		0.6	0.0	3.9		0.4	0.0	7.8				

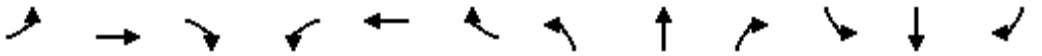
Intersection Summary												
HCM 6th Ctrl Delay			12.1									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	51	779	30	3	1023	23	46	80	18	41
Future Volume (vph)	51	779	30	3	1023	23	46	80	18	41
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	10.0	75.0	75.0	10.0	75.0	75.0	35.0	35.0	35.0	35.0
Total Split (%)	8.3%	62.5%	62.5%	8.3%	62.5%	62.5%	29.2%	29.2%	29.2%	29.2%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	6.0	77.9	77.9	5.8	72.0	72.0		17.8		17.8
Actuated g/C Ratio	0.06	0.74	0.74	0.05	0.68	0.68		0.17		0.17
v/c Ratio	0.60	0.34	0.03	0.06	0.48	0.02		0.74		0.55
Control Delay	78.5	6.5	0.8	54.0	10.1	0.0		61.2		30.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	78.5	6.5	0.8	54.0	10.1	0.0		61.2		30.7
LOS	E	A	A	D	B	A		E		C
Approach Delay		10.5			10.0			61.2		30.7
Approach LOS		B			B			E		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 105.6	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 15.0	Intersection LOS: B
Intersection Capacity Utilization 62.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	779	30	3	1023	23	46	80	15	18	41	102
Future Volume (veh/h)	51	779	30	3	1023	23	46	80	15	18	41	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1000	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	55	847	25	3	1112	25	50	87	7	20	45	72
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	77	2509	1118	9	2380	1061	110	149	11	60	84	115
Arrive On Green	0.05	0.73	0.73	0.01	0.70	0.70	0.14	0.14	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1619	3420	1523	952	3420	1525	447	1075	78	149	625	858
Grp Volume(v), veh/h	55	847	25	3	1112	25	144	0	0	137	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1523	952	1710	1525	1600	0	0	1633	0	0
Q Serve(g_s), s	3.4	8.9	0.5	0.3	15.0	0.5	0.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.4	8.9	0.5	0.3	15.0	0.5	8.6	0.0	0.0	7.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.35		0.05	0.15		0.53
Lane Grp Cap(c), veh/h	77	2509	1118	9	2380	1061	270	0	0	259	0	0
V/C Ratio(X)	0.71	0.34	0.02	0.32	0.47	0.02	0.53	0.00	0.00	0.53	0.00	0.00
Avail Cap(c_a), veh/h	95	2509	1118	56	2380	1061	528	0	0	522	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	47.9	4.8	3.7	50.2	7.0	4.8	41.4	0.0	0.0	41.9	0.0	0.0
Incr Delay (d2), s/veh	11.7	0.4	0.0	7.0	0.7	0.0	1.6	0.0	0.0	1.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	2.4	0.1	0.1	4.4	0.1	3.5	0.0	0.0	3.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.6	5.2	3.7	57.2	7.7	4.8	43.1	0.0	0.0	43.6	0.0	0.0
LnGrp LOS	E	A	A	E	A	A	D	A	A	D	A	A
Approach Vol, veh/h		927			1140			144			137	
Approach Delay, s/veh		8.4			7.7			43.1			43.6	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.2	5.0	78.9		18.2	8.9	75.0				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		29.9	5.4	69.2		* 30	5.4	69.2				
Max Q Clear Time (g_c+I1), s		10.6	2.3	10.9		9.9	5.4	17.0				
Green Ext Time (p_c), s		0.7	0.0	6.5		0.7	0.0	9.6				

Intersection Summary	
HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B

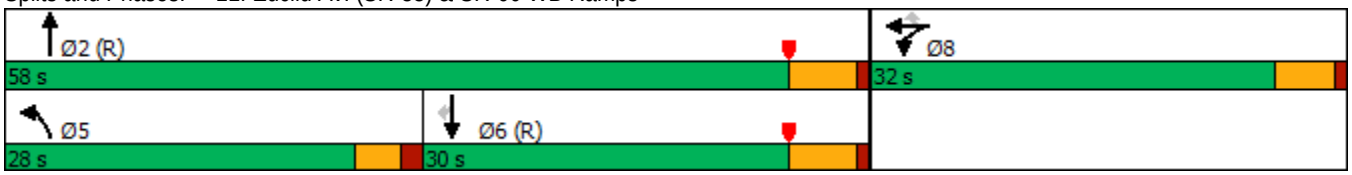
Notes

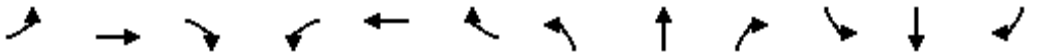
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	761	6	469	507	1046	1110	539
Future Volume (vph)	761	6	469	507	1046	1110	539
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	32.0	32.0	32.0	28.0	58.0	30.0	30.0
Total Split (%)	35.6%	35.6%	35.6%	31.1%	64.4%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	26.3	26.3	26.3	24.2	53.2	24.5	24.5
Actuated g/C Ratio	0.29	0.29	0.29	0.27	0.59	0.27	0.27
v/c Ratio	0.91	0.94	0.81	1.11	0.52	1.20	0.68
Control Delay	54.8	60.4	36.7	78.5	21.3	132.2	7.5
Queue Delay	0.0	0.0	0.0	0.0	3.5	0.0	0.0
Total Delay	54.8	60.4	36.7	78.5	24.8	132.2	7.5
LOS	D	E	D	E	C	F	A
Approach Delay		51.1			42.3	91.5	
Approach LOS		D			D	F	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay: 63.0	Intersection LOS: E
Intersection Capacity Utilization 145.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	761	6	469	507	1046	0	0	1110	539
Future Volume (veh/h)	0	0	0	761	6	469	507	1046	0	0	1110	539
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				899	0	189	539	1113	0	0	1181	345
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				989	0	440	472	2202	0	0	1079	481
Arrive On Green				0.27	0.00	0.27	0.52	1.00	0.00	0.00	0.30	0.30
Sat Flow, veh/h				3619	0	1610	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				899	0	189	539	1113	0	0	1181	345
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1610
Q Serve(g_s), s				21.6	0.0	8.7	23.5	0.0	0.0	0.0	26.9	17.2
Cycle Q Clear(g_c), s				21.6	0.0	8.7	23.5	0.0	0.0	0.0	26.9	17.2
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				989	0	440	472	2202	0	0	1079	481
V/C Ratio(X)				0.91	0.00	0.43	1.14	0.51	0.00	0.00	1.09	0.72
Avail Cap(c_a), veh/h				1086	0	483	472	2202	0	0	1079	481
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.6	0.0	26.9	21.5	0.0	0.0	0.0	31.5	28.2
Incr Delay (d2), s/veh				10.0	0.0	0.2	66.0	0.1	0.0	0.0	57.0	8.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				10.1	0.0	3.2	14.2	0.0	0.0	0.0	19.4	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				41.6	0.0	27.2	87.5	0.1	0.0	0.0	88.5	37.0
LnGrp LOS				D	A	C	F	A	A	A	F	D
Approach Vol, veh/h					1088			1652			1526	
Approach Delay, s/veh					39.1			28.6			76.9	
Approach LOS					D			C			E	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		60.4			28.0	32.4		29.6				
Change Period (Y+Rc), s		5.5			4.5	5.5		5.0				
Max Green Setting (Gmax), s		52.5			23.5	24.5		27.0				
Max Q Clear Time (g_c+I1), s		2.0			25.5	28.9		23.6				
Green Ext Time (p_c), s		15.0			0.0	0.0		1.0				

Intersection Summary		
HCM 6th Ctrl Delay	48.5	
HCM 6th LOS	D	

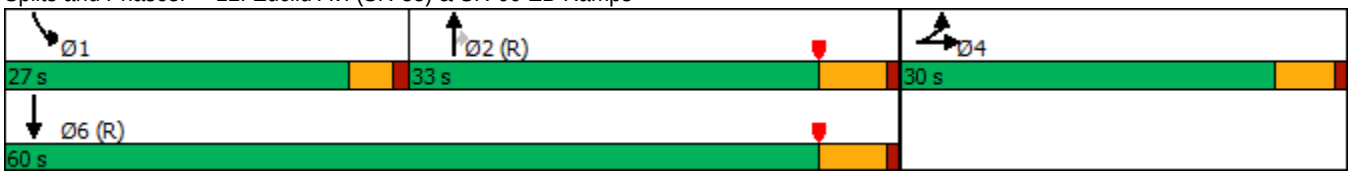
Notes

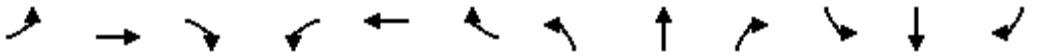
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	463	2	1091	788	417	1453
Future Volume (vph)	463	2	1091	788	417	1453
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	30.0	30.0	33.0	33.0	27.0	60.0
Total Split (%)	33.3%	33.3%	36.7%	36.7%	30.0%	66.7%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	25.0	25.0	27.7	27.7	22.8	54.5
Actuated g/C Ratio	0.28	0.28	0.31	0.31	0.25	0.61
v/c Ratio	0.92	1.59	1.03	0.91	0.96	0.70
Control Delay	58.8	299.6	67.8	24.0	47.6	5.8
Queue Delay	37.5	1.4	0.0	0.0	0.0	2.1
Total Delay	96.4	301.0	67.8	24.0	47.6	7.8
LOS	F	F	E	C	D	A
Approach Delay		223.8	49.4			16.7
Approach LOS		F	D			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.59	
Intersection Signal Delay: 76.5	Intersection LOS: E
Intersection Capacity Utilization 145.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	463	2	638	0	0	0	0	1091	788	417	1453	0
Future Volume (veh/h)	463	2	638	0	0	0	0	1091	788	417	1453	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	487	2	617				0	1148	630	439	1529	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	503	1	446				0	1103	478	462	2186	0
Arrive On Green	0.28	0.28	0.28				0.00	0.31	0.31	0.34	0.81	0.00
Sat Flow, veh/h	1810	5	1606				0	3705	1566	1810	3705	0
Grp Volume(v), veh/h	487	0	619				0	1148	630	439	1529	0
Grp Sat Flow(s),veh/h/ln	1810	0	1611				0	1805	1566	1810	1805	0
Q Serve(g_s), s	23.9	0.0	25.0				0.0	27.5	27.5	21.3	17.0	0.0
Cycle Q Clear(g_c), s	23.9	0.0	25.0				0.0	27.5	27.5	21.3	17.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	503	0	447				0	1103	478	462	2186	0
V/C Ratio(X)	0.97	0.00	1.38				0.00	1.04	1.32	0.95	0.70	0.00
Avail Cap(c_a), veh/h	503	0	447				0	1103	478	462	2186	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.33	1.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.56	0.56	0.09	0.09	0.00
Uniform Delay (d), s/veh	32.1	0.0	32.5				0.0	31.3	31.2	29.1	5.1	0.0
Incr Delay (d2), s/veh	32.0	0.0	185.9				0.0	31.8	150.9	4.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.1	0.0	32.1				0.0	16.0	29.7	8.4	3.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.1	0.0	218.4				0.0	63.0	182.1	34.0	5.3	0.0
LnGrp LOS	E	A	F				A	F	F	C	A	A
Approach Vol, veh/h		1106						1778			1968	
Approach Delay, s/veh		150.5						105.2			11.7	
Approach LOS		F						F			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	27.0	33.0		30.0		60.0
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	23.0	27.5		25.0		54.5
Max Q Clear Time (g_c+I1), s	23.3	29.5		27.0		19.0
Green Ext Time (p_c), s	0.0	0.0		0.0		20.6

Intersection Summary	
HCM 6th Ctrl Delay	77.6
HCM 6th LOS	E

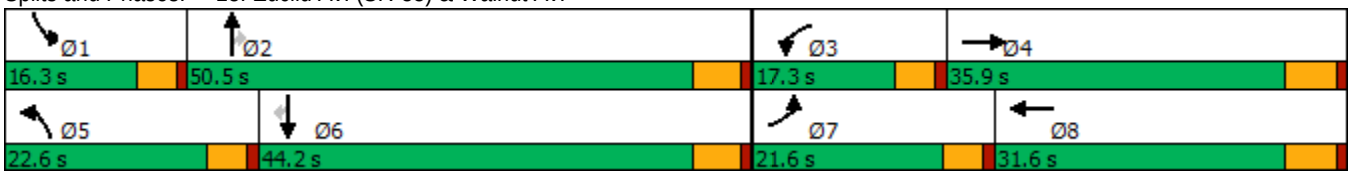
Notes

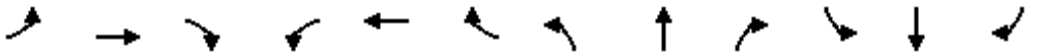
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	130	331	83	353	144	1460	52	172	1708	68
Future Volume (vph)	130	331	83	353	144	1460	52	172	1708	68
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	21.6	35.9	17.3	31.6	22.6	50.5	50.5	16.3	44.2	44.2
Total Split (%)	18.0%	29.9%	14.4%	26.3%	18.8%	42.1%	42.1%	13.6%	36.8%	36.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	13.2	27.9	9.9	22.2	14.1	45.4	45.4	10.3	41.6	41.6
Actuated g/C Ratio	0.12	0.25	0.09	0.20	0.13	0.41	0.41	0.09	0.37	0.37
v/c Ratio	0.72	0.57	0.61	0.85	0.75	0.77	0.08	0.67	0.98	0.11
Control Delay	69.6	36.9	68.9	46.7	70.2	33.1	0.2	63.0	53.5	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.6	36.9	68.9	46.7	70.2	33.1	0.2	63.0	53.5	0.3
LOS	E	D	E	D	E	C	A	E	D	A
Approach Delay		44.1		49.4		35.3			52.5	
Approach LOS		D		D		D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.6	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 45.2	Intersection LOS: D
Intersection Capacity Utilization 87.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	331	128	83	353	234	144	1460	52	172	1708	68
Future Volume (veh/h)	130	331	128	83	353	234	144	1460	52	172	1708	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	137	348	99	87	372	206	152	1537	37	181	1798	51
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	163	632	177	108	438	239	179	2079	645	234	1926	597
Arrive On Green	0.10	0.24	0.24	0.07	0.21	0.21	0.11	0.42	0.42	0.08	0.39	0.39
Sat Flow, veh/h	1619	2637	740	1619	2134	1163	1619	4914	1524	2956	4914	1524
Grp Volume(v), veh/h	137	224	223	87	297	281	152	1537	37	181	1798	51
Grp Sat Flow(s),veh/h/ln	1619	1710	1667	1619	1710	1587	1619	1638	1524	1478	1638	1524
Q Serve(g_s), s	8.9	12.2	12.5	5.6	17.8	18.2	9.8	28.0	1.5	6.4	37.4	2.2
Cycle Q Clear(g_c), s	8.9	12.2	12.5	5.6	17.8	18.2	9.8	28.0	1.5	6.4	37.4	2.2
Prop In Lane	1.00		0.44	1.00		0.73	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	163	410	399	108	351	326	179	2079	645	234	1926	597
V/C Ratio(X)	0.84	0.55	0.56	0.81	0.85	0.86	0.85	0.74	0.06	0.77	0.93	0.09
Avail Cap(c_a), veh/h	258	483	471	193	414	384	273	2079	645	325	1926	597
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	35.5	35.6	49.1	40.7	40.9	46.5	25.8	18.2	48.1	31.1	20.4
Incr Delay (d2), s/veh	7.1	1.1	1.2	5.3	13.2	16.0	9.1	2.4	0.2	4.6	9.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	5.0	5.0	2.4	8.5	8.3	4.3	10.7	0.5	2.5	15.6	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.2	36.6	36.8	54.3	53.9	56.9	55.7	28.2	18.3	52.7	40.9	20.7
LnGrp LOS	D	D	D	D	D	E	E	C	B	D	D	C
Approach Vol, veh/h		584			665			1726			2030	
Approach Delay, s/veh		40.8			55.2			30.4			41.5	
Approach LOS		D			E			C			D	

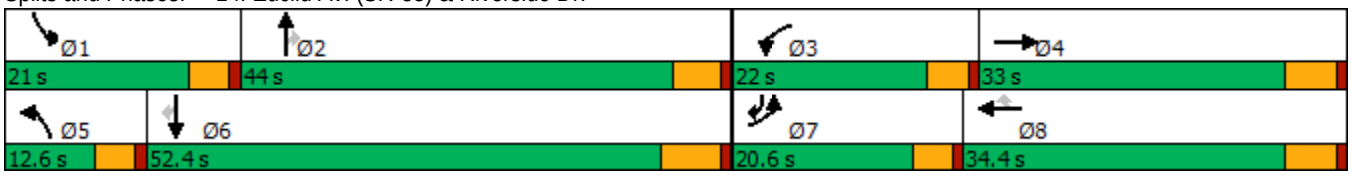
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	50.5	11.7	31.3	16.4	47.2	15.3	27.7
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	11.7	45.1	12.7	30.1	18.0	38.8	17.0	25.8
Max Q Clear Time (g_c+I1), s	8.4	30.0	7.6	14.5	11.8	39.4	10.9	20.2
Green Ext Time (p_c), s	0.1	9.1	0.0	2.1	0.1	0.0	0.1	1.6

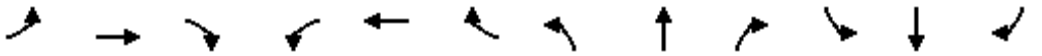
Intersection Summary	
HCM 6th Ctrl Delay	39.4
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	176	357	219	560	132	92	1216	181	199	1498	175
Future Volume (vph)	176	357	219	560	132	92	1216	181	199	1498	175
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	20.6	33.0	22.0	34.4	34.4	12.6	44.0	44.0	21.0	52.4	20.6
Total Split (%)	17.2%	27.5%	18.3%	28.7%	28.7%	10.5%	36.7%	36.7%	17.5%	43.7%	17.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None
Act Effct Green (s)	15.4	27.2	17.4	29.2	29.2	8.0	38.6	38.6	16.4	45.9	63.2
Actuated g/C Ratio	0.13	0.23	0.14	0.24	0.24	0.07	0.32	0.32	0.14	0.38	0.53
v/c Ratio	0.90	1.20	0.99	0.71	0.28	0.91	1.16	0.32	0.95	1.21	0.22
Control Delay	92.3	149.9	107.3	47.1	5.7	120.6	121.2	9.5	100.9	134.0	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.3	149.9	107.3	47.1	5.7	120.6	121.2	9.5	100.9	134.0	8.6
LOS	F	F	F	D	A	F	F	A	F	F	A
Approach Delay		133.9		55.6			107.5			118.8	
Approach LOS		F		E			F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.21	
Intersection Signal Delay: 105.6	Intersection LOS: F
Intersection Capacity Utilization 107.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	357	101	219	560	132	92	1216	181	199	1498	175
Future Volume (veh/h)	176	357	101	219	560	132	92	1216	181	199	1498	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	185	376	90	231	589	110	97	1280	151	209	1577	125
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	208	315	75	233	819	365	107	1090	486	219	1327	788
Arrive On Green	0.13	0.22	0.22	0.14	0.24	0.24	0.07	0.32	0.32	0.14	0.39	0.39
Sat Flow, veh/h	1619	1404	336	1619	3420	1525	1619	3420	1525	1619	3420	1524
Grp Volume(v), veh/h	185	0	466	231	589	110	97	1280	151	209	1577	125
Grp Sat Flow(s),veh/h/ln	1619	0	1740	1619	1710	1525	1619	1710	1525	1619	1710	1524
Q Serve(g_s), s	13.6	0.0	27.2	17.3	19.2	7.2	7.2	38.6	9.1	15.5	47.0	5.2
Cycle Q Clear(g_c), s	13.6	0.0	27.2	17.3	19.2	7.2	7.2	38.6	9.1	15.5	47.0	5.2
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	208	0	391	233	819	365	107	1090	486	219	1327	788
V/C Ratio(X)	0.89	0.00	1.19	0.99	0.72	0.30	0.91	1.17	0.31	0.95	1.19	0.16
Avail Cap(c_a), veh/h	214	0	391	233	819	365	107	1090	486	219	1327	788
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.9	0.0	47.0	51.8	42.3	37.7	56.2	41.2	31.2	52.0	37.1	15.4
Incr Delay (d2), s/veh	31.5	0.0	109.3	56.9	3.1	0.5	57.4	88.3	1.7	47.2	92.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	0.0	23.2	10.5	8.2	2.7	4.5	28.5	3.5	9.0	35.7	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.4	0.0	156.3	108.7	45.4	38.2	113.5	129.5	32.8	99.1	129.5	15.8
LnGrp LOS	F	A	F	F	D	D	F	F	C	F	F	B
Approach Vol, veh/h		651			930			1528			1911	
Approach Delay, s/veh		135.6			60.2			119.0			118.8	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	45.1	22.0	33.0	12.6	53.5	20.2	34.8
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	16.4	* 39	17.4	27.2	8.0	45.9	16.0	28.6
Max Q Clear Time (g_c+I1), s	17.5	40.6	19.3	29.2	9.2	49.0	15.6	21.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	110.2
HCM 6th LOS	F

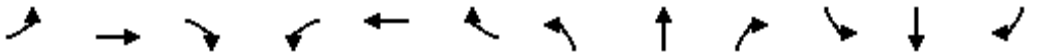
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	119	190	57	83	173	61	1307	148	64	1622	106
Future Volume (vph)	119	190	57	83	173	61	1307	148	64	1622	106
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	44.0	44.0	44.0	44.0	44.0	15.0	60.0	60.0	16.0	61.0	61.0
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	12.5%	50.0%	50.0%	13.3%	50.8%	50.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	30.1	30.1	30.1		30.1	8.2	56.4	56.4	8.6	55.4	55.4
Actuated g/C Ratio	0.28	0.28	0.28		0.28	0.08	0.52	0.52	0.08	0.51	0.51
v/c Ratio	0.63	0.40	0.13		0.92	0.53	0.78	0.19	0.53	0.99	0.14
Control Delay	49.6	34.6	5.5		68.1	67.6	27.9	11.0	66.3	47.9	7.9
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.6	34.6	5.5		68.1	67.6	27.9	11.0	66.3	47.9	7.9
LOS	D	C	A		E	E	C	B	E	D	A
Approach Delay		35.0			68.1		27.9			46.2	
Approach LOS		C			E		C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108.5	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 39.9	Intersection LOS: D
Intersection Capacity Utilization 99.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	190	57	83	173	58	61	1307	148	64	1622	106
Future Volume (veh/h)	119	190	57	83	173	58	61	1307	148	64	1622	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	127	202	45	88	184	50	65	1390	133	68	1726	82
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	228	506	428	122	223	56	81	1742	777	85	1750	764
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.05	0.51	0.51	0.05	0.51	0.51
Sat Flow, veh/h	1100	1800	1524	281	794	198	1619	3420	1525	1619	3420	1494
Grp Volume(v), veh/h	127	202	45	322	0	0	65	1390	133	68	1726	82
Grp Sat Flow(s),veh/h/ln	1100	1800	1524	1272	0	0	1619	1710	1525	1619	1710	1494
Q Serve(g_s), s	0.0	9.8	2.4	17.3	0.0	0.0	4.3	36.1	5.0	4.5	53.5	3.1
Cycle Q Clear(g_c), s	25.6	9.8	2.4	27.0	0.0	0.0	4.3	36.1	5.0	4.5	53.5	3.1
Prop In Lane	1.00		1.00	0.27		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	228	506	428	400	0	0	81	1742	777	85	1750	764
V/C Ratio(X)	0.56	0.40	0.11	0.80	0.00	0.00	0.80	0.80	0.17	0.80	0.99	0.11
Avail Cap(c_a), veh/h	310	639	541	513	0	0	157	1742	777	172	1750	764
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.0	31.3	28.6	38.8	0.0	0.0	50.6	21.8	14.2	50.4	25.9	13.6
Incr Delay (d2), s/veh	2.1	0.5	0.1	7.1	0.0	0.0	6.7	3.9	0.5	6.4	18.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	4.1	0.8	8.7	0.0	0.0	1.8	13.4	1.7	1.9	22.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.1	31.8	28.8	45.9	0.0	0.0	57.2	25.7	14.7	56.8	44.4	13.8
LnGrp LOS	D	C	C	D	A	A	E	C	B	E	D	B
Approach Vol, veh/h		374			322			1588			1876	
Approach Delay, s/veh		33.9			45.9			26.1			43.5	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.2	61.3		36.0	10.0	61.6		36.0				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	11.4	* 55		38.2	10.4	54.5		38.2				
Max Q Clear Time (g_c+I1), s	6.5	38.1		27.6	6.3	55.5		29.0				
Green Ext Time (p_c), s	0.0	8.7		1.2	0.0	0.0		1.2				

Intersection Summary		
HCM 6th Ctrl Delay	36.2	
HCM 6th LOS	D	

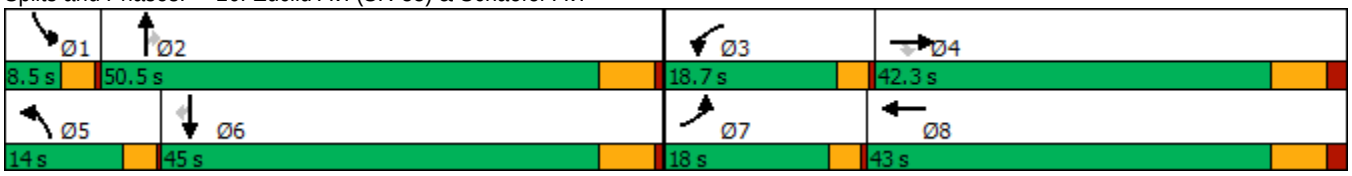
Notes

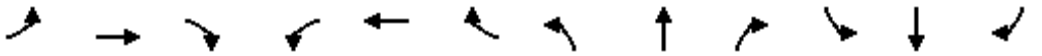
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	176	92	75	161	206	122	1272	40	33	1533	140
Future Volume (vph)	176	92	75	161	206	122	1272	40	33	1533	140
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	18.0	42.3	42.3	18.7	43.0	14.0	50.5	50.5	8.5	45.0	45.0
Total Split (%)	15.0%	35.3%	35.3%	15.6%	35.8%	11.7%	42.1%	42.1%	7.1%	37.5%	37.5%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	14.6	20.3	20.3	14.1	19.8	10.6	48.4	48.4	5.0	39.2	39.2
Actuated g/C Ratio	0.14	0.19	0.19	0.14	0.19	0.10	0.46	0.46	0.05	0.38	0.38
v/c Ratio	0.84	0.28	0.20	0.79	0.69	0.80	0.86	0.06	0.45	1.28	0.23
Control Delay	75.5	37.4	2.8	70.5	49.3	81.4	34.1	0.1	70.0	162.8	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.5	37.4	2.8	70.5	49.3	81.4	34.1	0.1	70.0	162.8	7.2
LOS	E	D	A	E	D	F	C	A	E	F	A
Approach Delay		49.3			58.3		37.1			148.2	
Approach LOS		D			E		D			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 104.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.28	
Intersection Signal Delay: 89.3	Intersection LOS: F
Intersection Capacity Utilization 94.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	92	75	161	206	13	122	1272	40	33	1533	140
Future Volume (veh/h)	176	92	75	161	206	13	122	1272	40	33	1533	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	189	99	62	173	222	12	131	1368	33	35	1648	117
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	218	314	266	202	278	15	157	1590	709	51	1365	607
Arrive On Green	0.13	0.17	0.17	0.12	0.16	0.16	0.10	0.47	0.47	0.03	0.40	0.40
Sat Flow, veh/h	1619	1800	1525	1619	1692	91	1619	3420	1525	1619	3420	1522
Grp Volume(v), veh/h	189	99	62	173	0	234	131	1368	33	35	1648	117
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1783	1619	1710	1525	1619	1710	1522
Q Serve(g_s), s	11.2	4.7	3.4	10.2	0.0	12.3	7.8	34.8	1.2	2.1	39.0	4.9
Cycle Q Clear(g_c), s	11.2	4.7	3.4	10.2	0.0	12.3	7.8	34.8	1.2	2.1	39.0	4.9
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	218	314	266	202	0	293	157	1590	709	51	1365	607
V/C Ratio(X)	0.87	0.32	0.23	0.86	0.00	0.80	0.83	0.86	0.05	0.69	1.21	0.19
Avail Cap(c_a), veh/h	240	650	551	252	0	657	174	1590	709	83	1365	607
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.4	35.2	34.7	41.9	0.0	39.3	43.3	23.3	14.3	46.8	29.3	19.1
Incr Delay (d2), s/veh	23.7	0.4	0.3	17.8	0.0	3.7	23.6	5.0	0.0	6.0	100.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	2.0	1.2	4.9	0.0	5.5	4.0	13.1	0.4	0.9	33.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.1	35.7	35.1	59.7	0.0	43.0	66.9	28.3	14.3	52.9	129.7	19.3
LnGrp LOS	E	D	D	E	A	D	E	C	B	D	F	B
Approach Vol, veh/h		350			407			1532			1800	
Approach Delay, s/veh		51.5			50.1			31.3			121.0	
Approach LOS		D			D			C			F	

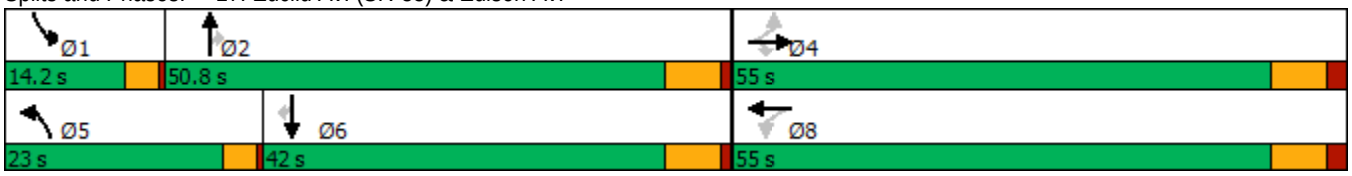
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	51.4	15.7	24.0	13.0	45.0	16.6	23.1
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	44.5	15.2	35.3	10.5	39.0	14.5	36.0
Max Q Clear Time (g_c+I1), s	4.1	36.8	12.2	6.7	9.8	41.0	13.2	14.3
Green Ext Time (p_c), s	0.0	4.8	0.1	0.5	0.0	0.0	0.0	0.9

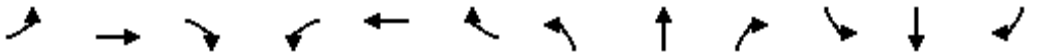
Intersection Summary	
HCM 6th Ctrl Delay	74.4
HCM 6th LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	179	421	147	41	519	257	1181	45	156	1326	192
Future Volume (vph)	179	421	147	41	519	257	1181	45	156	1326	192
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	55.0	55.0	55.0	55.0	55.0	23.0	50.8	50.8	14.2	42.0	42.0
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	19.2%	42.3%	42.3%	11.8%	35.0%	35.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	48.0	48.0	48.0	48.0	48.0	19.5	44.8	44.8	10.7	36.0	36.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.16	0.37	0.37	0.09	0.30	0.30
v/c Ratio	2.02	0.61	0.22	0.19	0.90	1.02	0.96	0.08	1.13	1.35	0.38
Control Delay	519.5	33.0	4.4	26.2	51.3	111.3	55.1	3.0	163.9	196.9	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	519.5	33.0	4.4	26.2	51.3	111.3	55.1	3.0	163.9	196.9	17.7
LOS	F	C	A	C	D	F	E	A	F	F	B
Approach Delay		143.7			49.7		63.3			173.3	
Approach LOS		F			D		E			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.02	
Intersection Signal Delay: 114.9	Intersection LOS: F
Intersection Capacity Utilization 120.6%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	421	147	41	519	94	257	1181	45	156	1326	192
Future Volume (veh/h)	179	421	147	41	519	94	257	1181	45	156	1326	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	186	439	98	43	541	93	268	1230	39	162	1381	149
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	106	720	610	232	599	103	263	1277	569	144	1026	447
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.16	0.37	0.37	0.09	0.30	0.30
Sat Flow, veh/h	761	1800	1524	833	1496	257	1619	3420	1525	1619	3420	1489
Grp Volume(v), veh/h	186	439	98	43	0	634	268	1230	39	162	1381	149
Grp Sat Flow(s),veh/h/ln	761	1800	1524	833	0	1753	1619	1710	1525	1619	1710	1489
Q Serve(g_s), s	7.2	23.2	4.9	5.2	0.0	40.8	19.5	42.2	2.0	10.7	36.0	9.3
Cycle Q Clear(g_c), s	48.0	23.2	4.9	28.4	0.0	40.8	19.5	42.2	2.0	10.7	36.0	9.3
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	106	720	610	232	0	701	263	1277	569	144	1026	447
V/C Ratio(X)	1.76	0.61	0.16	0.19	0.00	0.90	1.02	0.96	0.07	1.12	1.35	0.33
Avail Cap(c_a), veh/h	106	720	610	232	0	701	263	1277	569	144	1026	447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.4	28.6	23.1	39.8	0.0	33.8	50.3	36.8	24.2	54.7	42.0	32.7
Incr Delay (d2), s/veh	376.7	1.5	0.1	0.4	0.0	15.2	60.4	17.1	0.1	111.5	162.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.2	9.8	1.7	1.1	0.0	19.3	11.9	19.2	0.7	8.6	37.3	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	435.1	30.1	23.2	40.2	0.0	49.0	110.6	53.9	24.2	166.1	204.3	33.1
LnGrp LOS	F	C	C	D	A	D	F	D	C	F	F	C
Approach Vol, veh/h		723			677			1537			1692	
Approach Delay, s/veh		133.3			48.5			63.1			185.5	
Approach LOS		F			D			E			F	

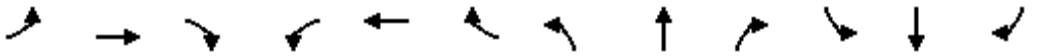
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.2	50.8		55.0	23.0	42.0		55.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	10.7	44.8		48.0	19.5	36.0		48.0				
Max Q Clear Time (g_c+I1), s	12.7	44.2		50.0	21.5	38.0		42.8				
Green Ext Time (p_c), s	0.0	0.4		0.0	0.0	0.0		1.9				

Intersection Summary		
HCM 6th Ctrl Delay		116.7
HCM 6th LOS		F

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	76	38	186	37	176	201	1397	14	113	1455	46
Future Volume (vph)	76	38	186	37	176	201	1397	14	113	1455	46
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	46.8	46.8	46.8	46.8	46.8	24.0	63.5	63.5	9.7	49.2	49.2
Total Split (%)	39.0%	39.0%	39.0%	39.0%	39.0%	20.0%	52.9%	52.9%	8.1%	41.0%	41.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	19.9	19.9	19.9	19.9	19.9	16.3	54.3	54.3	6.3	44.4	44.4
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.17	0.57	0.57	0.07	0.47	0.47
v/c Ratio	0.57	0.10	0.40	0.15	0.66	0.74	0.73	0.02	1.07	0.93	0.06
Control Delay	49.5	29.8	6.9	30.8	40.2	56.1	19.5	0.0	154.1	37.5	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	29.8	6.9	30.8	40.2	56.1	19.5	0.0	154.1	37.5	1.7
LOS	D	C	A	C	D	E	B	A	F	D	A
Approach Delay		20.6			39.0		23.9			44.6	
Approach LOS		C			D		C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 94.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 33.5	Intersection LOS: C
Intersection Capacity Utilization 89.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	38	186	37	176	67	201	1397	14	113	1455	46
Future Volume (veh/h)	76	38	186	37	176	67	201	1397	14	113	1455	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	78	39	104	38	180	60	205	1426	13	115	1485	36
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	188	403	342	328	289	96	239	1878	838	113	1612	718
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.15	0.55	0.55	0.07	0.47	0.47
Sat Flow, veh/h	1094	1800	1525	1195	1292	431	1619	3420	1525	1619	3420	1524
Grp Volume(v), veh/h	78	39	104	38	0	240	205	1426	13	115	1485	36
Grp Sat Flow(s),veh/h/ln	1094	1800	1525	1195	0	1722	1619	1710	1525	1619	1710	1524
Q Serve(g_s), s	6.2	1.5	5.1	2.3	0.0	11.2	11.0	28.7	0.3	6.2	36.1	1.1
Cycle Q Clear(g_c), s	17.4	1.5	5.1	3.9	0.0	11.2	11.0	28.7	0.3	6.2	36.1	1.1
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	403	342	328	0	386	239	1878	838	113	1612	718
V/C Ratio(X)	0.41	0.10	0.30	0.12	0.00	0.62	0.86	0.76	0.02	1.02	0.92	0.05
Avail Cap(c_a), veh/h	459	849	719	624	0	812	373	2219	990	113	1670	744
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	27.4	28.8	28.9	0.0	31.2	37.0	15.5	9.1	41.4	22.0	12.8
Incr Delay (d2), s/veh	1.1	0.1	0.4	0.1	0.0	1.2	9.7	1.3	0.0	90.3	8.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.6	1.8	0.6	0.0	4.5	4.7	9.1	0.1	5.1	13.8	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.1	27.5	29.2	29.1	0.0	32.4	46.7	16.8	9.1	131.8	30.7	12.8
LnGrp LOS	D	C	C	C	A	C	D	B	A	F	C	B
Approach Vol, veh/h		221			278			1644			1636	
Approach Delay, s/veh		32.7			31.9			20.5			37.4	
Approach LOS		C			C			C			D	

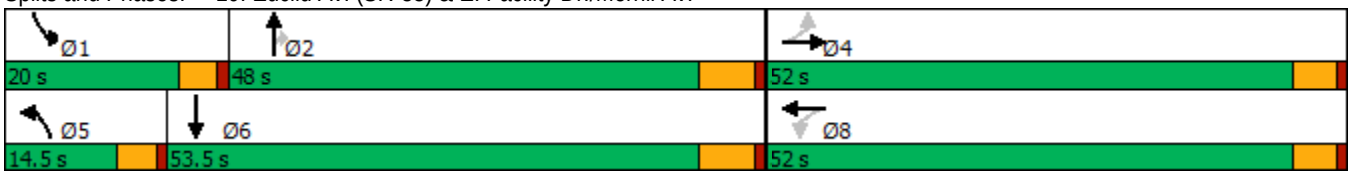
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.7	54.6		24.7	16.6	47.7		24.7				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	6.2	57.8		42.0	20.5	43.5		42.0				
Max Q Clear Time (g_c+I1), s	8.2	30.7		19.4	13.0	38.1		13.2				
Green Ext Time (p_c), s	0.0	11.0		0.6	0.2	3.8		1.1				

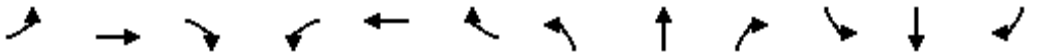
Intersection Summary			
HCM 6th Ctrl Delay		29.4	
HCM 6th LOS		C	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	4	9	324	55	11	1182	395	343	1261
Future Volume (vph)	4	9	324	55	11	1182	395	343	1261
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	52.0	52.0	52.0	52.0	14.5	48.0	48.0	20.0	53.5
Total Split (%)	43.3%	43.3%	43.3%	43.3%	12.1%	40.0%	40.0%	16.7%	44.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		47.0		47.0	10.0	42.0	42.0	15.5	59.1
Actuated g/C Ratio		0.39		0.39	0.08	0.35	0.35	0.13	0.49
v/c Ratio		0.05		1.39	0.08	1.02	0.66	1.70	0.80
Control Delay		12.9		216.8	52.4	69.6	27.8	368.2	30.9
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		12.9		216.8	52.4	69.6	27.8	368.2	30.9
LOS		B		F	D	E	C	F	C
Approach Delay		12.9		216.8		59.1			101.2
Approach LOS		B		F		E			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.70	
Intersection Signal Delay: 106.8	Intersection LOS: F
Intersection Capacity Utilization 124.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	9	19	324	55	420	11	1182	395	343	1261	44
Future Volume (veh/h)	4	9	19	324	55	420	11	1182	395	343	1261	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	4	9	19	334	57	406	11	1219	364	354	1300	31
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	88	195	363	288	42	299	41	1197	534	209	1548	37
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.03	0.35	0.35	0.13	0.45	0.45
Sat Flow, veh/h	137	497	928	627	107	762	1619	3420	1525	1619	3412	81
Grp Volume(v), veh/h	32	0	0	797	0	0	11	1219	364	354	651	680
Grp Sat Flow(s),veh/h/ln	1562	0	0	1496	0	0	1619	1710	1525	1619	1710	1783
Q Serve(g_s), s	0.0	0.0	0.0	45.5	0.0	0.0	0.8	42.0	24.4	15.5	40.3	40.4
Cycle Q Clear(g_c), s	1.5	0.0	0.0	47.0	0.0	0.0	0.8	42.0	24.4	15.5	40.3	40.4
Prop In Lane	0.12		0.59	0.42		0.51	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	646	0	0	629	0	0	41	1197	534	209	776	809
V/C Ratio(X)	0.05	0.00	0.00	1.27	0.00	0.00	0.27	1.02	0.68	1.69	0.84	0.84
Avail Cap(c_a), veh/h	646	0	0	629	0	0	135	1197	534	209	776	809
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.7	0.0	0.0	38.0	0.0	0.0	57.4	39.0	33.3	52.2	28.9	29.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	132.8	0.0	0.0	1.3	30.7	3.5	331.5	8.2	7.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	41.0	0.0	0.0	0.3	21.4	9.0	25.3	16.7	17.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.7	0.0	0.0	170.8	0.0	0.0	58.6	69.7	36.8	383.8	37.1	36.9
LnGrp LOS	C	A	A	F	A	A	E	F	D	F	D	D
Approach Vol, veh/h		32			797			1594			1685	
Approach Delay, s/veh		22.7			170.8			62.1			109.8	
Approach LOS		C			F			E			F	

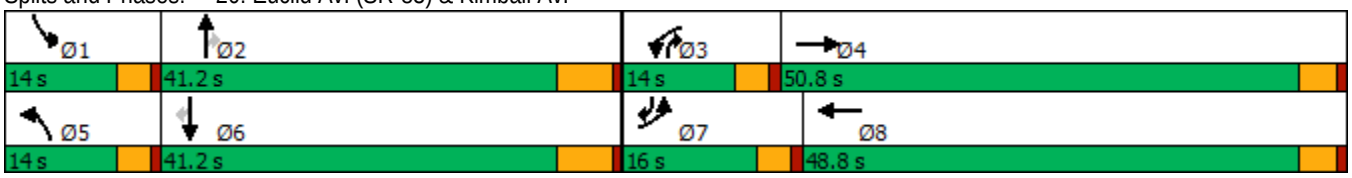
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.0	48.0		52.0	7.6	60.4		52.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	15.5	42.0		47.0	10.0	47.5		47.0				
Max Q Clear Time (g_c+I1), s	17.5	44.0		3.5	2.8	42.4		49.0				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	3.2		0.0				

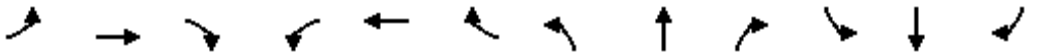
Intersection Summary			
HCM 6th Ctrl Delay		102.5	
HCM 6th LOS		F	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	155	292	62	856	124	1135	62	254	830	439
Future Volume (vph)	155	292	62	856	124	1135	62	254	830	439
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	16.0	50.8	14.0	48.8	14.0	41.2	14.0	14.0	41.2	16.0
Total Split (%)	13.3%	42.3%	11.7%	40.7%	11.7%	34.3%	11.7%	11.7%	34.3%	13.3%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	10.9	45.7	10.0	41.8	10.0	35.3	51.3	10.0	35.3	48.2
Actuated g/C Ratio	0.09	0.39	0.09	0.36	0.09	0.30	0.44	0.09	0.30	0.41
v/c Ratio	0.57	0.26	0.46	0.94	0.92	1.12	0.09	1.02	0.82	0.67
Control Delay	59.9	24.0	63.2	49.8	111.4	105.1	5.6	115.8	45.9	27.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.9	24.0	63.2	49.8	111.4	105.1	5.6	115.8	45.9	27.5
LOS	E	C	E	D	F	F	A	F	D	C
Approach Delay		35.3		50.5		101.1			52.2	
Approach LOS		D		D		F			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 64.2	Intersection LOS: E
Intersection Capacity Utilization 99.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	292	46	62	856	254	124	1135	62	254	830	439
Future Volume (veh/h)	155	292	46	62	856	254	124	1135	62	254	830	439
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	158	298	38	63	873	223	127	1158	51	259	847	319
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	259	1108	140	123	948	242	143	1060	589	260	1060	600
Arrive On Green	0.09	0.36	0.36	0.08	0.35	0.35	0.09	0.31	0.31	0.09	0.31	0.31
Sat Flow, veh/h	2956	3055	386	1619	2697	689	1619	3420	1525	2956	3420	1506
Grp Volume(v), veh/h	158	166	170	63	553	543	127	1158	51	259	847	319
Grp Sat Flow(s),veh/h/ln	1478	1710	1731	1619	1710	1676	1619	1710	1525	1478	1710	1506
Q Serve(g_s), s	5.8	7.8	7.9	4.2	35.2	35.3	8.8	35.2	2.4	9.9	25.8	18.4
Cycle Q Clear(g_c), s	5.8	7.8	7.9	4.2	35.2	35.3	8.8	35.2	2.4	9.9	25.8	18.4
Prop In Lane	1.00		0.22	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	259	620	628	123	601	589	143	1060	589	260	1060	600
V/C Ratio(X)	0.61	0.27	0.27	0.51	0.92	0.92	0.89	1.09	0.09	0.99	0.80	0.53
Avail Cap(c_a), veh/h	312	697	706	143	667	654	143	1060	589	260	1060	600
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.9	25.5	25.6	50.4	35.3	35.3	51.2	39.2	22.1	51.7	35.9	26.1
Incr Delay (d2), s/veh	1.0	0.2	0.2	1.2	16.3	16.8	43.5	56.2	0.1	54.1	4.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	3.1	3.2	1.7	16.5	16.3	5.1	21.9	0.8	5.5	10.6	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.9	25.7	25.8	51.6	51.6	52.1	94.7	95.4	22.2	105.9	40.3	27.0
LnGrp LOS	D	C	C	D	D	D	F	F	C	F	D	C
Approach Vol, veh/h		494			1159			1336			1425	
Approach Delay, s/veh		33.8			51.8			92.5			49.2	
Approach LOS		C			D			F			D	

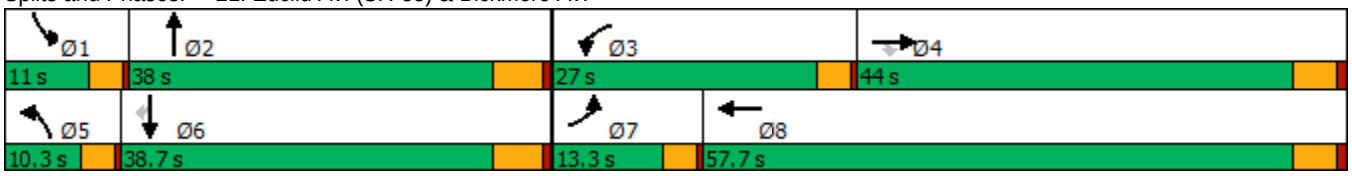
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	41.2	12.6	45.7	14.0	41.2	13.9	44.4
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	10.0	35.2	10.0	46.3	10.0	35.2	12.0	44.3
Max Q Clear Time (g_c+I1), s	11.9	37.2	6.2	9.9	10.8	27.8	7.8	37.3
Green Ext Time (p_c), s	0.0	0.0	0.0	1.8	0.0	3.6	0.1	2.6

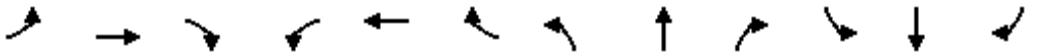
Intersection Summary	
HCM 6th Ctrl Delay	61.3
HCM 6th LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	74	15	42	219	240	84	942	55	758	222
Future Volume (vph)	74	15	42	219	240	84	942	55	758	222
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	13.3	44.0	44.0	27.0	57.7	10.3	38.0	11.0	38.7	38.7
Total Split (%)	11.1%	36.7%	36.7%	22.5%	48.1%	8.6%	31.7%	9.2%	32.3%	32.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	8.5	19.4	19.4	20.1	30.6	7.2	34.5	7.0	31.6	31.6
Actuated g/C Ratio	0.09	0.21	0.21	0.21	0.33	0.08	0.37	0.07	0.34	0.34
v/c Ratio	0.56	0.05	0.11	0.70	0.84	0.75	0.87	0.50	0.73	0.36
Control Delay	61.9	29.9	0.6	50.3	40.5	83.8	40.8	63.2	34.5	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.9	29.9	0.6	50.3	40.5	83.8	40.8	63.2	34.5	5.9
LOS	E	C	A	D	D	F	D	E	C	A
Approach Delay		38.5			43.8		44.2		29.9	
Approach LOS		D			D		D		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 93.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 38.7	Intersection LOS: D
Intersection Capacity Utilization 78.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	15	42	219	240	195	84	942	37	55	758	222
Future Volume (veh/h)	74	15	42	219	240	195	84	942	37	55	758	222
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	82	17	43	243	267	178	93	1047	34	61	842	199
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	102	343	291	283	304	203	115	1192	39	78	1126	502
Arrive On Green	0.06	0.19	0.19	0.17	0.30	0.30	0.07	0.35	0.35	0.05	0.33	0.33
Sat Flow, veh/h	1619	1800	1525	1619	1007	672	1619	3380	110	1619	3420	1525
Grp Volume(v), veh/h	82	17	43	243	0	445	93	530	551	61	842	199
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1679	1619	1710	1780	1619	1710	1525
Q Serve(g_s), s	3.7	0.6	1.8	10.9	0.0	18.8	4.2	21.7	21.7	2.8	16.4	7.5
Cycle Q Clear(g_c), s	3.7	0.6	1.8	10.9	0.0	18.8	4.2	21.7	21.7	2.8	16.4	7.5
Prop In Lane	1.00		1.00	1.00		0.40	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	102	343	291	283	0	507	115	603	628	78	1126	502
V/C Ratio(X)	0.80	0.05	0.15	0.86	0.00	0.88	0.81	0.88	0.88	0.78	0.75	0.40
Avail Cap(c_a), veh/h	212	939	796	509	0	1184	147	743	774	162	1519	678
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.6	24.7	25.2	30.0	0.0	24.8	34.2	22.7	22.7	35.2	22.3	19.3
Incr Delay (d2), s/veh	5.4	0.0	0.1	3.0	0.0	2.0	17.3	8.7	8.5	6.3	0.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.2	0.6	4.2	0.0	7.0	2.1	8.7	9.0	1.1	5.7	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.0	24.7	25.3	32.9	0.0	26.7	51.5	31.4	31.1	41.5	23.1	19.5
LnGrp LOS	D	C	C	C	A	C	D	C	C	D	C	B
Approach Vol, veh/h		142			688			1174			1102	
Approach Delay, s/veh		33.7			28.9			32.9			23.5	
Approach LOS		C			C			C			C	

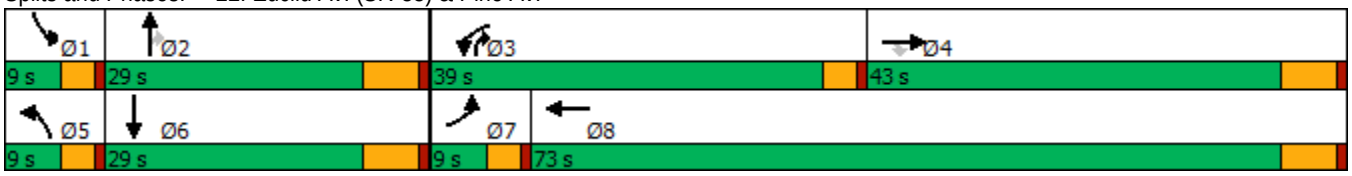
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	31.9	16.6	19.2	8.8	30.1	8.2	27.6
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	7.5	32.5	23.5	39.0	6.8	33.2	9.8	52.7
Max Q Clear Time (g_c+I1), s	4.8	23.7	12.9	3.8	6.2	18.4	5.7	20.8
Green Ext Time (p_c), s	0.0	2.6	0.2	0.1	0.0	3.2	0.0	1.8

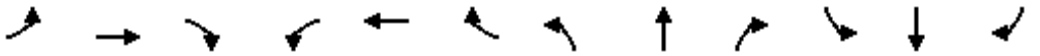
Intersection Summary	
HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	9	204	55	1199	367	65	994	776	71	818
Future Volume (vph)	9	204	55	1199	367	65	994	776	71	818
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	39.0	73.0	9.0	29.0	39.0	9.0	29.0
Total Split (%)	7.5%	35.8%	35.8%	32.5%	60.8%	7.5%	24.2%	32.5%	7.5%	24.2%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.0	19.9	19.9	35.2	57.6	5.0	23.2	60.4	5.0	23.2
Actuated g/C Ratio	0.05	0.19	0.19	0.34	0.56	0.05	0.22	0.58	0.05	0.22
v/c Ratio	0.12	0.61	0.14	1.23	0.52	0.86	1.34	0.76	0.94	1.13
Control Delay	54.7	45.1	0.7	144.6	16.0	119.1	195.5	13.1	136.3	111.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.7	45.1	0.7	144.6	16.0	119.1	195.5	13.1	136.3	111.7
LOS	D	D	A	F	B	F	F	B	F	F
Approach Delay		36.3			107.4		115.7			113.6
Approach LOS		D			F		F			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.34	
Intersection Signal Delay: 107.8	Intersection LOS: F
Intersection Capacity Utilization 102.0%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	204	55	1199	367	120	65	994	776	71	818	18
Future Volume (veh/h)	9	204	55	1199	367	120	65	994	776	71	818	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	9	210	0	1236	378	122	67	1025	544	73	843	15
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	18	267		1062	647	209	83	807	900	83	811	14
Arrive On Green	0.01	0.15	0.00	0.36	0.50	0.50	0.05	0.24	0.24	0.05	0.24	0.24
Sat Flow, veh/h	1619	1800	1525	2956	1304	421	1619	3420	1493	1619	3438	61
Grp Volume(v), veh/h	9	210	0	1236	0	500	67	1025	544	73	419	439
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1724	1619	1710	1493	1619	1710	1789
Q Serve(g_s), s	0.5	11.0	0.0	35.0	0.0	20.0	4.0	23.0	22.6	4.4	23.0	23.0
Cycle Q Clear(g_c), s	0.5	11.0	0.0	35.0	0.0	20.0	4.0	23.0	22.6	4.4	23.0	23.0
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	18	267		1062	0	856	83	807	900	83	404	422
V/C Ratio(X)	0.50	0.79		1.16	0.00	0.58	0.81	1.27	0.60	0.88	1.04	1.04
Avail Cap(c_a), veh/h	83	684		1062	0	1186	83	807	900	83	404	422
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.9	40.0	0.0	31.2	0.0	17.4	45.7	37.2	12.6	45.9	37.2	37.2
Incr Delay (d2), s/veh	7.8	7.2	0.0	84.3	0.0	0.9	39.9	131.1	0.8	58.7	55.2	54.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.2	0.0	23.7	0.0	7.1	2.4	23.5	6.3	3.0	15.0	15.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.7	47.2	0.0	115.5	0.0	18.3	85.6	168.3	13.4	104.6	92.4	91.5
LnGrp LOS	E	D		F	A	B	F	F	B	F	F	F
Approach Vol, veh/h		219	A		1736			1636			931	
Approach Delay, s/veh		47.5			87.5			113.4			92.9	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	29.0	39.0	20.4	9.0	29.0	5.1	54.4
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.0	23.0	35.0	37.0	5.0	23.0	5.0	67.0
Max Q Clear Time (g_c+I1), s	6.4	25.0	37.0	13.0	6.0	25.0	2.5	22.0
Green Ext Time (p_c), s	0.0	0.0	0.0	1.5	0.0	0.0	0.0	4.8

Intersection Summary	
HCM 6th Ctrl Delay	96.1
HCM 6th LOS	F

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	107.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	474	16	21	632	18	20	87	15	21	121	50
Future Vol, veh/h	55	474	16	21	632	18	20	87	15	21	121	50
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	60	521	18	23	695	20	22	96	16	23	133	55
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	82.6	170.2	15.7	18
HCM LOS	F	F	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	10%	3%	11%
Vol Thru, %	71%	87%	94%	63%
Vol Right, %	12%	3%	3%	26%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	122	545	671	192
LT Vol	20	55	21	21
Through Vol	87	474	632	121
RT Vol	15	16	18	50
Lane Flow Rate	134	599	737	211
Geometry Grp	1	1	1	1
Degree of Util (X)	0.3	1.06	1.303	0.445
Departure Headway (Hd)	8.953	6.946	6.621	8.394
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	404	527	553	433
Service Time	6.953	4.946	4.621	6.394
HCM Lane V/C Ratio	0.332	1.137	1.333	0.487
HCM Control Delay	15.7	82.6	170.2	18
HCM Lane LOS	C	F	F	C
HCM 95th-tile Q	1.2	16.4	29.6	2.2

Intersection	
Intersection Delay, s/veh	10
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	100	3	1	265	22	19	66	3	33	72	56
Future Vol, veh/h	21	100	3	1	265	22	19	66	3	33	72	56
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	23	108	3	1	285	24	20	71	3	35	77	60
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.2	10.9	9.1	9.5
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	17%	0%	20%
Vol Thru, %	75%	81%	92%	45%
Vol Right, %	3%	2%	8%	35%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	88	124	288	161
LT Vol	19	21	1	33
Through Vol	66	100	265	72
RT Vol	3	3	22	56
Lane Flow Rate	95	133	310	173
Geometry Grp	1	1	1	1
Degree of Util (X)	0.137	0.184	0.403	0.236
Departure Headway (Hd)	5.212	4.966	4.689	4.913
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	681	716	762	724
Service Time	3.296	3.042	2.752	2.989
HCM Lane V/C Ratio	0.14	0.186	0.407	0.239
HCM Control Delay	9.1	9.2	10.9	9.5
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.5	0.7	2	0.9

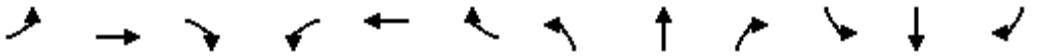
Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	69	658	858	84	39	54
Future Vol, veh/h	69	658	858	84	39	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	73	700	913	89	41	57

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1002	0	-	0	1804	958
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	846	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	699	-	-	-	146	390
Stage 1	-	-	-	-	376	-
Stage 2	-	-	-	-	424	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	699	-	-	-	121	390
Mov Cap-2 Maneuver	-	-	-	-	121	-
Stage 1	-	-	-	-	312	-
Stage 2	-	-	-	-	424	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	38.8
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	699	-	-	-	202
HCM Lane V/C Ratio	0.105	-	-	-	0.49
HCM Control Delay (s)	10.8	0	-	-	38.8
HCM Lane LOS	B	A	-	-	E
HCM 95th %tile Q(veh)	0.3	-	-	-	2.4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	294	0	625	299	1201	0	0	804	636
Future Volume (veh/h)	0	0	0	294	0	625	299	1201	0	0	804	636
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				320	0	550	325	1305	0	0	874	580
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				658	0	585	345	1949	0	0	1123	498
Arrive On Green				0.36	0.00	0.36	0.38	1.00	0.00	0.00	0.31	0.31
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1602
Grp Volume(v), veh/h				320	0	550	325	1305	0	0	874	580
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1602
Q Serve(g_s), s				16.4	0.0	39.6	20.8	0.0	0.0	0.0	26.4	37.3
Cycle Q Clear(g_c), s				16.4	0.0	39.6	20.8	0.0	0.0	0.0	26.4	37.3
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				658	0	585	345	1949	0	0	1123	498
V/C Ratio(X)				0.49	0.00	0.94	0.94	0.67	0.00	0.00	0.78	1.16
Avail Cap(c_a), veh/h				712	0	633	353	1949	0	0	1123	498
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				29.5	0.0	36.9	36.5	0.0	0.0	0.0	37.6	41.3
Incr Delay (d2), s/veh				0.6	0.0	21.3	5.5	0.2	0.0	0.0	5.3	93.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.0	0.0	18.2	7.4	0.0	0.0	0.0	12.0	27.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				30.1	0.0	58.2	42.0	0.2	0.0	0.0	42.9	135.3
LnGrp LOS				C	A	E	D	A	A	A	D	F
Approach Vol, veh/h					870			1630			1454	
Approach Delay, s/veh					47.9			8.5			79.8	
Approach LOS					D			A			E	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	70.6		27.5	43.1		49.4						
Change Period (Y+Rc), s	5.8		4.6	5.8		5.8						
Max Green Setting (Gmax), s	61.2		23.4	33.2		47.2						
Max Q Clear Time (g_c+I1), s	2.0		22.8	39.3		41.6						
Green Ext Time (p_c), s	12.4		0.0	0.0		2.0						

Intersection Summary		
HCM 6th Ctrl Delay	43.4	
HCM 6th LOS	D	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	709	1	240	0	0	0	0	791	405	397	701	0
Future Volume (veh/h)	709	1	240	0	0	0	0	791	405	397	701	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	771	1	186				0	860	331	432	762	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	636	1	565				0	790	303	368	1992	0
Arrive On Green	0.35	0.35	0.35				0.00	0.31	0.31	0.41	1.00	0.00
Sat Flow, veh/h	1807	2	1607				0	2643	977	1810	3705	0
Grp Volume(v), veh/h	772	0	186				0	608	583	432	762	0
Grp Sat Flow(s),veh/h/ln	1810	0	1607				0	1805	1720	1810	1805	0
Q Serve(g_s), s	42.2	0.0	10.2				0.0	37.2	37.2	24.4	0.0	0.0
Cycle Q Clear(g_c), s	42.2	0.0	10.2				0.0	37.2	37.2	24.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.57	1.00		0.00
Lane Grp Cap(c), veh/h	636	0	565				0	560	533	368	1992	0
V/C Ratio(X)	1.21	0.00	0.33				0.00	1.09	1.09	1.17	0.38	0.00
Avail Cap(c_a), veh/h	636	0	565				0	560	533	368	1992	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.59	0.59	0.39	0.39	0.00
Uniform Delay (d), s/veh	38.9	0.0	28.5				0.0	41.4	41.4	35.6	0.0	0.0
Incr Delay (d2), s/veh	109.9	0.0	0.3				0.0	55.9	58.4	89.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	37.1	0.0	3.8				0.0	24.4	23.7	17.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	148.8	0.0	28.9				0.0	97.3	99.8	125.2	0.2	0.0
LnGrp LOS	F	A	C				A	F	F	F	A	A
Approach Vol, veh/h		958						1191			1194	
Approach Delay, s/veh		125.5						98.5			45.4	
Approach LOS		F						F			D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	29.0	43.0		48.0		72.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	24.4	37.2		42.2		66.2
Max Q Clear Time (g_c+I1), s	26.4	39.2		44.2		2.0
Green Ext Time (p_c), s	0.0	0.0		0.0		5.6

Intersection Summary	
HCM 6th Ctrl Delay	87.3
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	216	63	20	216	206	55	687	15	102	672	118
Future Volume (veh/h)	203	216	63	20	216	206	55	687	15	102	672	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	239	254	59	24	254	171	65	808	17	120	791	103
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	270	884	201	40	353	229	81	1194	25	146	1183	154
Arrive On Green	0.17	0.32	0.32	0.02	0.18	0.18	0.05	0.35	0.35	0.09	0.39	0.39
Sat Flow, veh/h	1619	2757	628	1619	1981	1284	1619	3425	72	1619	3042	396
Grp Volume(v), veh/h	239	156	157	24	218	207	65	403	422	120	445	449
Grp Sat Flow(s),veh/h/ln	1619	1710	1675	1619	1710	1556	1619	1710	1787	1619	1710	1728
Q Serve(g_s), s	13.9	6.6	6.8	1.4	11.6	12.2	3.8	19.4	19.4	7.0	20.7	20.7
Cycle Q Clear(g_c), s	13.9	6.6	6.8	1.4	11.6	12.2	3.8	19.4	19.4	7.0	20.7	20.7
Prop In Lane	1.00		0.37	1.00		0.83	1.00		0.04	1.00		0.23
Lane Grp Cap(c), veh/h	270	548	537	40	305	277	81	596	623	146	665	672
V/C Ratio(X)	0.88	0.28	0.29	0.60	0.71	0.75	0.80	0.68	0.68	0.82	0.67	0.67
Avail Cap(c_a), veh/h	410	811	794	97	481	437	171	596	623	242	665	672
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	24.5	24.6	46.5	37.3	37.5	45.3	26.8	26.8	43.1	24.3	24.3
Incr Delay (d2), s/veh	10.0	0.3	0.3	5.3	3.1	4.0	6.7	6.1	5.8	4.3	5.3	5.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	2.5	2.6	0.6	4.9	4.7	1.6	8.3	8.7	2.9	8.7	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.2	24.8	24.9	51.9	40.4	41.5	52.0	32.8	32.6	47.3	29.6	29.5
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		552			449			890			1014	
Approach Delay, s/veh		35.4			41.6			34.1			31.7	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	39.4	7.0	36.7	9.4	43.3	20.7	23.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	33.3	5.8	45.7	10.2	37.5	24.4	27.1
Max Q Clear Time (g_c+I1), s	15.9	21.4	3.4	8.8	5.8	22.7	15.9	14.2
Green Ext Time (p_c), s	0.1	3.7	0.0	1.7	0.0	4.5	0.2	1.9

Intersection Summary	
HCM 6th Ctrl Delay	34.6
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	426	43	79	846	132	28	385	59	94	431	187
Future Volume (veh/h)	165	426	43	79	846	132	28	385	59	94	431	187
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	183	473	41	88	940	121	31	428	44	104	479	122
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	207	648	56	108	980	126	44	444	46	126	590	500
Arrive On Green	0.13	0.40	0.40	0.07	0.32	0.32	0.03	0.28	0.28	0.08	0.33	0.33
Sat Flow, veh/h	1619	1633	142	1619	3041	391	1619	1601	165	1619	1800	1525
Grp Volume(v), veh/h	183	0	514	88	528	533	31	0	472	104	479	122
Grp Sat Flow(s),veh/h/ln	1619	0	1775	1619	1710	1723	1619	0	1766	1619	1800	1525
Q Serve(g_s), s	13.2	0.0	29.2	6.4	36.0	36.0	2.3	0.0	31.3	7.5	29.0	4.5
Cycle Q Clear(g_c), s	13.2	0.0	29.2	6.4	36.0	36.0	2.3	0.0	31.3	7.5	29.0	4.5
Prop In Lane	1.00		0.08	1.00		0.23	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	207	0	704	108	551	555	44	0	489	126	590	500
V/C Ratio(X)	0.88	0.00	0.73	0.81	0.96	0.96	0.71	0.00	0.96	0.83	0.81	0.24
Avail Cap(c_a), veh/h	226	0	704	147	553	557	87	0	489	143	590	500
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	0.0	30.4	54.7	39.5	39.5	57.3	0.0	42.4	54.0	36.6	12.5
Incr Delay (d2), s/veh	27.9	0.0	3.9	16.0	28.2	28.2	7.7	0.0	32.9	25.6	11.6	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	0.0	12.4	3.0	18.5	18.7	1.0	0.0	17.4	3.9	14.1	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.8	0.0	34.3	70.7	67.7	67.7	65.0	0.0	75.2	79.6	48.2	13.7
LnGrp LOS	E	A	C	E	E	E	E	A	E	E	D	B
Approach Vol, veh/h		697			1149			503			705	
Approach Delay, s/veh		46.0			67.9			74.6			46.9	
Approach LOS		D			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	39.1	12.5	53.3	7.8	45.1	21.4	44.5
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	10.5	32.9	10.8	44.2	6.4	* 37	16.6	* 38
Max Q Clear Time (g_c+I1), s	9.5	33.3	8.4	31.2	4.3	31.0	15.2	38.0
Green Ext Time (p_c), s	0.0	0.0	0.0	2.3	0.0	1.7	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	59.2
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	61.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	69	99	30	11	89	33	40	376	15	51	490	34
Future Vol, veh/h	69	99	30	11	89	33	40	376	15	51	490	34
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	77	110	33	12	99	37	44	418	17	57	544	38
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	17.6	15	39.4	104.7
HCM LOS	C	B	E	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	35%	8%	9%
Vol Thru, %	87%	50%	67%	85%
Vol Right, %	3%	15%	25%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	431	198	133	575
LT Vol	40	69	11	51
Through Vol	376	99	89	490
RT Vol	15	30	33	34
Lane Flow Rate	479	220	148	639
Geometry Grp	1	1	1	1
Degree of Util (X)	0.866	0.461	0.319	1.135
Departure Headway (Hd)	6.816	7.966	8.226	6.396
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	536	455	440	569
Service Time	4.816	5.966	6.226	4.447
HCM Lane V/C Ratio	0.894	0.484	0.336	1.123
HCM Control Delay	39.4	17.6	15	104.7
HCM Lane LOS	E	C	B	F
HCM 95th-tile Q	9.4	2.4	1.4	20.8

Intersection	
Intersection Delay, s/veh	30.6
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	51	34	39	111	44	41	313	11	46	404	47
Future Vol, veh/h	48	51	34	39	111	44	41	313	11	46	404	47
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	53	57	38	43	123	49	46	348	12	51	449	52
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.8	15.6	24	45.9
HCM LOS	B	C	C	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	36%	20%	9%
Vol Thru, %	86%	38%	57%	81%
Vol Right, %	3%	26%	23%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	365	133	194	497
LT Vol	41	48	39	46
Through Vol	313	51	111	404
RT Vol	11	34	44	47
Lane Flow Rate	406	148	216	552
Geometry Grp	1	1	1	1
Degree of Util (X)	0.715	0.308	0.433	0.927
Departure Headway (Hd)	6.455	7.509	7.234	6.043
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	564	480	500	596
Service Time	4.455	5.522	5.234	4.139
HCM Lane V/C Ratio	0.72	0.308	0.432	0.926
HCM Control Delay	24	13.8	15.6	45.9
HCM Lane LOS	C	B	C	E
HCM 95th-tile Q	5.8	1.3	2.2	11.9

Intersection	
Intersection Delay, s/veh	317.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	230	239	112	568	35	84	255	38	66	351	32
Future Vol, veh/h	37	230	239	112	568	35	84	255	38	66	351	32
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	41	253	263	123	624	38	92	280	42	73	386	35
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	254.5	530.7	132.9	204.7
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	7%	16%	15%
Vol Thru, %	68%	45%	79%	78%
Vol Right, %	10%	47%	5%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	377	506	715	449
LT Vol	84	37	112	66
Through Vol	255	230	568	351
RT Vol	38	239	35	32
Lane Flow Rate	414	556	786	493
Geometry Grp	1	1	1	1
Degree of Util (X)	1.103	1.441	2.095	1.314
Departure Headway (Hd)	15.64	14.206	12.355	14.533
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	236	261	306	257
Service Time	13.64	12.206	10.355	12.533
HCM Lane V/C Ratio	1.754	2.13	2.569	1.918
HCM Control Delay	132.9	254.5	530.7	204.7
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	11.4	20.6	45	16.9

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	42	75	15	13	104	83	69	340	13	271	337	112
Future Vol, veh/h	42	75	15	13	104	83	69	340	13	271	337	112
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	46	82	16	14	114	91	76	374	14	298	370	123

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1664	1568	432	1610	1622	381	493	0	0	388	0	0
Stage 1	1028	1028	-	533	533	-	-	-	-	-	-	-
Stage 2	636	540	-	1077	1089	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	78	112	628	85	~ 104	671	1081	-	-	1182	-	-
Stage 1	285	314	-	534	528	-	-	-	-	-	-	-
Stage 2	469	524	-	268	294	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 66	628	-	~ 61	671	1081	-	-	1182	-	-
Mov Cap-2 Maneuver	-	~ 66	-	-	~ 61	-	-	-	-	-	-	-
Stage 1	259	203	-	486	480	-	-	-	-	-	-	-
Stage 2	281	477	-	100	190	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			1.4	3.4
HCM LOS	-	-		

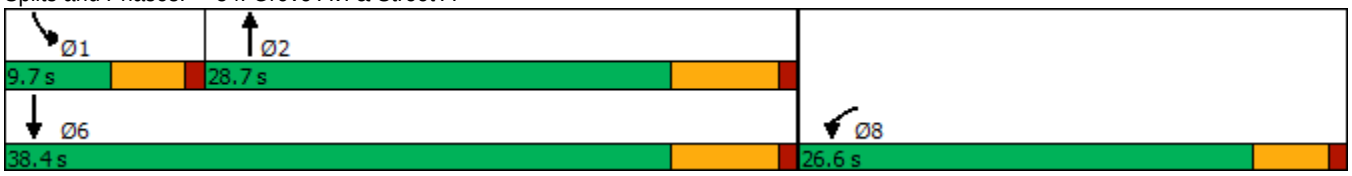
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1081	-	-	-	-	1182	-	-
HCM Lane V/C Ratio	0.07	-	-	-	-	0.252	-	-
HCM Control Delay (s)	8.6	0	-	-	-	9.1	0	-
HCM Lane LOS	A	A	-	-	-	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	-	-	1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	45	403	66	299
Future Volume (vph)	45	403	66	299
Turn Type	Prot	NA	Prot	NA
Protected Phases	8	2	1	6
Permitted Phases				
Detector Phase	8	2	1	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	5.0	10.0
Minimum Split (s)	26.6	23.2	9.6	16.2
Total Split (s)	26.6	28.7	9.7	38.4
Total Split (%)	40.9%	44.2%	14.9%	59.1%
Yellow Time (s)	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2
Lead/Lag		Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	
Recall Mode	None	Min	None	Min
Act Effct Green (s)	12.2	32.5	5.2	37.7
Actuated g/C Ratio	0.24	0.64	0.10	0.74
v/c Ratio	0.17	0.55	0.43	0.24
Control Delay	13.8	16.7	35.7	6.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.8	16.7	35.7	6.4
LOS	B	B	D	A
Approach Delay	13.8	16.7		11.7
Approach LOS	B	B		B

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 50.8	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 14.7	Intersection LOS: B
Intersection Capacity Utilization 58.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 34: Grove Av. & Street A



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	45	18	403	166	66	299
Future Volume (veh/h)	45	18	403	166	66	299
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	49	20	438	180	72	325
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	155	63	515	212	110	1088
Arrive On Green	0.13	0.13	0.43	0.43	0.07	0.60
Sat Flow, veh/h	1160	473	1212	498	1619	1800
Grp Volume(v), veh/h	70	0	0	618	72	325
Grp Sat Flow(s),veh/h/ln	1657	0	0	1710	1619	1800
Q Serve(g_s), s	1.6	0.0	0.0	13.4	1.8	3.6
Cycle Q Clear(g_c), s	1.6	0.0	0.0	13.4	1.8	3.6
Prop In Lane	0.70	0.29		0.29	1.00	
Lane Grp Cap(c), veh/h	221	0	0	727	110	1088
V/C Ratio(X)	0.32	0.00	0.00	0.85	0.65	0.30
Avail Cap(c_a), veh/h	883	0	0	932	200	1404
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.2	0.0	0.0	10.7	18.8	3.9
Incr Delay (d2), s/veh	0.8	0.0	0.0	6.1	2.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	4.0	0.6	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.0	0.0	0.0	16.7	21.2	4.1
LnGrp LOS	B	A	A	B	C	A
Approach Vol, veh/h	70		618			397
Approach Delay, s/veh	17.0		16.7			7.2
Approach LOS	B		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	7.4	23.8			31.2	10.1
Change Period (Y+Rc), s	4.6	6.2			6.2	4.6
Max Green Setting (Gmax), s	5.1	22.5			32.2	22.0
Max Q Clear Time (g_c+I1), s	3.8	15.4			5.6	3.6
Green Ext Time (p_c), s	0.0	2.1			1.7	0.1

Intersection Summary		
HCM 6th Ctrl Delay		13.3
HCM 6th LOS		B

Intersection	
Intersection Delay, s/veh	310.8
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	179	549	788	390	215	129
Future Vol, veh/h	179	549	788	390	215	129
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	185	566	812	402	222	133
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	172	479.2	27.6
HCM LOS	F	F	D

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	0%	62%
Vol Thru, %	75%	67%	0%
Vol Right, %	0%	33%	38%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	728	1178	344
LT Vol	179	0	215
Through Vol	549	788	0
RT Vol	0	390	129
Lane Flow Rate	751	1214	355
Geometry Grp	1	1	1
Degree of Util (X)	1.298	2.016	0.679
Departure Headway (Hd)	7.553	6.492	8.478
Convergence, Y/N	Yes	Yes	Yes
Cap	488	571	429
Service Time	5.553	4.492	6.478
HCM Lane V/C Ratio	1.539	2.126	0.828
HCM Control Delay	172	479.2	27.6
HCM Lane LOS	F	F	D
HCM 95th-tile Q	26.5	75.9	4.9

Intersection	
Int Delay, s/veh	52.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	19	274	10	421	489	159	5	21	88	29	20	13
Future Vol, veh/h	19	274	10	421	489	159	5	21	88	29	20	13
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	19	280	10	430	499	162	5	21	90	30	20	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	661	0	0	291	0	0	1781	1845	286	1819	1769	580
Stage 1	-	-	-	-	-	-	324	324	-	1440	1440	-
Stage 2	-	-	-	-	-	-	1457	1521	-	379	329	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	937	-	-	1282	-	-	65	76	758	61	84	518
Stage 1	-	-	-	-	-	-	692	653	-	167	200	-
Stage 2	-	-	-	-	-	-	163	183	-	647	650	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	937	-	-	1281	-	-	21	34	757	~ 16	37	518
Mov Cap-2 Maneuver	-	-	-	-	-	-	21	34	-	~ 16	37	-
Stage 1	-	-	-	-	-	-	675	637	-	163	91	-
Stage 2	-	-	-	-	-	-	56	83	-	538	634	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	3.6	151.8	$ 971.5
HCM LOS			F	F

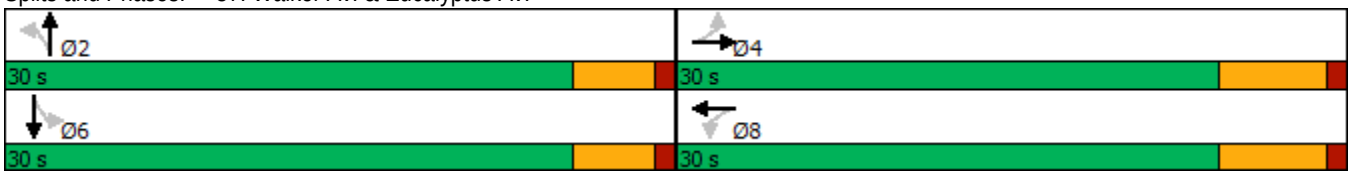
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	117	937	-	-	1281	-	-	26
HCM Lane V/C Ratio	0.994	0.021	-	-	0.335	-	-	2.433
HCM Control Delay (s)	151.8	8.9	0	-	9.2	0	-	$ 971.5
HCM Lane LOS	F	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	6.6	0.1	-	-	1.5	-	-	7.7

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	11	269	147	21	48	254	180
Future Volume (vph)	11	269	147	21	48	254	180
Turn Type	Perm	NA	NA	Perm	NA	Perm	NA
Protected Phases		4	8		2		6
Permitted Phases	4			2		6	
Detector Phase	4	4	8	2	2	6	6
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	22.8	22.8	22.8	21.6	21.6	21.6	21.6
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.8	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0
Total Lost Time (s)		5.8	5.8		4.6		4.6
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	None	None	None	None
Act Effct Green (s)		17.2	17.2		25.0		25.0
Actuated g/C Ratio		0.33	0.33		0.47		0.47
v/c Ratio		0.75	0.42		0.12		0.87
Control Delay		23.5	13.6		9.9		31.7
Queue Delay		0.0	0.0		0.0		0.0
Total Delay		23.5	13.6		9.9		31.7
LOS		C	B		A		C
Approach Delay		23.5	13.6		9.9		31.7
Approach LOS		C	B		A		C

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 52.8	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 24.3	Intersection LOS: C
Intersection Capacity Utilization 72.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 37: Walker Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	269	76	0	147	57	21	48	0	254	180	42
Future Volume (veh/h)	11	269	76	0	147	57	21	48	0	254	180	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	13	328	93	0	179	70	26	59	0	310	220	51
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	91	425	118	0	393	154	265	539	0	474	272	60
Arrive On Green	0.32	0.32	0.32	0.00	0.32	0.32	0.44	0.44	0.00	0.44	0.44	0.44
Sat Flow, veh/h	19	1334	369	0	1232	482	355	1216	0	785	614	135
Grp Volume(v), veh/h	434	0	0	0	0	249	85	0	0	581	0	0
Grp Sat Flow(s),veh/h/ln	1723	0	0	0	0	1713	1571	0	0	1533	0	0
Q Serve(g_s), s	1.3	0.0	0.0	0.0	0.0	5.1	0.0	0.0	0.0	13.6	0.0	0.0
Cycle Q Clear(g_c), s	10.0	0.0	0.0	0.0	0.0	5.1	1.2	0.0	0.0	14.8	0.0	0.0
Prop In Lane	0.03		0.21	0.00		0.28	0.31		0.00	0.53		0.09
Lane Grp Cap(c), veh/h	634	0	0	0	0	546	804	0	0	806	0	0
V/C Ratio(X)	0.68	0.00	0.00	0.00	0.00	0.46	0.11	0.00	0.00	0.72	0.00	0.00
Avail Cap(c_a), veh/h	1036	0	0	0	0	950	1015	0	0	1017	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.5	0.0	0.0	0.0	0.0	11.8	7.1	0.0	0.0	10.8	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.0	0.0	0.0	0.6	0.1	0.0	0.0	1.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	0.0	0.0	0.0	1.5	0.4	0.0	0.0	4.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.8	0.0	0.0	0.0	0.0	12.4	7.2	0.0	0.0	12.7	0.0	0.0
LnGrp LOS	B	A	A	A	A	B	A	A	A	B	A	A
Approach Vol, veh/h		434			249			85			581	
Approach Delay, s/veh		14.8			12.4			7.2			12.7	
Approach LOS		B			B			A			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		23.9		19.7		23.9		19.7				
Change Period (Y+Rc), s		4.6		5.8		4.6		5.8				
Max Green Setting (Gmax), s		25.4		24.2		25.4		24.2				
Max Q Clear Time (g_c+I1), s		3.2		12.0		16.8		7.1				
Green Ext Time (p_c), s		0.4		2.0		2.6		1.1				

Intersection Summary												
HCM 6th Ctrl Delay			13.0									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	226.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	103	547	113	134	954	82	145	19	110	22	5	28
Future Vol, veh/h	103	547	113	134	954	82	145	19	110	22	5	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	106	564	116	138	984	85	149	20	113	23	5	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1069	0	0	680	0	0	2096	2121	564	2204	2195	1027
Stage 1	-	-	-	-	-	-	776	776	-	1303	1303	-
Stage 2	-	-	-	-	-	-	1320	1345	-	901	892	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	660	-	-	922	-	-	~ 39	51	529	32	46	287
Stage 1	-	-	-	-	-	-	393	410	-	199	233	-
Stage 2	-	-	-	-	-	-	195	222	-	335	363	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	660	-	-	922	-	-	~ 26	36	529	~ 16	33	287
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 35	70	-	51	98	-
Stage 1	-	-	-	-	-	-	330	344	-	167	198	-
Stage 2	-	-	-	-	-	-	~ 145	189	-	208	305	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	1.1	$ 1844.4	87.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	59	660	-	-	922	-	-	95
HCM Lane V/C Ratio	4.788	0.161	-	-	0.15	-	-	0.597
HCM Control Delay (s)	$ 1844.4	11.5	-	-	9.6	-	-	87.9
HCM Lane LOS	F	B	-	-	A	-	-	F
HCM 95th %tile Q(veh)	31.3	0.6	-	-	0.5	-	-	2.8

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	399	123	0	171	33	0
Future Vol, veh/h	399	123	0	171	33	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	434	134	0	186	36	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	568	0	687	501
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	186	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1014	-	416	574
Stage 1	-	-	-	-	613	-
Stage 2	-	-	-	-	851	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1014	-	416	574
Mov Cap-2 Maneuver	-	-	-	-	416	-
Stage 1	-	-	-	-	613	-
Stage 2	-	-	-	-	851	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	416	-	-	1014	-
HCM Lane V/C Ratio	0.086	-	-	-	-
HCM Control Delay (s)	14.5	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	547	70	28	1133	72	20	0	36	20	0	17
Future Vol, veh/h	62	547	70	28	1133	72	20	0	36	20	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	68	601	77	31	1245	79	22	0	40	22	0	19

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1324	0	0	678	0	0	2132	2162	339	1784	2161	1285
Stage 1	-	-	-	-	-	-	776	776	-	1347	1347	-
Stage 2	-	-	-	-	-	-	1356	1386	-	437	814	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	528	-	-	923	-	-	32	48	663	58	48	203
Stage 1	-	-	-	-	-	-	361	410	-	188	222	-
Stage 2	-	-	-	-	-	-	186	212	-	574	394	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	528	-	-	923	-	-	26	40	663	48	40	203
Mov Cap-2 Maneuver	-	-	-	-	-	-	75	104	-	125	133	-
Stage 1	-	-	-	-	-	-	314	357	-	164	214	-
Stage 2	-	-	-	-	-	-	163	205	-	470	343	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.2	36.6	37.1
HCM LOS			E	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	174	528	-	-	923	-	-	152
HCM Lane V/C Ratio	0.354	0.129	-	-	0.033	-	-	0.267
HCM Control Delay (s)	36.6	12.8	-	-	9	-	-	37.1
HCM Lane LOS	E	B	-	-	A	-	-	E
HCM 95th %tile Q(veh)	1.5	0.4	-	-	0.1	-	-	1

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	256	143	0	132	0	38	0	0	0	0	0
Future Vol, veh/h	0	256	143	0	132	0	38	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	278	155	0	143	0	41	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	433	0	0	499	499	356
Stage 1	-	-	-	-	-	-	356	356	-
Stage 2	-	-	-	-	-	-	143	143	-
Critical Hdwy	-	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	1137	-	0	535	476	693
Stage 1	0	-	-	-	-	0	713	633	-
Stage 2	0	-	-	-	-	0	889	782	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1137	-	-	535	0	693
Mov Cap-2 Maneuver	-	-	-	-	-	-	535	0	-
Stage 1	-	-	-	-	-	-	713	0	-
Stage 2	-	-	-	-	-	-	889	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	535	-	-	1137	-
HCM Lane V/C Ratio	0.077	-	-	-	-
HCM Control Delay (s)	12.3	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	30.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	569	2	49	1070	103	156	19	40	28	5	9
Future Vol, veh/h	32	569	2	49	1070	103	156	19	40	28	5	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	200	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	34	612	2	53	1151	111	168	20	43	30	5	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1262	0	0	614	0	0	2001	2049	307	1697	1995	1207
Stage 1	-	-	-	-	-	-	681	681	-	1313	1313	-
Stage 2	-	-	-	-	-	-	1320	1368	-	384	682	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	558	-	-	975	-	-	~ 40	56	695	67	61	226
Stage 1	-	-	-	-	-	-	411	453	-	197	230	-
Stage 2	-	-	-	-	-	-	195	217	-	616	453	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	558	-	-	975	-	-	~ 34	50	695	51	54	226
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 104	129	-	139	148	-
Stage 1	-	-	-	-	-	-	386	425	-	185	218	-
Stage 2	-	-	-	-	-	-	172	205	-	517	425	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.4	287	33.8
HCM LOS			F	D

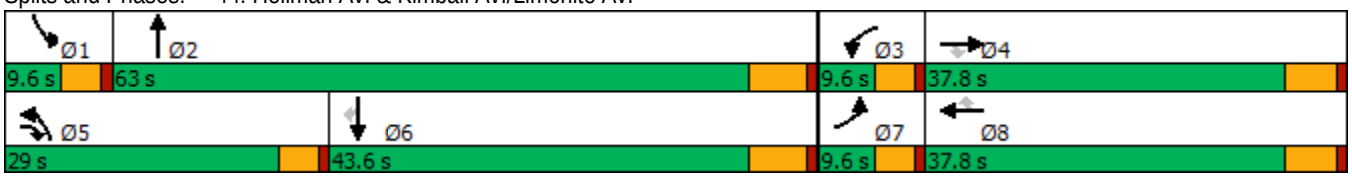
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	104	288	558	-	-	975	-	-	139	190
HCM Lane V/C Ratio	1.613	0.22	0.062	-	-	0.054	-	-	0.217	0.079
HCM Control Delay (s)	$ 387.6	21	11.9	-	-	8.9	-	-	37.9	25.6
HCM Lane LOS	F	C	B	-	-	A	-	-	E	D
HCM 95th %tile Q(veh)	12.9	0.8	0.2	-	-	0.2	-	-	0.8	0.3

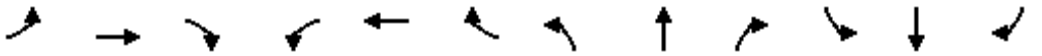
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	50	8	342	2	2	876	242	41	23	
Future Volume (vph)	50	8	342	2	2	876	242	41	23	
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	NA	Perm	
Protected Phases	7	4	5	3	8	5	2	6		1
Permitted Phases			4						6	
Detector Phase	7	4	5	3	8	5	2	6	6	
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	10.0	5.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	9.6	43.2	43.2	43.2	9.6
Total Split (s)	9.6	37.8	29.0	9.6	37.8	29.0	63.0	43.6	43.6	9.6
Total Split (%)	8.0%	31.5%	24.2%	8.0%	31.5%	24.2%	52.5%	36.3%	36.3%	8%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	5.2	5.2	5.2	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	4.6	6.2	6.2	6.2	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	None	None	Max	Max	None	None	None
Act Effct Green (s)	9.2	13.5	61.5	5.1	13.5	44.5	64.5	22.0	22.0	
Actuated g/C Ratio	0.11	0.16	0.71	0.06	0.16	0.51	0.74	0.25	0.25	
v/c Ratio	0.31	0.03	0.30	0.01	0.00	1.11	0.10	0.05	0.05	
Control Delay	45.9	31.6	2.2	46.5	31.5	97.3	6.0	23.2	0.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	45.9	31.6	2.2	46.5	31.5	97.3	6.0	23.2	0.2	
LOS	D	C	A	D	C	F	A	C	A	
Approach Delay		8.3			39.0		77.2	15.0		
Approach LOS		A			D		E	B		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 86.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 57.3	Intersection LOS: E
Intersection Capacity Utilization 84.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	8	342	2	2	0	876	242	6	0	41	23
Future Volume (veh/h)	50	8	342	2	2	0	876	242	6	0	41	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	53	8	360	2	2	0	922	255	6	0	43	24
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	65	358	708	8	552	246	430	2110	50	2	1034	461
Arrive On Green	0.04	0.20	0.20	0.00	0.16	0.00	0.27	0.62	0.62	0.00	0.30	0.30
Sat Flow, veh/h	1619	1800	1525	2956	3420	1525	1619	3415	80	1619	3420	1525
Grp Volume(v), veh/h	53	8	360	2	2	0	922	127	134	0	43	24
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	1710	1525	1619	1710	1786	1619	1710	1525
Q Serve(g_s), s	3.0	0.3	15.2	0.1	0.0	0.0	24.4	2.8	2.8	0.0	0.8	1.0
Cycle Q Clear(g_c), s	3.0	0.3	15.2	0.1	0.0	0.0	24.4	2.8	2.8	0.0	0.8	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	65	358	708	8	552	246	430	1056	1103	2	1034	461
V/C Ratio(X)	0.81	0.02	0.51	0.25	0.00	0.00	2.15	0.12	0.12	0.00	0.04	0.05
Avail Cap(c_a), veh/h	88	626	936	161	1190	531	430	1056	1103	88	1391	620
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	43.8	29.6	17.3	45.8	32.3	0.0	33.8	7.3	7.3	0.0	22.7	22.7
Incr Delay (d2), s/veh	24.7	0.0	0.6	5.9	0.0	0.0	523.5	0.2	0.2	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.1	4.9	0.0	0.0	0.0	71.2	0.9	0.9	0.0	0.3	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.4	29.7	17.8	51.7	32.4	0.0	557.3	7.5	7.5	0.0	22.7	22.8
LnGrp LOS	E	C	B	D	C	A	F	A	A	A	C	C
Approach Vol, veh/h		421			4			1183			67	
Approach Delay, s/veh		24.4			42.0			436.0			22.7	
Approach LOS		C			D			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	63.0	4.8	24.1	29.0	34.0	8.3	20.6
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	5.0	56.8	5.0	32.0	24.4	37.4	5.0	32.0
Max Q Clear Time (g_c+I1), s	0.0	4.8	2.1	17.2	26.4	3.0	5.0	2.0
Green Ext Time (p_c), s	0.0	1.3	0.0	1.1	0.0	0.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	315.1
HCM 6th LOS	F

Intersection	
Intersection Delay, s/veh	498.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	42	561	35	253	1179	106	23	0	136	146	0	20
Future Vol, veh/h	42	561	35	253	1179	106	23	0	136	146	0	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	45	597	37	269	1254	113	24	0	145	155	0	21
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

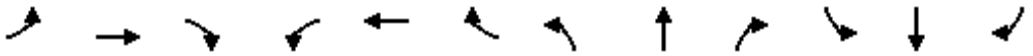
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	129.4	752.6	18.6	21.5
HCM LOS	F	F	C	C

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	14%	100%	0%	0%	100%	0%	88%
Vol Thru, %	0%	0%	100%	0%	0%	92%	0%
Vol Right, %	86%	0%	0%	100%	0%	8%	12%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	159	42	561	35	253	1285	166
LT Vol	23	42	0	0	253	0	146
Through Vol	0	0	561	0	0	1179	0
RT Vol	136	0	0	35	0	106	20
Lane Flow Rate	169	45	597	37	269	1367	177
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.381	0.097	1.216	0.069	0.623	2.939	0.436
Departure Headway (Hd)	9.927	9.492	8.973	8.246	8.812	8.234	10.721
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	365	380	412	437	412	451	339
Service Time	7.627	7.192	6.673	5.946	6.512	5.934	8.421
HCM Lane V/C Ratio	0.463	0.118	1.449	0.085	0.653	3.031	0.522
HCM Control Delay	18.6	13.2	145.5	11.6	25	895.8	21.5
HCM Lane LOS	C	B	F	B	C	F	C
HCM 95th-tile Q	1.7	0.3	20	0.2	4.1	110.3	2.1

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	4	540	731	1161	459
Future Volume (vph)	4	540	731	1161	459
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	30.0	30.0	29.0	60.0	31.0
Total Split (%)	33.3%	33.3%	32.2%	66.7%	34.4%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	24.0	24.0	33.9	54.2	16.3
Actuated g/C Ratio	0.27	0.27	0.38	0.60	0.18
v/c Ratio	1.54	1.19	1.20	0.41	0.61
Control Delay	280.5	129.3	128.7	20.5	29.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	280.5	129.3	128.7	20.5	29.8
LOS	F	F	F	C	C
Approach Delay	212.9			62.3	29.8
Approach LOS	F			E	C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.54	
Intersection Signal Delay: 104.7	Intersection LOS: F
Intersection Capacity Utilization 102.5%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	664	4	540	731	1161	0	0	459	215
Future Volume (veh/h)	0	0	0	664	4	540	731	1161	0	0	459	215
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				738	4	413	812	1290	0	0	510	229
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				480	3	429	622	3124	0	0	952	312
Arrive On Green				0.27	0.27	0.27	0.69	1.00	0.00	0.00	0.19	0.19
Sat Flow, veh/h				1800	10	1610	1810	5358	0	0	5168	1606
Grp Volume(v), veh/h				742	0	413	812	1290	0	0	510	229
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1729	0	0	1634	1606
Q Serve(g_s), s				24.0	0.0	22.8	30.9	0.0	0.0	0.0	8.4	12.1
Cycle Q Clear(g_c), s				24.0	0.0	22.8	30.9	0.0	0.0	0.0	8.4	12.1
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				483	0	429	622	3124	0	0	952	312
V/C Ratio(X)				1.54	0.00	0.96	1.31	0.41	0.00	0.00	0.54	0.73
Avail Cap(c_a), veh/h				483	0	429	622	3124	0	0	1373	450
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.0	0.0	32.5	14.1	0.0	0.0	0.0	32.6	34.1
Incr Delay (d2), s/veh				252.0	0.0	34.0	138.8	0.0	0.0	0.0	2.2	14.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				43.5	0.0	21.9	28.5	0.0	0.0	0.0	3.3	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				285.0	0.0	66.6	152.9	0.0	0.0	0.0	34.8	48.3
LnGrp LOS				F	A	E	F	A	A	A	C	D
Approach Vol, veh/h					1155			2102			739	
Approach Delay, s/veh					206.9			59.1			39.0	
Approach LOS					F			E			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	60.0	30.0	36.7	23.3
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	54.2	24.0	25.0	* 25
Max Q Clear Time (g_c+I1), s	2.0	26.0	32.9	14.1
Green Ext Time (p_c), s	11.5	0.0	0.0	3.4

Intersection Summary	
HCM 6th Ctrl Delay	98.1
HCM 6th LOS	F

Notes

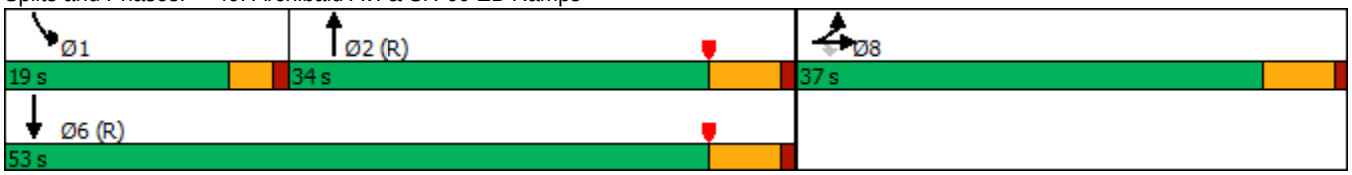
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

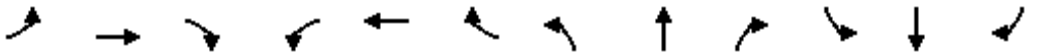
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	3	567	1484	175	949
Future Volume (vph)	3	567	1484	175	949
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (%)	41.1%	41.1%	37.8%	21.1%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	31.2	31.2	30.6	12.6	47.2
Actuated g/C Ratio	0.35	0.35	0.34	0.14	0.52
v/c Ratio	0.70	0.98	1.19dr	0.74	0.37
Control Delay	32.4	59.1	71.4	34.6	27.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	32.4	59.1	71.4	34.6	27.2
LOS	C	E	E	C	C
Approach Delay	47.9		71.4		28.4
Approach LOS	D		E		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 54.9	Intersection LOS: D
Intersection Capacity Utilization 102.5%	ICU Level of Service G
Analysis Period (min) 15	

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	408	3	567	0	0	0	0	1484	728	175	949	0
Future Volume (veh/h)	408	3	567	0	0	0	0	1484	728	175	949	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	434	3	386				0	1579	543	186	1010	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	504	3	452				0	2069	665	224	3063	0
Arrive On Green	0.28	0.28	0.28				0.00	0.42	0.42	0.04	0.19	0.00
Sat Flow, veh/h	1798	12	1610				0	5168	1575	1810	5358	0
Grp Volume(v), veh/h	437	0	386				0	1579	543	186	1010	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1575	1810	1729	0
Q Serve(g_s), s	20.6	0.0	20.4				0.0	24.7	27.4	9.2	15.1	0.0
Cycle Q Clear(g_c), s	20.6	0.0	20.4				0.0	24.7	27.4	9.2	15.1	0.0
Prop In Lane	0.99		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	508	0	452				0	2069	665	224	3063	0
V/C Ratio(X)	0.86	0.00	0.85				0.00	0.76	0.82	0.83	0.33	0.00
Avail Cap(c_a), veh/h	628	0	558				0	2069	665	302	3063	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.32	0.32	0.76	0.76	0.00
Uniform Delay (d), s/veh	30.7	0.0	30.6				0.0	22.2	22.9	42.2	20.9	0.0
Incr Delay (d2), s/veh	9.9	0.0	10.4				0.0	0.9	3.7	7.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	0.0	8.6				0.0	8.5	9.5	4.6	6.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.6	0.0	41.1				0.0	23.1	26.6	50.1	21.1	0.0
LnGrp LOS	D	A	D				A	C	C	D	C	A
Approach Vol, veh/h		823						2122			1196	
Approach Delay, s/veh		40.8						24.0			25.6	
Approach LOS		D						C			C	

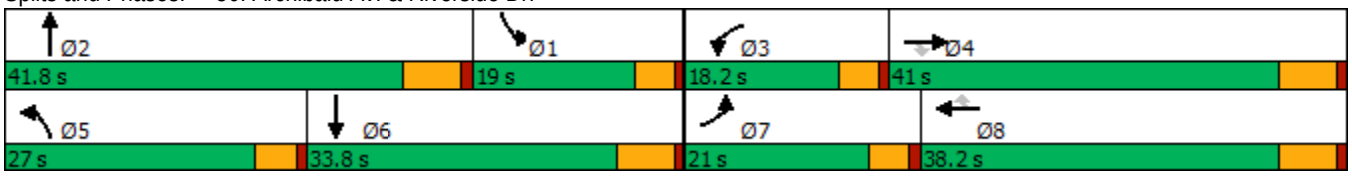
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	15.2	43.8				59.0		31.0				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	15.0	28.2				47.2		31.2				
Max Q Clear Time (g_c+I1), s	11.2	29.4				17.1		22.6				
Green Ext Time (p_c), s	0.1	0.0				7.1		2.6				

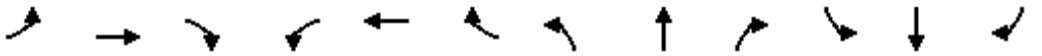
Intersection Summary			
HCM 6th Ctrl Delay			27.8
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	261	336	287	120	519	190	370	1270	146	816
Future Volume (vph)	261	336	287	120	519	190	370	1270	146	816
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.0	41.0	41.0	18.2	38.2	38.2	27.0	41.8	19.0	33.8
Total Split (%)	17.5%	34.2%	34.2%	15.2%	31.8%	31.8%	22.5%	34.8%	15.8%	28.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	16.4	28.7	28.7	11.9	24.2	24.2	22.5	35.7	14.4	27.7
Actuated g/C Ratio	0.15	0.26	0.26	0.11	0.22	0.22	0.20	0.32	0.13	0.25
v/c Ratio	1.18	0.41	0.50	0.75	0.75	0.42	1.22	0.91	0.75	0.95
Control Delay	158.4	36.4	6.7	75.2	48.0	7.6	164.2	47.2	71.0	56.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	158.4	36.4	6.7	75.2	48.0	7.6	164.2	47.2	71.0	56.9
LOS	F	D	A	E	D	A	F	D	E	E
Approach Delay		62.9			42.7			72.7		58.6
Approach LOS		E			D			E		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.22	
Intersection Signal Delay: 61.7	Intersection LOS: E
Intersection Capacity Utilization 96.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	261	336	287	120	519	190	370	1270	60	146	816	267
Future Volume (veh/h)	261	336	287	120	519	190	370	1270	60	146	816	267
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	278	357	171	128	552	120	394	1351	61	155	868	206
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	240	906	396	153	721	315	328	1499	68	194	963	227
Arrive On Green	0.15	0.26	0.26	0.09	0.21	0.21	0.20	0.31	0.31	0.12	0.24	0.24
Sat Flow, veh/h	1619	3420	1497	1619	3420	1495	1619	4819	218	1619	3969	937
Grp Volume(v), veh/h	278	357	171	128	552	120	394	918	494	155	716	358
Grp Sat Flow(s),veh/h/ln	1619	1710	1497	1619	1710	1495	1619	1638	1760	1619	1638	1630
Q Serve(g_s), s	16.4	9.5	10.5	8.6	16.8	5.4	22.4	29.7	29.7	10.3	23.4	23.6
Cycle Q Clear(g_c), s	16.4	9.5	10.5	8.6	16.8	5.4	22.4	29.7	29.7	10.3	23.4	23.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		0.57
Lane Grp Cap(c), veh/h	240	906	396	153	721	315	328	1019	548	194	795	396
V/C Ratio(X)	1.16	0.39	0.43	0.84	0.77	0.38	1.20	0.90	0.90	0.80	0.90	0.91
Avail Cap(c_a), veh/h	240	1077	472	199	990	433	328	1056	567	211	818	407
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.0	33.3	33.7	49.2	41.0	18.6	44.0	36.4	36.4	47.3	40.5	40.6
Incr Delay (d2), s/veh	107.0	0.3	0.7	17.0	2.4	0.8	115.8	10.4	17.2	16.0	12.8	23.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.5	3.8	3.7	4.1	7.0	2.7	19.1	12.6	14.5	4.8	10.3	11.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	154.1	33.6	34.5	66.2	43.5	19.4	159.8	46.9	53.7	63.3	53.3	63.7
LnGrp LOS	F	C	C	E	D	B	F	D	D	E	D	E
Approach Vol, veh/h		806			800			1806			1229	
Approach Delay, s/veh		75.3			43.5			73.4			57.6	
Approach LOS		E			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.4	40.6	15.0	35.5	27.0	33.0	21.0	29.5
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	14.4	* 36	13.6	34.8	22.4	27.6	16.4	32.0
Max Q Clear Time (g_c+I1), s	12.3	31.7	10.6	12.5	24.4	25.6	18.4	18.8
Green Ext Time (p_c), s	0.0	2.7	0.0	2.5	0.0	1.2	0.0	3.0

Intersection Summary	
HCM 6th Ctrl Delay	64.4
HCM 6th LOS	E

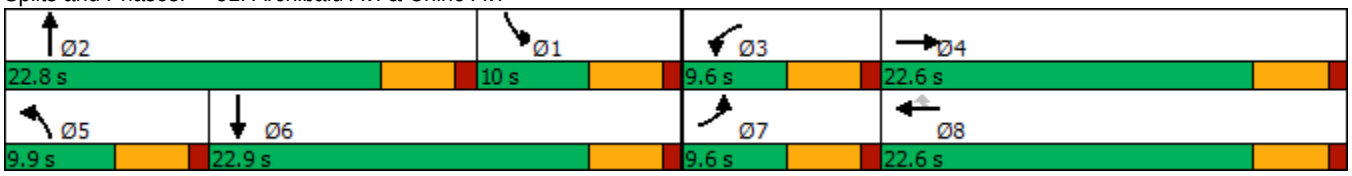
Notes

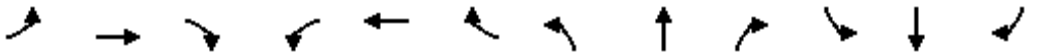
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	105	3	89	5	269	117	1262	127	1063
Future Volume (vph)	105	3	89	5	269	117	1262	127	1063
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	9.6	22.6	9.6	22.6	22.6	9.9	22.8	10.0	22.9
Total Split (%)	14.8%	34.8%	14.8%	34.8%	34.8%	15.2%	35.1%	15.4%	35.2%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	5.0	10.5	9.5	8.6	8.6	5.3	18.3	5.4	18.4
Actuated g/C Ratio	0.09	0.19	0.17	0.15	0.15	0.09	0.33	0.10	0.33
v/c Ratio	0.79	0.11	0.36	0.02	0.63	0.84	0.89	0.89	1.06
Control Delay	67.3	9.3	31.5	18.6	10.4	72.1	28.2	81.1	68.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.3	9.3	31.5	18.6	10.4	72.1	28.2	81.1	68.2
LOS	E	A	C	B	B	E	C	F	E
Approach Delay		53.8		15.6			31.8		69.6
Approach LOS		D		B			C		E

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 55.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 45.5	Intersection LOS: D
Intersection Capacity Utilization 64.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	3	29	89	5	269	117	1262	43	127	1063	27
Future Volume (veh/h)	105	3	29	89	5	269	117	1262	43	127	1063	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	115	3	14	98	5	159	129	1387	45	140	1168	28
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	142	36	166	120	208	177	159	1632	53	182	1188	28
Arrive On Green	0.09	0.13	0.13	0.07	0.12	0.12	0.10	0.33	0.33	0.11	0.35	0.35
Sat Flow, veh/h	1619	276	1286	1619	1800	1525	1619	4889	159	1619	3413	82
Grp Volume(v), veh/h	115	0	17	98	5	159	129	929	503	140	585	611
Grp Sat Flow(s),veh/h/ln	1619	0	1561	1619	1800	1525	1619	1638	1771	1619	1710	1785
Q Serve(g_s), s	3.7	0.0	0.5	3.1	0.1	3.6	4.1	13.9	13.9	4.4	17.8	17.8
Cycle Q Clear(g_c), s	3.7	0.0	0.5	3.1	0.1	3.6	4.1	13.9	13.9	4.4	17.8	17.8
Prop In Lane	1.00		0.82	1.00		1.00	1.00		0.09	1.00		0.05
Lane Grp Cap(c), veh/h	142	0	202	120	208	177	159	1094	591	182	595	621
V/C Ratio(X)	0.81	0.00	0.08	0.81	0.02	0.90	0.81	0.85	0.85	0.77	0.98	0.98
Avail Cap(c_a), veh/h	154	0	535	154	616	522	163	1134	613	182	595	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	0.0	20.2	24.0	20.6	10.4	23.2	16.3	16.3	22.7	17.0	17.0
Incr Delay (d2), s/veh	25.2	0.0	0.2	22.3	0.0	14.9	24.9	6.1	10.7	17.7	32.4	31.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.2	1.8	0.1	2.4	2.4	4.6	5.8	2.3	10.4	10.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.7	0.0	20.3	46.2	20.7	25.3	48.2	22.4	27.0	40.4	49.4	48.8
LnGrp LOS	D	A	C	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		132			262			1561			1336	
Approach Delay, s/veh		45.1			33.1			26.0			48.2	
Approach LOS		D			C			C			D	

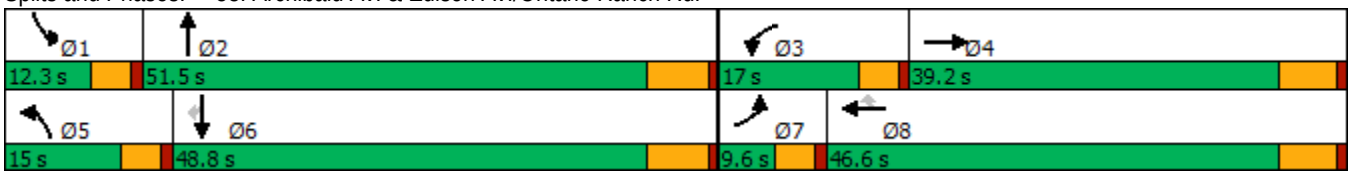
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	22.2	8.5	11.4	9.8	22.9	9.2	10.7
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	5.4	18.2	5.0	18.0	5.3	18.3	5.0	18.0
Max Q Clear Time (g_c+I1), s	6.4	15.9	5.1	2.5	6.1	19.8	5.7	5.6
Green Ext Time (p_c), s	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.4

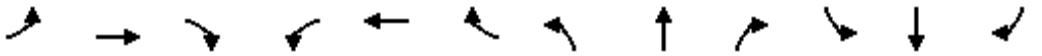
Intersection Summary	
HCM 6th Ctrl Delay	36.3
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	279	47	563	744	153	180	1164	475	72	628	206
Future Volume (vph)	54	279	47	563	744	153	180	1164	475	72	628	206
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	9.6	39.2		17.0	46.6	46.6	15.0	51.5		12.3	48.8	48.8
Total Split (%)	8.0%	32.7%		14.2%	38.8%	38.8%	12.5%	42.9%		10.3%	40.7%	40.7%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.1	31.0	113.8	12.6	41.0	41.0	10.5	43.4	113.8	7.4	37.5	37.5
Actuated g/C Ratio	0.04	0.27	1.00	0.11	0.36	0.36	0.09	0.38	1.00	0.07	0.33	0.33
v/c Ratio	0.43	0.31	0.03	1.78	1.18	0.25	1.25	0.92	0.32	0.71	0.57	0.35
Control Delay	66.6	34.8	0.0	395.7	132.8	10.5	200.0	47.0	0.6	89.6	33.6	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.6	34.8	0.0	395.7	132.8	10.5	200.0	47.0	0.6	89.6	33.6	10.3
LOS	E	C	A	F	F	B	F	D	A	F	C	B
Approach Delay		35.1			221.3			50.0			32.7	
Approach LOS		D			F			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.78	
Intersection Signal Delay: 100.1	Intersection LOS: F
Intersection Capacity Utilization 102.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	279	47	563	744	153	180	1164	475	72	628	206
Future Volume (veh/h)	54	279	47	563	744	153	180	1164	475	72	628	206
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	56	288	0	580	767	104	186	1200	0	74	647	179
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	106	942		314	622	527	144	1280		92	1170	522
Arrive On Green	0.04	0.28	0.00	0.11	0.35	0.35	0.09	0.37	0.00	0.06	0.34	0.34
Sat Flow, veh/h	2956	3420	1525	2956	1800	1525	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	56	288	0	580	767	104	186	1200	0	74	647	179
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1800	1525	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	2.2	7.8	0.0	12.4	40.4	5.6	10.4	39.5	0.0	5.3	17.9	10.2
Cycle Q Clear(g_c), s	2.2	7.8	0.0	12.4	40.4	5.6	10.4	39.5	0.0	5.3	17.9	10.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	106	942		314	622	527	144	1280		92	1170	522
V/C Ratio(X)	0.53	0.31		1.85	1.23	0.20	1.29	0.94		0.81	0.55	0.34
Avail Cap(c_a), veh/h	126	966		314	622	527	144	1317		107	1238	552
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.4	33.5	0.0	52.2	38.2	26.8	53.2	35.2	0.0	54.5	31.2	28.7
Incr Delay (d2), s/veh	1.5	0.2	0.0	394.1	118.2	0.2	172.8	12.5	0.0	27.2	0.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.1	0.0	21.6	37.0	2.0	11.0	17.3	0.0	2.8	7.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.9	33.7	0.0	446.3	156.4	27.0	226.1	47.8	0.0	81.7	31.7	29.0
LnGrp LOS	E	C		F	F	C	F	D		F	C	C
Approach Vol, veh/h		344	A		1451			1386	A		900	
Approach Delay, s/veh		37.5			263.0			71.7			35.3	
Approach LOS		D			F			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	50.2	17.0	38.4	15.0	46.5	8.8	46.6
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	7.7	45.0	12.4	33.0	10.4	42.3	5.0	40.4
Max Q Clear Time (g_c+I1), s	7.3	41.5	14.4	9.8	12.4	19.9	4.2	42.4
Green Ext Time (p_c), s	0.0	2.2	0.0	1.5	0.0	4.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	128.8
HCM 6th LOS	F

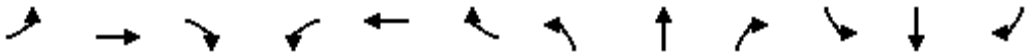
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	17	1802	9	26	1212
Future Volume (vph)	12	17	1802	9	26	1212
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.5	9.5	32.5	32.5	9.6	16.5
Total Split (s)	9.5	9.5	41.4	41.4	9.6	51.0
Total Split (%)	13.6%	13.6%	59.1%	59.1%	13.7%	72.9%
Yellow Time (s)	3.5	3.5	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	6.5	6.5	4.6	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max
Act Effct Green (s)	5.1	5.1	54.7	54.7	5.1	56.4
Actuated g/C Ratio	0.08	0.08	0.90	0.90	0.08	0.93
v/c Ratio	0.05	0.04	0.63	0.01	0.21	0.41
Control Delay	26.3	0.2	8.0	4.8	30.0	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.3	0.2	8.0	4.8	30.0	2.6
LOS	C	A	A	A	C	A
Approach Delay			8.0			3.2
Approach LOS			A			A

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 60.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 6.1	Intersection LOS: A
Intersection Capacity Utilization 65.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	12	0	17	0	1802	9	26	1212	0
Future Volume (veh/h)	0	0	0	12	0	17	0	1802	9	26	1212	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1700	0	1800	0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h				13	0	7	0	1938	7	28	1303	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				75	0	64	0	2293	1023	51	2677	0
Arrive On Green				0.02	0.00	0.02	0.00	0.67	0.67	0.03	0.78	0.00
Sat Flow, veh/h				3141	0	2685	0	3510	1525	1619	3510	0
Grp Volume(v), veh/h				13	0	7	0	1938	7	28	1303	0
Grp Sat Flow(s),veh/h/ln				1570	0	1342	0	1710	1525	1619	1710	0
Q Serve(g_s), s				0.2	0.0	0.1	0.0	24.5	0.1	1.0	7.6	0.0
Cycle Q Clear(g_c), s				0.2	0.0	0.1	0.0	24.5	0.1	1.0	7.6	0.0
Prop In Lane				1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				75	0	64	0	2293	1023	51	2677	0
V/C Ratio(X)				0.17	0.00	0.11	0.00	0.85	0.01	0.55	0.49	0.00
Avail Cap(c_a), veh/h				276	0	236	0	2293	1023	142	2677	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				27.2	0.0	27.2	0.0	7.1	3.1	27.1	2.2	0.0
Incr Delay (d2), s/veh				1.1	0.0	0.7	0.0	4.1	0.0	3.4	0.6	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.1	0.0	0.0	0.0	4.0	0.0	0.4	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.3	0.0	27.9	0.0	11.2	3.1	30.6	2.8	0.0
LnGrp LOS				C	A	C	A	B	A	C	A	A
Approach Vol, veh/h					20			1945			1331	
Approach Delay, s/veh					28.2			11.2			3.4	
Approach LOS					C			B			A	

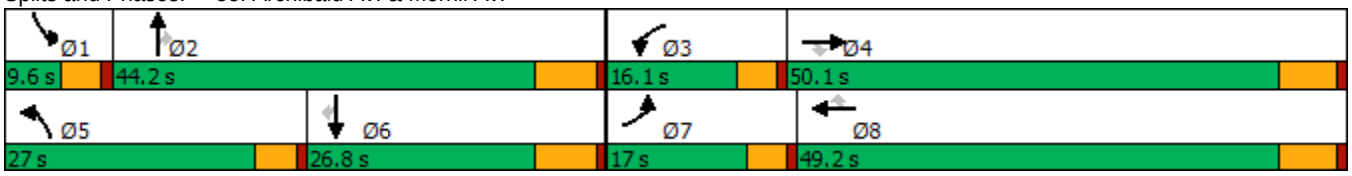
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	6.4	44.6				51.0		5.9				
Change Period (Y+Rc), s	4.6	6.5				6.5		4.5				
Max Green Setting (Gmax), s	5.0	34.9				44.5		5.0				
Max Q Clear Time (g_c+I1), s	3.0	26.5				9.6		2.2				
Green Ext Time (p_c), s	0.0	6.7				10.4		0.0				

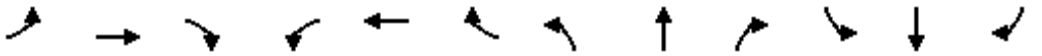
Intersection Summary		
HCM 6th Ctrl Delay		8.1
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	323	26	202	83	61	144	749	1344	41	44	607	574
Future Volume (vph)	323	26	202	83	61	144	749	1344	41	44	607	574
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	17.0	50.1	50.1	16.1	49.2	49.2	27.0	44.2	44.2	9.6	26.8	26.8
Total Split (%)	14.2%	41.8%	41.8%	13.4%	41.0%	41.0%	22.5%	36.8%	36.8%	8.0%	22.3%	22.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	12.6	21.4	21.4	8.7	15.3	15.3	22.8	42.5	42.5	5.1	20.6	20.6
Actuated g/C Ratio	0.13	0.23	0.23	0.09	0.16	0.16	0.24	0.45	0.45	0.05	0.22	0.22
v/c Ratio	1.53	0.07	0.41	0.57	0.21	0.39	1.97	0.89	0.06	0.28	0.83	1.00
Control Delay	292.5	29.3	6.6	57.9	33.6	7.2	468.8	34.7	0.1	50.8	46.9	56.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	292.5	29.3	6.6	57.9	33.6	7.2	468.8	34.7	0.1	50.8	46.9	56.0
LOS	F	C	A	E	C	A	F	C	A	D	D	E
Approach Delay		175.3			27.5			186.4			51.3	
Approach LOS		F			C			F			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 93.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.97	
Intersection Signal Delay: 134.6	Intersection LOS: F
Intersection Capacity Utilization 106.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	323	26	202	83	61	144	749	1344	41	44	607	574
Future Volume (veh/h)	323	26	202	83	61	144	749	1344	41	44	607	574
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	333	27	153	86	63	53	772	1386	23	45	626	526
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	231	344	292	107	207	175	417	1548	691	113	798	356
Arrive On Green	0.14	0.19	0.19	0.07	0.11	0.11	0.26	0.45	0.45	0.04	0.23	0.23
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	1619	3420	1525	2956	3420	1525
Grp Volume(v), veh/h	333	27	153	86	63	53	772	1386	23	45	626	526
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1710	1525	1478	1710	1525
Q Serve(g_s), s	12.4	1.1	7.8	4.6	2.8	2.8	22.4	32.4	0.7	1.3	14.9	20.3
Cycle Q Clear(g_c), s	12.4	1.1	7.8	4.6	2.8	2.8	22.4	32.4	0.7	1.3	14.9	20.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	231	344	292	107	207	175	417	1548	691	113	798	356
V/C Ratio(X)	1.44	0.08	0.52	0.80	0.30	0.30	1.85	0.90	0.03	0.40	0.78	1.48
Avail Cap(c_a), veh/h	231	908	770	214	890	754	417	1548	691	170	798	356
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.3	28.9	31.6	40.1	35.3	35.3	32.3	21.9	13.2	40.9	31.3	33.3
Incr Delay (d2), s/veh	222.2	0.1	1.5	5.1	0.8	1.0	392.5	7.2	0.0	0.9	5.2	229.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.8	0.4	2.9	1.9	1.2	1.0	53.3	12.3	0.2	0.5	6.1	29.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	259.5	29.0	33.1	45.2	36.1	36.3	424.8	29.1	13.2	41.7	36.5	263.0
LnGrp LOS	F	C	C	D	D	D	F	C	B	D	D	F
Approach Vol, veh/h		513			202			2181			1197	
Approach Delay, s/veh		179.8			40.0			169.0			136.2	
Approach LOS		F			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	45.9	10.4	22.8	27.0	26.8	17.0	16.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	37.7	11.5	43.9	22.4	20.3	12.4	43.0
Max Q Clear Time (g_c+I1), s	3.3	34.4	6.6	9.8	24.4	22.3	14.4	4.8
Green Ext Time (p_c), s	0.0	2.3	0.0	0.6	0.0	0.0	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	154.4
HCM 6th LOS	F

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	370	1100	994	397	280	568
Future Volume (vph)	370	1100	994	397	280	568
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	27.0	56.7	36.3	27.0	83.7
Total Split (%)	30.3%	22.5%	47.3%	30.3%	22.5%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min
Act Effct Green (s)	27.3	49.6	51.5	84.1	22.0	78.8
Actuated g/C Ratio	0.23	0.43	0.44	0.72	0.19	0.68
v/c Ratio	0.91	1.63	1.23	0.34	0.86	0.46
Control Delay	69.9	314.3	145.8	4.6	70.3	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.9	314.3	145.8	4.6	70.3	10.8
LOS	E	F	F	A	E	B
Approach Delay	252.8		105.5			30.4
Approach LOS	F		F			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.63	
Intersection Signal Delay: 146.7	Intersection LOS: F
Intersection Capacity Utilization 129.0%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	370	1100	994	397	280	568
Future Volume (veh/h)	370	1100	994	397	280	568
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	385	1090	1035	367	292	592
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	472	703	821	1115	319	1236
Arrive On Green	0.26	0.26	0.43	0.43	0.18	0.65
Sat Flow, veh/h	1810	1610	1900	1610	1810	1900
Grp Volume(v), veh/h	385	1090	1035	367	292	592
Grp Sat Flow(s),veh/h/ln	1810	1610	1900	1610	1810	1900
Q Serve(g_s), s	23.8	31.0	51.4	10.8	18.9	18.8
Cycle Q Clear(g_c), s	23.8	31.0	51.4	10.8	18.9	18.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	472	703	821	1115	319	1236
V/C Ratio(X)	0.82	1.55	1.26	0.33	0.92	0.48
Avail Cap(c_a), veh/h	472	703	821	1115	335	1257
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.3	33.5	33.8	7.3	48.1	10.6
Incr Delay (d2), s/veh	10.0	254.4	127.1	0.2	28.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.4	68.2	50.6	7.2	10.6	6.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	51.3	287.9	160.9	7.5	76.3	10.7
LnGrp LOS	D	F	F	A	E	B
Approach Vol, veh/h	1475		1402			884
Approach Delay, s/veh	226.2		120.7			32.4
Approach LOS	F		F			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	26.0	56.7			82.7	36.3
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	22.0	51.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	20.9	53.4			20.8	33.0
Green Ext Time (p_c), s	0.1	0.0			2.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	141.3
HCM 6th LOS	F

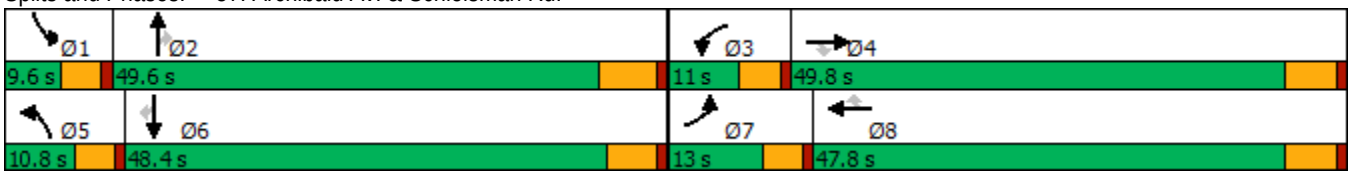
Notes

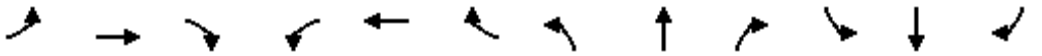
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	530	452	155	285	819	171	298	941	247	123	521	539
Future Volume (vph)	530	452	155	285	819	171	298	941	247	123	521	539
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	49.8	49.8	11.0	47.8	47.8	10.8	49.6	49.6	9.6	48.4	48.4
Total Split (%)	10.8%	41.5%	41.5%	9.2%	39.8%	39.8%	9.0%	41.3%	41.3%	8.0%	40.3%	40.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	8.4	44.1	44.1	6.4	42.1	42.1	6.2	39.9	39.9	5.0	39.5	39.5
Actuated g/C Ratio	0.07	0.38	0.38	0.05	0.36	0.36	0.05	0.34	0.34	0.04	0.34	0.34
v/c Ratio	2.34	0.26	0.24	1.65	0.49	0.29	1.78	0.59	0.38	0.91	0.33	0.93
Control Delay	636.9	26.0	4.7	350.4	30.5	12.3	404.7	33.0	4.9	110.8	29.0	50.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	636.9	26.0	4.7	350.4	30.5	12.3	404.7	33.0	4.9	110.8	29.0	50.1
LOS	F	C	A	F	C	B	F	C	A	F	C	D
Approach Delay		308.0			99.6			102.8			47.2	
Approach LOS		F			F			F			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.7	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.34	
Intersection Signal Delay: 135.0	Intersection LOS: F
Intersection Capacity Utilization 83.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	530	452	155	285	819	171	298	941	247	123	521	539
Future Volume (veh/h)	530	452	155	285	819	171	298	941	247	123	521	539
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	589	502	108	317	910	113	331	1046	201	137	579	477
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	253	1960	598	193	1871	573	187	1775	551	151	1722	527
Arrive On Green	0.07	0.38	0.38	0.05	0.36	0.36	0.05	0.34	0.34	0.04	0.33	0.33
Sat Flow, veh/h	3510	5187	1584	3510	5187	1590	3510	5187	1610	3510	5187	1588
Grp Volume(v), veh/h	589	502	108	317	910	113	331	1046	201	137	579	477
Grp Sat Flow(s),veh/h/ln	1755	1729	1584	1755	1729	1590	1755	1729	1610	1755	1729	1588
Q Serve(g_s), s	8.4	7.8	5.3	6.4	15.8	5.7	6.2	19.3	10.9	4.5	9.8	33.4
Cycle Q Clear(g_c), s	8.4	7.8	5.3	6.4	15.8	5.7	6.2	19.3	10.9	4.5	9.8	33.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	253	1960	598	193	1871	573	187	1775	551	151	1722	527
V/C Ratio(X)	2.33	0.26	0.18	1.64	0.49	0.20	1.77	0.59	0.36	0.91	0.34	0.90
Avail Cap(c_a), veh/h	253	1960	598	193	1871	573	187	1933	600	151	1915	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.0	25.0	24.2	55.0	28.9	25.6	55.1	31.6	28.8	55.5	29.3	37.1
Incr Delay (d2), s/veh	608.9	0.3	0.7	311.5	0.9	0.8	367.8	0.4	0.4	46.5	0.1	16.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.0	3.1	2.0	11.1	6.5	2.2	12.2	7.7	4.1	2.9	3.9	14.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	662.9	25.3	24.8	366.5	29.8	26.4	422.9	32.0	29.2	102.0	29.4	53.7
LnGrp LOS	F	C	C	F	C	C	F	C	C	F	C	D
Approach Vol, veh/h		1199			1340			1578			1193	
Approach Delay, s/veh		338.5			109.2			113.6			47.4	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	46.0	11.0	49.8	10.8	44.8	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.0	43.4	6.4	44.0	6.2	* 43	8.4	42.0
Max Q Clear Time (g_c+I1), s	6.5	21.3	8.4	9.8	8.2	35.4	10.4	17.8
Green Ext Time (p_c), s	0.0	7.6	0.0	3.7	0.0	3.2	0.0	6.6

Intersection Summary	
HCM 6th Ctrl Delay	148.4
HCM 6th LOS	F

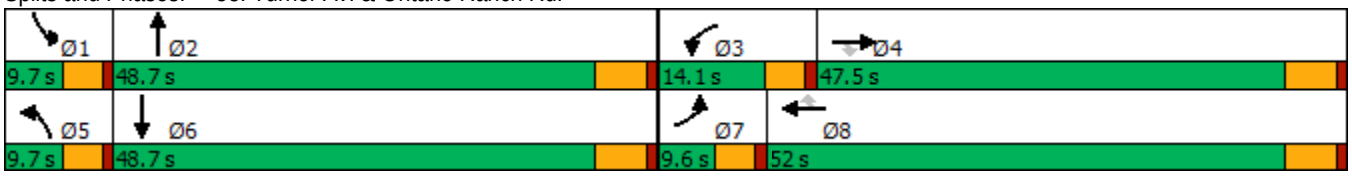
Notes

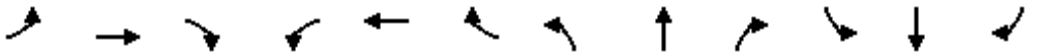
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	33	719	37	48	1508	20	64	27	38	17
Future Volume (vph)	33	719	37	48	1508	20	64	27	38	17
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	9.6	47.5	47.5	14.1	52.0	52.0	9.7	48.7	9.7	48.7
Total Split (%)	8.0%	39.6%	39.6%	11.8%	43.3%	43.3%	8.1%	40.6%	8.1%	40.6%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	5.1	47.1	47.1	7.2	51.4	51.4	5.2	17.2	5.2	15.2
Actuated g/C Ratio	0.05	0.50	0.50	0.08	0.55	0.55	0.06	0.18	0.06	0.16
v/c Ratio	0.43	0.47	0.05	0.43	0.90	0.02	0.80	0.23	0.48	0.32
Control Delay	61.6	19.3	0.1	54.4	29.1	0.1	98.8	16.5	64.1	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.6	19.3	0.1	54.4	29.1	0.1	98.8	16.5	64.1	12.3
LOS	E	B	A	D	C	A	F	B	E	B
Approach Delay		20.2			29.5			56.2		27.3
Approach LOS		C			C			E		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 93.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 28.0	Intersection LOS: C
Intersection Capacity Utilization 64.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	719	37	48	1508	20	64	27	41	38	17	76
Future Volume (veh/h)	33	719	37	48	1508	20	64	27	41	38	17	76
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	37	799	30	53	1676	13	71	30	33	42	19	61
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	56	1846	824	68	1873	835	88	105	116	60	44	141
Arrive On Green	0.03	0.54	0.54	0.04	0.55	0.55	0.05	0.13	0.13	0.04	0.12	0.12
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	783	862	1619	376	1207
Grp Volume(v), veh/h	37	799	30	53	1676	13	71	0	63	42	0	80
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	0	1645	1619	0	1583
Q Serve(g_s), s	1.9	11.8	0.8	2.7	36.7	0.3	3.7	0.0	2.9	2.2	0.0	4.0
Cycle Q Clear(g_c), s	1.9	11.8	0.8	2.7	36.7	0.3	3.7	0.0	2.9	2.2	0.0	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.52	1.00		0.76
Lane Grp Cap(c), veh/h	56	1846	824	68	1873	835	88	0	221	60	0	185
V/C Ratio(X)	0.66	0.43	0.04	0.78	0.89	0.02	0.81	0.00	0.29	0.70	0.00	0.43
Avail Cap(c_a), veh/h	96	1846	824	182	1873	835	98	0	837	98	0	805
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.2	11.7	9.1	40.0	16.9	8.7	39.4	0.0	32.9	40.1	0.0	34.6
Incr Delay (d2), s/veh	5.0	0.7	0.1	6.9	7.1	0.0	31.1	0.0	0.7	5.4	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.0	0.2	1.2	13.4	0.1	2.1	0.0	1.1	0.9	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	12.4	9.2	46.9	24.0	8.7	70.5	0.0	33.6	45.5	0.0	36.2
LnGrp LOS	D	B	A	D	C	A	E	A	C	D	A	D
Approach Vol, veh/h		866			1742			134			122	
Approach Delay, s/veh		13.7			24.6			53.2			39.4	
Approach LOS		B			C			D			D	

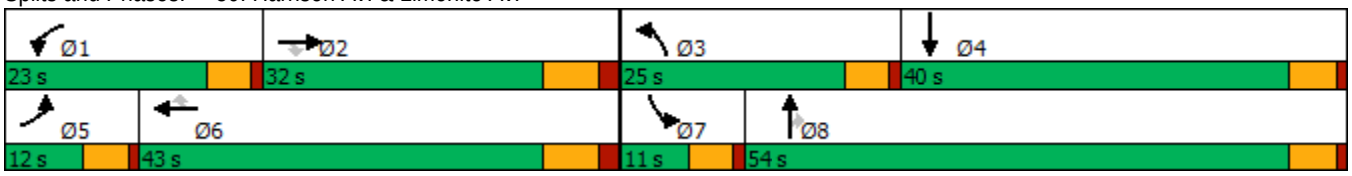
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	17.1	8.2	51.3	9.2	15.7	7.5	52.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	5.1	42.9	9.5	41.7	5.1	42.9	5.0	46.2
Max Q Clear Time (g_c+I1), s	4.2	4.9	4.7	13.8	5.7	6.0	3.9	38.7
Green Ext Time (p_c), s	0.0	0.3	0.0	5.6	0.0	0.4	0.0	5.7

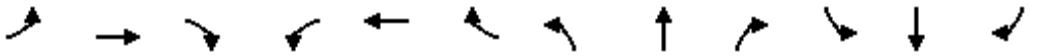
Intersection Summary	
HCM 6th Ctrl Delay	23.3
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	47	606	24	157	1218	24	166	118	234	29	125
Future Volume (vph)	47	606	24	157	1218	24	166	118	234	29	125
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	12.0	32.0	32.0	23.0	43.0	43.0	25.0	54.0	54.0	11.0	40.0
Total Split (%)	10.0%	26.7%	26.7%	19.2%	35.8%	35.8%	20.8%	45.0%	45.0%	9.2%	33.3%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	6.4	20.1	20.1	12.1	31.6	31.6	12.8	29.6	29.6	5.8	17.0
Actuated g/C Ratio	0.07	0.23	0.23	0.14	0.37	0.37	0.15	0.34	0.34	0.07	0.20
v/c Ratio	0.37	0.52	0.05	0.65	0.67	0.04	0.65	0.19	0.35	0.25	0.59
Control Delay	54.3	32.1	0.2	51.9	27.5	0.1	50.6	24.3	4.7	52.7	35.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.3	32.1	0.2	51.9	27.5	0.1	50.6	24.3	4.7	52.7	35.7
LOS	D	C	A	D	C	A	D	C	A	D	D
Approach Delay		32.5			29.8			23.8			37.8
Approach LOS		C			C			C			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 86	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 30.0	Intersection LOS: C
Intersection Capacity Utilization 67.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 59: Harrison Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	606	24	157	1218	24	166	118	234	29	125	86
Future Volume (veh/h)	47	606	24	157	1218	24	166	118	234	29	125	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	49	631	18	164	1269	23	173	123	126	30	130	61
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	80	1498	451	205	1857	563	216	453	383	58	185	87
Arrive On Green	0.04	0.29	0.29	0.11	0.36	0.36	0.12	0.24	0.24	0.03	0.15	0.15
Sat Flow, veh/h	1810	5187	1561	1810	5187	1572	1810	1900	1606	1810	1223	574
Grp Volume(v), veh/h	49	631	18	164	1269	23	173	123	126	30	0	191
Grp Sat Flow(s),veh/h/ln	1810	1729	1561	1810	1729	1572	1810	1900	1606	1810	0	1797
Q Serve(g_s), s	1.8	6.7	0.6	6.0	14.2	0.6	6.3	3.6	4.4	1.1	0.0	6.9
Cycle Q Clear(g_c), s	1.8	6.7	0.6	6.0	14.2	0.6	6.3	3.6	4.4	1.1	0.0	6.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	80	1498	451	205	1857	563	216	453	383	58	0	272
V/C Ratio(X)	0.61	0.42	0.04	0.80	0.68	0.04	0.80	0.27	0.33	0.52	0.00	0.70
Avail Cap(c_a), veh/h	186	1903	573	478	2740	830	531	1358	1148	159	0	915
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.0	19.6	17.4	29.4	18.6	14.3	29.2	21.1	21.4	32.5	0.0	27.5
Incr Delay (d2), s/veh	2.8	0.2	0.0	2.7	0.5	0.0	2.6	0.3	0.5	2.7	0.0	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.3	0.2	2.5	4.8	0.2	2.7	1.5	1.5	0.5	0.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.8	19.8	17.5	32.1	19.0	14.3	31.9	21.4	21.9	35.2	0.0	30.8
LnGrp LOS	C	B	B	C	B	B	C	C	C	D	A	C
Approach Vol, veh/h		698			1456			422			221	
Approach Delay, s/veh		20.8			20.4			25.9			31.4	
Approach LOS		C			C			C			C	

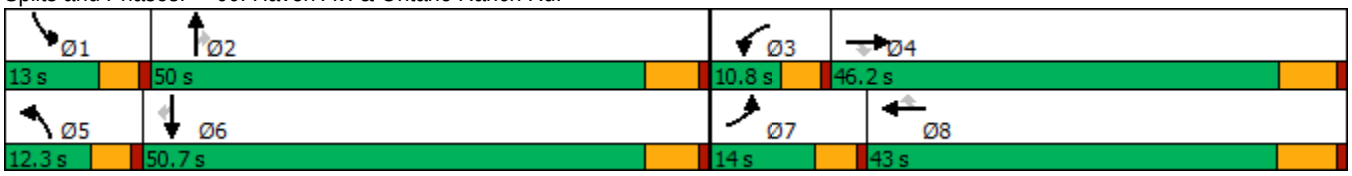
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	26.7	13.1	15.6	8.0	31.4	7.2	21.6
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	18.0	25.0	20.0	34.7	7.0	36.0	6.0	48.7
Max Q Clear Time (g_c+I1), s	8.0	8.7	8.3	8.9	3.8	16.2	3.1	6.4
Green Ext Time (p_c), s	0.1	3.5	0.1	1.0	0.0	8.2	0.0	1.0

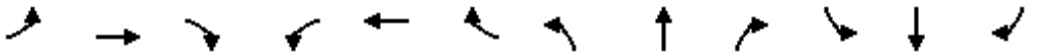
Intersection Summary	
HCM 6th Ctrl Delay	22.2
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	747	32	24	1305	91	69	211	87	132	64	88
Future Volume (vph)	155	747	32	24	1305	91	69	211	87	132	64	88
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	14.0	46.2	46.2	10.8	43.0	43.0	12.3	50.0	50.0	13.0	50.7	50.7
Total Split (%)	11.7%	38.5%	38.5%	9.0%	35.8%	35.8%	10.3%	41.7%	41.7%	10.8%	42.3%	42.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	9.5	47.4	47.4	5.7	36.9	36.9	7.4	19.7	19.7	8.5	23.1	23.1
Actuated g/C Ratio	0.10	0.49	0.49	0.06	0.38	0.38	0.08	0.20	0.20	0.09	0.24	0.24
v/c Ratio	1.04	0.33	0.04	0.27	1.06	0.15	0.59	0.61	0.23	0.99	0.16	0.21
Control Delay	127.7	18.1	0.1	54.7	72.9	4.8	66.1	41.1	4.5	119.7	30.1	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	127.7	18.1	0.1	54.7	72.9	4.8	66.1	41.1	4.5	119.7	30.1	4.3
LOS	F	B	A	D	E	A	E	D	A	F	C	A
Approach Delay		35.7			68.2			37.1			63.6	
Approach LOS		D			E			D			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 53.9	Intersection LOS: D
Intersection Capacity Utilization 85.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	747	32	24	1305	91	69	211	87	132	64	88
Future Volume (veh/h)	155	747	32	24	1305	91	69	211	87	132	64	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	165	795	21	26	1388	52	73	224	43	140	68	61
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	169	2379	739	43	1389	620	91	282	239	151	349	296
Arrive On Green	0.10	0.48	0.48	0.03	0.41	0.41	0.06	0.16	0.16	0.09	0.19	0.19
Sat Flow, veh/h	1619	4914	1525	1619	3420	1525	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	165	795	21	26	1388	52	73	224	43	140	68	61
Grp Sat Flow(s),veh/h/ln	1619	1638	1525	1619	1710	1525	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	9.1	8.9	0.6	1.4	36.5	1.9	4.0	10.8	2.2	7.7	2.8	3.0
Cycle Q Clear(g_c), s	9.1	8.9	0.6	1.4	36.5	1.9	4.0	10.8	2.2	7.7	2.8	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	169	2379	739	43	1389	620	91	282	239	151	349	296
V/C Ratio(X)	0.97	0.33	0.03	0.60	1.00	0.08	0.80	0.79	0.18	0.93	0.19	0.21
Avail Cap(c_a), veh/h	169	2379	739	112	1389	620	139	885	750	151	899	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.1	14.3	12.1	43.3	26.7	16.4	41.9	36.5	32.9	40.4	30.3	30.4
Incr Delay (d2), s/veh	61.1	0.4	0.1	5.0	24.0	0.3	9.4	5.1	0.4	50.6	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	3.0	0.2	0.6	17.3	0.6	1.8	4.9	0.8	5.1	1.2	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	101.2	14.6	12.2	48.3	50.6	16.7	51.3	41.6	33.3	91.1	30.6	30.8
LnGrp LOS	F	B	B	D	D	B	D	D	C	F	C	C
Approach Vol, veh/h		981			1466			340			269	
Approach Delay, s/veh		29.2			49.4			42.6			62.1	
Approach LOS		C			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	19.9	7.0	50.0	9.6	23.2	14.0	43.0
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	8.4	44.2	6.2	* 40	7.7	44.9	9.4	36.5
Max Q Clear Time (g_c+I1), s	9.7	12.8	3.4	10.9	6.0	5.0	11.1	38.5
Green Ext Time (p_c), s	0.0	1.3	0.0	5.4	0.0	0.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	43.3
HCM 6th LOS	D

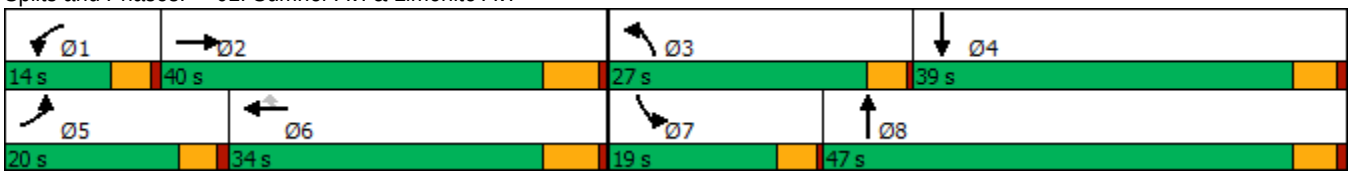
Notes

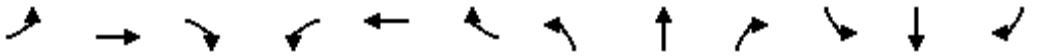
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	266	646	121	1005	36	208	422	107	211
Future Volume (vph)	266	646	121	1005	36	208	422	107	211
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	20.0	40.0	14.0	34.0	34.0	27.0	47.0	19.0	39.0
Total Split (%)	16.7%	33.3%	11.7%	28.3%	28.3%	22.5%	39.2%	15.8%	32.5%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	11.0	28.3	7.2	24.5	24.5	14.5	22.9	9.5	15.2
Actuated g/C Ratio	0.13	0.33	0.08	0.29	0.29	0.17	0.27	0.11	0.18
v/c Ratio	0.61	0.41	0.43	0.70	0.06	0.70	0.59	0.55	0.54
Control Delay	44.7	24.7	47.1	32.4	0.2	49.5	29.6	51.7	20.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.7	24.7	47.1	32.4	0.2	49.5	29.6	51.7	20.8
LOS	D	C	D	C	A	D	C	D	C
Approach Delay		30.3		33.0			35.1		27.5
Approach LOS		C		C			D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 85.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 31.9	Intersection LOS: C
Intersection Capacity Utilization 66.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 61: Sumner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	266	646	36	121	1005	36	208	422	123	107	211	173
Future Volume (veh/h)	266	646	36	121	1005	36	208	422	123	107	211	173
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	274	666	31	125	1036	33	214	435	53	110	218	81
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	385	1770	82	210	1549	475	263	658	80	142	355	128
Arrive On Green	0.11	0.35	0.35	0.06	0.30	0.30	0.15	0.20	0.20	0.08	0.14	0.14
Sat Flow, veh/h	3510	5080	235	3510	5187	1590	1810	3241	393	1810	2599	937
Grp Volume(v), veh/h	274	452	245	125	1036	33	214	241	247	110	149	150
Grp Sat Flow(s),veh/h/ln	1755	1729	1858	1755	1729	1590	1810	1805	1829	1810	1805	1731
Q Serve(g_s), s	4.7	6.2	6.2	2.2	11.0	0.9	7.2	7.7	7.8	3.8	4.9	5.1
Cycle Q Clear(g_c), s	4.7	6.2	6.2	2.2	11.0	0.9	7.2	7.7	7.8	3.8	4.9	5.1
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.21	1.00		0.54
Lane Grp Cap(c), veh/h	385	1205	647	210	1549	475	263	367	371	142	247	237
V/C Ratio(X)	0.71	0.38	0.38	0.60	0.67	0.07	0.82	0.66	0.66	0.77	0.61	0.63
Avail Cap(c_a), veh/h	865	1869	1004	530	2309	708	662	1205	1221	432	976	936
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	15.4	15.4	28.8	19.3	15.8	26.1	23.1	23.1	28.4	25.6	25.7
Incr Delay (d2), s/veh	0.9	0.2	0.4	1.0	0.5	0.1	2.4	1.5	1.5	3.3	1.8	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	2.0	2.2	0.8	3.7	0.3	2.9	3.0	3.1	1.6	2.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.0	15.6	15.7	29.8	19.8	15.9	28.4	24.6	24.6	31.8	27.3	27.7
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		971			1194			702			409	
Approach Delay, s/veh		19.1			20.8			25.8			28.7	
Approach LOS		B			C			C			C	

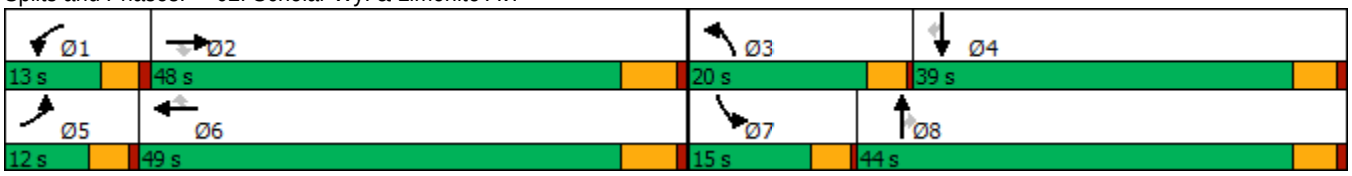
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	27.9	13.1	13.6	11.4	24.8	8.9	17.8
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	9.5	34.0	23.0	34.0	15.5	28.0	15.0	42.0
Max Q Clear Time (g_c+I1), s	4.2	8.2	9.2	7.1	6.7	13.0	5.8	9.8
Green Ext Time (p_c), s	0.1	4.1	0.1	1.2	0.2	5.8	0.0	2.1

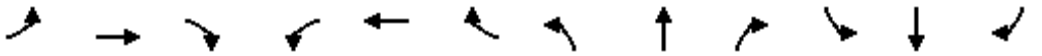
Intersection Summary	
HCM 6th Ctrl Delay	22.3
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	893	71	45	953	28	109	194	110	56	213	31
Future Volume (vph)	34	893	71	45	953	28	109	194	110	56	213	31
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	12.0	48.0	48.0	13.0	49.0	49.0	20.0	44.0	44.0	15.0	39.0	39.0
Total Split (%)	10.0%	40.0%	40.0%	10.8%	40.8%	40.8%	16.7%	36.7%	36.7%	12.5%	32.5%	32.5%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.2	29.9	29.9	6.7	30.3	30.3	10.2	16.9	16.9	7.4	14.6	14.6
Actuated g/C Ratio	0.08	0.40	0.40	0.09	0.41	0.41	0.14	0.23	0.23	0.10	0.20	0.20
v/c Ratio	0.25	0.67	0.11	0.30	0.70	0.04	0.48	0.49	0.26	0.34	0.33	0.08
Control Delay	47.3	24.3	0.8	47.1	24.7	0.1	44.4	32.6	7.4	46.0	30.7	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.3	24.3	0.8	47.1	24.7	0.1	44.4	32.6	7.4	46.0	30.7	0.4
LOS	D	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		23.4			25.0			29.0			30.4	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 74.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 25.6	Intersection LOS: C
Intersection Capacity Utilization 65.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	893	71	45	953	28	109	194	110	56	213	31
Future Volume (veh/h)	34	893	71	45	953	28	109	194	110	56	213	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	37	971	43	49	1036	19	118	211	78	61	232	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	55	1411	629	67	1434	640	153	391	330	77	592	251
Arrive On Green	0.03	0.39	0.39	0.04	0.40	0.40	0.08	0.21	0.21	0.04	0.16	0.16
Sat Flow, veh/h	1810	3610	1609	1810	3610	1610	1810	1900	1608	1810	3610	1534
Grp Volume(v), veh/h	37	971	43	49	1036	19	118	211	78	61	232	32
Grp Sat Flow(s),veh/h/ln	1810	1805	1609	1810	1805	1610	1810	1900	1608	1810	1805	1534
Q Serve(g_s), s	1.2	13.5	1.0	1.6	14.6	0.4	3.8	6.0	2.4	2.0	3.5	1.1
Cycle Q Clear(g_c), s	1.2	13.5	1.0	1.6	14.6	0.4	3.8	6.0	2.4	2.0	3.5	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	55	1411	629	67	1434	640	153	391	330	77	592	251
V/C Ratio(X)	0.67	0.69	0.07	0.73	0.72	0.03	0.77	0.54	0.24	0.79	0.39	0.13
Avail Cap(c_a), veh/h	225	2518	1122	255	2577	1150	481	1230	1041	330	2038	866
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.9	15.3	11.5	28.7	15.3	11.1	27.0	21.4	20.0	28.6	22.5	21.5
Incr Delay (d2), s/veh	5.0	0.6	0.0	5.5	0.7	0.0	3.1	0.9	0.3	6.5	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.4	0.3	0.7	4.7	0.1	1.7	2.5	0.9	1.0	1.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.9	15.9	11.5	34.2	16.0	11.1	30.1	22.2	20.2	35.0	22.8	21.7
LnGrp LOS	C	B	B	C	B	B	C	C	C	D	C	C
Approach Vol, veh/h		1051			1104			407			325	
Approach Delay, s/veh		16.4			16.8			24.1			25.0	
Approach LOS		B			B			C			C	

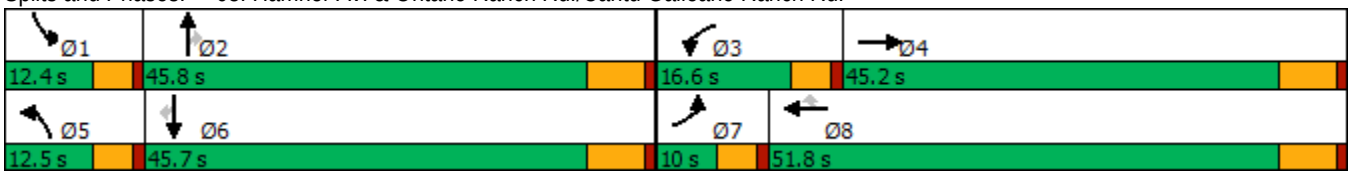
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	29.5	9.1	14.9	6.3	29.9	6.6	17.4
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	8.5	42.0	16.0	34.0	7.5	43.0	11.0	39.0
Max Q Clear Time (g_c+I1), s	3.6	15.5	5.8	5.5	3.2	16.6	4.0	8.0
Green Ext Time (p_c), s	0.0	6.8	0.1	1.3	0.0	7.3	0.0	1.1

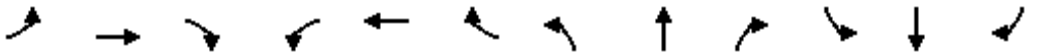
Intersection Summary	
HCM 6th Ctrl Delay	18.6
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	110	700	303	1231	224	190	778	556	170	233	102
Future Volume (vph)	110	700	303	1231	224	190	778	556	170	233	102
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	10.0	45.2	16.6	51.8	51.8	12.5	45.8	45.8	12.4	45.7	45.7
Total Split (%)	8.3%	37.7%	13.8%	43.2%	43.2%	10.4%	38.2%	38.2%	10.3%	38.1%	38.1%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	5.4	39.0	12.0	45.6	45.6	7.9	39.6	39.6	7.8	39.5	39.5
Actuated g/C Ratio	0.04	0.32	0.10	0.38	0.38	0.07	0.33	0.33	0.06	0.33	0.33
v/c Ratio	0.95	0.45	1.17	1.08	0.37	1.11	0.55	1.01	1.01	0.24	0.19
Control Delay	122.6	31.8	153.7	84.6	9.5	149.1	34.4	67.5	123.6	30.0	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	122.6	31.8	153.7	84.6	9.5	149.1	34.4	67.5	123.6	30.0	2.5
LOS	F	C	F	F	A	F	C	E	F	C	A
Approach Delay		42.9		86.9			60.8			55.9	
Approach LOS		D		F			E			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 66.6	Intersection LOS: E
Intersection Capacity Utilization 79.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	700	91	303	1231	224	190	778	556	170	233	102
Future Volume (veh/h)	110	700	91	303	1231	224	190	778	556	170	233	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	125	795	103	344	1399	255	216	884	625	193	265	116
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	133	1821	232	296	1300	580	195	1622	503	192	1126	502
Arrive On Green	0.05	0.32	0.32	0.10	0.38	0.38	0.07	0.33	0.33	0.06	0.33	0.33
Sat Flow, veh/h	2956	5602	713	2956	3420	1525	2956	4914	1525	2956	3420	1524
Grp Volume(v), veh/h	125	657	241	344	1399	255	216	884	625	193	265	116
Grp Sat Flow(s),veh/h/ln	1478	1548	1672	1478	1710	1525	1478	1638	1525	1478	1710	1524
Q Serve(g_s), s	5.1	13.3	13.7	12.0	45.6	14.9	7.9	17.6	39.6	7.8	6.8	6.6
Cycle Q Clear(g_c), s	5.1	13.3	13.7	12.0	45.6	14.9	7.9	17.6	39.6	7.8	6.8	6.6
Prop In Lane	1.00		0.43	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	133	1509	543	296	1300	580	195	1622	503	192	1126	502
V/C Ratio(X)	0.94	0.44	0.44	1.16	1.08	0.44	1.11	0.55	1.24	1.00	0.24	0.23
Avail Cap(c_a), veh/h	133	1509	543	296	1300	580	195	1622	503	192	1126	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	31.8	32.0	54.0	37.2	27.7	56.0	32.8	40.2	56.1	29.3	29.2
Incr Delay (d2), s/veh	59.0	0.2	0.6	104.2	48.3	0.5	97.0	0.4	124.7	66.1	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	4.7	5.3	8.6	26.4	5.3	5.5	6.7	31.4	4.6	2.7	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	116.2	32.0	32.5	158.2	85.5	28.2	153.1	33.2	164.9	122.2	29.4	29.5
LnGrp LOS	F	C	C	F	F	C	F	C	F	F	C	C
Approach Vol, veh/h		1023			1998			1725			574	
Approach Delay, s/veh		42.4			90.7			96.0			60.6	
Approach LOS		D			F			F			E	

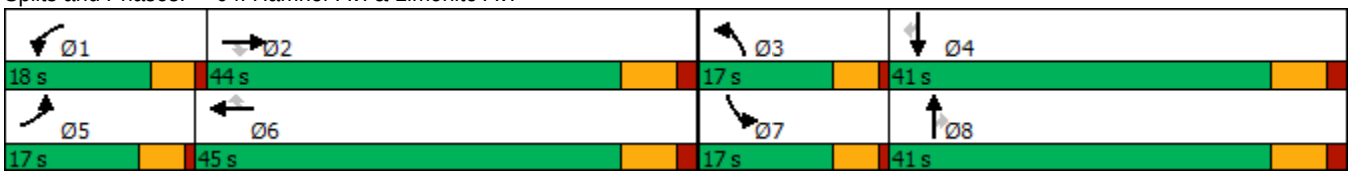
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	45.8	16.6	45.2	12.5	45.7	10.0	51.8
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	7.8	39.6	12.0	39.0	7.9	39.5	5.4	45.6
Max Q Clear Time (g_c+I1), s	9.8	41.6	14.0	15.7	9.9	8.8	7.1	47.6
Green Ext Time (p_c), s	0.0	0.0	0.0	5.3	0.0	1.9	0.0	0.0

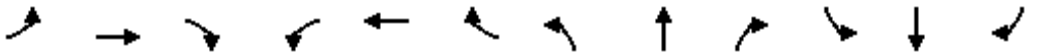
Intersection Summary	
HCM 6th Ctrl Delay	79.9
HCM 6th LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	677	56	194	686	94	203	767	280	175	412	128
Future Volume (vph)	193	677	56	194	686	94	203	767	280	175	412	128
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	17.0	44.0	44.0	18.0	45.0	45.0	17.0	41.0	41.0	17.0	41.0	41.0
Total Split (%)	14.2%	36.7%	36.7%	15.0%	37.5%	37.5%	14.2%	34.2%	34.2%	14.2%	34.2%	34.2%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	9.8	30.9	30.9	10.0	31.2	31.2	10.0	29.4	29.4	9.4	28.8	28.8
Actuated g/C Ratio	0.09	0.30	0.30	0.10	0.30	0.30	0.10	0.28	0.28	0.09	0.28	0.28
v/c Ratio	0.62	0.47	0.11	0.61	0.68	0.18	0.65	0.56	0.47	0.59	0.31	0.25
Control Delay	57.0	31.8	0.4	55.9	36.5	3.4	57.5	34.5	8.9	56.3	31.5	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.0	31.8	0.4	55.9	36.5	3.4	57.5	34.5	8.9	56.3	31.5	6.8
LOS	E	C	A	E	D	A	E	C	A	E	C	A
Approach Delay		35.1			37.1			32.5			33.2	
Approach LOS		D			D			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 104.4	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 34.4	Intersection LOS: C
Intersection Capacity Utilization 64.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 64: Hamner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	677	56	194	686	94	203	767	280	175	412	128
Future Volume (veh/h)	193	677	56	194	686	94	203	767	280	175	412	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	205	720	47	206	730	74	216	816	200	186	438	96
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	282	1543	478	284	1075	480	293	1425	442	262	1380	428
Arrive On Green	0.08	0.30	0.30	0.08	0.30	0.30	0.08	0.27	0.27	0.07	0.27	0.27
Sat Flow, veh/h	3510	5187	1609	3510	3610	1610	3510	5187	1608	3510	5187	1610
Grp Volume(v), veh/h	205	720	47	206	730	74	216	816	200	186	438	96
Grp Sat Flow(s),veh/h/ln	1755	1729	1609	1755	1805	1610	1755	1729	1608	1755	1729	1610
Q Serve(g_s), s	5.0	10.0	1.9	5.1	15.7	3.0	5.3	11.9	9.1	4.6	6.0	4.1
Cycle Q Clear(g_c), s	5.0	10.0	1.9	5.1	15.7	3.0	5.3	11.9	9.1	4.6	6.0	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	282	1543	478	284	1075	480	293	1425	442	262	1380	428
V/C Ratio(X)	0.73	0.47	0.10	0.73	0.68	0.15	0.74	0.57	0.45	0.71	0.32	0.22
Avail Cap(c_a), veh/h	478	2177	675	518	1556	694	478	2000	620	478	2000	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	25.3	22.4	39.6	27.2	22.8	39.4	27.5	26.5	39.8	25.9	25.3
Incr Delay (d2), s/veh	1.3	0.5	0.2	1.3	1.6	0.3	1.4	0.8	1.5	1.3	0.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	3.9	0.7	2.1	6.5	1.1	2.2	4.7	3.4	1.9	2.3	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.9	25.7	22.6	40.9	28.9	23.1	40.8	28.3	28.0	41.2	26.2	25.8
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		972			1010			1232			720	
Approach Delay, s/veh		28.8			30.9			30.4			30.0	
Approach LOS		C			C			C			C	

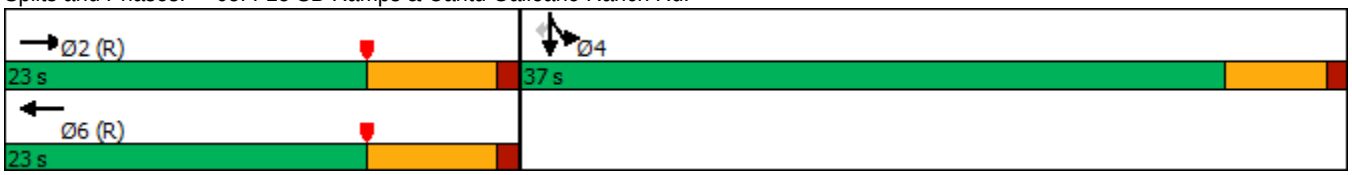
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	33.2	12.4	30.4	12.1	33.3	11.6	31.2
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	13.0	37.0	12.0	34.0	12.0	38.0	12.0	34.0
Max Q Clear Time (g_c+I1), s	7.1	12.0	7.3	8.0	7.0	17.7	6.6	13.9
Green Ext Time (p_c), s	0.1	9.0	0.1	5.9	0.1	8.5	0.1	10.2

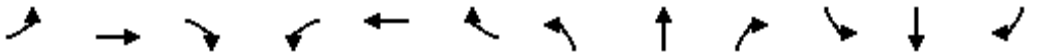
Intersection Summary	
HCM 6th Ctrl Delay	30.1
HCM 6th LOS	C

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1183	365	600	201	356	0	1551
Future Volume (vph)	1183	365	600	201	356	0	1551
Turn Type	NA	Free	NA	Free	Split	NA	Perm
Protected Phases	2		6		4	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		4	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		10.5	10.5	10.5
Total Split (s)	23.0		23.0		37.0	37.0	37.0
Total Split (%)	38.3%		38.3%		61.7%	61.7%	61.7%
Yellow Time (s)	5.8		5.8		4.5	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8		6.8		5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Max		Min	Min	Min
Act Effct Green (s)	16.2	60.0	16.2	60.0	31.5	31.5	31.5
Actuated g/C Ratio	0.27	1.00	0.27	1.00	0.52	0.52	0.52
v/c Ratio	0.94	0.25	0.68	0.14	0.40	1.09	1.05
Control Delay	36.4	0.4	19.0	0.2	10.2	77.5	61.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.4	0.4	19.0	0.2	10.2	77.5	61.9
LOS	D	A	B	A	B	E	E
Approach Delay	27.9		14.3			59.7	
Approach LOS	C		B			E	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 39 (65%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 39.6	Intersection LOS: D
Intersection Capacity Utilization 90.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	✣	↱
Traffic Volume (veh/h)	0	1183	365	0	600	201	0	0	0	356	0	1551
Future Volume (veh/h)	0	1183	365	0	600	201	0	0	0	356	0	1551
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1314	0	0	667	0				264	0	1567
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1443		0	1004					935	0	1665
Arrive On Green	0.00	0.28	0.00	0.00	0.28	0.00				0.52	0.00	0.52
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1314	0	0	667	0				264	0	1567
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	14.7	0.0	0.0	9.8	0.0				5.0	0.0	27.5
Cycle Q Clear(g_c), s	0.0	14.7	0.0	0.0	9.8	0.0				5.0	0.0	27.5
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1443		0	1004					935	0	1665
V/C Ratio(X)	0.00	0.91		0.00	0.66					0.28	0.00	0.94
Avail Cap(c_a), veh/h	0	1443		0	1004					950	0	1691
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.63	0.00	0.00	0.92	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	20.9	0.0	0.0	19.2	0.0				8.2	0.0	13.6
Incr Delay (d2), s/veh	0.0	6.9	0.0	0.0	3.2	0.0				0.2	0.0	10.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.8	0.0	0.0	3.8	0.0				1.4	0.0	9.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	27.8	0.0	0.0	22.4	0.0				8.4	0.0	24.5
LnGrp LOS	A	C		A	C					A	A	C
Approach Vol, veh/h		1314	A		667	A					1831	
Approach Delay, s/veh		27.8			22.4						22.2	
Approach LOS		C			C						C	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		23.5		36.5		23.5						
Change Period (Y+Rc), s		6.8		5.5		6.8						
Max Green Setting (Gmax), s		16.2		31.5		16.2						
Max Q Clear Time (g_c+I1), s		16.7		29.5		11.8						
Green Ext Time (p_c), s		0.0		1.5		1.6						

Intersection Summary		
HCM 6th Ctrl Delay		24.2
HCM 6th LOS		C

Notes

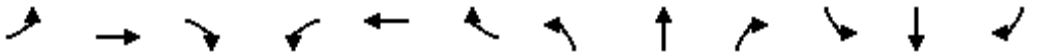
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1235	659	941	728	165	0	470
Future Volume (vph)	1235	659	941	728	165	0	470
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		4	4	
Permitted Phases		2		6			4
Detector Phase	2	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	36.5	36.5	23.5	23.5	23.5
Total Split (s)	74.0	74.0	74.0	74.0	36.0	36.0	36.0
Total Split (%)	67.3%	67.3%	67.3%	67.3%	32.7%	32.7%	32.7%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	Min	Min
Act Effct Green (s)	82.7	82.7	82.7	82.7	16.3	16.3	16.3
Actuated g/C Ratio	0.75	0.75	0.75	0.75	0.15	0.15	0.15
v/c Ratio	0.34	0.51	0.26	0.55	0.35	0.35	0.82
Control Delay	5.3	1.9	7.7	6.5	44.0	44.0	35.0
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	5.3	1.9	7.7	6.6	44.0	44.0	35.0
LOS	A	A	A	A	D	D	D
Approach Delay	4.1		7.2			37.4	
Approach LOS	A		A			D	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 10.4	Intersection LOS: B
Intersection Capacity Utilization 54.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	↲	↱↱
Traffic Volume (veh/h)	0	1235	659	0	941	728	0	0	0	165	0	470
Future Volume (veh/h)	0	1235	659	0	941	728	0	0	0	165	0	470
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1314	579	0	1001	774				176	0	202
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	4219	1309	0	4219	1310				314	0	275
Arrive On Green	0.00	0.81	0.81	0.00	0.81	0.81				0.09	0.00	0.09
Sat Flow, veh/h	0	5358	1610	0	5358	1610				3619	0	3173
Grp Volume(v), veh/h	0	1314	579	0	1001	774				176	0	202
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1610				1810	0	1587
Q Serve(g_s), s	0.0	7.0	11.5	0.0	4.9	19.0				5.1	0.0	6.8
Cycle Q Clear(g_c), s	0.0	7.0	11.5	0.0	4.9	19.0				5.1	0.0	6.8
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	4219	1309	0	4219	1310				314	0	275
V/C Ratio(X)	0.00	0.31	0.44	0.00	0.24	0.59				0.56	0.00	0.73
Avail Cap(c_a), veh/h	0	4219	1309	0	4219	1310				1003	0	880
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.92	0.92				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	2.6	3.0	0.0	2.4	3.7				48.2	0.0	49.0
Incr Delay (d2), s/veh	0.0	0.2	1.1	0.0	0.1	1.8				0.6	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.3	2.3	0.0	0.9	3.9				2.3	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	2.8	4.1	0.0	2.5	5.5				48.8	0.0	50.4
LnGrp LOS	A	A	A	A	A	A				D	A	D
Approach Vol, veh/h		1893			1775						378	
Approach Delay, s/veh		3.2			3.8						49.7	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		95.0		15.0		95.0						
Change Period (Y+Rc), s		5.5		5.5		5.5						
Max Green Setting (Gmax), s		68.5		30.5		68.5						
Max Q Clear Time (g_c+I1), s		13.5		8.8		21.0						
Green Ext Time (p_c), s		8.7		0.7		7.0						

Intersection Summary												
HCM 6th Ctrl Delay			7.8									
HCM 6th LOS			A									

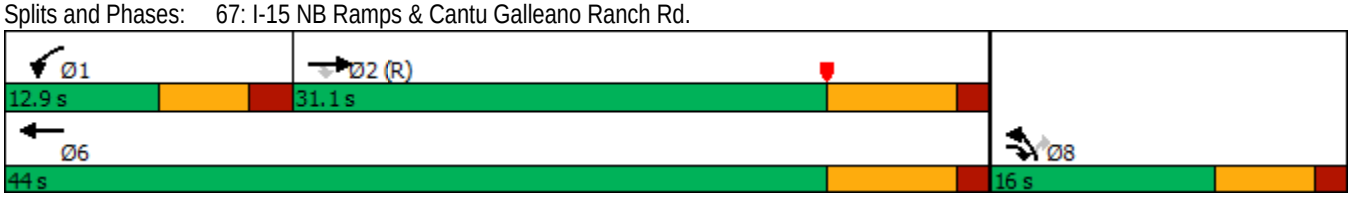
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	558	981	404	522	279	331
Future Volume (vph)	558	981	404	522	279	331
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	31.1	16.0	12.9	44.0	16.0	16.0
Total Split (%)	51.8%	26.7%	21.5%	73.3%	26.7%	26.7%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.0	6.0	7.3	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max
Act Effct Green (s)	23.8	41.1	6.9	36.7	10.0	10.0
Actuated g/C Ratio	0.40	0.68	0.12	0.61	0.17	0.17
v/c Ratio	0.30	0.97	1.10	0.18	0.68	0.50
Control Delay	5.6	28.0	105.8	5.3	22.5	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.6	28.0	105.8	5.3	22.5	8.7
LOS	A	C	F	A	C	A
Approach Delay	19.9			49.1	18.2	
Approach LOS	B			D	B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 28.3	Intersection LOS: C
Intersection Capacity Utilization 82.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	558	981	404	522	279	331
Future Volume (veh/h)	558	981	404	522	279	331
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	613	744	444	574	346	175
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2058	907	404	3173	603	268
Arrive On Green	0.66	0.66	0.11	0.61	0.17	0.17
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	613	744	444	574	346	175
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	3.0	23.8	6.9	2.9	5.3	6.1
Cycle Q Clear(g_c), s	3.0	23.8	6.9	2.9	5.3	6.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2058	907	404	3173	603	268
V/C Ratio(X)	0.30	0.82	1.10	0.18	0.57	0.65
Avail Cap(c_a), veh/h	2058	907	404	3173	603	268
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.46	0.46	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.6	6.1	26.5	5.1	23.0	23.4
Incr Delay (d2), s/veh	0.2	4.0	74.5	0.0	3.9	11.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.5	6.7	0.6	2.3	2.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.8	10.1	101.1	5.1	27.0	35.1
LnGrp LOS	A	B	F	A	C	D
Approach Vol, veh/h	1357			1018	521	
Approach Delay, s/veh	8.6			47.0	29.7	
Approach LOS	A			D	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	12.9	31.1				44.0	16.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	6.9	23.8				36.7	10.0
Max Q Clear Time (g_c+I1), s	8.9	25.8				4.9	8.1
Green Ext Time (p_c), s	0.0	0.0				3.7	0.4

Intersection Summary	
HCM 6th Ctrl Delay	25.9
HCM 6th LOS	C

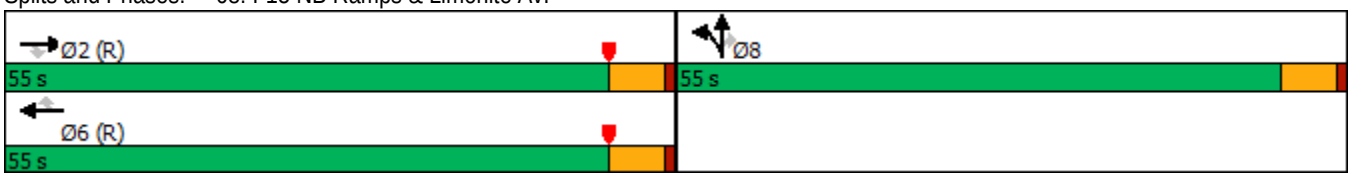
Notes

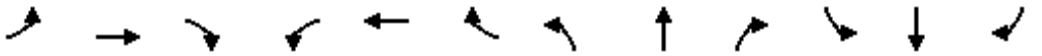
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	583	816	1268	434	401	0	353
Future Volume (vph)	583	816	1268	434	401	0	353
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		8	8	
Permitted Phases		2		6			8
Detector Phase	2	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	55.0	55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None
Act Effct Green (s)	78.2	78.2	78.2	78.2	20.8	20.8	20.8
Actuated g/C Ratio	0.71	0.71	0.71	0.71	0.19	0.19	0.19
v/c Ratio	0.16	0.61	0.36	0.35	0.65	0.65	0.46
Control Delay	5.7	7.6	7.1	1.5	49.6	49.6	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.7	7.6	7.1	1.5	49.6	49.6	7.7
LOS	A	A	A	A	D	D	A
Approach Delay	6.8		5.7			30.0	
Approach LOS	A		A			C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 10.8	Intersection LOS: B
Intersection Capacity Utilization 55.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱	↰	↕	↱↱			
Traffic Volume (veh/h)	0	583	816	0	1268	434	401	0	353	0	0	0
Future Volume (veh/h)	0	583	816	0	1268	434	401	0	353	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	0	607	850	0	1321	332	418	0	154			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	0	3898	1210	0	3898	1210	537	0	471			
Arrive On Green	0.00	1.00	1.00	0.00	0.75	0.75	0.15	0.00	0.15			
Sat Flow, veh/h	0	5358	1610	0	5358	1610	3619	0	3172			
Grp Volume(v), veh/h	0	607	850	0	1321	332	418	0	154			
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1610	1810	0	1586			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	9.3	7.1	12.2	0.0	4.8			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	9.3	7.1	12.2	0.0	4.8			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3898	1210	0	3898	1210	537	0	471			
V/C Ratio(X)	0.00	0.16	0.70	0.00	0.34	0.27	0.78	0.00	0.33			
Avail Cap(c_a), veh/h	0	3898	1210	0	3898	1210	1629	0	1427			
HCM Platoon Ratio	1.00	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.95	0.95	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	4.6	4.3	45.1	0.0	41.9			
Incr Delay (d2), s/veh	0.0	0.1	3.3	0.0	0.2	0.6	2.5	0.0	0.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.1	0.0	2.5	1.9	5.5	0.0	1.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.1	3.3	0.0	4.8	4.8	47.6	0.0	42.3			
LnGrp LOS	A	A	A	A	A	A	D	A	D			
Approach Vol, veh/h		1457			1653			572				
Approach Delay, s/veh		1.9			4.8			46.2				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		88.2				88.2		21.8				
Change Period (Y+Rc), s		5.5				5.5		5.5				
Max Green Setting (Gmax), s		49.5				49.5		49.5				
Max Q Clear Time (g_c+I1), s		2.0				11.3		14.2				
Green Ext Time (p_c), s		4.7				7.6		2.1				

Intersection Summary	
HCM 6th Ctrl Delay	10.1
HCM 6th LOS	B

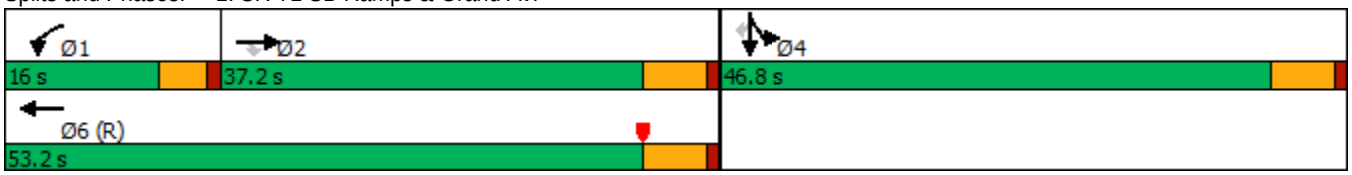
Notes

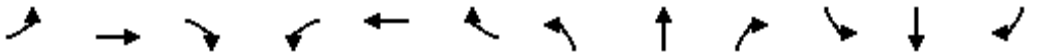
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1516	600	321	1469	980	1	505
Future Volume (vph)	1516	600	321	1469	980	1	505
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	37.2	37.2	16.0	53.2	46.8	46.8	46.8
Total Split (%)	37.2%	37.2%	16.0%	53.2%	46.8%	46.8%	46.8%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None
Act Effct Green (s)	34.9	34.9	12.3	51.2	40.8	40.8	40.8
Actuated g/C Ratio	0.35	0.35	0.12	0.51	0.41	0.41	0.41
v/c Ratio	0.99	0.72	0.88	0.65	0.82	0.82	0.84
Control Delay	51.7	8.5	49.0	22.8	37.3	37.4	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.7	8.5	49.0	22.8	37.3	37.4	34.8
LOS	D	A	D	C	D	D	C
Approach Delay	39.5			27.5		36.5	
Approach LOS	D			C		D	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 34.7	Intersection LOS: C
Intersection Capacity Utilization 83.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱	↰↰	↑↑↑					↰	↰↱	↱
Traffic Volume (veh/h)	0	1516	600	321	1469	0	0	0	0	980	1	505
Future Volume (veh/h)	0	1516	600	321	1469	0	0	0	0	980	1	505
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1784	617	378	1728	0				1154	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85				0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1722	535	421	2552	0				1331	0	
Arrive On Green	0.00	0.33	0.33	0.12	0.49	0.00				0.37	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	1784	617	378	1728	0				1154	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	33.2	33.2	10.6	25.4	0.0				29.6	0.0	0.0
Cycle Q Clear(g_c), s	0.0	33.2	33.2	10.6	25.4	0.0				29.6	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1722	535	421	2552	0				1331	0	
V/C Ratio(X)	0.00	1.04	1.15	0.90	0.68	0.00				0.87	0.00	
Avail Cap(c_a), veh/h	0	1722	535	421	2552	0				1549	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	33.4	33.4	43.4	19.3	0.0				29.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	31.6	89.0	2.6	0.1	0.0				4.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	17.9	25.2	4.6	9.1	0.0				12.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	65.0	122.4	46.0	19.5	0.0				34.2	0.0	0.0
LnGrp LOS	A	F	F	D	B	A				C	A	
Approach Vol, veh/h		2401			2106						1154	A
Approach Delay, s/veh		79.8			24.2						34.2	
Approach LOS		E			C						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.0	37.2		40.8		53.2
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	11.4	31.4		41.0		47.4
Max Q Clear Time (g_c+I1), s	12.6	35.2		31.6		27.4
Green Ext Time (p_c), s	0.0	0.0		3.4		11.9

Intersection Summary	
HCM 6th Ctrl Delay	49.8
HCM 6th LOS	D

Notes

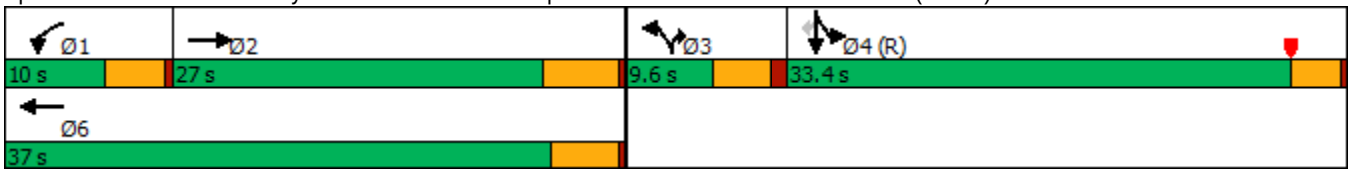
User approved volume balancing among the lanes for turning movement.

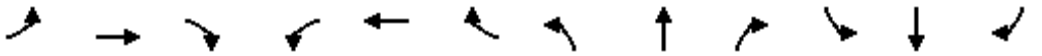
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	984	138	319	20	169	757	75	77
Future Volume (vph)	984	138	319	20	169	757	75	77
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	27.0	10.0	37.0	9.6	9.6	33.4	33.4	33.4
Total Split (%)	33.8%	12.5%	46.3%	12.0%	12.0%	41.8%	41.8%	41.8%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	23.0	9.2	36.7	5.1	5.1	25.7	25.7	25.7
Actuated g/C Ratio	0.29	0.12	0.46	0.06	0.06	0.32	0.32	0.32
v/c Ratio	1.06	0.70	0.20	0.18	0.73	0.79	0.78	0.13
Control Delay	74.6	57.9	14.3	39.4	28.8	35.3	34.5	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.6	57.9	14.3	39.4	28.8	35.3	34.5	1.0
LOS	E	E	B	D	C	D	C	A
Approach Delay	74.6		27.5				32.0	
Approach LOS	E		C				C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 48.3	Intersection LOS: D
Intersection Capacity Utilization 77.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	984	67	138	319	0	20	0	169	757	75	77
Future Volume (veh/h)	0	984	67	138	319	0	20	0	169	757	75	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	1025	58	144	332	0	21	0	117	845	0	53
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	955	54	136	1444		0	0	0	1787	0	795
Arrive On Green	0.00	0.28	0.28	0.02	0.13	0.00	0.00	0.00	0.00	0.49	0.00	0.49
Sat Flow, veh/h	0	3568	197	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	533	550	144	332	0		0.0		845	0	53
Grp Sat Flow(s),veh/h/ln	0	1805	1865	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	22.0	22.0	6.0	6.6	0.0				12.3	0.0	1.4
Cycle Q Clear(g_c), s	0.0	22.0	22.0	6.0	6.6	0.0				12.3	0.0	1.4
Prop In Lane	0.00		0.11	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	496	513	136	1444					1787	0	795
V/C Ratio(X)	0.00	1.07	1.07	1.06	0.23					0.47	0.00	0.07
Avail Cap(c_a), veh/h	0	496	513	136	1467					1787	0	795
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.60	0.60	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.0	29.0	39.0	23.7	0.0				13.4	0.0	10.6
Incr Delay (d2), s/veh	0.0	61.4	60.9	76.9	0.0	0.0				0.9	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	17.1	17.5	5.5	2.7	0.0				4.4	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	90.4	89.9	115.9	23.7	0.0				14.3	0.0	10.8
LnGrp LOS	A	F	F	F	C					B	A	B
Approach Vol, veh/h		1083			476	A					898	
Approach Delay, s/veh		90.1			51.6						14.1	
Approach LOS		F			D						B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	10.0	27.0		43.0		37.0						
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5						
Max Green Setting (Gmax), s	6.0	22.0		29.9		* 33						
Max Q Clear Time (g_c+I1), s	8.0	24.0		14.3		8.6						
Green Ext Time (p_c), s	0.0	0.0		3.1		1.5						

Intersection Summary												
HCM 6th Ctrl Delay			54.9									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

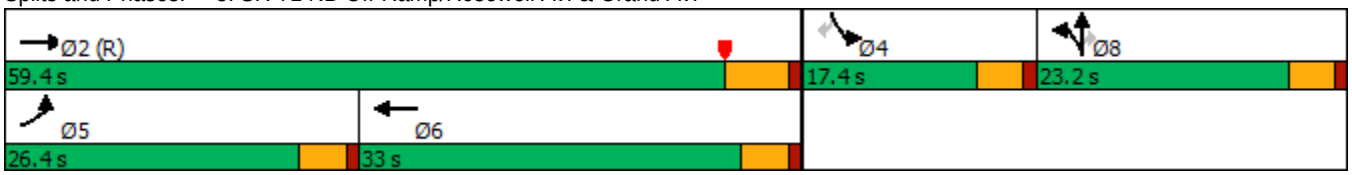
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	397	1757	342	1773	410	149	232	176	864
Future Volume (vph)	397	1757	342	1773	410	149	232	176	864
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	34.8		14.7	21.5	21.5	21.5	9.5	9.5
Total Split (s)	26.4	59.4		33.0	23.2	23.2	23.2	17.4	17.4
Total Split (%)	26.4%	59.4%		33.0%	23.2%	23.2%	23.2%	17.4%	17.4%
Yellow Time (s)	3.5	4.8		3.7	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.8		4.7	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	21.9	53.6	100.0	28.3	18.7	18.7	18.7	12.9	12.9
Actuated g/C Ratio	0.22	0.54	1.00	0.28	0.19	0.19	0.19	0.13	0.13
v/c Ratio	1.09	0.69	0.23	1.15	0.79	1.08	0.62	0.82	1.02
Control Delay	100.1	21.8	0.1	107.0	58.1	112.5	25.3	70.8	48.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	100.1	21.8	0.1	107.0	58.1	112.5	25.3	70.8	48.1
LOS	F	C	A	F	E	F	C	E	D
Approach Delay		31.3		107.0		70.9			
Approach LOS		C		F		E			

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.15	
Intersection Signal Delay: 63.2	Intersection LOS: E
Intersection Capacity Utilization 90.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	397	1757	342	0	1773	171	410	149	232	176	0	864
Future Volume (veh/h)	397	1757	342	0	1773	171	410	149	232	176	0	864
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	432	1910	0	0	1927	186	304	361	111	191	0	621
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	396	3683		0	2724	263	338	355	301	0	0	0
Arrive On Green	0.22	0.71	0.00	0.00	0.45	0.45	0.19	0.19	0.19	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6373	589	1810	1900	1610		0	
Grp Volume(v), veh/h	432	1910	0	0	1547	566	304	361	111		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1794	1810	1900	1610			
Q Serve(g_s), s	21.9	16.9	0.0	0.0	25.5	25.6	16.4	18.7	6.0			
Cycle Q Clear(g_c), s	21.9	16.9	0.0	0.0	25.5	25.6	16.4	18.7	6.0			
Prop In Lane	1.00		1.00	0.00		0.33	1.00		1.00			
Lane Grp Cap(c), veh/h	396	3683		0	2186	800	338	355	301			
V/C Ratio(X)	1.09	0.52		0.00	0.71	0.71	0.90	1.02	0.37			
Avail Cap(c_a), veh/h	396	3683		0	2186	800	338	355	301			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.22	0.22	0.00	0.00	0.54	0.54	1.00	1.00	1.00			
Uniform Delay (d), s/veh	39.1	6.7	0.0	0.0	22.4	22.4	39.7	40.7	35.5			
Incr Delay (d2), s/veh	50.3	0.1	0.0	0.0	0.6	1.6	24.8	51.9	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	14.8	4.5	0.0	0.0	9.4	10.5	9.3	13.4	2.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.4	6.8	0.0	0.0	23.0	24.0	64.5	92.5	35.8			
LnGrp LOS	F	A		A	C	C	E	F	D			
Approach Vol, veh/h		2342	A		2113			776				
Approach Delay, s/veh		22.0			23.3			73.4				
Approach LOS		C			C			E				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		76.8			26.4	50.4		23.2				
Change Period (Y+Rc), s		5.8			4.5	* 5.8		4.5				
Max Green Setting (Gmax), s		53.6			21.9	* 28		18.7				
Max Q Clear Time (g_c+I1), s		18.9			23.9	27.6		20.7				
Green Ext Time (p_c), s		18.5			0.0	0.7		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	30.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

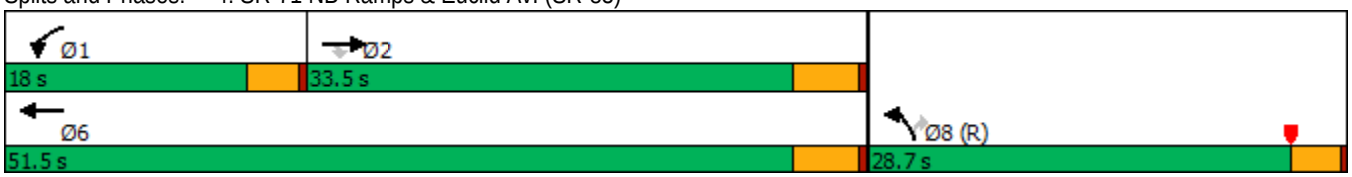
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	979	172	429	1431	146	1211
Future Volume (vph)	979	172	429	1431	146	1211
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	33.5	33.5	18.0	51.5	28.7	28.7
Total Split (%)	41.8%	41.8%	22.4%	64.2%	35.8%	35.8%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max
Act Effct Green (s)	28.4	28.4	14.5	46.4	25.8	25.8
Actuated g/C Ratio	0.35	0.35	0.18	0.58	0.32	0.32
v/c Ratio	0.89	0.31	1.53	0.80	0.15	1.82
Control Delay	34.8	9.5	281.5	16.8	20.2	394.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.8	9.5	281.5	16.8	20.2	394.1
LOS	C	A	F	B	C	F
Approach Delay	31.0			77.9	353.8	
Approach LOS	C			E	F	

Intersection Summary	
Cycle Length: 80.2	
Actuated Cycle Length: 80.2	
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.82	
Intersection Signal Delay: 151.2	Intersection LOS: F
Intersection Capacity Utilization 109.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	979	172	429	1431	146	1211
Future Volume (veh/h)	979	172	429	1431	146	1211
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	1138	0	499	1664	170	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1213		328	2026	1190	
Arrive On Green	0.67	0.00	0.18	0.56	0.34	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	1138	0	499	1664	170	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	22.4	0.0	14.5	30.0	2.7	0.0
Cycle Q Clear(g_c), s	22.4	0.0	14.5	30.0	2.7	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1213		328	2026	1190	
V/C Ratio(X)	0.94		1.52	0.82	0.14	
Avail Cap(c_a), veh/h	1309		328	2121	1190	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.19	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.4	0.0	32.8	14.3	18.4	0.0
Incr Delay (d2), s/veh	3.0	0.0	249.7	2.6	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	28.4	9.6	1.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.4	0.0	282.5	16.9	18.6	0.0
LnGrp LOS	B		F	B	B	
Approach Vol, veh/h	1138	A		2163	170	A
Approach Delay, s/veh	15.4			78.2	18.6	
Approach LOS	B			E	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	18.0	31.4				49.4	30.6
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	14.5	29.0				47.0	25.2
Max Q Clear Time (g_c+I1), s	16.5	24.4				32.0	4.7
Green Ext Time (p_c), s	0.0	2.5				9.4	0.3

Intersection Summary	
HCM 6th Ctrl Delay	54.7
HCM 6th LOS	D

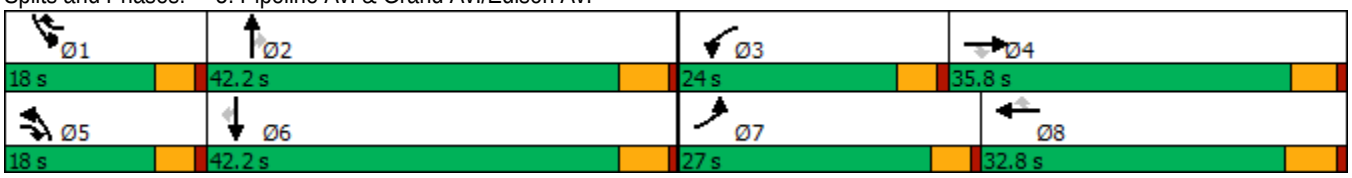
Notes

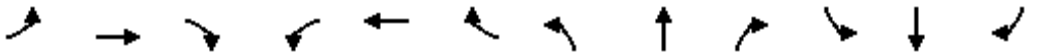
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	285	1175	258	253	1081	93	308	473	184	143	594	170
Future Volume (vph)	285	1175	258	253	1081	93	308	473	184	143	594	170
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	27.0	35.8	18.0	24.0	32.8	18.0	18.0	42.2	42.2	18.0	42.2	42.2
Total Split (%)	22.5%	29.8%	15.0%	20.0%	27.3%	15.0%	15.0%	35.2%	35.2%	15.0%	35.2%	35.2%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None
Act Effct Green (s)	15.5	32.1	46.2	14.3	30.9	44.2	14.1	29.1	29.1	13.3	28.3	28.3
Actuated g/C Ratio	0.15	0.31	0.44	0.14	0.29	0.42	0.13	0.28	0.28	0.13	0.27	0.27
v/c Ratio	0.68	0.86	0.40	0.65	0.82	0.15	0.85	0.55	0.35	0.77	0.71	0.35
Control Delay	50.9	42.6	15.5	51.4	41.5	5.7	66.7	34.9	6.0	70.7	39.2	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.9	42.6	15.5	51.4	41.5	5.7	66.7	34.9	6.0	70.7	39.2	6.2
LOS	D	D	B	D	D	A	E	C	A	E	D	A
Approach Delay		39.9			40.9			39.5			38.0	
Approach LOS		D			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 105	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 39.8	Intersection LOS: D
Intersection Capacity Utilization 76.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	285	1175	258	253	1081	93	308	473	184	143	594	170
Future Volume (veh/h)	285	1175	258	253	1081	93	308	473	184	143	594	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	313	1291	218	278	1188	64	338	520	115	157	653	111
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	399	1563	686	362	1539	641	407	959	428	193	897	390
Arrive On Green	0.13	0.32	0.31	0.12	0.31	0.30	0.14	0.28	0.28	0.12	0.26	0.26
Sat Flow, veh/h	3141	4914	1522	3141	4914	1524	2956	3420	1525	1619	3420	1487
Grp Volume(v), veh/h	313	1291	218	278	1188	64	338	520	115	157	653	111
Grp Sat Flow(s),veh/h/ln	1570	1638	1522	1570	1638	1524	1478	1710	1525	1619	1710	1487
Q Serve(g_s), s	9.7	24.3	9.2	8.6	21.9	2.5	11.1	12.9	5.9	9.5	17.4	5.9
Cycle Q Clear(g_c), s	9.7	24.3	9.2	8.6	21.9	2.5	11.1	12.9	5.9	9.5	17.4	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	399	1563	686	362	1539	641	407	959	428	193	897	390
V/C Ratio(X)	0.78	0.83	0.32	0.77	0.77	0.10	0.83	0.54	0.27	0.81	0.73	0.28
Avail Cap(c_a), veh/h	722	1563	686	628	1539	641	414	1306	583	227	1306	568
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	31.5	17.6	42.9	31.1	17.5	42.0	30.5	28.0	42.9	33.6	29.4
Incr Delay (d2), s/veh	1.3	5.1	1.2	1.3	3.8	0.3	12.4	0.5	0.3	14.8	1.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	10.0	3.2	3.3	8.6	0.9	4.6	5.2	2.1	4.5	7.1	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.6	36.7	18.8	44.3	34.9	17.8	54.4	31.0	28.3	57.8	34.8	29.8
LnGrp LOS	D	D	B	D	C	B	D	C	C	E	C	C
Approach Vol, veh/h		1822			1530			973			921	
Approach Delay, s/veh		35.7			35.9			38.8			38.1	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	32.0	15.5	36.5	17.8	30.2	16.7	35.3
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	13.4	36.8	19.4	* 31	13.4	36.8	22.4	27.0
Max Q Clear Time (g_c+I1), s	11.5	14.9	10.6	26.3	13.1	19.4	11.7	23.9
Green Ext Time (p_c), s	0.0	3.6	0.3	3.2	0.0	4.2	0.4	2.1

Intersection Summary	
HCM 6th Ctrl Delay	36.8
HCM 6th LOS	D

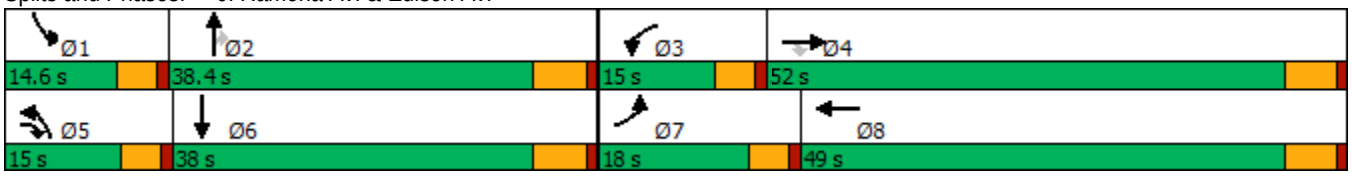
Notes

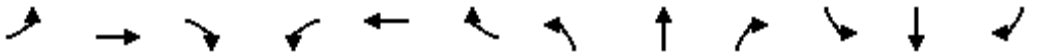
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	122	1264	122	94	1108	99	468	79	67	432
Future Volume (vph)	122	1264	122	94	1108	99	468	79	67	432
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	18.0	52.0	15.0	15.0	49.0	15.0	38.4	38.4	14.6	38.0
Total Split (%)	15.0%	43.3%	12.5%	12.5%	40.8%	12.5%	32.0%	32.0%	12.2%	31.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None
Act Effct Green (s)	12.6	48.2	62.6	10.2	45.8	10.4	30.4	30.4	9.1	26.9
Actuated g/C Ratio	0.11	0.43	0.56	0.09	0.41	0.09	0.27	0.27	0.08	0.24
v/c Ratio	0.75	0.96	0.09	0.72	0.95	0.74	0.56	0.18	0.58	0.75
Control Delay	74.5	48.5	3.0	77.4	48.5	79.5	38.5	4.7	68.7	43.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.5	48.5	3.0	77.4	48.5	79.5	38.5	4.7	68.7	43.7
LOS	E	D	A	E	D	E	D	A	E	D
Approach Delay		46.9			50.7		40.6			46.4
Approach LOS		D			D		D			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.8	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 47.0	Intersection LOS: D
Intersection Capacity Utilization 78.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	1264	122	94	1108	71	99	468	79	67	432	110
Future Volume (veh/h)	122	1264	122	94	1108	71	99	468	79	67	432	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1700	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	137	1420	113	106	1245	78	111	526	67	75	485	103
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	171	1545	1341	138	1410	88	143	853	380	102	629	133
Arrive On Green	0.11	0.45	0.44	0.09	0.43	0.41	0.09	0.25	0.25	0.06	0.22	0.21
Sat Flow, veh/h	1619	3420	2536	1619	3269	204	1619	3420	1525	1619	2810	593
Grp Volume(v), veh/h	137	1420	113	106	651	672	111	526	67	75	294	294
Grp Sat Flow(s),veh/h/ln	1619	1710	1268	1619	1710	1763	1619	1710	1525	1619	1710	1693
Q Serve(g_s), s	8.8	41.3	2.3	6.8	37.1	37.3	7.1	14.5	3.7	4.8	17.1	17.4
Cycle Q Clear(g_c), s	8.8	41.3	2.3	6.8	37.1	37.3	7.1	14.5	3.7	4.8	17.1	17.4
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	171	1545	1341	138	737	760	143	853	380	102	383	379
V/C Ratio(X)	0.80	0.92	0.08	0.77	0.88	0.88	0.78	0.62	0.18	0.73	0.77	0.78
Avail Cap(c_a), veh/h	213	1545	1341	168	737	760	168	1108	494	162	547	542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.4	27.3	12.3	47.6	27.7	27.9	47.4	35.4	31.3	48.9	38.6	39.0
Incr Delay (d2), s/veh	12.6	10.3	0.1	12.6	14.4	14.2	14.4	0.7	0.2	3.8	4.1	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	17.5	0.6	3.1	16.8	17.4	3.3	5.9	1.3	2.0	7.3	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.0	37.6	12.5	60.2	42.1	42.1	61.7	36.1	31.5	52.7	42.7	43.4
LnGrp LOS	E	D	B	E	D	D	E	D	C	D	D	D
Approach Vol, veh/h		1670			1429			704			663	
Approach Delay, s/veh		37.6			43.4			39.7			44.2	
Approach LOS		D			D			D			D	

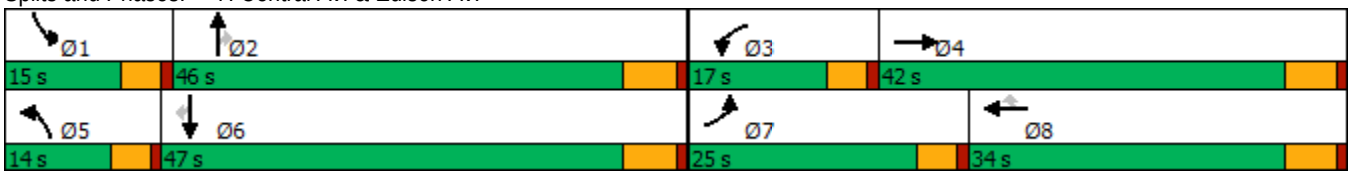
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	30.5	13.0	52.0	13.4	27.8	15.2	49.8
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.0	32.6	10.4	46.2	10.4	32.2	13.4	43.2
Max Q Clear Time (g_c+I1), s	6.8	16.5	8.8	43.3	9.1	19.4	10.8	39.3
Green Ext Time (p_c), s	0.0	3.0	0.0	2.2	0.0	2.6	0.0	2.6

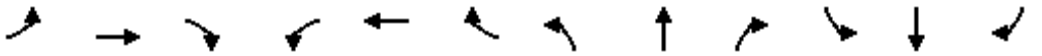
Intersection Summary	
HCM 6th Ctrl Delay	40.8
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	238	988	278	795	117	96	1094	449	127	877	148
Future Volume (vph)	238	988	278	795	117	96	1094	449	127	877	148
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	25.0	42.0	17.0	34.0	34.0	14.0	46.0	46.0	15.0	47.0	47.0
Total Split (%)	20.8%	35.0%	14.2%	28.3%	28.3%	11.7%	38.3%	38.3%	12.5%	39.2%	39.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	20.2	38.0	12.8	30.7	30.7	9.6	42.0	42.0	11.0	43.4	43.4
Actuated g/C Ratio	0.17	0.32	0.11	0.26	0.26	0.08	0.35	0.35	0.09	0.36	0.36
v/c Ratio	0.90	1.04	0.86	0.94	0.24	0.77	0.94	0.68	0.89	0.73	0.24
Control Delay	83.8	77.9	76.4	62.7	4.0	89.5	53.4	21.3	102.6	37.5	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.8	77.9	76.4	62.7	4.0	89.5	53.4	21.3	102.6	37.5	5.3
LOS	F	E	E	E	A	F	D	C	F	D	A
Approach Delay		79.0		60.1			46.7			40.5	
Approach LOS		E		E			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.8	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 56.4	Intersection LOS: E
Intersection Capacity Utilization 94.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	988	94	278	795	117	96	1094	449	127	877	148
Future Volume (veh/h)	238	988	94	278	795	117	96	1094	449	127	877	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	245	1019	93	287	820	110	99	1128	382	131	904	119
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	275	1002	91	340	873	389	128	1197	525	148	1241	553
Arrive On Green	0.17	0.32	0.30	0.11	0.26	0.26	0.08	0.35	0.35	0.09	0.36	0.36
Sat Flow, veh/h	1619	3165	289	3141	3420	1525	1619	3420	1499	1619	3420	1524
Grp Volume(v), veh/h	245	550	562	287	820	110	99	1128	382	131	904	119
Grp Sat Flow(s),veh/h/ln	1619	1710	1743	1570	1710	1525	1619	1710	1499	1619	1710	1524
Q Serve(g_s), s	17.8	38.0	38.0	10.8	28.2	6.9	7.2	38.4	26.7	9.6	27.5	6.5
Cycle Q Clear(g_c), s	17.8	38.0	38.0	10.8	28.2	6.9	7.2	38.4	26.7	9.6	27.5	6.5
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	275	542	552	340	873	389	128	1197	525	148	1241	553
V/C Ratio(X)	0.89	1.02	1.02	0.84	0.94	0.28	0.78	0.94	0.73	0.88	0.73	0.22
Avail Cap(c_a), veh/h	283	542	552	340	873	389	135	1197	525	148	1241	553
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	41.0	41.1	52.5	43.8	35.9	54.2	37.8	34.0	53.9	33.1	26.4
Incr Delay (d2), s/veh	26.2	42.9	42.7	16.5	18.9	1.8	20.6	14.4	5.1	40.5	2.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	21.7	22.1	4.9	13.8	2.7	3.6	17.6	10.0	5.5	11.2	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.9	83.9	83.8	69.0	62.7	37.7	74.9	52.2	39.1	94.4	35.3	26.6
LnGrp LOS	E	F	F	E	E	D	E	D	D	F	D	C
Approach Vol, veh/h		1357			1217			1609			1154	
Approach Delay, s/veh		82.2			61.9			50.5			41.1	
Approach LOS		F			E			D			D	

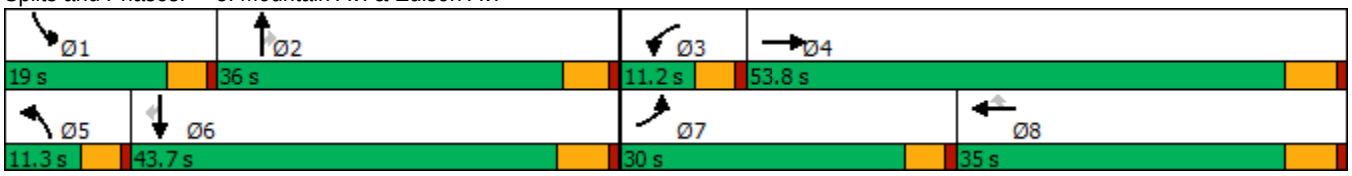
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	46.0	17.0	42.0	13.5	47.5	24.4	34.6
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.4	40.2	12.4	36.2	9.4	41.2	20.4	28.2
Max Q Clear Time (g_c+I1), s	11.6	40.4	12.8	40.0	9.2	29.5	19.8	30.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0

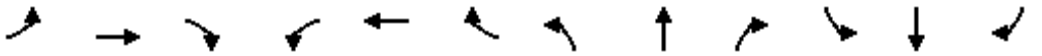
Intersection Summary	
HCM 6th Ctrl Delay	59.1
HCM 6th LOS	E

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	225	1277	38	867	110	41	101	31	125	186	234
Future Volume (vph)	225	1277	38	867	110	41	101	31	125	186	234
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	30.0	53.8	11.2	35.0	35.0	11.3	36.0	36.0	19.0	43.7	43.7
Total Split (%)	25.0%	44.8%	9.3%	29.2%	29.2%	9.4%	30.0%	30.0%	15.8%	36.4%	36.4%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	18.0	51.5	6.8	35.4	35.4	6.9	15.2	15.2	13.1	22.3	22.3
Actuated g/C Ratio	0.19	0.55	0.07	0.38	0.38	0.07	0.16	0.16	0.14	0.24	0.24
v/c Ratio	0.75	0.52	0.34	0.69	0.16	0.36	0.36	0.08	0.57	0.45	0.44
Control Delay	53.4	17.6	55.9	31.7	0.5	56.4	41.0	0.4	52.9	35.5	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.4	17.6	55.9	31.7	0.5	56.4	41.0	0.4	52.9	35.5	6.7
LOS	D	B	E	C	A	E	D	A	D	D	A
Approach Delay		22.7		29.3			37.3			27.2	
Approach LOS		C		C			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 94.1	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 26.2	Intersection LOS: C
Intersection Capacity Utilization 70.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	1277	88	38	867	110	41	101	31	125	186	234
Future Volume (veh/h)	225	1277	88	38	867	110	41	101	31	125	186	234
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	230	1303	88	39	885	100	42	103	17	128	190	174
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	272	2556	173	66	1428	637	69	233	193	166	354	300
Arrive On Green	0.17	0.54	0.53	0.04	0.42	0.42	0.04	0.13	0.13	0.10	0.20	0.20
Sat Flow, veh/h	1619	4692	317	1619	3420	1525	1619	1800	1492	1619	1800	1525
Grp Volume(v), veh/h	230	910	481	39	885	100	42	103	17	128	190	174
Grp Sat Flow(s),veh/h/ln	1619	1638	1732	1619	1710	1525	1619	1800	1492	1619	1800	1525
Q Serve(g_s), s	12.6	16.0	16.1	2.2	18.6	3.7	2.3	4.8	0.9	7.0	8.7	9.5
Cycle Q Clear(g_c), s	12.6	16.0	16.1	2.2	18.6	3.7	2.3	4.8	0.9	7.0	8.7	9.5
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	272	1785	944	66	1428	637	69	233	193	166	354	300
V/C Ratio(X)	0.84	0.51	0.51	0.59	0.62	0.16	0.61	0.44	0.09	0.77	0.54	0.58
Avail Cap(c_a), veh/h	460	1785	944	128	1428	637	129	630	522	266	782	662
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.9	13.1	13.2	43.1	20.9	16.6	43.0	36.8	35.1	40.0	33.0	33.3
Incr Delay (d2), s/veh	2.8	1.0	2.0	3.1	2.0	0.5	3.2	1.3	0.2	2.9	1.3	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	5.3	5.9	0.9	7.1	1.3	1.0	2.2	0.3	2.8	3.7	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.6	14.2	15.2	46.1	23.0	17.1	46.3	38.1	35.2	42.9	34.2	35.0
LnGrp LOS	D	B	B	D	C	B	D	D	D	D	C	D
Approach Vol, veh/h		1621			1024			162			492	
Approach Delay, s/veh		18.1			23.3			39.9			36.8	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	16.5	7.7	53.8	7.9	22.0	19.4	42.2
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	* 31	6.6	48.0	6.7	37.9	25.4	29.2
Max Q Clear Time (g_c+I1), s	9.0	6.8	4.2	18.1	4.3	11.5	14.6	20.6
Green Ext Time (p_c), s	0.1	0.5	0.0	10.5	0.0	1.5	0.2	3.8

Intersection Summary	
HCM 6th Ctrl Delay	23.6
HCM 6th LOS	C

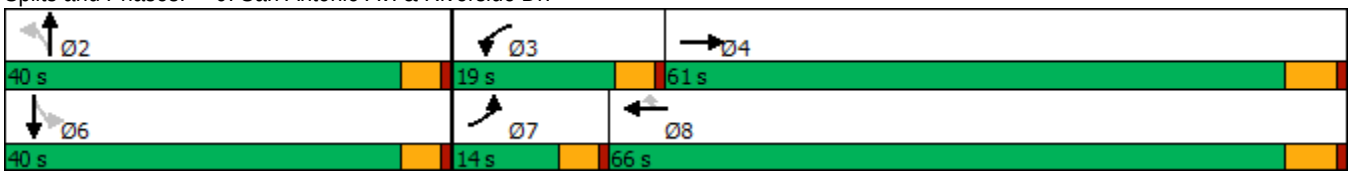
Notes

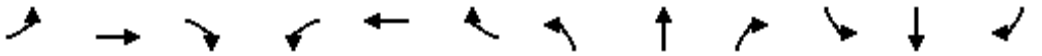
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	33	874	64	819	48	98	17	21	8
Future Volume (vph)	33	874	64	819	48	98	17	21	8
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	14.0	61.0	19.0	66.0	66.0	40.0	40.0	40.0	40.0
Total Split (%)	11.7%	50.8%	15.8%	55.0%	55.0%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	7.3	62.9	9.0	66.9	66.9	15.6	15.6	15.6	15.6
Actuated g/C Ratio	0.07	0.64	0.09	0.68	0.68	0.16	0.16	0.16	0.16
v/c Ratio	0.28	0.48	0.45	0.36	0.05	0.52	0.22	0.11	0.15
Control Delay	50.7	11.8	52.6	8.9	2.6	46.4	16.4	35.2	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.7	11.8	52.6	8.9	2.6	46.4	16.4	35.2	15.5
LOS	D	B	D	A	A	D	B	D	B
Approach Delay		13.0		11.6			34.7		22.3
Approach LOS		B		B			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.7	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay: 14.3	Intersection LOS: B
Intersection Capacity Utilization 57.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	874	125	64	819	48	98	17	45	21	8	33
Future Volume (veh/h)	33	874	125	64	819	48	98	17	45	21	8	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	34	910	124	67	853	50	102	18	23	22	8	11
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	63	2057	280	94	2400	1069	233	89	113	213	85	117
Arrive On Green	0.04	0.68	0.66	0.06	0.70	0.70	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1619	3015	411	1619	3420	1524	1337	716	914	1305	686	944
Grp Volume(v), veh/h	34	516	518	67	853	50	102	0	41	22	0	19
Grp Sat Flow(s),veh/h/ln	1619	1710	1716	1619	1710	1524	1337	0	1630	1305	0	1630
Q Serve(g_s), s	1.8	12.1	12.3	3.6	8.8	0.9	6.5	0.0	2.0	1.4	0.0	0.9
Cycle Q Clear(g_c), s	1.8	12.1	12.3	3.6	8.8	0.9	7.4	0.0	2.0	3.4	0.0	0.9
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.56	1.00		0.58
Lane Grp Cap(c), veh/h	63	1167	1170	94	2400	1069	233	0	202	213	0	202
V/C Ratio(X)	0.54	0.44	0.44	0.71	0.36	0.05	0.44	0.00	0.20	0.10	0.00	0.09
Avail Cap(c_a), veh/h	183	1167	1170	275	2400	1069	612	0	664	584	0	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.7	6.4	6.5	40.9	5.2	4.1	37.6	0.0	35.0	36.3	0.0	34.5
Incr Delay (d2), s/veh	2.7	1.2	1.2	3.7	0.4	0.1	1.3	0.0	0.5	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.5	3.6	1.5	2.3	0.2	2.2	0.0	0.8	0.4	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.4	7.6	7.7	44.6	5.7	4.1	38.9	0.0	35.4	36.5	0.0	34.7
LnGrp LOS	D	A	A	D	A	A	D	A	D	D	A	C
Approach Vol, veh/h		1068			970			143			41	
Approach Delay, s/veh		8.8			8.3			37.9			35.7	
Approach LOS		A			A			D			D	

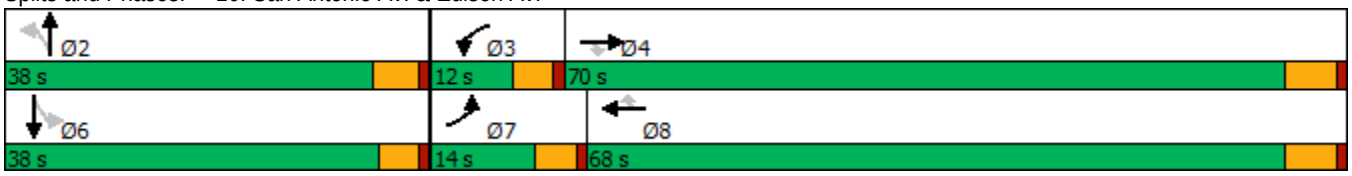
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.9	9.1	64.3		14.9	7.4	66.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		35.4	14.4	55.2		35.4	9.4	60.2				
Max Q Clear Time (g_c+I1), s		9.4	5.6	14.3		5.4	3.8	10.8				
Green Ext Time (p_c), s		0.5	0.0	7.3		0.1	0.0	6.6				

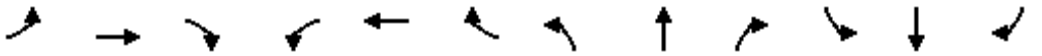
Intersection Summary												
HCM 6th Ctrl Delay			11.0									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	91	1230	42	7	935	19	24	33	13	45
Future Volume (vph)	91	1230	42	7	935	19	24	33	13	45
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	14.0	70.0	70.0	12.0	68.0	68.0	38.0	38.0	38.0	38.0
Total Split (%)	11.7%	58.3%	58.3%	10.0%	56.7%	56.7%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	9.5	77.2	77.2	6.3	65.9	65.9		14.7		14.7
Actuated g/C Ratio	0.09	0.76	0.76	0.06	0.65	0.65		0.14		0.14
v/c Ratio	0.65	0.51	0.04	0.12	0.45	0.02		0.34		0.45
Control Delay	66.3	7.7	1.6	51.9	10.8	0.1		37.9		31.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	66.3	7.7	1.6	51.9	10.8	0.1		37.9		31.2
LOS	E	A	A	D	B	A		D		C
Approach Delay		11.4			10.9			37.9		31.2
Approach LOS		B			B			D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.1	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 12.9	Intersection LOS: B
Intersection Capacity Utilization 59.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	1230	42	7	935	19	24	33	11	13	45	55
Future Volume (veh/h)	91	1230	42	7	935	19	24	33	11	13	45	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1000	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	97	1309	44	7	995	17	26	35	8	14	48	29
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	130	2537	1132	15	2316	1033	103	118	22	60	109	58
Arrive On Green	0.08	0.74	0.74	0.02	0.68	0.68	0.12	0.12	0.10	0.11	0.11	0.10
Sat Flow, veh/h	1619	3420	1525	952	3420	1525	440	1021	192	149	982	529
Grp Volume(v), veh/h	97	1309	44	7	995	17	69	0	0	91	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	952	1710	1525	1653	0	0	1660	0	0
Q Serve(g_s), s	5.5	15.1	0.7	0.7	12.5	0.3	0.0	0.0	0.0	0.5	0.0	0.0
Cycle Q Clear(g_c), s	5.5	15.1	0.7	0.7	12.5	0.3	3.4	0.0	0.0	4.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.38		0.12	0.15		0.32
Lane Grp Cap(c), veh/h	130	2537	1132	15	2316	1033	244	0	0	227	0	0
V/C Ratio(X)	0.75	0.52	0.04	0.48	0.43	0.02	0.28	0.00	0.00	0.40	0.00	0.00
Avail Cap(c_a), veh/h	171	2537	1132	81	2316	1033	626	0	0	634	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.5	5.1	3.2	46.2	6.9	5.0	38.5	0.0	0.0	39.6	0.0	0.0
Incr Delay (d2), s/veh	7.8	0.8	0.1	8.9	0.6	0.0	0.6	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	3.6	0.2	0.2	3.6	0.1	1.5	0.0	0.0	2.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.4	5.9	3.3	55.1	7.5	5.0	39.1	0.0	0.0	40.7	0.0	0.0
LnGrp LOS	D	A	A	E	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1450			1019			69			91	
Approach Delay, s/veh		8.8			7.8			39.1			40.7	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.0	5.4	74.1		15.0	11.6	68.0				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		32.9	7.4	64.2		* 33	9.4	62.2				
Max Q Clear Time (g_c+I1), s		5.4	2.7	17.1		6.8	7.5	14.5				
Green Ext Time (p_c), s		0.3	0.0	12.4		0.5	0.0	8.0				

Intersection Summary	
HCM 6th Ctrl Delay	10.3
HCM 6th LOS	B

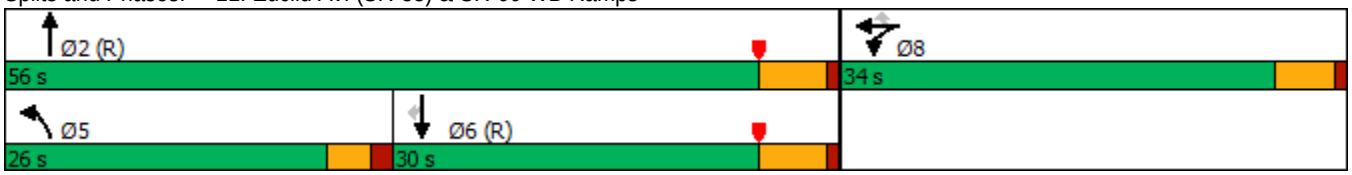
Notes

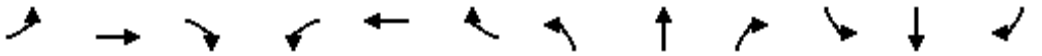
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	708	7	450	590	1215	1124	543
Future Volume (vph)	708	7	450	590	1215	1124	543
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	34.0	34.0	34.0	26.0	56.0	30.0	30.0
Total Split (%)	37.8%	37.8%	37.8%	28.9%	62.2%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	26.2	26.2	26.2	24.3	53.3	24.5	24.5
Actuated g/C Ratio	0.29	0.29	0.29	0.27	0.59	0.27	0.27
v/c Ratio	0.84	0.86	0.76	1.27	0.59	1.19	0.67
Control Delay	45.9	47.4	32.4	146.7	25.2	128.1	6.8
Queue Delay	0.0	0.0	0.0	0.0	7.5	0.0	0.0
Total Delay	45.9	47.4	32.4	146.7	32.7	128.1	6.8
LOS	D	D	C	F	C	F	A
Approach Delay		42.2			70.0	88.6	
Approach LOS		D			E	F	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.27	
Intersection Signal Delay: 69.7	Intersection LOS: E
Intersection Capacity Utilization 108.0%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	708	7	450	590	1215	0	0	1124	543
Future Volume (veh/h)	0	0	0	708	7	450	590	1215	0	0	1124	543
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				830	0	194	615	1266	0	0	1171	361
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				937	0	416	432	2255	0	0	1212	540
Arrive On Green				0.26	0.00	0.26	0.48	1.00	0.00	0.00	0.34	0.34
Sat Flow, veh/h				3619	0	1608	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				830	0	194	615	1266	0	0	1171	361
Grp Sat Flow(s),veh/h/ln				1810	0	1608	1810	1805	0	0	1805	1610
Q Serve(g_s), s				19.9	0.0	9.2	21.5	0.0	0.0	0.0	28.7	17.3
Cycle Q Clear(g_c), s				19.9	0.0	9.2	21.5	0.0	0.0	0.0	28.7	17.3
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				937	0	416	432	2255	0	0	1212	540
V/C Ratio(X)				0.89	0.00	0.47	1.42	0.56	0.00	0.00	0.97	0.67
Avail Cap(c_a), veh/h				1166	0	518	432	2255	0	0	1212	540
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				32.1	0.0	28.1	23.5	0.0	0.0	0.0	29.4	25.6
Incr Delay (d2), s/veh				6.3	0.0	0.3	191.5	0.1	0.0	0.0	19.0	6.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.9	0.0	3.3	28.6	0.0	0.0	0.0	14.7	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				38.3	0.0	28.4	215.0	0.1	0.0	0.0	48.4	32.0
LnGrp LOS				D	A	C	F	A	A	A	D	C
Approach Vol, veh/h					1024			1881			1532	
Approach Delay, s/veh					36.5			70.3			44.5	
Approach LOS					D			E			D	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	61.7		26.0	35.7		28.3						
Change Period (Y+Rc), s	5.5		4.5	5.5		5.0						
Max Green Setting (Gmax), s	50.5		21.5	24.5		29.0						
Max Q Clear Time (g_c+I1), s	2.0		23.5	30.7		21.9						
Green Ext Time (p_c), s	18.1		0.0	0.0		1.4						

Intersection Summary		
HCM 6th Ctrl Delay	53.6	
HCM 6th LOS	D	

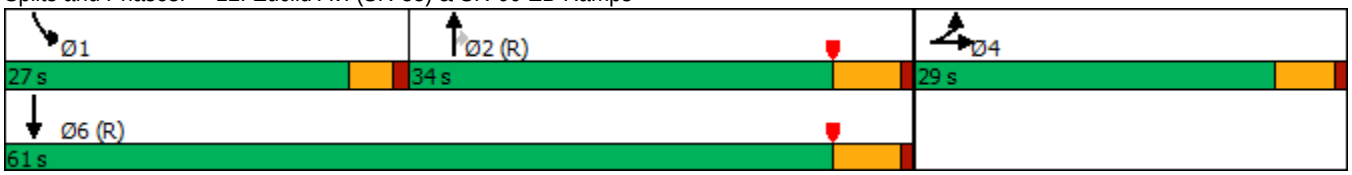
Notes

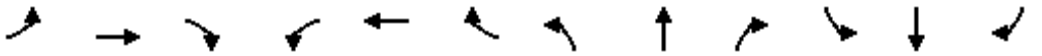
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	459	3	1346	721	414	1418
Future Volume (vph)	459	3	1346	721	414	1418
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	29.0	29.0	34.0	34.0	27.0	61.0
Total Split (%)	32.2%	32.2%	37.8%	37.8%	30.0%	67.8%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	24.0	24.0	29.1	29.1	22.4	55.5
Actuated g/C Ratio	0.27	0.27	0.32	0.32	0.25	0.62
v/c Ratio	0.92	1.25	1.18	0.80	0.94	0.65
Control Delay	60.3	159.7	118.4	13.1	47.1	4.9
Queue Delay	51.5	6.0	0.0	0.0	0.0	1.2
Total Delay	111.8	165.7	118.4	13.1	47.1	6.1
LOS	F	F	F	B	D	A
Approach Delay		142.6	81.6			15.4
Approach LOS		F	F			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.25	
Intersection Signal Delay: 68.7	Intersection LOS: E
Intersection Capacity Utilization 108.0%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	459	3	501	0	0	0	0	1346	721	414	1418	0
Future Volume (veh/h)	459	3	501	0	0	0	0	1346	721	414	1418	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	457	18	444				0	1373	542	422	1447	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	483	17	415				0	1179	513	444	2226	0
Arrive On Green	0.27	0.27	0.27				0.00	0.33	0.33	0.49	1.00	0.00
Sat Flow, veh/h	1810	63	1557				0	3705	1571	1810	3705	0
Grp Volume(v), veh/h	457	0	462				0	1373	542	422	1447	0
Grp Sat Flow(s),veh/h/ln	1810	0	1620				0	1805	1571	1810	1805	0
Q Serve(g_s), s	22.3	0.0	24.0				0.0	29.4	29.4	20.0	0.0	0.0
Cycle Q Clear(g_c), s	22.3	0.0	24.0				0.0	29.4	29.4	20.0	0.0	0.0
Prop In Lane	1.00		0.96				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	483	0	432				0	1179	513	444	2226	0
V/C Ratio(X)	0.95	0.00	1.07				0.00	1.16	1.06	0.95	0.65	0.00
Avail Cap(c_a), veh/h	483	0	432				0	1179	513	462	2226	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.09	0.09	0.09	0.09	0.00
Uniform Delay (d), s/veh	32.4	0.0	33.0				0.0	30.3	30.3	22.4	0.0	0.0
Incr Delay (d2), s/veh	27.8	0.0	63.1				0.0	75.0	30.2	4.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.7	0.0	16.3				0.0	24.1	14.6	5.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.2	0.0	96.1				0.0	105.3	60.5	27.1	0.1	0.0
LnGrp LOS	E	A	F				A	F	F	C	A	A
Approach Vol, veh/h		919						1915			1869	
Approach Delay, s/veh		78.2						92.6			6.2	
Approach LOS		E						F			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	26.1	34.9		29.0		61.0
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	23.0	28.5		24.0		55.5
Max Q Clear Time (g_c+I1), s	22.0	31.4		26.0		2.0
Green Ext Time (p_c), s	0.1	0.0		0.0		23.3

Intersection Summary	
HCM 6th Ctrl Delay	55.5
HCM 6th LOS	E

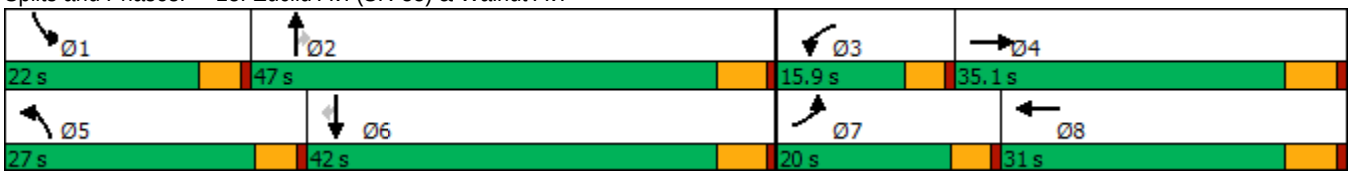
Notes

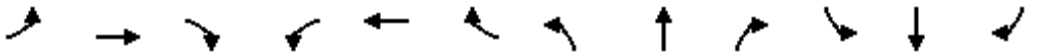
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	118	408	77	408	208	1767	82	291	1424	161
Future Volume (vph)	118	408	77	408	208	1767	82	291	1424	161
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	20.0	35.1	15.9	31.0	27.0	47.0	47.0	22.0	42.0	42.0
Total Split (%)	16.7%	29.3%	13.3%	25.8%	22.5%	39.2%	39.2%	18.3%	35.0%	35.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	12.3	28.4	9.2	22.9	18.7	41.9	41.9	15.1	38.4	38.4
Actuated g/C Ratio	0.11	0.25	0.08	0.20	0.17	0.37	0.37	0.13	0.34	0.34
v/c Ratio	0.72	0.70	0.63	0.86	0.83	1.03	0.14	0.78	0.91	0.28
Control Delay	71.9	41.7	72.4	54.4	71.2	65.4	3.4	62.6	45.9	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.9	41.7	72.4	54.4	71.2	65.4	3.4	62.6	45.9	8.1
LOS	E	D	E	D	E	E	A	E	D	A
Approach Delay		46.9		56.5		63.5			45.2	
Approach LOS		D		E		E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.8	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 54.0	Intersection LOS: D
Intersection Capacity Utilization 88.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	408	154	77	408	154	208	1767	82	291	1424	161
Future Volume (veh/h)	118	408	154	77	408	154	208	1767	82	291	1424	161
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	126	434	141	82	434	138	221	1880	60	310	1515	117
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	151	589	189	102	514	162	249	1915	594	366	1768	548
Arrive On Green	0.09	0.23	0.23	0.06	0.20	0.20	0.15	0.39	0.39	0.12	0.36	0.36
Sat Flow, veh/h	1619	2534	815	1619	2544	801	1619	4914	1523	2956	4914	1524
Grp Volume(v), veh/h	126	291	284	82	290	282	221	1880	60	310	1515	117
Grp Sat Flow(s),veh/h/ln	1619	1710	1639	1619	1710	1635	1619	1638	1523	1478	1638	1524
Q Serve(g_s), s	8.2	16.8	17.1	5.3	17.4	17.7	14.3	40.4	2.7	11.0	30.5	5.7
Cycle Q Clear(g_c), s	8.2	16.8	17.1	5.3	17.4	17.7	14.3	40.4	2.7	11.0	30.5	5.7
Prop In Lane	1.00		0.50	1.00		0.49	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	151	397	381	102	345	330	249	1915	594	366	1768	548
V/C Ratio(X)	0.83	0.73	0.74	0.81	0.84	0.85	0.89	0.98	0.10	0.85	0.86	0.21
Avail Cap(c_a), veh/h	234	469	450	171	404	386	340	1915	594	482	1768	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.6	37.9	38.0	49.4	40.9	41.1	44.3	32.2	20.7	45.8	31.6	23.7
Incr Delay (d2), s/veh	8.1	4.8	5.5	5.5	13.0	15.0	15.6	16.7	0.3	8.4	5.6	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	7.3	7.2	2.2	8.3	8.2	6.6	17.9	1.0	4.3	12.3	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.7	42.7	43.5	54.9	54.0	56.1	59.8	48.8	21.0	54.1	37.2	24.6
LnGrp LOS	E	D	D	D	D	E	E	D	C	D	D	C
Approach Vol, veh/h		701			654			2161			1942	
Approach Delay, s/veh		45.4			55.0			49.2			39.2	
Approach LOS		D			D			D			D	

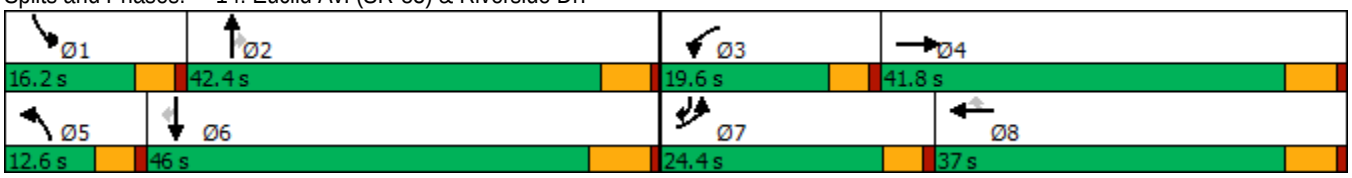
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	47.0	11.3	30.6	21.0	43.8	14.6	27.3
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	17.4	41.6	11.3	29.3	22.4	36.6	15.4	25.2
Max Q Clear Time (g_c+I1), s	13.0	42.4	7.3	19.1	16.3	32.5	10.2	19.7
Green Ext Time (p_c), s	0.3	0.0	0.0	2.3	0.2	3.2	0.1	1.5

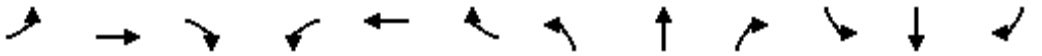
Intersection Summary	
HCM 6th Ctrl Delay	45.8
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	167	505	208	451	71	124	1563	268	153	1219	212
Future Volume (vph)	167	505	208	451	71	124	1563	268	153	1219	212
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	24.4	41.8	19.6	37.0	37.0	12.6	42.4	42.4	16.2	46.0	24.4
Total Split (%)	20.3%	34.8%	16.3%	30.8%	30.8%	10.5%	35.3%	35.3%	13.5%	38.3%	20.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None
Act Effct Green (s)	16.3	36.0	15.0	34.7	34.7	8.0	37.0	37.0	11.6	39.5	57.7
Actuated g/C Ratio	0.14	0.30	0.12	0.29	0.29	0.07	0.31	0.31	0.10	0.33	0.48
v/c Ratio	0.79	1.19	1.08	0.48	0.14	1.21	1.54	0.48	1.02	1.13	0.28
Control Delay	74.6	139.6	135.6	37.9	0.5	199.6	280.9	17.5	130.9	107.3	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.6	139.6	135.6	37.9	0.5	199.6	280.9	17.5	130.9	107.3	9.3
LOS	E	F	F	D	A	F	F	B	F	F	A
Approach Delay		125.5		62.1			239.7			96.5	
Approach LOS		F		E			F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.54	
Intersection Signal Delay: 151.5	Intersection LOS: F
Intersection Capacity Utilization 119.6%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	505	102	208	451	71	124	1563	268	153	1219	212
Future Volume (veh/h)	167	505	102	208	451	71	124	1563	268	153	1219	212
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	174	526	81	217	470	58	129	1628	225	159	1270	130
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	198	453	70	201	1021	455	107	1045	466	155	1147	692
Arrive On Green	0.12	0.30	0.30	0.12	0.30	0.30	0.07	0.31	0.31	0.10	0.34	0.34
Sat Flow, veh/h	1619	1523	235	1619	3420	1524	1619	3420	1525	1619	3420	1506
Grp Volume(v), veh/h	174	0	607	217	470	58	129	1628	225	159	1270	130
Grp Sat Flow(s),veh/h/ln	1619	0	1758	1619	1710	1524	1619	1710	1525	1619	1710	1506
Q Serve(g_s), s	12.8	0.0	36.0	15.0	13.5	3.4	8.0	37.0	14.6	11.6	40.6	6.2
Cycle Q Clear(g_c), s	12.8	0.0	36.0	15.0	13.5	3.4	8.0	37.0	14.6	11.6	40.6	6.2
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	198	0	523	201	1021	455	107	1045	466	155	1147	692
V/C Ratio(X)	0.88	0.00	1.16	1.08	0.46	0.13	1.21	1.56	0.48	1.03	1.11	0.19
Avail Cap(c_a), veh/h	265	0	523	201	1021	455	107	1045	466	155	1147	692
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.2	0.0	42.6	53.1	34.5	31.0	56.5	42.0	34.3	54.8	40.2	19.5
Incr Delay (d2), s/veh	18.0	0.0	92.3	87.1	0.3	0.1	152.6	255.8	3.6	79.1	61.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	28.3	10.8	5.5	1.2	7.7	51.7	5.7	8.1	26.2	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.2	0.0	134.8	140.2	34.9	31.1	209.2	297.9	37.8	133.8	101.5	20.1
LnGrp LOS	E	A	F	F	C	C	F	F	D	F	F	C
Approach Vol, veh/h		781			745			1982			1559	
Approach Delay, s/veh		120.4			65.2			262.6			98.0	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	43.5	19.6	41.8	12.6	47.1	19.4	42.0
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	11.6	* 37	15.0	36.0	8.0	39.5	19.8	31.2
Max Q Clear Time (g_c+I1), s	13.6	39.0	17.0	38.0	10.0	42.6	14.8	15.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.6

Intersection Summary	
HCM 6th Ctrl Delay	161.0
HCM 6th LOS	F

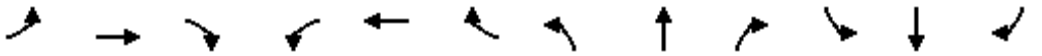
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	106	314	63	87	124	62	1835	253	28	1380	79
Future Volume (vph)	106	314	63	87	124	62	1835	253	28	1380	79
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	41.0	41.0	41.0	41.0	41.0	12.4	68.0	68.0	11.0	66.6	66.6
Total Split (%)	34.2%	34.2%	34.2%	34.2%	34.2%	10.3%	56.7%	56.7%	9.2%	55.5%	55.5%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	35.3	35.3	35.3		35.3	7.3	65.1	65.1	5.9	60.5	60.5
Actuated g/C Ratio	0.30	0.30	0.30		0.30	0.06	0.55	0.55	0.05	0.51	0.51
v/c Ratio	0.40	0.63	0.13		0.98	0.68	1.05	0.32	0.37	0.85	0.11
Control Delay	39.1	42.4	7.0		95.6	86.4	60.8	12.4	68.0	31.0	5.1
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.1	42.4	7.0		95.6	86.4	60.8	12.4	68.0	31.0	5.1
LOS	D	D	A		F	F	E	B	E	C	A
Approach Delay		37.0			95.6		55.8			30.3	
Approach LOS		D			F		E			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 47.0	Intersection LOS: D
Intersection Capacity Utilization 101.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	314	63	87	124	10	62	1835	253	28	1380	79
Future Volume (veh/h)	106	314	63	87	124	10	62	1835	253	28	1380	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	114	338	45	94	133	7	67	1973	201	30	1484	52
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	265	536	454	117	149	7	83	1823	796	43	1738	759
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.05	0.53	0.53	0.03	0.51	0.51
Sat Flow, veh/h	1198	1800	1525	250	500	23	1619	3420	1494	1619	3420	1494
Grp Volume(v), veh/h	114	338	45	234	0	0	67	1973	201	30	1484	52
Grp Sat Flow(s),veh/h/ln	1198	1800	1525	773	0	0	1619	1710	1494	1619	1710	1494
Q Serve(g_s), s	0.0	19.2	2.5	16.0	0.0	0.0	4.8	63.1	8.6	2.2	44.6	2.1
Cycle Q Clear(g_c), s	16.5	19.2	2.5	35.2	0.0	0.0	4.8	63.1	8.6	2.2	44.6	2.1
Prop In Lane	1.00		1.00	0.40		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	265	536	454	273	0	0	83	1823	796	43	1738	759
V/C Ratio(X)	0.43	0.63	0.10	0.86	0.00	0.00	0.80	1.08	0.25	0.70	0.85	0.07
Avail Cap(c_a), veh/h	265	536	454	273	0	0	107	1823	796	88	1738	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.0	35.9	30.1	46.3	0.0	0.0	55.5	27.6	14.9	57.1	25.3	14.8
Incr Delay (d2), s/veh	1.1	2.4	0.1	22.8	0.0	0.0	22.2	47.2	0.8	7.4	5.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	8.5	0.9	8.4	0.0	0.0	2.4	34.1	2.8	0.9	17.3	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.1	38.3	30.2	69.2	0.0	0.0	77.8	74.8	15.7	64.5	30.9	15.0
LnGrp LOS	D	D	C	E	A	A	E	F	B	E	C	B
Approach Vol, veh/h		497			234			2241			1566	
Approach Delay, s/veh		37.1			69.2			69.6			31.0	
Approach LOS		D			E			E			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	69.6		41.0	10.7	66.6		41.0				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	6.4	* 63		35.2	7.8	60.1		35.2				
Max Q Clear Time (g_c+I1), s	4.2	65.1		21.2	6.8	46.6		37.2				
Green Ext Time (p_c), s	0.0	0.0		2.0	0.0	7.9		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		52.7
HCM 6th LOS		D

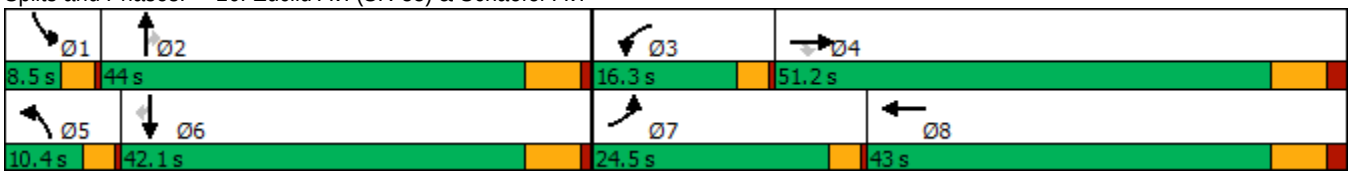
Notes

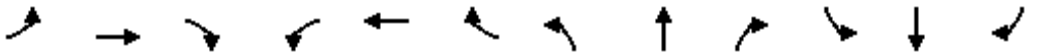
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	321	320	210	87	85	103	1771	91	32	1410	128
Future Volume (vph)	321	320	210	87	85	103	1771	91	32	1410	128
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	24.5	51.2	51.2	16.3	43.0	10.4	44.0	44.0	8.5	42.1	42.1
Total Split (%)	20.4%	42.7%	42.7%	13.6%	35.8%	8.7%	36.7%	36.7%	7.1%	35.1%	35.1%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	21.2	28.2	28.2	10.9	14.8	7.0	42.1	42.1	5.1	36.5	36.5
Actuated g/C Ratio	0.21	0.28	0.28	0.11	0.15	0.07	0.42	0.42	0.05	0.37	0.37
v/c Ratio	0.94	0.64	0.37	0.50	0.42	0.93	1.24	0.13	0.40	1.14	0.20
Control Delay	77.5	38.2	7.4	54.9	36.9	116.3	141.7	2.1	64.1	103.5	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.5	38.2	7.4	54.9	36.9	116.3	141.7	2.1	64.1	103.5	5.6
LOS	E	D	A	D	D	F	F	A	E	F	A
Approach Delay		45.4			44.7		133.9			94.7	
Approach LOS		D			D		F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99.7	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.24	
Intersection Signal Delay: 100.2	Intersection LOS: F
Intersection Capacity Utilization 99.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	321	320	210	87	85	28	103	1771	91	32	1410	128
Future Volume (veh/h)	321	320	210	87	85	28	103	1771	91	32	1410	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	324	323	171	88	86	23	104	1789	74	32	1424	99
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	353	384	325	158	127	34	122	1504	671	49	1350	602
Arrive On Green	0.22	0.21	0.21	0.10	0.09	0.09	0.08	0.44	0.44	0.03	0.39	0.39
Sat Flow, veh/h	1619	1800	1525	1619	1368	366	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	324	323	171	88	0	109	104	1789	74	32	1424	99
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1734	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	17.9	15.7	9.1	4.7	0.0	5.6	5.8	40.2	2.6	1.8	36.1	3.8
Cycle Q Clear(g_c), s	17.9	15.7	9.1	4.7	0.0	5.6	5.8	40.2	2.6	1.8	36.1	3.8
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	353	384	325	158	0	161	122	1504	671	49	1350	602
V/C Ratio(X)	0.92	0.84	0.53	0.56	0.00	0.68	0.85	1.19	0.11	0.65	1.05	0.16
Avail Cap(c_a), veh/h	372	870	737	227	0	683	122	1504	671	89	1350	602
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.9	34.5	31.9	39.4	0.0	40.1	41.8	25.6	15.1	43.8	27.7	17.9
Incr Delay (d2), s/veh	25.6	3.8	1.0	1.1	0.0	3.7	38.8	92.1	0.1	5.3	40.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	6.9	3.2	1.9	0.0	2.4	3.5	33.0	0.8	0.7	20.2	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.5	38.3	32.8	40.5	0.0	43.8	80.5	117.7	15.1	49.1	67.9	18.0
LnGrp LOS	E	D	C	D	A	D	F	F	B	D	F	B
Approach Vol, veh/h		818			197			1967			1555	
Approach Delay, s/veh		45.9			42.3			111.9			64.4	
Approach LOS		D			D			F			E	

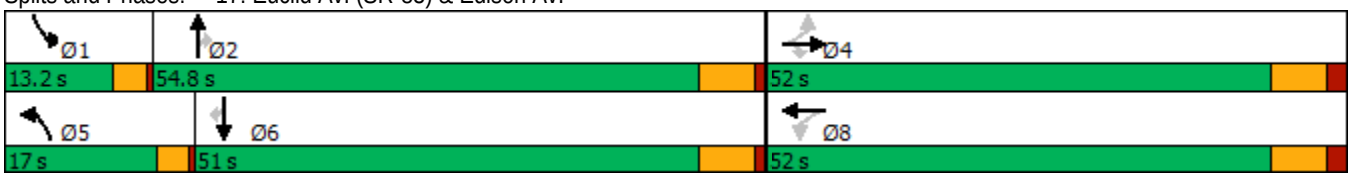
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	46.2	12.4	26.5	10.4	42.1	23.4	15.5
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	38.0	12.8	44.2	6.9	36.1	21.0	36.0
Max Q Clear Time (g_c+I1), s	3.8	42.2	6.7	17.7	7.8	38.1	19.9	7.6
Green Ext Time (p_c), s	0.0	0.0	0.0	1.8	0.0	0.0	0.1	0.4

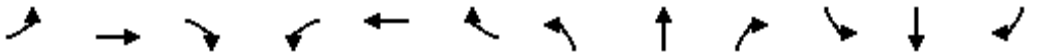
Intersection Summary	
HCM 6th Ctrl Delay	80.7
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	304	591	342	48	456	202	1631	83	127	1471	200
Future Volume (vph)	304	591	342	48	456	202	1631	83	127	1471	200
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	17.0	54.8	54.8	13.2	51.0	51.0
Total Split (%)	43.3%	43.3%	43.3%	43.3%	43.3%	14.2%	45.7%	45.7%	11.0%	42.5%	42.5%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	45.0	45.0	45.0	45.0	45.0	13.5	48.8	48.8	9.7	45.0	45.0
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.11	0.41	0.41	0.08	0.38	0.38
v/c Ratio	4.27	0.92	0.52	0.68	0.94	1.18	1.24	0.13	1.03	1.21	0.33
Control Delay	1513.5	56.6	15.1	77.0	59.6	168.8	144.8	8.0	141.4	135.2	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1513.5	56.6	15.1	77.0	59.6	168.8	144.8	8.0	141.4	135.2	13.7
LOS	F	E	B	E	E	F	F	A	F	F	B
Approach Delay		403.2			60.9		141.5			122.1	
Approach LOS		F			E		F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 4.27	
Intersection Signal Delay: 183.9	Intersection LOS: F
Intersection Capacity Utilization 128.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	304	591	342	48	456	134	202	1631	83	127	1471	200
Future Volume (veh/h)	304	591	342	48	456	134	202	1631	83	127	1471	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	320	622	278	51	480	135	213	1717	79	134	1548	179
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	83	675	572	87	505	142	182	1391	619	131	1282	572
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.11	0.41	0.41	0.08	0.38	0.38
Sat Flow, veh/h	775	1800	1525	594	1347	379	1619	3420	1522	1619	3420	1525
Grp Volume(v), veh/h	320	622	278	51	0	615	213	1717	79	134	1548	179
Grp Sat Flow(s),veh/h/ln	775	1800	1525	594	0	1726	1619	1710	1522	1619	1710	1525
Q Serve(g_s), s	3.5	39.6	16.7	5.4	0.0	41.5	13.5	48.8	3.9	9.7	45.0	10.0
Cycle Q Clear(g_c), s	45.0	39.6	16.7	45.0	0.0	41.5	13.5	48.8	3.9	9.7	45.0	10.0
Prop In Lane	1.00		1.00	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	83	675	572	87	0	647	182	1391	619	131	1283	572
V/C Ratio(X)	3.88	0.92	0.49	0.59	0.00	0.95	1.17	1.23	0.13	1.02	1.21	0.31
Avail Cap(c_a), veh/h	83	675	572	87	0	647	182	1391	619	131	1283	572
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.5	35.8	28.7	58.6	0.0	36.4	53.3	35.6	22.3	55.1	37.5	26.6
Incr Delay (d2), s/veh	1324.0	18.1	0.6	10.0	0.0	23.7	119.7	112.0	0.1	85.2	100.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	32.8	19.8	6.0	1.8	0.0	20.8	11.3	40.1	1.3	6.9	35.2	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1383.5	53.9	29.3	68.6	0.0	60.1	172.9	147.6	22.4	140.3	138.2	26.9
LnGrp LOS	F	D	C	E	A	E	F	F	C	F	F	C
Approach Vol, veh/h		1220			666			2009			1861	
Approach Delay, s/veh		397.1			60.8			145.3			127.7	
Approach LOS		F			E			F			F	

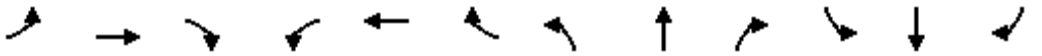
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.2	54.8		52.0	17.0	51.0		52.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	9.7	48.8		45.0	13.5	45.0		45.0				
Max Q Clear Time (g_c+I1), s	11.7	50.8		47.0	15.5	47.0		47.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		183.2
HCM 6th LOS		F

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	43	184	242	9	35	134	1620	20	82	1633	71
Future Volume (vph)	43	184	242	9	35	134	1620	20	82	1633	71
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	46.8	46.8	46.8	46.8	46.8	14.0	63.2	63.2	10.0	59.2	59.2
Total Split (%)	39.0%	39.0%	39.0%	39.0%	39.0%	11.7%	52.7%	52.7%	8.3%	49.3%	49.3%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	18.9	18.9	18.9	18.9	18.9	10.6	58.2	58.2	6.6	54.2	54.2
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19	0.11	0.59	0.59	0.07	0.55	0.55
v/c Ratio	0.26	0.60	0.68	0.07	0.39	0.86	0.90	0.02	0.85	0.97	0.09
Control Delay	35.3	42.1	26.8	30.3	12.4	85.5	26.2	1.0	101.9	37.8	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.3	42.1	26.8	30.3	12.4	85.5	26.2	1.0	101.9	37.8	4.1
LOS	D	D	C	C	B	F	C	A	F	D	A
Approach Delay		33.6			13.5		30.5			39.4	
Approach LOS		C			B		C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 34.0	Intersection LOS: C
Intersection Capacity Utilization 86.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	184	242	9	35	108	134	1620	20	82	1633	71
Future Volume (veh/h)	43	184	242	9	35	108	134	1620	20	82	1633	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	48	207	156	10	39	118	151	1820	21	92	1835	68
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	168	301	255	136	66	199	179	2087	931	114	1949	851
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.11	0.61	0.61	0.07	0.57	0.57
Sat Flow, veh/h	1180	1800	1525	977	394	1192	1619	3420	1525	1619	3420	1494
Grp Volume(v), veh/h	48	207	156	10	0	157	151	1820	21	92	1835	68
Grp Sat Flow(s),veh/h/ln	1180	1800	1525	977	0	1586	1619	1710	1525	1619	1710	1494
Q Serve(g_s), s	3.6	10.0	8.7	0.9	0.0	8.4	8.4	40.8	0.5	5.2	45.9	1.9
Cycle Q Clear(g_c), s	12.0	10.0	8.7	10.9	0.0	8.4	8.4	40.8	0.5	5.2	45.9	1.9
Prop In Lane	1.00		1.00	1.00		0.75	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	168	301	255	136	0	265	179	2087	931	114	1949	851
V/C Ratio(X)	0.29	0.69	0.61	0.07	0.00	0.59	0.84	0.87	0.02	0.81	0.94	0.08
Avail Cap(c_a), veh/h	508	821	696	418	0	723	185	2135	952	114	1986	868
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	36.1	35.6	41.2	0.0	35.4	40.2	15.0	7.1	42.2	18.4	8.9
Incr Delay (d2), s/veh	0.7	2.1	1.8	0.2	0.0	1.6	26.9	4.2	0.0	32.5	9.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	4.4	3.2	0.2	0.0	3.2	4.5	12.8	0.1	3.0	16.5	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.7	38.1	37.3	41.4	0.0	37.0	67.0	19.2	7.1	74.7	28.0	9.0
LnGrp LOS	D	D	D	D	A	D	E	B	A	E	C	A
Approach Vol, veh/h		411			167			1992			1995	
Approach Delay, s/veh		38.2			37.3			22.7			29.5	
Approach LOS		D			D			C			C	

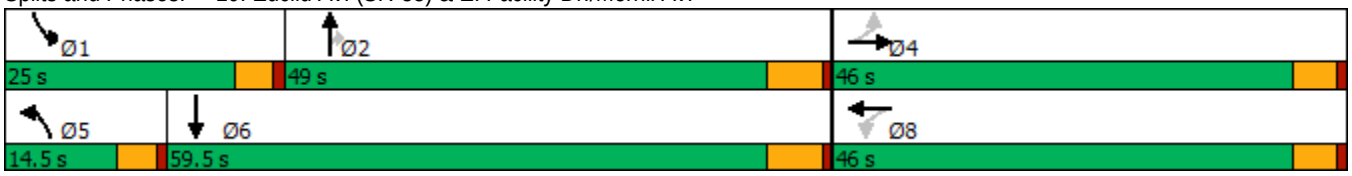
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	61.9		20.2	13.7	58.2		20.2				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	6.5	57.5		42.0	10.5	53.5		42.0				
Max Q Clear Time (g_c+I1), s	7.2	42.8		14.0	10.4	47.9		12.9				
Green Ext Time (p_c), s	0.0	10.2		1.4	0.0	4.6		0.7				

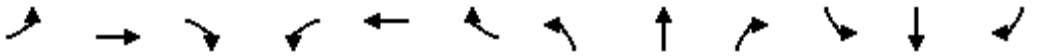
Intersection Summary			
HCM 6th Ctrl Delay		27.6	
HCM 6th LOS		C	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	13	33	458	2	5	1433	345	359	1462
Future Volume (vph)	13	33	458	2	5	1433	345	359	1462
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	14.5	49.0	49.0	25.0	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	12.1%	40.8%	40.8%	20.8%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		41.0		41.0	10.0	43.0	43.0	20.5	65.1
Actuated g/C Ratio		0.34		0.34	0.08	0.36	0.36	0.17	0.54
v/c Ratio		0.12		1.90	0.04	1.29	0.62	1.44	0.87
Control Delay		22.4		437.0	51.4	168.5	28.0	252.7	30.6
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		22.4		437.0	51.4	168.5	28.0	252.7	30.6
LOS		C		F	D	F	C	F	C
Approach Delay		22.4		437.0		141.0			74.4
Approach LOS		C		F		F			E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.90	
Intersection Signal Delay: 168.4	Intersection LOS: F
Intersection Capacity Utilization 135.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	33	14	458	2	392	5	1433	345	359	1462	1
Future Volume (veh/h)	13	33	14	458	2	392	5	1433	345	359	1462	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	14	36	14	503	2	421	5	1575	314	395	1607	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	131	322	116	318	1	227	21	1226	547	277	1766	0
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.01	0.36	0.36	0.17	0.52	0.00
Sat Flow, veh/h	275	942	341	795	3	666	1619	3420	1525	1619	3510	0
Grp Volume(v), veh/h	64	0	0	926	0	0	5	1575	314	395	1607	0
Grp Sat Flow(s),veh/h/ln	1557	0	0	1464	0	0	1619	1710	1525	1619	1710	0
Q Serve(g_s), s	0.0	0.0	0.0	38.0	0.0	0.0	0.4	43.0	20.0	20.5	51.4	0.0
Cycle Q Clear(g_c), s	3.0	0.0	0.0	41.0	0.0	0.0	0.4	43.0	20.0	20.5	51.4	0.0
Prop In Lane	0.22		0.22	0.54		0.45	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	569	0	0	547	0	0	21	1226	547	277	1766	0
V/C Ratio(X)	0.11	0.00	0.00	1.69	0.00	0.00	0.24	1.29	0.57	1.43	0.91	0.00
Avail Cap(c_a), veh/h	569	0	0	547	0	0	135	1226	547	277	1766	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.0	0.0	0.0	41.0	0.0	0.0	58.7	38.5	31.1	49.7	26.5	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	320.3	0.0	0.0	2.2	134.6	1.5	212.3	7.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	64.4	0.0	0.0	0.2	39.5	7.1	24.2	20.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.0	0.0	0.0	361.2	0.0	0.0	60.9	173.1	32.6	262.1	33.9	0.0
LnGrp LOS	C	A	A	F	A	A	E	F	C	F	C	A
Approach Vol, veh/h		64			926			1894			2002	
Approach Delay, s/veh		27.0			361.2			149.5			79.0	
Approach LOS		C			F			F			E	

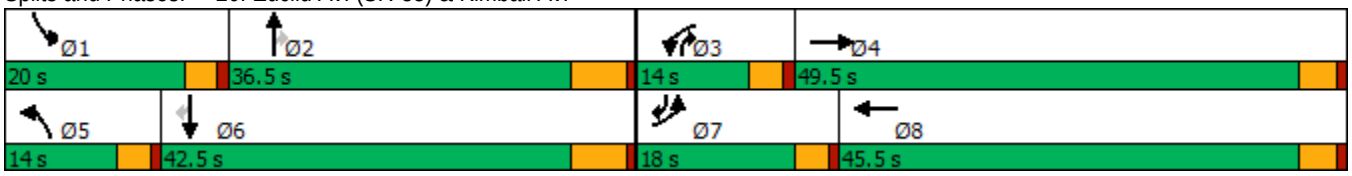
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.0	49.0		46.0	6.0	68.0		46.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	20.5	43.0		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	22.5	45.0		5.0	2.4	53.4		43.0				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	0.1		0.0				

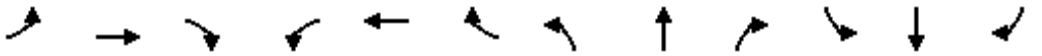
Intersection Summary												
HCM 6th Ctrl Delay			159.1									
HCM 6th LOS			F									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	403	886	96	395	88	1126	54	492	1184	276
Future Volume (vph)	403	886	96	395	88	1126	54	492	1184	276
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	18.0	49.5	14.0	45.5	14.0	36.5	14.0	20.0	42.5	18.0
Total Split (%)	15.0%	41.3%	11.7%	37.9%	11.7%	30.4%	11.7%	16.7%	35.4%	15.0%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	14.0	39.2	10.0	35.2	10.0	30.6	46.6	16.0	36.6	52.6
Actuated g/C Ratio	0.12	0.34	0.09	0.31	0.09	0.27	0.41	0.14	0.32	0.46
v/c Ratio	1.15	0.86	0.70	0.58	0.65	1.27	0.08	1.23	1.12	0.35
Control Delay	139.3	43.1	78.3	30.9	73.4	166.4	2.1	163.8	102.2	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	139.3	43.1	78.3	30.9	73.4	166.4	2.1	163.8	102.2	5.2
LOS	F	D	E	C	E	F	A	F	F	A
Approach Delay		71.4		37.5		152.9			104.0	
Approach LOS		E		D		F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.27	
Intersection Signal Delay: 98.6	Intersection LOS: F
Intersection Capacity Utilization 102.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	403	886	83	96	395	194	88	1126	54	492	1184	276
Future Volume (veh/h)	403	886	83	96	395	194	88	1126	54	492	1184	276
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	415	913	83	99	407	162	91	1161	41	507	1221	187
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	371	1053	96	138	700	275	136	935	547	424	1137	698
Arrive On Green	0.13	0.33	0.33	0.09	0.29	0.29	0.08	0.27	0.27	0.14	0.33	0.33
Sat Flow, veh/h	2956	3170	288	1619	2397	943	1619	3420	1525	2956	3420	1524
Grp Volume(v), veh/h	415	493	503	99	289	280	91	1161	41	507	1221	187
Grp Sat Flow(s),veh/h/ln	1478	1710	1748	1619	1710	1630	1619	1710	1525	1478	1710	1524
Q Serve(g_s), s	14.0	30.2	30.2	6.6	16.1	16.4	6.1	30.5	2.0	16.0	37.1	8.5
Cycle Q Clear(g_c), s	14.0	30.2	30.2	6.6	16.1	16.4	6.1	30.5	2.0	16.0	37.1	8.5
Prop In Lane	1.00		0.16	1.00		0.58	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	371	568	580	138	499	476	136	935	547	424	1137	698
V/C Ratio(X)	1.12	0.87	0.87	0.72	0.58	0.59	0.67	1.24	0.07	1.20	1.07	0.27
Avail Cap(c_a), veh/h	371	690	705	145	628	599	145	935	547	424	1137	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.8	35.0	35.0	49.7	33.6	33.8	49.6	40.5	23.6	47.8	37.3	18.7
Incr Delay (d2), s/veh	83.0	9.8	9.6	12.4	0.4	0.4	7.9	118.1	0.1	109.2	49.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	13.4	13.7	3.1	6.4	6.3	2.6	27.2	0.7	12.0	22.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	131.8	44.8	44.6	62.1	34.0	34.2	57.5	158.6	23.6	157.0	86.2	18.9
LnGrp LOS	F	D	D	E	C	C	E	F	C	F	F	B
Approach Vol, veh/h		1411			668			1293			1915	
Approach Delay, s/veh		70.3			38.3			147.2			98.4	
Approach LOS		E			D			F			F	

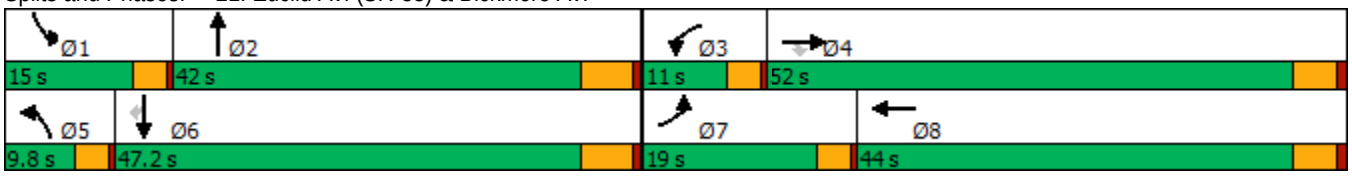
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	36.5	13.5	41.6	13.4	43.1	18.0	37.1
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	16.0	30.5	10.0	45.0	10.0	36.5	14.0	41.0
Max Q Clear Time (g_c+I1), s	18.0	32.5	8.6	32.2	8.1	39.1	16.0	18.4
Green Ext Time (p_c), s	0.0	0.0	0.0	4.8	0.0	0.0	0.0	1.9

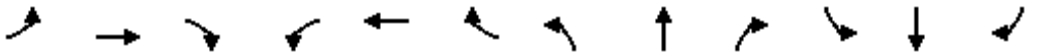
Intersection Summary	
HCM 6th Ctrl Delay	95.2
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	199	130	126	63	34	50	846	136	1054	181
Future Volume (vph)	199	130	126	63	34	50	846	136	1054	181
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	19.0	52.0	52.0	11.0	44.0	9.8	42.0	15.0	47.2	47.2
Total Split (%)	15.8%	43.3%	43.3%	9.2%	36.7%	8.2%	35.0%	12.5%	39.3%	39.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	15.8	22.0	22.0	7.1	11.4	6.1	36.3	11.7	43.7	43.7
Actuated g/C Ratio	0.17	0.24	0.24	0.08	0.12	0.07	0.39	0.13	0.47	0.47
v/c Ratio	0.79	0.33	0.29	0.55	0.47	0.51	0.79	0.73	0.71	0.25
Control Delay	60.3	31.6	6.3	62.0	17.7	62.9	31.8	63.0	25.6	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.3	31.6	6.3	62.0	17.7	62.9	31.8	63.0	25.6	6.4
LOS	E	C	A	E	B	E	C	E	C	A
Approach Delay		37.1			32.8		33.4		26.8	
Approach LOS		D			C		C		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 93	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 30.9	Intersection LOS: C
Intersection Capacity Utilization 72.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	130	126	63	34	87	50	846	114	136	1054	181
Future Volume (veh/h)	199	130	126	63	34	87	50	846	114	136	1054	181
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	216	141	122	68	37	67	54	920	101	148	1146	165
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	258	366	310	89	57	103	78	1100	121	182	1431	638
Arrive On Green	0.16	0.20	0.20	0.05	0.10	0.10	0.05	0.35	0.35	0.11	0.42	0.42
Sat Flow, veh/h	1619	1800	1525	1619	574	1039	1619	3107	341	1619	3420	1525
Grp Volume(v), veh/h	216	141	122	68	0	104	54	506	515	148	1146	165
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1613	1619	1710	1739	1619	1710	1525
Q Serve(g_s), s	8.2	4.3	4.4	2.6	0.0	4.0	2.1	17.3	17.3	5.7	18.7	4.5
Cycle Q Clear(g_c), s	8.2	4.3	4.4	2.6	0.0	4.0	2.1	17.3	17.3	5.7	18.7	4.5
Prop In Lane	1.00		1.00	1.00		0.64	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	258	366	310	89	0	160	78	605	616	182	1431	638
V/C Ratio(X)	0.84	0.39	0.39	0.76	0.00	0.65	0.69	0.84	0.84	0.81	0.80	0.26
Avail Cap(c_a), veh/h	394	1329	1126	191	0	988	160	980	997	292	2240	999
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	21.9	22.0	29.7	0.0	27.6	29.8	18.9	18.9	27.6	16.2	12.1
Incr Delay (d2), s/veh	5.6	0.2	0.3	5.0	0.0	1.7	4.0	1.6	1.6	3.7	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	1.7	1.4	1.1	0.0	1.5	0.8	5.6	5.7	2.1	5.5	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.6	22.2	22.3	34.7	0.0	29.3	33.8	20.5	20.5	31.3	16.7	12.2
LnGrp LOS	C	C	C	C	A	C	C	C	C	C	B	B
Approach Vol, veh/h		479			172			1075			1459	
Approach Delay, s/veh		26.4			31.4			21.2			17.7	
Approach LOS		C			C			C			B	

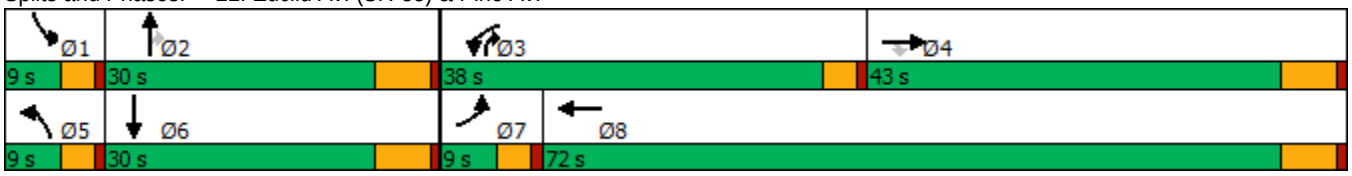
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	28.0	7.0	18.0	6.6	32.1	13.7	11.3
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	11.5	36.5	7.5	47.0	6.3	41.7	15.5	39.0
Max Q Clear Time (g_c+I1), s	7.7	19.3	4.6	6.4	4.1	20.7	10.2	6.0
Green Ext Time (p_c), s	0.1	3.2	0.0	0.6	0.0	5.0	0.1	0.3

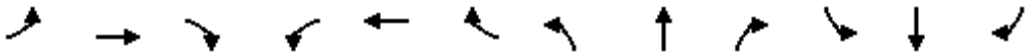
Intersection Summary	
HCM 6th Ctrl Delay	20.9
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	6	506	112	648	82	65	896	1301	162	1104
Future Volume (vph)	6	506	112	648	82	65	896	1301	162	1104
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	38.0	72.0	9.0	30.0	38.0	9.0	30.0
Total Split (%)	7.5%	35.8%	35.8%	31.7%	60.0%	7.5%	25.0%	31.7%	7.5%	25.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.0	36.0	36.0	34.0	72.2	5.0	24.0	64.0	5.0	24.0
Actuated g/C Ratio	0.04	0.30	0.30	0.29	0.61	0.04	0.20	0.54	0.04	0.20
v/c Ratio	0.09	0.95	0.20	0.79	0.16	0.97	1.32	1.52	2.43	1.64
Control Delay	58.3	68.9	4.1	47.1	6.9	160.8	194.4	265.4	714.8	327.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.3	68.9	4.1	47.1	6.9	160.8	194.4	265.4	714.8	327.7
LOS	E	E	A	D	A	F	F	F	F	F
Approach Delay		57.2			39.0		234.3			377.0
Approach LOS		E			D		F			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.43	
Intersection Signal Delay: 216.7	Intersection LOS: F
Intersection Capacity Utilization 134.8%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	506	112	648	82	81	65	896	1301	162	1104	5
Future Volume (veh/h)	6	506	112	648	82	81	65	896	1301	162	1104	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	6	516	0	661	84	81	66	914	911	165	1127	5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	12	558		722	460	444	74	747	706	74	762	3
Arrive On Green	0.01	0.31	0.00	0.24	0.55	0.55	0.05	0.22	0.22	0.05	0.22	0.22
Sat Flow, veh/h	1619	1800	1525	2956	842	812	1619	3420	1525	1619	3492	15
Grp Volume(v), veh/h	6	516	0	661	0	165	66	914	911	165	552	580
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	0	1654	1619	1710	1525	1619	1710	1797
Q Serve(g_s), s	0.4	30.5	0.0	23.9	0.0	5.5	4.5	24.0	24.0	5.0	24.0	24.0
Cycle Q Clear(g_c), s	0.4	30.5	0.0	23.9	0.0	5.5	4.5	24.0	24.0	5.0	24.0	24.0
Prop In Lane	1.00		1.00	1.00		0.49	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	12	558		722	0	904	74	747	706	74	373	392
V/C Ratio(X)	0.49	0.92		0.92	0.00	0.18	0.90	1.22	1.29	2.24	1.48	1.48
Avail Cap(c_a), veh/h	74	606		914	0	993	74	747	706	74	373	392
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.3	36.7	0.0	40.4	0.0	12.6	52.2	43.0	29.5	52.5	43.0	43.0
Incr Delay (d2), s/veh	10.6	19.9	0.0	10.4	0.0	0.1	68.9	112.6	141.4	599.2	229.2	228.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	15.7	0.0	9.2	0.0	1.9	3.1	21.2	44.3	14.2	33.3	34.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.9	56.6	0.0	50.8	0.0	12.7	121.1	155.5	171.0	651.7	272.1	271.5
LnGrp LOS	E	E		D	A	B	F	F	F	F	F	F
Approach Vol, veh/h		522	A		826			1891			1297	
Approach Delay, s/veh		56.7			43.2			161.8			320.1	
Approach LOS		E			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	30.0	30.8	40.1	9.0	30.0	4.8	66.1
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.0	24.0	34.0	37.0	5.0	24.0	5.0	66.0
Max Q Clear Time (g_c+I1), s	7.0	26.0	25.9	32.5	6.5	26.0	2.4	7.5
Green Ext Time (p_c), s	0.0	0.0	0.9	1.6	0.0	0.0	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	173.4
HCM 6th LOS	F

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	121.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	78	633	25	7	585	7	14	112	11	19	94	53
Future Vol, veh/h	78	633	25	7	585	7	14	112	11	19	94	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	82	666	26	7	616	7	15	118	12	20	99	56
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	187.4	92.7	15.9	16.5
HCM LOS	F	F	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	11%	1%	11%
Vol Thru, %	82%	86%	98%	57%
Vol Right, %	8%	3%	1%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	137	736	599	166
LT Vol	14	78	7	19
Through Vol	112	633	585	94
RT Vol	11	25	7	53
Lane Flow Rate	144	775	631	175
Geometry Grp	1	1	1	1
Degree of Util (X)	0.316	1.346	1.094	0.37
Departure Headway (Hd)	8.86	6.526	6.834	8.535
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	408	566	536	425
Service Time	6.86	4.526	4.834	6.535
HCM Lane V/C Ratio	0.353	1.369	1.177	0.412
HCM Control Delay	15.9	187.4	92.7	16.5
HCM Lane LOS	C	F	F	C
HCM 95th-tile Q	1.3	32.4	18.1	1.7

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	315	5	2	127	10	6	102	8	23	75	16
Future Vol, veh/h	20	315	5	2	127	10	6	102	8	23	75	16
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	23	362	6	2	146	11	7	117	9	26	86	18
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.4	9.7	9.9	9.9
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	6%	1%	20%
Vol Thru, %	88%	93%	91%	66%
Vol Right, %	7%	1%	7%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	116	340	139	114
LT Vol	6	20	2	23
Through Vol	102	315	127	75
RT Vol	8	5	10	16
Lane Flow Rate	133	391	160	131
Geometry Grp	1	1	1	1
Degree of Util (X)	0.204	0.533	0.228	0.2
Departure Headway (Hd)	5.496	4.906	5.147	5.488
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	653	739	697	654
Service Time	3.532	2.906	3.181	3.525
HCM Lane V/C Ratio	0.204	0.529	0.23	0.2
HCM Control Delay	9.9	13.4	9.7	9.9
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.8	3.2	0.9	0.7

Intersection	
Int Delay, s/veh	13.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	103	847	789	51	72	81
Future Vol, veh/h	103	847	789	51	72	81
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	110	901	839	54	77	86

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	893	0	-	0	1987	866
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	1121	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	768	-	-	-	118	431
Stage 1	-	-	-	-	415	-
Stage 2	-	-	-	-	314	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	768	-	-	-	84	431
Mov Cap-2 Maneuver	-	-	-	-	84	-
Stage 1	-	-	-	-	296	-
Stage 2	-	-	-	-	314	-

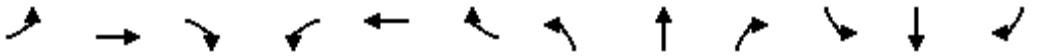
Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	169.7
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	768	-	-	-	146
HCM Lane V/C Ratio	0.143	-	-	-	1.115
HCM Control Delay (s)	10.5	0	-	-	169.7
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0.5	-	-	-	8.9

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	377	261	1000	1105	730
Future Volume (vph)	0	377	261	1000	1105	730
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	38.0	38.0	28.0	82.0	54.0	54.0
Total Split (%)	31.7%	31.7%	23.3%	68.3%	45.0%	45.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	27.6	27.6	21.0	80.8	55.2	55.2
Actuated g/C Ratio	0.23	0.23	0.18	0.67	0.46	0.46
v/c Ratio	0.83	0.84	0.86	0.43	0.69	0.69
Control Delay	60.6	45.9	49.7	12.9	30.0	7.1
Queue Delay	23.9	0.0	0.0	0.7	0.1	0.0
Total Delay	84.5	45.9	49.7	13.5	30.0	7.1
LOS	F	D	D	B	C	A
Approach Delay	63.9			21.0	20.9	
Approach LOS	E			C	C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 28.9	Intersection LOS: C
Intersection Capacity Utilization 99.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	330	0	377	261	1000	0	0	1105	730
Future Volume (veh/h)	0	0	0	330	0	377	261	1000	0	0	1105	730
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				344	0	213	272	1042	0	0	1151	585
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				389	0	346	295	2485	0	0	1758	767
Arrive On Green				0.22	0.00	0.22	0.33	1.00	0.00	0.00	0.49	0.49
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1575
Grp Volume(v), veh/h				344	0	213	272	1042	0	0	1151	585
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1575
Q Serve(g_s), s				22.1	0.0	14.4	17.4	0.0	0.0	0.0	28.8	36.4
Cycle Q Clear(g_c), s				22.1	0.0	14.4	17.4	0.0	0.0	0.0	28.8	36.4
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				389	0	346	295	2485	0	0	1758	767
V/C Ratio(X)				0.88	0.00	0.62	0.92	0.42	0.00	0.00	0.65	0.76
Avail Cap(c_a), veh/h				486	0	432	353	2485	0	0	1758	767
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				45.6	0.0	42.6	39.7	0.0	0.0	0.0	23.2	25.1
Incr Delay (d2), s/veh				14.9	0.0	1.8	3.5	0.0	0.0	0.0	1.9	7.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				11.2	0.0	5.7	6.3	0.0	0.0	0.0	11.9	14.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				60.5	0.0	44.4	43.2	0.0	0.0	0.0	25.1	32.2
LnGrp LOS				E	A	D	D	A	A	A	C	C
Approach Vol, veh/h					557			1314			1736	
Approach Delay, s/veh					54.3			9.0			27.5	
Approach LOS					D			A			C	

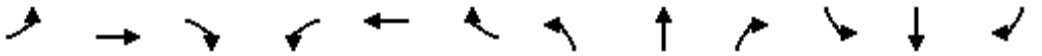
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		88.4			24.1	64.2		31.6				
Change Period (Y+Rc), s		5.8			4.6	5.8		5.8				
Max Green Setting (Gmax), s		76.2			23.4	48.2		32.2				
Max Q Clear Time (g_c+I1), s		2.0			19.4	38.4		24.1				
Green Ext Time (p_c), s		8.7			0.2	6.4		1.7				

Intersection Summary		
HCM 6th Ctrl Delay	24.9	
HCM 6th LOS	C	

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	381	795	480	956
Future Volume (vph)	0	381	795	480	956
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	38.0	38.0	44.0	38.0	82.0
Total Split (%)	31.7%	31.7%	36.7%	31.7%	68.3%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	32.2	32.2	38.2	33.4	76.2
Actuated g/C Ratio	0.27	0.27	0.32	0.28	0.64
v/c Ratio	1.04	0.78	1.11	1.03	0.45
Control Delay	93.5	38.9	98.9	99.5	8.7
Queue Delay	0.0	0.0	0.0	8.3	0.2
Total Delay	93.5	38.9	98.9	107.8	8.9
LOS	F	D	F	F	A
Approach Delay	68.9		98.9		41.9
Approach LOS	E		F		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 67.8	Intersection LOS: E
Intersection Capacity Utilization 99.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	466	0	381	0	0	0	0	795	369	480	956	0
Future Volume (veh/h)	466	0	381	0	0	0	0	795	369	480	956	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	501	0	323				0	855	314	516	1028	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	486	0	432				0	816	299	504	2292	0
Arrive On Green	0.27	0.00	0.27				0.00	0.32	0.32	0.56	1.00	0.00
Sat Flow, veh/h	1810	0	1610				0	2660	939	1810	3705	0
Grp Volume(v), veh/h	501	0	323				0	601	568	516	1028	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1699	1810	1805	0
Q Serve(g_s), s	32.2	0.0	22.0				0.0	38.2	38.2	33.4	0.0	0.0
Cycle Q Clear(g_c), s	32.2	0.0	22.0				0.0	38.2	38.2	33.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.55	1.00		0.00
Lane Grp Cap(c), veh/h	486	0	432				0	575	541	504	2292	0
V/C Ratio(X)	1.03	0.00	0.75				0.00	1.05	1.05	1.02	0.45	0.00
Avail Cap(c_a), veh/h	486	0	432				0	575	541	504	2292	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.64	0.64	0.66	0.66	0.00
Uniform Delay (d), s/veh	43.9	0.0	40.2				0.0	40.9	40.9	26.6	0.0	0.0
Incr Delay (d2), s/veh	49.3	0.0	7.0				0.0	42.7	45.0	39.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.5	0.0	9.2				0.0	23.0	22.0	14.2	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.2	0.0	47.2				0.0	83.6	85.9	65.6	0.4	0.0
LnGrp LOS	F	A	D				A	F	F	F	A	A
Approach Vol, veh/h		824						1169			1544	
Approach Delay, s/veh		75.1						84.7			22.2	
Approach LOS		E						F			C	

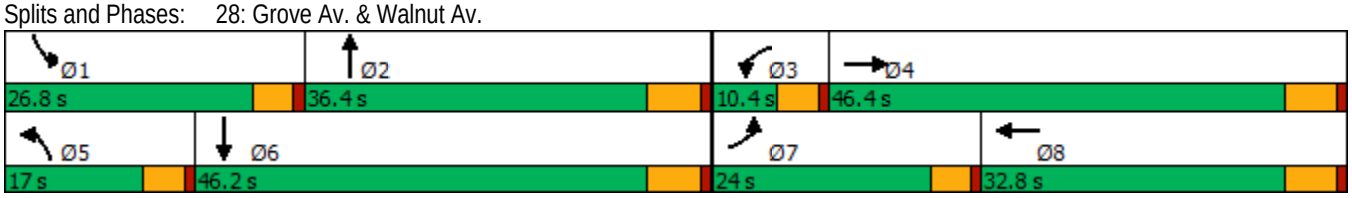
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	38.0	44.0		38.0		82.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	33.4	38.2		32.2		76.2
Max Q Clear Time (g_c+I1), s	35.4	40.2		34.2		2.0
Green Ext Time (p_c), s	0.0	0.0		0.0		8.5

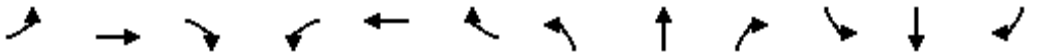
Intersection Summary	
HCM 6th Ctrl Delay	55.2
HCM 6th LOS	E

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	167	325	20	176	92	740	192	802
Future Volume (vph)	167	325	20	176	92	740	192	802
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	24.0	46.4	10.4	32.8	17.0	36.4	26.8	46.2
Total Split (%)	20.0%	38.7%	8.7%	27.3%	14.2%	30.3%	22.3%	38.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	14.4	29.4	5.5	13.9	9.7	33.4	16.0	42.2
Actuated g/C Ratio	0.15	0.30	0.06	0.14	0.10	0.34	0.16	0.43
v/c Ratio	0.74	0.43	0.23	0.57	0.61	0.70	0.77	0.72
Control Delay	61.4	28.2	56.6	26.5	62.4	34.6	60.8	29.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.4	28.2	56.6	26.5	62.4	34.6	60.8	29.4
LOS	E	C	E	C	E	C	E	C
Approach Delay		37.8		28.3		37.6		34.5
Approach LOS		D		C		D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 98.9	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 35.4	Intersection LOS: D
Intersection Capacity Utilization 73.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	325	88	20	176	138	92	740	28	192	802	190
Future Volume (veh/h)	167	325	88	20	176	138	92	740	28	192	802	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	174	339	77	21	183	109	96	771	19	200	835	130
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	205	644	144	37	267	151	119	1274	31	233	1315	205
Arrive On Green	0.13	0.23	0.23	0.02	0.13	0.13	0.07	0.37	0.37	0.14	0.44	0.44
Sat Flow, veh/h	1619	2775	622	1619	2092	1180	1619	3411	84	1619	2965	462
Grp Volume(v), veh/h	174	207	209	21	148	144	96	386	404	200	482	483
Grp Sat Flow(s),veh/h/ln	1619	1710	1688	1619	1710	1562	1619	1710	1785	1619	1710	1717
Q Serve(g_s), s	9.6	9.6	9.9	1.2	7.5	8.1	5.3	16.7	16.7	11.0	19.9	19.9
Cycle Q Clear(g_c), s	9.6	9.6	9.9	1.2	7.5	8.1	5.3	16.7	16.7	11.0	19.9	19.9
Prop In Lane	1.00		0.37	1.00		0.76	1.00		0.05	1.00		0.27
Lane Grp Cap(c), veh/h	205	397	392	37	218	200	119	639	666	233	758	761
V/C Ratio(X)	0.85	0.52	0.53	0.57	0.68	0.72	0.81	0.61	0.61	0.86	0.64	0.64
Avail Cap(c_a), veh/h	345	762	752	103	507	463	220	639	666	394	758	761
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.9	30.6	30.7	44.1	37.9	38.2	41.6	23.1	23.1	38.1	19.6	19.6
Incr Delay (d2), s/veh	4.1	1.1	1.1	5.2	3.6	4.9	4.7	4.2	4.1	4.2	4.0	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	3.9	3.9	0.5	3.2	3.2	2.2	6.9	7.2	4.4	7.9	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.0	31.6	31.8	49.3	41.6	43.1	46.3	27.3	27.2	42.3	23.7	23.7
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		590			313			886			1165	
Approach Delay, s/veh		35.0			42.8			29.3			26.9	
Approach LOS		D			D			C			C	

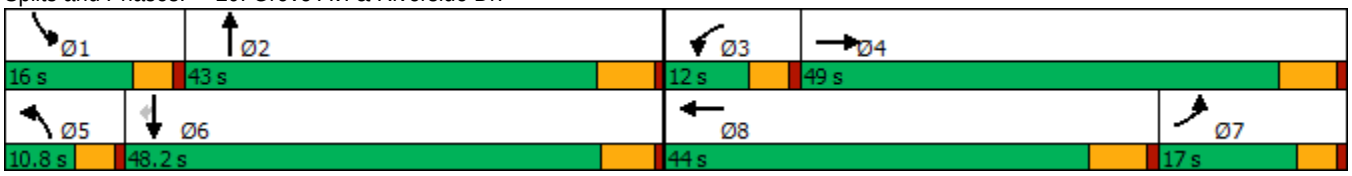
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.7	39.8	6.7	26.9	11.3	46.2	16.2	17.4
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	22.2	30.6	5.8	40.6	12.4	40.4	19.4	27.0
Max Q Clear Time (g_c+I1), s	13.0	18.7	3.2	11.9	7.3	21.9	11.6	10.1
Green Ext Time (p_c), s	0.2	3.5	0.0	2.3	0.0	5.5	0.1	1.4

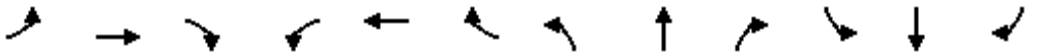
Intersection Summary	
HCM 6th Ctrl Delay	30.9
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	183	648	48	609	36	529	172	421	192
Future Volume (vph)	183	648	48	609	36	529	172	421	192
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	17.0	49.0	12.0	44.0	10.8	43.0	16.0	48.2	48.2
Total Split (%)	14.2%	40.8%	10.0%	36.7%	9.0%	35.8%	13.3%	40.2%	40.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	15.8	42.9	6.7	31.7	5.9	36.9	11.4	46.9	46.9
Actuated g/C Ratio	0.13	0.37	0.06	0.27	0.05	0.31	0.10	0.40	0.40
v/c Ratio	0.88	1.07	0.54	0.83	0.47	1.16	1.14	0.61	0.27
Control Delay	87.5	92.9	76.5	47.6	74.6	128.5	163.4	34.5	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.5	92.9	76.5	47.6	74.6	128.5	163.4	34.5	4.7
LOS	F	F	E	D	E	F	F	C	A
Approach Delay		91.8		49.4		125.5		55.4	
Approach LOS		F		D		F		E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.4	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 79.0	Intersection LOS: E
Intersection Capacity Utilization 105.8%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	648	25	48	609	118	36	529	93	172	421	192
Future Volume (veh/h)	183	648	25	48	609	118	36	529	93	172	421	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	191	675	25	50	634	77	38	551	80	179	439	143
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	241	630	23	62	742	90	49	483	70	158	686	582
Arrive On Green	0.15	0.37	0.37	0.04	0.24	0.24	0.03	0.31	0.31	0.10	0.38	0.38
Sat Flow, veh/h	1619	1723	64	1619	3070	372	1619	1537	223	1619	1800	1525
Grp Volume(v), veh/h	191	0	700	50	353	358	38	0	631	179	439	143
Grp Sat Flow(s),veh/h/ln	1619	0	1787	1619	1710	1732	1619	0	1760	1619	1800	1525
Q Serve(g_s), s	13.3	0.0	42.8	3.6	23.1	23.2	2.7	0.0	36.8	11.4	23.4	4.4
Cycle Q Clear(g_c), s	13.3	0.0	42.8	3.6	23.1	23.2	2.7	0.0	36.8	11.4	23.4	4.4
Prop In Lane	1.00		0.04	1.00		0.21	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	241	0	653	62	413	418	49	0	553	158	686	582
V/C Ratio(X)	0.79	0.00	1.07	0.80	0.85	0.86	0.77	0.00	1.14	1.14	0.64	0.25
Avail Cap(c_a), veh/h	241	0	653	102	552	559	86	0	553	158	686	582
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	0.0	37.1	55.9	42.4	42.5	56.4	0.0	40.1	52.8	29.6	8.6
Incr Delay (d2), s/veh	15.3	0.0	56.0	8.7	9.6	9.7	9.3	0.0	83.4	112.8	4.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	27.5	1.6	10.4	10.6	1.2	0.0	27.7	9.4	10.5	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.4	0.0	93.2	64.6	52.1	52.2	65.7	0.0	123.6	165.6	34.2	9.6
LnGrp LOS	E	A	F	E	D	D	E	A	F	F	C	A
Approach Vol, veh/h		891			761			669			761	
Approach Delay, s/veh		86.8			53.0			120.3			60.5	
Approach LOS		F			D			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	43.0	9.1	49.0	8.1	50.9	23.6	34.5
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	11.4	36.8	7.4	42.8	6.2	* 42	12.4	* 38
Max Q Clear Time (g_c+I1), s	13.4	38.8	5.6	44.8	4.7	25.4	15.3	25.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.7	0.0	3.1

Intersection Summary	
HCM 6th Ctrl Delay	79.2
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	86
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	84	202	29	10	44	43	40	565	21	40	425	24
Future Vol, veh/h	84	202	29	10	44	43	40	565	21	40	425	24
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	88	210	30	10	46	45	42	589	22	42	443	25
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	26.9	15	147.5	59.3
HCM LOS	D	B	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	27%	10%	8%
Vol Thru, %	90%	64%	45%	87%
Vol Right, %	3%	9%	44%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	626	315	97	489
LT Vol	40	84	10	40
Through Vol	565	202	44	425
RT Vol	21	29	43	24
Lane Flow Rate	652	328	101	509
Geometry Grp	1	1	1	1
Degree of Util (X)	1.243	0.685	0.236	0.965
Departure Headway (Hd)	6.862	8.093	9.159	7.307
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	528	450	395	499
Service Time	4.927	6.093	7.159	5.307
HCM Lane V/C Ratio	1.235	0.729	0.256	1.02
HCM Control Delay	147.5	26.9	15	59.3
HCM Lane LOS	F	D	B	F
HCM 95th-tile Q	25.3	5.1	0.9	12.3

Intersection	
Intersection Delay, s/veh	76.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	110	159	101	2	51	41	32	495	34	59	326	60
Future Vol, veh/h	110	159	101	2	51	41	32	495	34	59	326	60
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	118	171	109	2	55	44	34	532	37	63	351	65
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	37.4	15.3	129.5	55.6
HCM LOS	E	C	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	30%	2%	13%
Vol Thru, %	88%	43%	54%	73%
Vol Right, %	6%	27%	44%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	561	370	94	445
LT Vol	32	110	2	59
Through Vol	495	159	51	326
RT Vol	34	101	41	60
Lane Flow Rate	603	398	101	478
Geometry Grp	1	1	1	1
Degree of Util (X)	1.193	0.816	0.242	0.942
Departure Headway (Hd)	7.117	7.888	9.356	7.551
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	507	462	386	483
Service Time	5.209	5.888	7.356	5.551
HCM Lane V/C Ratio	1.189	0.861	0.262	0.99
HCM Control Delay	129.5	37.4	15.3	55.6
HCM Lane LOS	F	E	C	F
HCM 95th-tile Q	22.1	7.7	0.9	11.4

Intersection	
Intersection Delay, s/veh	478.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	49	494	102	84	306	57	278	457	192	146	269	25
Future Vol, veh/h	49	494	102	84	306	57	278	457	192	146	269	25
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	53	531	110	90	329	61	299	491	206	157	289	27
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	427.9	207.8	776.5	201.5
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	30%	8%	19%	33%
Vol Thru, %	49%	77%	68%	61%
Vol Right, %	21%	16%	13%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	927	645	447	440
LT Vol	278	49	84	146
Through Vol	457	494	306	269
RT Vol	192	102	57	25
Lane Flow Rate	997	694	481	473
Geometry Grp	1	1	1	1
Degree of Util (X)	2.64	1.834	1.276	1.255
Departure Headway (Hd)	13.866	16.431	19.653	20.097
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	279	229	192	185
Service Time	11.866	14.431	17.653	18.097
HCM Lane V/C Ratio	3.573	3.031	2.505	2.557
HCM Control Delay	776.5	427.9	207.8	201.5
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	57.7	28.2	13	12.5

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	166	110	78	6	64	306	16	498	5	115	282	54
Future Vol, veh/h	166	110	78	6	64	306	16	498	5	115	282	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	25	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	184	122	87	7	71	340	18	1992	6	128	313	60

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2836	2633	343	2735	2660	1995	373	0	0	1998	0	0
Stage 1	599	599	-	2031	2031	-	-	-	-	-	-	-
Stage 2	2237	2034	-	704	629	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 11	~ 24	704	13	~ 23	~ 77	1197	-	-	291	-	-
Stage 1	492	494	-	76	102	-	-	-	-	-	-	-
Stage 2	~ 57	~ 102	-	431	478	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 11	704	-	~ 10	~ 77	1197	-	-	291	-	-
Mov Cap-2 Maneuver	-	~ 11	-	-	~ 10	-	-	-	-	-	-	-
Stage 1	492	217	-	76	102	-	-	-	-	-	-	-
Stage 2	-	~ 102	-	73	210	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			0.1	6.8
HCM LOS	-	-		

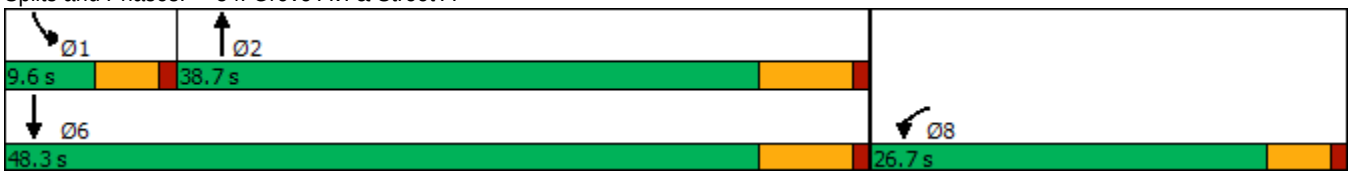
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1197	-	-	-	-	291	-	-
HCM Lane V/C Ratio	0.015	-	-	-	-	0.439	-	-
HCM Control Delay (s)	8.1	0	-	-	-	26.7	0	-
HCM Lane LOS	A	A	-	-	-	D	A	-
HCM 95th %tile Q(veh)	0	-	-	-	-	2.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	172	443	26	339
Future Volume (vph)	172	443	26	339
Turn Type	Prot	NA	Prot	NA
Protected Phases	8	2	1	6
Permitted Phases				
Detector Phase	8	2	1	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	5.0	10.0
Minimum Split (s)	26.6	23.2	9.6	16.2
Total Split (s)	26.7	38.7	9.6	48.3
Total Split (%)	35.6%	51.6%	12.8%	64.4%
Yellow Time (s)	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2
Lead/Lag		Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	
Recall Mode	None	Min	None	Min
Act Effct Green (s)	14.3	21.7	5.5	24.4
Actuated g/C Ratio	0.28	0.43	0.11	0.48
v/c Ratio	0.55	0.71	0.16	0.42
Control Delay	20.7	19.3	31.0	10.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	20.7	19.3	31.0	10.0
LOS	C	B	C	A
Approach Delay	20.7	19.3		11.5
Approach LOS	C	B		B

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 50.7	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 17.1	Intersection LOS: B
Intersection Capacity Utilization 52.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 34: Grove Av. & Street A



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	172	76	443	58	26	339
Future Volume (veh/h)	172	76	443	58	26	339
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	187	83	482	63	28	368
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	254	113	605	79	53	950
Arrive On Green	0.22	0.22	0.39	0.39	0.03	0.53
Sat Flow, veh/h	1140	506	1559	204	1619	1800
Grp Volume(v), veh/h	271	0	0	545	28	368
Grp Sat Flow(s),veh/h/ln	1652	0	0	1763	1619	1800
Q Serve(g_s), s	6.6	0.0	0.0	11.8	0.7	5.2
Cycle Q Clear(g_c), s	6.6	0.0	0.0	11.8	0.7	5.2
Prop In Lane	0.69	0.31		0.12	1.00	
Lane Grp Cap(c), veh/h	367	0	0	684	53	950
V/C Ratio(X)	0.74	0.00	0.00	0.80	0.52	0.39
Avail Cap(c_a), veh/h	845	0	0	1326	187	1754
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.6	0.0	0.0	11.7	20.6	6.1
Incr Delay (d2), s/veh	2.9	0.0	0.0	2.2	2.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	0.0	3.2	0.3	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.5	0.0	0.0	13.9	23.5	6.3
LnGrp LOS	B	A	A	B	C	A
Approach Vol, veh/h	271		545			396
Approach Delay, s/veh	18.5		13.9			7.5
Approach LOS	B		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.0	23.0			29.0	14.2
Change Period (Y+Rc), s	4.6	6.2			6.2	4.6
Max Green Setting (Gmax), s	5.0	32.5			42.1	22.1
Max Q Clear Time (g_c+I1), s	2.7	13.8			7.2	8.6
Green Ext Time (p_c), s	0.0	2.9			2.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

Intersection	
Intersection Delay, s/veh	334
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	232	696	643	269	318	192
Future Vol, veh/h	232	696	643	269	318	192
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	242	725	670	280	331	200
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	425	384.1	78.8
HCM LOS	F	F	F

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	0%	62%
Vol Thru, %	75%	71%	0%
Vol Right, %	0%	29%	38%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	928	912	510
LT Vol	232	0	318
Through Vol	696	643	0
RT Vol	0	269	192
Lane Flow Rate	967	950	531
Geometry Grp	1	1	1
Degree of Util (X)	1.882	1.79	1.018
Departure Headway (Hd)	8.228	8.107	8.661
Convergence, Y/N	Yes	Yes	Yes
Cap	454	456	425
Service Time	6.228	6.107	6.661
HCM Lane V/C Ratio	2.13	2.083	1.249
HCM Control Delay	425	384.1	78.8
HCM Lane LOS	F	F	F
HCM 95th-tile Q	54	49.8	13.1

Intersection	
Int Delay, s/veh	61

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	23	793	1	134	417	34	3	22	397	73	15	11
Future Vol, veh/h	23	793	1	134	417	34	3	22	397	73	15	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	24	835	1	141	439	36	3	23	418	77	16	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	475	0	0	836	0	0	1637	1641	836	1843	1623	457
Stage 1	-	-	-	-	-	-	884	884	-	739	739	-
Stage 2	-	-	-	-	-	-	753	757	-	1104	884	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1098	-	-	807	-	-	81	101	~ 370	~ 58	104	608
Stage 1	-	-	-	-	-	-	343	366	-	412	427	-
Stage 2	-	-	-	-	-	-	405	419	-	258	366	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1098	-	-	807	-	-	53	74	~ 370	-	76	608
Mov Cap-2 Maneuver	-	-	-	-	-	-	53	74	-	-	76	-
Stage 1	-	-	-	-	-	-	329	351	-	395	325	-
Stage 2	-	-	-	-	-	-	288	319	-	-	351	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	2.4	274.4	
HCM LOS			F	-

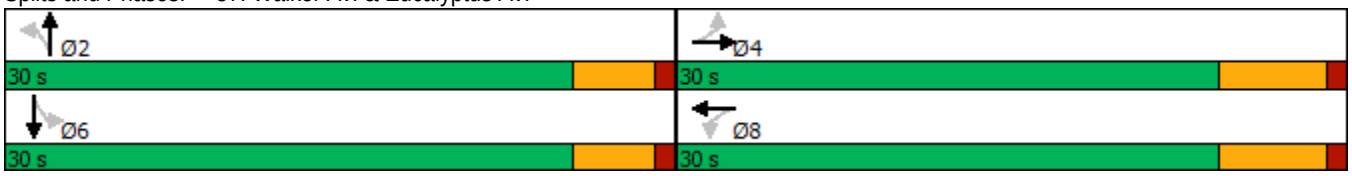
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	296	1098	-	-	807	-	-	-
HCM Lane V/C Ratio	1.501	0.022	-	-	0.175	-	-	-
HCM Control Delay (s)	274.4	8.4	0	-	10.4	0	-	-
HCM Lane LOS	F	A	A	-	B	A	-	-
HCM 95th %tile Q(veh)	25.1	0.1	-	-	0.6	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	45	157	284	88	208	70	71
Future Volume (vph)	45	157	284	88	208	70	71
Turn Type	Perm	NA	NA	Perm	NA	Perm	NA
Protected Phases		4	8		2		6
Permitted Phases	4			2		6	
Detector Phase	4	4	8	2	2	6	6
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	22.8	22.8	22.8	21.6	21.6	21.6	21.6
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.8	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0
Total Lost Time (s)		5.8	5.8		4.6		4.6
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	None	None	None	None
Act Effct Green (s)		16.2	16.2		15.1		15.1
Actuated g/C Ratio		0.38	0.38		0.36		0.36
v/c Ratio		0.46	0.71		0.59		0.31
Control Delay		12.9	16.8		16.8		12.6
Queue Delay		0.0	0.0		0.0		0.0
Total Delay		12.9	16.8		16.8		12.6
LOS		B	B		B		B
Approach Delay		12.9	16.8		16.8		12.6
Approach LOS		B	B		B		B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 42.3	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 15.5	Intersection LOS: B
Intersection Capacity Utilization 71.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 37: Walker Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	157	30	0	284	168	88	208	0	70	71	3
Future Volume (veh/h)	45	157	30	0	284	168	88	208	0	70	71	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	49	171	33	0	309	183	96	226	0	76	77	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	169	395	65	0	410	243	250	391	0	343	291	9
Arrive On Green	0.39	0.39	0.39	0.00	0.39	0.39	0.30	0.30	0.00	0.30	0.30	0.30
Sat Flow, veh/h	100	1020	168	0	1060	628	365	1309	0	607	976	31
Grp Volume(v), veh/h	253	0	0	0	0	492	322	0	0	156	0	0
Grp Sat Flow(s),veh/h/ln	1288	0	0	0	0	1687	1674	0	0	1613	0	0
Q Serve(g_s), s	0.6	0.0	0.0	0.0	0.0	8.3	2.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.9	0.0	0.0	0.0	0.0	8.3	5.4	0.0	0.0	2.2	0.0	0.0
Prop In Lane	0.19		0.13	0.00		0.37	0.30		0.00	0.49		0.02
Lane Grp Cap(c), veh/h	628	0	0	0	0	653	641	0	0	644	0	0
V/C Ratio(X)	0.40	0.00	0.00	0.00	0.00	0.75	0.50	0.00	0.00	0.24	0.00	0.00
Avail Cap(c_a), veh/h	1141	0	0	0	0	1234	1407	0	0	1312	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.4	0.0	0.0	0.0	0.0	8.8	10.0	0.0	0.0	8.9	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.0	0.0	1.8	0.6	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	0.0	0.0	1.8	1.6	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.8	0.0	0.0	0.0	0.0	10.6	10.6	0.0	0.0	9.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	B	B	A	A	A	A	A
Approach Vol, veh/h		253			492			322			156	
Approach Delay, s/veh		7.8			10.6			10.6			9.1	
Approach LOS		A			B			B			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.5		18.6		14.5		18.6				
Change Period (Y+Rc), s		4.6		5.8		4.6		5.8				
Max Green Setting (Gmax), s		25.4		24.2		25.4		24.2				
Max Q Clear Time (g_c+I1), s		7.4		10.9		4.2		10.3				
Green Ext Time (p_c), s		1.9		1.1		0.9		2.5				

Intersection Summary												
HCM 6th Ctrl Delay			9.8									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	831.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	853	127	97	685	29	104	8	142	86	22	107
Future Vol, veh/h	36	853	127	97	685	29	104	8	142	86	22	107
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	25	91	91	91	91	91	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	40	937	140	107	753	116	114	9	156	95	24	110

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	869	0	0	1077	0	0	2109	2100	937	2195	2182	811
Stage 1	-	-	-	-	-	-	1017	1017	-	1025	1025	-
Stage 2	-	-	-	-	-	-	1092	1083	-	1170	1157	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	784	-	-	655	-	-	~ 38	52	324	~ 33	47	383
Stage 1	-	-	-	-	-	-	289	318	-	286	315	-
Stage 2	-	-	-	-	-	-	262	296	-	237	273	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	784	-	-	655	-	-	~ 19	41	324	~ 14	37	383
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 75	130	-	~ 5	103	-
Stage 1	-	-	-	-	-	-	274	302	-	271	264	-
Stage 2	-	-	-	-	-	-	142	248	-	113	259	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.3	$ 559.1	$ 8747.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	135	784	-	-	655	-	-	12
HCM Lane V/C Ratio	2.068	0.05	-	-	0.163	-	-	19.083
HCM Control Delay (s)	$ 559.1	9.8	-	-	11.6	-	-	$ 8747.3
HCM Lane LOS	F	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	22.6	0.2	-	-	0.6	-	-	30

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	178	49	0	309	143	0
Future Vol, veh/h	178	49	0	309	143	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	193	53	0	336	155	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	246	0	556	220
Stage 1	-	-	-	-	220	-
Stage 2	-	-	-	-	336	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1332	-	496	825
Stage 1	-	-	-	-	821	-
Stage 2	-	-	-	-	728	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1332	-	496	825
Mov Cap-2 Maneuver	-	-	-	-	496	-
Stage 1	-	-	-	-	821	-
Stage 2	-	-	-	-	728	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	496	-	-	1332	-
HCM Lane V/C Ratio	0.313	-	-	-	-
HCM Control Delay (s)	15.5	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.3	-	-	0	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	1038	21	11	703	26	45	0	20	75	0	64
Future Vol, veh/h	22	1038	21	11	703	26	45	0	20	75	0	64
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	25	1180	24	13	799	30	51	0	23	85	0	73

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	829	0	0	1205	0	0	2120	2098	603	1480	2095	814
Stage 1	-	-	-	-	-	-	1243	1243	-	840	840	-
Stage 2	-	-	-	-	-	-	877	855	-	640	1255	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	811	-	-	586	-	-	~ 33	53	447	96	53	381
Stage 1	-	-	-	-	-	-	188	249	-	363	384	-
Stage 2	-	-	-	-	-	-	346	378	-	435	245	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	811	-	-	585	-	-	~ 26	50	447	87	50	381
Mov Cap-2 Maneuver	-	-	-	-	-	-	108	151	-	208	149	-
Stage 1	-	-	-	-	-	-	182	241	-	352	376	-
Stage 2	-	-	-	-	-	-	274	370	-	400	237	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	55.7	37.3
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	141	811	-	-	585	-	-	263
HCM Lane V/C Ratio	0.524	0.031	-	-	0.021	-	-	0.601
HCM Control Delay (s)	55.7	9.6	-	-	11.3	-	-	37.3
HCM Lane LOS	F	A	-	-	B	-	-	E
HCM 95th %tile Q(veh)	2.5	0.1	-	-	0.1	-	-	3.6

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	121	57	0	143	0	166	0	0	0	0	0
Future Vol, veh/h	0	121	57	0	143	0	166	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	132	62	0	155	0	180	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	194	0	0	318	318	163
Stage 1	-	-	-	-	-	-	163	163	-
Stage 2	-	-	-	-	-	-	155	155	-
Critical Hdwy	-	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	1391	-	0	679	602	887
Stage 1	0	-	-	-	-	0	871	767	-
Stage 2	0	-	-	-	-	0	878	773	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1391	-	-	679	0	887
Mov Cap-2 Maneuver	-	-	-	-	-	-	679	0	-
Stage 1	-	-	-	-	-	-	871	0	-
Stage 2	-	-	-	-	-	-	878	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	679	-	-	1391	-
HCM Lane V/C Ratio	0.266	-	-	-	-
HCM Control Delay (s)	12.2	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.1	-	-	0	-

Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	1122	1	62	646	36	60	8	74	107	22	33
Future Vol, veh/h	11	1122	1	62	646	36	60	8	74	107	22	33
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	200	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	12	1247	1	69	718	40	67	9	82	119	24	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	758	0	0	1249	0	0	2180	2169	625	1528	2149	738
Stage 1	-	-	-	-	-	-	1273	1273	-	876	876	-
Stage 2	-	-	-	-	-	-	907	896	-	652	1273	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	862	-	-	564	-	-	~ 30	47	433	~ 89	49	421
Stage 1	-	-	-	-	-	-	180	241	-	346	369	-
Stage 2	-	-	-	-	-	-	333	362	-	428	241	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	862	-	-	563	-	-	~ 21	41	433	~ 62	42	421
Mov Cap-2 Maneuver	-	-	-	-	-	-	102	140	-	162	118	-
Stage 1	-	-	-	-	-	-	177	237	-	341	324	-
Stage 2	-	-	-	-	-	-	247	317	-	329	237	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1	48.9	57.5
HCM LOS			E	F

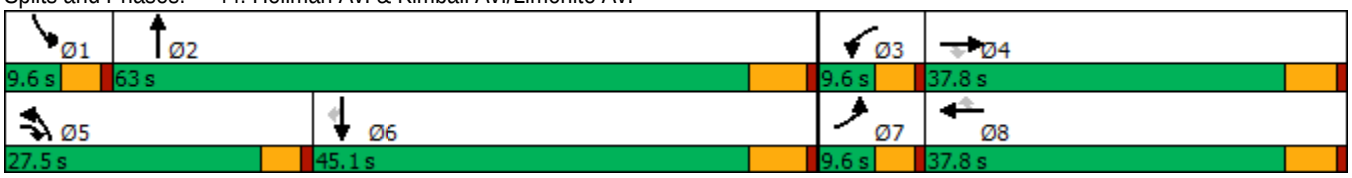
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	102	360	862	-	-	563	-	-	162	208
HCM Lane V/C Ratio	0.654	0.253	0.014	-	-	0.122	-	-	0.734	0.294
HCM Control Delay (s)	90.6	18.4	9.2	-	-	12.3	-	-	71.9	29.4
HCM Lane LOS	F	C	A	-	-	B	-	-	F	D
HCM 95th %tile Q(veh)	3.3	1	0	-	-	0.4	-	-	4.5	1.2

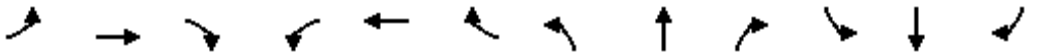
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	28	4	860	7	10	297	85	90	134	
Future Volume (vph)	28	4	860	7	10	297	85	90	134	
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	NA	Perm	
Protected Phases	7	4	5	3	8	5	2	6		1
Permitted Phases			4						6	
Detector Phase	7	4	5	3	8	5	2	6	6	
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	10.0	5.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	9.6	43.2	43.2	43.2	9.6
Total Split (s)	9.6	37.8	27.5	9.6	37.8	27.5	63.0	45.1	45.1	9.6
Total Split (%)	8.0%	31.5%	22.9%	8.0%	31.5%	22.9%	52.5%	37.6%	37.6%	8%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	5.2	5.2	5.2	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-2.2	-2.2	-2.2	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	None	None	Max	Max	Min	Min	None
Act Effct Green (s)	6.0	17.2	34.7	6.0	15.5	25.1	67.0	34.6	34.6	
Actuated g/C Ratio	0.08	0.22	0.44	0.08	0.20	0.32	0.85	0.44	0.44	
v/c Ratio	0.24	0.01	0.82	0.03	0.02	0.61	0.03	0.06	0.19	
Control Delay	48.3	27.8	9.6	45.4	29.8	34.5	5.8	18.5	4.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	48.3	27.8	9.6	45.4	29.8	34.5	5.8	18.5	4.5	
LOS	D	C	A	D	C	C	A	B	A	
Approach Delay		10.9			35.9		28.1	10.1		
Approach LOS		B			D		C	B		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 79.1	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 15.4	Intersection LOS: B
Intersection Capacity Utilization 78.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	4	860	7	10	0	297	85	2	0	90	134
Future Volume (veh/h)	28	4	860	7	10	0	297	85	2	0	90	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	29	4	905	7	11	0	313	89	2	0	95	141
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	53	572	805	43	1025	457	358	1897	43	2	1013	452
Arrive On Green	0.03	0.32	0.31	0.01	0.30	0.00	0.22	0.55	0.53	0.00	0.30	0.30
Sat Flow, veh/h	1619	1800	1525	2956	3420	1525	1619	3420	77	1619	3420	1525
Grp Volume(v), veh/h	29	4	905	7	11	0	313	44	47	0	95	141
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	1710	1525	1619	1710	1786	1619	1710	1525
Q Serve(g_s), s	1.9	0.2	32.6	0.2	0.2	0.0	19.9	1.3	1.3	0.0	2.1	7.6
Cycle Q Clear(g_c), s	1.9	0.2	32.6	0.2	0.2	0.0	19.9	1.3	1.3	0.0	2.1	7.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	53	572	805	43	1025	457	358	949	991	2	1013	452
V/C Ratio(X)	0.55	0.01	1.12	0.16	0.01	0.00	0.87	0.05	0.05	0.00	0.09	0.31
Avail Cap(c_a), veh/h	85	572	805	156	1087	485	358	949	991	85	1322	590
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	50.7	24.8	25.1	51.8	26.2	0.0	40.0	10.8	10.8	0.0	27.1	29.0
Incr Delay (d2), s/veh	3.3	0.0	71.8	0.7	0.0	0.0	24.5	0.1	0.1	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.1	33.8	0.1	0.1	0.0	9.9	0.5	0.5	0.0	0.8	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.9	24.8	96.9	52.4	26.2	0.0	64.5	10.9	10.9	0.0	27.1	29.4
LnGrp LOS	D	C	F	D	C	A	E	B	B	A	C	C
Approach Vol, veh/h		938			18			404			236	
Approach Delay, s/veh		95.3			36.4			52.4			28.5	
Approach LOS		F			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	63.0	5.5	37.8	27.5	35.5	7.5	35.9
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	5.0	56.8	5.0	32.0	22.9	38.9	5.0	32.0
Max Q Clear Time (g_c+I1), s	0.0	3.3	2.2	34.6	21.9	9.6	3.9	2.2
Green Ext Time (p_c), s	0.0	0.4	0.0	0.0	0.1	0.9	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	73.9
HCM 6th LOS	E

Intersection	
Intersection Delay, s/veh	568.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	1263	25	46	664	30	46	5	155	125	6	34
Future Vol, veh/h	16	1263	25	46	664	30	46	5	155	125	6	34
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	18	1403	28	51	738	33	51	6	172	139	7	38
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

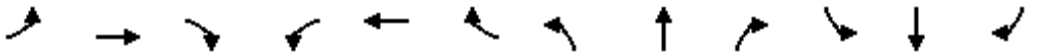
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	851.6	342.2	26.4	25.7
HCM LOS	F	F	D	D

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	22%	100%	0%	0%	100%	0%	76%
Vol Thru, %	2%	0%	100%	0%	0%	96%	4%
Vol Right, %	75%	0%	0%	100%	0%	4%	21%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	206	16	1263	25	46	694	165
LT Vol	46	16	0	0	46	0	125
Through Vol	5	0	1263	0	0	664	6
RT Vol	155	0	0	25	0	30	34
Lane Flow Rate	229	18	1403	28	51	771	183
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.517	0.039	2.9	0.052	0.122	1.722	0.454
Departure Headway (Hd)	11.787	8.99	8.468	7.739	11.819	11.253	12.808
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	309	401	449	466	305	332	284
Service Time	9.487	6.69	6.168	5.439	9.519	8.953	10.508
HCM Lane V/C Ratio	0.741	0.045	3.125	0.06	0.167	2.322	0.644
HCM Control Delay	26.4	12.1	878.9	10.9	16.2	363.8	25.7
HCM Lane LOS	D	B	F	B	C	F	D
HCM 95th-tile Q	2.8	0.1	105.4	0.2	0.4	34.8	2.2

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	6	290	463	570	1210
Future Volume (vph)	6	290	463	570	1210
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (%)	32.2%	32.2%	31.1%	67.8%	36.7%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	23.0	23.0	24.0	55.2	27.2
Actuated g/C Ratio	0.26	0.26	0.27	0.61	0.30
v/c Ratio	1.18	0.47	1.00	0.19	0.91
Control Delay	133.7	6.1	81.1	20.5	36.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	133.7	6.1	81.1	20.5	36.3
LOS	F	A	F	C	D
Approach Delay	88.2			47.7	36.3
Approach LOS	F			D	D

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 51.5	Intersection LOS: D
Intersection Capacity Utilization 93.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	517	6	290	463	570	0	0	1210	499
Future Volume (veh/h)	0	0	0	517	6	290	463	570	0	0	1210	499
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				539	6	157	482	594	0	0	1260	385
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				458	5	411	537	3398	0	0	1461	445
Arrive On Green				0.26	0.26	0.26	0.59	1.00	0.00	0.00	0.29	0.29
Sat Flow, veh/h				1791	20	1610	1810	5358	0	0	5242	1515
Grp Volume(v), veh/h				545	0	157	482	594	0	0	1241	404
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1729	0	0	1634	1589
Q Serve(g_s), s				23.0	0.0	7.2	20.8	0.0	0.0	0.0	21.6	21.7
Cycle Q Clear(g_c), s				23.0	0.0	7.2	20.8	0.0	0.0	0.0	21.6	21.7
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.95
Lane Grp Cap(c), veh/h				463	0	411	537	3398	0	0	1440	467
V/C Ratio(X)				1.18	0.00	0.38	0.90	0.17	0.00	0.00	0.86	0.87
Avail Cap(c_a), veh/h				463	0	411	537	3398	0	0	1481	480
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.36	0.36	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.5	0.0	27.6	17.1	0.0	0.0	0.0	30.1	30.1
Incr Delay (d2), s/veh				100.6	0.0	1.2	7.4	0.0	0.0	0.0	7.0	18.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				22.3	0.0	7.0	5.7	0.0	0.0	0.0	8.8	10.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				134.1	0.0	28.9	24.4	0.0	0.0	0.0	37.1	49.0
LnGrp LOS				F	A	C	C	A	A	A	D	D
Approach Vol, veh/h					702			1076			1645	
Approach Delay, s/veh					110.5			11.0			40.0	
Approach LOS					F			B			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	64.8	29.0	32.5	32.2
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	55.2	23.0	24.0	* 27
Max Q Clear Time (g_c+I1), s	2.0	25.0	22.8	23.7
Green Ext Time (p_c), s	4.1	0.0	0.1	2.8

Intersection Summary	
HCM 6th Ctrl Delay	45.3
HCM 6th LOS	D

Notes

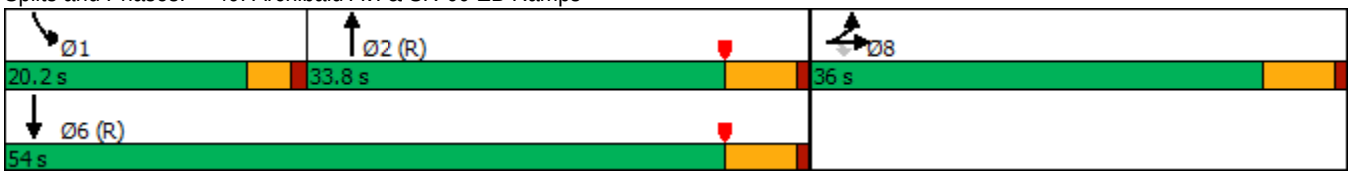
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

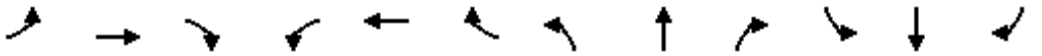
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	625	916	424	1303
Future Volume (vph)	0	625	916	424	1303
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	10.8	10.8	25.8	9.0	25.8
Total Split (s)	36.0	36.0	33.8	20.2	54.0
Total Split (%)	40.0%	40.0%	37.6%	22.4%	60.0%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	30.2	30.2	28.0	16.2	48.2
Actuated g/C Ratio	0.34	0.34	0.31	0.18	0.54
v/c Ratio	0.20	1.09	1.23dr	1.36	0.49
Control Delay	22.4	91.8	31.0	194.3	21.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.4	91.8	31.0	194.3	21.9
LOS	C	F	C	F	C
Approach Delay	80.9		31.0		64.3
Approach LOS	F		C		E

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.36	
Intersection Signal Delay: 53.6	Intersection LOS: D
Intersection Capacity Utilization 93.7%	ICU Level of Service F
Analysis Period (min) 15	

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	0	625	0	0	0	0	916	804	424	1303	0
Future Volume (veh/h)	116	0	625	0	0	0	0	916	804	424	1303	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	121	0	401				0	954	663	442	1357	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	499	0	444				0	1819	596	326	3089	0
Arrive On Green	0.28	0.00	0.28				0.00	0.37	0.37	0.12	0.40	0.00
Sat Flow, veh/h	1810	0	1610				0	5168	1606	1810	5358	0
Grp Volume(v), veh/h	121	0	401				0	954	663	442	1357	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1606	1810	1729	0
Q Serve(g_s), s	4.7	0.0	21.6				0.0	13.7	33.4	16.2	17.2	0.0
Cycle Q Clear(g_c), s	4.7	0.0	21.6				0.0	13.7	33.4	16.2	17.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	499	0	444				0	1819	596	326	3089	0
V/C Ratio(X)	0.24	0.00	0.90				0.00	0.52	1.11	1.36	0.44	0.00
Avail Cap(c_a), veh/h	607	0	540				0	1819	596	326	3089	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.67	0.67	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.26	0.26	0.30	0.30	0.00
Uniform Delay (d), s/veh	25.3	0.0	31.4				0.0	22.1	28.3	39.6	16.1	0.0
Incr Delay (d2), s/veh	0.2	0.0	16.4				0.0	0.3	57.5	166.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	9.8				0.0	4.8	20.9	22.3	6.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.6	0.0	47.9				0.0	22.4	85.8	206.3	16.2	0.0
LnGrp LOS	C	A	D				A	C	F	F	B	A
Approach Vol, veh/h		522						1617			1799	
Approach Delay, s/veh		42.7						48.4			62.9	
Approach LOS		D						D			E	

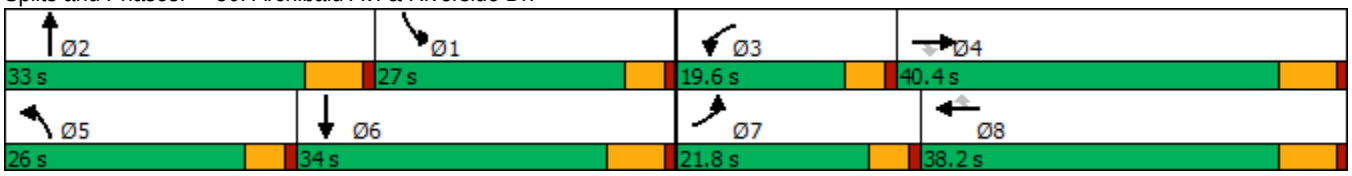
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	20.2	39.2				59.4		30.6				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	16.2	28.0				48.2		30.2				
Max Q Clear Time (g_c+I1), s	18.2	35.4				19.2		23.6				
Green Ext Time (p_c), s	0.0	0.0				10.4		1.2				

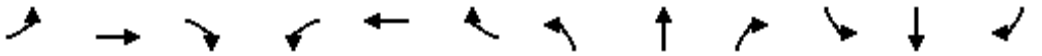
Intersection Summary			
HCM 6th Ctrl Delay			54.3
HCM 6th LOS			D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	246	686	387	173	489	128	326	934	313	1072
Future Volume (vph)	246	686	387	173	489	128	326	934	313	1072
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.8	40.4	40.4	19.6	38.2	38.2	26.0	33.0	27.0	34.0
Total Split (%)	18.2%	33.7%	33.7%	16.3%	31.8%	31.8%	21.7%	27.5%	22.5%	28.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	17.2	30.8	30.8	14.7	28.3	28.3	21.4	26.8	22.4	27.8
Actuated g/C Ratio	0.15	0.26	0.26	0.13	0.24	0.24	0.18	0.23	0.19	0.24
v/c Ratio	1.10	0.81	0.59	0.91	0.63	0.28	1.17	0.96	1.07	1.22
Control Delay	133.8	47.7	7.0	94.2	42.8	3.9	148.5	64.1	117.0	143.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	133.8	47.7	7.0	94.2	42.8	3.9	148.5	64.1	117.0	143.9
LOS	F	D	A	F	D	A	F	E	F	F
Approach Delay		51.8			47.7			84.5		138.8
Approach LOS		D			D			F		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.22	
Intersection Signal Delay: 88.0	Intersection LOS: F
Intersection Capacity Utilization 98.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	246	686	387	173	489	128	326	934	86	313	1072	269
Future Volume (veh/h)	246	686	387	173	489	128	326	934	86	313	1072	269
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	262	730	255	184	520	77	347	994	82	333	1140	222
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	238	865	377	208	800	356	296	1058	87	310	1035	202
Arrive On Green	0.15	0.25	0.25	0.13	0.23	0.23	0.18	0.23	0.23	0.19	0.25	0.25
Sat Flow, veh/h	1619	3420	1491	1619	3420	1520	1619	4620	380	1619	4120	802
Grp Volume(v), veh/h	262	730	255	184	520	77	347	704	372	333	906	456
Grp Sat Flow(s),veh/h/ln	1619	1710	1491	1619	1710	1520	1619	1638	1724	1619	1638	1646
Q Serve(g_s), s	17.2	23.7	18.0	13.1	16.1	2.9	21.4	24.7	24.8	22.4	29.4	29.4
Cycle Q Clear(g_c), s	17.2	23.7	18.0	13.1	16.1	2.9	21.4	24.7	24.8	22.4	29.4	29.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		0.49
Lane Grp Cap(c), veh/h	238	865	377	208	800	356	296	750	395	310	823	414
V/C Ratio(X)	1.10	0.84	0.68	0.89	0.65	0.22	1.17	0.94	0.94	1.07	1.10	1.10
Avail Cap(c_a), veh/h	238	1000	436	208	936	416	296	751	395	310	823	414
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.9	41.5	39.4	50.1	40.5	13.5	47.8	44.3	44.3	47.3	43.8	43.8
Incr Delay (d2), s/veh	87.9	6.0	3.4	32.6	1.3	0.3	107.1	19.4	30.7	72.2	62.7	74.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.5	10.2	6.7	7.0	6.6	1.7	17.1	11.6	13.4	14.8	18.5	19.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	137.7	47.5	42.8	82.8	41.7	13.8	154.9	63.7	75.0	119.5	106.5	118.3
LnGrp LOS	F	D	D	F	D	B	F	E	E	F	F	F
Approach Vol, veh/h		1247			781			1423			1695	
Approach Delay, s/veh		65.5			48.6			88.9			112.2	
Approach LOS		E			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.6	33.0	19.6	35.8	26.0	35.6	21.8	33.6
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	22.4	* 27	15.0	34.2	21.4	27.8	17.2	32.0
Max Q Clear Time (g_c+I1), s	24.4	26.8	15.1	25.7	23.4	31.4	19.2	18.1
Green Ext Time (p_c), s	0.0	0.0	0.0	3.4	0.0	0.0	0.0	2.8

Intersection Summary	
HCM 6th Ctrl Delay	84.8
HCM 6th LOS	F

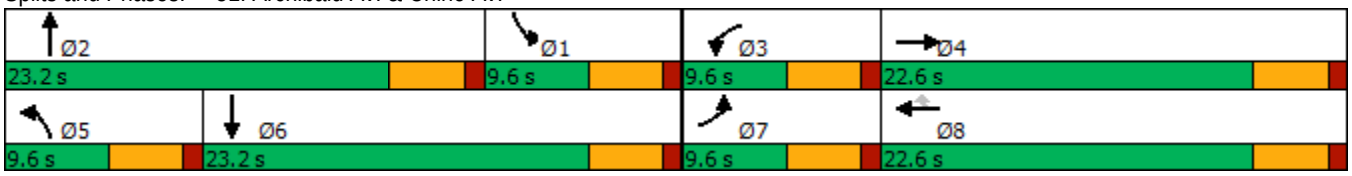
Notes

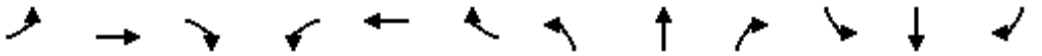
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	23	1	28	122	21	1143	157	1315
Future Volume (vph)	23	1	28	122	21	1143	157	1315
Turn Type	Prot	NA	Prot	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3		5	2	1	6
Permitted Phases				8				
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	9.6	22.6	9.6	22.6	9.6	23.2	9.6	23.2
Total Split (%)	14.8%	34.8%	14.8%	34.8%	14.8%	35.7%	14.8%	35.7%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	5.4	7.7	5.4	7.7	5.4	18.5	5.4	28.9
Actuated g/C Ratio	0.12	0.17	0.12	0.17	0.12	0.42	0.12	0.65
v/c Ratio	0.13	0.03	0.16	0.24	0.12	0.65	0.90	0.67
Control Delay	24.5	11.7	24.7	1.0	24.3	15.5	73.3	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.5	11.7	24.7	1.0	24.3	15.5	73.3	14.6
LOS	C	B	C	A	C	B	E	B
Approach Delay		21.5				15.6		20.8
Approach LOS		C				B		C

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 44.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 17.8	Intersection LOS: B
Intersection Capacity Utilization 62.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	1	6	28	0	122	21	1143	56	157	1315	14
Future Volume (veh/h)	23	1	6	28	0	122	21	1143	56	157	1315	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	26	1	5	31	0	52	23	1270	53	174	1461	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	50	19	95	58	140	119	45	1747	73	183	1549	16
Arrive On Green	0.03	0.07	0.07	0.04	0.00	0.08	0.03	0.36	0.36	0.11	0.45	0.45
Sat Flow, veh/h	1619	261	1304	1619	1800	1525	1619	4837	202	1619	3468	36
Grp Volume(v), veh/h	26	0	6	31	0	52	23	860	463	174	720	756
Grp Sat Flow(s),veh/h/ln	1619	0	1565	1619	1800	1525	1619	1638	1763	1619	1710	1794
Q Serve(g_s), s	0.7	0.0	0.2	0.8	0.0	0.9	0.6	10.0	10.0	4.7	17.8	17.8
Cycle Q Clear(g_c), s	0.7	0.0	0.2	0.8	0.0	0.9	0.6	10.0	10.0	4.7	17.8	17.8
Prop In Lane	1.00		0.83	1.00		1.00	1.00		0.11	1.00		0.02
Lane Grp Cap(c), veh/h	50	0	114	58	140	119	45	1183	637	183	764	801
V/C Ratio(X)	0.52	0.00	0.05	0.53	0.00	0.44	0.51	0.73	0.73	0.95	0.94	0.94
Avail Cap(c_a), veh/h	183	0	638	183	734	622	183	1381	743	183	764	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	19.0	20.9	0.0	8.2	21.2	12.2	12.2	19.4	11.7	11.7
Incr Delay (d2), s/veh	8.1	0.0	0.2	7.4	0.0	2.5	8.7	1.6	3.0	51.6	19.9	19.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.1	0.4	0.0	0.5	0.3	2.5	2.9	4.0	8.0	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	0.0	19.2	28.4	0.0	10.8	29.8	13.8	15.2	71.0	31.6	31.1
LnGrp LOS	C	A	B	C	A	B	C	B	B	E	C	C
Approach Vol, veh/h		32			83			1346			1650	
Approach Delay, s/veh		27.3			17.3			14.6			35.5	
Approach LOS		C			B			B			D	

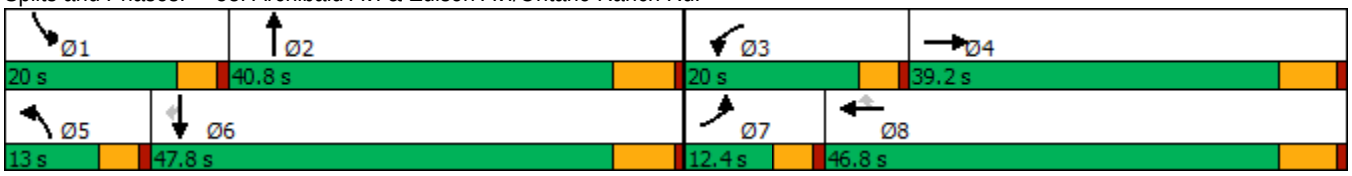
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	20.5	6.2	7.8	5.8	24.3	6.0	8.0
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	5.0	18.6	5.0	18.0	5.0	18.6	5.0	18.0
Max Q Clear Time (g_c+I1), s	6.7	12.0	2.8	2.2	2.6	19.8	2.7	2.9
Green Ext Time (p_c), s	0.0	3.9	0.0	0.0	0.0	0.0	0.0	0.1

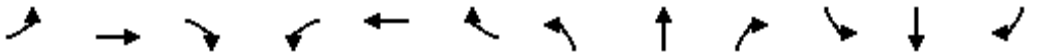
Intersection Summary	
HCM 6th Ctrl Delay	25.9
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	874	138	383	319	81	78	825	494	150	971	120
Future Volume (vph)	216	874	138	383	319	81	78	825	494	150	971	120
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	12.4	39.2		20.0	46.8	46.8	13.0	40.8		20.0	47.8	47.8
Total Split (%)	10.3%	32.7%		16.7%	39.0%	39.0%	10.8%	34.0%		16.7%	39.8%	39.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	7.8	32.5	116.4	15.4	40.1	40.1	7.9	32.7	116.4	13.8	38.6	38.6
Actuated g/C Ratio	0.07	0.28	1.00	0.13	0.34	0.34	0.07	0.28	1.00	0.12	0.33	0.33
v/c Ratio	1.13	0.95	0.09	1.01	0.53	0.13	0.73	0.89	0.34	0.81	0.88	0.21
Control Delay	152.2	60.5	0.1	99.2	35.1	0.4	89.6	52.4	0.6	81.0	47.1	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	152.2	60.5	0.1	99.2	35.1	0.4	89.6	52.4	0.6	81.0	47.1	2.9
LOS	F	E	A	F	D	A	F	D	A	F	D	A
Approach Delay		69.9			62.8			36.1			46.9	
Approach LOS		E			E			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 52.4	Intersection LOS: D
Intersection Capacity Utilization 90.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	874	138	383	319	81	78	825	494	150	971	120
Future Volume (veh/h)	216	874	138	383	319	81	78	825	494	150	971	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	223	901	0	395	329	50	80	851	0	155	1001	102
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	202	966		399	629	533	99	954		180	1126	491
Arrive On Green	0.07	0.28	0.00	0.14	0.35	0.35	0.06	0.28	0.00	0.11	0.33	0.33
Sat Flow, veh/h	2956	3420	1525	2956	1800	1525	1619	3420	1525	1619	3420	1491
Grp Volume(v), veh/h	223	901	0	395	329	50	80	851	0	155	1001	102
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1800	1525	1619	1710	1525	1619	1710	1491
Q Serve(g_s), s	7.8	29.3	0.0	15.2	16.6	2.5	5.6	27.2	0.0	10.7	31.6	5.6
Cycle Q Clear(g_c), s	7.8	29.3	0.0	15.2	16.6	2.5	5.6	27.2	0.0	10.7	31.6	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	202	966		399	629	533	99	954		180	1126	491
V/C Ratio(X)	1.10	0.93		0.99	0.52	0.09	0.81	0.89		0.86	0.89	0.21
Avail Cap(c_a), veh/h	202	990		399	641	543	119	1029		219	1239	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.1	39.8	0.0	49.2	29.5	25.0	52.9	39.4	0.0	49.8	36.3	27.5
Incr Delay (d2), s/veh	93.4	14.9	0.0	42.0	0.7	0.1	23.7	9.5	0.0	21.4	7.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	13.6	0.0	7.7	6.9	0.9	2.8	11.9	0.0	5.2	13.4	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	146.5	54.7	0.0	91.2	30.3	25.0	76.6	48.9	0.0	71.2	44.0	27.7
LnGrp LOS	F	D		F	C	C	E	D		E	D	C
Approach Vol, veh/h		1124	A		774			931	A		1258	
Approach Delay, s/veh		72.9			61.0			51.3			46.0	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.3	38.3	20.0	38.4	11.6	44.0	12.4	46.0
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	15.4	34.3	15.4	33.0	8.4	41.3	7.8	40.6
Max Q Clear Time (g_c+I1), s	12.7	29.2	17.2	31.3	7.6	33.6	9.8	18.6
Green Ext Time (p_c), s	0.0	2.2	0.0	1.0	0.0	3.8	0.0	1.8

Intersection Summary	
HCM 6th Ctrl Delay	57.5
HCM 6th LOS	E

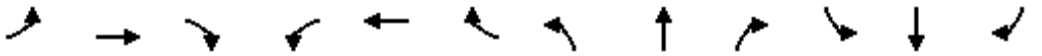
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	11	1384	1	10	1481
Future Volume (vph)	2	11	1384	1	10	1481
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.5	9.5	32.5	32.5	9.6	16.5
Total Split (s)	10.0	10.0	40.0	40.0	10.0	50.0
Total Split (%)	14.3%	14.3%	57.1%	57.1%	14.3%	71.4%
Yellow Time (s)	3.5	3.5	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	6.5	6.5	4.6	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max
Act Effct Green (s)	5.6	5.6	56.7	56.7	5.2	58.5
Actuated g/C Ratio	0.09	0.09	0.90	0.90	0.08	0.92
v/c Ratio	0.01	0.03	0.48	0.00	0.08	0.50
Control Delay	26.5	0.1	6.1	6.0	28.3	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	0.1	6.1	6.0	28.3	3.4
LOS	C	A	A	A	C	A
Approach Delay			6.1			3.6
Approach LOS			A			A

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 63.3	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay: 4.8	Intersection LOS: A
Intersection Capacity Utilization 55.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	2	0	11	0	1384	1	10	1481	0
Future Volume (veh/h)	0	0	0	2	0	11	0	1384	1	10	1481	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1700	0	1800	0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h				2	0	3	0	1472	1	11	1576	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				21	0	18	0	2377	1059	23	2711	0
Arrive On Green				0.01	0.00	0.01	0.00	0.69	0.69	0.01	0.79	0.00
Sat Flow, veh/h				3141	0	2685	0	3510	1524	1619	3510	0
Grp Volume(v), veh/h				2	0	3	0	1472	1	11	1576	0
Grp Sat Flow(s),veh/h/ln				1570	0	1342	0	1710	1524	1619	1710	0
Q Serve(g_s), s				0.0	0.0	0.1	0.0	12.6	0.0	0.4	9.7	0.0
Cycle Q Clear(g_c), s				0.0	0.0	0.1	0.0	12.6	0.0	0.4	9.7	0.0
Prop In Lane				1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				21	0	18	0	2377	1059	23	2711	0
V/C Ratio(X)				0.10	0.00	0.17	0.00	0.62	0.00	0.48	0.58	0.00
Avail Cap(c_a), veh/h				315	0	269	0	2377	1059	159	2711	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				27.1	0.0	27.1	0.0	4.5	2.6	26.8	2.2	0.0
Incr Delay (d2), s/veh				1.9	0.0	4.3	0.0	1.2	0.0	5.8	0.9	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.0	0.0	0.0	0.0	1.2	0.0	0.2	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				29.0	0.0	31.4	0.0	5.7	2.6	32.6	3.1	0.0
LnGrp LOS				C	A	C	A	A	A	C	A	A
Approach Vol, veh/h					5			1473			1587	
Approach Delay, s/veh					30.4			5.7			3.3	
Approach LOS					C			A			A	

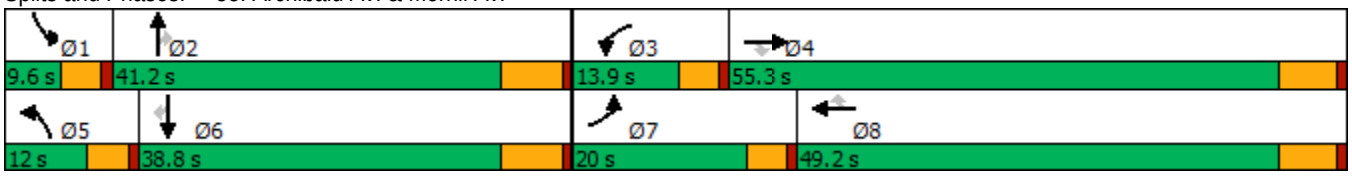
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	5.4	44.6				50.0		4.9				
Change Period (Y+Rc), s	4.6	6.5				6.5		4.5				
Max Green Setting (Gmax), s	5.4	33.5				43.5		5.5				
Max Q Clear Time (g_c+I1), s	2.4	14.6				11.7		2.1				
Green Ext Time (p_c), s	0.0	9.5				13.5		0.0				

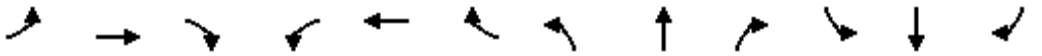
Intersection Summary		
HCM 6th Ctrl Delay		4.5
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	606	92	798	51	31	61	260	718	44	80	1098	306
Future Volume (vph)	606	92	798	51	31	61	260	718	44	80	1098	306
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	20.0	55.3	55.3	13.9	49.2	49.2	12.0	41.2	41.2	9.6	38.8	38.8
Total Split (%)	16.7%	46.1%	46.1%	11.6%	41.0%	41.0%	10.0%	34.3%	34.3%	8.0%	32.3%	32.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	23.2	49.2	49.2	7.7	35.1	35.1	7.4	34.8	34.8	5.0	32.4	32.4
Actuated g/C Ratio	0.20	0.42	0.42	0.07	0.30	0.30	0.06	0.30	0.30	0.04	0.28	0.28
v/c Ratio	1.95	0.12	1.07	0.50	0.06	0.11	2.63	0.73	0.08	0.65	1.19	0.59
Control Delay	464.2	22.2	79.9	69.7	25.7	0.4	779.5	42.1	0.3	79.8	134.7	23.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	464.2	22.2	79.9	69.7	25.7	0.4	779.5	42.1	0.3	79.8	134.7	23.5
LOS	F	C	E	E	C	A	F	D	A	E	F	C
Approach Delay		232.0			30.7			228.0			108.8	
Approach LOS		F			C			F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.63	
Intersection Signal Delay: 180.0	Intersection LOS: F
Intersection Capacity Utilization 106.7%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	606	92	798	51	31	61	260	718	44	80	1098	306
Future Volume (veh/h)	606	92	798	51	31	61	260	718	44	80	1098	306
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	625	95	638	53	32	24	268	740	31	82	1132	257
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	216	766	649	66	599	508	104	1035	456	123	957	427
Arrive On Green	0.13	0.43	0.43	0.04	0.33	0.33	0.06	0.30	0.30	0.04	0.28	0.28
Sat Flow, veh/h	1619	1800	1525	1619	1800	1525	1619	3420	1506	2956	3420	1525
Grp Volume(v), veh/h	625	95	638	53	32	24	268	740	31	82	1132	257
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1710	1506	1478	1710	1525
Q Serve(g_s), s	15.4	3.7	47.7	3.7	1.4	1.2	7.4	22.2	1.7	3.2	32.3	16.8
Cycle Q Clear(g_c), s	15.4	3.7	47.7	3.7	1.4	1.2	7.4	22.2	1.7	3.2	32.3	16.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	216	766	649	66	599	508	104	1035	456	123	957	427
V/C Ratio(X)	2.89	0.12	0.98	0.80	0.05	0.05	2.58	0.72	0.07	0.67	1.18	0.60
Avail Cap(c_a), veh/h	216	766	649	130	671	568	104	1035	456	128	957	427
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.0	20.1	32.7	54.9	26.2	26.1	54.0	35.8	28.7	54.5	41.6	36.0
Incr Delay (d2), s/veh	864.3	0.1	31.0	8.2	0.0	0.0	738.9	2.4	0.1	9.4	92.9	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	57.9	1.5	22.4	1.7	0.6	0.5	24.2	9.0	0.6	1.3	25.0	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	914.3	20.2	63.7	63.1	26.2	26.1	792.9	38.2	28.7	64.0	134.5	38.4
LnGrp LOS	F	C	E	E	C	C	F	D	C	E	F	D
Approach Vol, veh/h		1358			109			1039			1471	
Approach Delay, s/veh		452.1			44.1			232.6			113.8	
Approach LOS		F			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	41.4	9.3	55.3	12.0	38.8	20.0	44.6
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	34.7	9.3	49.1	7.4	32.3	15.4	43.0
Max Q Clear Time (g_c+I1), s	5.2	24.2	5.7	49.7	9.4	34.3	17.4	3.4
Green Ext Time (p_c), s	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	258.4
HCM 6th LOS	F

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	480	361	641	467	882	1070
Future Volume (vph)	480	361	641	467	882	1070
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	36.3	37.0	46.7	36.3	37.0	83.7
Total Split (%)	30.3%	30.8%	38.9%	30.3%	30.8%	69.8%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min
Act Effct Green (s)	31.0	68.3	41.4	72.4	32.0	78.7
Actuated g/C Ratio	0.26	0.57	0.34	0.60	0.27	0.66
v/c Ratio	1.05	0.38	1.00	0.49	1.87	0.88
Control Delay	99.2	11.9	74.5	12.6	427.4	26.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	99.2	11.9	74.5	12.6	427.4	26.6
LOS	F	B	E	B	F	C
Approach Delay	61.7		48.4			207.7
Approach LOS	E		D			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.87	
Intersection Signal Delay: 131.0	Intersection LOS: F
Intersection Capacity Utilization 122.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	480	361	641	467	882	1070
Future Volume (veh/h)	480	361	641	467	882	1070
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	490	318	654	456	900	1092
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	467	845	655	960	483	1241
Arrive On Green	0.26	0.26	0.34	0.34	0.27	0.65
Sat Flow, veh/h	1810	1610	1900	1576	1810	1900
Grp Volume(v), veh/h	490	318	654	456	900	1092
Grp Sat Flow(s),veh/h/ln	1810	1610	1900	1576	1810	1900
Q Serve(g_s), s	31.0	14.0	41.3	19.4	32.0	56.2
Cycle Q Clear(g_c), s	31.0	14.0	41.3	19.4	32.0	56.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	467	845	655	960	483	1241
V/C Ratio(X)	1.05	0.38	1.00	0.48	1.87	0.88
Avail Cap(c_a), veh/h	467	845	656	960	483	1246
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	16.9	39.3	13.3	44.0	17.0
Incr Delay (d2), s/veh	54.8	0.1	34.5	0.4	397.2	7.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.3	4.8	24.3	11.7	66.7	21.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	99.3	17.0	73.8	13.7	441.2	24.2
LnGrp LOS	F	B	E	B	F	C
Approach Vol, veh/h	808		1110			1992
Approach Delay, s/veh	66.9		49.1			212.6
Approach LOS	E		D			F

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	37.0	46.7			83.7	36.3
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	32.0	41.4			* 79	31.0
Max Q Clear Time (g_c+I1), s	34.0	43.3			58.2	33.0
Green Ext Time (p_c), s	0.0	0.0			4.9	0.0

Intersection Summary		
HCM 6th Ctrl Delay	136.1	
HCM 6th LOS	F	

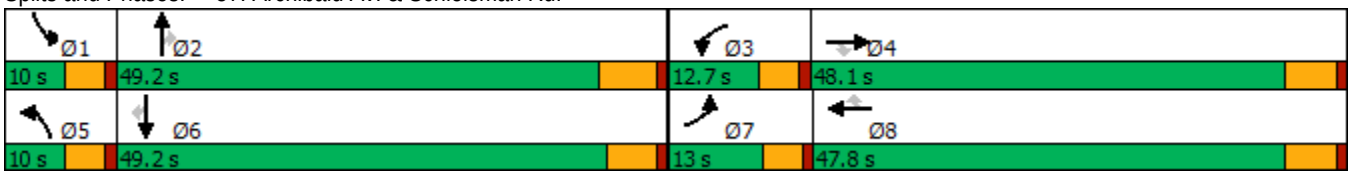
Notes

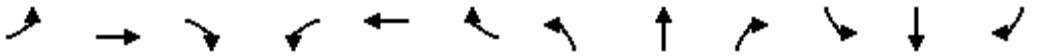
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	518	1161	227	123	379	71	234	704	125	201	795	451
Future Volume (vph)	518	1161	227	123	379	71	234	704	125	201	795	451
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	48.1	48.1	12.7	47.8	47.8	10.0	49.2	49.2	10.0	49.2	49.2
Total Split (%)	10.8%	40.1%	40.1%	10.6%	39.8%	39.8%	8.3%	41.0%	41.0%	8.3%	41.0%	41.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	8.5	43.4	43.4	7.4	42.3	42.3	5.4	25.9	25.9	5.4	26.7	26.7
Actuated g/C Ratio	0.08	0.42	0.42	0.07	0.41	0.41	0.05	0.25	0.25	0.05	0.26	0.26
v/c Ratio	1.85	0.55	0.30	0.51	0.18	0.10	1.31	0.55	0.26	1.12	0.61	0.68
Control Delay	424.8	25.0	9.0	55.3	21.0	1.6	210.8	34.8	6.2	148.1	35.2	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	424.8	25.0	9.0	55.3	21.0	1.6	210.8	34.8	6.2	148.1	35.2	13.6
LOS	F	C	A	E	C	A	F	C	A	F	D	B
Approach Delay		131.8			26.0			70.2			44.2	
Approach LOS		F			C			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.4	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.85	
Intersection Signal Delay: 81.1	Intersection LOS: F
Intersection Capacity Utilization 90.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	518	1161	227	123	379	71	234	704	125	201	795	451
Future Volume (veh/h)	518	1161	227	123	379	71	234	704	125	201	795	451
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	529	1185	150	126	387	46	239	718	91	205	811	346
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	276	2169	673	186	2036	631	177	1453	451	177	1453	450
Arrive On Green	0.08	0.42	0.42	0.05	0.39	0.39	0.05	0.28	0.28	0.05	0.28	0.28
Sat Flow, veh/h	3510	5187	1610	3510	5187	1608	3510	5187	1610	3510	5187	1605
Grp Volume(v), veh/h	529	1185	150	126	387	46	239	718	91	205	811	346
Grp Sat Flow(s),veh/h/ln	1755	1729	1610	1755	1729	1608	1755	1729	1610	1755	1729	1605
Q Serve(g_s), s	8.4	18.4	6.4	3.8	5.2	1.9	5.4	12.4	4.6	5.4	14.3	21.2
Cycle Q Clear(g_c), s	8.4	18.4	6.4	3.8	5.2	1.9	5.4	12.4	4.6	5.4	14.3	21.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	276	2169	673	186	2036	631	177	1453	451	177	1453	450
V/C Ratio(X)	1.92	0.55	0.22	0.68	0.19	0.07	1.35	0.49	0.20	1.16	0.56	0.77
Avail Cap(c_a), veh/h	276	2169	673	266	2036	631	177	2085	647	177	2124	657
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	23.5	20.0	49.8	21.3	20.3	50.8	32.2	29.4	50.8	32.8	35.3
Incr Delay (d2), s/veh	426.8	1.0	0.8	1.6	0.2	0.2	189.5	0.3	0.2	116.1	0.3	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.9	7.2	2.4	1.6	2.1	0.7	6.9	4.9	1.7	5.1	5.7	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	476.1	24.5	20.7	51.4	21.5	20.5	240.3	32.4	29.6	166.9	33.2	38.7
LnGrp LOS	F	C	C	D	C	C	F	C	C	F	C	D
Approach Vol, veh/h		1864			559			1048			1362	
Approach Delay, s/veh		152.3			28.2			79.6			54.7	
Approach LOS		F			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	36.2	10.3	50.5	10.0	36.2	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.4	43.0	8.1	42.3	5.4	* 44	8.4	42.0
Max Q Clear Time (g_c+I1), s	7.4	14.4	5.8	20.4	7.4	23.2	10.4	7.2
Green Ext Time (p_c), s	0.0	5.0	0.0	8.7	0.0	6.3	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	94.7
HCM 6th LOS	F

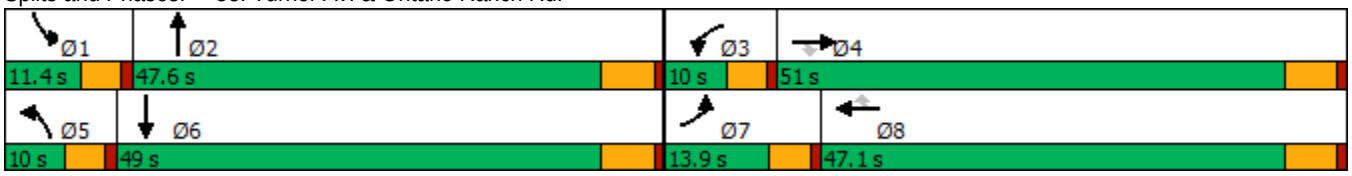
Notes

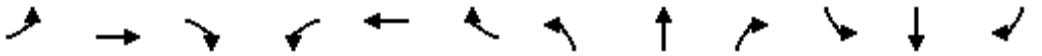
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	60	1578	44	35	804	14	29	8	30	8
Future Volume (vph)	60	1578	44	35	804	14	29	8	30	8
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	13.9	51.0	51.0	10.0	47.1	47.1	10.0	47.6	11.4	49.0
Total Split (%)	11.6%	42.5%	42.5%	8.3%	39.3%	39.3%	8.3%	39.7%	9.5%	40.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	7.7	57.1	57.1	5.6	50.5	50.5	5.6	14.9	6.2	15.6
Actuated g/C Ratio	0.09	0.68	0.68	0.07	0.60	0.60	0.07	0.18	0.07	0.19
v/c Ratio	0.45	0.74	0.04	0.35	0.43	0.02	0.30	0.18	0.28	0.12
Control Delay	52.3	22.4	0.1	54.9	17.7	0.0	53.3	12.8	50.9	14.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	22.4	0.1	54.9	17.7	0.0	53.3	12.8	50.9	14.4
LOS	D	C	A	D	B	A	D	B	D	B
Approach Delay		22.9			19.0			27.4		30.9
Approach LOS		C			B			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 83.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 22.0	Intersection LOS: C
Intersection Capacity Utilization 75.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1578	44	35	804	14	29	8	44	30	8	28
Future Volume (veh/h)	60	1578	44	35	804	14	29	8	44	30	8	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	66	1734	36	38	884	12	32	9	29	33	9	17
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	82	1888	842	57	1836	819	51	47	151	52	71	134
Arrive On Green	0.05	0.55	0.55	0.04	0.54	0.54	0.03	0.13	0.13	0.03	0.13	0.13
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	372	1199	1619	557	1053
Grp Volume(v), veh/h	66	1734	36	38	884	12	32	0	38	33	0	26
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	0	1571	1619	0	1610
Q Serve(g_s), s	3.3	37.7	0.9	1.9	13.2	0.3	1.6	0.0	1.8	1.6	0.0	1.2
Cycle Q Clear(g_c), s	3.3	37.7	0.9	1.9	13.2	0.3	1.6	0.0	1.8	1.6	0.0	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.76	1.00		0.65
Lane Grp Cap(c), veh/h	82	1888	842	57	1836	819	51	0	198	52	0	205
V/C Ratio(X)	0.81	0.92	0.04	0.66	0.48	0.01	0.63	0.00	0.19	0.63	0.00	0.13
Avail Cap(c_a), veh/h	184	1888	842	107	1836	819	107	0	802	134	0	850
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.5	16.7	8.4	39.0	11.8	8.9	39.2	0.0	32.0	39.1	0.0	31.7
Incr Delay (d2), s/veh	6.9	8.7	0.1	4.8	0.9	0.0	4.6	0.0	0.5	4.6	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	13.9	0.3	0.8	4.4	0.1	0.7	0.0	0.7	0.7	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	25.3	8.5	43.9	12.7	8.9	43.8	0.0	32.5	43.8	0.0	32.0
LnGrp LOS	D	C	A	D	B	A	D	A	C	D	A	C
Approach Vol, veh/h		1836			934			70			59	
Approach Delay, s/veh		25.7			14.0			37.6			38.6	
Approach LOS		C			B			D			D	

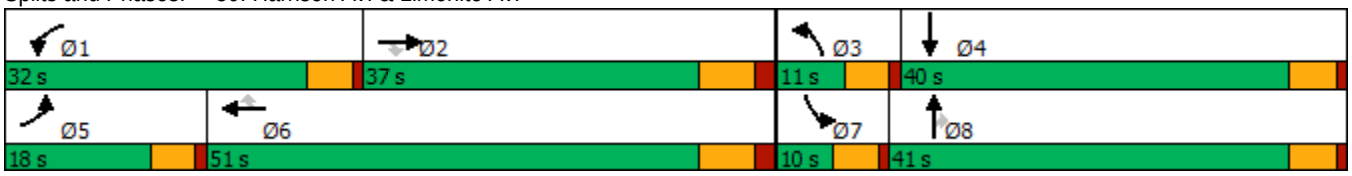
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	16.1	7.5	51.0	7.2	16.2	8.7	49.8
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	6.8	41.8	5.4	45.2	5.4	43.2	9.3	41.3
Max Q Clear Time (g_c+I1), s	3.6	3.8	3.9	39.7	3.6	3.2	5.3	15.2
Green Ext Time (p_c), s	0.0	0.2	0.0	4.4	0.0	0.1	0.0	6.2

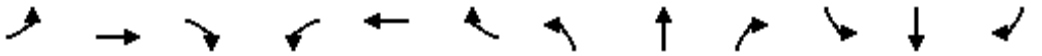
Intersection Summary	
HCM 6th Ctrl Delay	22.5
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	87	1200	61	232	766	6	40	49	173	18	51
Future Volume (vph)	87	1200	61	232	766	6	40	49	173	18	51
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	18.0	37.0	37.0	32.0	51.0	51.0	11.0	41.0	41.0	10.0	40.0
Total Split (%)	15.0%	30.8%	30.8%	26.7%	42.5%	42.5%	9.2%	34.2%	34.2%	8.3%	33.3%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	8.3	28.1	28.1	15.2	38.1	38.1	5.9	14.1	14.1	5.4	11.6
Actuated g/C Ratio	0.10	0.35	0.35	0.19	0.48	0.48	0.07	0.18	0.18	0.07	0.15
v/c Ratio	0.47	0.67	0.09	0.69	0.31	0.01	0.31	0.15	0.41	0.15	0.31
Control Delay	48.3	27.0	0.3	44.1	16.6	0.0	50.1	30.9	8.4	48.8	26.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.3	27.0	0.3	44.1	16.6	0.0	50.1	30.9	8.4	48.8	26.5
LOS	D	C	A	D	B	A	D	C	A	D	C
Approach Delay		27.2			22.9			18.9			30.3
Approach LOS		C			C			B			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 79.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 24.9	Intersection LOS: C
Intersection Capacity Utilization 59.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 59: Harrison Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	1200	61	232	766	6	40	49	173	18	51	35
Future Volume (veh/h)	87	1200	61	232	766	6	40	49	173	18	51	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	89	1224	57	237	782	4	41	50	92	18	52	27
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	115	1799	558	287	2292	711	74	219	183	39	113	59
Arrive On Green	0.06	0.35	0.35	0.16	0.44	0.44	0.04	0.12	0.12	0.02	0.10	0.10
Sat Flow, veh/h	1810	5187	1610	1810	5187	1610	1810	1900	1588	1810	1178	612
Grp Volume(v), veh/h	89	1224	57	237	782	4	41	50	92	18	0	79
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1610	1810	1900	1588	1810	0	1790
Q Serve(g_s), s	3.0	12.6	1.5	7.9	6.2	0.1	1.4	1.5	3.4	0.6	0.0	2.6
Cycle Q Clear(g_c), s	3.0	12.6	1.5	7.9	6.2	0.1	1.4	1.5	3.4	0.6	0.0	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	115	1799	558	287	2292	711	74	219	183	39	0	172
V/C Ratio(X)	0.77	0.68	0.10	0.83	0.34	0.01	0.56	0.23	0.50	0.46	0.00	0.46
Avail Cap(c_a), veh/h	377	2495	775	783	3660	1136	174	1088	909	145	0	996
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.8	17.4	13.8	25.4	11.4	9.7	29.4	25.1	25.9	30.2	0.0	26.6
Incr Delay (d2), s/veh	4.1	0.5	0.1	2.3	0.1	0.0	2.4	0.5	2.1	3.2	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.1	0.5	3.1	1.8	0.0	0.6	0.6	1.3	0.3	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.8	17.9	13.9	27.7	11.5	9.7	31.8	25.6	28.0	33.3	0.0	28.5
LnGrp LOS	C	B	B	C	B	A	C	C	C	C	A	C
Approach Vol, veh/h		1370			1023			183			97	
Approach Delay, s/veh		18.7			15.3			28.2			29.4	
Approach LOS		B			B			C			C	

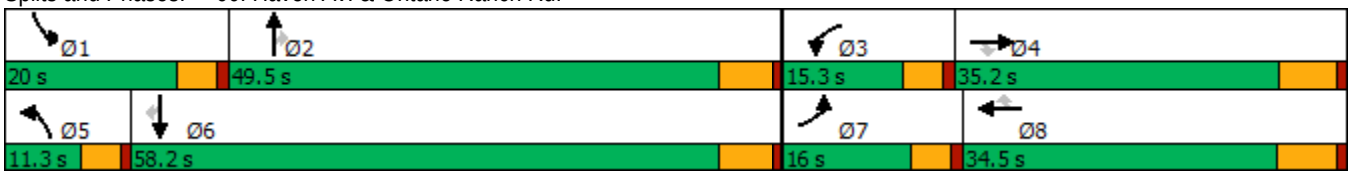
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	28.6	7.5	11.3	9.0	34.6	6.3	12.5
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	27.0	30.0	6.0	34.7	13.0	44.0	5.0	35.7
Max Q Clear Time (g_c+I1), s	9.9	14.6	3.4	4.6	5.0	8.2	2.6	5.4
Green Ext Time (p_c), s	0.2	7.0	0.0	0.3	0.0	5.4	0.0	0.5

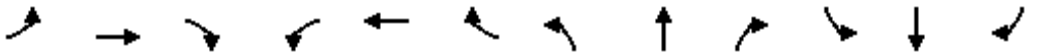
Intersection Summary	
HCM 6th Ctrl Delay	18.4
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	1341	74	68	710	144	32	99	26	186	291	131
Future Volume (vph)	147	1341	74	68	710	144	32	99	26	186	291	131
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	16.0	35.2	35.2	15.3	34.5	34.5	11.3	49.5	49.5	20.0	58.2	58.2
Total Split (%)	13.3%	29.3%	29.3%	12.8%	28.8%	28.8%	9.4%	41.3%	41.3%	16.7%	48.5%	48.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	11.8	35.5	35.5	8.0	28.9	28.9	6.1	16.0	16.0	15.3	25.7	25.7
Actuated g/C Ratio	0.13	0.39	0.39	0.09	0.32	0.32	0.07	0.18	0.18	0.17	0.29	0.29
v/c Ratio	0.73	0.72	0.11	0.50	0.67	0.25	0.31	0.32	0.07	0.71	0.59	0.25
Control Delay	62.1	30.4	0.3	55.4	33.2	6.6	53.1	34.8	0.3	53.9	32.3	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.1	30.4	0.3	55.4	33.2	6.6	53.1	34.8	0.3	53.9	32.3	5.3
LOS	E	C	A	E	C	A	D	C	A	D	C	A
Approach Delay		31.9			30.7			32.8			33.1	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 90	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 31.8	Intersection LOS: C
Intersection Capacity Utilization 69.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	1341	74	68	710	144	32	99	26	186	291	131
Future Volume (veh/h)	147	1341	74	68	710	144	32	99	26	186	291	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	153	1397	46	71	740	76	33	103	13	194	303	63
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	185	2015	625	88	1199	535	53	225	191	229	421	357
Arrive On Green	0.11	0.41	0.41	0.05	0.35	0.35	0.03	0.13	0.13	0.14	0.23	0.23
Sat Flow, veh/h	1619	4914	1525	1619	3420	1525	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	153	1397	46	71	740	76	33	103	13	194	303	63
Grp Sat Flow(s),veh/h/ln	1619	1638	1525	1619	1710	1525	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	7.4	18.7	1.5	3.5	14.3	2.7	1.6	4.2	0.6	9.3	12.4	2.6
Cycle Q Clear(g_c), s	7.4	18.7	1.5	3.5	14.3	2.7	1.6	4.2	0.6	9.3	12.4	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	185	2015	625	88	1199	535	53	225	191	229	421	357
V/C Ratio(X)	0.83	0.69	0.07	0.80	0.62	0.14	0.63	0.46	0.07	0.85	0.72	0.18
Avail Cap(c_a), veh/h	231	2015	625	217	1199	535	136	985	834	312	1181	1001
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.6	19.4	14.3	37.3	21.5	17.7	38.2	32.4	30.8	33.5	28.2	24.5
Incr Delay (d2), s/veh	15.0	2.0	0.2	6.3	2.4	0.6	4.5	1.4	0.1	11.5	2.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	6.4	0.5	1.4	5.3	0.9	0.7	1.8	0.2	4.2	5.2	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.6	21.4	14.6	43.6	23.9	18.3	42.7	33.9	31.0	44.9	30.5	24.7
LnGrp LOS	D	C	B	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1596			887			149			560	
Approach Delay, s/veh		23.9			25.0			35.6			34.9	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	15.8	9.0	39.3	7.2	24.5	13.7	34.5
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	15.4	43.7	10.7	* 29	6.7	52.4	11.4	28.0
Max Q Clear Time (g_c+I1), s	11.3	6.2	5.5	20.7	3.6	14.4	9.4	16.3
Green Ext Time (p_c), s	0.1	0.5	0.0	5.2	0.0	1.9	0.0	3.6

Intersection Summary	
HCM 6th Ctrl Delay	26.7
HCM 6th LOS	C

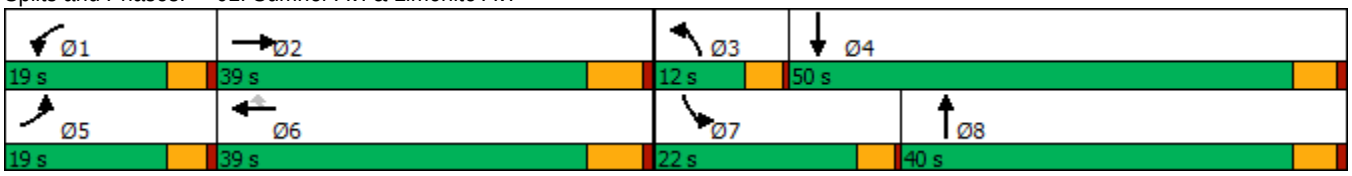
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	239	1001	237	747	50	54	238	129	492
Future Volume (vph)	239	1001	237	747	50	54	238	129	492
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	19.0	39.0	19.0	39.0	39.0	12.0	40.0	22.0	50.0
Total Split (%)	15.8%	32.5%	15.8%	32.5%	32.5%	10.0%	33.3%	18.3%	41.7%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	10.5	27.1	10.4	27.1	27.1	6.5	19.3	10.9	26.2
Actuated g/C Ratio	0.12	0.31	0.12	0.31	0.31	0.07	0.22	0.12	0.30
v/c Ratio	0.59	0.72	0.59	0.49	0.09	0.42	0.49	0.60	0.69
Control Delay	46.8	31.6	46.8	27.8	0.3	55.8	22.9	52.4	29.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.8	31.6	46.8	27.8	0.3	55.8	22.9	52.4	29.6
LOS	D	C	D	C	A	E	C	D	C
Approach Delay		34.3		30.8			26.9		33.1
Approach LOS		C		C			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 88.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 32.1	Intersection LOS: C
Intersection Capacity Utilization 68.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 61: Sumner Av. & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	239	1001	103	237	747	50	54	238	156	129	492	217
Future Volume (veh/h)	239	1001	103	237	747	50	54	238	156	129	492	217
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	246	1032	94	244	770	44	56	245	90	133	507	126
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	351	1534	139	349	1641	509	71	495	177	171	706	174
Arrive On Green	0.10	0.32	0.32	0.10	0.32	0.32	0.04	0.19	0.19	0.09	0.25	0.25
Sat Flow, veh/h	3510	4838	440	3510	5187	1610	1810	2593	924	1810	2868	709
Grp Volume(v), veh/h	246	737	389	244	770	44	56	168	167	133	318	315
Grp Sat Flow(s),veh/h/ln	1755	1729	1820	1755	1729	1610	1810	1805	1713	1810	1805	1772
Q Serve(g_s), s	4.4	12.1	12.1	4.4	7.8	1.3	2.0	5.4	5.7	4.7	10.5	10.6
Cycle Q Clear(g_c), s	4.4	12.1	12.1	4.4	7.8	1.3	2.0	5.4	5.7	4.7	10.5	10.6
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.54	1.00		0.40
Lane Grp Cap(c), veh/h	351	1096	577	349	1641	509	71	345	327	171	444	436
V/C Ratio(X)	0.70	0.67	0.67	0.70	0.47	0.09	0.79	0.49	0.51	0.78	0.72	0.72
Avail Cap(c_a), veh/h	779	1747	919	779	2620	813	222	967	917	499	1243	1221
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.5	19.4	19.4	28.5	17.9	15.7	31.1	23.6	23.7	28.9	22.5	22.6
Incr Delay (d2), s/veh	1.0	0.7	1.4	1.0	0.2	0.1	7.1	0.8	0.9	2.9	1.6	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	4.1	4.5	1.7	2.6	0.4	0.9	2.1	2.1	2.0	4.1	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.4	20.1	20.8	29.4	18.1	15.8	38.2	24.4	24.6	31.8	24.2	24.3
LnGrp LOS	C	C	C	C	B	B	D	C	C	C	C	C
Approach Vol, veh/h		1372			1058			391			766	
Approach Delay, s/veh		22.0			20.6			26.5			25.5	
Approach LOS		C			C			C			C	

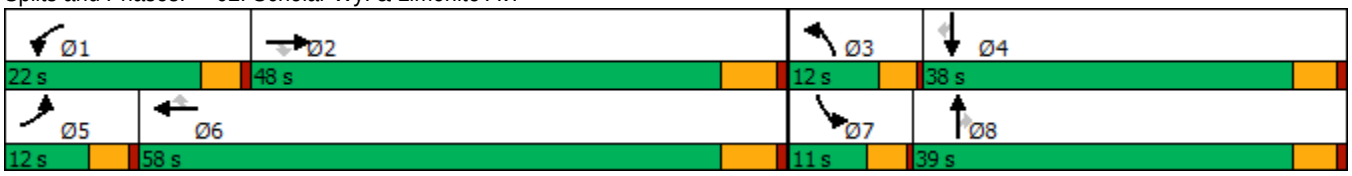
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	26.7	6.6	21.1	11.0	26.7	10.2	17.5
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	14.5	33.0	8.0	45.0	14.5	33.0	18.0	35.0
Max Q Clear Time (g_c+I1), s	6.4	14.1	4.0	12.6	6.4	9.8	6.7	7.7
Green Ext Time (p_c), s	0.2	6.5	0.0	2.9	0.2	5.0	0.1	1.4

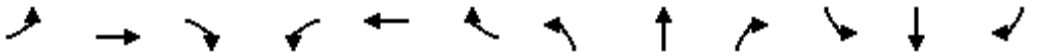
Intersection Summary	
HCM 6th Ctrl Delay	22.8
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	1203	47	137	963	62	48	105	140	32	147	33
Future Volume (vph)	44	1203	47	137	963	62	48	105	140	32	147	33
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	12.0	48.0	48.0	22.0	58.0	58.0	12.0	39.0	39.0	11.0	38.0	38.0
Total Split (%)	10.0%	40.0%	40.0%	18.3%	48.3%	48.3%	10.0%	32.5%	32.5%	9.2%	31.7%	31.7%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.1	42.3	42.3	11.1	52.0	52.0	6.3	12.9	12.9	5.6	12.4	12.4
Actuated g/C Ratio	0.07	0.48	0.48	0.13	0.59	0.59	0.07	0.15	0.15	0.06	0.14	0.14
v/c Ratio	0.38	0.74	0.06	0.64	0.48	0.07	0.40	0.40	0.41	0.30	0.31	0.10
Control Delay	54.3	25.3	0.1	53.3	15.5	1.9	54.5	39.5	9.4	53.0	36.4	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.3	25.3	0.1	53.3	15.5	1.9	54.5	39.5	9.4	53.0	36.4	0.6
LOS	D	C	A	D	B	A	D	D	A	D	D	A
Approach Delay		25.4			19.3			27.6			33.4	
Approach LOS		C			B			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 88.1	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 23.8	Intersection LOS: C
Intersection Capacity Utilization 67.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	1203	47	137	963	62	48	105	140	32	147	33
Future Volume (veh/h)	44	1203	47	137	963	62	48	105	140	32	147	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	47	1280	36	146	1024	42	51	112	69	34	156	28
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	64	1663	742	186	1907	851	67	210	178	51	367	160
Arrive On Green	0.04	0.46	0.46	0.10	0.53	0.53	0.04	0.11	0.11	0.03	0.10	0.10
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	1900	1610	1810	3610	1569
Grp Volume(v), veh/h	47	1280	36	146	1024	42	51	112	69	34	156	28
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1900	1610	1810	1805	1569
Q Serve(g_s), s	1.7	19.4	0.8	5.2	12.2	0.8	1.8	3.6	2.6	1.2	2.7	1.1
Cycle Q Clear(g_c), s	1.7	19.4	0.8	5.2	12.2	0.8	1.8	3.6	2.6	1.2	2.7	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	64	1663	742	186	1907	851	67	210	178	51	367	160
V/C Ratio(X)	0.74	0.77	0.05	0.79	0.54	0.05	0.76	0.53	0.39	0.67	0.42	0.18
Avail Cap(c_a), veh/h	207	2316	1033	484	2868	1279	221	987	836	194	1820	791
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.3	14.7	9.7	28.7	10.2	7.5	31.2	27.5	27.1	31.5	27.6	26.9
Incr Delay (d2), s/veh	6.1	1.1	0.0	2.8	0.2	0.0	6.5	1.6	1.0	5.5	0.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	6.2	0.3	2.1	3.5	0.2	0.9	1.6	1.0	0.6	1.1	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.4	15.8	9.8	31.4	10.4	7.5	37.8	29.1	28.1	37.0	28.2	27.3
LnGrp LOS	D	B	A	C	B	A	D	C	C	D	C	C
Approach Vol, veh/h		1363			1212			232			218	
Approach Delay, s/veh		16.4			12.8			30.7			29.4	
Approach LOS		B			B			C			C	

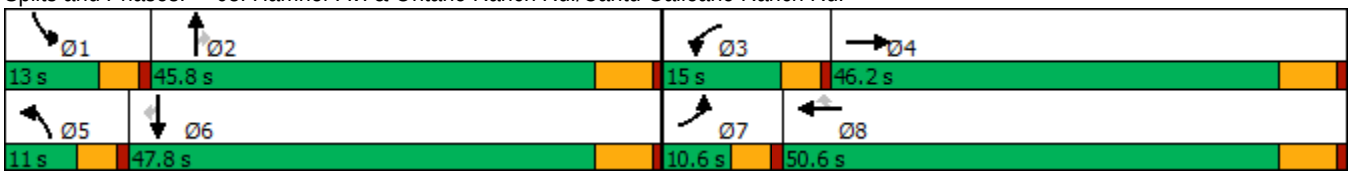
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	36.2	6.4	11.7	6.8	40.6	5.8	12.2
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	17.5	42.0	8.0	33.0	7.5	52.0	7.0	34.0
Max Q Clear Time (g_c+I1), s	7.2	21.4	3.8	4.7	3.7	14.2	3.2	5.6
Green Ext Time (p_c), s	0.1	8.8	0.0	0.8	0.0	7.9	0.0	0.6

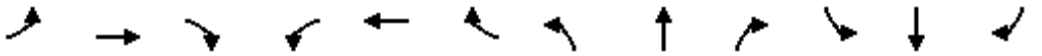
Intersection Summary	
HCM 6th Ctrl Delay	17.0
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	114	1233	666	623	123	223	432	268	517	912	128
Future Volume (vph)	114	1233	666	623	123	223	432	268	517	912	128
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	10.6	46.2	15.0	50.6	50.6	11.0	45.8	45.8	13.0	47.8	47.8
Total Split (%)	8.8%	38.5%	12.5%	42.2%	42.2%	9.2%	38.2%	38.2%	10.8%	39.8%	39.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.0	36.9	10.5	41.4	41.4	6.5	34.8	34.8	8.5	36.9	36.9
Actuated g/C Ratio	0.05	0.33	0.09	0.37	0.37	0.06	0.31	0.31	0.08	0.33	0.33
v/c Ratio	0.75	0.80	2.53	0.52	0.20	1.37	0.30	0.50	2.44	0.85	0.23
Control Delay	82.9	36.9	721.9	29.9	5.1	242.3	30.1	20.0	682.2	43.7	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.9	36.9	721.9	29.9	5.1	242.3	30.1	20.0	682.2	43.7	8.2
LOS	F	D	F	C	A	F	C	B	F	D	A
Approach Delay		40.1		354.2			78.4			253.0	
Approach LOS		D		F			E			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.53	
Intersection Signal Delay: 186.3	Intersection LOS: F
Intersection Capacity Utilization 99.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	1233	302	666	623	123	223	432	268	517	912	128
Future Volume (veh/h)	114	1233	302	666	623	123	223	432	268	517	912	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	119	1284	258	694	649	94	232	450	200	539	950	78
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	166	1646	329	288	1221	545	177	1503	466	233	1110	495
Arrive On Green	0.06	0.32	0.32	0.10	0.36	0.36	0.06	0.31	0.31	0.08	0.32	0.32
Sat Flow, veh/h	2956	5213	1043	2956	3420	1525	2956	4914	1524	2956	3420	1524
Grp Volume(v), veh/h	119	1143	399	694	649	94	232	450	200	539	950	78
Grp Sat Flow(s),veh/h/ln	1478	1548	1612	1478	1710	1525	1478	1638	1524	1478	1710	1524
Q Serve(g_s), s	4.2	23.9	24.0	10.4	16.1	4.5	6.4	7.5	11.2	8.4	27.7	3.9
Cycle Q Clear(g_c), s	4.2	23.9	24.0	10.4	16.1	4.5	6.4	7.5	11.2	8.4	27.7	3.9
Prop In Lane	1.00		0.65	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	166	1466	509	288	1221	545	177	1503	466	233	1110	495
V/C Ratio(X)	0.72	0.78	0.78	2.41	0.53	0.17	1.31	0.30	0.43	2.32	0.86	0.16
Avail Cap(c_a), veh/h	166	1739	604	288	1422	634	177	1822	565	233	1332	594
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.6	33.2	33.2	48.2	27.2	23.5	50.2	28.3	29.6	49.2	33.7	25.7
Incr Delay (d2), s/veh	12.0	2.0	5.6	645.3	0.4	0.1	173.7	0.1	0.6	606.4	4.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	8.5	9.4	29.5	6.2	1.6	6.5	2.8	3.9	22.6	11.5	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.5	35.1	38.9	693.5	27.6	23.7	223.9	28.4	30.2	655.6	38.6	25.8
LnGrp LOS	E	D	D	F	C	C	F	C	C	F	D	C
Approach Vol, veh/h		1661			1437			882			1567	
Approach Delay, s/veh		37.9			348.9			80.3			250.2	
Approach LOS		D			F			F			F	

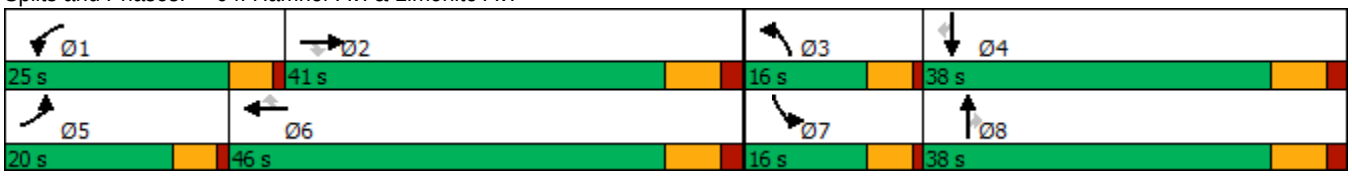
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	38.9	15.0	39.9	11.0	40.9	10.6	44.3
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	8.4	39.6	10.4	40.0	6.4	41.6	6.0	44.4
Max Q Clear Time (g_c+I1), s	10.4	13.2	12.4	26.0	8.4	29.7	6.2	18.1
Green Ext Time (p_c), s	0.0	3.4	0.0	7.7	0.0	4.8	0.0	4.4

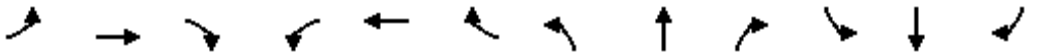
Intersection Summary	
HCM 6th Ctrl Delay	185.2
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	321	870	111	409	613	165	229	643	199	208	694	246
Future Volume (vph)	321	870	111	409	613	165	229	643	199	208	694	246
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	20.0	41.0	41.0	25.0	46.0	46.0	16.0	38.0	38.0	16.0	38.0	38.0
Total Split (%)	16.7%	34.2%	34.2%	20.8%	38.3%	38.3%	13.3%	31.7%	31.7%	13.3%	31.7%	31.7%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	13.2	30.1	30.1	16.5	33.3	33.3	10.0	26.9	26.9	9.7	26.5	26.5
Actuated g/C Ratio	0.12	0.28	0.28	0.15	0.31	0.31	0.09	0.25	0.25	0.09	0.25	0.25
v/c Ratio	0.77	0.62	0.21	0.79	0.57	0.28	0.72	0.51	0.37	0.68	0.56	0.44
Control Delay	60.2	36.6	5.5	56.5	33.9	5.6	63.0	37.0	6.9	61.1	38.0	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.2	36.6	5.5	56.5	33.9	5.6	63.0	37.0	6.9	61.1	38.0	6.9
LOS	E	D	A	E	C	A	E	D	A	E	D	A
Approach Delay		39.8			37.8			37.0			35.5	
Approach LOS		D			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.6	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 37.6	Intersection LOS: D
Intersection Capacity Utilization 70.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 64: Hamner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	321	870	111	409	613	165	229	643	199	208	694	246
Future Volume (veh/h)	321	870	111	409	613	165	229	643	199	208	694	246
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	331	897	93	422	632	125	236	663	121	214	715	191
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	404	1428	442	498	1090	479	307	1287	391	286	1254	382
Arrive On Green	0.12	0.28	0.28	0.14	0.30	0.30	0.09	0.25	0.25	0.08	0.24	0.24
Sat Flow, veh/h	3510	5187	1607	3510	3610	1587	3510	5187	1577	3510	5187	1580
Grp Volume(v), veh/h	331	897	93	422	632	125	236	663	121	214	715	191
Grp Sat Flow(s),veh/h/ln	1755	1729	1607	1755	1805	1587	1755	1729	1577	1755	1729	1580
Q Serve(g_s), s	8.7	14.4	4.2	11.1	14.0	5.7	6.2	10.4	5.9	5.6	11.5	9.9
Cycle Q Clear(g_c), s	8.7	14.4	4.2	11.1	14.0	5.7	6.2	10.4	5.9	5.6	11.5	9.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	404	1428	442	498	1090	479	307	1287	391	286	1254	382
V/C Ratio(X)	0.82	0.63	0.21	0.85	0.58	0.26	0.77	0.52	0.31	0.75	0.57	0.50
Avail Cap(c_a), veh/h	556	1862	577	741	1487	653	408	1698	516	408	1698	517
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	30.1	26.4	39.6	28.0	25.0	42.3	30.7	29.0	42.6	31.6	31.0
Incr Delay (d2), s/veh	4.8	1.0	0.5	3.9	1.0	0.6	4.2	0.7	1.0	2.3	0.9	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	5.7	1.6	4.8	5.8	2.1	2.8	4.2	2.2	2.4	4.6	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.8	31.1	26.9	43.6	29.0	25.7	46.4	31.4	29.9	44.9	32.4	33.1
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1321			1179			1020			1120	
Approach Delay, s/veh		34.5			33.9			34.7			34.9	
Approach LOS		C			C			C			C	

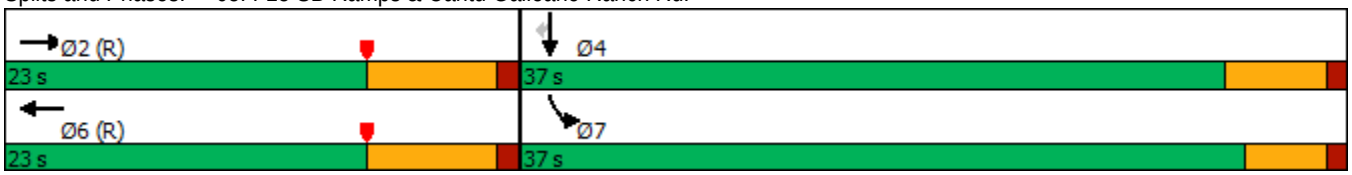
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.4	33.1	13.3	29.9	15.9	35.6	12.7	30.5
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	20.0	34.0	11.0	31.0	15.0	39.0	11.0	31.0
Max Q Clear Time (g_c+I1), s	13.1	16.4	8.2	13.5	10.7	16.0	7.6	12.4
Green Ext Time (p_c), s	0.3	9.5	0.1	8.4	0.2	8.3	0.1	7.7

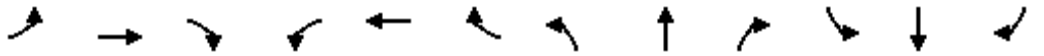
Intersection Summary	
HCM 6th Ctrl Delay	34.5
HCM 6th LOS	C

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1560	563	518	480	333	0	1208
Future Volume (vph)	1560	563	518	480	333	0	1208
Turn Type	NA	Free	NA	Free	Prot	NA	Perm
Protected Phases	2		6		7	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		7	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		9.6	10.5	10.5
Total Split (s)	23.0		23.0		37.0	37.0	37.0
Total Split (%)	38.3%		38.3%		61.7%	61.7%	61.7%
Yellow Time (s)	5.8		5.8		3.6	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8		6.8		4.6	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Min		None	Min	Min
Act Effct Green (s)	16.2	60.0	16.2	60.0	32.4	31.5	31.5
Actuated g/C Ratio	0.27	1.00	0.27	1.00	0.54	0.52	0.52
v/c Ratio	1.15	0.36	0.55	0.31	0.33	0.79	0.75
Control Delay	99.6	0.6	17.1	1.1	9.0	19.6	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	99.6	0.6	17.1	1.1	9.0	19.6	17.2
LOS	F	A	B	A	A	B	B
Approach Delay	73.4		9.4			16.6	
Approach LOS	E		A			B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 53 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.15	
Intersection Signal Delay: 40.9	Intersection LOS: D
Intersection Capacity Utilization 74.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1560	563	0	518	480	0	0	0	333	0	1208
Future Volume (veh/h)	0	1560	563	0	518	480	0	0	0	333	0	1208
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1608	0	0	534	0				229	0	1036
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2150		0	1496					716	0	1274
Arrive On Green	0.00	0.41	0.00	0.00	0.41	0.00				0.40	0.00	0.40
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1608	0	0	534	0				229	0	1036
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	15.8	0.0	0.0	6.1	0.0				5.3	0.0	17.2
Cycle Q Clear(g_c), s	0.0	15.8	0.0	0.0	6.1	0.0				5.3	0.0	17.2
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2150		0	1496					716	0	1274
V/C Ratio(X)	0.00	0.75		0.00	0.36					0.32	0.00	0.81
Avail Cap(c_a), veh/h	0	2150		0	1496					977	0	1739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.09	0.00	0.00	0.95	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	14.9	0.0	0.0	12.1	0.0				12.5	0.0	16.2
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.6	0.0				0.3	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.7	0.0	0.0	2.0	0.0				1.8	0.0	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	15.1	0.0	0.0	12.7	0.0				12.8	0.0	18.4
LnGrp LOS	A	B		A	B					B	A	B
Approach Vol, veh/h		1608	A		534	A					1265	
Approach Delay, s/veh		15.1			12.7						17.4	
Approach LOS		B			B						B	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		31.7		28.3		31.7						
Change Period (Y+Rc), s		6.8		4.6		6.8						
Max Green Setting (Gmax), s		16.2		32.4		16.2						
Max Q Clear Time (g_c+I1), s		17.8		19.2		8.1						
Green Ext Time (p_c), s		0.0		4.5		1.9						

Intersection Summary	
HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

Notes

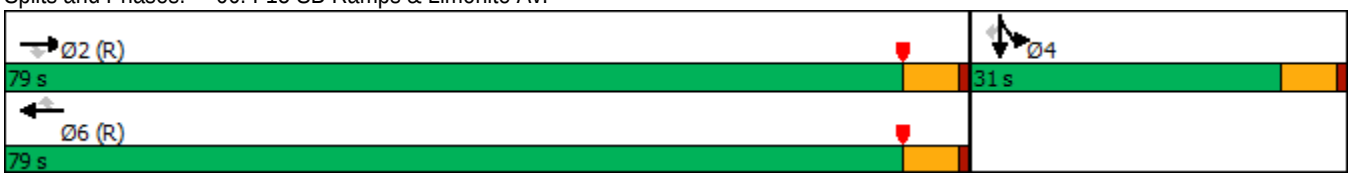
User approved volume balancing among the lanes for turning movement.

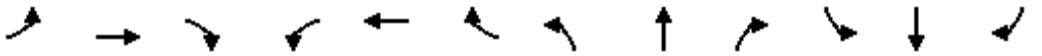
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1354	798	1202	589	148	1	493
Future Volume (vph)	1354	798	1202	589	148	1	493
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		4	4	
Permitted Phases		2		6			4
Detector Phase	2	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	36.5	36.5	23.5	23.5	23.5
Total Split (s)	79.0	79.0	79.0	79.0	31.0	31.0	31.0
Total Split (%)	71.8%	71.8%	71.8%	71.8%	28.2%	28.2%	28.2%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	Min	Min
Act Effct Green (s)	80.6	80.6	80.6	80.6	18.4	18.4	18.4
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.17	0.17	0.17
v/c Ratio	0.36	0.58	0.32	0.45	0.26	0.27	0.82
Control Delay	6.1	2.3	6.9	5.5	40.3	40.4	40.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.1	2.3	6.9	5.5	40.3	40.4	40.0
LOS	A	A	A	A	D	D	D
Approach Delay	4.7		6.4			40.1	
Approach LOS	A		A			D	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 10.3	Intersection LOS: B
Intersection Capacity Utilization 62.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	↰	↱↱
Traffic Volume (veh/h)	0	1354	798	0	1202	589	0	0	0	148	1	493
Future Volume (veh/h)	0	1354	798	0	1202	589	0	0	0	148	1	493
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1382	668	0	1227	601				152	0	269
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	4117	1278	0	4117	1278				385	0	342
Arrive On Green	0.00	0.79	0.79	0.00	1.00	1.00				0.11	0.00	0.11
Sat Flow, veh/h	0	5358	1610	0	5358	1610				3619	0	3220
Grp Volume(v), veh/h	0	1382	668	0	1227	601				152	0	269
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1610				1810	0	1610
Q Serve(g_s), s	0.0	8.2	16.1	0.0	0.0	0.0				4.3	0.0	9.0
Cycle Q Clear(g_c), s	0.0	8.2	16.1	0.0	0.0	0.0				4.3	0.0	9.0
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	4117	1278	0	4117	1278				385	0	342
V/C Ratio(X)	0.00	0.34	0.52	0.00	0.30	0.47				0.40	0.00	0.79
Avail Cap(c_a), veh/h	0	4117	1278	0	4117	1278				839	0	747
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.88	0.88				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	3.2	4.0	0.0	0.0	0.0				45.9	0.0	47.9
Incr Delay (d2), s/veh	0.0	0.2	1.5	0.0	0.2	1.1				0.2	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.8	3.7	0.0	0.1	0.4				1.9	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	3.4	5.5	0.0	0.2	1.1				46.1	0.0	49.5
LnGrp LOS	A	A	A	A	A	A				D	A	D
Approach Vol, veh/h		2050			1828						421	
Approach Delay, s/veh		4.1			0.5						48.2	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		92.8		17.2		92.8						
Change Period (Y+Rc), s		5.5		5.5		5.5						
Max Green Setting (Gmax), s		73.5		25.5		73.5						
Max Q Clear Time (g_c+I1), s		18.1		11.0		2.0						
Green Ext Time (p_c), s		9.8		0.7		8.1						

Intersection Summary												
HCM 6th Ctrl Delay			6.9									
HCM 6th LOS			A									

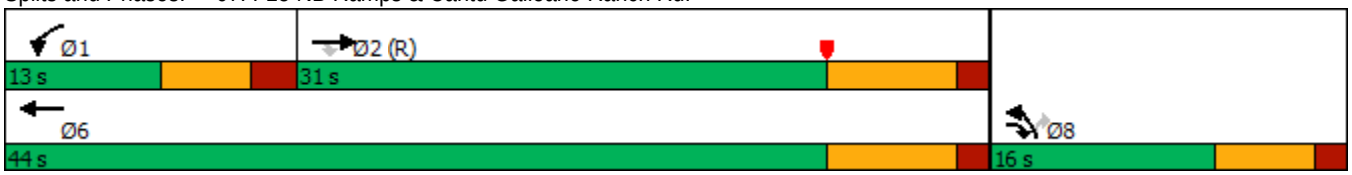
Notes

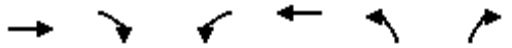
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	747	1182	335	782	220	262
Future Volume (vph)	747	1182	335	782	220	262
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	31.0	16.0	13.0	44.0	16.0	16.0
Total Split (%)	51.7%	26.7%	21.7%	73.3%	26.7%	26.7%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.0	6.0	7.3	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max
Act Effct Green (s)	23.7	41.0	7.0	36.7	10.0	10.0
Actuated g/C Ratio	0.40	0.68	0.12	0.61	0.17	0.17
v/c Ratio	0.38	1.12	0.87	0.26	0.53	0.42
Control Delay	11.7	76.0	50.0	5.6	18.3	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.7	76.0	50.0	5.6	18.3	8.5
LOS	B	E	D	A	B	A
Approach Delay	51.1			18.9	15.2	
Approach LOS	D			B	B	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 36.0	Intersection LOS: D
Intersection Capacity Utilization 92.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.





Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	747	1182	335	782	220	262
Future Volume (veh/h)	747	1182	335	782	220	262
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	786	1028	353	823	267	135
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2049	904	410	3173	603	268
Arrive On Green	0.66	0.66	0.12	0.61	0.17	0.17
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	786	1028	353	823	267	135
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	4.1	23.7	5.9	4.4	4.0	4.6
Cycle Q Clear(g_c), s	4.1	23.7	5.9	4.4	4.0	4.6
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2049	904	410	3173	603	268
V/C Ratio(X)	0.38	1.14	0.86	0.26	0.44	0.50
Avail Cap(c_a), veh/h	2049	904	410	3173	603	268
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.9	6.2	26.0	5.4	22.5	22.7
Incr Delay (d2), s/veh	0.0	63.0	20.6	0.0	2.3	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	20.5	3.3	0.9	1.7	2.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.9	69.1	46.6	5.4	24.8	29.3
LnGrp LOS	A	F	D	A	C	C
Approach Vol, veh/h	1814			1176	402	
Approach Delay, s/veh	42.2			17.8	26.4	
Approach LOS	D			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.0	31.0				44.0	16.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	7.0	23.7				36.7	10.0
Max Q Clear Time (g_c+I1), s	7.9	25.7				6.4	6.6
Green Ext Time (p_c), s	0.0	0.0				5.5	0.5

Intersection Summary	
HCM 6th Ctrl Delay	31.8
HCM 6th LOS	C

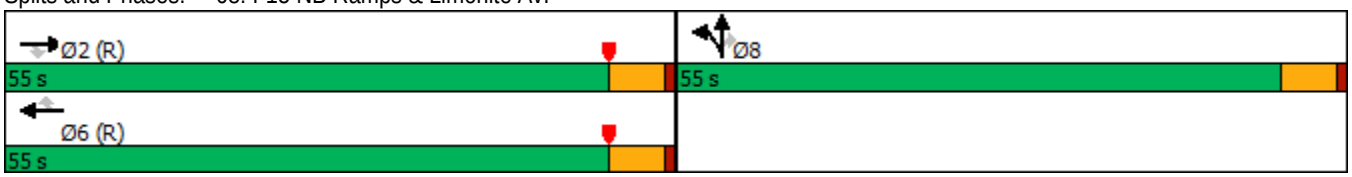
Notes

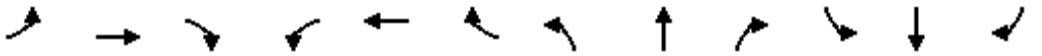
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	952	546	1281	213	509	2	870
Future Volume (vph)	952	546	1281	213	509	2	870
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		8	8	
Permitted Phases		2		6			8
Detector Phase	2	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	55.0	55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None
Act Effct Green (s)	57.7	57.7	57.7	57.7	41.3	41.3	41.3
Actuated g/C Ratio	0.52	0.52	0.52	0.52	0.38	0.38	0.38
v/c Ratio	0.35	0.50	0.48	0.23	0.40	0.40	0.78
Control Delay	16.4	5.9	18.3	3.0	26.0	26.1	31.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.4	5.9	18.3	3.0	26.0	26.1	31.2
LOS	B	A	B	A	C	C	C
Approach Delay	12.6		16.1			29.3	
Approach LOS	B		B			C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 19.1	Intersection LOS: B
Intersection Capacity Utilization 58.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱	↰	↕	↱↱			
Traffic Volume (veh/h)	0	952	546	0	1281	213	509	2	870	0	0	0
Future Volume (veh/h)	0	952	546	0	1281	213	509	2	870	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	0	962	552	0	1294	124	515	0	586			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	0	3458	1073	0	3458	1073	844	0	741			
Arrive On Green	0.00	1.00	1.00	0.00	0.67	0.67	0.23	0.00	0.23			
Sat Flow, veh/h	0	5358	1610	0	5358	1609	3619	0	3176			
Grp Volume(v), veh/h	0	962	552	0	1294	124	515	0	586			
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1609	1810	0	1588			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	12.2	3.1	14.0	0.0	19.1			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	12.2	3.1	14.0	0.0	19.1			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3458	1073	0	3458	1073	844	0	741			
V/C Ratio(X)	0.00	0.28	0.51	0.00	0.37	0.12	0.61	0.00	0.79			
Avail Cap(c_a), veh/h	0	3458	1073	0	3458	1073	1629	0	1429			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.94	0.94	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	8.1	6.6	37.7	0.0	39.6			
Incr Delay (d2), s/veh	0.0	0.2	1.7	0.0	0.3	0.2	0.7	0.0	1.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.5	0.0	3.9	1.0	6.0	0.0	7.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.2	1.7	0.0	8.5	6.8	38.4	0.0	41.6			
LnGrp LOS	A	A	A	A	A	A	D	A	D			
Approach Vol, veh/h		1514			1418			1101				
Approach Delay, s/veh		0.7			8.3			40.1				
Approach LOS		A			A			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		78.8				78.8		31.2				
Change Period (Y+Rc), s		5.5				5.5		5.5				
Max Green Setting (Gmax), s		49.5				49.5		49.5				
Max Q Clear Time (g_c+I1), s		2.0				14.2		21.1				
Green Ext Time (p_c), s		5.8				6.8		4.6				

Intersection Summary												
HCM 6th Ctrl Delay			14.1									
HCM 6th LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.

APPENDIX 8.3:

OPENING YEAR CUMULATIVE (2026) WITHOUT PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

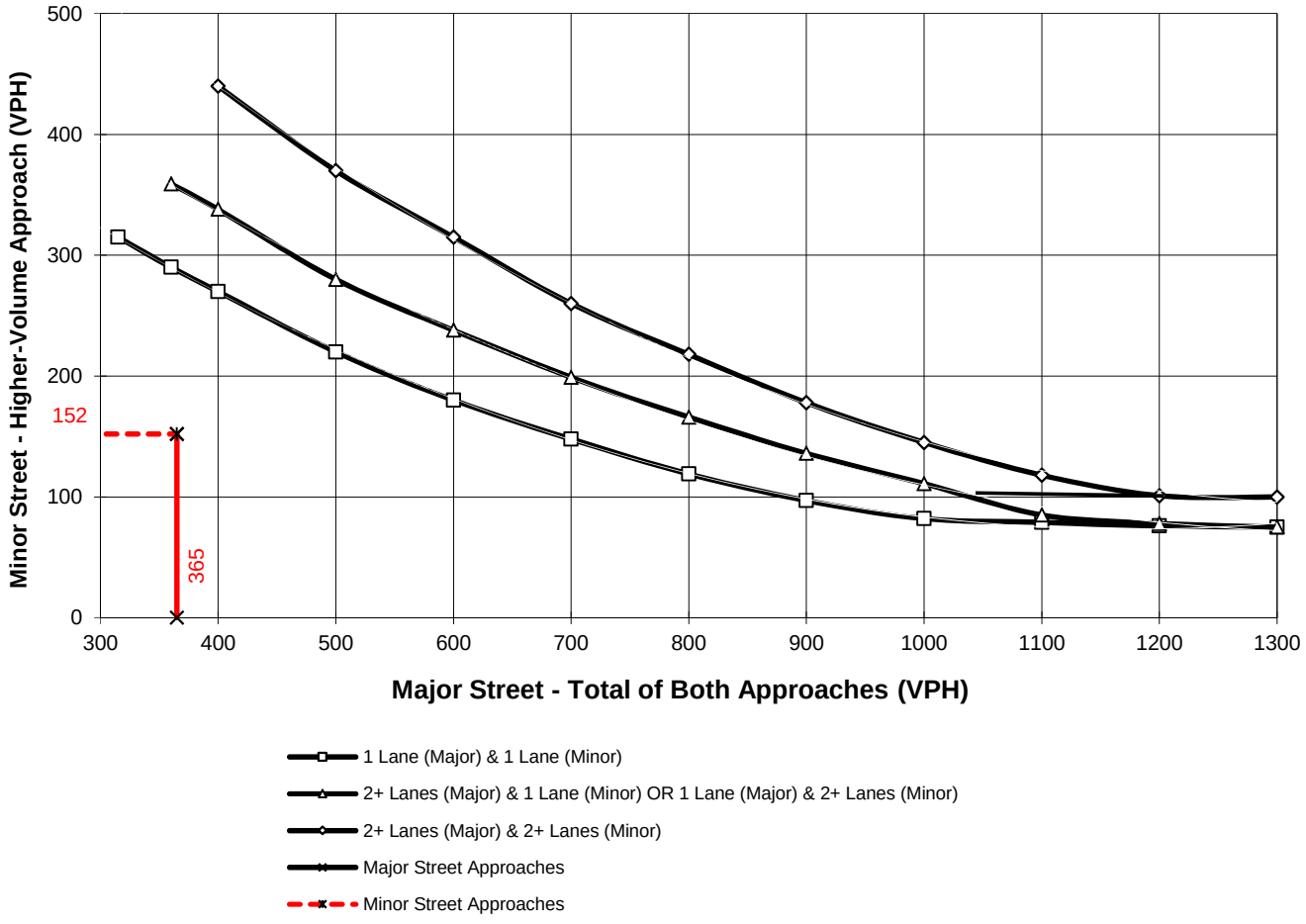
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Cumulative (2026) Without Project Conditions - Weekday AM Peak Hou**

Major Street Name = **Eucalyptus Av.** Total of Both Approaches (VPH) = **365**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Bon View Av.** High Volume Approach (VPH) = **152**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

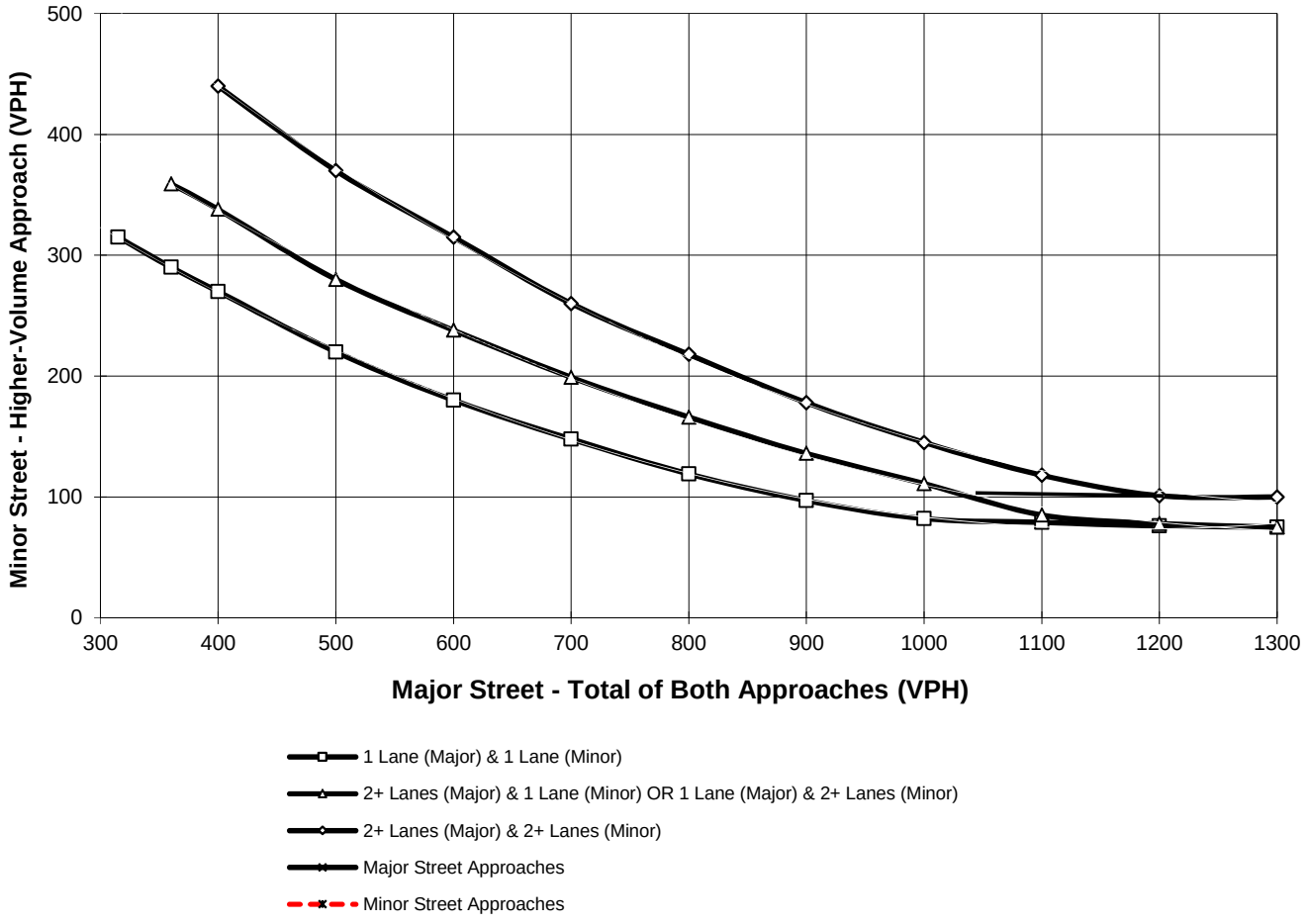
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Cumulative (2026) Without Project Conditions - Weekday AM Peak Hou**

Major Street Name = **Walker Av.**
Total of Both Approaches (VPH) = **212**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Eucalyptus Av.**
High Volume Approach (VPH) = **181**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

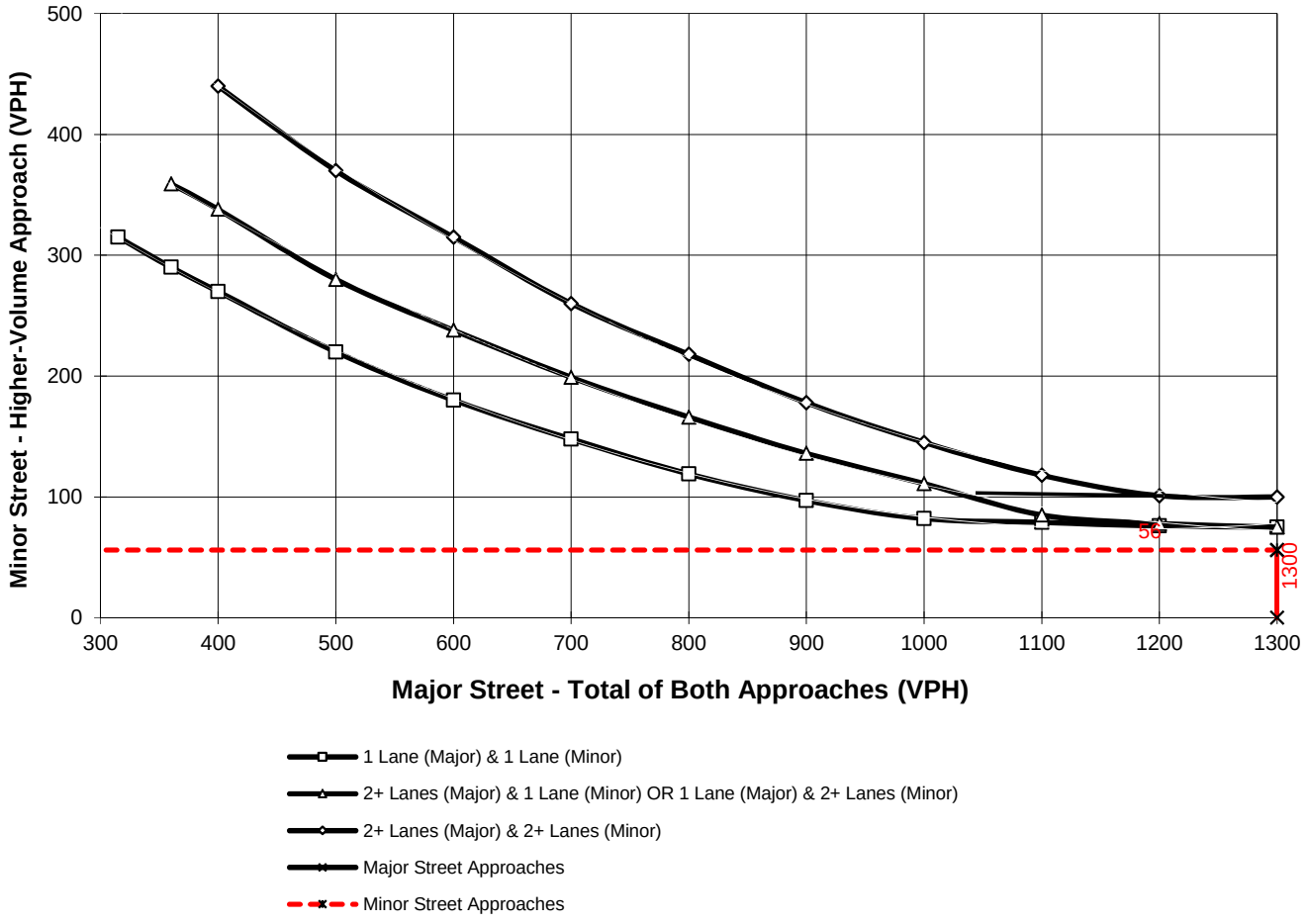
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Cumulative (2026) Without Project Conditions - Weekday AM Peak Hou**

Major Street Name = **Merrill Av.**
Total of Both Approaches (VPH) = **1491**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Baker Av.**
High Volume Approach (VPH) = **56**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

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APPENDIX 8.4:

OPENING YEAR CUMULATIVE (2026) WITH PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

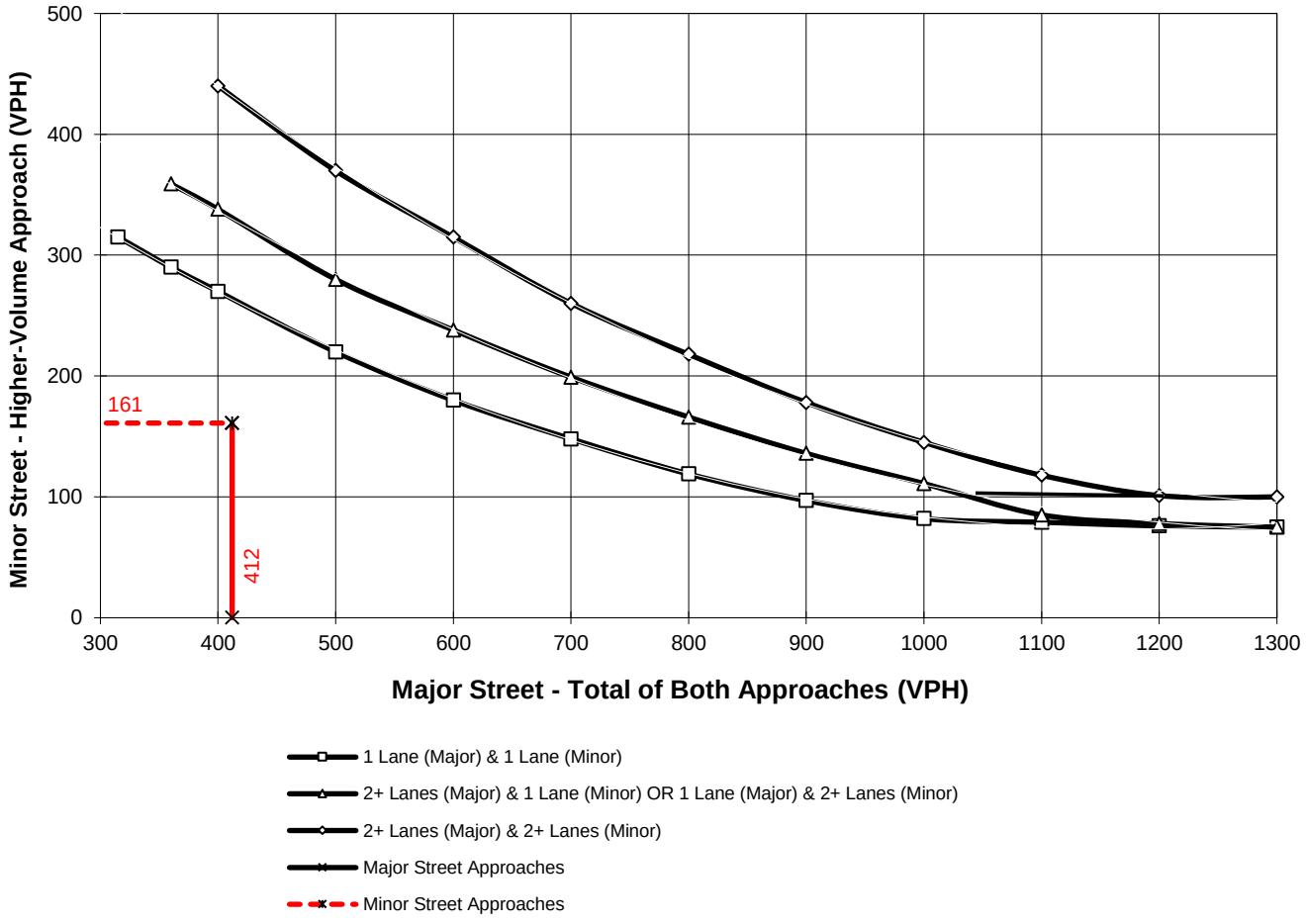
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Cumulative (2026) With Project Conditions - Weekday PM Peak Hour**

Major Street Name = **Eucalyptus Av.** Total of Both Approaches (VPH) = **412**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Bon View Av.** High Volume Approach (VPH) = **161**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

Opening Year Cumulative

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	**(2026) With Project**
				CALC CP	DATE 12/16/19
				CHK CP	DATE 12/16/19

Jurisdiction: **City of Ontario**
Major Street: **Eucalyptus Av.**
Minor Street: **Baker Av.**
Critical Approach Speed (Major) 45 mph
Critical Approach Speed (Minor) 25 mph

Major Street Approach Lanes = **1** lane
Minor Street Approach Lanes **1** lane

Major Street Future ADT = **6,850** vpd
Minor Street Future ADT = **1,108** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……... [√]
or
In built up area of isolated community of < 10,000 population …… [ ]

RURAL (R)

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL **XX**

CONDITION A - Minimum Vehicular Volume

Satisfied / Not Satisfied **XX**

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Minimum Requirements EADT: Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **6,850**	*1* **1,108**	8,000	5,600 *	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240

CONDITION B - Interruption of Continuous Traffic

Satisfied / Not Satisfied **XX**

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Minimum Requirements: Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **6,850**	*1* **1,108**	12,000	8,400	1,200	850 *
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120

Combination of CONDITIONS A + B

Satisfied / Not Satisfied **XX**

No one condition satisfied, but following conditions fulfilled 80% of more ….. **A** **66%** **B** **82%**

Minimum Requirements: 2 CONDITIONS 80% (Vehicles Per Day on Major Street); 2 CONDITIONS 80% (Vehicles Per Day on Higher-Volume Minor Street Approach)

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

Opening Year Cumulative

TRAFFIC CONDITIONS **(2026) With Project**

DIST	CO	RTE	PM				
				CALC	CP	DATE	12/16/19
Jurisdiction:	**City of Ontario**			CHK	CP	DATE	
Major Street:	**Eucalyptus Av.**			Critical Approach Speed (Major)		45	mph
Minor Street:	**Vineyard Av.**			Critical Approach Speed (Minor)		25	mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes = **1** lane

Major Street Future ADT = **3,063** vpd Minor Street Future ADT = **1,227** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. √

or

In built up area of isolated community of < 10,000 population ……

RURAL (R)

(Based on Estimated Average Daily Traffic - See Note)

URBAN RURAL **XX**

CONDITION A - Minimum Vehicular Volume

Satisfied Not Satisfied **XX**

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Minimum Requirements EADT: Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **3,063**	*1* **1,227**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240

CONDITION B - Interruption of Continuous Traffic

Satisfied Not Satisfied **XX**

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **3,063**	*1* **1,227**	12,000	8,400	1,200	850 *
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120

Combination of CONDITIONS A + B

Satisfied Not Satisfied **XX**

No one condition satisfied, but following conditions fulfilled 80% of more ….. **A** **55%** **B** **36%**

2 CONDITIONS 80% 2 CONDITIONS 80%

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

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APPENDIX 8.5:

OPENING YEAR CUMULATIVE (2026) WITHOUT PROJECT CONDITIONS OFF-RAMP QUEUING ANALYSIS WORKSHEETS

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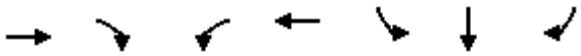


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	996	269	85	1791	549	556	415
v/c Ratio	0.46	0.33	0.38	0.69	0.76	0.77	0.57
Control Delay	23.7	4.1	43.3	30.3	31.6	32.0	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.7	4.1	43.3	30.3	31.6	32.0	20.0
Queue Length 50th (ft)	182	0	28	350	291	296	150
Queue Length 95th (ft)	212	42	m32	m367	371	378	209
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	2150	827	224	2586	806	808	801
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.33	0.38	0.69	0.68	0.69	0.52

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	854	228	335	21	337	388	389	46
v/c Ratio	1.00	0.73	0.20	0.15	1.10	0.76	0.75	0.08
Control Delay	62.7	49.9	18.4	37.3	100.9	34.6	34.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.7	49.9	18.4	37.3	100.9	34.6	34.3	0.3
Queue Length 50th (ft)	223	112	60	10	~95	180	180	0
Queue Length 95th (ft)	#352	#286	98	32	#256	257	257	0
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	855	314	1688	137	305	640	645	693
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.73	0.20	0.15	1.10	0.61	0.60	0.07

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	398	1323	216	1352	333	339	82	51	837
v/c Ratio	1.05	0.55	0.13	0.99	0.62	0.62	0.14	0.26	0.96
Control Delay	101.4	18.8	0.1	61.3	35.6	35.6	1.8	44.5	33.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.4	18.8	0.1	61.3	35.6	35.6	1.8	44.5	33.6
Queue Length 50th (ft)	~290	198	0	250	190	194	0	30	72
Queue Length 95th (ft)	#482	227	m0	#333	292	296	11	67	#210
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	379	2386	1615	1370	536	543	594	202	883
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.05	0.55	0.13	0.99	0.62	0.62	0.14	0.25	0.95

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	830	352	937	1236	52	914
v/c Ratio	0.75	0.56	1.17	0.43	0.14	1.25
Control Delay	25.4	10.4	114.5	3.0	35.8	135.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.4	10.4	114.5	3.0	35.8	135.0
Queue Length 50th (ft)	178	61	~567	66	12	~272
Queue Length 95th (ft)	m203	m95	#790	63	30	#505
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1263	689	800	3023	371	734
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.51	1.17	0.41	0.14	1.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	454	452	409	485	1110	1171	573
v/c Ratio	0.91	0.94	0.80	1.00	0.52	1.19	0.68
Control Delay	54.8	60.4	36.5	48.5	21.3	128.1	7.3
Queue Delay	0.0	0.0	0.0	0.0	3.4	0.0	0.0
Total Delay	54.8	60.4	36.5	48.5	24.7	128.1	7.3
Queue Length 50th (ft)	256	263	177	~297	328	~427	5
Queue Length 95th (ft)	#441	#468	#333	m#318	m337	#555	93
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)	400		400	285			
Base Capacity (vph)	514	493	521	485	2134	982	848
Starvation Cap Reductn	0	0	0	0	902	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.92	0.79	1.00	0.90	1.19	0.68

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

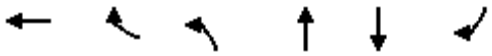
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	438	525	1092	829	439	1520
v/c Ratio	0.92	1.15	0.98	0.91	0.96	0.70
Control Delay	58.8	118.9	55.2	24.0	47.6	5.8
Queue Delay	34.7	1.3	0.0	0.0	0.0	2.0
Total Delay	93.5	120.2	55.2	24.0	47.6	7.7
Queue Length 50th (ft)	253	~356	323	123	195	91
Queue Length 95th (ft)	#443	#565	#465	#408	m186	m97
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	476	458	1112	908	461	2186
Starvation Cap Reductn	0	0	0	0	0	484
Spillback Cap Reductn	66	60	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.07	1.32	0.98	0.91	0.95	0.89

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	299	679	316	1297	843	691
v/c Ratio	0.42	1.01	0.93	0.70	0.82	0.74
Control Delay	28.8	69.4	63.0	25.4	48.4	8.0
Queue Delay	0.0	0.0	0.0	3.6	0.0	0.0
Total Delay	28.8	69.4	63.0	29.0	48.4	8.0
Queue Length 50th (ft)	166	~490	263	341	324	0
Queue Length 95th (ft)	246	#752	m222	m288	405	111
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	709	675	351	1841	1022	939
Starvation Cap Reductn	0	0	0	442	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	1.01	0.90	0.93	0.82	0.74

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	772	230	1278	432	711
v/c Ratio	1.21	0.34	1.15	1.18	0.36
Control Delay	145.4	8.0	115.9	153.8	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	145.4	8.0	115.9	153.8	13.9
Queue Length 50th (ft)	~732	22	~593	~414	97
Queue Length 95th (ft)	#970	80	#732	m#584	161
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	636	680	1107	367	1991
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.21	0.34	1.15	1.18	0.36

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	571	600	812	1287	739
v/c Ratio	1.24	1.22	1.16	0.40	0.60
Control Delay	155.3	145.2	113.3	19.7	29.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	155.3	145.2	113.3	19.7	29.4
Queue Length 50th (ft)	~406	~379	~514	232	93
Queue Length 95th (ft)	#605	#587	m#609	m234	116
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	462	490	702	3181	1960
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.24	1.22	1.16	0.40	0.38

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	437	603	2306	186	836
v/c Ratio	0.72	0.95	1.11dr	0.74	0.30
Control Delay	33.5	50.1	55.3	42.9	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	50.1	55.3	42.9	24.8
Queue Length 50th (ft)	211	267	~415	115	158
Queue Length 95th (ft)	320	#485	#511	m136	m160
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	627	646	2247	300	2768
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.70	0.93	1.03	0.62	0.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1237	406	657	223	356	749	738
v/c Ratio	0.88	0.25	0.67	0.14	0.38	0.93	0.88
Control Delay	30.6	0.4	20.5	0.2	9.6	33.0	26.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.6	0.4	20.5	0.2	9.6	33.0	26.6
Queue Length 50th (ft)	156	0	121	0	71	230	206
Queue Length 95th (ft)	#232	0	m172	m0	123	#489	#446
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1400	1615	974	1615	926	809	838
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.25	0.67	0.14	0.38	0.93	0.88

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1304	670	853	774	88	88	500
v/c Ratio	0.32	0.48	0.21	0.54	0.49	0.49	0.81
Control Delay	3.7	1.5	4.7	5.3	54.0	54.0	24.0
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	3.7	1.5	4.7	5.4	54.0	54.0	24.0
Queue Length 50th (ft)	69	0	31	40	63	63	53
Queue Length 95th (ft)	125	28	127	241	108	108	110
Internal Link Dist (ft)	1166		735			976	
Turn Bay Length (ft)		250					250
Base Capacity (vph)	4122	1405	4122	1442	397	397	927
Starvation Cap Reductn	0	0	0	91	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.48	0.21	0.57	0.22	0.22	0.54

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	610	1004	444	564	460	211
v/c Ratio	0.29	0.91	1.09	0.17	0.74	0.53
Control Delay	9.7	20.2	100.1	4.8	26.4	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.7	20.2	100.1	4.8	26.4	9.6
Queue Length 50th (ft)	32	164	~96	26	59	0
Queue Length 95th (ft)	m46	m#287	#175	38	#118	54
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2135	1105	408	3259	618	399
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.91	1.09	0.17	0.74	0.53

Intersection Summary

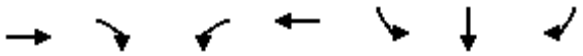
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	599	850	1290	452	151	152	368
v/c Ratio	0.15	0.60	0.33	0.34	0.59	0.60	0.52
Control Delay	3.8	5.1	5.3	1.3	52.3	52.5	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.8	5.1	5.3	1.3	52.3	52.5	8.8
Queue Length 50th (ft)	31	70	92	0	106	107	11
Queue Length 95th (ft)	54	185	149	30	163	164	52
Internal Link Dist (ft)	735		1069			1143	
Turn Bay Length (ft)				250			250
Base Capacity (vph)	3897	1424	3897	1326	771	771	1447
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.60	0.33	0.34	0.20	0.20	0.25

Intersection Summary



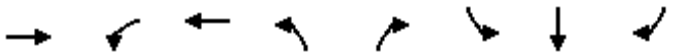
Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1779	706	378	1715	556	558	594
v/c Ratio	0.98	0.72	0.86	0.64	0.80	0.81	0.85
Control Delay	49.5	8.4	48.4	22.5	36.0	36.1	35.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	8.4	48.4	22.5	36.0	36.1	35.7
Queue Length 50th (ft)	~448	28	133	270	307	309	283
Queue Length 95th (ft)	#491	102	m128	m255	412	413	394
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	1823	984	437	2678	734	735	737
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.72	0.86	0.64	0.76	0.76	0.81

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1091	144	321	21	176	434	433	80
v/c Ratio	1.03	0.70	0.19	0.18	0.73	0.79	0.78	0.13
Control Delay	66.6	57.9	14.3	39.4	28.8	35.3	34.5	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.6	57.9	14.3	39.4	28.8	35.3	34.5	1.0
Queue Length 50th (ft)	~318	71	50	10	13	197	195	0
Queue Length 95th (ft)	#440	#190	81	32	#102	295	293	6
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	1057	207	1657	115	242	640	648	693
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.70	0.19	0.18	0.73	0.68	0.67	0.12

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	432	1868	372	1993	254	354	252	191	939
v/c Ratio	1.09	0.67	0.23	1.09	0.79	1.08	0.62	0.82	1.01
Control Delay	98.6	21.8	0.1	84.4	58.1	112.5	25.3	70.8	46.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	98.6	21.8	0.1	84.4	58.1	112.5	25.3	70.8	46.4
Queue Length 50th (ft)	~323	319	0	~418	164	~266	70	120	~122
Queue Length 95th (ft)	m#407	m336	m0	#496	#294	#451	155	#237	#274
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	398	2780	1615	1831	320	328	406	232	930
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	0.67	0.23	1.09	0.79	1.08	0.62	0.82	1.01

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1134	200	499	1463	170	1344
v/c Ratio	0.74	0.26	1.48	0.62	0.20	2.07
Control Delay	22.3	4.3	259.9	9.0	26.7	507.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.3	4.3	259.9	9.0	26.7	507.3
Queue Length 50th (ft)	242	13	~350	194	35	~961
Queue Length 95th (ft)	245	38	#500	159	64	#1179
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1868	910	337	2700	863	648
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.22	1.48	0.54	0.20	2.07

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	421	413	380	414	1254	1167	566
v/c Ratio	0.84	0.86	0.76	0.93	0.59	1.10	0.65
Control Delay	45.9	47.4	32.4	37.1	24.6	91.7	6.4
Queue Delay	0.0	0.0	0.0	0.0	6.5	0.0	0.0
Total Delay	45.9	47.4	32.4	37.1	31.2	91.7	6.4
Queue Length 50th (ft)	225	224	154	227	409	~425	0
Queue Length 95th (ft)	#370	#384	265	m240	m420	#552	83
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)				285			400
Base Capacity (vph)	552	528	545	447	2136	1061	874
Starvation Cap Reductn	0	0	0	0	827	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.78	0.70	0.93	0.96	1.10	0.65

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

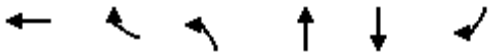
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	421	495	1165	736	422	1443
v/c Ratio	0.92	1.10	1.00	0.80	0.94	0.65
Control Delay	60.3	104.6	57.7	13.1	52.3	5.2
Queue Delay	49.9	4.6	0.0	0.0	0.0	1.1
Total Delay	110.2	109.2	57.7	13.1	52.3	6.3
Queue Length 50th (ft)	245	~318	~358	53	192	73
Queue Length 95th (ft)	#430	#522	#501	#225	m203	m98
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	457	448	1168	921	461	2226
Starvation Cap Reductn	0	0	0	0	0	505
Spillback Cap Reductn	173	159	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.48	1.71	1.00	0.80	0.92	0.84

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	336	393	238	1007	1140	760
v/c Ratio	0.82	0.83	0.82	0.41	0.66	0.68
Control Delay	59.9	43.9	47.4	12.6	28.2	6.6
Queue Delay	3.6	0.0	0.0	0.6	0.1	0.0
Total Delay	63.5	43.9	47.4	13.2	28.3	6.6
Queue Length 50th (ft)	246	196	198	229	357	26
Queue Length 95th (ft)	342	309	m193	m223	488	156
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	484	532	351	2438	1719	1116
Starvation Cap Reductn	0	0	0	944	0	0
Spillback Cap Reductn	80	0	0	0	47	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.74	0.68	0.67	0.68	0.68

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	501	398	1157	516	1008
v/c Ratio	1.04	0.75	1.02	1.03	0.44
Control Delay	93.5	36.2	71.1	98.1	8.6
Queue Delay	0.0	0.0	0.0	8.3	0.2
Total Delay	93.5	36.2	71.1	106.4	8.7
Queue Length 50th (ft)	~417	192	~481	~398	124
Queue Length 95th (ft)	#630	315	#619	#661	162
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	484	531	1130	502	2292
Starvation Cap Reductn	0	0	0	12	459
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.04	0.75	1.02	1.05	0.55

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	487	302	482	582	1776
v/c Ratio	1.05	0.47	1.00	0.18	0.91
Control Delay	91.4	6.1	83.4	21.1	36.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	91.4	6.1	83.4	21.1	36.1
Queue Length 50th (ft)	~306	0	~249	106	263
Queue Length 95th (ft)	#494	61	m#414	m140	#323
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	462	637	481	3181	1959
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.05	0.47	1.00	0.18	0.91

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	121	651	1612	442	1296
v/c Ratio	0.19	1.06	1.04dr	1.44	0.48
Control Delay	21.7	81.1	28.2	231.0	22.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	81.1	28.2	231.0	22.0
Queue Length 50th (ft)	48	~379	213	~360	271
Queue Length 95th (ft)	88	#591	259	m#393	m288
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	625	613	2023	306	2720
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.19	1.06	0.80	1.44	0.48

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1318	580	530	495	309	598	587
v/c Ratio	0.80	0.36	0.46	0.31	0.33	0.69	0.65
Control Delay	23.5	0.6	15.3	0.9	8.6	12.8	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.5	0.6	15.3	0.9	8.6	12.8	11.6
Queue Length 50th (ft)	157	0	52	0	57	119	108
Queue Length 95th (ft)	206	0	124	0	102	238	211
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1642	1615	1143	1615	943	868	897
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.36	0.46	0.31	0.33	0.69	0.65

Intersection Summary

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1345	696	1173	601	75	77	503
v/c Ratio	0.35	0.51	0.31	0.45	0.27	0.28	0.82
Control Delay	5.8	1.9	6.7	5.7	41.0	41.2	38.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.8	1.9	6.7	5.7	41.0	41.2	38.4
Queue Length 50th (ft)	103	0	165	172	49	50	125
Queue Length 95th (ft)	163	35	206	304	88	90	178
Internal Link Dist (ft)	1166		735			975	
Turn Bay Length (ft)		250					250
Base Capacity (vph)	3832	1374	3832	1350	397	398	803
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.51	0.31	0.45	0.19	0.19	0.63

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	775	959	353	819	348	160
v/c Ratio	0.33	0.82	0.67	0.24	0.45	0.38
Control Delay	7.1	13.3	31.5	4.2	16.0	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.1	13.3	31.5	4.2	16.0	7.2
Queue Length 50th (ft)	27	155	63	34	37	0
Queue Length 95th (ft)	m54	m#257	#103	47	70	45
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2334	1170	525	3458	770	422
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.82	0.67	0.24	0.45	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	928	552	1283	215	236	239	879
v/c Ratio	0.34	0.49	0.47	0.23	0.37	0.38	0.79
Control Delay	15.6	5.5	17.9	3.0	25.9	25.9	31.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	5.5	17.9	3.0	25.9	25.9	31.3
Queue Length 50th (ft)	117	10	201	0	125	127	268
Queue Length 95th (ft)	181	113	281	42	170	172	310
Internal Link Dist (ft)	735		1069			1151	
Turn Bay Length (ft)				250			250
Base Capacity (vph)	2752	1116	2752	945	771	774	1329
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.49	0.47	0.23	0.31	0.31	0.66

Intersection Summary

APPENDIX 8.6:

OPENING YEAR CUMULATIVE (2026) WITH PROJECT CONDITIONS OFF-RAMP QUEUING ANALYSIS WORKSHEETS

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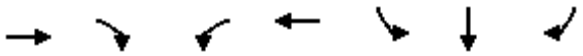


Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1007	269	85	1794	599	606	415
v/c Ratio	0.48	0.33	0.40	0.72	0.80	0.80	0.55
Control Delay	24.6	4.1	44.1	31.2	32.8	33.3	18.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	4.1	44.1	31.2	32.8	33.3	18.9
Queue Length 50th (ft)	187	0	28	352	316	321	142
Queue Length 95th (ft)	215	42	m31	m364	421	427	209
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	2077	808	214	2499	806	808	801
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.33	0.40	0.72	0.74	0.75	0.52

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	864	228	338	21	337	388	389	46
v/c Ratio	1.01	0.73	0.20	0.15	1.11	0.76	0.75	0.08
Control Delay	65.4	49.7	18.7	37.3	102.2	34.6	34.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.4	49.7	18.7	37.3	102.2	34.6	34.3	0.3
Queue Length 50th (ft)	~230	111	61	10	~96	180	180	0
Queue Length 95th (ft)	#358	#286	100	32	#257	257	257	0
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	855	314	1688	137	304	640	645	693
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.73	0.20	0.15	1.11	0.61	0.60	0.07

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	398	1426	216	1380	333	339	82	51	837
v/c Ratio	1.07	0.60	0.13	0.99	0.62	0.63	0.14	0.26	0.97
Control Delay	104.8	18.9	0.1	62.2	35.7	35.7	1.8	44.4	35.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	104.8	18.9	0.1	62.2	35.7	35.7	1.8	44.4	35.3
Queue Length 50th (ft)	~294	220	0	255	190	194	0	30	76
Queue Length 95th (ft)	m#483	249	m0	#340	292	296	11	67	#217
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	373	2386	1615	1390	534	541	592	202	875
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.07	0.60	0.13	0.99	0.62	0.63	0.14	0.25	0.96

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	839	352	937	1283	52	1078
v/c Ratio	0.75	0.56	1.18	0.45	0.14	1.47
Control Delay	25.3	10.3	117.0	3.0	35.8	236.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.3	10.3	117.0	3.0	35.8	236.8
Queue Length 50th (ft)	182	60	~569	70	12	~453
Queue Length 95th (ft)	m203	m94	#792	66	30	#696
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1272	692	796	3023	372	731
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.51	1.18	0.42	0.14	1.47

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	454	452	409	539	1113	1181	573
v/c Ratio	0.91	0.94	0.81	1.11	0.52	1.20	0.68
Control Delay	54.8	60.4	36.7	78.5	21.3	132.2	7.5
Queue Delay	0.0	0.0	0.0	0.0	3.5	0.0	0.0
Total Delay	54.8	60.4	36.7	78.5	24.8	132.2	7.5
Queue Length 50th (ft)	256	263	178	~363	332	~433	7
Queue Length 95th (ft)	#441	#468	#334	m#359	m320	#562	97
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)	400		400	285			
Base Capacity (vph)	514	493	520	485	2134	982	845
Starvation Cap Reductn	0	0	0	0	902	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.92	0.79	1.11	0.90	1.20	0.68

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

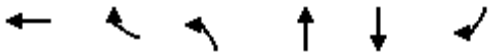
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	438	723	1148	829	439	1529
v/c Ratio	0.92	1.59	1.03	0.91	0.96	0.70
Control Delay	58.8	299.6	67.8	24.0	47.6	5.8
Queue Delay	37.5	1.4	0.0	0.0	0.0	2.1
Total Delay	96.4	301.0	67.8	24.0	47.6	7.8
Queue Length 50th (ft)	253	~613	~375	123	195	91
Queue Length 95th (ft)	#443	#845	#503	#408	m185	m97
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	476	456	1112	908	461	2186
Starvation Cap Reductn	0	0	0	0	0	484
Spillback Cap Reductn	69	62	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.08	1.84	1.03	0.91	0.95	0.90

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	320	679	325	1305	874	691
v/c Ratio	0.45	1.01	0.95	0.71	0.86	0.74
Control Delay	29.4	69.4	64.4	25.4	51.1	8.4
Queue Delay	0.0	0.0	0.0	3.9	0.0	0.0
Total Delay	29.4	69.4	64.4	29.4	51.1	8.4
Queue Length 50th (ft)	180	~490	270	342	340	3
Queue Length 95th (ft)	264	#752	m227	m286	#446	120
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	709	675	351	1841	1014	932
Starvation Cap Reductn	0	0	0	442	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	1.01	0.93	0.93	0.86	0.74

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	772	261	1300	432	762
v/c Ratio	1.21	0.39	1.18	1.18	0.38
Control Delay	145.4	11.3	124.1	152.3	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.2
Total Delay	145.4	11.3	124.1	152.3	14.9
Queue Length 50th (ft)	~732	44	~612	~415	115
Queue Length 95th (ft)	#970	112	#753	m#555	m170
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	636	674	1106	367	1991
Starvation Cap Reductn	0	0	0	0	537
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.21	0.39	1.18	1.18	0.52

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	742	600	812	1290	749
v/c Ratio	1.54	1.19	1.20	0.41	0.61
Control Delay	280.5	129.3	128.7	20.5	29.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	280.5	129.3	128.7	20.5	29.8
Queue Length 50th (ft)	~598	~369	~530	231	95
Queue Length 95th (ft)	#815	#577	m#594	m222	119
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	482	506	679	3123	1823
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.54	1.19	1.20	0.41	0.41

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	437	603	2353	186	1010
v/c Ratio	0.70	0.98	1.19dr	0.74	0.37
Control Delay	32.4	59.1	71.4	34.6	27.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	32.4	59.1	71.4	34.6	27.2
Queue Length 50th (ft)	211	298	~431	115	197
Queue Length 95th (ft)	320	#525	#527	m120	m173
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	627	614	2191	300	2720
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.70	0.98	1.07	0.62	0.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1314	406	667	223	356	884	879
v/c Ratio	0.94	0.25	0.68	0.14	0.40	1.09	1.05
Control Delay	36.4	0.4	19.0	0.2	10.2	77.5	61.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.4	0.4	19.0	0.2	10.2	77.5	61.9
Queue Length 50th (ft)	169	0	90	0	73	~397	~364
Queue Length 95th (ft)	#256	0	132	m0	128	#620	#577
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1400	1615	974	1615	900	809	838
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.25	0.68	0.14	0.40	1.09	1.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1314	701	1001	774	88	88	500
v/c Ratio	0.34	0.51	0.26	0.55	0.35	0.35	0.82
Control Delay	5.3	1.9	7.7	6.5	44.0	44.0	35.0
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	5.3	1.9	7.7	6.6	44.0	44.0	35.0
Queue Length 50th (ft)	94	0	80	86	60	60	107
Queue Length 95th (ft)	153	34	180	284	102	102	160
Internal Link Dist (ft)	1166		735			976	
Turn Bay Length (ft)		250					250
Base Capacity (vph)	3899	1373	3899	1406	475	475	944
Starvation Cap Reductn	0	0	0	88	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.51	0.26	0.59	0.19	0.19	0.53

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	613	1078	444	574	460	211
v/c Ratio	0.30	0.97	1.10	0.18	0.68	0.50
Control Delay	5.6	28.0	105.8	5.3	22.5	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.6	28.0	105.8	5.3	22.5	8.7
Queue Length 50th (ft)	17	433	~97	28	57	0
Queue Length 95th (ft)	m21	m#517	#176	41	100	53
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2057	1107	402	3172	674	420
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.97	1.10	0.18	0.68	0.50

Intersection Summary

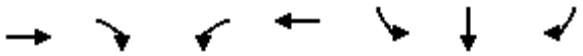
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	607	850	1321	452	209	209	368
v/c Ratio	0.16	0.61	0.36	0.35	0.65	0.65	0.46
Control Delay	5.7	7.6	7.1	1.5	49.6	49.6	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.7	7.6	7.1	1.5	49.6	49.6	7.7
Queue Length 50th (ft)	39	102	116	0	145	145	13
Queue Length 95th (ft)	77	283	184	35	207	207	51
Internal Link Dist (ft)	735		1069			1143	
Turn Bay Length (ft)				250			250
Base Capacity (vph)	3688	1394	3688	1278	771	771	1442
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.61	0.36	0.35	0.27	0.27	0.26

Intersection Summary



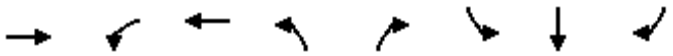
Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1784	706	378	1728	576	578	594
v/c Ratio	0.99	0.72	0.88	0.65	0.82	0.82	0.84
Control Delay	51.7	8.5	49.0	22.8	37.3	37.4	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.7	8.5	49.0	22.8	37.3	37.4	34.8
Queue Length 50th (ft)	~450	29	133	271	325	326	283
Queue Length 95th (ft)	#493	102	m125	m249	433	434	394
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	1809	980	430	2654	734	735	737
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.72	0.88	0.65	0.78	0.79	0.81

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1095	144	332	21	176	434	433	80
v/c Ratio	1.06	0.70	0.20	0.18	0.73	0.79	0.78	0.13
Control Delay	74.6	57.9	14.3	39.4	28.8	35.3	34.5	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.6	57.9	14.3	39.4	28.8	35.3	34.5	1.0
Queue Length 50th (ft)	~333	71	52	10	13	197	195	0
Queue Length 95th (ft)	#458	#190	84	32	#102	295	293	6
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	1035	207	1657	115	242	640	648	693
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.70	0.20	0.18	0.73	0.68	0.67	0.12

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	432	1910	372	2113	254	354	252	191	939
v/c Ratio	1.09	0.69	0.23	1.15	0.79	1.08	0.62	0.82	1.02
Control Delay	100.1	21.8	0.1	107.0	58.1	112.5	25.3	70.8	48.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	100.1	21.8	0.1	107.0	58.1	112.5	25.3	70.8	48.1
Queue Length 50th (ft)	~326	328	0	~461	164	~266	70	120	~127
Queue Length 95th (ft)	m#395	m344	m0	#539	#294	#451	155	#237	#278
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	395	2780	1615	1841	320	328	406	232	925
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	0.69	0.23	1.15	0.79	1.08	0.62	0.82	1.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1138	200	499	1664	170	1408
v/c Ratio	0.89	0.31	1.53	0.80	0.15	1.82
Control Delay	34.8	9.5	281.5	16.8	20.2	394.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.8	9.5	281.5	16.8	20.2	394.1
Queue Length 50th (ft)	274	27	~356	307	31	~962
Queue Length 95th (ft)	335	67	#506	364	51	#1135
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1305	658	326	2115	1128	773
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.30	1.53	0.79	0.15	1.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	421	413	380	615	1266	1171	566
v/c Ratio	0.84	0.86	0.76	1.27	0.59	1.19	0.67
Control Delay	45.9	47.4	32.4	146.7	25.2	128.1	6.8
Queue Delay	0.0	0.0	0.0	0.0	7.5	0.0	0.0
Total Delay	45.9	47.4	32.4	146.7	32.7	128.1	6.8
Queue Length 50th (ft)	225	224	154	~479	414	~427	0
Queue Length 95th (ft)	#370	#384	265	m#416	m360	#555	83
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)				285			400
Base Capacity (vph)	552	528	545	486	2136	982	851
Starvation Cap Reductn	0	0	0	0	827	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.78	0.70	1.27	0.97	1.19	0.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

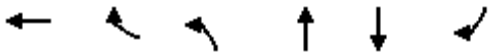
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	421	561	1373	736	422	1447
v/c Ratio	0.92	1.25	1.18	0.80	0.94	0.65
Control Delay	60.3	159.7	118.4	13.1	47.1	4.9
Queue Delay	51.5	6.0	0.0	0.0	0.0	1.2
Total Delay	111.8	165.7	118.4	13.1	47.1	6.1
Queue Length 50th (ft)	245	~404	~504	53	192	73
Queue Length 95th (ft)	#430	#616	#636	#225	m195	m94
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	457	448	1168	921	461	2226
Starvation Cap Reductn	0	0	0	0	0	505
Spillback Cap Reductn	206	189	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.68	2.17	1.18	0.80	0.92	0.84

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	344	393	272	1042	1151	760
v/c Ratio	0.83	0.84	0.86	0.43	0.69	0.69
Control Delay	60.6	45.9	49.7	12.9	30.0	7.1
Queue Delay	23.9	0.0	0.0	0.7	0.1	0.0
Total Delay	84.5	45.9	49.7	13.5	30.0	7.1
Queue Length 50th (ft)	251	203	226	230	382	31
Queue Length 95th (ft)	351	318	m209	m213	495	164
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	484	524	351	2429	1660	1098
Starvation Cap Reductn	0	0	0	938	0	0
Spillback Cap Reductn	140	0	0	0	27	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.75	0.77	0.70	0.70	0.69

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	501	410	1252	516	1028
v/c Ratio	1.04	0.78	1.11	1.03	0.45
Control Delay	93.5	38.9	98.9	99.5	8.7
Queue Delay	0.0	0.0	0.0	8.3	0.2
Total Delay	93.5	38.9	98.9	107.8	8.9
Queue Length 50th (ft)	~417	207	~565	~426	127
Queue Length 95th (ft)	#630	#341	#704	#665	170
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	484	527	1128	502	2292
Starvation Cap Reductn	0	0	0	12	454
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.04	0.78	1.11	1.05	0.56

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	545	302	482	594	1780
v/c Ratio	1.18	0.47	1.00	0.19	0.91
Control Delay	133.7	6.1	81.1	20.5	36.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	133.7	6.1	81.1	20.5	36.3
Queue Length 50th (ft)	~375	0	~252	109	265
Queue Length 95th (ft)	#571	61	m#362	m130	#325
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	462	637	481	3181	1959
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.18	0.47	1.00	0.19	0.91

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	121	651	1792	442	1357
v/c Ratio	0.20	1.09	1.23dr	1.36	0.49
Control Delay	22.4	91.8	31.0	194.3	21.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.4	91.8	31.0	194.3	21.9
Queue Length 50th (ft)	48	~389	243	~350	282
Queue Length 95th (ft)	90	#601	293	m#363	m289
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	605	596	2045	324	2777
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.20	1.09	0.88	1.36	0.49

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1608	580	534	495	309	644	635
v/c Ratio	1.15	0.36	0.55	0.31	0.33	0.79	0.75
Control Delay	99.6	0.6	17.1	1.1	9.0	19.6	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	99.6	0.6	17.1	1.1	9.0	19.6	17.2
Queue Length 50th (ft)	~258	0	52	0	60	165	150
Queue Length 95th (ft)	#343	0	121	6	105	#381	#303
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1400	1615	974	1615	926	813	842
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.15	0.36	0.55	0.31	0.33	0.79	0.75

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1382	814	1227	601	75	77	503
v/c Ratio	0.36	0.58	0.32	0.45	0.26	0.27	0.82
Control Delay	6.1	2.3	6.9	5.5	40.3	40.4	40.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.1	2.3	6.9	5.5	40.3	40.4	40.0
Queue Length 50th (ft)	110	0	172	166	49	50	132
Queue Length 95th (ft)	172	38	230	291	87	90	185
Internal Link Dist (ft)	1166		735			975	
Turn Bay Length (ft)		250					250
Base Capacity (vph)	3800	1400	3800	1343	397	398	787
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.58	0.32	0.45	0.19	0.19	0.64

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	786	1244	353	823	348	160
v/c Ratio	0.38	1.12	0.87	0.26	0.53	0.42
Control Delay	11.7	76.0	50.0	5.6	18.3	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.7	76.0	50.0	5.6	18.3	8.5
Queue Length 50th (ft)	48	~371	65	42	39	0
Queue Length 95th (ft)	m46	m#303	#131	59	73	47
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2048	1108	408	3172	661	378
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	1.12	0.87	0.26	0.53	0.42

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	962	552	1294	215	257	259	879
v/c Ratio	0.35	0.50	0.48	0.23	0.40	0.40	0.78
Control Delay	16.4	5.9	18.3	3.0	26.0	26.1	31.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.4	5.9	18.3	3.0	26.0	26.1	31.2
Queue Length 50th (ft)	124	10	205	0	137	138	271
Queue Length 95th (ft)	199	121	284	42	186	187	314
Internal Link Dist (ft)	735		1069			1151	
Turn Bay Length (ft)				250			250
Base Capacity (vph)	2719	1109	2719	937	771	774	1322
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.50	0.48	0.23	0.33	0.33	0.66

Intersection Summary

APPENDIX 8.7:

OPENING YEAR CUMULATIVE (2026) WITHOUT PROJECT CONDITIONS FREEWAY FACILITY ANALYSIS WORKSHEETS

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2962	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	869
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.36
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	12.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2962	1106
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	8.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.926	0.893
Flow Rate (vi),pc/h	3477	1346
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.36	0.32

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	7.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.419
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	789
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	58.3
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	1900	Ramp Junction Speed (S), mi/h	65.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	13.3
Level of Service (LOS)	A		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	469	576
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.893
Flow Rate (vi),pc/h	541	701
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.26	0.37

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	11.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.309
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	541	Ramp Junction Speed (S), mi/h	61.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	1242	Average Density (D), pc/mi/ln	10.1
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1761	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1044
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.43
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4799	Heavy Vehicle Adjustment Factor (f_{HV})	0.787
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1657
Total Trucks, %	27.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.69
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4059	740
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	28.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.781	0.855
Flow Rate (vi),pc/h	5649	941
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.92	0.45

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	30.4
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.518
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2147
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	55.5
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	64.1
Flow in Lanes 1 and 2 (v12), pc/h	3502	Ramp Junction Speed (S), mi/h	58.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	4443	Average Density (D), pc/mi/ln	37.9
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1631	784
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	30.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.769	0.893
Flow Rate (vi),pc/h	2305	954
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.32	0.23

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	16.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.384
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	743
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.2
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	1562	Ramp Junction Speed (S), mi/h	63.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	12.0
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1631	Heavy Vehicle Adjustment Factor (f_{HV})	0.769
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	768
Total Trucks, %	30.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.32
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	11.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8359	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2386
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.99
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	44.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8359	852
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.855
Flow Rate (vi),pc/h	9544	1083
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	1.11	0.52

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	39.2
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	43.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.082	Outer Lanes Freeway Speed (SO), mi/h	61.1
Flow in Lanes 1 and 2 (v12), pc/h	4144	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	5227	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.952	9638	9548	1.01	53.0	45.0	F

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.952	0.833	9128	972	9600	2100	1.00	0.46	44.3	59.2	51.5	40.8	F

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	7956	9548	0.91	31.8	62.6	F

Segment 4: Merge

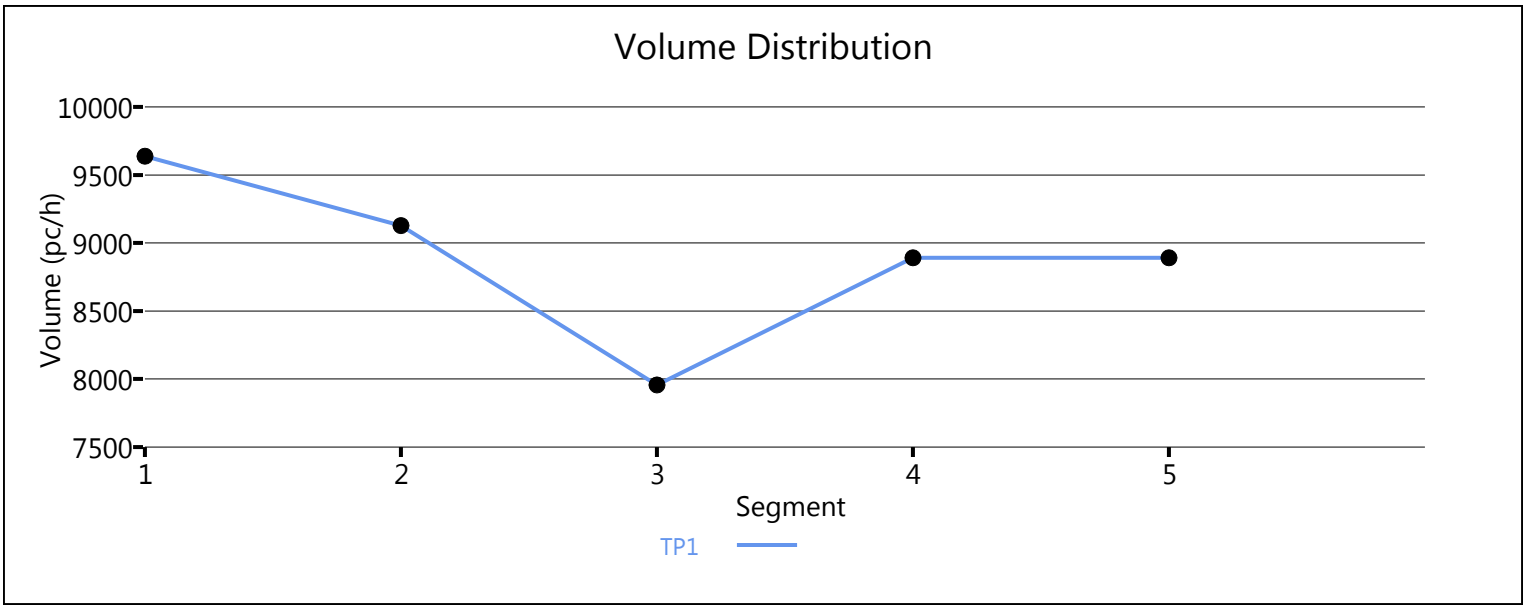
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.826	8891	984	9600	2100	1.01	0.47	40.1	54.3	55.4	33.1	F

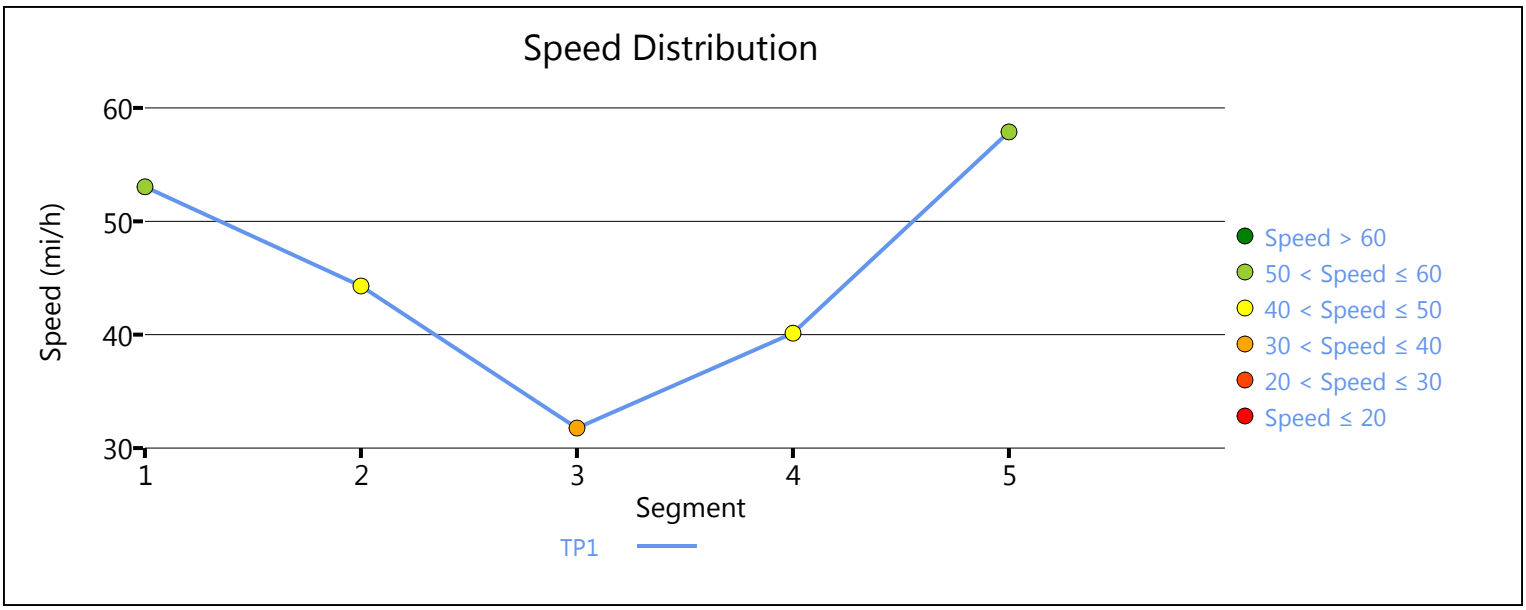
Segment 5: Basic

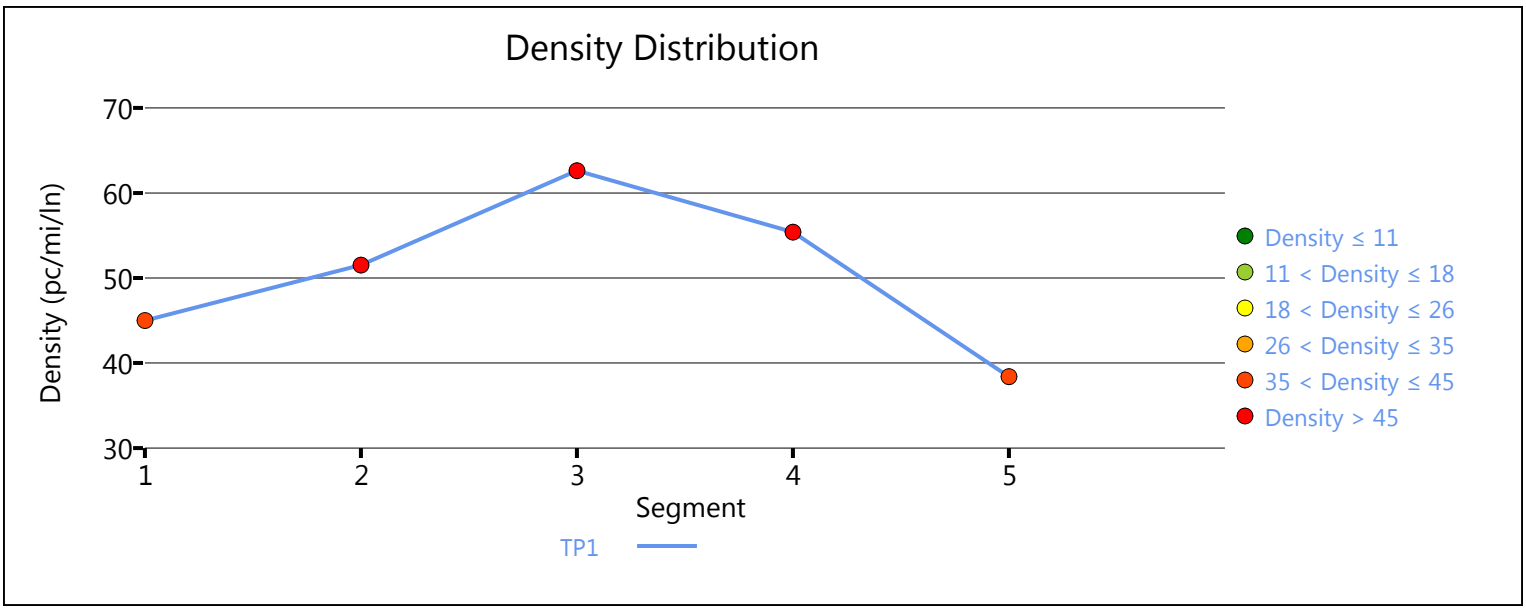
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.952	8891	9548	1.01	57.9	38.4	F

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	43.7	50.2	48.0	2.6	F

Facility Overall Results			
Space Mean Speed, mi/h	43.7	Density, veh/mi/ln	48.0
Average Travel Time, min	2.6	Density, pc/mi/ln	50.2







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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6129	868
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	7.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.862
Flow Rate (vi),pc/h	7125	1095
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.59	0.52

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	30.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.397
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1299
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.9
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	75.6
Flow in Lanes 1 and 2 (v12), pc/h	3103	Ramp Junction Speed (S), mi/h	65.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	21.8
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6129	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1425
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.59
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8186	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2270
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.95
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	40.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8186	744
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	19.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.840
Flow Rate (vi),pc/h	9079	963
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.76	0.46

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	31.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.385
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1777
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.2
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	73.8
Flow in Lanes 1 and 2 (v12), pc/h	3710	Ramp Junction Speed (S), mi/h	65.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	27.7
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	9433	9548	0.99	53.8	43.8	E

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.971	0.885	9433	978	9600	2100	0.98	0.47	64.8	59.2	36.4	39.6	E

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.990	8378	9548	0.88	60.1	34.8	D

Segment 4: Merge

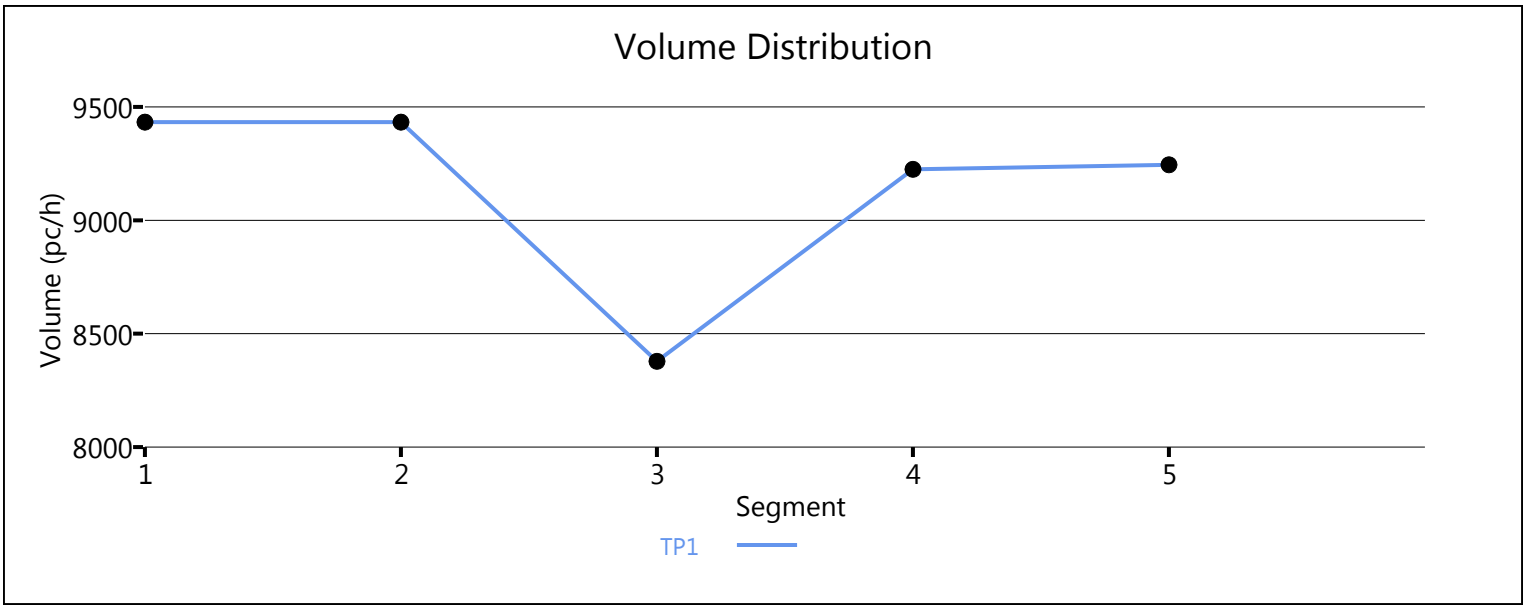
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.990	0.806	9225	847	9600	2100	0.96	0.40	59.5	56.6	38.8	30.7	D

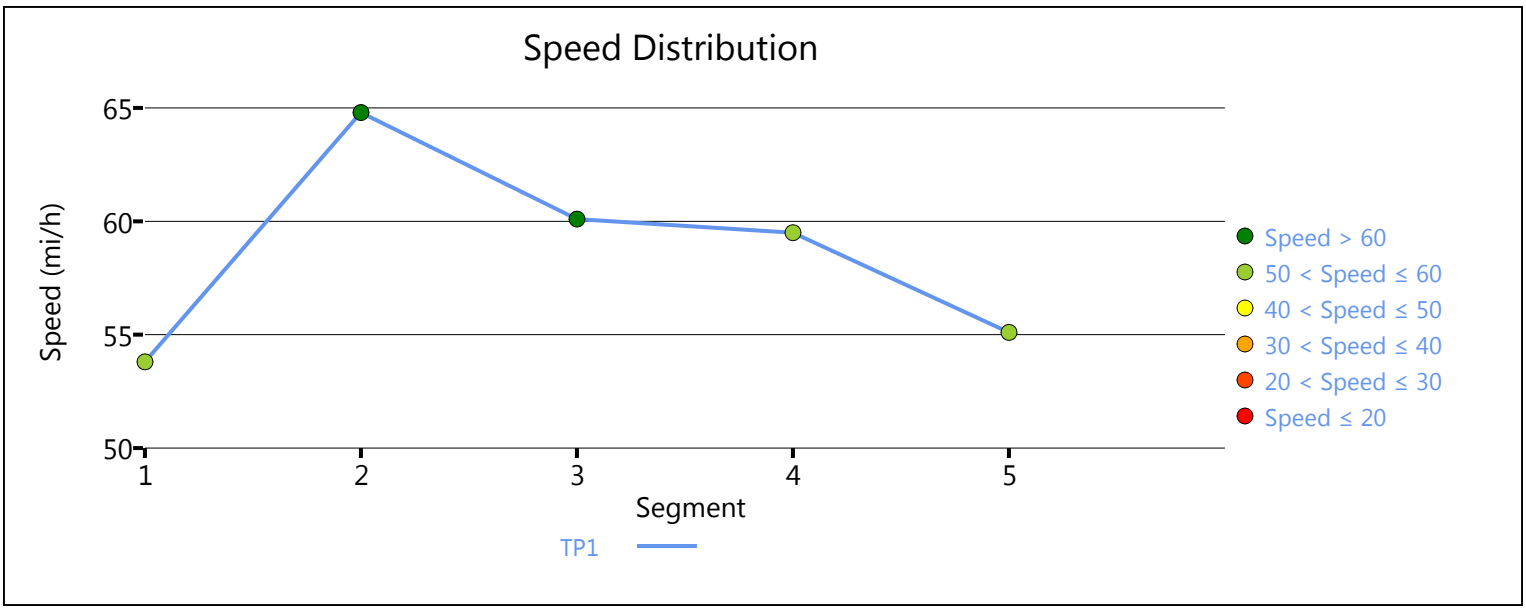
Segment 5: Basic

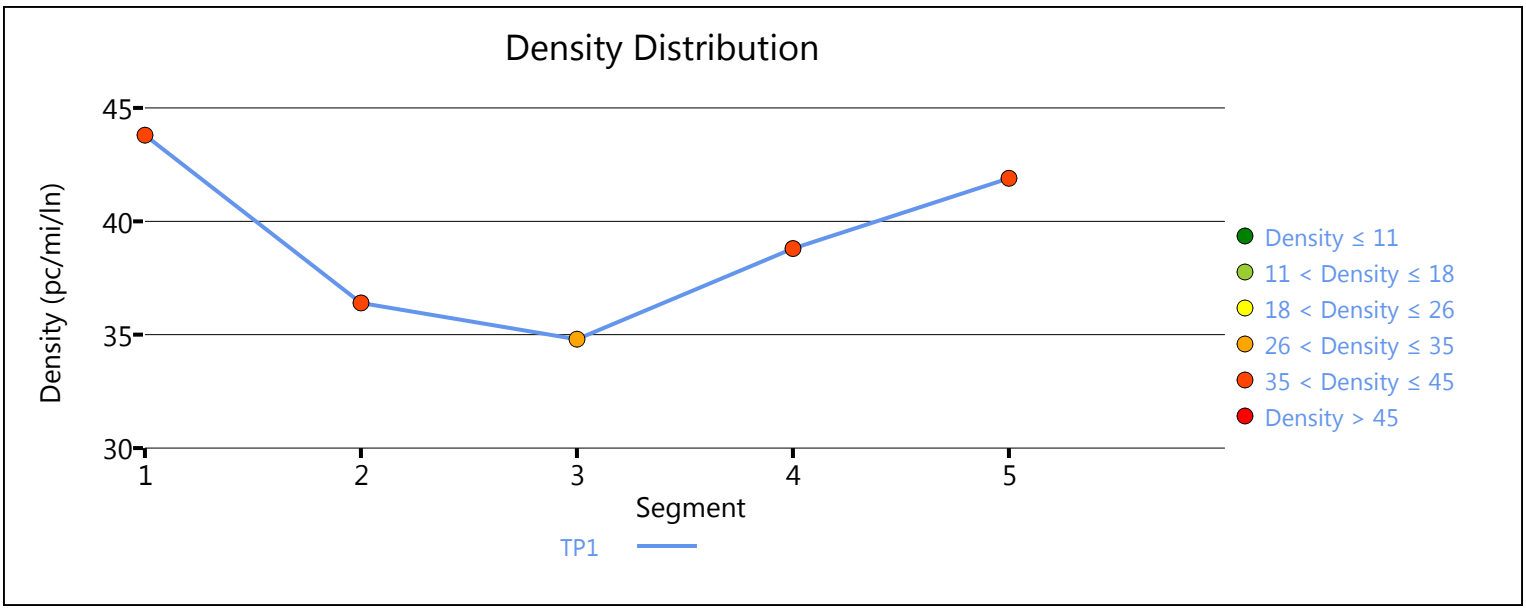
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	9245	9548	0.97	55.1	41.9	E

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	58.0	39.3	38.4	1.9	E

Facility Overall Results			
Space Mean Speed, mi/h	58.0	Density, veh/mi/ln	38.4
Average Travel Time, min	1.9	Density, pc/mi/ln	39.3







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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	5034	716
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.855
Flow Rate (vi),pc/h	5527	910
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.67	0.43

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	22.8
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.314
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1658
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.104	Outer Lanes Freeway Speed (SO), mi/h	65.8
Flow in Lanes 1 and 2 (v12), pc/h	2211	Ramp Junction Speed (S), mi/h	63.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	3121	Average Density (D), pc/mi/ln	25.3
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5749	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1609
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.67
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.6
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5293	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1511
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.63
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	5293	1365
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.862
Flow Rate (vi),pc/h	6043	1721
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.63	0.82

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	31.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.453
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1219
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	57.3
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	75.9
Flow in Lanes 1 and 2 (v12), pc/h	3605	Ramp Junction Speed (S), mi/h	63.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	23.8
Level of Service (LOS)	D		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4455	599
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.952
Flow Rate (vi),pc/h	4987	684
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.79	0.33

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	27.5
Distance to Upstream Ramp (LUP), ft	1000	Speed Index (M)	0.385
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1960
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	59.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	3027	Ramp Junction Speed (S), mi/h	61.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	3711	Average Density (D), pc/mi/ln	31.0
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5054	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1886
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.79
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	64.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5913	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1312
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.55
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 NB, On-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4743	1170
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	0.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	1.000	0.909
Flow Rate (vi),pc/h	5155	1399
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.91	0.74

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	307.6	Density in Ramp Influence Area (DR), pc/mi/ln	39.1
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.632
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2175
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	52.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	64.0
Flow in Lanes 1 and 2 (v12), pc/h	2980	Ramp Junction Speed (S), mi/h	55.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	4379	Average Density (D), pc/mi/ln	39.2
Level of Service (LOS)	E		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4652	603
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.952
Flow Rate (vi),pc/h	5160	688
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.72	0.33

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	29.4
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.360
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1793
Distance to Downstream Ramp (LDOWN), ft	1000	Off-Ramp Influenece Area Speed (SR), mi/h	59.9
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.599	Outer Lanes Freeway Speed (SO), mi/h	73.7
Flow in Lanes 1 and 2 (v12), pc/h	3367	Ramp Junction Speed (S), mi/h	64.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	26.8
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4652	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1720
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.72
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4811	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1373
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.57
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4811	1308
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.926
Flow Rate (vi),pc/h	5493	1535
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.57	0.37

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	12.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.436
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1465
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	57.8
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	75.0
Flow in Lanes 1 and 2 (v12), pc/h	2564	Ramp Junction Speed (S), mi/h	65.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	20.8
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	344	866
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	11.00	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.901	0.935
Flow Rate (vi),pc/h	415	1007
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.30	0.53

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	12.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.311
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	415	Ramp Junction Speed (S), mi/h	61.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	1422	Average Density (D), pc/mi/ln	11.6
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1956	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1128
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.47
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4239	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1222
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.51
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3086	1154
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	3557	1330
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.68	0.63

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	23.1
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.320
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1352
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	66.9
Flow in Lanes 1 and 2 (v12), pc/h	2205	Ramp Junction Speed (S), mi/h	62.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	3535	Average Density (D), pc/mi/ln	26.1
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3169	1216
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	14.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.877	0.943
Flow Rate (vi),pc/h	3928	1402
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.55	0.33

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	24.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.424
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1389
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	75.3
Flow in Lanes 1 and 2 (v12), pc/h	2539	Ramp Junction Speed (S), mi/h	63.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	20.7
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3169	Heavy Vehicle Adjustment Factor (f_{HV})	0.877
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1309
Total Trucks, %	14.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.55
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8182	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2311
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.96
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	41.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7364	818
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	13.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.885
Flow Rate (vi),pc/h	8243	1005
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.96	0.48

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	32.0
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.514
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2473
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	55.6
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.092	Outer Lanes Freeway Speed (SO), mi/h	62.4
Flow in Lanes 1 and 2 (v12), pc/h	3297	Ramp Junction Speed (S), mi/h	59.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	4302	Average Density (D), pc/mi/ln	39.2
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	9113	9548	0.95	55.9	40.8	E

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.855	9113	739	9600	2100	0.95	0.35	65.3	59.8	34.9	37.7	E

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	8378	9548	0.88	60.1	34.8	D

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.971	0.917	9400	1022	9600	2100	0.98	0.49	58.7	55.1	40.0	32.4	D

Segment 5: Basic

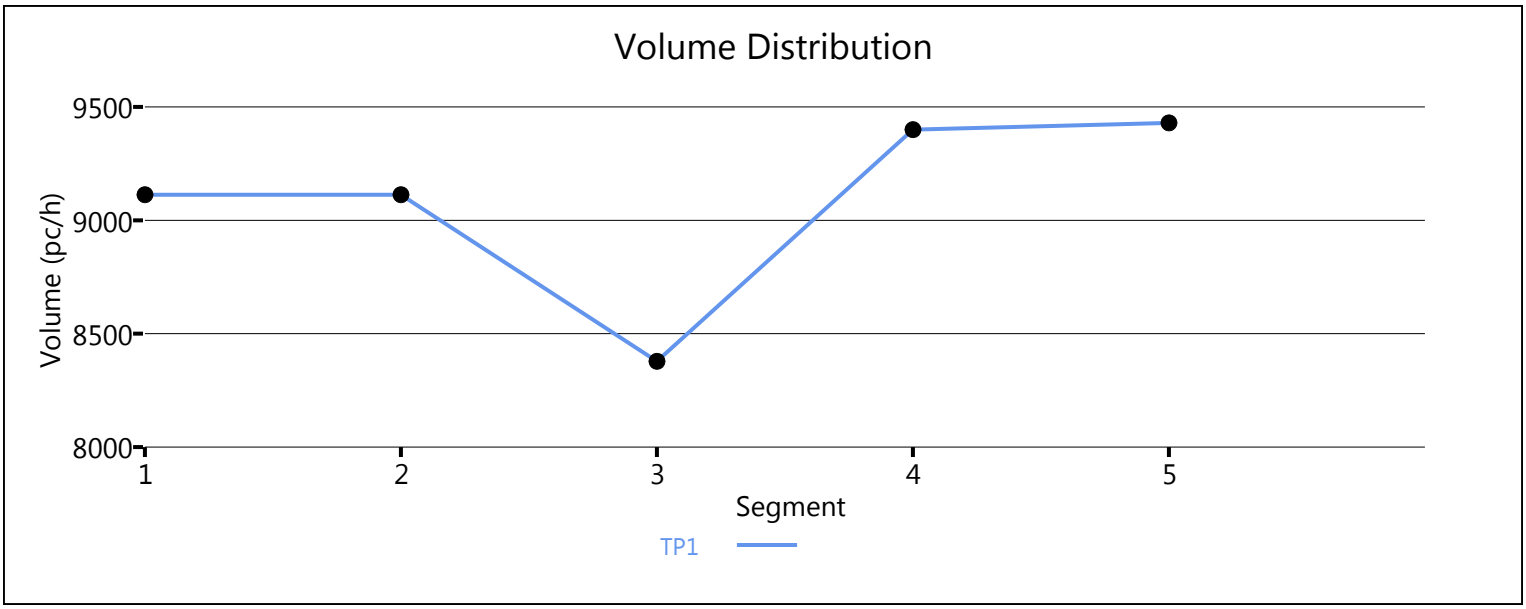
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	9430	9548	0.99	53.8	43.8	E

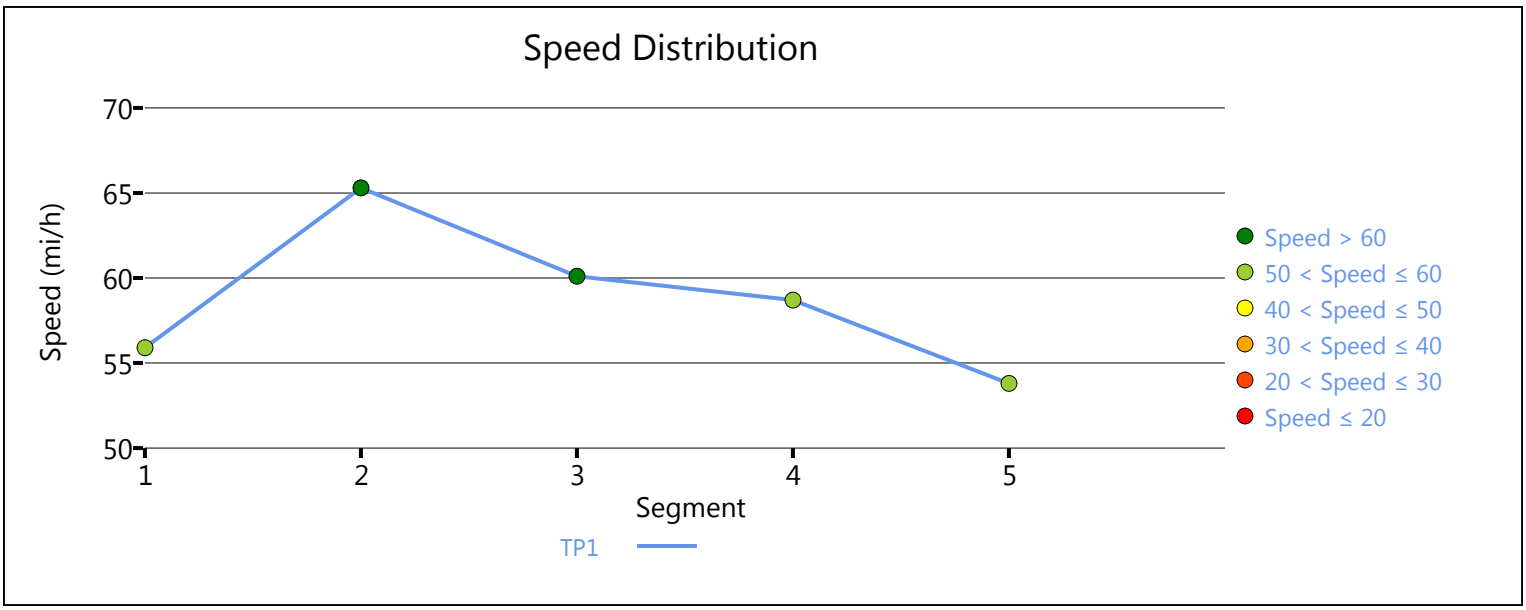
Facility Time Period Results

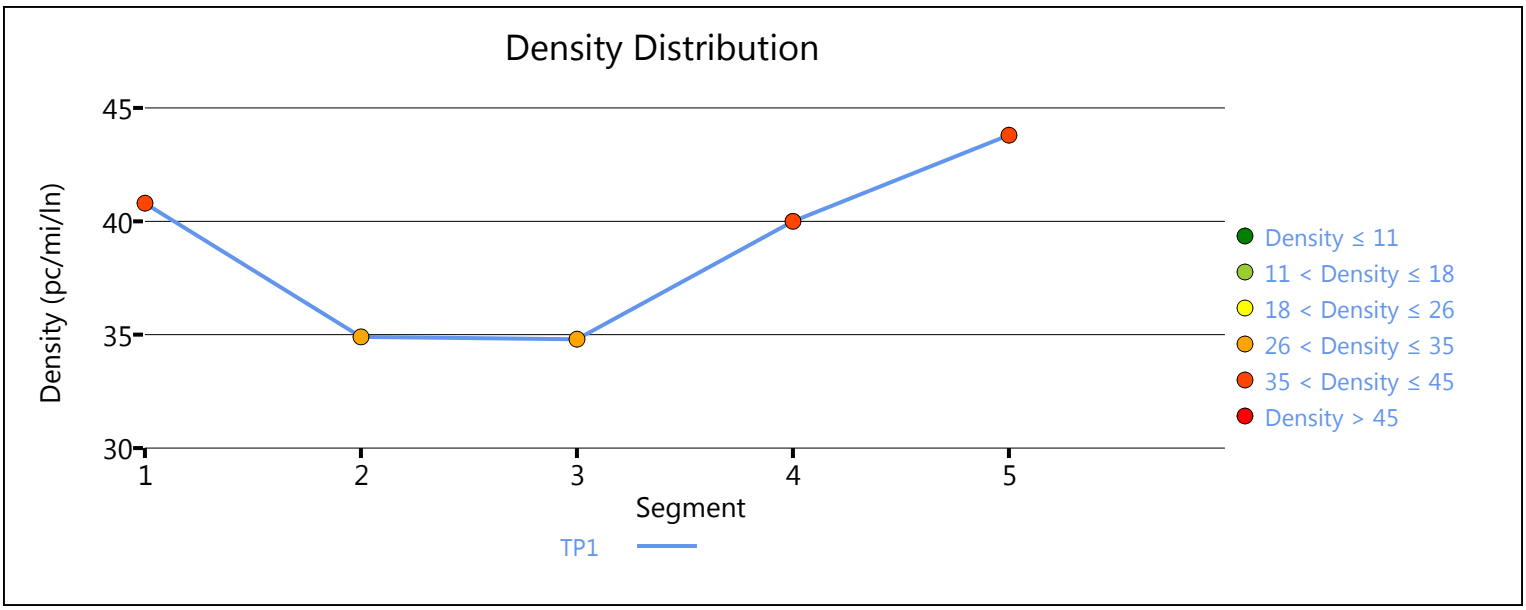
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	57.7	39.5	38.1	1.9	E

Facility Overall Results

Space Mean Speed, mi/h	57.7	Density, veh/mi/ln	38.1
Average Travel Time, min	1.9	Density, pc/mi/ln	39.5







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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	5085	662
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	7.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.893
Flow Rate (vi),pc/h	5911	806
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.49	0.38

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	27.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.371
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1190
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.6
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.1
Flow in Lanes 1 and 2 (v12), pc/h	2645	Ramp Junction Speed (S), mi/h	66.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	17.8
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5747	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1349
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.56
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7132	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1978
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7132	767
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.862
Flow Rate (vi),pc/h	7910	967
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.66	0.46

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	28.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.385
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1512
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.2
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	74.8
Flow in Lanes 1 and 2 (v12), pc/h	3304	Ramp Junction Speed (S), mi/h	65.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	24.0
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.980	8070	9548	0.85	61.6	32.8	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.980	0.840	8070	879	9600	2100	0.84	0.42	65.5	59.4	30.8	34.0	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	1.000	7171	9548	0.75	65.1	27.5	D

Segment 4: Merge

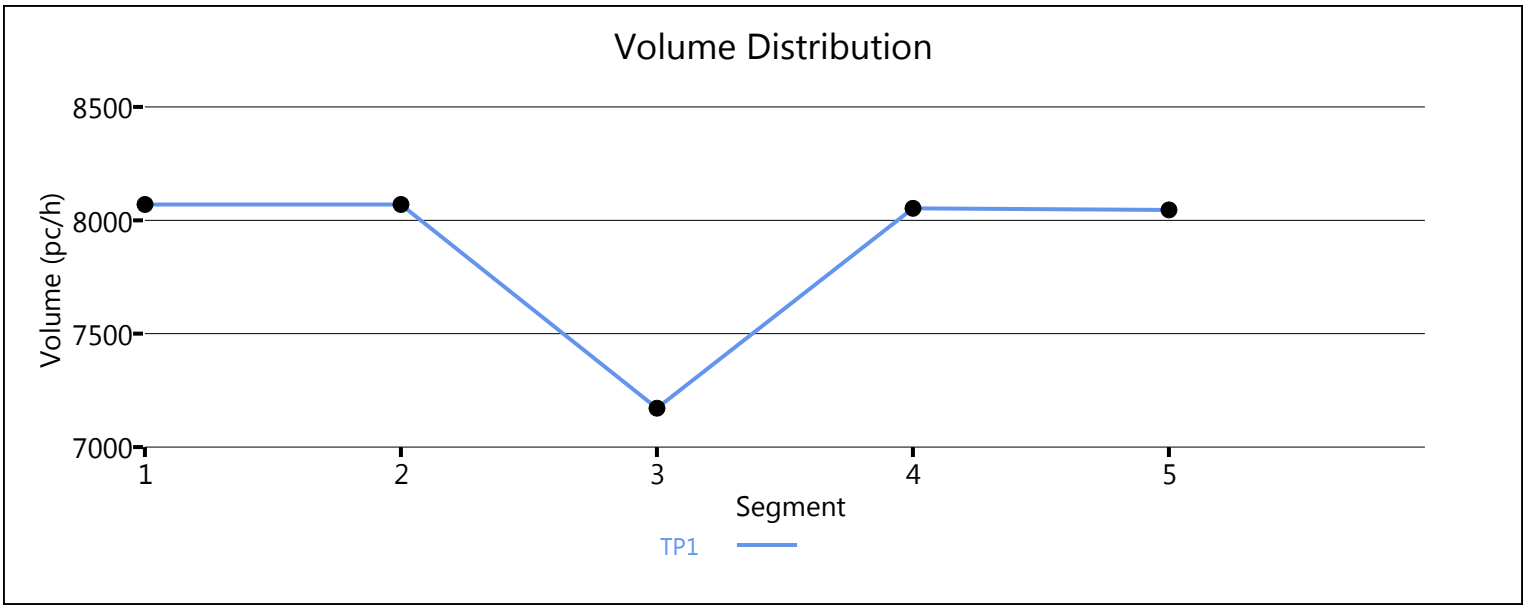
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	1.000	0.901	8053	882	9600	2100	0.84	0.42	61.8	59.3	32.6	27.2	C

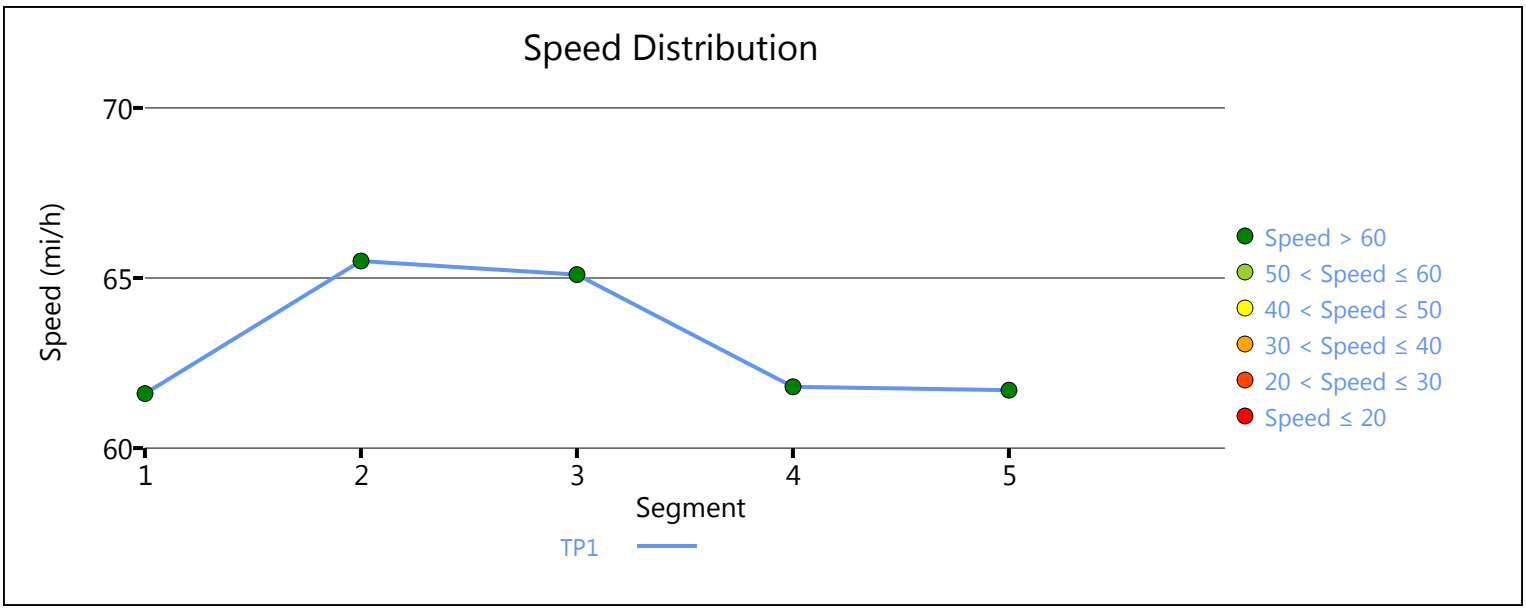
Segment 5: Basic

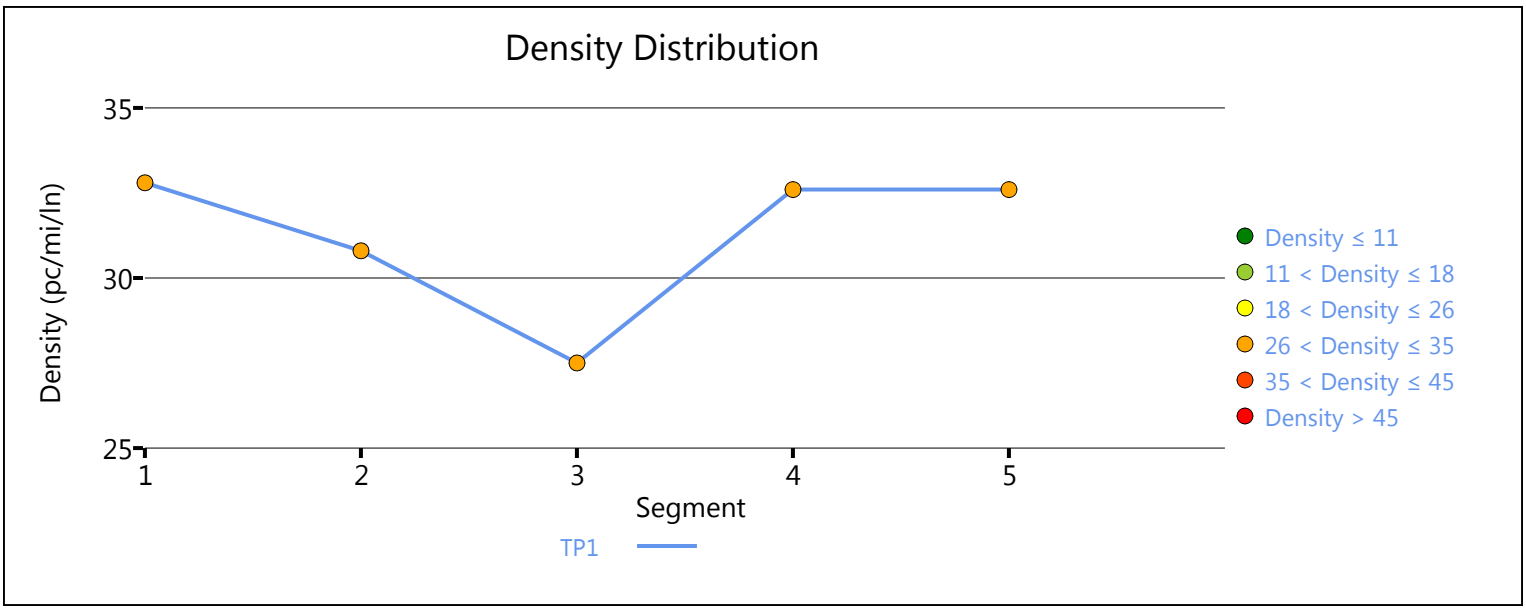
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.990	8046	9548	0.84	61.7	32.6	D

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	63.0	31.2	30.9	1.7	D

Facility Overall Results			
Space Mean Speed, mi/h	63.0	Density, veh/mi/ln	30.9
Average Travel Time, min	1.7	Density, pc/mi/ln	31.2







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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4810	962
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.926
Flow Rate (vi),pc/h	5335	1129
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.67	0.54

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	23.8
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.327
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1601
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	60.8
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.077	Outer Lanes Freeway Speed (SO), mi/h	66.0
Flow in Lanes 1 and 2 (v12), pc/h	2134	Ramp Junction Speed (S), mi/h	63.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	3263	Average Density (D), pc/mi/ln	25.5
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2025) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5772	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1615
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.67
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4179	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1204
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.50
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4179	1294
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.909
Flow Rate (vi),pc/h	4817	1547
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.50	0.74

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	26.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.437
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	922
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	57.8
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	2973	Ramp Junction Speed (S), mi/h	63.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	18.9
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3815	656
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.980
Flow Rate (vi),pc/h	4356	728
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.71	0.35

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	24.9
Distance to Upstream Ramp (LUP), ft	1000	Speed Index (M)	0.339
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1712
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	60.5
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	65.6
Flow in Lanes 1 and 2 (v12), pc/h	2644	Ramp Junction Speed (S), mi/h	62.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	3372	Average Density (D), pc/mi/ln	27.3
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4471	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1684
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.70
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5162	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1156
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.48
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 NB, On-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4063	1099
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.909
Flow Rate (vi),pc/h	4461	1314
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.80	0.69

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	140.9	Density in Ramp Influence Area (DR), pc/mi/ln	35.3
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.512
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1883
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	55.7
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	65.0
Flow in Lanes 1 and 2 (v12), pc/h	2578	Ramp Junction Speed (S), mi/h	58.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	3892	Average Density (D), pc/mi/ln	33.0
Level of Service (LOS)	E		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3741	1296
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.971
Flow Rate (vi),pc/h	4149	1451
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.58	0.69

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	26.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.429
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1106
Distance to Downstream Ramp (LDOWN), ft	1000	Off-Ramp Influenece Area Speed (SR), mi/h	58.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.590	Outer Lanes Freeway Speed (SO), mi/h	76.4
Flow in Lanes 1 and 2 (v12), pc/h	3043	Ramp Junction Speed (S), mi/h	62.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	22.3
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5037	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1880
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	64.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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APPENDIX 8.8:

OPENING YEAR CUMULATIVE (2026) WITH PROJECT CONDITIONS FREEWAY FACILITY ANALYSIS WORKSHEETS

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3044	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	893
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.37
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	12.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3044	1188
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	8.00	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.926	0.901
Flow Rate (vi),pc/h	3573	1433
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.37	0.34

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	7.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.427
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	792
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	58.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	1989	Ramp Junction Speed (S), mi/h	65.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	13.7
Level of Service (LOS)	A		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	469	603
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	13.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.885
Flow Rate (vi),pc/h	541	741
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.27	0.39

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	12.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.309
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	541	Ramp Junction Speed (S), mi/h	61.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	1282	Average Density (D), pc/mi/ln	10.5
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1788	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1060
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.44
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4822	Heavy Vehicle Adjustment Factor (f_{HV})	0.787
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1665
Total Trucks, %	27.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.69
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4059	763
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	28.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.781	0.862
Flow Rate (vi),pc/h	5649	962
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.92	0.46

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	30.5
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.525
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2147
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	55.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	64.1
Flow in Lanes 1 and 2 (v12), pc/h	3502	Ramp Junction Speed (S), mi/h	57.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	4464	Average Density (D), pc/mi/ln	38.1
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1732	885
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	30.00	14.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.769	0.877
Flow Rate (vi),pc/h	2448	1097
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.34	0.26

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	17.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.397
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	743
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.9
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	1705	Ramp Junction Speed (S), mi/h	63.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	12.9
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1732	Heavy Vehicle Adjustment Factor (f_{HV})	0.769
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	816
Total Trucks, %	30.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.34
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	11.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8396	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2396
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.00
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	44.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8396	881
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	18.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.847
Flow Rate (vi),pc/h	9586	1131
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	1.12	0.54

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	39.9
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	41.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.076	Outer Lanes Freeway Speed (SO), mi/h	61.1
Flow in Lanes 1 and 2 (v12), pc/h	4186	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	5317	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.952	9659	9548	1.01	53.0	45.0	F

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.952	0.840	9135	989	9600	2100	1.01	0.47	44.4	59.2	51.4	40.9	F

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	7945	9548	0.91	31.7	62.7	F

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.826	8891	995	9600	2100	1.01	0.47	40.1	54.2	55.4	33.1	F

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.952	8891	9548	1.01	57.9	38.4	F

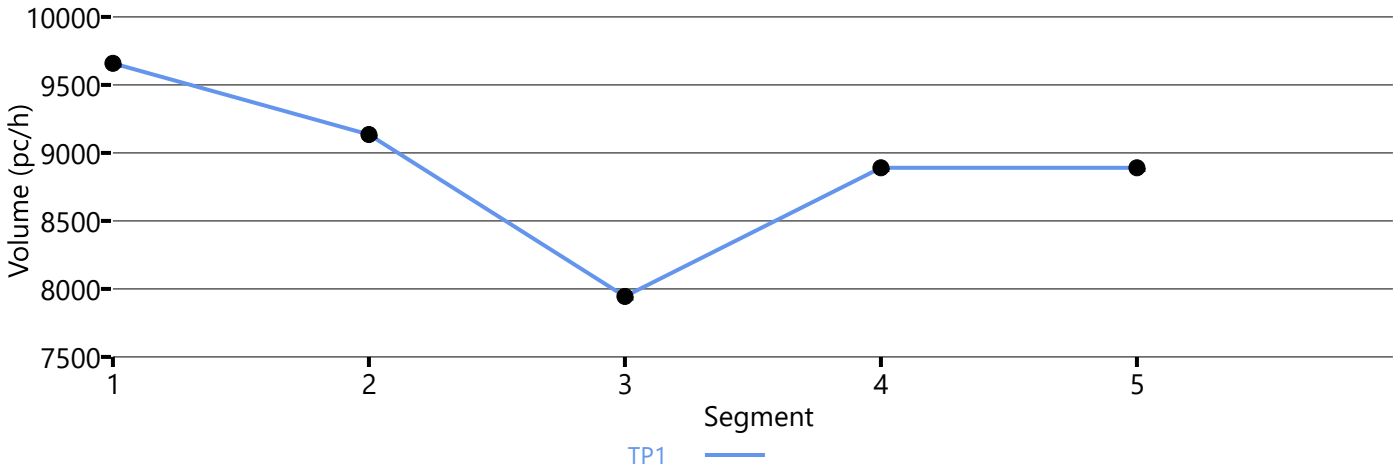
Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	43.8	50.2	48.0	2.6	F

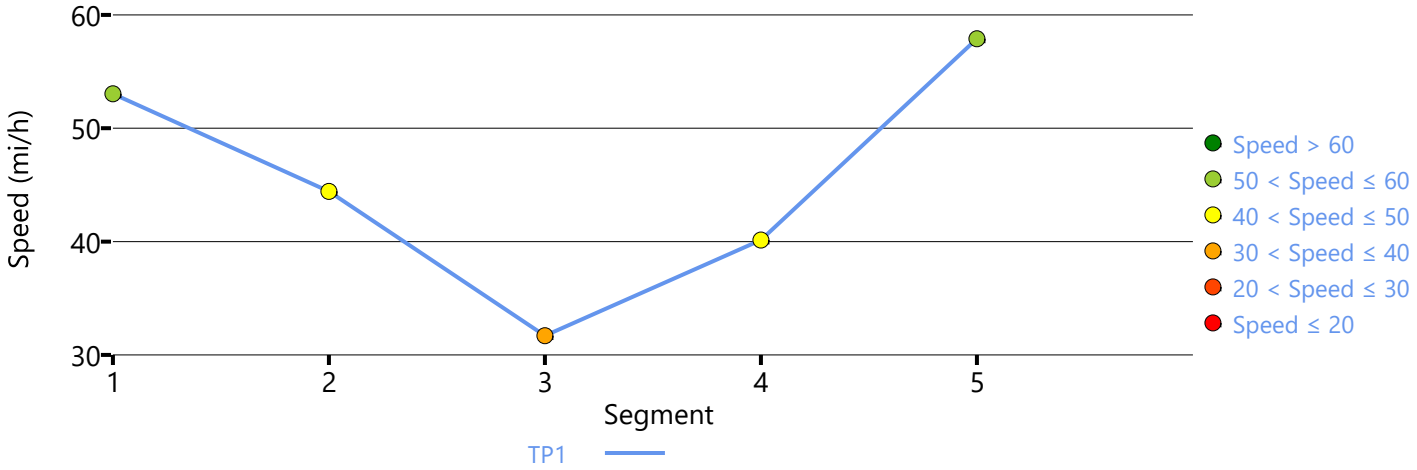
Facility Overall Results

Space Mean Speed, mi/h	43.8	Density, veh/mi/ln	48.0
Average Travel Time, min	2.6	Density, pc/mi/ln	50.2

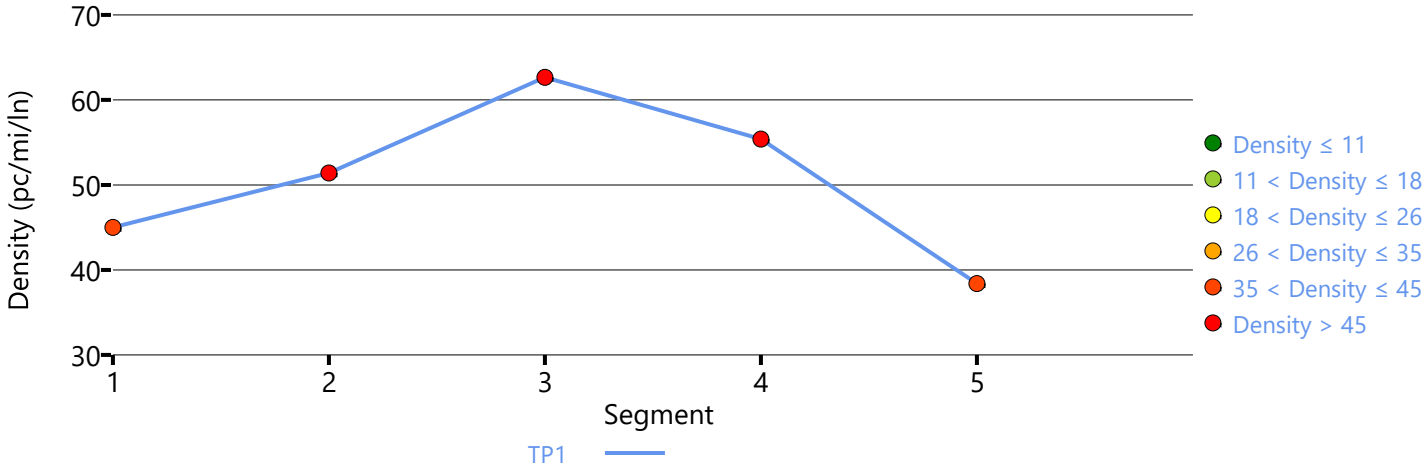
Volume Distribution



Speed Distribution



Density Distribution



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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6249	969
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	7.00	18.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.847
Flow Rate (vi),pc/h	7265	1244
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.61	0.59

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	32.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.410
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1288
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	75.7
Flow in Lanes 1 and 2 (v12), pc/h	3236	Ramp Junction Speed (S), mi/h	65.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	22.3
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6249	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1453
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.61
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8323	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2329
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.97
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	42.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8323	853
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	22.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.820
Flow Rate (vi),pc/h	9317	1131
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.78	0.54

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	33.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.400
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1783
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.8
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	73.7
Flow in Lanes 1 and 2 (v12), pc/h	3888	Ramp Junction Speed (S), mi/h	65.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	28.6
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.980	9378	9548	0.98	54.2	43.2	E

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.980	0.893	9378	1003	9600	2100	0.98	0.48	64.8	59.1	36.2	39.5	E

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.990	8378	9548	0.88	60.1	34.8	D

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.990	0.806	9232	854	9600	2100	0.96	0.41	59.5	56.6	38.8	30.7	D

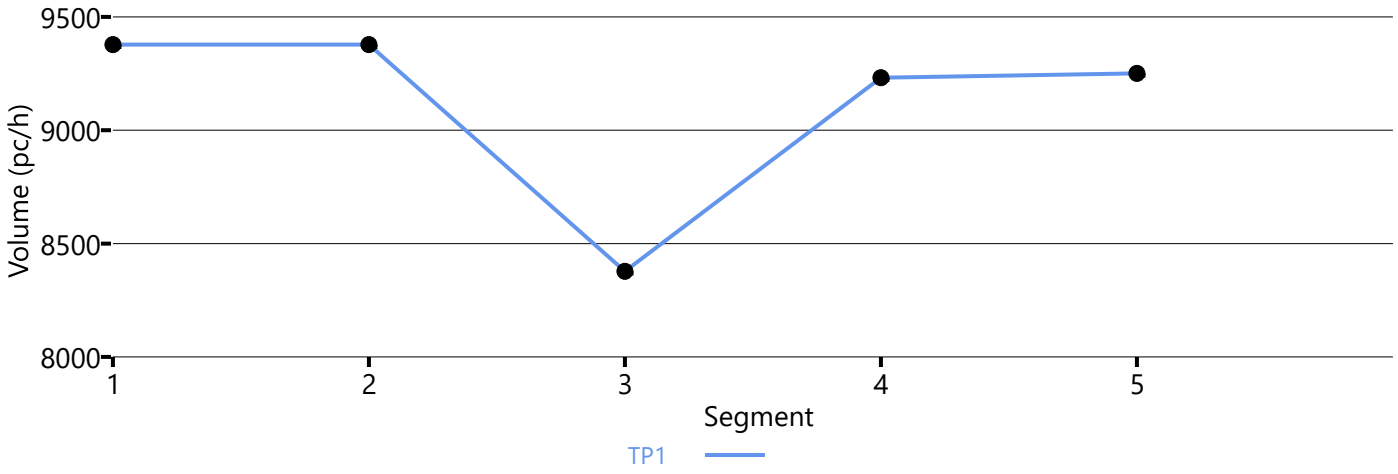
Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	9251	9548	0.97	55.0	42.1	E

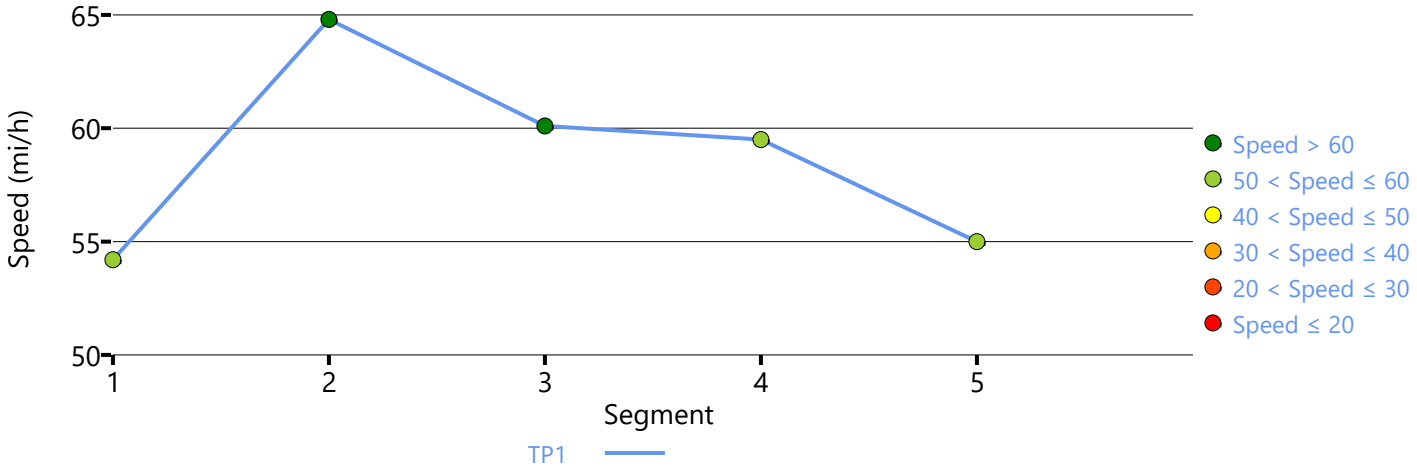
Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	58.0	39.2	38.4	1.9	E

Facility Overall Results			
Space Mean Speed, mi/h	58.0	Density, veh/mi/ln	38.4
Average Travel Time, min	1.9	Density, pc/mi/ln	39.2

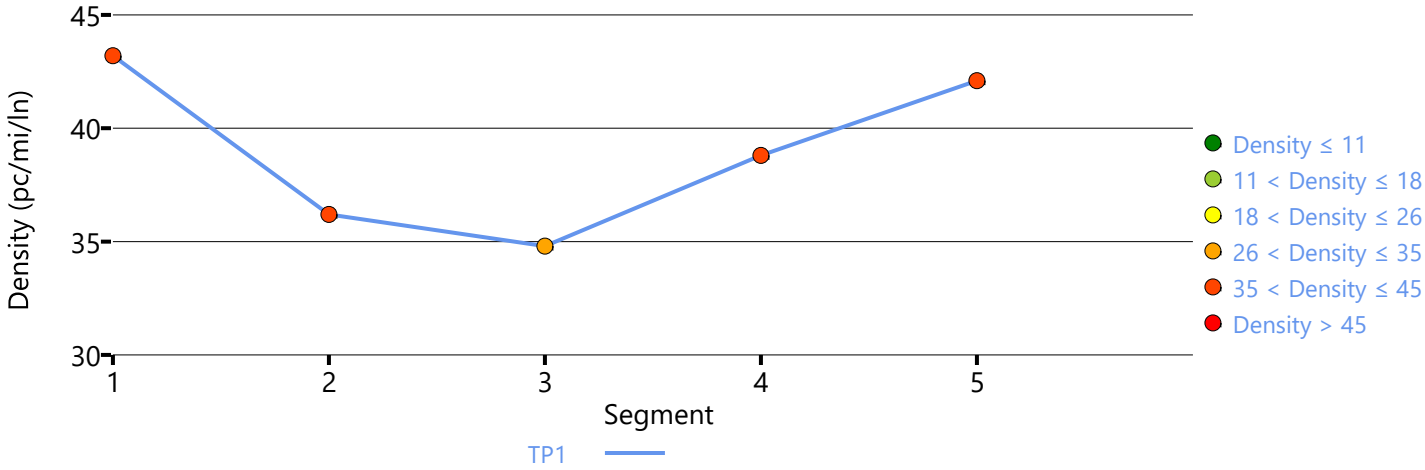
Volume Distribution



Speed Distribution



Density Distribution



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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	5039	743
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	18.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.847
Flow Rate (vi),pc/h	5532	953
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.68	0.45

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	23.2
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.318
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1660
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.1
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.099	Outer Lanes Freeway Speed (SO), mi/h	65.8
Flow in Lanes 1 and 2 (v12), pc/h	2213	Ramp Junction Speed (S), mi/h	63.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	3166	Average Density (D), pc/mi/ln	25.6
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5781	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1618
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.67
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5489	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1582
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.66
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	5489	1561
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.862
Flow Rate (vi),pc/h	6327	1968
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.66	0.94

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	34.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.475
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1229
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	56.7
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	75.9
Flow in Lanes 1 and 2 (v12), pc/h	3869	Ramp Junction Speed (S), mi/h	62.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	25.1
Level of Service (LOS)	D		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4455	621
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.943
Flow Rate (vi),pc/h	4987	716
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.79	0.34

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	27.8
Distance to Upstream Ramp (LUP), ft	1000	Speed Index (M)	0.390
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1960
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	59.1
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	3027	Ramp Junction Speed (S), mi/h	60.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	3743	Average Density (D), pc/mi/ln	31.2
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5076	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1894
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.79
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	64.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5965	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1323
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.55
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 NB, On-Ramp at Cantu Galleano		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4743	1222
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	0.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	1.000	0.909
Flow Rate (vi),pc/h	5155	1461
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.92	0.77

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	320.8	Density in Ramp Influence Area (DR), pc/mi/ln	39.5
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.652
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2175
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	51.7
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	64.0
Flow in Lanes 1 and 2 (v12), pc/h	2980	Ramp Junction Speed (S), mi/h	55.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	4441	Average Density (D), pc/mi/ln	40.0
Level of Service (LOS)	E		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4736	687
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.935
Flow Rate (vi),pc/h	5253	799
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.73	0.38

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	30.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.370
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1817
Distance to Downstream Ramp (LDOWN), ft	1000	Off-Ramp Influenece Area Speed (SR), mi/h	59.6
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.592	Outer Lanes Freeway Speed (SO), mi/h	73.6
Flow in Lanes 1 and 2 (v12), pc/h	3436	Ramp Junction Speed (S), mi/h	63.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	27.4
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4736	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1751
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4845	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1383
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4845	1342
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.926
Flow Rate (vi),pc/h	5532	1575
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.58	0.38

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	13.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.440
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1464
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	57.7
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	75.0
Flow in Lanes 1 and 2 (v12), pc/h	2604	Ramp Junction Speed (S), mi/h	65.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	21.1
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	344	977
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	11.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.901	0.909
Flow Rate (vi),pc/h	415	1168
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.33	0.61

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	14.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.314
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	415	Ramp Junction Speed (S), mi/h	61.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	1583	Average Density (D), pc/mi/ln	12.9
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2067	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1213
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.51
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4338	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1250
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.52
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3086	1253
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	3557	1444
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.69	0.69

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	23.9
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.336
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1352
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	60.6
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	66.9
Flow in Lanes 1 and 2 (v12), pc/h	2205	Ramp Junction Speed (S), mi/h	62.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	3649	Average Density (D), pc/mi/ln	26.8
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3207	1254
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	14.00	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.877	0.935
Flow Rate (vi),pc/h	3975	1458
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.55	0.35

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	25.4
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.429
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1384
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	75.3
Flow in Lanes 1 and 2 (v12), pc/h	2591	Ramp Junction Speed (S), mi/h	63.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	21.0
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3207	Heavy Vehicle Adjustment Factor (f_{HV})	0.877
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1325
Total Trucks, %	14.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.55
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8332	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2354
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.98
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	43.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7397	935
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.855
Flow Rate (vi),pc/h	8280	1189
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.99	0.57

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	33.5
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.577
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2484
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	53.8
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.069	Outer Lanes Freeway Speed (SO), mi/h	62.4
Flow in Lanes 1 and 2 (v12), pc/h	3312	Ramp Junction Speed (S), mi/h	58.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	4501	Average Density (D), pc/mi/ln	40.8
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	9120	9548	0.96	55.9	40.8	E

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.855	9120	748	9600	2100	0.95	0.36	65.3	59.8	34.9	37.8	E

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	8378	9548	0.88	60.1	34.8	D

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.971	0.917	9439	1061	9600	2100	0.98	0.51	58.5	54.8	40.3	32.6	D

Segment 5: Basic

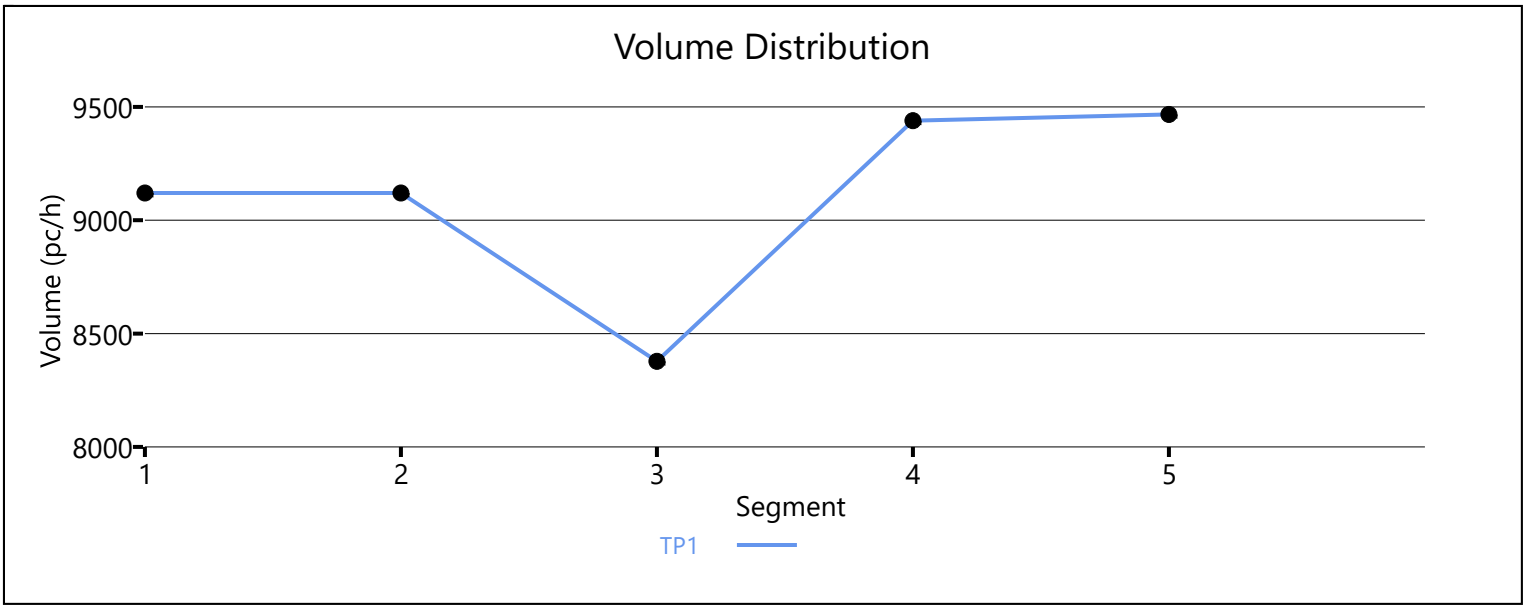
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	9467	9548	0.99	53.6	44.2	E

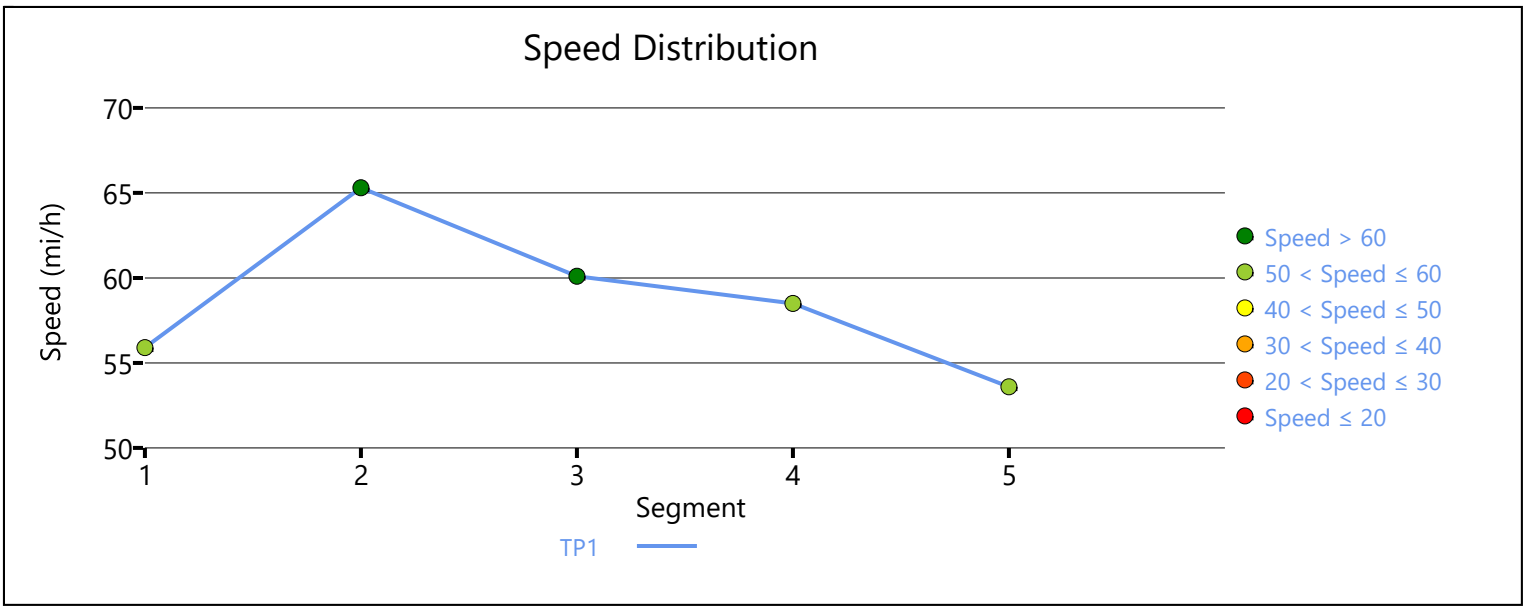
Facility Time Period Results

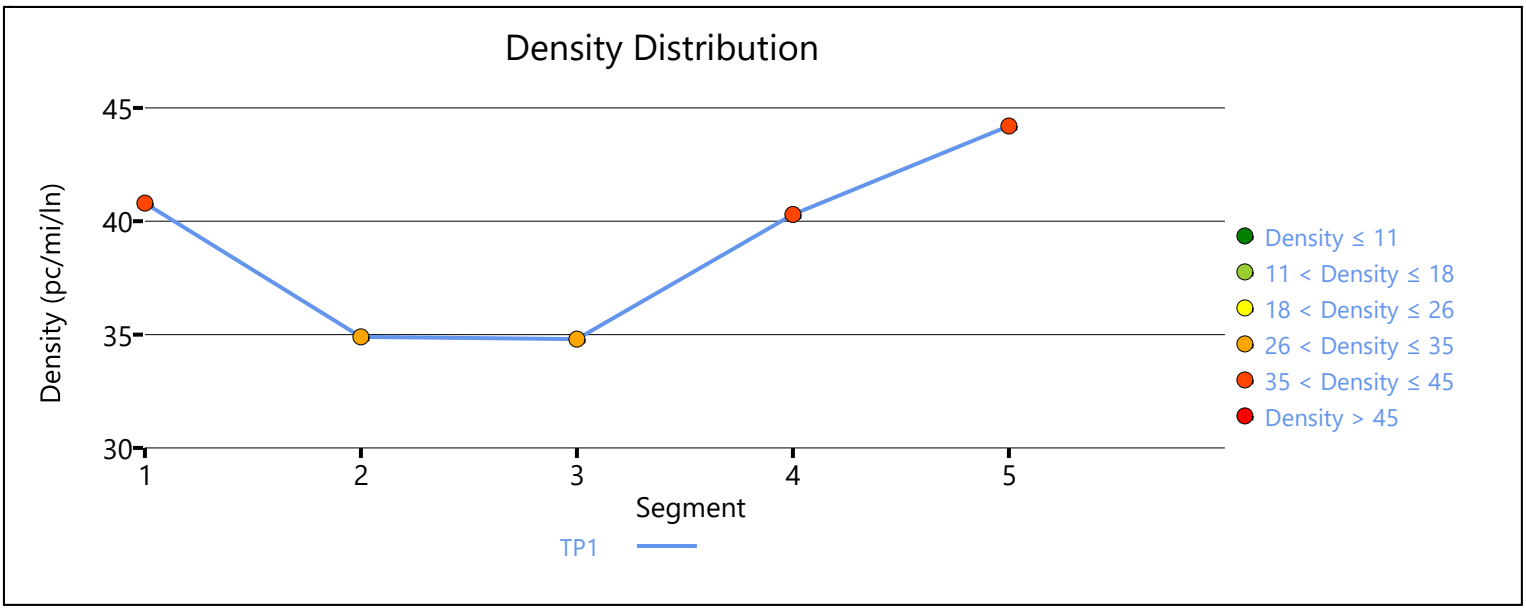
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	57.5	39.6	38.2	1.9	E

Facility Overall Results

Space Mean Speed, mi/h	57.5	Density, veh/mi/ln	38.2
Average Travel Time, min	1.9	Density, pc/mi/ln	39.6







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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	5092	701
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	7.00	13.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.885
Flow Rate (vi),pc/h	5920	861
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.49	0.41

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	27.3
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.375
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1176
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.1
Flow in Lanes 1 and 2 (v12), pc/h	2680	Ramp Junction Speed (S), mi/h	66.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	17.9
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5792	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1360
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.57
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7183	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1992
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7183	807
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.855
Flow Rate (vi),pc/h	7967	1026
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.66	0.49

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	28.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.390
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1508
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	74.8
Flow in Lanes 1 and 2 (v12), pc/h	3358	Ramp Junction Speed (S), mi/h	65.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	24.3
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.980	8082	9548	0.85	61.5	32.8	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.980	0.847	8082	885	9600	2100	0.84	0.42	65.5	59.4	30.8	34.1	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	1.000	7171	9548	0.75	65.1	27.5	D

Segment 4: Merge

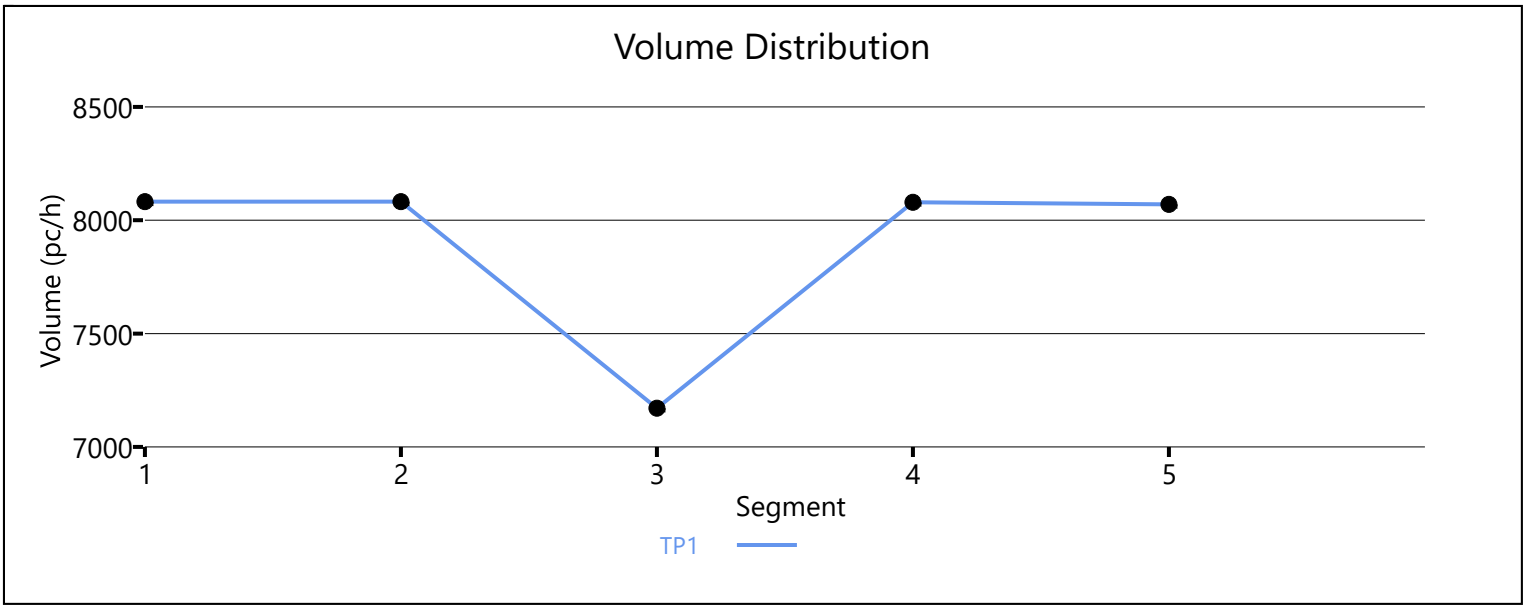
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	1.000	0.901	8079	908	9600	2100	0.84	0.43	61.7	59.1	32.7	27.4	C

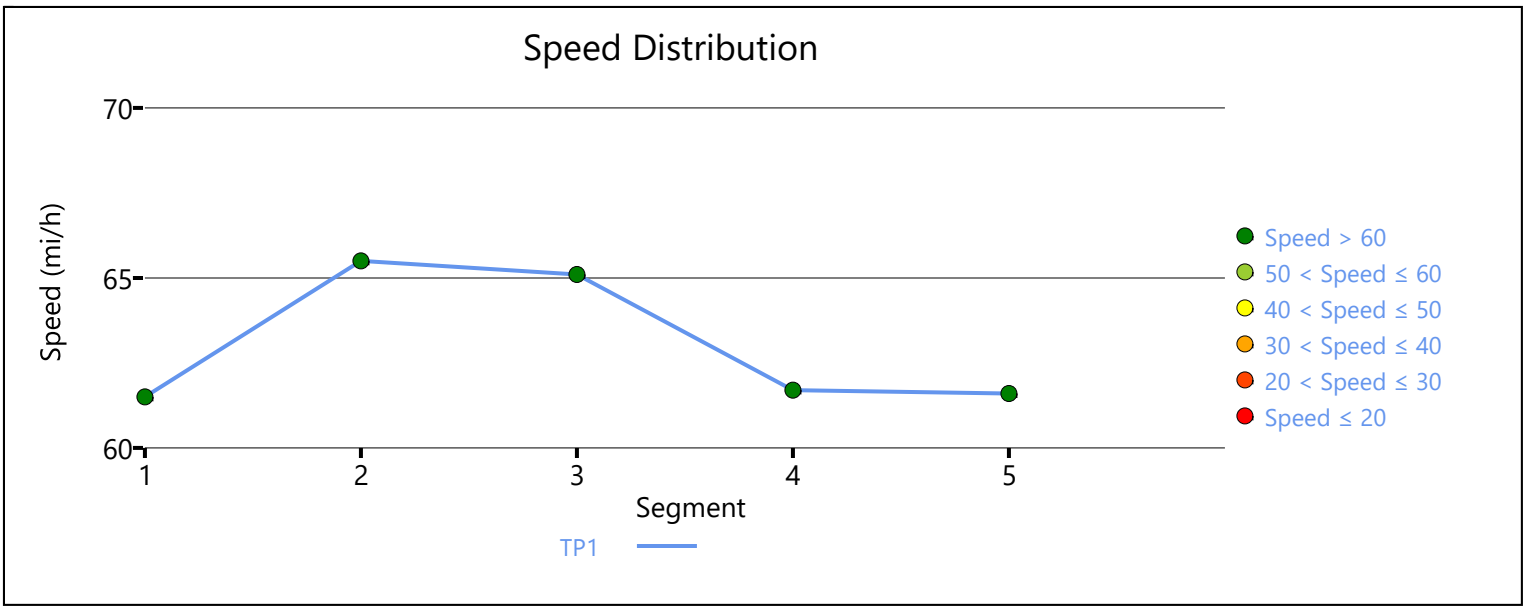
Segment 5: Basic

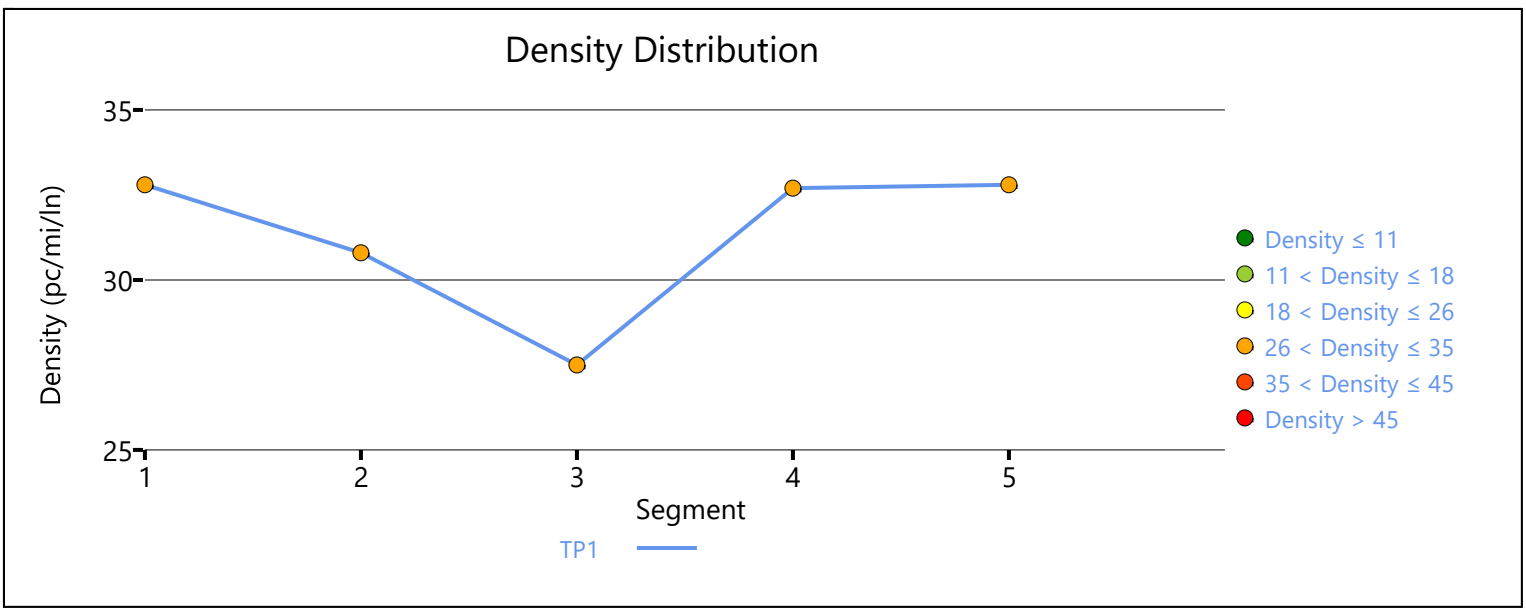
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.990	8070	9548	0.85	61.6	32.8	D

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	62.9	31.3	31.0	1.7	D

Facility Overall Results			
Space Mean Speed, mi/h	62.9	Density, veh/mi/ln	31.0
Average Travel Time, min	1.7	Density, pc/mi/ln	31.3







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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4832	1073
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.901
Flow Rate (vi),pc/h	5359	1294
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.69	0.62

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	25.1
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.347
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1608
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	60.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.056	Outer Lanes Freeway Speed (SO), mi/h	66.0
Flow in Lanes 1 and 2 (v12), pc/h	2144	Ramp Junction Speed (S), mi/h	62.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	3438	Average Density (D), pc/mi/ln	26.4
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5905	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1668
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.70
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4254	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1226
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.51
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4254	1369
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	6.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.909
Flow Rate (vi),pc/h	4903	1637
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.51	0.78

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	27.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.445
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	921
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	57.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	3061	Ramp Junction Speed (S), mi/h	63.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	19.3
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3815	750
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	4.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.962
Flow Rate (vi),pc/h	4356	847
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.72	0.40

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	25.7
Distance to Upstream Ramp (LUP), ft	1000	Speed Index (M)	0.354
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1712
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	60.1
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	65.6
Flow in Lanes 1 and 2 (v12), pc/h	2644	Ramp Junction Speed (S), mi/h	61.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	3491	Average Density (D), pc/mi/ln	28.1
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4565	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1737
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.72
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5383	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1216
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.51
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 NB, On-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4063	1320
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.901
Flow Rate (vi),pc/h	4461	1592
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.84	0.84

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	200.3	Density in Ramp Influence Area (DR), pc/mi/ln	37.3
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.573
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1883
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	54.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	65.0
Flow in Lanes 1 and 2 (v12), pc/h	2578	Ramp Junction Speed (S), mi/h	57.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	4170	Average Density (D), pc/mi/ln	35.4
Level of Service (LOS)	E		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3741	1328
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	4.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.962
Flow Rate (vi),pc/h	4149	1500
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.58	0.71

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	26.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.433
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1094
Distance to Downstream Ramp (LDOWN), ft	1000	Off-Ramp Influenece Area Speed (SR), mi/h	57.9
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.587	Outer Lanes Freeway Speed (SO), mi/h	76.4
Flow in Lanes 1 and 2 (v12), pc/h	3055	Ramp Junction Speed (S), mi/h	61.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	22.4
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5069	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1891
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.79
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	64.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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APPENDIX 8.9:

OPENING YEAR CUMULATIVE (2026) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

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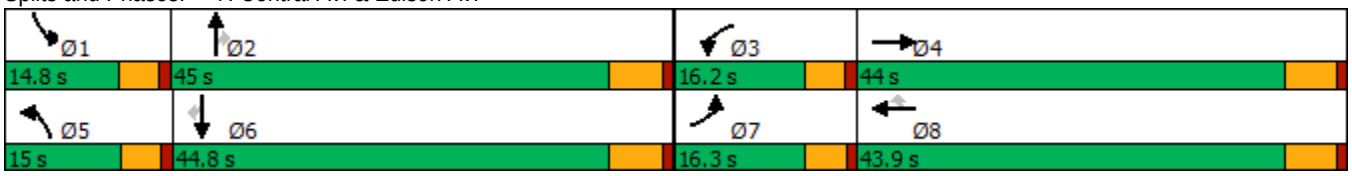
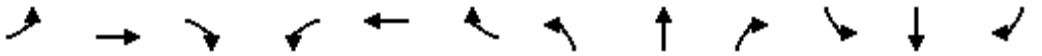
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	161	524	344	1087	126	83	858	335	92	1010	272
Future Volume (vph)	161	524	344	1087	126	83	858	335	92	1010	272
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	16.3	44.0	16.2	43.9	43.9	15.0	45.0	45.0	14.8	44.8	44.8
Total Split (%)	13.6%	36.7%	13.5%	36.6%	36.6%	12.5%	37.5%	37.5%	12.3%	37.3%	37.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	10.6	40.1	12.2	41.7	41.7	9.7	38.3	38.3	9.9	40.8	40.8
Actuated g/C Ratio	0.09	0.34	0.10	0.36	0.36	0.08	0.33	0.33	0.08	0.35	0.35
v/c Ratio	0.59	0.52	1.09	0.93	0.21	0.64	0.80	0.54	0.70	0.88	0.47
Control Delay	60.2	32.7	125.2	50.6	7.0	74.2	41.7	14.4	79.1	46.0	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.2	32.7	125.2	50.6	7.0	74.2	41.7	14.4	79.1	46.0	20.4
LOS	E	C	F	D	A	E	D	B	E	D	C
Approach Delay		38.6		63.5			36.7			43.2	
Approach LOS		D		E			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 47.2	Intersection LOS: D
Intersection Capacity Utilization 84.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	524	62	344	1087	126	83	858	335	92	1010	272
Future Volume (veh/h)	161	524	62	344	1087	126	83	858	335	92	1010	272
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	168	546	59	358	1132	103	86	894	167	96	1052	225
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	236	1073	116	330	1280	563	114	1147	504	125	1171	515
Arrive On Green	0.08	0.34	0.33	0.11	0.37	0.37	0.07	0.34	0.34	0.08	0.34	0.34
Sat Flow, veh/h	3141	3114	336	3141	3420	1505	1619	3420	1503	1619	3420	1504
Grp Volume(v), veh/h	168	299	306	358	1132	103	86	894	167	96	1052	225
Grp Sat Flow(s),veh/h/ln	1570	1710	1740	1570	1710	1505	1619	1710	1503	1619	1710	1504
Q Serve(g_s), s	6.1	16.1	16.3	12.2	35.9	5.3	6.1	27.3	9.6	6.8	33.9	13.4
Cycle Q Clear(g_c), s	6.1	16.1	16.3	12.2	35.9	5.3	6.1	27.3	9.6	6.8	33.9	13.4
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	236	589	599	330	1280	563	114	1147	504	125	1171	515
V/C Ratio(X)	0.71	0.51	0.51	1.08	0.88	0.18	0.76	0.78	0.33	0.77	0.90	0.44
Avail Cap(c_a), veh/h	333	589	599	330	1280	563	153	1208	531	151	1202	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.5	30.2	30.4	52.0	34.0	24.4	53.0	34.7	28.8	52.6	36.3	29.5
Incr Delay (d2), s/veh	1.7	3.1	3.1	74.1	9.1	0.7	8.7	3.2	0.4	14.0	9.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	6.9	7.1	8.1	15.7	1.9	2.7	11.3	3.4	3.2	14.9	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.1	33.4	33.5	126.1	43.1	25.1	61.7	37.9	29.2	66.5	45.4	30.1
LnGrp LOS	D	C	C	F	D	C	E	D	C	E	D	C
Approach Vol, veh/h		773			1593			1147			1373	
Approach Delay, s/veh		37.9			60.6			38.4			44.4	
Approach LOS		D			E			D			D	

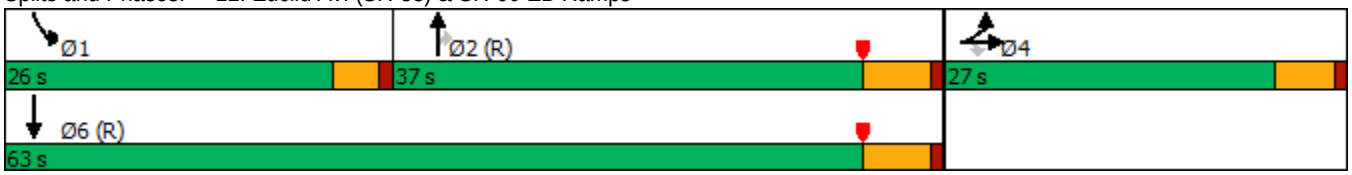
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	43.0	16.2	44.0	12.2	43.8	12.7	47.5
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.2	39.2	11.6	38.2	10.4	39.0	11.7	38.1
Max Q Clear Time (g_c+I1), s	8.8	29.3	14.2	18.3	8.1	35.9	8.1	37.9
Green Ext Time (p_c), s	0.0	4.4	0.0	3.2	0.0	2.0	0.1	0.1

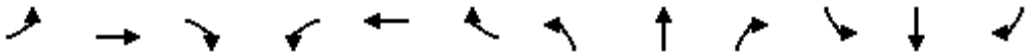
Intersection Summary	
HCM 6th Ctrl Delay	47.2
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	463	2	450	1037	788	417	1444
Future Volume (vph)	463	2	450	1037	788	417	1444
Turn Type	Split	NA	Perm	NA	Perm	Prot	NA
Protected Phases	4	4		2		1	6
Permitted Phases			4		2		
Detector Phase	4	4	4	2	2	1	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	27.0	27.0	27.0	37.0	37.0	26.0	63.0
Total Split (%)	30.0%	30.0%	30.0%	41.1%	41.1%	28.9%	70.0%
Yellow Time (s)	4.0	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	20.3	20.3	20.3	32.2	32.2	23.0	59.2
Actuated g/C Ratio	0.23	0.23	0.23	0.36	0.36	0.26	0.66
v/c Ratio	0.87	0.84	0.75	0.85	0.88	0.95	0.64
Control Delay	57.0	48.8	35.7	34.5	20.8	51.5	5.1
Queue Delay	9.0	6.2	0.0	0.0	0.0	0.0	0.9
Total Delay	65.9	55.0	35.7	34.5	20.8	51.5	6.0
LOS	E	D	D	C	C	D	A
Approach Delay		52.7		28.6			16.2
Approach LOS		D		C			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 28.4	Intersection LOS: C
Intersection Capacity Utilization 131.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	463	2	450	0	0	0	0	1037	788	417	1444	0
Future Volume (veh/h)	463	2	450	0	0	0	0	1037	788	417	1444	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	618	0	280				0	1092	630	439	1520	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	729	0	324				0	1419	617	442	2462	0
Arrive On Green	0.20	0.00	0.20				0.00	0.39	0.39	0.49	1.00	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1568	1810	3705	0
Grp Volume(v), veh/h	618	0	280				0	1092	630	439	1520	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1568	1810	1805	0
Q Serve(g_s), s	14.8	0.0	15.1				0.0	23.7	35.4	21.7	0.0	0.0
Cycle Q Clear(g_c), s	14.8	0.0	15.1				0.0	23.7	35.4	21.7	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	729	0	324				0	1419	617	442	2462	0
V/C Ratio(X)	0.85	0.00	0.86				0.00	0.77	1.02	0.99	0.62	0.00
Avail Cap(c_a), veh/h	885	0	394				0	1419	617	442	2462	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.60	0.60	0.09	0.09	0.00
Uniform Delay (d), s/veh	34.6	0.0	34.7				0.0	23.8	27.3	22.9	0.0	0.0
Incr Delay (d2), s/veh	5.7	0.0	13.5				0.0	2.5	33.7	11.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	0.0	6.8				0.0	9.8	17.8	6.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.3	0.0	48.3				0.0	26.2	61.0	34.0	0.1	0.0
LnGrp LOS	D	A	D				A	C	F	C	A	A
Approach Vol, veh/h		898						1722			1959	
Approach Delay, s/veh		42.8						39.0			7.7	
Approach LOS		D						D			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	26.0	40.9		23.1		66.9
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	22.0	31.5		22.0		57.5
Max Q Clear Time (g_c+I1), s	23.7	37.4		17.1		2.0
Green Ext Time (p_c), s	0.0	0.0		1.0		25.6

Intersection Summary	
HCM 6th Ctrl Delay	26.3
HCM 6th LOS	C

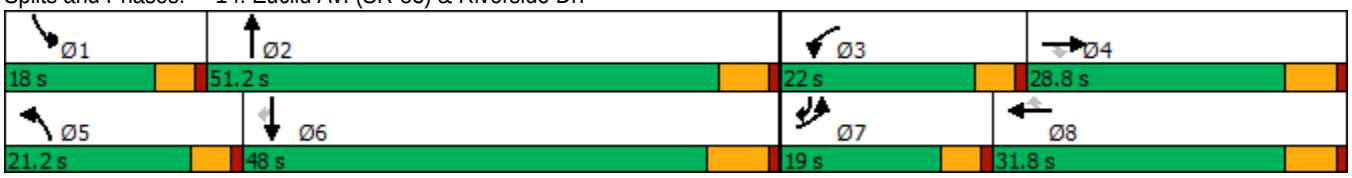
Notes

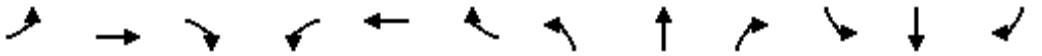
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	176	357	73	219	560	132	84	1162	199	1300	175
Future Volume (vph)	176	357	73	219	560	132	84	1162	199	1300	175
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2	1	6	7
Permitted Phases			4			8					6
Detector Phase	7	4	4	3	8	8	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	9.6	34.5	9.6
Total Split (s)	19.0	28.8	28.8	22.0	31.8	31.8	21.2	51.2	18.0	48.0	19.0
Total Split (%)	15.8%	24.0%	24.0%	18.3%	26.5%	26.5%	17.7%	42.7%	15.0%	40.0%	15.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	Max	None
Act Effct Green (s)	14.4	21.1	21.1	17.4	24.2	24.2	10.8	45.8	13.4	49.5	65.9
Actuated g/C Ratio	0.12	0.18	0.18	0.15	0.20	0.20	0.09	0.39	0.11	0.42	0.56
v/c Ratio	0.94	0.62	0.21	0.97	0.84	0.33	0.60	0.75	1.14	0.66	0.20
Control Delay	103.4	49.4	3.8	102.7	57.2	8.6	68.0	33.9	157.5	31.2	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.4	49.4	3.8	102.7	57.2	8.6	68.0	33.9	157.5	31.2	2.5
LOS	F	D	A	F	E	A	E	C	F	C	A
Approach Delay		59.6			61.2			35.9		43.2	
Approach LOS		E			E			D		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.2	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.14	
Intersection Signal Delay: 46.6	Intersection LOS: D
Intersection Capacity Utilization 84.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	357	73	219	560	132	84	1162	181	199	1300	175
Future Volume (veh/h)	176	357	73	219	560	132	84	1162	181	199	1300	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	185	376	61	231	589	110	88	1223	151	209	1368	125
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	197	587	262	238	674	300	108	1713	212	183	2127	845
Arrive On Green	0.12	0.17	0.17	0.15	0.20	0.20	0.07	0.39	0.39	0.11	0.43	0.43
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	4431	547	1619	4914	1524
Grp Volume(v), veh/h	185	376	61	231	589	110	88	904	470	209	1368	125
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	1638	1702	1619	1638	1524
Q Serve(g_s), s	13.4	12.1	4.1	16.8	19.8	7.4	6.4	27.7	27.7	13.4	25.9	4.7
Cycle Q Clear(g_c), s	13.4	12.1	4.1	16.8	19.8	7.4	6.4	27.7	27.7	13.4	25.9	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	197	587	262	238	674	300	108	1267	658	183	2127	845
V/C Ratio(X)	0.94	0.64	0.23	0.97	0.87	0.37	0.81	0.71	0.71	1.14	0.64	0.15
Avail Cap(c_a), veh/h	197	664	296	238	751	335	227	1267	658	183	2127	845
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.6	45.6	42.3	50.3	46.1	41.2	54.5	30.8	30.8	52.5	26.4	12.8
Incr Delay (d2), s/veh	46.6	1.7	0.5	49.8	10.4	0.7	5.4	3.5	6.5	109.5	1.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	5.1	1.5	9.9	9.1	2.8	2.6	10.7	11.7	10.9	10.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	98.2	47.4	42.8	100.1	56.5	41.9	59.9	34.2	37.3	162.0	27.9	13.2
LnGrp LOS	F	D	D	F	E	D	E	C	D	F	C	B
Approach Vol, veh/h		622			930			1462			1702	
Approach Delay, s/veh		62.0			65.6			36.7			43.3	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	52.3	22.0	26.1	12.5	57.8	19.0	29.1
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	13.4	* 46	17.4	23.0	16.6	41.5	14.4	26.0
Max Q Clear Time (g_c+I1), s	15.4	29.7	18.8	14.1	8.4	27.9	15.4	21.8
Green Ext Time (p_c), s	0.0	7.4	0.0	1.6	0.0	7.8	0.0	1.5

Intersection Summary	
HCM 6th Ctrl Delay	48.1
HCM 6th LOS	D

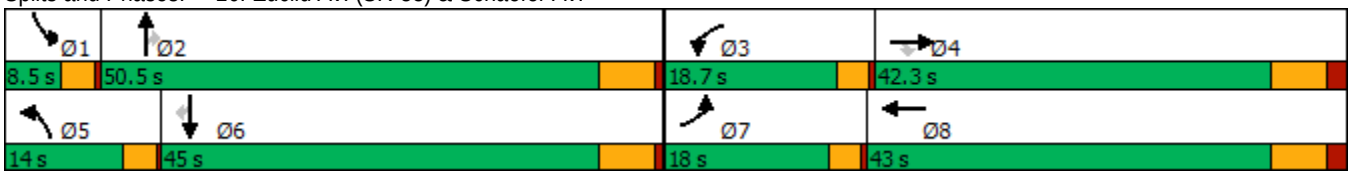
Notes

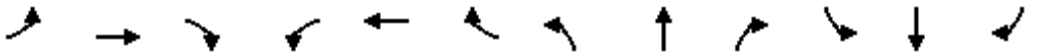
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	176	83	75	161	203	122	1208	40	33	1298	140
Future Volume (vph)	176	83	75	161	203	122	1208	40	33	1298	140
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	18.0	42.3	42.3	18.7	43.0	14.0	50.5	50.5	8.5	45.0	45.0
Total Split (%)	15.0%	35.3%	35.3%	15.6%	35.8%	11.7%	42.1%	42.1%	7.1%	37.5%	37.5%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	14.7	20.0	20.0	14.1	19.4	10.6	45.2	45.2	5.1	35.8	35.8
Actuated g/C Ratio	0.15	0.20	0.20	0.14	0.19	0.11	0.45	0.45	0.05	0.36	0.36
v/c Ratio	0.80	0.25	0.20	0.77	0.67	0.77	0.59	0.06	0.43	0.80	0.25
Control Delay	69.7	36.4	2.8	66.7	47.2	75.6	24.0	0.1	67.8	34.3	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.7	36.4	2.8	66.7	47.2	75.6	24.0	0.1	67.8	34.3	7.3
LOS	E	D	A	E	D	E	C	A	E	C	A
Approach Delay		46.4			55.5		27.9			32.4	
Approach LOS		D			E		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 100.8	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 34.4	Intersection LOS: C
Intersection Capacity Utilization 76.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	83	75	161	203	13	122	1208	40	33	1298	140
Future Volume (veh/h)	176	83	75	161	203	13	122	1208	40	33	1298	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	189	89	62	173	218	12	131	1299	33	35	1396	117
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	221	317	269	205	281	15	159	2126	660	53	1804	558
Arrive On Green	0.14	0.18	0.18	0.13	0.17	0.17	0.10	0.43	0.43	0.03	0.37	0.37
Sat Flow, veh/h	1619	1800	1525	1619	1690	93	1619	4914	1525	1619	4914	1521
Grp Volume(v), veh/h	189	89	62	173	0	230	131	1299	33	35	1396	117
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1783	1619	1638	1525	1619	1638	1521
Q Serve(g_s), s	9.9	3.7	3.0	9.0	0.0	10.7	6.9	17.6	1.1	1.8	21.7	4.6
Cycle Q Clear(g_c), s	9.9	3.7	3.0	9.0	0.0	10.7	6.9	17.6	1.1	1.8	21.7	4.6
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	221	317	269	205	0	297	159	2126	660	53	1804	558
V/C Ratio(X)	0.85	0.28	0.23	0.84	0.00	0.78	0.82	0.61	0.05	0.66	0.77	0.21
Avail Cap(c_a), veh/h	272	736	624	285	0	743	197	2533	786	94	2220	687
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.4	30.8	30.5	36.9	0.0	34.4	38.2	18.9	14.2	41.3	24.2	18.7
Incr Delay (d2), s/veh	16.8	0.4	0.3	11.3	0.0	3.3	16.7	0.3	0.0	5.0	1.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	1.5	1.1	4.0	0.0	4.6	3.2	5.7	0.3	0.8	7.5	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.2	31.2	30.8	48.2	0.0	37.7	54.8	19.2	14.2	46.3	25.6	18.9
LnGrp LOS	D	C	C	D	A	D	D	B	B	D	C	B
Approach Vol, veh/h		340			403			1463			1548	
Approach Delay, s/veh		43.4			42.2			22.3			25.5	
Approach LOS		D			D			C			C	

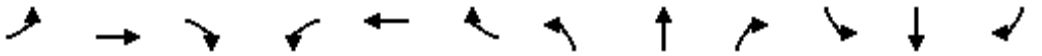
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	43.3	14.4	22.2	12.0	37.7	15.3	21.4
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	44.5	15.2	35.3	10.5	39.0	14.5	36.0
Max Q Clear Time (g_c+I1), s	3.8	19.6	11.0	5.7	8.9	23.7	11.9	12.7
Green Ext Time (p_c), s	0.0	9.1	0.1	0.5	0.0	8.0	0.1	0.9

Intersection Summary	
HCM 6th Ctrl Delay	27.7
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	307	147	41	488	74	257	1137	45	80	1167	192
Future Volume (vph)	179	307	147	41	488	74	257	1137	45	80	1167	192
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	52.0	26.0	54.0	54.0	14.0	42.0	42.0
Total Split (%)	43.3%	43.3%	43.3%	43.3%	43.3%	43.3%	21.7%	45.0%	45.0%	11.7%	35.0%	35.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	45.2	45.2	45.2	45.2	45.2	45.2	13.7	41.5	41.5	7.3	33.2	33.2
Actuated g/C Ratio	0.42	0.42	0.42	0.42	0.42	0.42	0.13	0.38	0.38	0.07	0.31	0.31
v/c Ratio	0.93	0.43	0.21	0.13	0.68	0.11	0.68	0.63	0.08	0.40	0.81	0.34
Control Delay	81.6	26.0	4.4	23.1	32.7	3.9	54.9	29.5	2.9	55.4	40.0	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.6	26.0	4.4	23.1	32.7	3.9	54.9	29.5	2.9	55.4	40.0	8.2
LOS	F	C	A	C	C	A	D	C	A	E	D	A
Approach Delay		36.7			28.5			33.2			36.6	
Approach LOS		D			C			C			D	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 108.6		
Natural Cycle: 100		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.93		
Intersection Signal Delay: 34.2	Intersection LOS: C	
Intersection Capacity Utilization 90.6%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	307	147	41	488	74	257	1137	45	80	1167	192
Future Volume (veh/h)	179	307	147	41	488	74	257	1137	45	80	1167	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	186	320	98	43	508	72	268	1184	39	83	1216	149
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	238	780	660	358	780	660	333	1790	556	137	1484	454
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.11	0.36	0.36	0.04	0.30	0.30
Sat Flow, veh/h	800	1800	1524	929	1800	1524	3141	4914	1525	3141	4914	1503
Grp Volume(v), veh/h	186	320	98	43	508	72	268	1184	39	83	1216	149
Grp Sat Flow(s),veh/h/ln	800	1800	1524	929	1800	1524	1570	1638	1525	1570	1638	1503
Q Serve(g_s), s	21.8	12.7	4.0	3.5	23.2	2.9	8.7	21.0	1.7	2.7	23.8	8.0
Cycle Q Clear(g_c), s	45.0	12.7	4.0	16.2	23.2	2.9	8.7	21.0	1.7	2.7	23.8	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	238	780	660	358	780	660	333	1790	556	137	1484	454
V/C Ratio(X)	0.78	0.41	0.15	0.12	0.65	0.11	0.80	0.66	0.07	0.60	0.82	0.33
Avail Cap(c_a), veh/h	238	780	660	358	780	660	680	2271	705	317	1703	521
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.1	20.3	17.8	25.9	23.2	17.5	45.4	27.7	21.5	48.8	33.6	28.1
Incr Delay (d2), s/veh	15.5	0.3	0.1	0.1	1.9	0.1	1.8	0.5	0.1	1.6	2.9	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	5.1	1.4	0.8	9.5	1.0	3.3	7.5	0.6	1.0	9.1	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.6	20.6	17.9	26.0	25.2	17.6	47.1	28.1	21.6	50.4	36.6	28.5
LnGrp LOS	E	C	B	C	C	B	D	C	C	D	D	C
Approach Vol, veh/h		604			623			1491			1448	
Approach Delay, s/veh		31.6			24.4			31.4			36.5	
Approach LOS		C			C			C			D	

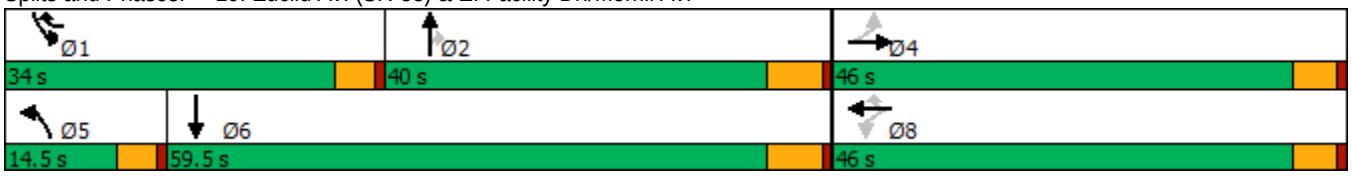
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	43.8		52.0	14.5	37.4		52.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	10.5	48.0		45.0	22.5	36.0		45.0				
Max Q Clear Time (g_c+I1), s	4.7	23.0		47.0	10.7	25.8		25.2				
Green Ext Time (p_c), s	0.0	8.1		0.0	0.4	5.5		3.3				

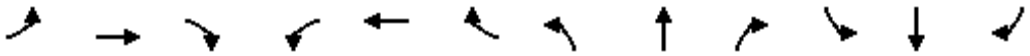
Intersection Summary												
HCM 6th Ctrl Delay			32.2									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	4	9	277	55	384	11	1182	222	212	1261
Future Volume (vph)	4	9	277	55	384	11	1182	222	212	1261
Turn Type	Perm	NA	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	1	5	2		1	6
Permitted Phases	4		8		8			2		
Detector Phase	4	4	8	8	1	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	34.0	14.5	40.0	40.0	34.0	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	28.3%	12.1%	33.3%	33.3%	28.3%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	4.5	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		26.0	26.0	26.0	48.8	10.5	30.4	30.4	17.5	50.4
Actuated g/C Ratio		0.29	0.29	0.29	0.54	0.12	0.34	0.34	0.19	0.56
v/c Ratio		0.07	0.79	0.11	0.47	0.06	0.74	0.39	0.70	0.49
Control Delay		14.9	47.9	25.9	13.7	46.2	31.5	17.4	49.1	14.8
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		14.9	47.9	25.9	13.7	46.2	31.5	17.4	49.1	14.8
LOS		B	D	C	B	D	C	B	D	B
Approach Delay		14.9		27.9			29.4			19.6
Approach LOS		B		C			C			B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 90.2	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 24.9	Intersection LOS: C
Intersection Capacity Utilization 74.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	9	19	277	55	384	11	1182	222	212	1261	44
Future Volume (veh/h)	4	9	19	277	55	384	11	1182	222	212	1261	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	4	9	19	286	57	369	11	1219	186	219	1300	31
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	81	138	232	443	449	627	45	1759	546	262	2428	58
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.03	0.36	0.36	0.16	0.49	0.49
Sat Flow, veh/h	81	554	929	1326	1800	1525	1619	4914	1525	1619	4934	118
Grp Volume(v), veh/h	32	0	0	286	57	369	11	1219	186	219	863	468
Grp Sat Flow(s),veh/h/ln	1564	0	0	1326	1800	1525	1619	1638	1525	1619	1638	1776
Q Serve(g_s), s	0.0	0.0	0.0	12.6	1.6	12.6	0.4	14.2	6.0	8.8	12.2	12.2
Cycle Q Clear(g_c), s	1.0	0.0	0.0	13.6	1.6	12.6	0.4	14.2	6.0	8.8	12.2	12.2
Prop In Lane	0.12		0.59	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	451	0	0	443	449	627	45	1759	546	262	1612	874
V/C Ratio(X)	0.07	0.00	0.00	0.65	0.13	0.59	0.25	0.69	0.34	0.84	0.54	0.54
Avail Cap(c_a), veh/h	987	0	0	921	1099	1178	241	2488	772	711	2610	1415
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.3	0.0	0.0	23.9	19.5	15.3	32.0	18.4	15.8	27.3	11.8	11.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.6	0.0	0.3	1.0	0.5	0.4	2.7	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	3.8	0.6	3.6	0.2	4.4	1.7	3.1	3.3	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.3	0.0	0.0	24.5	19.6	15.7	33.0	18.9	16.1	30.0	12.0	12.3
LnGrp LOS	B	A	A	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		32			712			1416			1550	
Approach Delay, s/veh		19.3			19.5			18.7			14.6	
Approach LOS		B			B			B			B	

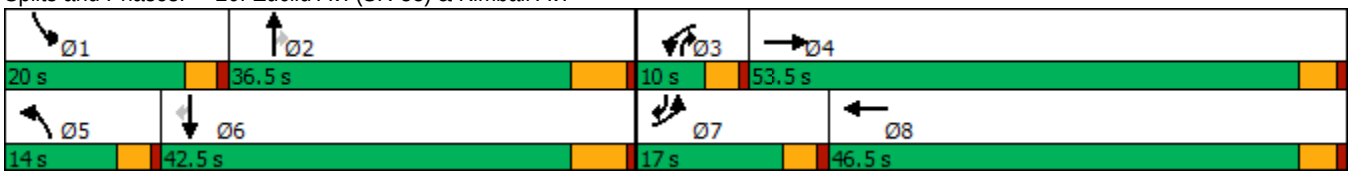
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.4	30.0		21.8	6.4	39.0		21.8				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	29.5	34.0		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	10.8	16.2		3.0	2.4	14.2		15.6				
Green Ext Time (p_c), s	0.2	7.8		0.1	0.0	9.7		1.2				

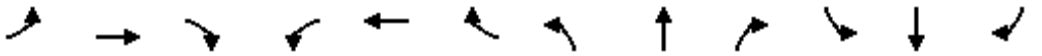
Intersection Summary			
HCM 6th Ctrl Delay		17.2	
HCM 6th LOS		B	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	146	292	62	856	124	972	62	254	786	436
Future Volume (vph)	146	292	62	856	124	972	62	254	786	436
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	9.0	45.5	14.0	36.0	9.0	9.0	33.0	14.0
Total Split (s)	17.0	53.5	10.0	46.5	14.0	36.5	10.0	20.0	42.5	17.0
Total Split (%)	14.2%	44.6%	8.3%	38.8%	11.7%	30.4%	8.3%	16.7%	35.4%	14.2%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	11.0	45.2	6.1	40.3	10.1	27.6	39.8	13.5	31.0	44.1
Actuated g/C Ratio	0.10	0.41	0.05	0.36	0.09	0.25	0.36	0.12	0.28	0.40
v/c Ratio	0.51	0.25	0.72	0.93	0.87	0.81	0.10	0.73	0.58	0.70
Control Delay	55.9	21.7	95.9	47.4	98.7	45.8	0.3	60.4	36.3	28.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.9	21.7	95.9	47.4	98.7	45.8	0.3	60.4	36.3	28.1
LOS	E	C	F	D	F	D	A	E	D	C
Approach Delay		32.0		50.0		49.1			38.0	
Approach LOS		C		D		D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.1	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 43.6	Intersection LOS: D
Intersection Capacity Utilization 85.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	292	46	62	856	254	124	972	62	254	786	436
Future Volume (veh/h)	146	292	46	62	856	254	124	972	62	254	786	436
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	149	298	38	63	873	223	127	992	51	259	802	316
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	291	1246	157	78	966	247	157	1234	457	319	1287	544
Arrive On Green	0.10	0.41	0.41	0.05	0.36	0.36	0.10	0.25	0.25	0.11	0.26	0.26
Sat Flow, veh/h	2956	3055	386	1619	2697	689	1619	4914	1525	2956	4914	1506
Grp Volume(v), veh/h	149	166	170	63	553	543	127	992	51	259	802	316
Grp Sat Flow(s),veh/h/ln	1478	1710	1731	1619	1710	1676	1619	1638	1525	1478	1638	1506
Q Serve(g_s), s	4.8	6.4	6.5	3.9	30.7	30.8	7.7	19.0	2.4	8.6	14.4	17.0
Cycle Q Clear(g_c), s	4.8	6.4	6.5	3.9	30.7	30.8	7.7	19.0	2.4	8.6	14.4	17.0
Prop In Lane	1.00		0.22	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	291	698	706	78	612	600	157	1234	457	319	1287	544
V/C Ratio(X)	0.51	0.24	0.24	0.80	0.90	0.90	0.81	0.80	0.11	0.81	0.62	0.58
Avail Cap(c_a), veh/h	384	837	847	97	717	703	162	1497	538	472	1791	699
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	19.4	19.5	47.2	30.5	30.5	44.3	35.2	25.4	43.7	32.6	25.9
Incr Delay (d2), s/veh	0.5	0.2	0.2	25.9	12.4	12.7	23.2	2.7	0.1	4.0	0.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.4	2.5	2.1	13.8	13.6	3.9	7.3	0.9	3.1	5.3	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.4	19.6	19.6	73.1	42.9	43.2	67.5	37.9	25.5	47.7	33.1	26.9
LnGrp LOS	D	B	B	E	D	D	E	D	C	D	C	C
Approach Vol, veh/h		485			1159			1170			1377	
Approach Delay, s/veh		26.9			44.7			40.6			34.4	
Approach LOS		C			D			D			C	

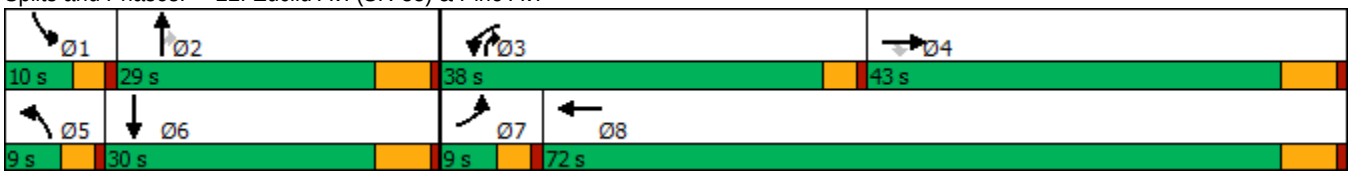
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	31.1	8.8	45.4	13.7	32.2	13.8	40.4
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	16.0	30.5	6.0	49.0	10.0	36.5	13.0	42.0
Max Q Clear Time (g_c+I1), s	10.6	21.0	5.9	8.5	9.7	19.0	6.8	32.8
Green Ext Time (p_c), s	0.2	4.2	0.0	1.8	0.0	5.6	0.1	3.1

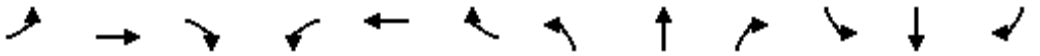
Intersection Summary	
HCM 6th Ctrl Delay	38.1
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	9	204	55	1199	367	65	831	776	71	774
Future Volume (vph)	9	204	55	1199	367	65	831	776	71	774
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	38.0	72.0	9.0	29.0	38.0	10.0	30.0
Total Split (%)	7.5%	35.8%	35.8%	31.7%	60.0%	7.5%	24.2%	31.7%	8.3%	25.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-2.0	-2.0	0.0	-2.0	0.0	-2.0	0.0	0.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.1	17.6	17.6	34.5	54.7	5.1	22.4	56.9	6.1	23.4
Actuated g/C Ratio	0.05	0.18	0.18	0.36	0.57	0.05	0.23	0.59	0.06	0.24
v/c Ratio	0.11	0.34	0.15	1.18	0.51	0.80	0.75	0.42	0.72	0.69
Control Delay	52.4	35.3	0.8	120.0	14.9	102.9	40.4	1.8	84.9	37.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.4	35.3	0.8	120.0	14.9	102.9	40.4	1.8	84.9	37.6
LOS	D	D	A	F	B	F	D	A	F	D
Approach Delay		28.8			89.7		24.9			41.5
Approach LOS		C			F		C			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 52.7	Intersection LOS: D
Intersection Capacity Utilization 81.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	204	55	1199	367	120	65	831	776	71	774	18
Future Volume (veh/h)	9	204	55	1199	367	120	65	831	776	71	774	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	9	210	0	1236	378	122	67	857	544	73	798	15
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	18	423		1165	660	213	83	1185	1630	91	1221	23
Arrive On Green	0.01	0.12	0.00	0.39	0.51	0.48	0.05	0.24	0.22	0.06	0.25	0.22
Sat Flow, veh/h	1619	3420	1525	2956	1304	421	1619	4914	2626	1619	4966	93
Grp Volume(v), veh/h	9	210	0	1236	0	500	67	857	544	73	526	287
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1478	0	1724	1619	1638	1313	1619	1638	1783
Q Serve(g_s), s	0.5	4.9	0.0	34.0	0.0	17.5	3.5	13.8	8.8	3.8	12.5	12.5
Cycle Q Clear(g_c), s	0.5	4.9	0.0	34.0	0.0	17.5	3.5	13.8	8.8	3.8	12.5	12.5
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	18	423		1165	0	873	83	1185	1630	91	805	438
V/C Ratio(X)	0.49	0.50		1.06	0.00	0.57	0.81	0.72	0.33	0.81	0.65	0.65
Avail Cap(c_a), veh/h	94	1545		1165	0	1359	94	1423	1758	113	987	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.4	35.3	0.0	26.2	0.0	15.0	40.5	30.1	8.2	40.3	29.2	29.3
Incr Delay (d2), s/veh	7.5	1.3	0.0	44.3	0.0	0.8	31.6	1.1	0.0	23.0	0.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.0	0.0	17.5	0.0	6.0	2.0	5.0	1.9	2.0	4.5	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.9	36.6	0.0	70.4	0.0	15.9	72.1	31.2	8.2	63.3	29.8	30.4
LnGrp LOS	D	D		F	A	B	E	C	A	E	C	C
Approach Vol, veh/h		219	A		1736			1468			886	
Approach Delay, s/veh		37.1			54.7			24.5			32.8	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	24.8	38.0	14.7	8.4	25.2	5.0	47.7
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	6.0	23.0	34.0	37.0	5.0	24.0	5.0	66.0
Max Q Clear Time (g_c+I1), s	5.8	15.8	36.0	6.9	5.5	14.5	2.5	19.5
Green Ext Time (p_c), s	0.0	3.0	0.0	1.7	0.0	2.1	0.0	4.8

Intersection Summary	
HCM 6th Ctrl Delay	39.0
HCM 6th LOS	D

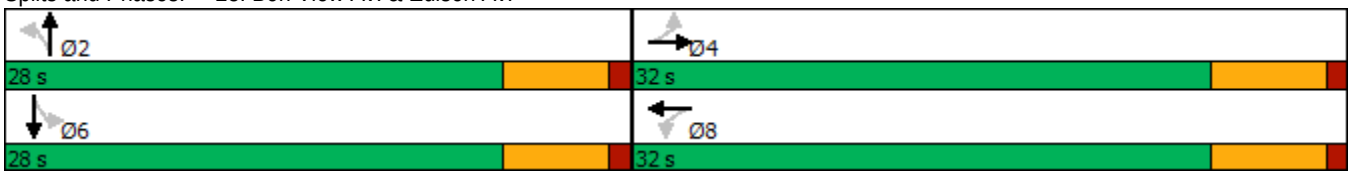
Notes

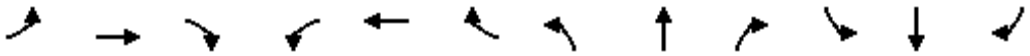
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	55	284	21	581	20	84	21	112
Future Volume (vph)	55	284	21	581	20	84	21	112
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	27.8	27.8	27.8	27.8
Total Split (s)	32.0	32.0	32.0	32.0	28.0	28.0	28.0	28.0
Total Split (%)	53.3%	53.3%	53.3%	53.3%	46.7%	46.7%	46.7%	46.7%
Yellow Time (s)	5.2	5.2	5.2	5.2	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		5.8		5.8
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)		23.2		23.2		12.5		12.5
Actuated g/C Ratio		0.48		0.48		0.26		0.26
v/c Ratio		0.53		0.80		0.30		0.44
Control Delay		12.5		21.3		15.5		15.9
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		12.5		21.3		15.5		15.9
LOS		B		C		B		B
Approach Delay		12.5		21.3		15.5		15.9
Approach LOS		B		C		B		B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 47.9	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 17.5	Intersection LOS: B
Intersection Capacity Utilization 66.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 23: Bon View Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	284	16	21	581	18	20	84	15	21	112	50
Future Volume (veh/h)	55	284	16	21	581	18	20	84	15	21	112	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	60	312	18	23	638	20	22	92	16	23	123	55
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	168	657	35	103	777	24	138	333	51	122	277	113
Arrive On Green	0.46	0.46	0.46	0.46	0.46	0.46	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	144	1435	76	25	1697	52	138	1350	209	96	1125	460
Grp Volume(v), veh/h	390	0	0	681	0	0	130	0	0	201	0	0
Grp Sat Flow(s),veh/h/ln	1656	0	0	1774	0	0	1697	0	0	1681	0	0
Q Serve(g_s), s	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.1	0.0	0.0	13.6	0.0	0.0	2.4	0.0	0.0	4.1	0.0	0.0
Prop In Lane	0.15		0.05	0.03		0.03	0.17		0.12	0.11		0.27
Lane Grp Cap(c), veh/h	860	0	0	904	0	0	522	0	0	513	0	0
V/C Ratio(X)	0.45	0.00	0.00	0.75	0.00	0.00	0.25	0.00	0.00	0.39	0.00	0.00
Avail Cap(c_a), veh/h	1126	0	0	1215	0	0	1013	0	0	1008	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.6	0.0	0.0	9.6	0.0	0.0	12.4	0.0	0.0	13.1	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	1.9	0.0	0.0	0.2	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	3.1	0.0	0.0	0.7	0.0	0.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.0	0.0	0.0	11.5	0.0	0.0	12.7	0.0	0.0	13.5	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h		390			681			130			201	
Approach Delay, s/veh		8.0			11.5			12.7			13.5	
Approach LOS		A			B			B			B	

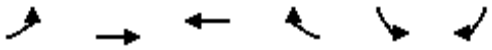
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.8		24.8		15.8		24.8				
Change Period (Y+Rc), s		5.8		6.2		5.8		6.2				
Max Green Setting (Gmax), s		22.2		25.8		22.2		25.8				
Max Q Clear Time (g_c+I1), s		4.4		8.1		6.1		15.6				
Green Ext Time (p_c), s		0.5		2.1		0.9		3.0				

Intersection Summary												
HCM 6th Ctrl Delay			10.9									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	69	355	775	30
Future Volume (vph)	69	355	775	30
Turn Type	Perm	NA	NA	Prot
Protected Phases		4	8	6
Permitted Phases	4			
Detector Phase	4	4	8	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	16.2	16.2	23.2	32.8
Total Split (s)	86.0	86.0	86.0	34.0
Total Split (%)	71.7%	71.7%	71.7%	28.3%
Yellow Time (s)	5.2	5.2	5.2	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0
Total Lost Time (s)		6.2	6.2	5.8
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	Min
Act Effct Green (s)		21.4	21.4	13.0
Actuated g/C Ratio		0.45	0.45	0.27
v/c Ratio		0.74	0.59	0.18
Control Delay		19.5	11.3	9.1
Queue Delay		0.0	0.0	0.0
Total Delay		19.5	11.3	9.1
LOS		B	B	A
Approach Delay		19.5	11.3	9.1
Approach LOS		B	B	A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 47.5	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 13.7	Intersection LOS: B
Intersection Capacity Utilization 72.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 25: Merrill Av. & Bon View Av.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	69	355	775	81	30	54
Future Volume (veh/h)	69	355	775	81	30	54
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	73	378	824	86	32	57
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	158	532	1335	139	147	262
Arrive On Green	0.43	0.43	0.43	0.43	0.26	0.26
Sat Flow, veh/h	116	1244	3215	326	565	1007
Grp Volume(v), veh/h	451	0	451	459	90	0
Grp Sat Flow(s),veh/h/ln	1360	0	1710	1741	1590	0
Q Serve(g_s), s	3.1	0.0	7.9	7.9	1.7	0.0
Cycle Q Clear(g_c), s	11.0	0.0	7.9	7.9	1.7	0.0
Prop In Lane	0.16			0.19	0.36	0.63
Lane Grp Cap(c), veh/h	690	0	731	744	414	0
V/C Ratio(X)	0.65	0.00	0.62	0.62	0.22	0.00
Avail Cap(c_a), veh/h	2965	0	3553	3618	1168	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.9	0.0	8.6	8.6	11.1	0.0
Incr Delay (d2), s/veh	1.1	0.0	0.9	0.8	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	1.6	1.6	0.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.9	0.0	9.4	9.4	11.4	0.0
LnGrp LOS	A	A	A	A	B	A
Approach Vol, veh/h		451	910		90	
Approach Delay, s/veh		9.9	9.4		11.4	
Approach LOS		A	A		B	

Timer - Assigned Phs		4		6	8
Phs Duration (G+Y+Rc), s		22.6		15.8	22.6
Change Period (Y+Rc), s		6.2		5.8	6.2
Max Green Setting (Gmax), s		79.8		28.2	79.8
Max Q Clear Time (g_c+I1), s		13.0		3.7	9.9
Green Ext Time (p_c), s		3.4		0.2	5.9

Intersection Summary	
HCM 6th Ctrl Delay	9.7
HCM 6th LOS	A

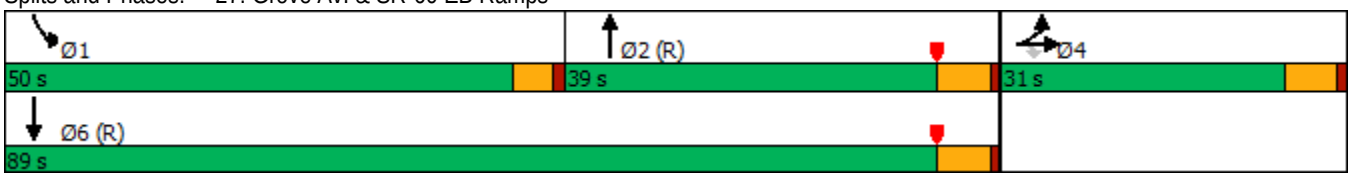
Notes

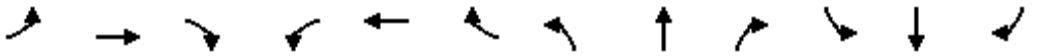
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	709	1	212	776	397	654
Future Volume (vph)	709	1	212	776	397	654
Turn Type	Split	NA	Perm	NA	Prot	NA
Protected Phases	4	4		2	1	6
Permitted Phases			4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	30.8	26.8	9.6	22.8
Total Split (s)	31.0	31.0	31.0	39.0	50.0	89.0
Total Split (%)	25.8%	25.8%	25.8%	32.5%	41.7%	74.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.6	5.8
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	25.2	25.2	25.2	44.9	33.7	83.2
Actuated g/C Ratio	0.21	0.21	0.21	0.37	0.28	0.69
v/c Ratio	1.07	1.07	0.45	0.97	0.85	0.28
Control Delay	112.4	114.0	8.0	54.3	65.2	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.8	0.0
Total Delay	112.4	114.0	8.0	54.3	66.0	7.9
LOS	F	F	A	D	E	A
Approach Delay		89.1		54.3		29.8
Approach LOS		F		D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 56.3	Intersection LOS: E
Intersection Capacity Utilization 89.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	709	1	212	0	0	0	0	776	400	397	654	0
Future Volume (veh/h)	709	1	212	0	0	0	0	776	400	397	654	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	772	0	155				0	843	326	432	711	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	760	0	337				0	1031	398	452	2503	0
Arrive On Green	0.21	0.00	0.21				0.00	0.41	0.41	0.50	1.00	0.00
Sat Flow, veh/h	3619	0	1606				0	2639	981	1810	3705	0
Grp Volume(v), veh/h	772	0	155				0	597	572	432	711	0
Grp Sat Flow(s),veh/h/ln	1810	0	1606				0	1805	1721	1810	1805	0
Q Serve(g_s), s	25.2	0.0	10.1				0.0	35.3	35.5	27.4	0.0	0.0
Cycle Q Clear(g_c), s	25.2	0.0	10.1				0.0	35.3	35.5	27.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.57	1.00		0.00
Lane Grp Cap(c), veh/h	760	0	337				0	731	697	452	2503	0
V/C Ratio(X)	1.02	0.00	0.46				0.00	0.82	0.82	0.96	0.28	0.00
Avail Cap(c_a), veh/h	760	0	337				0	731	697	685	2503	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.61	0.61	0.46	0.46	0.00
Uniform Delay (d), s/veh	47.4	0.0	41.4				0.0	31.7	31.8	29.4	0.0	0.0
Incr Delay (d2), s/veh	36.6	0.0	1.0				0.0	6.2	6.6	8.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.8	0.0	4.0				0.0	15.8	15.2	9.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	84.0	0.0	42.4				0.0	38.0	38.4	38.2	0.1	0.0
LnGrp LOS	F	A	D				A	D	D	D	A	A
Approach Vol, veh/h		927						1169			1143	
Approach Delay, s/veh		77.1						38.2			14.5	
Approach LOS		E						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	34.6	54.4		31.0		89.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	45.4	33.2		25.2		83.2
Max Q Clear Time (g_c+I1), s	29.4	37.5		27.2		2.0
Green Ext Time (p_c), s	0.6	0.0		0.0		5.1

Intersection Summary			
HCM 6th Ctrl Delay			41.0
HCM 6th LOS			D

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	69	99	11	89	40	351	51	396
Future Volume (vph)	69	99	11	89	40	351	51	396
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Total Split (s)	38.0	38.0	38.0	38.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	31.7%	31.7%	68.3%	68.3%	68.3%	68.3%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		21.8		21.8		76.1		76.1
Actuated g/C Ratio		0.20		0.20		0.69		0.69
v/c Ratio		0.81		0.43		0.40		0.48
Control Delay		63.5		38.4		9.5		10.6
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		63.5		38.4		9.5		10.6
LOS		E		D		A		B
Approach Delay		63.5		38.4		9.5		10.6
Approach LOS		E		D		A		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.3	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 21.8	Intersection LOS: C
Intersection Capacity Utilization 71.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 30: Grove Av. & Chino Rd.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	99	30	11	89	33	40	351	15	51	396	34
Future Volume (veh/h)	69	99	30	11	89	33	40	351	15	51	396	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	77	110	33	12	99	37	44	390	17	57	440	38
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	123	141	38	48	204	72	125	1067	45	135	1012	85
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	463	846	231	66	1225	430	122	1490	63	136	1413	118
Grp Volume(v), veh/h	220	0	0	148	0	0	451	0	0	535	0	0
Grp Sat Flow(s),veh/h/ln	1539	0	0	1721	0	0	1675	0	0	1668	0	0
Q Serve(g_s), s	6.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.7	0.0	0.0	8.3	0.0	0.0	10.1	0.0	0.0	12.9	0.0	0.0
Prop In Lane	0.35		0.15	0.08		0.25	0.10		0.04	0.11		0.07
Lane Grp Cap(c), veh/h	302	0	0	323	0	0	1237	0	0	1232	0	0
V/C Ratio(X)	0.73	0.00	0.00	0.46	0.00	0.00	0.36	0.00	0.00	0.43	0.00	0.00
Avail Cap(c_a), veh/h	508	0	0	547	0	0	1237	0	0	1232	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.8	0.0	0.0	40.2	0.0	0.0	5.7	0.0	0.0	6.1	0.0	0.0
Incr Delay (d2), s/veh	3.4	0.0	0.0	1.0	0.0	0.0	0.8	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	0.0	0.0	3.4	0.0	0.0	3.0	0.0	0.0	3.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.1	0.0	0.0	41.2	0.0	0.0	6.5	0.0	0.0	7.2	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		220			148			451			535	
Approach Delay, s/veh		46.1			41.2			6.5			7.2	
Approach LOS		D			D			A			A	

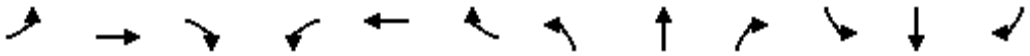
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		82.0		23.8		82.0		23.8				
Change Period (Y+Rc), s		6.2		6.2		6.2		6.2				
Max Green Setting (Gmax), s		75.8		31.8		75.8		31.8				
Max Q Clear Time (g_c+I1), s		12.1		16.7		14.9		10.3				
Green Ext Time (p_c), s		2.8		0.9		3.5		0.6				

Intersection Summary												
HCM 6th Ctrl Delay			17.0									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	48	51	39	111	38	288	46	310
Future Volume (vph)	48	51	39	111	38	288	46	310
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	41.0	41.0	41.0	41.0	79.0	79.0	79.0	79.0
Total Split (%)	34.2%	34.2%	34.2%	34.2%	65.8%	65.8%	65.8%	65.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.8		5.8		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		18.3		18.3		73.1		73.1
Actuated g/C Ratio		0.18		0.18		0.71		0.71
v/c Ratio		0.67		0.75		0.32		0.39
Control Delay		52.1		54.2		7.3		7.9
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		52.1		54.2		7.3		7.9
LOS		D		D		A		A
Approach Delay		52.1		54.2		7.3		7.9
Approach LOS		D		D		A		A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.4	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 21.4	Intersection LOS: C
Intersection Capacity Utilization 53.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 31: Grove Av. & Schaefer Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	51	25	39	111	44	38	288	11	46	310	47
Future Volume (veh/h)	48	51	25	39	111	44	38	288	11	46	310	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	53	57	28	43	123	49	42	320	12	51	344	52
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	111	109	43	81	161	59	145	1072	39	147	960	141
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.73	0.73	0.73	0.73	0.73	0.73
Sat Flow, veh/h	397	708	281	247	1043	381	145	1476	54	147	1322	194
Grp Volume(v), veh/h	138	0	0	215	0	0	374	0	0	447	0	0
Grp Sat Flow(s),veh/h/ln	1386	0	0	1671	0	0	1675	0	0	1663	0	0
Q Serve(g_s), s	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.2	0.0	0.0	12.4	0.0	0.0	7.3	0.0	0.0	9.3	0.0	0.0
Prop In Lane	0.38		0.20	0.20		0.23	0.11		0.03	0.11		0.12
Lane Grp Cap(c), veh/h	263	0	0	301	0	0	1256	0	0	1248	0	0
V/C Ratio(X)	0.52	0.00	0.00	0.72	0.00	0.00	0.30	0.00	0.00	0.36	0.00	0.00
Avail Cap(c_a), veh/h	555	0	0	620	0	0	1256	0	0	1248	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	39.4	0.0	0.0	41.0	0.0	0.0	4.8	0.0	0.0	5.0	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.0	3.2	0.0	0.0	0.6	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	5.2	0.0	0.0	2.0	0.0	0.0	2.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	0.0	0.0	44.2	0.0	0.0	5.4	0.0	0.0	5.8	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		138			215			374			447	
Approach Delay, s/veh		41.0			44.2			5.4			5.8	
Approach LOS		D			D			A			A	

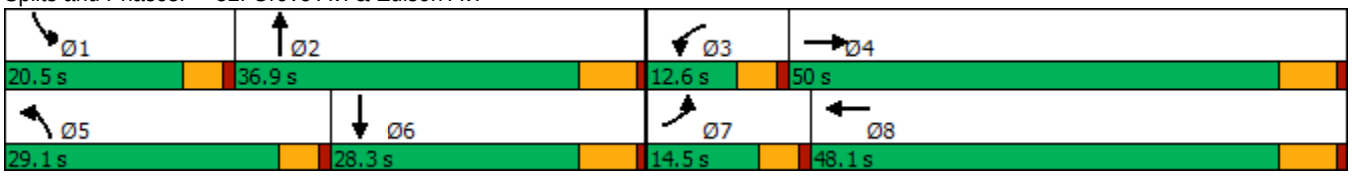
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		79.0		21.3		79.0		21.3				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		72.8		35.2		72.8		35.2				
Max Q Clear Time (g_c+I1), s		9.3		11.2		11.3		14.4				
Green Ext Time (p_c), s		2.2		0.7		2.8		1.0				

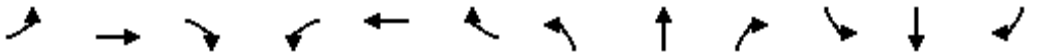
Intersection Summary												
HCM 6th Ctrl Delay			16.8									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	37	230	112	568	33	227	66	247
Future Volume (vph)	37	230	112	568	33	227	66	247
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	9.6	28.2	9.6	28.2
Total Split (s)	14.5	50.0	12.6	48.1	29.1	36.9	20.5	28.3
Total Split (%)	12.1%	41.7%	10.5%	40.1%	24.3%	30.8%	17.1%	23.6%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	7.0	44.3	8.1	49.8	6.8	14.1	8.7	18.0
Actuated g/C Ratio	0.07	0.47	0.09	0.53	0.07	0.15	0.09	0.19
v/c Ratio	0.34	0.37	0.90	0.71	0.31	0.57	0.49	0.47
Control Delay	52.3	19.4	100.2	26.9	51.5	40.7	54.4	36.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	19.4	100.2	26.9	51.5	40.7	54.4	36.0
LOS	D	B	F	C	D	D	D	D
Approach Delay		23.3		38.4		41.9		39.6
Approach LOS		C		D		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 94.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 36.4	Intersection LOS: D
Intersection Capacity Utilization 68.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	230	49	112	568	35	33	227	38	66	247	32
Future Volume (veh/h)	37	230	49	112	568	35	33	227	38	66	247	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	41	253	54	123	624	38	36	249	42	73	271	35
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	58	706	151	145	916	56	54	353	59	91	438	56
Arrive On Green	0.04	0.49	0.49	0.09	0.55	0.55	0.03	0.12	0.12	0.06	0.14	0.14
Sat Flow, veh/h	1619	1438	307	1619	1679	102	1619	2934	488	1619	3050	390
Grp Volume(v), veh/h	41	0	307	123	0	662	36	144	147	73	151	155
Grp Sat Flow(s),veh/h/ln	1619	0	1745	1619	0	1782	1619	1710	1712	1619	1710	1730
Q Serve(g_s), s	2.2	0.0	9.7	6.7	0.0	24.0	2.0	7.2	7.4	4.0	7.4	7.5
Cycle Q Clear(g_c), s	2.2	0.0	9.7	6.7	0.0	24.0	2.0	7.2	7.4	4.0	7.4	7.5
Prop In Lane	1.00		0.18	1.00		0.06	1.00		0.29	1.00		0.23
Lane Grp Cap(c), veh/h	58	0	857	145	0	971	54	206	206	91	246	249
V/C Ratio(X)	0.71	0.00	0.36	0.85	0.00	0.68	0.67	0.70	0.71	0.80	0.61	0.62
Avail Cap(c_a), veh/h	180	0	857	145	0	971	445	589	589	289	424	429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.5	0.0	14.0	40.0	0.0	14.7	42.6	37.7	37.7	41.6	35.8	35.9
Incr Delay (d2), s/veh	5.8	0.0	1.2	33.2	0.0	3.9	5.3	4.2	4.6	5.9	2.5	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	3.6	3.8	0.0	8.9	0.8	3.1	3.2	1.6	3.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.3	0.0	15.2	73.2	0.0	18.5	48.0	41.9	42.3	47.5	38.3	38.5
LnGrp LOS	D	A	B	E	A	B	D	D	D	D	D	D
Approach Vol, veh/h		348			785			327			379	
Approach Delay, s/veh		19.1			27.1			42.7			40.1	
Approach LOS		B			C			D			D	

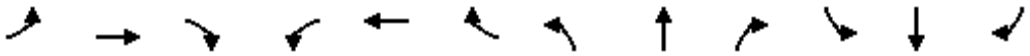
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	16.9	12.6	50.0	7.6	19.0	7.8	54.8
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	15.9	30.7	8.0	43.8	24.5	22.1	9.9	41.9
Max Q Clear Time (g_c+I1), s	6.0	9.4	8.7	11.7	4.0	9.5	4.2	26.0
Green Ext Time (p_c), s	0.0	1.4	0.0	1.7	0.0	1.2	0.0	3.6

Intersection Summary	
HCM 6th Ctrl Delay	31.1
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	42	37	13	94	69	322	43	271
Future Volume (vph)	42	37	13	94	69	322	43	271
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	27.8	27.8	27.8	27.8	92.2	92.2	92.2	92.2
Total Split (%)	23.2%	23.2%	23.2%	23.2%	76.8%	76.8%	76.8%	76.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	6.2	6.2	6.2	6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)	14.2	14.2	14.2	14.2	88.7	88.7	88.7	88.7
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.77	0.77	0.77	0.77
v/c Ratio	0.37	0.25	0.09	0.57	0.11	0.14	0.07	0.16
Control Delay	53.4	37.0	43.7	53.1	4.4	3.8	4.2	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.4	37.0	43.7	53.1	4.4	3.8	4.2	2.8
LOS	D	D	D	D	A	A	A	A
Approach Delay		44.3		52.2		3.9		3.0
Approach LOS		D		D		A		A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.9	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 13.0	Intersection LOS: B
Intersection Capacity Utilization 44.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	37	15	13	94	22	69	322	13	43	271	112
Future Volume (veh/h)	42	37	15	13	94	22	69	322	13	43	271	112
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	46	41	16	14	103	24	76	354	14	47	298	123
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	133	155	60	187	177	41	744	2574	102	784	1825	736
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.77	0.77	0.77	0.77	0.77	0.77
Sat Flow, veh/h	1212	1232	481	1292	1412	329	927	3354	132	973	2378	960
Grp Volume(v), veh/h	46	0	57	14	0	127	76	180	188	47	212	209
Grp Sat Flow(s),veh/h/ln	1212	0	1713	1292	0	1741	927	1710	1776	973	1710	1627
Q Serve(g_s), s	4.2	0.0	3.4	1.1	0.0	7.7	2.7	3.1	3.1	1.5	3.7	3.8
Cycle Q Clear(g_c), s	11.9	0.0	3.4	4.5	0.0	7.7	6.5	3.1	3.1	4.6	3.7	3.8
Prop In Lane	1.00		0.28	1.00		0.19	1.00		0.07	1.00		0.59
Lane Grp Cap(c), veh/h	133	0	215	187	0	218	744	1312	1363	784	1312	1249
V/C Ratio(X)	0.35	0.00	0.27	0.07	0.00	0.58	0.10	0.14	0.14	0.06	0.16	0.17
Avail Cap(c_a), veh/h	219	0	336	279	0	342	744	1312	1363	784	1312	1249
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.8	0.0	44.3	46.4	0.0	46.2	4.3	3.4	3.4	4.0	3.5	3.5
Incr Delay (d2), s/veh	1.5	0.0	0.7	0.2	0.0	2.4	0.3	0.2	0.2	0.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	1.4	0.4	0.0	3.4	0.4	0.8	0.8	0.2	0.9	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.4	0.0	45.0	46.5	0.0	48.7	4.6	3.6	3.6	4.1	3.7	3.8
LnGrp LOS	D	A	D	D	A	D	A	A	A	A	A	A
Approach Vol, veh/h		103			141			444			468	
Approach Delay, s/veh		48.7			48.5			3.8			3.8	
Approach LOS		D			D			A			A	

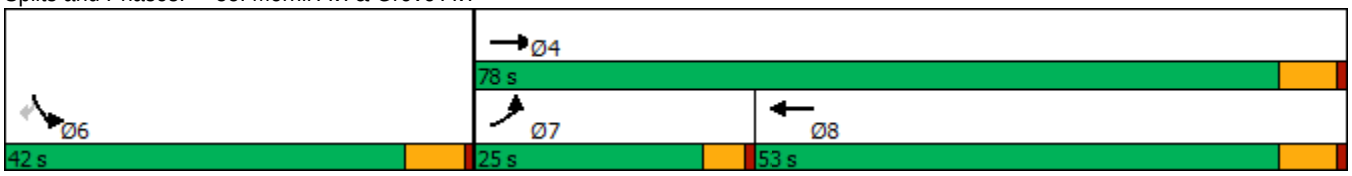
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		92.2		19.9		92.2		19.9				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		86.0		22.0		86.0		22.0				
Max Q Clear Time (g_c+I1), s		8.5		13.9		6.6		9.7				
Green Ext Time (p_c), s		2.4		0.2		2.6		0.4				

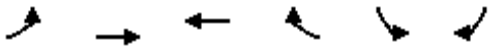
Intersection Summary												
HCM 6th Ctrl Delay			13.2									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	95	320	726	193	106
Future Volume (vph)	95	320	726	193	106
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	28.2	28.2
Total Split (s)	25.0	78.0	53.0	42.0	42.0
Total Split (%)	20.8%	65.0%	44.2%	35.0%	35.0%
Yellow Time (s)	3.6	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	6.2	6.2
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	Max	Max	None	None
Act Effct Green (s)	10.5	72.0	56.9	17.7	17.7
Actuated g/C Ratio	0.10	0.71	0.56	0.17	0.17
v/c Ratio	0.59	0.26	1.10	0.71	0.31
Control Delay	58.7	6.7	83.9	54.1	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	58.7	6.7	83.9	54.1	9.2
LOS	E	A	F	D	A
Approach Delay		18.6	83.9	38.2	
Approach LOS		B	F	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 60.6	Intersection LOS: E
Intersection Capacity Utilization 92.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	95	320	726	308	193	106
Future Volume (veh/h)	95	320	726	308	193	106
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	98	330	748	318	199	109
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	122	1308	725	308	240	226
Arrive On Green	0.08	0.73	0.60	0.60	0.15	0.15
Sat Flow, veh/h	1619	1800	1199	510	1619	1525
Grp Volume(v), veh/h	98	330	0	1066	199	109
Grp Sat Flow(s),veh/h/ln	1619	1800	0	1708	1619	1525
Q Serve(g_s), s	5.9	6.1	0.0	59.8	11.8	6.5
Cycle Q Clear(g_c), s	5.9	6.1	0.0	59.8	11.8	6.5
Prop In Lane	1.00			0.30	1.00	1.00
Lane Grp Cap(c), veh/h	122	1308	0	1033	240	226
V/C Ratio(X)	0.81	0.25	0.00	1.03	0.83	0.48
Avail Cap(c_a), veh/h	334	1308	0	1033	586	553
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	4.5	0.0	19.5	40.9	38.6
Incr Delay (d2), s/veh	4.7	0.5	0.0	36.5	7.2	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	1.7	0.0	28.9	4.9	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	49.7	5.0	0.0	56.0	48.1	40.2
LnGrp LOS	D	A	A	F	D	D
Approach Vol, veh/h		428	1066		308	
Approach Delay, s/veh		15.2	56.0		45.3	
Approach LOS		B	E		D	

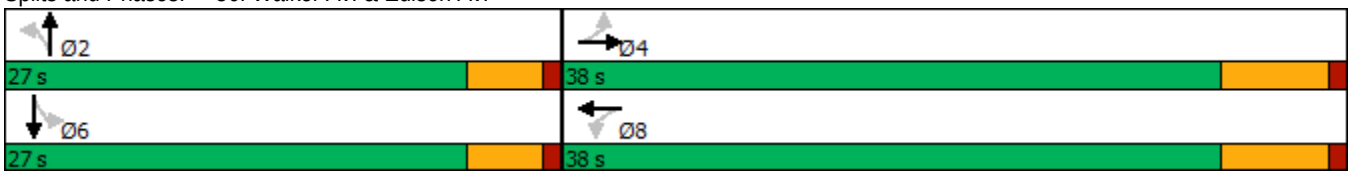
Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			78.0		20.8	12.0	66.0
Change Period (Y+Rc), s			6.2		6.2	4.6	6.2
Max Green Setting (Gmax), s			71.8		35.8	20.4	46.8
Max Q Clear Time (g_c+I1), s			8.1		13.8	7.9	61.8
Green Ext Time (p_c), s			1.8		0.8	0.1	0.0

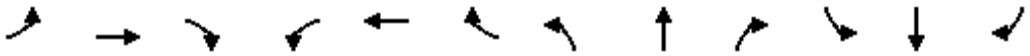
Intersection Summary	
HCM 6th Ctrl Delay	44.5
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	19	274	127	489	5	21	29	20
Future Volume (vph)	19	274	127	489	5	21	29	20
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	26.7	26.7	26.7	26.7
Total Split (s)	38.0	38.0	38.0	38.0	27.0	27.0	27.0	27.0
Total Split (%)	58.5%	58.5%	58.5%	58.5%	41.5%	41.5%	41.5%	41.5%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		4.7		4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		43.8		43.8		12.2		12.2
Actuated g/C Ratio		0.76		0.76		0.21		0.21
v/c Ratio		0.24		0.67		0.10		0.20
Control Delay		6.1		14.0		14.8		16.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		6.1		14.0		14.8		16.8
LOS		A		B		B		B
Approach Delay		6.1		14.0		14.8		16.8
Approach LOS		A		B		B		B

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 57.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 12.2	Intersection LOS: B
Intersection Capacity Utilization 86.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	274	10	127	489	159	5	21	9	29	20	13
Future Volume (veh/h)	19	274	10	127	489	159	5	21	9	29	20	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	19	280	10	130	499	162	5	21	9	30	20	13
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	101	1042	36	211	686	210	97	172	65	185	108	49
Arrive On Green	0.63	0.63	0.63	0.63	0.63	0.63	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	40	1642	56	201	1082	331	99	1159	435	534	727	328
Grp Volume(v), veh/h	309	0	0	791	0	0	35	0	0	63	0	0
Grp Sat Flow(s),veh/h/ln	1738	0	0	1614	0	0	1693	0	0	1589	0	0
Q Serve(g_s), s	0.0	0.0	0.0	9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.8	0.0	0.0	17.0	0.0	0.0	0.9	0.0	0.0	1.6	0.0	0.0
Prop In Lane	0.06		0.03	0.16		0.20	0.14		0.26	0.48		0.21
Lane Grp Cap(c), veh/h	1179	0	0	1107	0	0	333	0	0	342	0	0
V/C Ratio(X)	0.26	0.00	0.00	0.71	0.00	0.00	0.10	0.00	0.00	0.18	0.00	0.00
Avail Cap(c_a), veh/h	1179	0	0	1107	0	0	824	0	0	797	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.1	0.0	0.0	6.3	0.0	0.0	18.6	0.0	0.0	18.9	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	3.9	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	3.1	0.0	0.0	0.3	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.6	0.0	0.0	10.3	0.0	0.0	18.7	0.0	0.0	19.1	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h		309			791			35			63	
Approach Delay, s/veh		4.6			10.3			18.7			19.1	
Approach LOS		A			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		12.1		38.0		12.1		38.0				
Change Period (Y+Rc), s		* 4.7		6.2		* 4.7		6.2				
Max Green Setting (Gmax), s		* 22		31.8		* 22		31.8				
Max Q Clear Time (g_c+I1), s		2.9		5.8		3.6		19.0				
Green Ext Time (p_c), s		0.1		1.7		0.2		4.4				

Intersection Summary												
HCM 6th Ctrl Delay			9.5									
HCM 6th LOS			A									

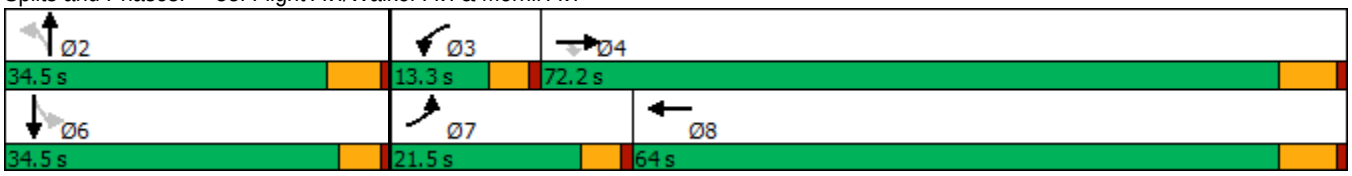
Notes

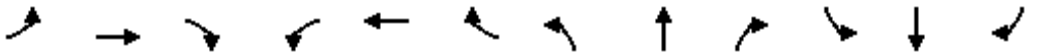
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	Ø6	Ø7
Lane Configurations								
Traffic Volume (vph)	400	113	134	838	145	0		
Future Volume (vph)	400	113	134	838	145	0		
Turn Type	NA	Perm	Prot	NA	Perm	NA		
Protected Phases	4		3	8		2	6	7
Permitted Phases		4			2			
Detector Phase	4	4	3	8	2	2		
Switch Phase								
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0	5.0
Minimum Split (s)	23.2	23.2	9.6	23.2	32.8	32.8	21.6	9.6
Total Split (s)	72.2	72.2	13.3	64.0	34.5	34.5	34.5	21.5
Total Split (%)	60.2%	60.2%	11.1%	53.3%	28.8%	28.8%	29%	18%
Yellow Time (s)	5.2	5.2	3.6	5.2	4.8	4.8	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.2	6.2	4.6	6.2	5.8	5.8		
Lead/Lag	Lag	Lag	Lead	Lag				Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				Yes
Recall Mode	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	66.2	66.2	8.7	79.5	18.0	18.0		
Actuated g/C Ratio	0.60	0.60	0.08	0.73	0.16	0.16		
v/c Ratio	0.38	0.12	1.08	0.35	0.71	0.17		
Control Delay	13.3	4.9	151.0	6.6	61.1	0.5		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	13.3	4.9	151.0	6.6	61.1	0.5		
LOS	B	A	F	A	E	A		
Approach Delay	11.5			26.5		35.0		
Approach LOS	B			C		C		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.6	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 23.3	Intersection LOS: C
Intersection Capacity Utilization 53.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 38: Flight Av./Walker Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	400	113	134	838	0	145	0	110	0	0	0
Future Volume (veh/h)	0	400	113	134	838	0	145	0	110	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	0	412	116	138	864	0	149	0	113	0	0	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	2	1149	973	136	2622	0	259	0	179	0	211	0
Arrive On Green	0.00	0.64	0.64	0.08	0.77	0.00	0.12	0.00	0.12	0.00	0.00	0.00
Sat Flow, veh/h	1619	1800	1525	1619	3510	0	1619	0	1525	0	1800	0
Grp Volume(v), veh/h	0	412	116	138	864	0	149	0	113	0	0	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	0	1619	0	1525	0	1800	0
Q Serve(g_s), s	0.0	11.1	3.1	8.7	8.2	0.0	9.3	0.0	7.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	11.1	3.1	8.7	8.2	0.0	9.3	0.0	7.3	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	2	1149	973	136	2622	0	259	0	179	0	211	0
V/C Ratio(X)	0.00	0.36	0.12	1.01	0.33	0.00	0.57	0.00	0.63	0.00	0.00	0.00
Avail Cap(c_a), veh/h	265	1149	973	136	2622	0	519	0	423	0	520	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	8.8	7.3	47.4	3.8	0.0	44.4	0.0	43.5	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.9	0.2	80.7	0.3	0.0	2.0	0.0	3.7	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.8	0.9	6.4	1.8	0.0	3.7	0.0	2.8	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	9.7	7.6	128.0	4.1	0.0	46.4	0.0	47.2	0.0	0.0	0.0
LnGrp LOS	A	A	A	F	A	A	D	A	D	A	A	A
Approach Vol, veh/h		528			1002			262			0	
Approach Delay, s/veh		9.2			21.2			46.7			0.0	
Approach LOS		A			C			D				

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	17.9	13.3	72.2	17.9	0.0	85.5
Change Period (Y+Rc), s	5.8	4.6	6.2	* 5.8	4.6	6.2
Max Green Setting (Gmax), s	28.7	8.7	66.0	* 30	16.9	57.8
Max Q Clear Time (g_c+I1), s	11.3	10.7	13.1	0.0	0.0	10.2
Green Ext Time (p_c), s	0.9	0.0	2.7	0.0	0.0	6.2

Intersection Summary	
HCM 6th Ctrl Delay	21.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBL	WBT	NBL	NBT	Ø6
Lane Configurations						
Traffic Volume (vph)	440	28	953	20	0	
Future Volume (vph)	440	28	953	20	0	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4		8		2	6
Permitted Phases		8		2		
Detector Phase	4	8	8	2	2	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	26.6
Total Split (s)	91.0	91.0	91.0	29.0	29.0	29.0
Total Split (%)	75.8%	75.8%	75.8%	24.2%	24.2%	24%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.2	6.2	6.2		6.2	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Max	None	None	None
Act Effct Green (s)	97.4	97.4	97.4		12.4	
Actuated g/C Ratio	0.83	0.83	0.83		0.11	
v/c Ratio	0.20	0.05	0.37		0.33	
Control Delay	3.1	3.7	4.1		26.6	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	3.1	3.7	4.1		26.6	
LOS	A	A	A		C	
Approach Delay	3.1		4.1		26.6	
Approach LOS	A		A		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.2	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.37	
Intersection Signal Delay: 4.6	Intersection LOS: A
Intersection Capacity Utilization 46.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 40: Van Vliet Av. & Merrill Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	440	70	28	953	0	20	0	36	0	0	0
Future Volume (veh/h)	0	440	70	28	953	0	20	0	36	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	0	484	77	31	1047	0	22	0	40	0	0	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	68	2375	376	691	2747	0	76	13	78	0	143	0
Arrive On Green	0.00	0.80	0.80	0.80	0.80	0.00	0.08	0.00	0.08	0.00	0.00	0.00
Sat Flow, veh/h	517	2957	468	814	3510	0	381	161	985	0	1800	0
Grp Volume(v), veh/h	0	279	282	31	1047	0	62	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	517	1710	1716	814	1710	0	1527	0	0	0	1800	0
Q Serve(g_s), s	0.0	4.0	4.1	1.0	9.2	0.0	1.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.0	4.1	5.1	9.2	0.0	4.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.27	1.00		0.00	0.35		0.65	0.00		0.00
Lane Grp Cap(c), veh/h	68	1373	1378	691	2747	0	167	0	0	0	143	0
V/C Ratio(X)	0.00	0.20	0.20	0.04	0.38	0.00	0.37	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	68	1373	1378	691	2747	0	371	0	0	0	416	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	2.4	2.4	3.0	2.9	0.0	46.6	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.3	0.1	0.4	0.0	1.4	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.8	0.8	0.1	1.6	0.0	1.6	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	2.8	2.8	3.2	3.3	0.0	47.9	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	A	A	A
Approach Vol, veh/h		561			1078			62			0	
Approach Delay, s/veh		2.8			3.3			47.9			0.0	
Approach LOS		A			A			D				

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	14.6	91.0	14.6	91.0
Change Period (Y+Rc), s	6.2	6.2	* 6.2	6.2
Max Green Setting (Gmax), s	22.8	84.8	* 24	84.8
Max Q Clear Time (g_c+I1), s	6.0	6.1	0.0	11.2
Green Ext Time (p_c), s	0.2	3.2	0.0	8.7

Intersection Summary	
HCM 6th Ctrl Delay	4.8
HCM 6th LOS	A

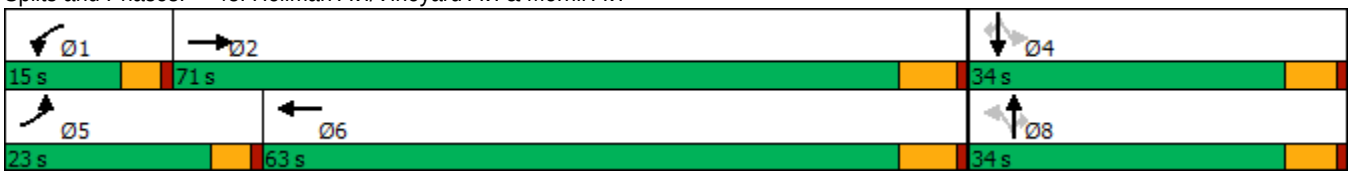
Notes

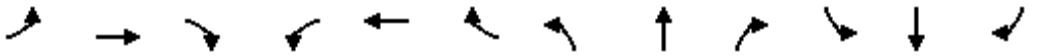
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBL	WBT	NBL	NBR	Ø4	Ø5
Lane Configurations							
Traffic Volume (vph)	474	49	826	156	40		
Future Volume (vph)	474	49	826	156	40		
Turn Type	NA	Prot	NA	Perm	Perm		
Protected Phases	2	1	6			4	5
Permitted Phases				8	8		
Detector Phase	2	1	6	8	8		
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	28.2	9.6	28.2	27.8	27.8	27.8	9.6
Total Split (s)	71.0	15.0	63.0	34.0	34.0	34.0	23.0
Total Split (%)	59.2%	12.5%	52.5%	28.3%	28.3%	28%	19%
Yellow Time (s)	5.2	3.6	5.2	4.8	4.8	4.8	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.2	4.6	6.2	5.8	5.8		
Lead/Lag	Lag	Lead	Lag				Lead
Lead-Lag Optimize?	Yes	Yes	Yes				Yes
Recall Mode	Max	None	Max	None	None	None	None
Act Effct Green (s)	68.2	7.8	78.6	19.4	19.4		
Actuated g/C Ratio	0.62	0.07	0.71	0.18	0.18		
v/c Ratio	0.24	0.46	0.36	0.74	0.07		
Control Delay	11.3	63.6	7.2	62.5	0.2		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	11.3	63.6	7.2	62.5	0.2		
LOS	B	E	A	E	A		
Approach Delay	11.3		10.3				
Approach LOS	B		B				

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 15.6	Intersection LOS: B
Intersection Capacity Utilization 51.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 43: Hellman Av./Vineyard Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	474	2	49	826	0	156	0	40	0	0	0
Future Volume (veh/h)	0	474	2	49	826	0	156	0	40	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	0	510	2	53	888	0	168	0	43	0	0	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	2	2318	9	66	2569	0	278	227	192	74	227	192
Arrive On Green	0.00	0.66	0.66	0.04	0.75	0.00	0.13	0.00	0.13	0.00	0.00	0.00
Sat Flow, veh/h	1619	3494	14	1619	3510	0	1619	1800	1525	1308	1800	1525
Grp Volume(v), veh/h	0	250	262	53	888	0	168	0	43	0	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1798	1619	1710	0	1619	1800	1525	1308	1800	1525
Q Serve(g_s), s	0.0	5.6	5.6	3.2	8.5	0.0	9.9	0.0	2.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.6	5.6	3.2	8.5	0.0	9.9	0.0	2.5	0.0	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	1135	1193	66	2569	0	278	227	192	74	227	192
V/C Ratio(X)	0.00	0.22	0.22	0.81	0.35	0.00	0.60	0.00	0.22	0.00	0.00	0.00
Avail Cap(c_a), veh/h	305	1135	1193	172	2569	0	541	520	440	287	520	440
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	6.5	6.5	46.5	4.1	0.0	41.6	0.0	38.4	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.4	8.5	0.4	0.0	2.1	0.0	0.6	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	1.8	1.4	1.9	0.0	3.9	0.0	0.9	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	6.9	6.9	54.9	4.5	0.0	43.7	0.0	39.0	0.0	0.0	0.0
LnGrp LOS	A	A	A	D	A	A	D	A	D	A	A	A
Approach Vol, veh/h		512			941			211			0	
Approach Delay, s/veh		6.9			7.3			42.8			0.0	
Approach LOS		A			A			D				

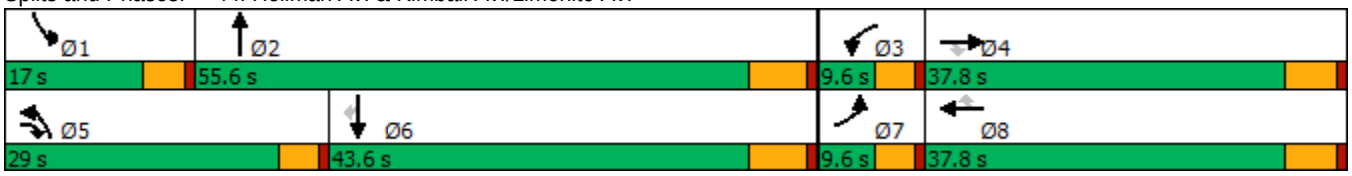
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.6	71.0		18.1	0.0	79.6		18.1				
Change Period (Y+Rc), s	4.6	6.2		5.8	4.6	6.2		5.8				
Max Green Setting (Gmax), s	10.4	64.8		28.2	18.4	56.8		28.2				
Max Q Clear Time (g_c+I1), s	5.2	7.6		0.0	0.0	10.5		11.9				
Green Ext Time (p_c), s	0.0	2.8		0.0	0.0	6.5		0.5				

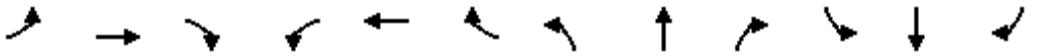
Intersection Summary			
HCM 6th Ctrl Delay		11.7	
HCM 6th LOS		B	

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	50	8	342	2	2	876	223	36	23	
Future Volume (vph)	50	8	342	2	2	876	223	36	23	
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	NA	Perm	
Protected Phases	7	4	5	3	8	5	2	6		1
Permitted Phases			4						6	
Detector Phase	7	4	5	3	8	5	2	6	6	
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	10.0	5.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	9.6	43.2	43.2	43.2	9.6
Total Split (s)	9.6	37.8	29.0	9.6	37.8	29.0	55.6	43.6	43.6	17.0
Total Split (%)	8.0%	31.5%	24.2%	8.0%	31.5%	24.2%	46.3%	36.3%	36.3%	14%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	5.2	5.2	5.2	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	4.6	6.2	6.2	6.2	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	None	None	Max	Max	None	None	None
Act Effct Green (s)	9.4	13.4	59.0	5.2	13.4	42.1	58.7	18.8	18.8	
Actuated g/C Ratio	0.12	0.17	0.73	0.06	0.17	0.52	0.73	0.23	0.23	
v/c Ratio	0.28	0.03	0.30	0.01	0.00	0.60	0.10	0.05	0.05	
Control Delay	42.7	29.9	2.1	45.0	29.5	25.9	6.3	23.7	0.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	42.7	29.9	2.1	45.0	29.5	25.9	6.3	23.7	0.2	
LOS	D	C	A	D	C	C	A	C	A	
Approach Delay		7.7			37.3		21.9	14.6		
Approach LOS		A			D		C	B		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 80.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 18.0	Intersection LOS: B
Intersection Capacity Utilization 60.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	8	342	2	2	0	876	223	6	0	36	23
Future Volume (veh/h)	50	8	342	2	2	0	876	223	6	0	36	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	53	8	360	2	2	0	922	235	6	0	38	24
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	69	351	750	8	531	237	877	2046	52	2	848	378
Arrive On Green	0.04	0.20	0.20	0.00	0.16	0.00	0.30	0.60	0.60	0.00	0.25	0.25
Sat Flow, veh/h	1619	1800	1525	2956	3420	1525	2956	3408	87	1619	3420	1525
Grp Volume(v), veh/h	53	8	360	2	2	0	922	118	123	0	38	24
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	1710	1525	1478	1710	1784	1619	1710	1525
Q Serve(g_s), s	2.7	0.3	12.9	0.1	0.0	0.0	24.4	2.4	2.4	0.0	0.7	1.0
Cycle Q Clear(g_c), s	2.7	0.3	12.9	0.1	0.0	0.0	24.4	2.4	2.4	0.0	0.7	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	69	351	750	8	531	237	877	1027	1071	2	848	378
V/C Ratio(X)	0.77	0.02	0.48	0.25	0.00	0.00	1.05	0.11	0.12	0.00	0.04	0.06
Avail Cap(c_a), veh/h	98	700	1046	180	1330	593	877	1027	1071	244	1554	693
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	26.8	13.9	40.9	29.4	0.0	28.9	7.1	7.1	0.0	23.5	23.6
Incr Delay (d2), s/veh	11.7	0.0	0.5	5.9	0.0	0.0	44.9	0.2	0.2	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.1	3.9	0.0	0.0	0.0	13.1	0.7	0.8	0.0	0.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.7	26.8	14.4	46.8	29.4	0.0	73.9	7.3	7.3	0.0	23.6	23.7
LnGrp LOS	D	C	B	D	C	A	F	A	A	A	C	C
Approach Vol, veh/h		421			4			1163			62	
Approach Delay, s/veh		19.2			38.1			60.1			23.6	
Approach LOS		B			D			E			C	

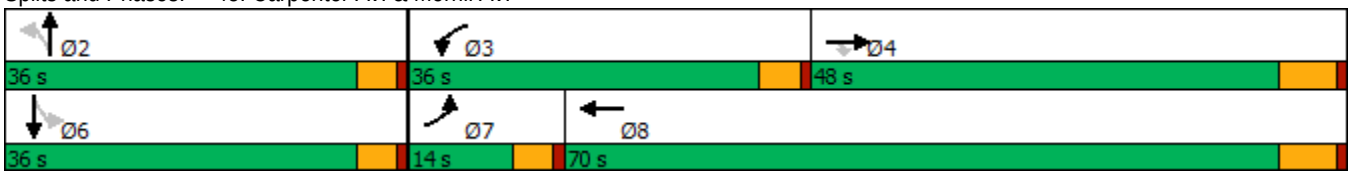
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	55.6	4.8	21.9	29.0	26.6	8.1	18.6
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	12.4	49.4	5.0	32.0	24.4	37.4	5.0	32.0
Max Q Clear Time (g_c+I1), s	0.0	4.4	2.1	14.9	26.4	3.0	4.7	2.0
Green Ext Time (p_c), s	0.0	1.2	0.0	1.1	0.0	0.2	0.0	0.0

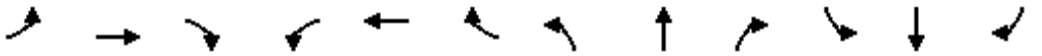
Intersection Summary	
HCM 6th Ctrl Delay	48.2
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	11	469	35	253	841	23	0	130	0
Future Volume (vph)	11	469	35	253	841	23	0	130	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	26.6	26.6
Total Split (s)	14.0	48.0	48.0	36.0	70.0	36.0	36.0	36.0	36.0
Total Split (%)	11.7%	40.0%	40.0%	30.0%	58.3%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2		4.6		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.5	44.1	44.1	18.3	65.1		12.8		12.8
Actuated g/C Ratio	0.06	0.49	0.49	0.20	0.72		0.14		0.14
v/c Ratio	0.12	0.30	0.05	0.78	0.39		0.50		0.75
Control Delay	46.5	16.4	0.1	50.3	6.7		14.4		35.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	46.5	16.4	0.1	50.3	6.7		14.4		35.2
LOS	D	B	A	D	A		B		D
Approach Delay		16.0			16.3		14.4		35.2
Approach LOS		B			B		B		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 90.7	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 17.4	Intersection LOS: B
Intersection Capacity Utilization 65.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 45: Carpenter Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	469	35	253	841	46	23	0	136	130	0	11
Future Volume (veh/h)	11	469	35	253	841	46	23	0	136	130	0	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	12	499	37	269	895	49	24	0	145	138	0	12
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	24	1679	749	303	2154	118	67	16	247	235	3	15
Arrive On Green	0.01	0.49	0.49	0.18	0.65	0.65	0.17	0.00	0.17	0.17	0.00	0.17
Sat Flow, veh/h	1714	3420	1525	1714	3297	181	145	89	1414	940	17	83
Grp Volume(v), veh/h	12	499	37	269	464	480	169	0	0	150	0	0
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1768	1648	0	0	1039	0	0
Q Serve(g_s), s	0.7	8.5	1.2	15.0	12.6	12.6	0.0	0.0	0.0	4.9	0.0	0.0
Cycle Q Clear(g_c), s	0.7	8.5	1.2	15.0	12.6	12.6	9.4	0.0	0.0	14.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.10	0.14		0.86	0.92		0.08
Lane Grp Cap(c), veh/h	24	1679	749	303	1117	1155	330	0	0	252	0	0
V/C Ratio(X)	0.49	0.30	0.05	0.89	0.42	0.42	0.51	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	165	1679	749	551	1117	1155	552	0	0	440	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	47.8	14.8	13.0	39.3	8.1	8.1	37.2	0.0	0.0	39.8	0.0	0.0
Incr Delay (d2), s/veh	5.6	0.5	0.1	3.5	1.1	1.1	1.2	0.0	0.0	2.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.0	0.4	6.2	3.9	4.0	3.8	0.0	0.0	3.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.4	15.3	13.1	42.8	9.2	9.2	38.5	0.0	0.0	42.0	0.0	0.0
LnGrp LOS	D	B	B	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		548			1213			169			150	
Approach Delay, s/veh		16.0			16.6			38.5			42.0	
Approach LOS		B			B			D			D	

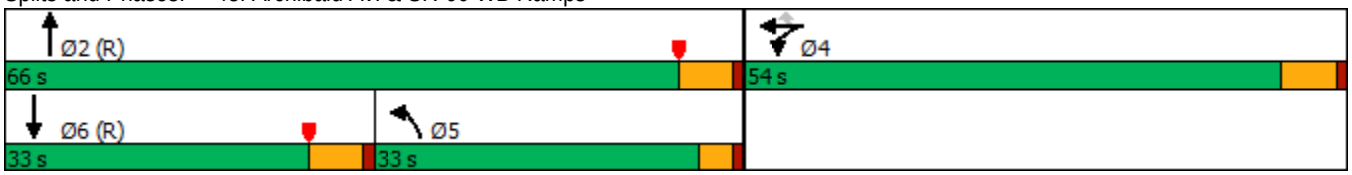
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		21.7	21.9	54.1		21.7	6.0	70.0				
Change Period (Y+Rc), s		4.6	4.6	6.2		4.6	4.6	6.2				
Max Green Setting (Gmax), s		31.4	31.4	41.8		31.4	9.4	63.8				
Max Q Clear Time (g_c+I1), s		11.4	17.0	10.5		16.3	2.7	14.6				
Green Ext Time (p_c), s		1.0	0.3	3.2		0.7	0.0	6.1				

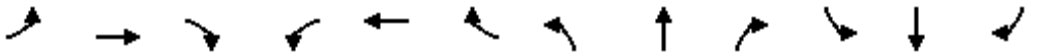
Intersection Summary												
HCM 6th Ctrl Delay			20.1									
HCM 6th LOS			C									

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	4	540	731	1158	450
Future Volume (vph)	4	540	731	1158	450
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	54.0	54.0	33.0	66.0	33.0
Total Split (%)	45.0%	45.0%	27.5%	55.0%	27.5%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	47.1	47.1	31.7	61.1	25.4
Actuated g/C Ratio	0.39	0.39	0.26	0.51	0.21
v/c Ratio	0.79	0.86	0.86	0.48	0.52
Control Delay	40.9	42.8	40.7	10.6	38.8
Queue Delay	0.0	0.0	1.7	0.5	0.0
Total Delay	40.9	42.8	42.4	11.1	38.8
LOS	D	D	D	B	D
Approach Delay	41.8			23.2	38.8
Approach LOS	D			C	D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 31.5	Intersection LOS: C
Intersection Capacity Utilization 74.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	510	4	540	731	1158	0	0	450	215
Future Volume (veh/h)	0	0	0	510	4	540	731	1158	0	0	450	215
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				554	4	404	795	1259	0	0	489	224
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				643	5	576	1126	2822	0	0	857	281
Arrive On Green				0.36	0.36	0.36	0.11	0.18	0.00	0.00	0.17	0.17
Sat Flow, veh/h				1797	13	1610	3510	5358	0	0	5168	1606
Grp Volume(v), veh/h				558	0	404	795	1259	0	0	489	224
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1729	0	0	1634	1606
Q Serve(g_s), s				34.3	0.0	25.8	26.3	26.0	0.0	0.0	11.0	16.1
Cycle Q Clear(g_c), s				34.3	0.0	25.8	26.3	26.0	0.0	0.0	11.0	16.1
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				647	0	576	1126	2822	0	0	857	281
V/C Ratio(X)				0.86	0.00	0.70	0.71	0.45	0.00	0.00	0.57	0.80
Avail Cap(c_a), veh/h				724	0	644	1126	2822	0	0	1111	364
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.41	0.41	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				35.8	0.0	33.0	48.2	33.1	0.0	0.0	45.4	47.5
Incr Delay (d2), s/veh				11.1	0.0	4.3	0.7	0.2	0.0	0.0	2.8	20.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				16.4	0.0	22.8	12.4	12.0	0.0	0.0	4.6	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				46.9	0.0	37.3	48.9	33.3	0.0	0.0	48.1	68.1
LnGrp LOS				D	A	D	D	C	A	A	D	E
Approach Vol, veh/h					962			2054			713	
Approach Delay, s/veh					42.9			39.3			54.4	
Approach LOS					D			D			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	71.1	48.9	44.3	26.8
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	60.2	48.0	29.0	* 27
Max Q Clear Time (g_c+I1), s	28.0	36.3	28.3	18.1
Green Ext Time (p_c), s	10.0	6.6	0.2	2.9

Intersection Summary	
HCM 6th Ctrl Delay	43.1
HCM 6th LOS	D

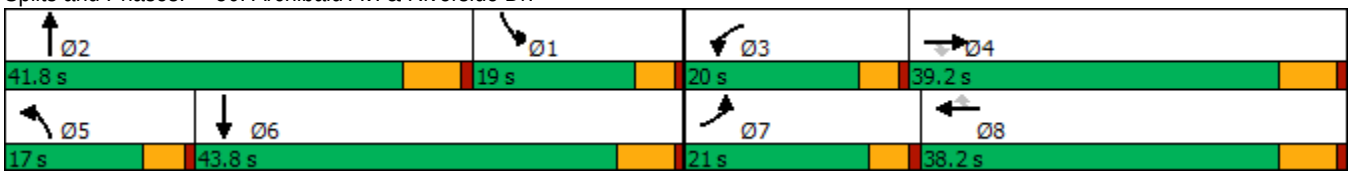
Notes

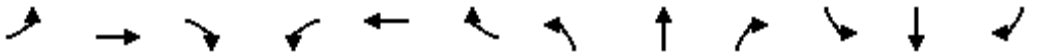
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	261	336	278	101	519	190	367	1226	146	653
Future Volume (vph)	261	336	278	101	519	190	367	1226	146	653
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.0	39.2	39.2	20.0	38.2	38.2	17.0	41.8	19.0	43.8
Total Split (%)	17.5%	32.7%	32.7%	16.7%	31.8%	31.8%	14.2%	34.8%	15.8%	36.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	16.6	28.3	28.3	10.7	22.5	22.5	12.5	33.6	9.3	30.4
Actuated g/C Ratio	0.16	0.27	0.27	0.10	0.22	0.22	0.12	0.32	0.09	0.29
v/c Ratio	1.02	0.36	0.46	0.61	0.71	0.40	0.97	0.82	0.52	0.65
Control Delay	105.2	32.8	6.3	61.0	43.2	7.3	86.8	37.7	53.2	31.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	105.2	32.8	6.3	61.0	43.2	7.3	86.8	37.7	53.2	31.5
LOS	F	C	A	E	D	A	F	D	D	C
Approach Delay		46.0			37.0			48.6		34.4
Approach LOS		D			D			D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.8	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 42.5	Intersection LOS: D
Intersection Capacity Utilization 79.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	261	336	278	101	519	190	367	1226	55	146	653	267
Future Volume (veh/h)	261	336	278	101	519	190	367	1226	55	146	653	267
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	278	357	162	107	552	120	390	1304	56	155	695	206
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	288	1094	479	134	769	336	422	1606	69	221	1079	315
Arrive On Green	0.17	0.30	0.30	0.08	0.21	0.21	0.13	0.31	0.31	0.07	0.27	0.27
Sat Flow, veh/h	1714	3610	1582	1714	3610	1578	3326	5099	219	3326	3983	1164
Grp Volume(v), veh/h	278	357	162	107	552	120	390	884	476	155	602	299
Grp Sat Flow(s),veh/h/ln	1714	1805	1582	1714	1805	1578	1663	1729	1860	1663	1729	1689
Q Serve(g_s), s	15.7	7.5	7.8	6.0	13.9	4.8	11.3	23.0	23.0	4.5	15.0	15.3
Cycle Q Clear(g_c), s	15.7	7.5	7.8	6.0	13.9	4.8	11.3	23.0	23.0	4.5	15.0	15.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		0.69
Lane Grp Cap(c), veh/h	288	1094	479	134	769	336	422	1089	586	221	937	457
V/C Ratio(X)	0.97	0.33	0.34	0.80	0.72	0.36	0.92	0.81	0.81	0.70	0.64	0.65
Avail Cap(c_a), veh/h	288	1220	535	270	1183	517	422	1261	678	490	1331	650
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	26.3	26.4	44.3	35.7	18.6	42.2	30.8	30.8	44.6	31.4	31.5
Incr Delay (d2), s/veh	43.3	0.2	0.4	4.2	1.3	0.6	25.4	3.6	6.6	1.5	0.7	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	3.0	2.8	2.6	5.9	2.3	5.9	9.3	10.5	1.8	5.9	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.7	26.5	26.8	48.4	37.0	19.3	67.6	34.4	37.4	46.1	32.2	33.1
LnGrp LOS	F	C	C	D	D	B	E	C	D	D	C	C
Approach Vol, veh/h		797			779			1750			1056	
Approach Delay, s/veh		46.5			35.8			42.6			34.5	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	37.0	12.2	35.8	17.0	32.7	21.0	27.0
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	14.4	* 36	15.4	33.0	12.4	37.6	16.4	32.0
Max Q Clear Time (g_c+I1), s	6.5	25.0	8.0	9.8	13.3	17.3	17.7	15.9
Green Ext Time (p_c), s	0.1	5.8	0.1	2.5	0.0	5.3	0.0	3.3

Intersection Summary	
HCM 6th Ctrl Delay	40.2
HCM 6th LOS	D

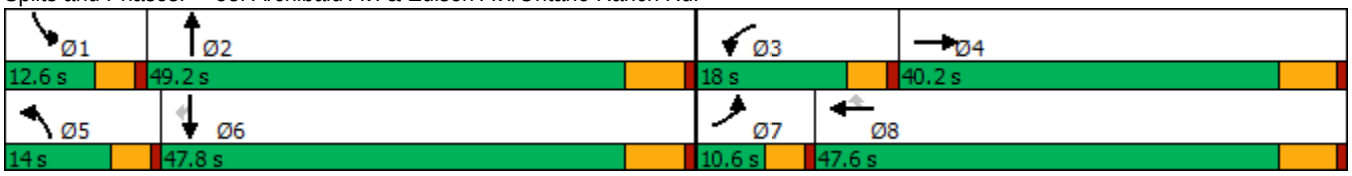
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	225	47	476	545	153	180	1135	451	72	522	111
Future Volume (vph)	28	225	47	476	545	153	180	1135	451	72	522	111
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	10.6	40.2		18.0	47.6	47.6	14.0	49.2		12.6	47.8	47.8
Total Split (%)	8.8%	33.5%		15.0%	39.7%	39.7%	11.7%	41.0%		10.5%	39.8%	39.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.6	16.6	97.2	13.9	29.6	29.6	9.7	39.4	97.2	7.6	34.4	34.4
Actuated g/C Ratio	0.06	0.17	1.00	0.14	0.30	0.30	0.10	0.41	1.00	0.08	0.35	0.35
v/c Ratio	0.17	0.40	0.03	1.17	0.54	0.27	1.16	0.84	0.31	0.59	0.44	0.18
Control Delay	52.0	38.5	0.0	138.9	32.8	6.0	161.7	34.5	0.5	68.3	25.5	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	38.5	0.0	138.9	32.8	6.0	161.7	34.5	0.5	68.3	25.5	2.2
LOS	D	D	A	F	C	A	F	C	A	E	C	A
Approach Delay		33.8			72.3			38.8			26.2	
Approach LOS		C			E			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.2	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 46.1	Intersection LOS: D
Intersection Capacity Utilization 80.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	225	47	476	545	153	180	1135	451	72	522	111
Future Volume (veh/h)	28	225	47	476	545	153	180	1135	451	72	522	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	29	232	0	491	562	104	186	1170	0	74	538	81
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	86	405		469	847	378	180	1392		92	1206	538
Arrive On Green	0.03	0.12	0.00	0.16	0.25	0.25	0.11	0.41	0.00	0.06	0.35	0.35
Sat Flow, veh/h	2956	3420	1525	2956	3420	1525	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	29	232	0	491	562	104	186	1170	0	74	538	81
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1710	1525	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	0.8	5.4	0.0	13.4	12.5	4.7	9.4	26.1	0.0	3.8	10.2	3.1
Cycle Q Clear(g_c), s	0.8	5.4	0.0	13.4	12.5	4.7	9.4	26.1	0.0	3.8	10.2	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	86	405		469	847	378	180	1392		92	1206	538
V/C Ratio(X)	0.34	0.57		1.05	0.66	0.28	1.03	0.84		0.80	0.45	0.15
Avail Cap(c_a), veh/h	210	1376		469	1676	747	180	1728		153	1672	746
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.2	35.2	0.0	35.6	28.6	25.7	37.6	22.6	0.0	39.4	21.0	18.7
Incr Delay (d2), s/veh	0.8	1.3	0.0	54.5	0.9	0.4	75.9	3.2	0.0	6.0	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.2	0.0	8.0	4.8	1.6	7.2	9.4	0.0	1.6	3.6	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.1	36.5	0.0	90.1	29.5	26.1	113.5	25.8	0.0	45.4	21.3	18.8
LnGrp LOS	D	D		F	C	C	F	C		D	C	B
Approach Vol, veh/h		261	A		1157			1356	A		693	
Approach Delay, s/veh		37.0			54.9			37.8			23.6	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	40.9	18.0	16.2	14.0	36.3	7.1	27.1
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	8.0	42.7	13.4	34.0	9.4	41.3	6.0	41.4
Max Q Clear Time (g_c+I1), s	5.8	28.1	15.4	7.4	11.4	12.2	2.8	14.5
Green Ext Time (p_c), s	0.0	6.3	0.0	1.3	0.0	3.5	0.0	3.8

Intersection Summary	
HCM 6th Ctrl Delay	40.6
HCM 6th LOS	D

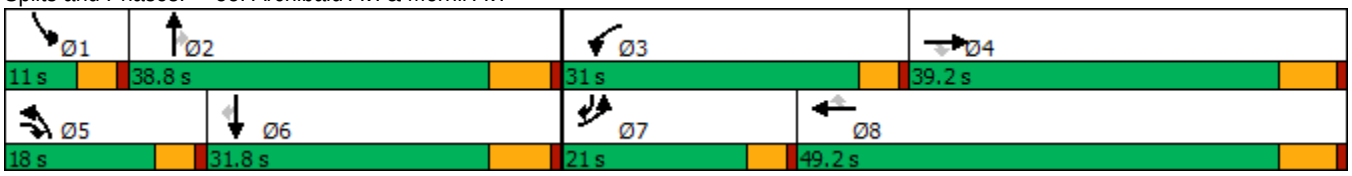
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	23	149	83	52	144	554	1344	41	44	607	381
Future Volume (vph)	270	23	149	83	52	144	554	1344	41	44	607	381
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	16.2	9.6	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	9.6
Total Split (s)	21.0	39.2	18.0	31.0	49.2	49.2	18.0	38.8	38.8	11.0	31.8	21.0
Total Split (%)	17.5%	32.7%	15.0%	25.8%	41.0%	41.0%	15.0%	32.3%	32.3%	9.2%	26.5%	17.5%
Yellow Time (s)	3.6	5.2	3.6	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	None
Act Effct Green (s)	11.8	18.9	32.1	17.6	15.1	15.1	13.9	34.6	34.6	5.8	21.9	40.4
Actuated g/C Ratio	0.14	0.22	0.38	0.21	0.18	0.18	0.16	0.41	0.41	0.07	0.26	0.47
v/c Ratio	0.64	0.06	0.23	0.26	0.17	0.37	1.12	1.00	0.06	0.22	0.72	0.45
Control Delay	44.4	28.5	3.4	36.4	31.0	7.0	112.9	53.2	0.2	46.2	35.9	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	28.5	3.4	36.4	31.0	7.0	112.9	53.2	0.2	46.2	35.9	6.3
LOS	D	C	A	D	C	A	F	D	A	D	D	A
Approach Delay		29.7			20.3			69.1			25.4	
Approach LOS		C			C			E			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 85.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 48.5	Intersection LOS: D
Intersection Capacity Utilization 73.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	23	149	83	52	144	554	1344	41	44	607	381
Future Volume (veh/h)	270	23	149	83	52	144	554	1344	41	44	607	381
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	278	24	99	86	54	53	571	1386	23	45	626	327
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	364	325	545	108	237	201	554	1450	647	119	984	616
Arrive On Green	0.12	0.18	0.18	0.07	0.13	0.13	0.18	0.42	0.42	0.04	0.29	0.29
Sat Flow, veh/h	3141	1800	1525	1619	1800	1525	3141	3420	1525	2956	3420	1525
Grp Volume(v), veh/h	278	24	99	86	54	53	571	1386	23	45	626	327
Grp Sat Flow(s),veh/h/ln	1570	1800	1525	1619	1800	1525	1570	1710	1525	1478	1710	1525
Q Serve(g_s), s	6.5	0.8	3.4	4.0	2.0	2.4	13.4	29.8	0.7	1.1	12.1	12.4
Cycle Q Clear(g_c), s	6.5	0.8	3.4	4.0	2.0	2.4	13.4	29.8	0.7	1.1	12.1	12.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	364	325	545	108	237	201	554	1450	647	119	984	616
V/C Ratio(X)	0.76	0.07	0.18	0.79	0.23	0.26	1.03	0.96	0.04	0.38	0.64	0.53
Avail Cap(c_a), veh/h	678	782	932	563	1019	864	554	1454	649	249	1139	685
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.6	25.8	16.8	34.9	29.5	29.7	31.3	21.2	12.8	35.5	23.6	17.2
Incr Delay (d2), s/veh	1.3	0.1	0.2	4.9	0.5	0.7	46.2	14.5	0.0	0.7	0.9	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.3	1.1	1.7	0.9	0.9	8.1	12.4	0.2	0.4	4.3	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.8	25.9	16.9	39.8	30.0	30.4	77.5	35.6	12.8	36.2	24.5	17.9
LnGrp LOS	C	C	B	D	C	C	F	D	B	D	C	B
Approach Vol, veh/h		401			193			1980			998	
Approach Delay, s/veh		29.2			34.5			47.5			22.9	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	38.7	9.7	19.9	18.0	28.4	13.4	16.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	6.4	32.3	26.4	33.0	13.4	25.3	16.4	43.0
Max Q Clear Time (g_c+I1), s	3.1	31.8	6.0	5.4	15.4	14.4	8.5	4.4
Green Ext Time (p_c), s	0.0	0.4	0.1	0.4	0.0	3.6	0.3	0.4

Intersection Summary	
HCM 6th Ctrl Delay	37.8
HCM 6th LOS	D

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	370	943	956	397	237	558
Future Volume (vph)	370	943	956	397	237	558
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	39.0	18.0	63.0	39.0	18.0	81.0
Total Split (%)	32.5%	15.0%	52.5%	32.5%	15.0%	67.5%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min
Act Effct Green (s)	16.9	30.2	58.0	80.2	13.1	76.4
Actuated g/C Ratio	0.16	0.29	0.56	0.77	0.13	0.74
v/c Ratio	0.68	1.09	0.94	0.33	0.54	0.40
Control Delay	46.5	84.9	39.3	3.7	48.6	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.5	84.9	39.3	3.7	48.6	7.0
LOS	D	F	D	A	D	A
Approach Delay	74.1		28.9			19.4
Approach LOS	E		C			B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 43.8	Intersection LOS: D
Intersection Capacity Utilization 91.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	370	943	956	397	237	558
Future Volume (veh/h)	370	943	956	397	237	558
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1976	1976
Adj Flow Rate, veh/h	385	836	996	367	247	581
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	997	1047	943	1256	313	1235
Arrive On Green	0.28	0.28	0.50	0.50	0.09	0.62
Sat Flow, veh/h	3510	2834	1900	1610	3651	1976
Grp Volume(v), veh/h	385	836	996	367	247	581
Grp Sat Flow(s),veh/h/ln	1755	1417	1900	1610	1825	1976
Q Serve(g_s), s	10.3	30.7	57.7	7.5	7.7	18.2
Cycle Q Clear(g_c), s	10.3	30.7	57.7	7.5	7.7	18.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	997	1047	943	1256	313	1235
V/C Ratio(X)	0.39	0.80	1.06	0.29	0.79	0.47
Avail Cap(c_a), veh/h	1018	1064	943	1256	408	1292
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	32.8	29.3	3.6	52.1	11.6
Incr Delay (d2), s/veh	0.1	3.9	45.3	0.2	7.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	10.4	35.2	6.0	3.7	6.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.6	36.7	74.6	3.8	59.8	11.7
LnGrp LOS	C	D	F	A	E	B
Approach Vol, veh/h	1221		1363			828
Approach Delay, s/veh	35.7		55.6			26.0
Approach LOS	D		E			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	15.0	63.0			78.0	38.3
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	13.0	57.7			* 76	33.7
Max Q Clear Time (g_c+I1), s	9.7	59.7			20.2	32.7
Green Ext Time (p_c), s	0.2	0.0			2.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	41.3
HCM 6th LOS	D

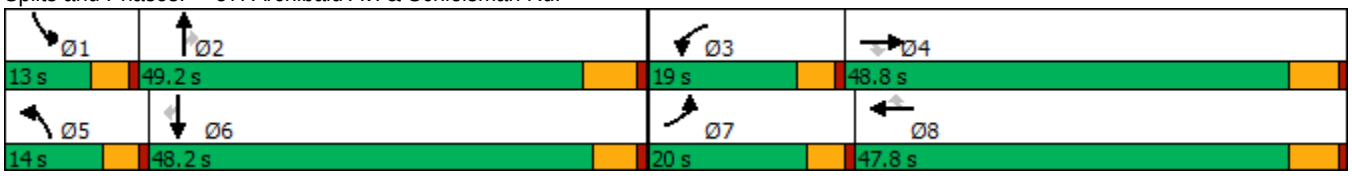
Notes

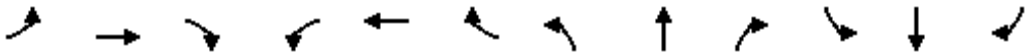
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	530	452	155	285	819	162	298	913	247	120	513	539
Future Volume (vph)	530	452	155	285	819	162	298	913	247	120	513	539
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	20.0	48.8	48.8	19.0	47.8	47.8	14.0	49.2	49.2	13.0	48.2	48.2
Total Split (%)	15.4%	37.5%	37.5%	14.6%	36.8%	36.8%	10.8%	37.8%	37.8%	10.0%	37.1%	37.1%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	Max	Max	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	15.5	43.3	43.3	13.4	41.2	41.2	9.5	37.2	37.2	7.8	36.4	36.4
Actuated g/C Ratio	0.13	0.35	0.35	0.11	0.33	0.33	0.08	0.30	0.30	0.06	0.30	0.30
v/c Ratio	1.30	0.25	0.26	0.81	0.48	0.28	1.19	0.59	0.40	0.58	0.34	0.92
Control Delay	191.9	30.0	5.4	70.8	34.2	8.7	165.4	37.7	5.4	68.4	34.1	43.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	191.9	30.0	5.4	70.8	34.2	8.7	165.4	37.7	5.4	68.4	34.1	43.8
LOS	F	C	A	E	C	A	F	D	A	E	C	D
Approach Delay		102.1			39.2			58.3			42.1	
Approach LOS		F			D			E			D	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 123.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.30	
Intersection Signal Delay: 59.6	Intersection LOS: E
Intersection Capacity Utilization 82.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	530	452	155	285	819	162	298	913	247	120	513	539
Future Volume (veh/h)	530	452	155	285	819	162	298	913	247	120	513	539
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	589	502	92	317	910	103	331	1014	137	133	570	360
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	475	2089	581	375	1932	539	290	1689	477	191	1533	427
Arrive On Green	0.20	0.55	0.37	0.16	0.51	0.34	0.08	0.44	0.30	0.05	0.40	0.27
Sat Flow, veh/h	3619	5700	1584	3619	5700	1590	3619	5700	1610	3619	5700	1588
Grp Volume(v), veh/h	589	502	92	317	910	103	331	1014	137	133	570	360
Grp Sat Flow(s),veh/h/ln	1810	1900	1584	1810	1900	1590	1810	1900	1610	1810	1900	1588
Q Serve(g_s), s	15.4	5.4	4.6	10.0	12.1	5.4	9.4	15.8	7.7	4.2	8.2	25.1
Cycle Q Clear(g_c), s	15.4	5.4	4.6	10.0	12.1	5.4	9.4	15.8	7.7	4.2	8.2	25.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	475	2089	581	375	1932	539	290	1689	477	191	1533	427
V/C Ratio(X)	1.24	0.24	0.16	0.85	0.47	0.19	1.14	0.60	0.29	0.70	0.37	0.84
Avail Cap(c_a), veh/h	475	2089	581	444	2041	569	290	2089	590	259	2080	579
HCM Platoon Ratio	1.50	1.50	1.00	1.50	1.50	1.00	1.00	1.50	1.00	1.00	1.50	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	17.9	25.0	48.6	22.0	27.4	54.0	27.3	31.7	54.6	28.0	40.5
Incr Delay (d2), s/veh	124.8	0.3	0.6	10.8	0.2	0.2	96.6	0.3	0.3	2.2	0.2	8.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.4	2.2	1.8	4.7	4.6	2.0	8.0	6.0	0.0	1.9	3.4	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	171.9	18.2	25.6	59.4	22.2	27.6	150.6	27.7	32.1	56.8	28.2	48.8
LnGrp LOS	F	B	C	E	C	C	F	C	C	E	C	D
Approach Vol, veh/h		1183			1330			1482			1063	
Approach Delay, s/veh		95.3			31.5			55.5			38.7	
Approach LOS		F			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	41.0	16.8	48.8	14.0	37.8	20.0	45.6
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	8.4	43.0	14.4	43.0	9.4	* 43	15.4	42.0
Max Q Clear Time (g_c+I1), s	6.2	17.8	12.0	7.4	11.4	27.1	17.4	14.1
Green Ext Time (p_c), s	0.0	7.4	0.2	3.6	0.0	4.2	0.0	6.8

Intersection Summary	
HCM 6th Ctrl Delay	55.0
HCM 6th LOS	D

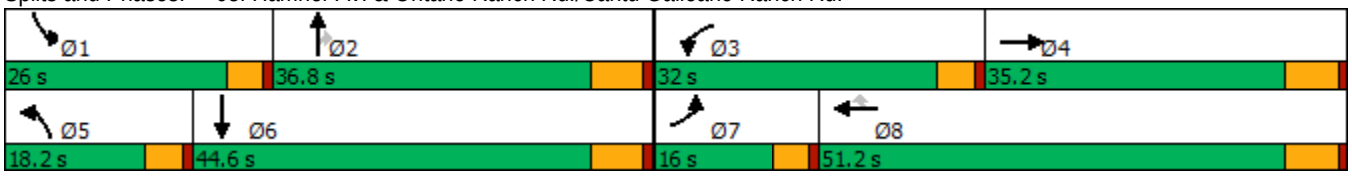
Notes

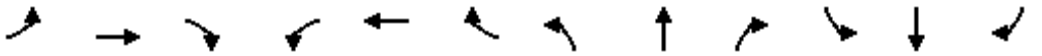
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	107	630	303	973	224	190	778	556	170	233
Future Volume (vph)	107	630	303	973	224	190	778	556	170	233
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.2	9.6	38.2	38.2	9.6	35.2	35.2	9.6	38.2
Total Split (s)	16.0	35.2	32.0	51.2	51.2	18.2	36.8	36.8	26.0	44.6
Total Split (%)	12.3%	27.1%	24.6%	39.4%	39.4%	14.0%	28.3%	28.3%	20.0%	34.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	None	Max	None	None	None	None	None	None	None
Act Effct Green (s)	12.1	22.0	28.3	38.2	38.2	12.1	29.8	29.8	12.0	29.7
Actuated g/C Ratio	0.11	0.20	0.26	0.35	0.35	0.11	0.28	0.28	0.11	0.27
v/c Ratio	0.36	0.56	0.43	0.58	0.36	0.64	0.59	0.86	0.57	0.25
Control Delay	50.7	39.4	37.5	30.4	4.7	56.7	36.5	25.3	54.3	24.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.7	39.4	37.5	30.4	4.7	56.7	36.5	25.3	54.3	24.6
LOS	D	D	D	C	A	E	D	C	D	C
Approach Delay		40.8		28.0			34.9			34.8
Approach LOS		D		C			C			C

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 108.3	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 33.6	Intersection LOS: C
Intersection Capacity Utilization 63.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	630	91	303	973	224	190	778	556	170	233	93
Future Volume (veh/h)	107	630	91	303	973	224	190	778	556	170	233	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	122	716	-69	344	1106	186	216	884	480	193	265	33
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	359	1125	0	838	1693	478	292	1740	492	272	1491	181
Arrive On Green	0.12	0.23	0.00	0.28	0.47	0.31	0.10	0.32	0.32	0.09	0.32	0.29
Sat Flow, veh/h	3048	7200	0	3048	5400	1525	3048	5400	1525	3048	4724	572
Grp Volume(v), veh/h	122	647	0	344	1106	186	216	884	480	193	200	98
Grp Sat Flow(s),veh/h/ln	1524	1800	0	1524	1800	1525	1524	1800	1525	1524	1800	1696
Q Serve(g_s), s	3.7	8.1	0.0	9.4	15.9	9.7	7.0	13.5	31.7	6.3	4.1	4.3
Cycle Q Clear(g_c), s	3.7	8.1	0.0	9.4	15.9	9.7	7.0	13.5	31.7	6.3	4.1	4.3
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	359	1125	0	838	1693	478	292	1740	492	272	1136	535
V/C Ratio(X)	0.34	0.58	0.00	0.41	0.65	0.39	0.74	0.51	0.98	0.71	0.18	0.18
Avail Cap(c_a), veh/h	359	2207	0	838	2504	707	425	1740	492	659	1436	677
HCM Platoon Ratio	1.00	1.50	1.00	1.00	1.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.3	36.0	0.0	30.1	22.7	27.3	44.8	28.0	34.1	45.1	25.2	25.6
Incr Delay (d2), s/veh	2.6	0.5	0.0	1.5	0.4	0.5	1.6	0.2	34.4	1.3	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	3.2	0.0	3.4	5.3	3.4	2.6	5.5	15.5	2.3	1.7	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.8	36.4	0.0	31.6	23.2	27.8	46.4	28.2	68.5	46.4	25.3	25.7
LnGrp LOS	D	D	A	C	C	C	D	C	E	D	C	C
Approach Vol, veh/h		769			1636			1580			491	
Approach Delay, s/veh		37.6			25.5			42.9			33.7	
Approach LOS		D			C			D			C	

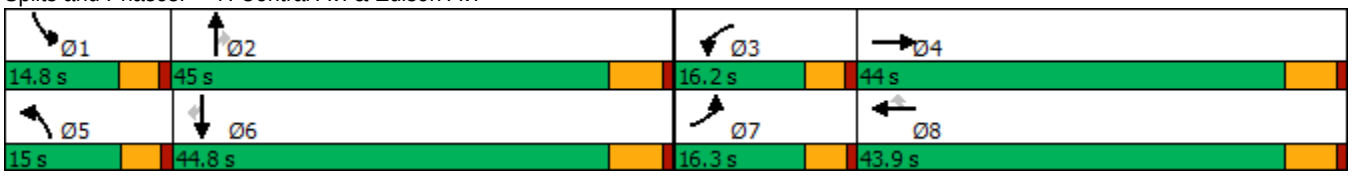
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	36.8	32.0	19.9	13.8	36.1	16.0	35.9
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	21.4	30.6	27.4	29.0	13.6	38.4	11.4	45.0
Max Q Clear Time (g_c+I1), s	8.3	33.7	11.4	10.1	9.0	6.3	5.7	17.9
Green Ext Time (p_c), s	0.2	0.0	0.5	3.6	0.2	1.6	0.1	8.6

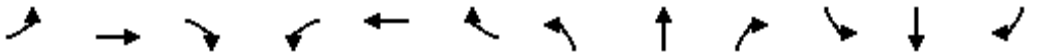
Intersection Summary	
HCM 6th Ctrl Delay	34.6
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	238	950	278	685	106	96	1094	449	123	877	148
Future Volume (vph)	238	950	278	685	106	96	1094	449	123	877	148
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	16.3	44.0	16.2	43.9	43.9	15.0	45.0	45.0	14.8	44.8	44.8
Total Split (%)	13.6%	36.7%	13.5%	36.6%	36.6%	12.5%	37.5%	37.5%	12.3%	37.3%	37.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	11.9	40.0	12.2	40.3	40.3	10.2	41.0	41.0	10.8	41.5	41.5
Actuated g/C Ratio	0.10	0.33	0.10	0.34	0.34	0.08	0.34	0.34	0.09	0.35	0.35
v/c Ratio	0.79	0.95	0.90	0.62	0.19	0.72	0.97	0.69	0.88	0.76	0.26
Control Delay	70.9	56.9	84.4	36.3	6.0	81.3	58.4	22.4	102.2	40.2	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.9	56.9	84.4	36.3	6.0	81.3	58.4	22.4	102.2	40.2	10.7
LOS	E	E	F	D	A	F	E	C	F	D	B
Approach Delay		59.5		45.8			49.9			43.0	
Approach LOS		E		D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 49.9	Intersection LOS: D
Intersection Capacity Utilization 92.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	950	94	278	685	106	96	1094	449	123	877	148
Future Volume (veh/h)	238	950	94	278	685	106	96	1094	449	123	877	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	245	979	93	287	706	98	99	1128	382	127	904	119
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	308	1051	100	319	1152	514	128	1168	512	146	1206	538
Arrive On Green	0.10	0.33	0.32	0.10	0.34	0.34	0.08	0.34	0.34	0.09	0.35	0.35
Sat Flow, veh/h	3141	3152	299	3141	3420	1525	1619	3420	1499	1619	3420	1524
Grp Volume(v), veh/h	245	531	541	287	706	98	99	1128	382	127	904	119
Grp Sat Flow(s),veh/h/ln	1570	1710	1741	1570	1710	1525	1619	1710	1499	1619	1710	1524
Q Serve(g_s), s	9.2	36.0	36.1	10.8	20.7	5.5	7.2	38.9	27.0	9.3	27.9	6.6
Cycle Q Clear(g_c), s	9.2	36.0	36.1	10.8	20.7	5.5	7.2	38.9	27.0	9.3	27.9	6.6
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	308	570	580	319	1152	514	128	1169	512	146	1206	538
V/C Ratio(X)	0.79	0.93	0.93	0.90	0.61	0.19	0.77	0.97	0.75	0.87	0.75	0.22
Avail Cap(c_a), veh/h	322	570	580	319	1152	514	148	1169	512	146	1206	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.9	38.7	38.8	53.3	33.3	28.2	54.2	38.8	34.9	53.9	34.2	27.3
Incr Delay (d2), s/veh	11.3	24.1	23.9	25.9	2.4	0.8	16.2	18.5	5.9	38.4	2.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	18.2	18.5	5.3	8.6	2.1	3.4	18.5	10.3	5.2	11.5	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.2	62.8	62.7	79.2	35.7	29.0	70.4	57.3	40.8	92.4	36.8	27.5
LnGrp LOS	E	E	E	E	D	C	E	E	D	F	D	C
Approach Vol, veh/h		1317			1091			1609			1150	
Approach Delay, s/veh		63.0			46.5			54.2			42.0	
Approach LOS		E			D			D			D	

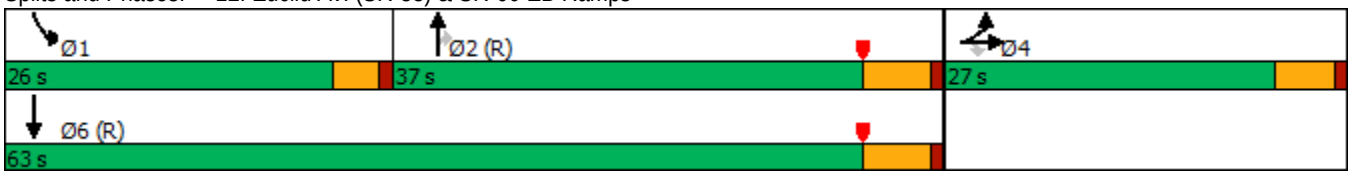
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	45.0	16.2	44.0	13.5	46.3	15.8	44.4
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.2	39.2	11.6	38.2	10.4	39.0	11.7	38.1
Max Q Clear Time (g_c+I1), s	11.3	40.9	12.8	38.1	9.2	29.9	11.2	22.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.1	0.0	4.1	0.0	4.2

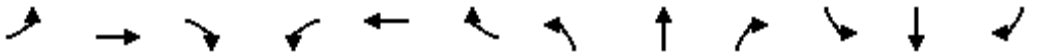
Intersection Summary	
HCM 6th Ctrl Delay	52.1
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	459	3	436	1142	721	414	1414
Future Volume (vph)	459	3	436	1142	721	414	1414
Turn Type	Split	NA	Perm	NA	Perm	Prot	NA
Protected Phases	4	4		2		1	6
Permitted Phases			4		2		
Detector Phase	4	4	4	2	2	1	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	27.0	27.0	27.0	37.0	37.0	26.0	63.0
Total Split (%)	30.0%	30.0%	30.0%	41.1%	41.1%	28.9%	70.0%
Yellow Time (s)	4.0	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	19.9	19.9	19.9	33.2	33.2	22.4	59.6
Actuated g/C Ratio	0.22	0.22	0.22	0.37	0.37	0.25	0.66
v/c Ratio	0.84	0.80	0.72	0.87	0.77	0.94	0.60
Control Delay	53.7	43.7	34.1	36.1	11.8	56.9	4.7
Queue Delay	60.1	59.6	0.0	0.0	0.0	0.0	0.6
Total Delay	113.8	103.3	34.1	36.1	11.8	56.9	5.3
LOS	F	F	C	D	B	E	A
Approach Delay		85.1		26.7			17.0
Approach LOS		F		C			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 34.3	Intersection LOS: C
Intersection Capacity Utilization 97.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	459	3	436	0	0	0	0	1142	721	414	1414	0
Future Volume (veh/h)	459	3	436	0	0	0	0	1142	721	414	1414	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	587	0	253				0	1165	542	422	1443	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	689	0	306				0	1459	636	442	2502	0
Arrive On Green	0.19	0.00	0.19				0.00	0.40	0.40	0.49	1.00	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1573	1810	3705	0
Grp Volume(v), veh/h	587	0	253				0	1165	542	422	1443	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1573	1810	1805	0
Q Serve(g_s), s	14.1	0.0	13.6				0.0	25.6	28.2	20.1	0.0	0.0
Cycle Q Clear(g_c), s	14.1	0.0	13.6				0.0	25.6	28.2	20.1	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	689	0	306				0	1459	636	442	2502	0
V/C Ratio(X)	0.85	0.00	0.83				0.00	0.80	0.85	0.95	0.58	0.00
Avail Cap(c_a), veh/h	885	0	394				0	1459	636	442	2502	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.32	0.32	0.09	0.09	0.00
Uniform Delay (d), s/veh	35.2	0.0	35.0				0.0	23.6	24.4	22.5	0.0	0.0
Incr Delay (d2), s/veh	5.3	0.0	8.6				0.0	1.5	4.9	5.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	0.0	5.7				0.0	10.3	10.4	5.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.5	0.0	43.6				0.0	25.1	29.3	28.0	0.1	0.0
LnGrp LOS	D	A	D				A	C	C	C	A	A
Approach Vol, veh/h		840						1707			1865	
Approach Delay, s/veh		41.5						26.4			6.4	
Approach LOS		D						C			A	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	26.0	41.9		22.1		67.9						
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5						
Max Green Setting (Gmax), s	22.0	31.5		22.0		57.5						
Max Q Clear Time (g_c+I1), s	22.1	30.2		16.1		2.0						
Green Ext Time (p_c), s	0.0	1.2		1.0		23.5						

Intersection Summary												
HCM 6th Ctrl Delay			20.8									
HCM 6th LOS			C									

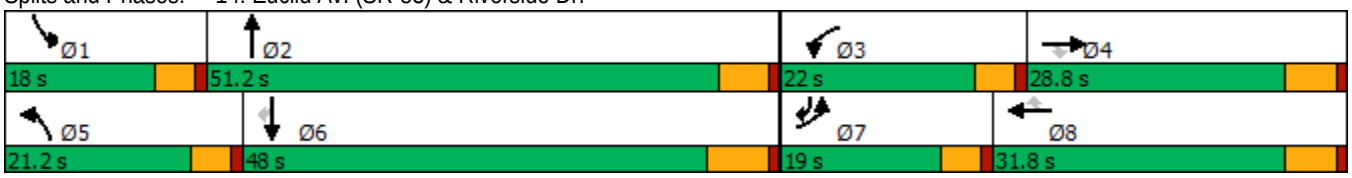
Notes

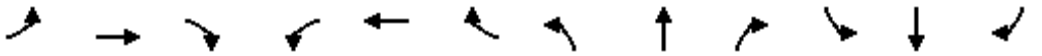
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	167	505	91	208	451	71	91	1359	153	1150	212
Future Volume (vph)	167	505	91	208	451	71	91	1359	153	1150	212
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2	1	6	7
Permitted Phases			4			8					6
Detector Phase	7	4	4	3	8	8	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	9.6	34.5	9.6
Total Split (s)	19.0	28.8	28.8	22.0	31.8	31.8	21.2	51.2	18.0	48.0	19.0
Total Split (%)	15.8%	24.0%	24.0%	18.3%	26.5%	26.5%	17.7%	42.7%	15.0%	40.0%	15.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	Max	None
Act Effct Green (s)	14.1	21.5	21.5	17.1	24.5	24.5	11.3	45.9	13.0	46.5	62.4
Actuated g/C Ratio	0.12	0.18	0.18	0.15	0.21	0.21	0.10	0.39	0.11	0.39	0.53
v/c Ratio	0.91	0.85	0.26	0.93	0.66	0.18	0.62	0.90	0.89	0.62	0.25
Control Delay	96.5	60.1	6.4	93.7	48.0	2.9	67.9	40.8	96.9	31.2	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.5	60.1	6.4	93.7	48.0	2.9	67.9	40.8	96.9	31.2	3.3
LOS	F	E	A	F	D	A	E	D	F	C	A
Approach Delay		61.7			56.6			42.3		33.9	
Approach LOS		E			E			D		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.8	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 44.9	Intersection LOS: D
Intersection Capacity Utilization 88.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	505	91	208	451	71	91	1359	268	153	1150	212
Future Volume (veh/h)	167	505	91	208	451	71	91	1359	268	153	1150	212
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	174	526	70	217	470	58	95	1416	225	159	1198	130
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	196	600	268	237	686	306	116	1646	261	182	2092	826
Arrive On Green	0.12	0.18	0.18	0.15	0.20	0.20	0.07	0.38	0.38	0.11	0.43	0.43
Sat Flow, veh/h	1619	3420	1525	1619	3420	1523	1619	4275	679	1619	4914	1506
Grp Volume(v), veh/h	174	526	70	217	470	58	95	1085	556	159	1198	130
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1523	1619	1638	1678	1619	1638	1506
Q Serve(g_s), s	12.6	17.8	4.7	15.7	15.2	3.8	6.9	36.2	36.3	11.5	22.0	5.1
Cycle Q Clear(g_c), s	12.6	17.8	4.7	15.7	15.2	3.8	6.9	36.2	36.3	11.5	22.0	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.40	1.00		1.00
Lane Grp Cap(c), veh/h	196	600	268	237	686	306	116	1261	646	182	2092	826
V/C Ratio(X)	0.89	0.88	0.26	0.92	0.68	0.19	0.82	0.86	0.86	0.87	0.57	0.16
Avail Cap(c_a), veh/h	196	661	295	237	747	333	226	1261	646	182	2092	826
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.5	47.8	42.4	50.1	44.1	39.5	54.4	33.6	33.7	51.9	25.9	13.4
Incr Delay (d2), s/veh	34.4	11.9	0.5	36.0	2.3	0.3	5.2	7.8	14.1	32.8	1.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	8.4	1.8	8.5	6.5	1.4	2.9	14.6	16.1	6.2	8.5	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.9	59.7	42.9	86.1	46.4	39.8	59.6	41.5	47.8	84.7	27.1	13.8
LnGrp LOS	F	E	D	F	D	D	E	D	D	F	C	B
Approach Vol, veh/h		770			745			1736			1487	
Approach Delay, s/veh		64.1			57.5			44.5			32.1	
Approach LOS		E			E			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	52.3	22.0	26.7	13.1	57.2	19.0	29.7
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	13.4	* 46	17.4	23.0	16.6	41.5	14.4	26.0
Max Q Clear Time (g_c+I1), s	13.5	38.3	17.7	19.8	8.9	24.0	14.6	17.2
Green Ext Time (p_c), s	0.0	5.2	0.0	1.0	0.1	8.1	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	45.8
HCM 6th LOS	D

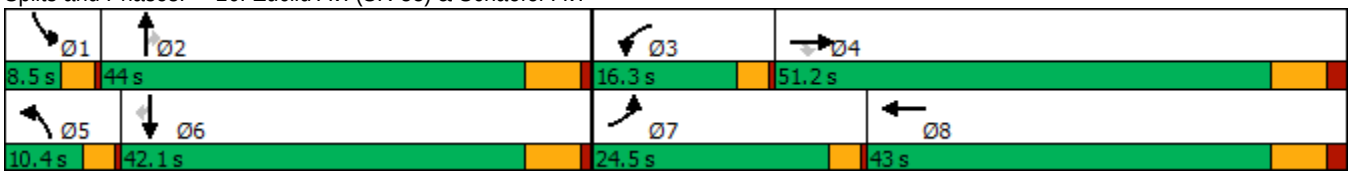
Notes

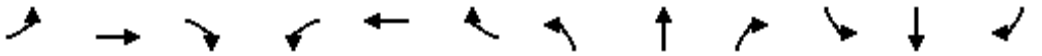
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	321	316	210	87	74	103	1523	91	32	1326	128
Future Volume (vph)	321	316	210	87	74	103	1523	91	32	1326	128
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	24.5	51.2	51.2	16.3	43.0	10.4	44.0	44.0	8.5	42.1	42.1
Total Split (%)	20.4%	42.7%	42.7%	13.6%	35.8%	8.7%	36.7%	36.7%	7.1%	35.1%	35.1%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	21.4	28.0	28.0	10.9	14.2	7.0	39.0	39.0	5.1	33.1	33.1
Actuated g/C Ratio	0.22	0.29	0.29	0.11	0.15	0.07	0.41	0.41	0.05	0.34	0.34
v/c Ratio	0.90	0.61	0.36	0.48	0.38	0.88	0.77	0.13	0.38	0.79	0.21
Control Delay	68.1	36.5	7.3	53.3	34.3	105.1	30.3	2.1	62.4	33.7	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.1	36.5	7.3	53.3	34.3	105.1	30.3	2.1	62.4	33.7	5.7
LOS	E	D	A	D	C	F	C	A	E	C	A
Approach Delay		41.2			43.1		33.3			31.9	
Approach LOS		D			D		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 34.8	Intersection LOS: C
Intersection Capacity Utilization 78.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	321	316	210	87	74	28	103	1523	91	32	1326	128
Future Volume (veh/h)	321	316	210	87	74	28	103	1523	91	32	1326	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	324	319	171	88	75	23	104	1538	74	32	1339	99
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	358	387	328	171	132	40	129	1982	615	51	1747	542
Arrive On Green	0.22	0.22	0.22	0.11	0.10	0.10	0.08	0.40	0.40	0.03	0.36	0.36
Sat Flow, veh/h	1619	1800	1525	1619	1322	405	1619	4914	1525	1619	4914	1525
Grp Volume(v), veh/h	324	319	171	88	0	98	104	1538	74	32	1339	99
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1727	1619	1638	1525	1619	1638	1525
Q Serve(g_s), s	15.9	13.8	8.1	4.2	0.0	4.4	5.2	22.2	2.5	1.6	19.8	3.7
Cycle Q Clear(g_c), s	15.9	13.8	8.1	4.2	0.0	4.4	5.2	22.2	2.5	1.6	19.8	3.7
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	358	387	328	171	0	172	129	1982	615	51	1747	542
V/C Ratio(X)	0.90	0.82	0.52	0.51	0.00	0.57	0.81	0.78	0.12	0.63	0.77	0.18
Avail Cap(c_a), veh/h	415	972	824	253	0	760	136	2282	708	99	2167	673
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.0	30.6	28.4	34.6	0.0	35.2	37.1	21.2	15.3	39.2	23.4	18.2
Incr Delay (d2), s/veh	19.6	3.3	1.0	0.9	0.0	2.2	25.7	1.5	0.1	4.6	1.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	5.9	0.1	1.6	0.0	1.9	2.8	7.4	0.8	0.7	6.7	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.6	34.0	29.3	35.5	0.0	37.4	62.7	22.7	15.4	43.8	24.7	18.3
LnGrp LOS	D	C	C	D	A	D	E	C	B	D	C	B
Approach Vol, veh/h		814			186			1716			1470	
Approach Delay, s/veh		39.6			36.5			24.8			24.7	
Approach LOS		D			D			C			C	

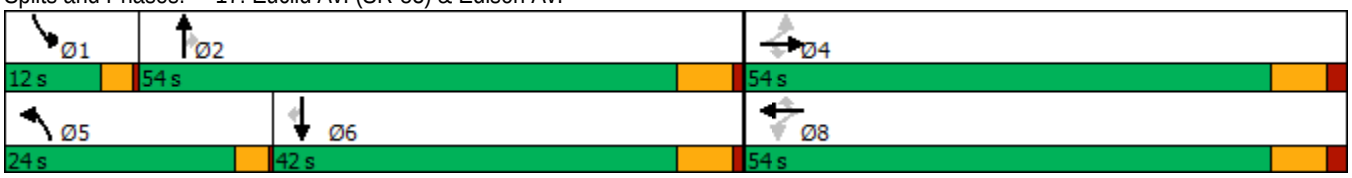
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.1	39.0	12.1	24.6	10.0	35.1	21.6	15.2
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	38.0	12.8	44.2	6.9	36.1	21.0	36.0
Max Q Clear Time (g_c+I1), s	3.6	24.2	6.2	15.8	7.2	21.8	17.9	6.4
Green Ext Time (p_c), s	0.0	8.1	0.0	1.8	0.0	7.3	0.2	0.4

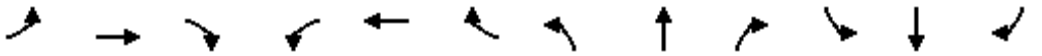
Intersection Summary	
HCM 6th Ctrl Delay	28.2
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	304	546	342	48	324	46	202	1471	83	97	1417	200
Future Volume (vph)	304	546	342	48	324	46	202	1471	83	97	1417	200
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	54.0	54.0	54.0	54.0	54.0	54.0	24.0	54.0	54.0	12.0	42.0	42.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	20.0%	45.0%	45.0%	10.0%	35.0%	35.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	47.1	47.1	47.1	47.1	47.1	47.1	12.2	44.7	44.7	7.5	40.0	40.0
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.41	0.41	0.11	0.39	0.39	0.06	0.35	0.35
v/c Ratio	1.04	0.79	0.44	0.36	0.47	0.07	0.64	0.82	0.14	0.50	0.88	0.34
Control Delay	96.2	40.0	5.1	34.6	28.6	0.8	59.2	36.1	8.3	62.1	43.1	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.2	40.0	5.1	34.6	28.6	0.8	59.2	36.1	8.3	62.1	43.1	10.8
LOS	F	D	A	C	C	A	E	D	A	E	D	B
Approach Delay		44.3			26.3			37.5			40.4	
Approach LOS		D			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.8	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 39.1	Intersection LOS: D
Intersection Capacity Utilization 92.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	304	546	342	48	324	46	202	1471	83	97	1417	200
Future Volume (veh/h)	304	546	342	48	324	46	202	1471	83	97	1417	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	320	575	278	51	341	42	213	1548	79	102	1492	179
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	343	763	647	160	763	639	272	1863	577	151	1674	520
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.09	0.38	0.38	0.05	0.34	0.34
Sat Flow, veh/h	960	1800	1525	621	1800	1506	3141	4914	1523	3141	4914	1525
Grp Volume(v), veh/h	320	575	278	51	341	42	213	1548	79	102	1492	179
Grp Sat Flow(s),veh/h/ln	960	1800	1525	621	1800	1506	1570	1638	1523	1570	1638	1525
Q Serve(g_s), s	32.1	30.0	14.2	8.4	14.9	1.8	7.4	31.7	3.8	3.5	31.9	9.7
Cycle Q Clear(g_c), s	47.0	30.0	14.2	38.4	14.9	1.8	7.4	31.7	3.8	3.5	31.9	9.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	343	763	647	160	763	639	272	1863	577	151	1674	520
V/C Ratio(X)	0.93	0.75	0.43	0.32	0.45	0.07	0.78	0.83	0.14	0.67	0.89	0.34
Avail Cap(c_a), veh/h	343	763	647	160	763	639	581	2127	659	241	1674	520
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.5	27.0	22.5	43.3	22.7	18.9	49.6	31.2	22.5	51.9	34.6	27.3
Incr Delay (d2), s/veh	32.1	4.3	0.5	1.1	0.4	0.0	1.9	2.6	0.1	2.0	6.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.8	12.9	4.9	1.3	6.1	0.6	2.8	11.8	1.3	1.4	12.6	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.6	31.3	23.0	44.4	23.1	19.0	51.5	33.8	22.6	53.9	41.1	27.7
LnGrp LOS	E	C	C	D	C	B	D	C	C	D	D	C
Approach Vol, veh/h		1173			434			1840			1773	
Approach Delay, s/veh		40.9			25.2			35.4			40.5	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.8	48.0		54.0	13.1	43.8		54.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	8.5	48.0		47.0	20.5	36.0		47.0				
Max Q Clear Time (g_c+I1), s	5.5	33.7		49.0	9.4	33.9		40.4				
Green Ext Time (p_c), s	0.0	8.4		0.0	0.3	1.7		1.3				

Intersection Summary			
HCM 6th Ctrl Delay		37.5	
HCM 6th LOS		D	

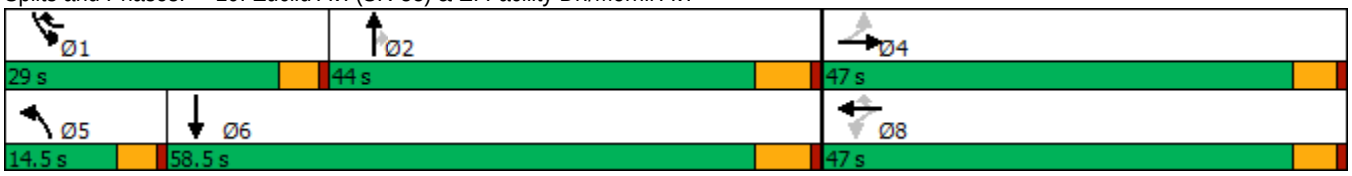
Notes

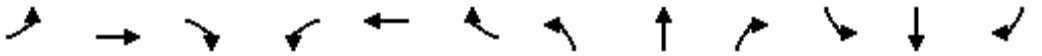
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	13	33	274	2	265	5	1433	283	316	1462
Future Volume (vph)	13	33	274	2	265	5	1433	283	316	1462
Turn Type	Perm	NA	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	1	5	2		1	6
Permitted Phases	4		8		8			2		
Detector Phase	4	4	8	8	1	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	14.5	28.0	28.0	14.5	28.0
Total Split (s)	47.0	47.0	47.0	47.0	29.0	14.5	44.0	44.0	29.0	58.5
Total Split (%)	39.2%	39.2%	39.2%	39.2%	24.2%	12.1%	36.7%	36.7%	24.2%	48.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	4.5	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		29.2	29.2	29.2	58.9	10.1	38.3	38.3	24.7	64.8
Actuated g/C Ratio		0.27	0.27	0.27	0.55	0.09	0.36	0.36	0.23	0.60
v/c Ratio		0.14	0.87	0.00	0.34	0.03	0.90	0.51	0.94	0.54
Control Delay		23.6	61.5	26.5	13.1	49.4	42.4	22.6	76.9	15.9
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		23.6	61.5	26.5	13.1	49.4	42.4	22.6	76.9	15.9
LOS		C	E	C	B	D	D	C	E	B
Approach Delay		23.6		37.7			39.2			26.8
Approach LOS		C		D			D			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.7	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 33.4	Intersection LOS: C
Intersection Capacity Utilization 85.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	33	14	274	2	265	5	1433	283	316	1462	1
Future Volume (veh/h)	13	33	14	274	2	265	5	1433	283	316	1462	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	14	36	14	301	2	281	5	1575	246	347	1607	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	104	246	86	402	444	729	21	1800	559	374	2871	0
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.01	0.37	0.37	0.23	0.58	0.00
Sat Flow, veh/h	242	998	347	1300	1800	1525	1619	4914	1525	1619	5076	0
Grp Volume(v), veh/h	64	0	0	301	2	281	5	1575	246	347	1607	0
Grp Sat Flow(s),veh/h/ln	1588	0	0	1300	1800	1525	1619	1638	1525	1619	1638	0
Q Serve(g_s), s	0.0	0.0	0.0	18.8	0.1	11.7	0.3	29.7	12.1	20.9	20.1	0.0
Cycle Q Clear(g_c), s	2.9	0.0	0.0	21.6	0.1	11.7	0.3	29.7	12.1	20.9	20.1	0.0
Prop In Lane	0.22		0.22	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	436	0	0	402	444	729	21	1800	559	374	2871	0
V/C Ratio(X)	0.15	0.00	0.00	0.75	0.00	0.39	0.24	0.88	0.44	0.93	0.56	0.00
Avail Cap(c_a), veh/h	706	0	0	631	761	997	163	1879	583	399	2871	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.3	0.0	0.0	36.1	28.2	16.6	48.6	29.4	23.8	37.4	12.8	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	1.1	0.0	0.1	2.1	4.8	0.5	26.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	6.7	0.0	3.7	0.1	11.2	4.0	10.3	6.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.3	0.0	0.0	37.1	28.2	16.7	50.7	34.2	24.3	63.5	13.0	0.0
LnGrp LOS	C	A	A	D	C	B	D	C	C	E	B	A
Approach Vol, veh/h		64			584			1826			1954	
Approach Delay, s/veh		29.3			27.3			32.9			22.0	
Approach LOS		C			C			C			C	

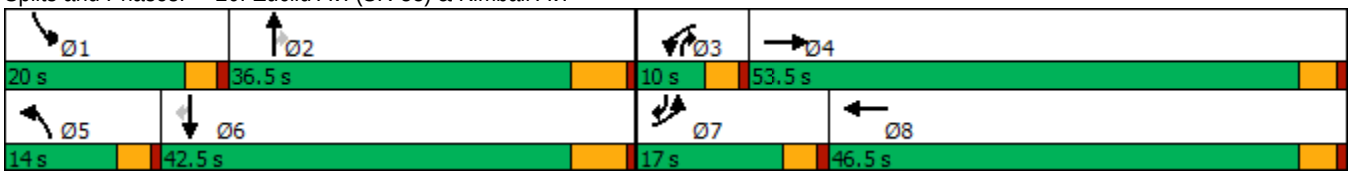
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.5	42.4		29.5	5.8	64.1		29.5				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	24.5	38.0		42.0	10.0	52.5		42.0				
Max Q Clear Time (g_c+I1), s	22.9	31.7		4.9	2.3	22.1		23.6				
Green Ext Time (p_c), s	0.1	4.7		0.2	0.0	12.8		0.9				

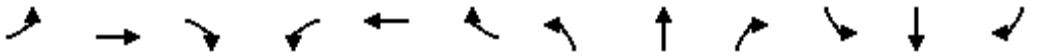
Intersection Summary			
HCM 6th Ctrl Delay		27.3	
HCM 6th LOS		C	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	399	886	96	395	88	1067	54	492	1011	265
Future Volume (vph)	399	886	96	395	88	1067	54	492	1011	265
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	9.0	45.5	14.0	36.0	9.0	9.0	33.0	14.0
Total Split (s)	17.0	53.5	10.0	46.5	14.0	36.5	10.0	20.0	42.5	17.0
Total Split (%)	14.2%	44.6%	8.3%	38.8%	11.7%	30.4%	8.3%	16.7%	35.4%	14.2%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	13.1	38.6	6.1	31.6	10.1	28.8	40.9	16.1	34.9	50.0
Actuated g/C Ratio	0.12	0.36	0.06	0.29	0.09	0.27	0.38	0.15	0.32	0.46
v/c Ratio	1.15	0.83	1.10	0.61	0.61	0.84	0.09	1.15	0.66	0.33
Control Delay	139.7	37.9	175.0	31.0	67.9	45.2	0.3	134.9	34.7	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	139.7	37.9	175.0	31.0	67.9	45.2	0.3	134.9	34.7	4.4
LOS	F	D	F	C	E	D	A	F	C	A
Approach Delay		67.6		51.2		44.9			58.1	
Approach LOS		E		D		D			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.15	
Intersection Signal Delay: 56.5	Intersection LOS: E
Intersection Capacity Utilization 88.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	399	886	83	96	395	194	88	1067	54	492	1011	265
Future Volume (veh/h)	399	886	83	96	395	194	88	1067	54	492	1011	265
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	411	913	83	99	407	162	91	1100	41	507	1042	175
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	372	1086	99	94	659	259	145	1305	494	457	1625	696
Arrive On Green	0.13	0.34	0.34	0.06	0.27	0.27	0.09	0.27	0.27	0.15	0.33	0.33
Sat Flow, veh/h	2956	3170	288	1619	2397	943	1619	4914	1525	2956	4914	1524
Grp Volume(v), veh/h	411	493	503	99	289	280	91	1100	41	507	1042	175
Grp Sat Flow(s),veh/h/ln	1478	1710	1748	1619	1710	1630	1619	1638	1525	1478	1638	1524
Q Serve(g_s), s	13.0	27.5	27.5	6.0	15.2	15.5	5.6	21.9	1.9	16.0	18.6	7.3
Cycle Q Clear(g_c), s	13.0	27.5	27.5	6.0	15.2	15.5	5.6	21.9	1.9	16.0	18.6	7.3
Prop In Lane	1.00		0.16	1.00		0.58	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	372	586	599	94	470	448	145	1305	494	457	1625	696
V/C Ratio(X)	1.11	0.84	0.84	1.05	0.61	0.62	0.63	0.84	0.08	1.11	0.64	0.25
Avail Cap(c_a), veh/h	372	810	828	94	695	662	157	1450	539	457	1735	730
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.2	31.4	31.4	48.7	32.7	32.8	45.4	35.9	24.3	43.7	29.4	17.3
Incr Delay (d2), s/veh	78.3	5.8	5.7	108.1	0.5	0.5	4.7	4.3	0.1	74.9	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	11.5	11.8	5.2	6.1	5.9	2.3	8.6	0.7	10.2	6.8	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	123.5	37.1	37.0	156.8	33.2	33.3	50.1	40.3	24.4	118.6	30.1	17.4
LnGrp LOS	F	D	D	F	C	C	D	D	C	F	C	B
Approach Vol, veh/h		1407			668			1232			1724	
Approach Delay, s/veh		62.3			51.6			40.5			54.9	
Approach LOS		E			D			D			D	

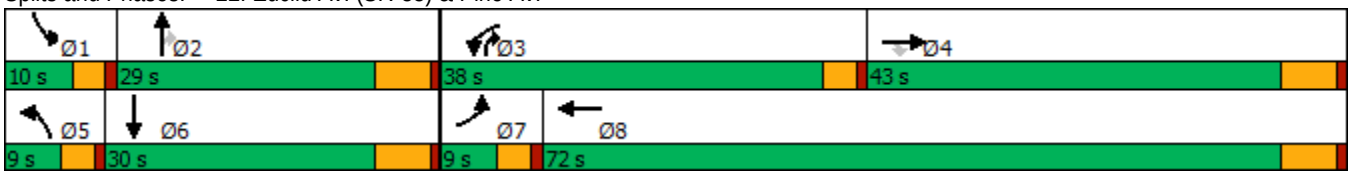
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	33.5	10.0	39.9	13.3	40.2	17.0	32.9
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	16.0	30.5	6.0	49.0	10.0	36.5	13.0	42.0
Max Q Clear Time (g_c+I1), s	18.0	23.9	8.0	29.5	7.6	20.6	15.0	17.5
Green Ext Time (p_c), s	0.0	3.5	0.0	5.8	0.0	6.3	0.0	2.0

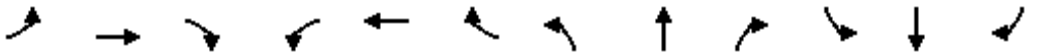
Intersection Summary	
HCM 6th Ctrl Delay	53.0
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	6	506	112	648	82	65	837	1301	162	931
Future Volume (vph)	6	506	112	648	82	65	837	1301	162	931
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	38.0	72.0	9.0	29.0	38.0	10.0	30.0
Total Split (%)	7.5%	35.8%	35.8%	31.7%	60.0%	7.5%	24.2%	31.7%	8.3%	25.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.1	23.7	23.7	27.8	54.1	5.1	22.3	56.2	6.1	23.4
Actuated g/C Ratio	0.05	0.24	0.24	0.28	0.54	0.05	0.22	0.56	0.06	0.23
v/c Ratio	0.07	0.64	0.25	0.81	0.18	0.80	0.78	0.83	1.68	0.84
Control Delay	54.3	38.7	4.7	43.4	7.6	108.9	44.2	22.1	379.4	45.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.3	38.7	4.7	43.4	7.6	108.9	44.2	22.1	379.4	45.8
LOS	D	D	A	D	A	F	D	C	F	D
Approach Delay		32.7			36.2		33.0			95.0
Approach LOS		C			D		C			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 100.4	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.68	
Intersection Signal Delay: 47.9	Intersection LOS: D
Intersection Capacity Utilization 84.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	506	112	648	82	81	65	837	1301	162	931	5
Future Volume (veh/h)	6	506	112	648	82	81	65	837	1301	162	931	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	6	516	0	661	84	81	66	854	911	165	950	5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	13	719		739	381	367	82	1245	1351	107	1356	7
Arrive On Green	0.01	0.21	0.00	0.25	0.45	0.45	0.05	0.25	0.25	0.07	0.27	0.27
Sat Flow, veh/h	1619	3420	1525	2956	842	812	1619	4914	2685	1619	5045	27
Grp Volume(v), veh/h	6	516	0	661	0	165	66	854	911	165	617	338
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1478	0	1654	1619	1638	1342	1619	1638	1795
Q Serve(g_s), s	0.3	12.7	0.0	19.6	0.0	5.5	3.7	14.3	23.0	6.0	15.4	15.4
Cycle Q Clear(g_c), s	0.3	12.7	0.0	19.6	0.0	5.5	3.7	14.3	23.0	6.0	15.4	15.4
Prop In Lane	1.00		1.00	1.00		0.49	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	13	719		739	0	748	82	1245	1351	107	881	483
V/C Ratio(X)	0.48	0.72		0.89	0.00	0.22	0.81	0.69	0.67	1.54	0.70	0.70
Avail Cap(c_a), veh/h	89	1394		1107	0	1202	89	1245	1351	107	881	483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.9	33.3	0.0	32.9	0.0	15.1	42.7	30.6	17.0	42.4	29.9	29.9
Incr Delay (d2), s/veh	10.2	1.9	0.0	4.9	0.0	0.2	34.3	1.3	1.1	284.8	2.1	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.2	0.0	6.9	0.0	1.9	2.1	5.3	6.2	10.7	5.7	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.0	35.3	0.0	37.8	0.0	15.3	76.9	31.9	18.0	327.2	32.0	33.7
LnGrp LOS	E	D		D	A	B	E	C	B	F	C	C
Approach Vol, veh/h		522	A		826			1831			1120	
Approach Delay, s/veh		35.5			33.3			26.7			76.0	
Approach LOS		D			C			C			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	29.0	26.7	25.1	8.6	30.4	4.7	47.1
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	6.0	23.0	34.0	37.0	5.0	24.0	5.0	66.0
Max Q Clear Time (g_c+I1), s	8.0	25.0	21.6	14.7	5.7	17.4	2.3	7.5
Green Ext Time (p_c), s	0.0	0.0	1.1	4.4	0.0	2.0	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	41.9
HCM 6th LOS	D

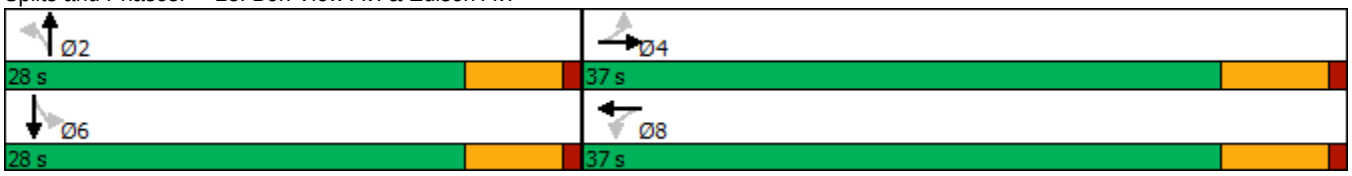
Notes

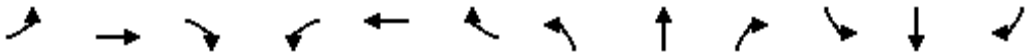
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	78	557	7	365	14	101	19	90
Future Volume (vph)	78	557	7	365	14	101	19	90
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	27.8	27.8	27.8	27.8
Total Split (s)	37.0	37.0	37.0	37.0	28.0	28.0	28.0	28.0
Total Split (%)	56.9%	56.9%	56.9%	56.9%	43.1%	43.1%	43.1%	43.1%
Yellow Time (s)	5.2	5.2	5.2	5.2	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		5.8		5.8
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)		29.3		29.3		12.4		12.4
Actuated g/C Ratio		0.54		0.54		0.23		0.23
v/c Ratio		0.78		0.41		0.34		0.42
Control Delay		19.7		9.6		19.2		17.2
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		19.7		9.6		19.2		17.2
LOS		B		A		B		B
Approach Delay		19.7		9.6		19.2		17.2
Approach LOS		B		A		B		B

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 53.8	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 16.5	Intersection LOS: B
Intersection Capacity Utilization 86.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 23: Bon View Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	557	25	7	365	7	14	101	11	19	90	53
Future Volume (veh/h)	78	557	25	7	365	7	14	101	11	19	90	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	82	586	26	7	384	7	15	106	12	20	95	56
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	157	726	31	90	848	15	114	349	37	116	240	127
Arrive On Green	0.49	0.49	0.49	0.49	0.49	0.49	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	129	1495	63	8	1745	31	86	1492	156	94	1026	545
Grp Volume(v), veh/h	694	0	0	398	0	0	133	0	0	171	0	0
Grp Sat Flow(s),veh/h/ln	1687	0	0	1785	0	0	1734	0	0	1665	0	0
Q Serve(g_s), s	8.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	15.1	0.0	0.0	6.3	0.0	0.0	2.7	0.0	0.0	3.7	0.0	0.0
Prop In Lane	0.12		0.04	0.02		0.02	0.11		0.09	0.12		0.33
Lane Grp Cap(c), veh/h	914	0	0	953	0	0	499	0	0	483	0	0
V/C Ratio(X)	0.76	0.00	0.00	0.42	0.00	0.00	0.27	0.00	0.00	0.35	0.00	0.00
Avail Cap(c_a), veh/h	1297	0	0	1364	0	0	981	0	0	948	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.4	0.0	0.0	7.3	0.0	0.0	13.6	0.0	0.0	14.0	0.0	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	0.0	1.3	0.0	0.0	0.8	0.0	0.0	1.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.0	0.0	0.0	7.6	0.0	0.0	13.9	0.0	0.0	14.4	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		694			398			133			171	
Approach Delay, s/veh		11.0			7.6			13.9			14.4	
Approach LOS		B			A			B			B	

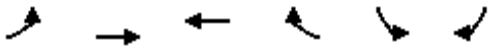
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.8		27.0		15.8		27.0				
Change Period (Y+Rc), s		5.8		6.2		5.8		6.2				
Max Green Setting (Gmax), s		22.2		30.8		22.2		30.8				
Max Q Clear Time (g_c+I1), s		4.7		17.1		5.7		8.3				
Green Ext Time (p_c), s		0.5		3.7		0.7		2.1				

Intersection Summary												
HCM 6th Ctrl Delay			10.7									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	103	742	479	68
Future Volume (vph)	103	742	479	68
Turn Type	Perm	NA	NA	Prot
Protected Phases		4	8	6
Permitted Phases	4			
Detector Phase	4	4	8	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	16.2	16.2	23.2	32.8
Total Split (s)	86.0	86.0	86.0	34.0
Total Split (%)	71.7%	71.7%	71.7%	28.3%
Yellow Time (s)	5.2	5.2	5.2	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0
Total Lost Time (s)		6.2	6.2	5.8
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	Min
Act Effct Green (s)		78.8	78.8	14.6
Actuated g/C Ratio		0.75	0.75	0.14
v/c Ratio		0.78	0.22	0.59
Control Delay		15.8	4.7	38.9
Queue Delay		0.0	0.0	0.0
Total Delay		15.8	4.7	38.9
LOS		B	A	D
Approach Delay		15.8	4.7	38.9
Approach LOS		B	A	D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 105.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 14.2	Intersection LOS: B
Intersection Capacity Utilization 86.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 25: Merrill Av. & Bon View Av.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	103	742	479	40	68	81
Future Volume (veh/h)	103	742	479	40	68	81
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	110	789	510	43	72	86
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	162	928	1986	167	125	149
Arrive On Green	0.62	0.62	0.62	0.62	0.17	0.17
Sat Flow, veh/h	149	1492	3283	269	728	869
Grp Volume(v), veh/h	899	0	272	281	159	0
Grp Sat Flow(s),veh/h/ln	1640	0	1710	1752	1607	0
Q Serve(g_s), s	17.5	0.0	4.2	4.2	5.3	0.0
Cycle Q Clear(g_c), s	26.0	0.0	4.2	4.2	5.3	0.0
Prop In Lane	0.12			0.15	0.45	0.54
Lane Grp Cap(c), veh/h	1090	0	1064	1090	276	0
V/C Ratio(X)	0.82	0.00	0.26	0.26	0.58	0.00
Avail Cap(c_a), veh/h	2282	0	2344	2401	779	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.8	0.0	4.9	5.0	22.2	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.1	0.1	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	0.8	0.8	1.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.4	0.0	5.1	5.1	24.0	0.0
LnGrp LOS	B	A	A	A	C	A
Approach Vol, veh/h		899	553		159	
Approach Delay, s/veh		10.4	5.1		24.0	
Approach LOS		B	A		C	

Timer - Assigned Phs		4		6	8
Phs Duration (G+Y+Rc), s		42.4		15.8	42.4
Change Period (Y+Rc), s		6.2		5.8	6.2
Max Green Setting (Gmax), s		79.8		28.2	79.8
Max Q Clear Time (g_c+I1), s		28.0		7.3	6.2
Green Ext Time (p_c), s		8.2		0.4	3.1

Intersection Summary	
HCM 6th Ctrl Delay	9.9
HCM 6th LOS	A

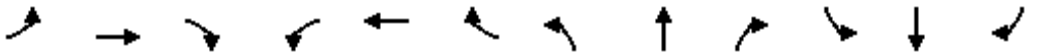
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	466	0	370	729	480	937
Future Volume (vph)	466	0	370	729	480	937
Turn Type	Split	NA	Perm	NA	Prot	NA
Protected Phases	4	4		2	1	6
Permitted Phases			4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	30.8	26.8	9.6	22.8
Total Split (s)	31.0	31.0	31.0	50.0	39.0	89.0
Total Split (%)	25.8%	25.8%	25.8%	41.7%	32.5%	74.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.6	5.8
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	22.7	22.7	22.7	45.5	35.6	85.7
Actuated g/C Ratio	0.19	0.19	0.19	0.38	0.30	0.71
v/c Ratio	0.77	0.78	0.91	0.87	0.96	0.39
Control Delay	62.4	62.6	54.5	40.6	84.8	5.8
Queue Delay	0.0	0.0	0.0	0.0	17.6	0.2
Total Delay	62.4	62.6	54.5	40.6	102.4	6.0
LOS	E	E	D	D	F	A
Approach Delay		59.0		40.6		38.6
Approach LOS		E		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 44.4	Intersection LOS: D
Intersection Capacity Utilization 89.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	466	0	370	0	0	0	0	729	347	480	937	0
Future Volume (veh/h)	466	0	370	0	0	0	0	729	347	480	937	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	501	0	311				0	784	290	516	1008	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	752	0	335				0	948	350	519	2511	0
Arrive On Green	0.21	0.00	0.21				0.00	0.37	0.37	0.57	1.00	0.00
Sat Flow, veh/h	3619	0	1610				0	2653	946	1810	3705	0
Grp Volume(v), veh/h	501	0	311				0	553	521	516	1008	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1699	1810	1805	0
Q Serve(g_s), s	15.3	0.0	22.8				0.0	33.4	33.4	34.0	0.0	0.0
Cycle Q Clear(g_c), s	15.3	0.0	22.8				0.0	33.4	33.4	34.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.56	1.00		0.00
Lane Grp Cap(c), veh/h	752	0	335				0	669	630	519	2511	0
V/C Ratio(X)	0.67	0.00	0.93				0.00	0.83	0.83	0.99	0.40	0.00
Avail Cap(c_a), veh/h	760	0	338				0	669	630	519	2511	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.72	0.72	0.70	0.70	0.00
Uniform Delay (d), s/veh	43.7	0.0	46.7				0.0	34.3	34.3	25.5	0.0	0.0
Incr Delay (d2), s/veh	2.2	0.0	31.3				0.0	8.3	8.9	31.7	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	0.0	11.7				0.0	15.5	14.6	13.1	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.9	0.0	77.9				0.0	42.6	43.2	57.2	0.3	0.0
LnGrp LOS	D	A	E				A	D	D	E	A	A
Approach Vol, veh/h		812						1074			1524	
Approach Delay, s/veh		58.2						42.9			19.6	
Approach LOS		E						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	39.0	50.3		30.7		89.3
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	34.4	44.2		25.2		83.2
Max Q Clear Time (g_c+I1), s	36.0	35.4		24.8		2.0
Green Ext Time (p_c), s	0.0	4.2		0.2		8.3

Intersection Summary		
HCM 6th Ctrl Delay		36.1
HCM 6th LOS		D

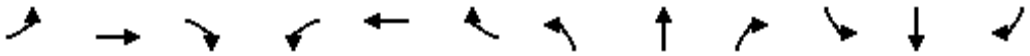
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	84	202	10	44	40	456	40	387
Future Volume (vph)	84	202	10	44	40	456	40	387
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Total Split (s)	38.0	38.0	38.0	38.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	31.7%	31.7%	68.3%	68.3%	68.3%	68.3%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		27.6		27.6		76.0		76.0
Actuated g/C Ratio		0.24		0.24		0.66		0.66
v/c Ratio		0.88		0.25		0.49		0.44
Control Delay		66.2		25.4		12.7		11.7
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		66.2		25.4		12.7		11.7
LOS		E		C		B		B
Approach Delay		66.2		25.4		12.7		11.7
Approach LOS		E		C		B		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 25.5	Intersection LOS: C
Intersection Capacity Utilization 71.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 30: Grove Av. & Chino Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	202	29	10	44	43	40	456	21	40	387	24
Future Volume (veh/h)	84	202	29	10	44	43	40	456	21	40	387	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	88	210	30	10	46	45	42	475	22	42	403	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	126	244	33	52	184	161	96	1039	47	107	994	60
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.67	0.67	0.67	0.67	0.67	0.67
Sat Flow, veh/h	389	1113	151	75	838	734	92	1548	70	108	1481	89
Grp Volume(v), veh/h	328	0	0	101	0	0	539	0	0	470	0	0
Grp Sat Flow(s),veh/h/ln	1653	0	0	1648	0	0	1710	0	0	1679	0	0
Q Serve(g_s), s	16.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	21.7	0.0	0.0	5.7	0.0	0.0	16.1	0.0	0.0	13.3	0.0	0.0
Prop In Lane	0.27		0.09	0.10		0.45	0.08		0.04	0.09		0.05
Lane Grp Cap(c), veh/h	403	0	0	397	0	0	1181	0	0	1161	0	0
V/C Ratio(X)	0.81	0.00	0.00	0.25	0.00	0.00	0.46	0.00	0.00	0.40	0.00	0.00
Avail Cap(c_a), veh/h	503	0	0	495	0	0	1181	0	0	1161	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.7	0.0	0.0	36.6	0.0	0.0	8.8	0.0	0.0	8.3	0.0	0.0
Incr Delay (d2), s/veh	8.1	0.0	0.0	0.3	0.0	0.0	1.3	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	0.0	0.0	2.3	0.0	0.0	5.5	0.0	0.0	4.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.8	0.0	0.0	37.0	0.0	0.0	10.0	0.0	0.0	9.4	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	B	A	A	A	A	A
Approach Vol, veh/h		328			101			539			470	
Approach Delay, s/veh		50.8			37.0			10.0			9.4	
Approach LOS		D			D			B			A	

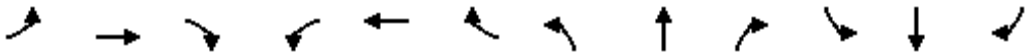
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		82.0		31.0		82.0		31.0				
Change Period (Y+Rc), s		6.2		6.2		6.2		6.2				
Max Green Setting (Gmax), s		75.8		31.8		75.8		31.8				
Max Q Clear Time (g_c+I1), s		18.1		23.7		15.3		7.7				
Green Ext Time (p_c), s		3.5		1.0		3.0		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			21.0									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	110	159	2	51	21	386	59	288
Future Volume (vph)	110	159	2	51	21	386	59	288
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	41.0	41.0	41.0	41.0	79.0	79.0	79.0	79.0
Total Split (%)	34.2%	34.2%	34.2%	34.2%	65.8%	65.8%	65.8%	65.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.8		5.8		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		32.4		32.4		72.9		72.9
Actuated g/C Ratio		0.28		0.28		0.62		0.62
v/c Ratio		0.92		0.21		0.44		0.45
Control Delay		68.5		22.8		13.6		13.7
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		68.5		22.8		13.6		13.7
LOS		E		C		B		B
Approach Delay		68.5		22.8		13.6		13.7
Approach LOS		E		C		B		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.3	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 29.6	Intersection LOS: C
Intersection Capacity Utilization 82.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 31: Grove Av. & Schaefer Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	159	97	2	51	41	21	386	34	59	288	60
Future Volume (veh/h)	110	159	97	2	51	41	21	386	34	59	288	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	118	171	104	2	55	44	23	415	37	63	310	65
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	158	194	112	34	251	195	61	982	85	155	740	150
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.63	0.63	0.63	0.63	0.63	0.63
Sat Flow, veh/h	440	729	421	7	942	732	46	1560	136	189	1175	238
Grp Volume(v), veh/h	393	0	0	101	0	0	475	0	0	438	0	0
Grp Sat Flow(s),veh/h/ln	1589	0	0	1681	0	0	1741	0	0	1603	0	0
Q Serve(g_s), s	22.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	27.8	0.0	0.0	5.5	0.0	0.0	15.6	0.0	0.0	14.2	0.0	0.0
Prop In Lane	0.30		0.26	0.02		0.44	0.05		0.08	0.14		0.15
Lane Grp Cap(c), veh/h	464	0	0	480	0	0	1129	0	0	1045	0	0
V/C Ratio(X)	0.85	0.00	0.00	0.21	0.00	0.00	0.42	0.00	0.00	0.42	0.00	0.00
Avail Cap(c_a), veh/h	523	0	0	542	0	0	1129	0	0	1045	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	41.0	0.0	0.0	33.1	0.0	0.0	10.8	0.0	0.0	10.6	0.0	0.0
Incr Delay (d2), s/veh	11.2	0.0	0.0	0.2	0.0	0.0	1.2	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	0.0	0.0	2.2	0.0	0.0	5.6	0.0	0.0	5.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.3	0.0	0.0	33.3	0.0	0.0	12.0	0.0	0.0	11.8	0.0	0.0
LnGrp LOS	D	A	A	C	A	A	B	A	A	B	A	A
Approach Vol, veh/h		393			101			475			438	
Approach Delay, s/veh		52.3			33.3			12.0			11.8	
Approach LOS		D			C			B			B	

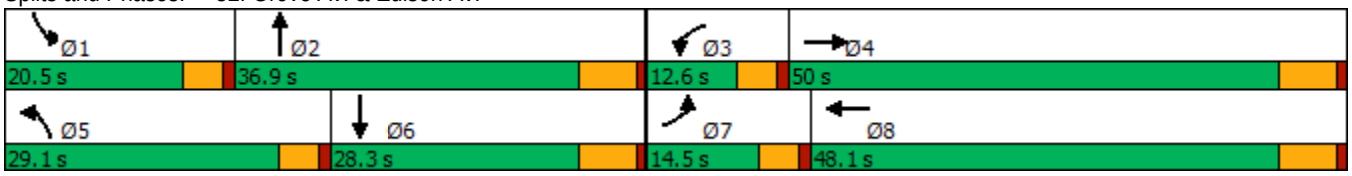
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		79.0		36.6		79.0		36.6				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		72.8		35.2		72.8		35.2				
Max Q Clear Time (g_c+I1), s		17.6		29.8		16.2		7.5				
Green Ext Time (p_c), s		2.9		1.0		2.9		0.5				

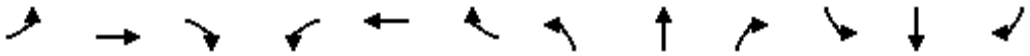
Intersection Summary												
HCM 6th Ctrl Delay			24.7									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	49	494	84	306	58	337	146	228
Future Volume (vph)	49	494	84	306	58	337	146	228
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	9.6	28.2	9.6	28.2
Total Split (s)	14.5	50.0	12.6	48.1	29.1	36.9	20.5	28.3
Total Split (%)	12.1%	41.7%	10.5%	40.1%	24.3%	30.8%	17.1%	23.6%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	7.7	44.0	7.9	46.4	8.7	22.3	13.8	29.5
Actuated g/C Ratio	0.07	0.40	0.07	0.42	0.08	0.20	0.13	0.27
v/c Ratio	0.47	0.78	0.78	0.52	0.49	0.78	0.78	0.30
Control Delay	64.6	39.1	91.8	29.1	62.8	42.9	73.0	32.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.6	39.1	91.8	29.1	62.8	42.9	73.0	32.6
LOS	E	D	F	C	E	D	E	C
Approach Delay		41.3		40.9		44.8		47.4
Approach LOS		D		D		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 43.4	Intersection LOS: D
Intersection Capacity Utilization 77.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	494	26	84	306	57	58	337	192	146	228	25
Future Volume (veh/h)	49	494	26	84	306	57	58	337	192	146	228	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	53	531	28	90	329	61	62	362	206	157	245	27
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	66	693	37	111	645	120	78	438	245	184	848	93
Arrive On Green	0.04	0.41	0.41	0.07	0.44	0.44	0.05	0.21	0.21	0.11	0.27	0.27
Sat Flow, veh/h	1619	1695	89	1619	1477	274	1619	2114	1183	1619	3110	339
Grp Volume(v), veh/h	53	0	559	90	0	390	62	292	276	157	134	138
Grp Sat Flow(s),veh/h/ln	1619	0	1784	1619	0	1751	1619	1710	1587	1619	1710	1739
Q Serve(g_s), s	3.5	0.0	28.9	5.9	0.0	17.3	4.1	17.5	17.9	10.2	6.6	6.7
Cycle Q Clear(g_c), s	3.5	0.0	28.9	5.9	0.0	17.3	4.1	17.5	17.9	10.2	6.6	6.7
Prop In Lane	1.00		0.05	1.00		0.16	1.00		0.75	1.00		0.20
Lane Grp Cap(c), veh/h	66	0	730	111	0	765	78	355	329	184	466	474
V/C Ratio(X)	0.80	0.00	0.77	0.81	0.00	0.51	0.80	0.82	0.84	0.86	0.29	0.29
Avail Cap(c_a), veh/h	150	0	730	121	0	765	370	490	455	240	466	474
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	0.0	27.2	49.2	0.0	21.8	50.4	40.6	40.7	46.6	30.7	30.8
Incr Delay (d2), s/veh	8.3	0.0	7.5	27.9	0.0	2.4	6.8	7.8	9.7	16.7	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	12.7	3.1	0.0	7.0	1.7	7.7	7.5	4.8	2.6	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.2	0.0	34.8	77.1	0.0	24.3	57.3	48.4	50.4	63.3	31.1	31.1
LnGrp LOS	E	A	C	E	A	C	E	D	D	E	C	C
Approach Vol, veh/h		612			480			630			429	
Approach Delay, s/veh		36.9			34.2			50.2			42.9	
Approach LOS		D			C			D			D	

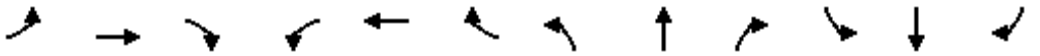
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	28.4	11.9	50.0	9.7	35.4	9.0	53.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	15.9	30.7	8.0	43.8	24.5	22.1	9.9	41.9
Max Q Clear Time (g_c+I1), s	12.2	19.9	7.9	30.9	6.1	8.7	5.5	19.3
Green Ext Time (p_c), s	0.1	2.3	0.0	2.6	0.0	1.0	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	41.4
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	166	95	6	20	16	422	24	256
Future Volume (vph)	166	95	6	20	16	422	24	256
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	42.0	42.0	42.0	42.0	78.0	78.0	78.0	78.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	65.0%	65.0%	65.0%	65.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	6.2	6.2	6.2	6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)	36.5	36.5	36.5	36.5	59.2	59.2	59.2	59.2
Actuated g/C Ratio	0.34	0.34	0.34	0.34	0.55	0.55	0.55	0.55
v/c Ratio	0.45	0.33	0.02	0.12	0.03	0.86	0.43	0.18
Control Delay	34.8	25.5	28.8	20.7	10.5	25.6	37.2	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.8	25.5	28.8	20.7	10.5	25.6	37.2	10.4
LOS	C	C	C	C	B	C	D	B
Approach Delay		30.0		21.4		25.5		12.4
Approach LOS		C		C		C		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.8	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 24.1	Intersection LOS: C
Intersection Capacity Utilization 49.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	95	78	6	20	42	16	422	5	24	256	54
Future Volume (veh/h)	166	95	78	6	20	42	16	422	5	24	256	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	184	106	87	7	22	47	18	1688	6	27	284	60
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.25	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	464	311	255	357	174	371	562	1963	7	108	1582	329
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.55	0.55	0.55	0.55	0.55	0.55
Sat Flow, veh/h	1278	914	751	1142	511	1092	995	3585	13	278	2891	601
Grp Volume(v), veh/h	184	0	193	7	0	69	18	847	847	27	175	169
Grp Sat Flow(s),veh/h/ln	1278	0	1665	1142	0	1603	995	1800	1798	278	1800	1692
Q Serve(g_s), s	12.4	0.0	9.2	0.5	0.0	3.2	1.0	42.9	42.9	9.8	5.2	5.3
Cycle Q Clear(g_c), s	15.5	0.0	9.2	9.7	0.0	3.2	6.3	42.9	42.9	52.7	5.2	5.3
Prop In Lane	1.00		0.45	1.00		0.68	1.00		0.01	1.00		0.36
Lane Grp Cap(c), veh/h	464	0	566	357	0	545	562	985	984	108	985	926
V/C Ratio(X)	0.40	0.00	0.34	0.02	0.00	0.13	0.03	0.86	0.86	0.25	0.18	0.18
Avail Cap(c_a), veh/h	464	0	566	357	0	545	688	1213	1212	143	1213	1140
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	0.0	26.2	29.9	0.0	24.2	13.7	20.6	20.6	43.2	12.1	12.1
Incr Delay (d2), s/veh	2.5	0.0	1.6	0.1	0.0	0.5	0.0	5.4	5.5	1.2	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	3.7	0.1	0.0	1.2	0.2	16.8	16.9	0.7	1.9	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.1	0.0	27.9	30.0	0.0	24.7	13.7	26.0	26.1	44.4	12.2	12.2
LnGrp LOS	C	A	C	C	A	C	B	C	C	D	B	B
Approach Vol, veh/h		377			76			1712			371	
Approach Delay, s/veh		30.0			25.2			25.9			14.5	
Approach LOS		C			C			C			B	

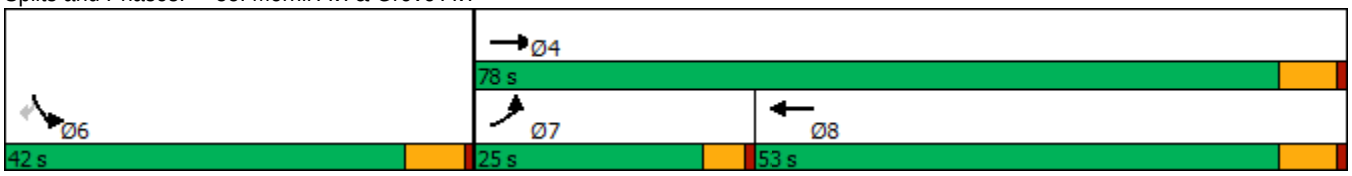
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		64.5		42.0		64.5		42.0				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		71.8		36.2		71.8		36.2				
Max Q Clear Time (g_c+I1), s		44.9		17.5		54.7		11.7				
Green Ext Time (p_c), s		13.4		1.5		2.1		0.3				

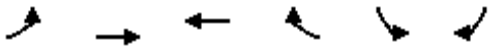
Intersection Summary												
HCM 6th Ctrl Delay			24.8									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	203	616	407	232	107
Future Volume (vph)	203	616	407	232	107
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	28.2	28.2
Total Split (s)	25.0	78.0	53.0	42.0	42.0
Total Split (%)	20.8%	65.0%	44.2%	35.0%	35.0%
Yellow Time (s)	3.6	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	6.2	6.2
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	Max	Max	None	None
Act Effct Green (s)	17.1	72.0	50.3	20.8	20.8
Actuated g/C Ratio	0.16	0.68	0.48	0.20	0.20
v/c Ratio	0.81	0.52	0.81	0.76	0.28
Control Delay	66.0	11.0	33.8	55.4	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	66.0	11.0	33.8	55.4	8.3
LOS	E	B	C	E	A
Approach Delay		24.6	33.8	40.6	
Approach LOS		C	C	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 105.2	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 30.9	Intersection LOS: C
Intersection Capacity Utilization 79.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	203	616	407	240	232	107
Future Volume (veh/h)	203	616	407	240	232	107
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	211	642	424	250	242	111
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	240	1268	542	320	282	265
Arrive On Green	0.15	0.70	0.51	0.51	0.17	0.17
Sat Flow, veh/h	1619	1800	1061	626	1619	1525
Grp Volume(v), veh/h	211	642	0	674	242	111
Grp Sat Flow(s),veh/h/ln	1619	1800	0	1687	1619	1525
Q Serve(g_s), s	13.0	16.7	0.0	33.2	14.8	6.6
Cycle Q Clear(g_c), s	13.0	16.7	0.0	33.2	14.8	6.6
Prop In Lane	1.00			0.37	1.00	1.00
Lane Grp Cap(c), veh/h	240	1268	0	862	282	265
V/C Ratio(X)	0.88	0.51	0.00	0.78	0.86	0.42
Avail Cap(c_a), veh/h	324	1268	0	862	569	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.5	6.9	0.0	20.3	40.9	37.5
Incr Delay (d2), s/veh	15.3	1.4	0.0	7.0	7.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	5.1	0.0	13.0	6.2	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	57.8	8.4	0.0	27.3	48.4	38.6
LnGrp LOS	E	A	A	C	D	D
Approach Vol, veh/h		853	674		353	
Approach Delay, s/veh		20.6	27.3		45.3	
Approach LOS		C	C		D	

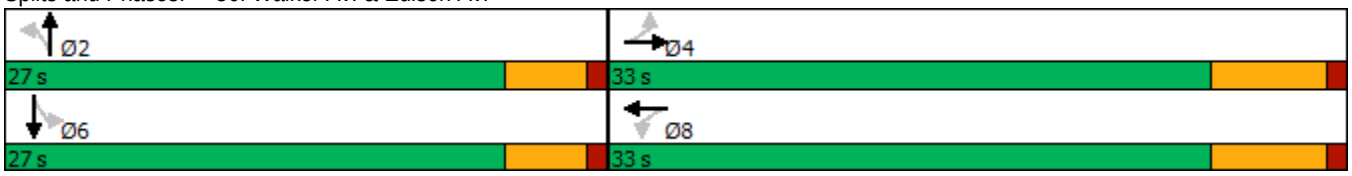
Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			78.0		23.9	19.7	58.3
Change Period (Y+Rc), s			6.2		6.2	4.6	6.2
Max Green Setting (Gmax), s			71.8		35.8	20.4	46.8
Max Q Clear Time (g_c+I1), s			18.7		16.8	15.0	35.2
Green Ext Time (p_c), s			4.2		0.9	0.1	3.3

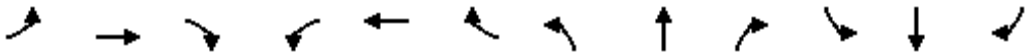
Intersection Summary	
HCM 6th Ctrl Delay	27.6
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	23	793	17	417	3	22	73	15
Future Volume (vph)	23	793	17	417	3	22	73	15
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	26.7	26.7	26.7	26.7
Total Split (s)	33.0	33.0	33.0	33.0	27.0	27.0	27.0	27.0
Total Split (%)	55.0%	55.0%	55.0%	55.0%	45.0%	45.0%	45.0%	45.0%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		4.7		4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		33.1		33.1		12.2		12.2
Actuated g/C Ratio		0.64		0.64		0.24		0.24
v/c Ratio		0.76		0.45		0.20		0.34
Control Delay		18.3		9.5		7.9		17.2
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		18.3		9.5		7.9		17.2
LOS		B		A		A		B
Approach Delay		18.3		9.5		7.9		17.2
Approach LOS		B		A		A		B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 51.8	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 14.9	Intersection LOS: B
Intersection Capacity Utilization 75.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	793	1	17	417	34	3	22	56	73	15	11
Future Volume (veh/h)	23	793	1	17	417	34	3	22	56	73	15	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	24	835	1	18	439	36	3	23	59	77	16	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	91	1006	1	93	913	73	83	92	216	327	64	33
Arrive On Green	0.57	0.57	0.57	0.57	0.57	0.57	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	20	1759	2	23	1596	128	18	470	1107	990	329	170
Grp Volume(v), veh/h	860	0	0	493	0	0	85	0	0	105	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	0	1746	0	0	1596	0	0	1489	0	0
Q Serve(g_s), s	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Cycle Q Clear(g_c), s	18.5	0.0	0.0	7.7	0.0	0.0	2.1	0.0	0.0	2.5	0.0	0.0
Prop In Lane	0.03		0.00	0.04		0.07	0.04		0.69	0.73		0.11
Lane Grp Cap(c), veh/h	1098	0	0	1078	0	0	391	0	0	424	0	0
V/C Ratio(X)	0.78	0.00	0.00	0.46	0.00	0.00	0.22	0.00	0.00	0.25	0.00	0.00
Avail Cap(c_a), veh/h	1098	0	0	1078	0	0	836	0	0	820	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.2	0.0	0.0	5.9	0.0	0.0	16.0	0.0	0.0	16.1	0.0	0.0
Incr Delay (d2), s/veh	5.6	0.0	0.0	1.4	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.0	0.0	1.6	0.0	0.0	0.7	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.8	0.0	0.0	7.3	0.0	0.0	16.3	0.0	0.0	16.4	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		860			493			85			105	
Approach Delay, s/veh		13.8			7.3			16.3			16.4	
Approach LOS		B			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.9		33.0		13.9		33.0				
Change Period (Y+Rc), s		* 4.7		6.2		* 4.7		6.2				
Max Green Setting (Gmax), s		* 22		26.8		* 22		26.8				
Max Q Clear Time (g_c+I1), s		4.1		20.5		4.5		9.7				
Green Ext Time (p_c), s		0.4		2.9		0.5		2.6				

Intersection Summary		
HCM 6th Ctrl Delay		12.1
HCM 6th LOS		B

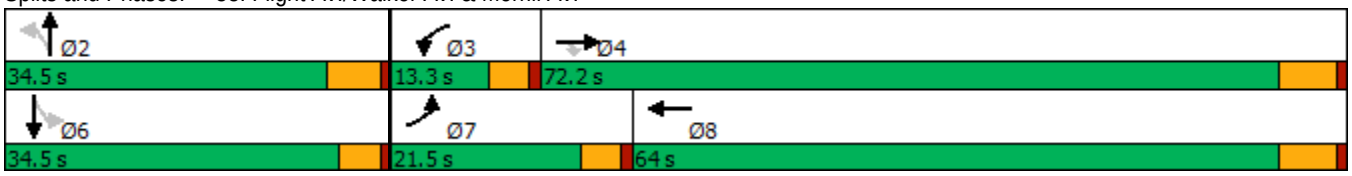
Notes

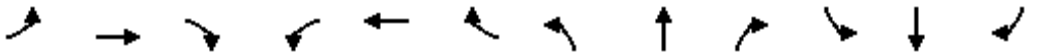
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	Ø6	Ø7
Lane Configurations								
Traffic Volume (vph)	723	127	97	527	104	0		
Future Volume (vph)	723	127	97	527	104	0		
Turn Type	NA	Perm	Prot	NA	Perm	NA		
Protected Phases	4		3	8		2	6	7
Permitted Phases		4			2			
Detector Phase	4	4	3	8	2	2		
Switch Phase								
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0	5.0
Minimum Split (s)	23.2	23.2	9.6	23.2	32.8	32.8	21.6	9.6
Total Split (s)	72.2	72.2	13.3	64.0	34.5	34.5	34.5	21.5
Total Split (%)	60.2%	60.2%	11.1%	53.3%	28.8%	28.8%	29%	18%
Yellow Time (s)	5.2	5.2	3.6	5.2	4.8	4.8	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.2	6.2	4.6	6.2	5.8	5.8		
Lead/Lag	Lag	Lag	Lead	Lag				Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				Yes
Recall Mode	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	66.3	66.3	8.7	79.6	19.0	19.0		
Actuated g/C Ratio	0.60	0.60	0.08	0.72	0.17	0.17		
v/c Ratio	0.74	0.15	0.84	0.24	0.52	0.32		
Control Delay	22.6	6.6	98.4	6.2	49.6	1.7		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	22.6	6.6	98.4	6.2	49.6	1.7		
LOS	C	A	F	A	D	A		
Approach Delay	20.2			20.6		21.9		
Approach LOS	C			C		C		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 20.6	Intersection LOS: C
Intersection Capacity Utilization 69.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 38: Flight Av./Walker Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	723	127	97	527	0	104	0	142	0	0	0
Future Volume (veh/h)	0	723	127	97	527	0	104	0	142	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	0	795	140	107	579	0	114	0	156	0	0	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.25	0.91	0.91	0.91	0.91	0.91	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	2	1138	965	130	2589	0	276	0	195	0	230	0
Arrive On Green	0.00	0.63	0.63	0.08	0.76	0.00	0.13	0.00	0.13	0.00	0.00	0.00
Sat Flow, veh/h	1619	1800	1525	1619	3510	0	1619	0	1525	0	1800	0
Grp Volume(v), veh/h	0	795	140	107	579	0	114	0	156	0	0	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	0	1619	0	1525	0	1800	0
Q Serve(g_s), s	0.0	30.3	3.9	6.8	5.2	0.0	6.9	0.0	10.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	30.3	3.9	6.8	5.2	0.0	6.9	0.0	10.4	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	2	1138	965	130	2589	0	276	0	195	0	230	0
V/C Ratio(X)	0.00	0.70	0.15	0.82	0.22	0.00	0.41	0.00	0.80	0.00	0.00	0.00
Avail Cap(c_a), veh/h	262	1138	965	135	2589	0	514	0	420	0	516	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	12.6	7.8	47.2	3.7	0.0	42.7	0.0	44.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.6	0.3	28.9	0.2	0.0	1.0	0.0	7.3	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.9	1.1	3.7	1.2	0.0	2.7	0.0	4.2	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	16.2	8.1	76.2	3.9	0.0	43.7	0.0	51.5	0.0	0.0	0.0
LnGrp LOS	A	B	A	E	A	A	D	A	D	A	A	A
Approach Vol, veh/h		935			686			270			0	
Approach Delay, s/veh		15.0			15.2			48.2			0.0	
Approach LOS		B			B			D				

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	19.2	13.0	72.2	19.2	0.0	85.2
Change Period (Y+Rc), s	5.8	4.6	6.2	* 5.8	4.6	6.2
Max Green Setting (Gmax), s	28.7	8.7	66.0	* 30	16.9	57.8
Max Q Clear Time (g_c+I1), s	12.4	8.8	32.3	0.0	0.0	7.2
Green Ext Time (p_c), s	1.0	0.0	6.2	0.0	0.0	3.8

Intersection Summary	
HCM 6th Ctrl Delay	19.8
HCM 6th LOS	B

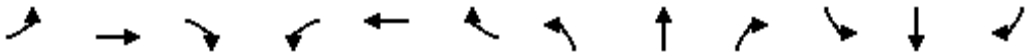
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBL	WBT	NBL	NBT	Ø6
Lane Configurations						
Traffic Volume (vph)	844	11	580	45	0	
Future Volume (vph)	844	11	580	45	0	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4		8		2	6
Permitted Phases		8		2		
Detector Phase	4	8	8	2	2	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	26.6
Total Split (s)	91.0	91.0	91.0	29.0	29.0	29.0
Total Split (%)	75.8%	75.8%	75.8%	24.2%	24.2%	24%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.2	6.2	6.2		6.2	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Max	None	None	None
Act Effct Green (s)	96.8	96.8	96.8		12.9	
Actuated g/C Ratio	0.83	0.83	0.83		0.11	
v/c Ratio	0.35	0.03	0.23		0.42	
Control Delay	4.1	4.1	3.6		38.6	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	4.1	4.1	3.6		38.6	
LOS	A	A	A		D	
Approach Delay	4.1		3.6		38.6	
Approach LOS	A		A		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.2	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay: 5.4	Intersection LOS: A
Intersection Capacity Utilization 44.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 40: Van Vliet Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	844	21	11	580	0	45	0	20	0	0	0
Future Volume (veh/h)	0	844	21	11	580	0	45	0	20	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	0	959	24	12	659	0	51	0	23	0	0	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	68	2726	68	464	2734	0	133	10	39	0	151	0
Arrive On Green	0.00	0.80	0.80	0.80	0.80	0.00	0.08	0.00	0.08	0.00	0.00	0.00
Sat Flow, veh/h	744	3409	85	549	3510	0	908	119	463	0	1800	0
Grp Volume(v), veh/h	0	481	502	12	659	0	74	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	744	1710	1785	549	1710	0	1490	0	0	0	1800	0
Q Serve(g_s), s	0.0	8.3	8.3	0.7	5.1	0.0	4.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	8.3	8.3	9.0	5.1	0.0	5.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.00	0.69		0.31	0.00		0.00
Lane Grp Cap(c), veh/h	68	1367	1427	464	2734	0	182	0	0	0	151	0
V/C Ratio(X)	0.00	0.35	0.35	0.03	0.24	0.00	0.41	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	68	1367	1427	464	2734	0	374	0	0	0	414	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	3.0	3.0	4.2	2.6	0.0	46.8	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.7	0.1	0.2	0.0	1.5	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	1.7	0.1	0.9	0.0	1.9	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	3.7	3.7	4.3	2.9	0.0	48.2	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	A	A	A
Approach Vol, veh/h		983			671			74			0	
Approach Delay, s/veh		3.7			2.9			48.2			0.0	
Approach LOS		A			A			D				

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.1		91.0		15.1		91.0				
Change Period (Y+Rc), s		6.2		6.2		* 6.2		6.2				
Max Green Setting (Gmax), s		22.8		84.8		* 24		84.8				
Max Q Clear Time (g_c+I1), s		7.0		10.3		0.0		11.0				
Green Ext Time (p_c), s		0.2		6.5		0.0		4.6				

Intersection Summary		
HCM 6th Ctrl Delay		5.3
HCM 6th LOS		A

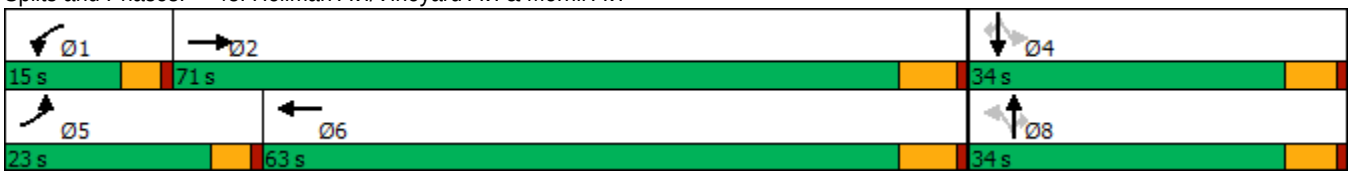
Notes

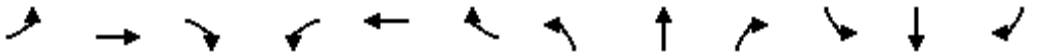
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBL	WBT	NBL	NBR	Ø4	Ø5
Lane Configurations							
Traffic Volume (vph)	863	62	530	60	74		
Future Volume (vph)	863	62	530	60	74		
Turn Type	NA	Prot	NA	Perm	Perm		
Protected Phases	2	1	6			4	5
Permitted Phases				8	8		
Detector Phase	2	1	6	8	8		
Switch Phase							
Minimum Initial (s)	10.0	5.0	10.0	10.0	10.0	10.0	5.0
Minimum Split (s)	28.2	9.6	28.2	27.8	27.8	27.8	9.6
Total Split (s)	71.0	15.0	63.0	34.0	34.0	34.0	23.0
Total Split (%)	59.2%	12.5%	52.5%	28.3%	28.3%	28%	19%
Yellow Time (s)	5.2	3.6	5.2	4.8	4.8	4.8	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.2	4.6	6.2	5.8	5.8		
Lead/Lag	Lag	Lead	Lag				Lead
Lead-Lag Optimize?	Yes	Yes	Yes				Yes
Recall Mode	Max	None	Max	None	None	None	None
Act Effct Green (s)	68.0	8.3	79.0	12.9	12.9		
Actuated g/C Ratio	0.65	0.08	0.76	0.12	0.12		
v/c Ratio	0.43	0.54	0.23	0.42	0.20		
Control Delay	10.6	62.1	4.2	49.9	1.1		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	10.6	62.1	4.2	49.9	1.1		
LOS	B	E	A	D	A		
Approach Delay	10.6		10.3				
Approach LOS	B		B				

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.9	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay: 11.6	Intersection LOS: B
Intersection Capacity Utilization 51.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 43: Hellman Av./Vineyard Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	863	1	62	530	0	60	0	74	0	0	0
Future Volume (veh/h)	0	863	1	62	530	0	60	0	74	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	0	959	1	69	589	0	67	0	82	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	2	2358	2	86	2646	0	240	183	155	75	183	155
Arrive On Green	0.00	0.67	0.67	0.05	0.77	0.00	0.10	0.00	0.10	0.00	0.00	0.00
Sat Flow, veh/h	1619	3506	4	1619	3510	0	1619	1800	1525	1263	1800	1525
Grp Volume(v), veh/h	0	468	492	69	589	0	67	0	82	0	0	0
Grp Sat Flow(s),veh/h/ln	1619	1710	1799	1619	1710	0	1619	1800	1525	1263	1800	1525
Q Serve(g_s), s	0.0	11.9	11.9	4.1	4.5	0.0	3.7	0.0	4.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	11.9	11.9	4.1	4.5	0.0	3.7	0.0	4.9	0.0	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	1150	1210	86	2646	0	240	183	155	75	183	155
V/C Ratio(X)	0.00	0.41	0.41	0.80	0.22	0.00	0.28	0.00	0.53	0.00	0.00	0.00
Avail Cap(c_a), veh/h	309	1150	1210	175	2646	0	549	527	447	316	527	447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.1	7.1	45.1	3.0	0.0	40.5	0.0	41.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	1.0	6.3	0.2	0.0	0.6	0.0	2.8	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.5	3.7	1.7	0.9	0.0	1.5	0.0	1.9	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.2	8.1	51.4	3.2	0.0	41.2	0.0	43.8	0.0	0.0	0.0
LnGrp LOS	A	A	A	D	A	A	D	A	D	A	A	A
Approach Vol, veh/h		960			658			149			0	
Approach Delay, s/veh		8.1			8.2			42.6			0.0	
Approach LOS		A			A			D				

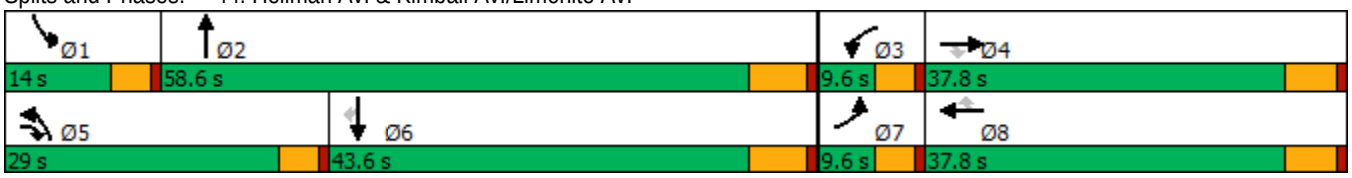
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.7	71.0		15.6	0.0	80.7		15.6				
Change Period (Y+Rc), s	4.6	6.2		5.8	4.6	6.2		5.8				
Max Green Setting (Gmax), s	10.4	64.8		28.2	18.4	56.8		28.2				
Max Q Clear Time (g_c+I1), s	6.1	13.9		0.0	0.0	6.5		6.9				
Green Ext Time (p_c), s	0.0	6.2		0.0	0.0	3.9		0.4				

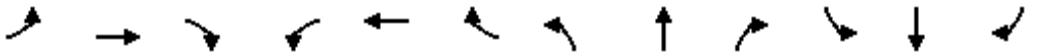
Intersection Summary		
HCM 6th Ctrl Delay		11.1
HCM 6th LOS		B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	28	4	860	7	10	297	77	68	134	
Future Volume (vph)	28	4	860	7	10	297	77	68	134	
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	NA	Perm	
Protected Phases	7	4	5	3	8	5	2	6		1
Permitted Phases			4						6	
Detector Phase	7	4	5	3	8	5	2	6	6	
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	10.0	5.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	9.6	43.2	43.2	43.2	9.6
Total Split (s)	9.6	37.8	29.0	9.6	37.8	29.0	58.6	43.6	43.6	14.0
Total Split (%)	8.0%	31.5%	24.2%	8.0%	31.5%	24.2%	48.8%	36.3%	36.3%	12%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	5.2	5.2	5.2	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-2.2	-2.2	-2.2	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	None	None	Max	Max	None	None	None
Act Effct Green (s)	6.0	17.3	37.5	6.0	15.5	28.0	64.7	29.3	29.3	
Actuated g/C Ratio	0.08	0.23	0.49	0.08	0.20	0.37	0.84	0.38	0.38	
v/c Ratio	0.23	0.01	0.77	0.03	0.02	0.29	0.03	0.06	0.21	
Control Delay	47.1	27.0	6.9	44.7	29.1	24.1	5.8	20.1	4.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	47.1	27.0	6.9	44.7	29.1	24.1	5.8	20.1	4.8	
LOS	D	C	A	D	C	C	A	C	A	
Approach Delay		8.2			35.2		20.3	10.0		
Approach LOS		A			D		C	A		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 76.7	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 11.8	Intersection LOS: B
Intersection Capacity Utilization 78.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	4	860	7	10	0	297	77	2	0	68	134
Future Volume (veh/h)	28	4	860	7	10	0	297	77	2	0	68	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	29	4	905	7	11	0	313	81	2	0	72	141
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	54	597	862	43	1071	478	725	1828	45	2	859	383
Arrive On Green	0.03	0.33	0.32	0.01	0.31	0.00	0.25	0.54	0.51	0.00	0.25	0.25
Sat Flow, veh/h	1619	1800	1525	2956	3420	1525	2956	3411	84	1619	3420	1525
Grp Volume(v), veh/h	29	4	905	7	11	0	313	40	43	0	72	141
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	1710	1525	1478	1710	1785	1619	1710	1525
Q Serve(g_s), s	1.8	0.2	32.6	0.2	0.2	0.0	9.1	1.1	1.2	0.0	1.6	7.8
Cycle Q Clear(g_c), s	1.8	0.2	32.6	0.2	0.2	0.0	9.1	1.1	1.2	0.0	1.6	7.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	54	597	862	43	1071	478	725	916	956	2	859	383
V/C Ratio(X)	0.54	0.01	1.05	0.16	0.01	0.00	0.43	0.04	0.04	0.00	0.08	0.37
Avail Cap(c_a), veh/h	89	597	862	162	1134	506	725	916	956	159	1329	593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	48.5	22.8	22.1	49.6	24.1	0.0	32.5	11.2	11.3	0.0	29.2	31.5
Incr Delay (d2), s/veh	3.1	0.0	44.5	0.6	0.0	0.0	1.9	0.1	0.1	0.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.1	28.0	0.1	0.1	0.0	3.3	0.4	0.4	0.0	0.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.5	22.8	66.6	50.2	24.1	0.0	34.3	11.3	11.4	0.0	29.2	32.1
LnGrp LOS	D	C	F	D	C	A	C	B	B	A	C	C
Approach Vol, veh/h		938			18			396			213	
Approach Delay, s/veh		66.0			34.3			29.5			31.1	
Approach LOS		E			C			C			C	

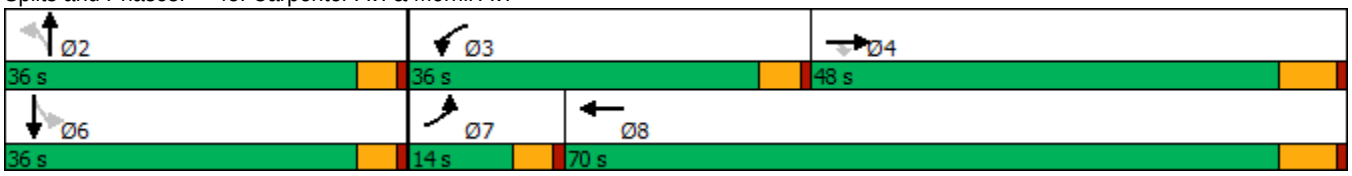
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	58.6	5.5	37.8	29.0	29.6	7.4	35.9
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	9.4	52.4	5.0	32.0	24.4	37.4	5.0	32.0
Max Q Clear Time (g_c+I1), s	0.0	3.2	2.2	34.6	11.1	9.8	3.8	2.2
Green Ext Time (p_c), s	0.0	0.4	0.0	0.0	0.5	0.8	0.0	0.0

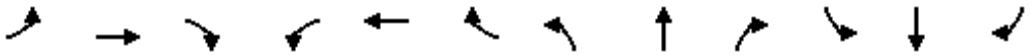
Intersection Summary	
HCM 6th Ctrl Delay	51.6
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	5	908	25	46	544	46	5	60	6
Future Volume (vph)	5	908	25	46	544	46	5	60	6
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	26.6	26.6
Total Split (s)	14.0	48.0	48.0	36.0	70.0	36.0	36.0	36.0	36.0
Total Split (%)	11.7%	40.0%	40.0%	30.0%	58.3%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2		4.6		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.2	59.1	59.1	7.3	65.0		13.6		13.6
Actuated g/C Ratio	0.06	0.65	0.65	0.08	0.71		0.15		0.15
v/c Ratio	0.06	0.46	0.03	0.38	0.25		0.70		0.81
Control Delay	45.8	10.7	0.0	49.2	5.9		29.5		90.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	45.8	10.7	0.0	49.2	5.9		29.5		90.4
LOS	D	B	A	D	A		C		F
Approach Delay		10.6			9.3		29.5		90.4
Approach LOS		B			A		C		F

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 91.3			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 15.3		Intersection LOS: B	
Intersection Capacity Utilization 55.9%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 45: Carpenter Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	908	25	46	544	8	46	5	155	60	6	2
Future Volume (veh/h)	5	908	25	46	544	8	46	5	155	60	6	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	6	1009	28	51	604	9	51	6	172	67	7	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	13	2161	964	66	2286	34	93	21	205	194	18	4
Arrive On Green	0.01	0.63	0.63	0.04	0.66	0.66	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1714	3420	1525	1714	3449	51	277	123	1207	730	105	23
Grp Volume(v), veh/h	6	1009	28	51	299	314	229	0	0	76	0	0
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1791	1607	0	0	858	0	0
Q Serve(g_s), s	0.3	14.8	0.7	2.8	6.9	6.9	4.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	14.8	0.7	2.8	6.9	6.9	13.0	0.0	0.0	8.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	0.22		0.75	0.88		0.03
Lane Grp Cap(c), veh/h	13	2161	964	66	1133	1187	318	0	0	216	0	0
V/C Ratio(X)	0.45	0.47	0.03	0.77	0.26	0.26	0.72	0.00	0.00	0.35	0.00	0.00
Avail Cap(c_a), veh/h	167	2161	964	559	1133	1187	555	0	0	415	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	47.6	9.3	6.6	45.8	6.6	6.6	38.5	0.0	0.0	36.7	0.0	0.0
Incr Delay (d2), s/veh	8.8	0.7	0.1	6.8	0.6	0.5	3.1	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.5	0.2	1.3	2.1	2.2	5.5	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.4	10.0	6.7	52.7	7.2	7.2	41.6	0.0	0.0	37.7	0.0	0.0
LnGrp LOS	E	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1043			664			229			76	
Approach Delay, s/veh		10.2			10.7			41.6			37.7	
Approach LOS		B			B			D			D	

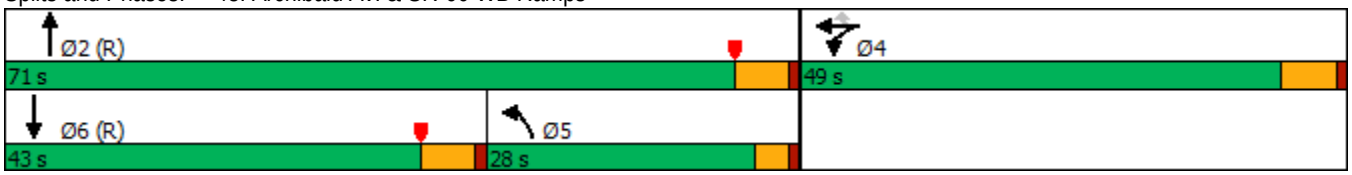
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		20.9	8.3	67.0		20.9	5.3	70.0				
Change Period (Y+Rc), s		4.6	4.6	6.2		4.6	4.6	6.2				
Max Green Setting (Gmax), s		31.4	31.4	41.8		31.4	9.4	63.8				
Max Q Clear Time (g_c+I1), s		15.0	4.8	16.8		10.8	2.3	8.9				
Green Ext Time (p_c), s		1.3	0.0	7.0		0.4	0.0	3.5				

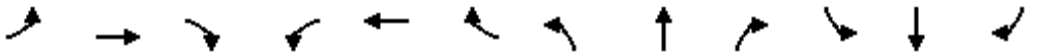
Intersection Summary												
HCM 6th Ctrl Delay			15.0									
HCM 6th LOS			B									

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	6	290	463	559	1206
Future Volume (vph)	6	290	463	559	1206
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	49.0	49.0	28.0	71.0	43.0
Total Split (%)	40.8%	40.8%	23.3%	59.2%	35.8%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	39.3	39.3	20.4	68.9	44.5
Actuated g/C Ratio	0.33	0.33	0.17	0.57	0.37
v/c Ratio	0.82	0.42	0.81	0.20	0.75
Control Delay	49.0	6.6	39.4	2.6	34.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	6.6	39.4	2.6	34.9
LOS	D	A	D	A	C
Approach Delay	32.8			19.3	34.9
Approach LOS	C			B	C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 29.8	Intersection LOS: C
Intersection Capacity Utilization 78.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	462	6	290	463	559	0	0	1206	499
Future Volume (veh/h)	0	0	0	462	6	290	463	559	0	0	1206	499
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				481	6	157	482	582	0	0	1256	385
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				550	7	495	878	3081	0	0	1469	448
Arrive On Green				0.31	0.31	0.31	0.08	0.20	0.00	0.00	0.30	0.30
Sat Flow, veh/h				1788	22	1610	3510	5358	0	0	5238	1518
Grp Volume(v), veh/h				487	0	157	482	582	0	0	1238	403
Grp Sat Flow(s),veh/h/ln				1811	0	1610	1755	1729	0	0	1634	1588
Q Serve(g_s), s				30.6	0.0	9.0	15.8	11.2	0.0	0.0	28.6	28.7
Cycle Q Clear(g_c), s				30.6	0.0	9.0	15.8	11.2	0.0	0.0	28.6	28.7
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.96
Lane Grp Cap(c), veh/h				557	0	495	878	3081	0	0	1448	469
V/C Ratio(X)				0.87	0.00	0.32	0.55	0.19	0.00	0.00	0.86	0.86
Avail Cap(c_a), veh/h				649	0	577	878	3081	0	0	1520	492
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.57	0.57	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				39.3	0.0	31.9	48.5	24.1	0.0	0.0	39.9	39.9
Incr Delay (d2), s/veh				13.3	0.0	0.8	0.2	0.1	0.0	0.0	6.7	18.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				15.1	0.0	9.0	7.5	5.0	0.0	0.0	11.9	13.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				52.6	0.0	32.6	48.8	24.2	0.0	0.0	46.5	58.0
LnGrp LOS				D	A	C	D	C	A	A	D	E
Approach Vol, veh/h					644			1064			1641	
Approach Delay, s/veh					47.8			35.3			49.3	
Approach LOS					D			D			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	77.1	42.9	35.8	41.3
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	65.2	43.0	24.0	* 37
Max Q Clear Time (g_c+I1), s	13.2	32.6	17.8	30.7
Green Ext Time (p_c), s	4.0	4.4	0.6	4.7

Intersection Summary	
HCM 6th Ctrl Delay	44.6
HCM 6th LOS	D

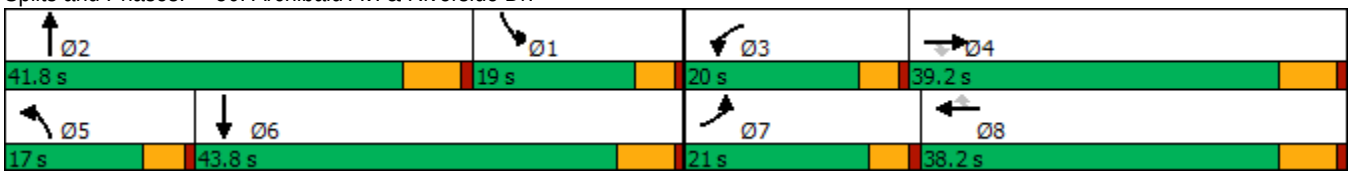
Notes

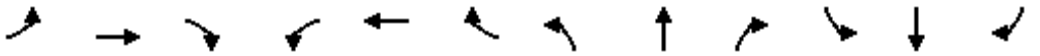
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	246	686	383	165	489	128	315	761	313	1013
Future Volume (vph)	246	686	383	165	489	128	315	761	313	1013
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.0	39.2	39.2	20.0	38.2	38.2	17.0	41.8	19.0	43.8
Total Split (%)	17.5%	32.7%	32.7%	16.7%	31.8%	31.8%	14.2%	34.8%	15.8%	36.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	16.5	29.4	29.4	14.2	27.0	27.0	12.5	26.5	21.5	35.5
Actuated g/C Ratio	0.15	0.26	0.26	0.13	0.24	0.24	0.11	0.23	0.19	0.31
v/c Ratio	1.05	0.78	0.66	0.83	0.61	0.27	0.92	0.73	0.53	0.85
Control Delay	119.4	45.9	17.5	79.4	41.5	3.8	81.6	43.6	47.0	41.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	119.4	45.9	17.5	79.4	41.5	3.8	81.6	43.6	47.0	41.3
LOS	F	D	B	E	D	A	F	D	D	D
Approach Delay		51.4			43.4			54.1		42.4
Approach LOS		D			D			D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 47.8	Intersection LOS: D
Intersection Capacity Utilization 83.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	246	686	383	165	489	128	315	761	64	313	1013	269
Future Volume (veh/h)	246	686	383	165	489	128	315	761	64	313	1013	269
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	262	730	250	176	520	77	335	810	59	333	1078	222
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	266	916	399	205	788	350	390	1091	79	619	1315	271
Arrive On Green	0.16	0.25	0.25	0.12	0.22	0.22	0.12	0.22	0.22	0.19	0.31	0.31
Sat Flow, veh/h	1714	3610	1574	1714	3610	1604	3326	4929	357	3326	4305	886
Grp Volume(v), veh/h	262	730	250	176	520	77	335	567	302	333	866	434
Grp Sat Flow(s),veh/h/ln	1714	1805	1574	1714	1805	1604	1663	1729	1828	1663	1729	1732
Q Serve(g_s), s	16.1	20.0	14.9	10.7	13.9	2.6	10.5	16.2	16.3	9.6	24.5	24.6
Cycle Q Clear(g_c), s	16.1	20.0	14.9	10.7	13.9	2.6	10.5	16.2	16.3	9.6	24.5	24.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		0.51
Lane Grp Cap(c), veh/h	266	916	399	205	788	350	390	766	405	619	1056	529
V/C Ratio(X)	0.99	0.80	0.63	0.86	0.66	0.22	0.86	0.74	0.75	0.54	0.82	0.82
Avail Cap(c_a), veh/h	266	1126	491	250	1092	485	390	1163	615	619	1229	616
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	36.9	35.0	45.7	37.8	12.7	45.8	38.4	38.4	38.9	34.0	34.1
Incr Delay (d2), s/veh	51.1	3.3	1.7	18.9	1.0	0.3	16.6	1.4	2.7	0.5	4.0	7.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	8.7	5.6	5.4	5.9	1.5	5.0	6.6	7.2	3.8	10.2	10.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	95.6	40.3	36.8	64.6	38.7	13.0	62.4	39.8	41.2	39.4	38.0	41.7
LnGrp LOS	F	D	D	E	D	B	E	D	D	D	D	D
Approach Vol, veh/h		1242			773			1204			1633	
Approach Delay, s/veh		51.2			42.1			46.4			39.3	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.9	29.6	17.2	33.0	17.0	38.5	21.0	29.3
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	14.4	* 36	15.4	33.0	12.4	37.6	16.4	32.0
Max Q Clear Time (g_c+I1), s	11.6	18.3	12.7	22.0	12.5	26.6	18.1	15.9
Green Ext Time (p_c), s	0.2	4.7	0.1	4.0	0.0	5.7	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	44.6
HCM 6th LOS	D

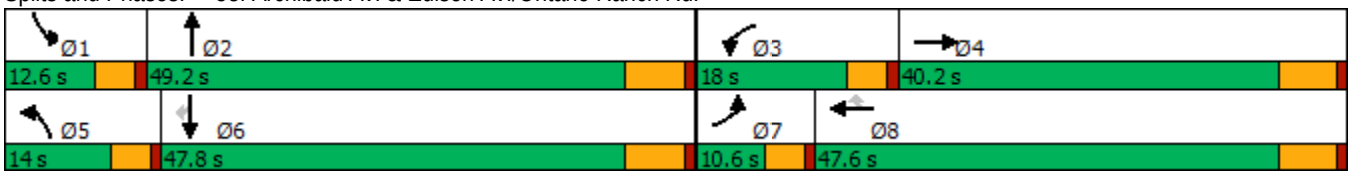
Notes

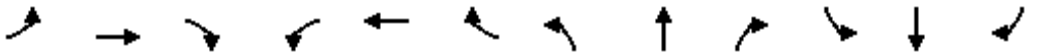
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	643	138	355	240	81	78	718	409	150	935	82
Future Volume (vph)	106	643	138	355	240	81	78	718	409	150	935	82
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	10.6	40.2		18.0	47.6	47.6	14.0	49.2		12.6	47.8	47.8
Total Split (%)	8.8%	33.5%		15.0%	39.7%	39.7%	11.7%	41.0%		10.5%	39.8%	39.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	6.1	26.1	104.7	13.7	33.7	33.7	8.4	34.3	104.7	8.2	36.8	36.8
Actuated g/C Ratio	0.06	0.25	1.00	0.13	0.32	0.32	0.08	0.33	1.00	0.08	0.35	0.35
v/c Ratio	0.64	0.78	0.09	0.95	0.22	0.15	0.62	0.66	0.28	1.23	0.80	0.13
Control Delay	69.6	44.4	0.1	82.5	27.5	2.7	72.4	33.3	0.5	197.9	38.1	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.6	44.4	0.1	82.5	27.5	2.7	72.4	33.3	0.5	197.9	38.1	0.4
LOS	E	D	A	F	C	A	E	C	A	F	D	A
Approach Delay		40.5			53.4			24.7			56.0	
Approach LOS		D			D			C			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 104.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.23	
Intersection Signal Delay: 42.5	Intersection LOS: D
Intersection Capacity Utilization 81.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	643	138	355	240	81	78	718	409	150	935	82
Future Volume (veh/h)	106	643	138	355	240	81	78	718	409	150	935	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	109	663	0	366	247	50	80	740	0	155	964	63
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	159	816		407	1103	492	100	1082		133	1153	507
Arrive On Green	0.05	0.24	0.00	0.14	0.32	0.32	0.06	0.32	0.00	0.08	0.34	0.34
Sat Flow, veh/h	2956	3420	1525	2956	3420	1525	1619	3420	1525	1619	3420	1505
Grp Volume(v), veh/h	109	663	0	366	247	50	80	740	0	155	964	63
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1710	1525	1619	1710	1525	1619	1710	1505
Q Serve(g_s), s	3.5	17.8	0.0	11.8	5.1	2.2	4.7	18.4	0.0	8.0	25.3	2.8
Cycle Q Clear(g_c), s	3.5	17.8	0.0	11.8	5.1	2.2	4.7	18.4	0.0	8.0	25.3	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	159	816		407	1103	492	100	1082		133	1153	507
V/C Ratio(X)	0.68	0.81		0.90	0.22	0.10	0.80	0.68		1.16	0.84	0.12
Avail Cap(c_a), veh/h	182	1196		407	1456	649	157	1502		133	1453	639
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.2	35.0	0.0	41.2	24.1	23.1	45.0	29.0	0.0	44.6	29.8	22.3
Incr Delay (d2), s/veh	6.1	2.8	0.0	21.6	0.1	0.1	6.9	0.8	0.0	128.6	3.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	7.2	0.0	5.3	1.9	0.8	2.0	6.9	0.0	7.8	9.9	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.3	37.8	0.0	62.8	24.2	23.2	51.9	29.8	0.0	173.2	33.4	22.4
LnGrp LOS	D	D		E	C	C	D	C		F	C	C
Approach Vol, veh/h		772	A		663			820	A		1182	
Approach Delay, s/veh		39.7			45.4			31.9			51.1	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	37.2	18.0	29.4	10.6	39.3	9.8	37.5
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	8.0	42.7	13.4	34.0	9.4	41.3	6.0	41.4
Max Q Clear Time (g_c+I1), s	10.0	20.4	13.8	19.8	6.7	27.3	5.5	7.1
Green Ext Time (p_c), s	0.0	4.4	0.0	3.4	0.0	5.2	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	42.9
HCM 6th LOS	D

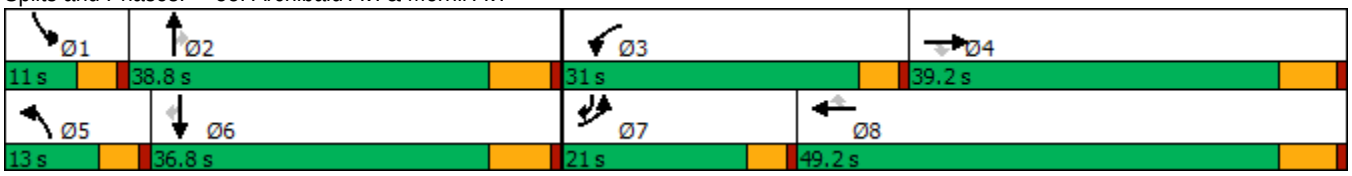
Notes

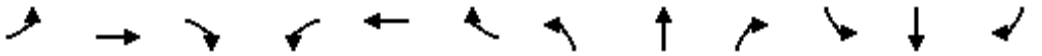
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	415	81	580	51	27	61	185	718	44	80	1098	242
Future Volume (vph)	415	81	580	51	27	61	185	718	44	80	1098	242
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	9.6
Total Split (s)	21.0	39.2	39.2	31.0	49.2	49.2	13.0	38.8	38.8	11.0	36.8	21.0
Total Split (%)	17.5%	32.7%	32.7%	25.8%	41.0%	41.0%	10.8%	32.3%	32.3%	9.2%	30.7%	17.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	None
Act Effct Green (s)	16.3	25.0	25.0	7.8	18.3	18.3	8.4	36.3	36.3	6.2	31.4	54.4
Actuated g/C Ratio	0.18	0.27	0.27	0.08	0.20	0.20	0.09	0.39	0.39	0.07	0.34	0.59
v/c Ratio	0.75	0.17	0.83	0.39	0.08	0.16	0.65	0.52	0.07	0.41	0.93	0.26
Control Delay	48.6	26.3	20.2	53.5	29.7	1.2	55.9	28.3	0.2	53.3	46.2	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.6	26.3	20.2	53.5	29.7	1.2	55.9	28.3	0.2	53.3	46.2	8.3
LOS	D	C	C	D	C	A	E	C	A	D	D	A
Approach Delay		31.6			26.0			32.4			40.2	
Approach LOS		C			C			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 92.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 35.0	Intersection LOS: C
Intersection Capacity Utilization 88.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	415	81	580	51	27	61	185	718	44	80	1098	242
Future Volume (veh/h)	415	81	580	51	27	61	185	718	44	80	1098	242
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	428	84	413	53	28	24	191	740	31	82	1132	191
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	500	534	453	66	330	280	259	1323	554	149	1211	749
Arrive On Green	0.15	0.30	0.30	0.04	0.18	0.18	0.08	0.37	0.37	0.05	0.34	0.34
Sat Flow, veh/h	3238	1800	1525	1619	1800	1525	3238	3600	1506	3048	3600	1525
Grp Volume(v), veh/h	428	84	413	53	28	24	191	740	31	82	1132	191
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1800	1506	1524	1800	1525
Q Serve(g_s), s	11.5	3.1	23.2	2.9	1.1	1.2	5.1	14.6	1.2	2.3	27.1	6.5
Cycle Q Clear(g_c), s	11.5	3.1	23.2	2.9	1.1	1.2	5.1	14.6	1.2	2.3	27.1	6.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	500	534	453	66	330	280	259	1323	554	149	1211	749
V/C Ratio(X)	0.86	0.16	0.91	0.80	0.08	0.09	0.74	0.56	0.06	0.55	0.93	0.26
Avail Cap(c_a), veh/h	596	667	565	480	869	737	305	1323	554	219	1225	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	23.1	30.2	42.3	30.2	30.2	40.1	22.4	18.2	41.4	28.6	13.2
Incr Delay (d2), s/veh	9.0	0.1	16.8	7.9	0.1	0.1	5.8	0.5	0.0	1.2	13.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	1.2	10.2	1.3	0.5	0.4	2.1	5.5	0.4	0.8	12.4	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.7	23.2	46.9	50.2	30.3	30.3	45.9	23.0	18.2	42.6	41.6	13.4
LnGrp LOS	D	C	D	D	C	C	D	C	B	D	D	B
Approach Vol, veh/h		925			105			962			1405	
Approach Delay, s/veh		44.2			40.4			27.4			37.8	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	39.2	8.3	32.6	11.7	36.5	18.3	22.5
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	6.4	32.3	26.4	33.0	8.4	30.3	16.4	43.0
Max Q Clear Time (g_c+I1), s	4.3	16.6	4.9	25.2	7.1	29.1	13.5	3.2
Green Ext Time (p_c), s	0.0	4.0	0.0	1.2	0.0	0.8	0.3	0.2

Intersection Summary	
HCM 6th Ctrl Delay	36.7
HCM 6th LOS	D

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	480	302	626	467	708	1026
Future Volume (vph)	480	302	626	467	708	1026
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	39.0	20.0	61.0	39.0	20.0	81.0
Total Split (%)	32.5%	16.7%	50.8%	32.5%	16.7%	67.5%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min
Act Effct Green (s)	17.5	38.8	34.6	52.1	15.7	55.9
Actuated g/C Ratio	0.21	0.46	0.41	0.62	0.19	0.66
v/c Ratio	0.67	0.21	0.82	0.48	1.07	0.80
Control Delay	36.7	2.5	31.7	7.3	91.0	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.7	2.5	31.7	7.3	91.0	17.3
LOS	D	A	C	A	F	B
Approach Delay	23.5		21.3			47.3
Approach LOS	C		C			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 84.2	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 34.3	Intersection LOS: C
Intersection Capacity Utilization 79.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	480	302	626	467	708	1026
Future Volume (veh/h)	480	302	626	467	708	1026
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1976	1976
Adj Flow Rate, veh/h	490	122	639	456	722	1047
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	598	1048	803	941	728	1361
Arrive On Green	0.17	0.17	0.42	0.42	0.20	0.69
Sat Flow, veh/h	3510	2834	1900	1577	3651	1976
Grp Volume(v), veh/h	490	122	639	456	722	1047
Grp Sat Flow(s),veh/h/ln	1755	1417	1900	1577	1825	1976
Q Serve(g_s), s	10.1	2.1	22.0	12.5	14.8	26.4
Cycle Q Clear(g_c), s	10.1	2.1	22.0	12.5	14.8	26.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	598	1048	803	941	728	1361
V/C Ratio(X)	0.82	0.12	0.80	0.48	0.99	0.77
Avail Cap(c_a), veh/h	1573	1835	1407	1442	728	1996
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.1	15.6	18.9	8.8	30.1	7.8
Incr Delay (d2), s/veh	1.1	0.0	2.2	0.5	31.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.6	8.5	5.4	8.9	5.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.2	15.6	21.1	9.2	61.3	8.3
LnGrp LOS	C	B	C	A	E	A
Approach Vol, veh/h	612		1095			1769
Approach Delay, s/veh	28.1		16.2			29.9
Approach LOS	C		B			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	20.0	37.1			57.1	18.1
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	15.0	55.7			* 76	33.7
Max Q Clear Time (g_c+I1), s	16.8	24.0			28.4	12.1
Green Ext Time (p_c), s	0.0	7.8			5.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	25.3
HCM 6th LOS	C

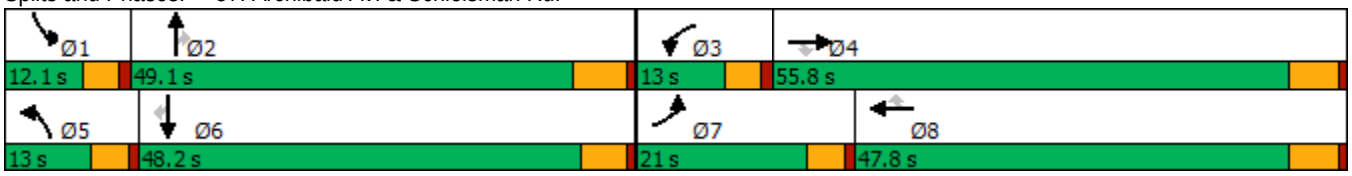
Notes

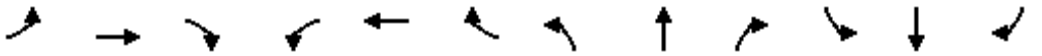
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	518	1161	227	123	379	67	234	693	125	190	762	451
Future Volume (vph)	518	1161	227	123	379	67	234	693	125	190	762	451
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	21.0	55.8	55.8	13.0	47.8	47.8	13.0	49.1	49.1	12.1	48.2	48.2
Total Split (%)	16.2%	42.9%	42.9%	10.0%	36.8%	36.8%	10.0%	37.8%	37.8%	9.3%	37.1%	37.1%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	16.5	51.0	51.0	7.7	42.2	42.2	8.4	27.7	27.7	7.5	27.6	27.6
Actuated g/C Ratio	0.14	0.44	0.44	0.07	0.37	0.37	0.07	0.24	0.24	0.07	0.24	0.24
v/c Ratio	1.06	0.52	0.28	0.54	0.20	0.10	0.93	0.57	0.26	0.85	0.63	0.70
Control Delay	104.0	25.3	6.8	62.4	26.5	0.3	95.8	39.8	5.6	85.1	41.1	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	104.0	25.3	6.8	62.4	26.5	0.3	95.8	39.8	5.6	85.1	41.1	14.5
LOS	F	C	A	E	C	A	F	D	A	F	D	B
Approach Delay		44.5			31.2			48.2			38.5	
Approach LOS		D			C			D			D	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 115.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 42.0	Intersection LOS: D
Intersection Capacity Utilization 90.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	518	1161	227	123	379	67	234	693	125	190	762	451
Future Volume (veh/h)	518	1161	227	123	379	67	234	693	125	190	762	451
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	529	1185	150	126	387	42	239	707	91	194	778	346
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	479	2252	699	181	1812	561	245	1430	444	219	1391	430
Arrive On Green	0.14	0.43	0.43	0.05	0.35	0.35	0.07	0.28	0.28	0.06	0.27	0.27
Sat Flow, veh/h	3510	5187	1610	3510	5187	1607	3510	5187	1610	3510	5187	1605
Grp Volume(v), veh/h	529	1185	150	126	387	42	239	707	91	194	778	346
Grp Sat Flow(s),veh/h/ln	1755	1729	1610	1755	1729	1607	1755	1729	1610	1755	1729	1605
Q Serve(g_s), s	16.4	20.1	7.0	4.2	6.3	2.1	8.2	13.7	5.2	6.6	15.5	24.2
Cycle Q Clear(g_c), s	16.4	20.1	7.0	4.2	6.3	2.1	8.2	13.7	5.2	6.6	15.5	24.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	479	2252	699	181	1812	561	245	1430	444	219	1391	430
V/C Ratio(X)	1.10	0.53	0.21	0.70	0.21	0.07	0.97	0.49	0.21	0.89	0.56	0.80
Avail Cap(c_a), veh/h	479	2252	699	245	1812	561	245	1851	574	219	1846	571
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.9	24.9	21.2	56.1	27.5	26.1	55.8	36.5	33.4	55.9	37.9	41.1
Incr Delay (d2), s/veh	72.8	0.9	0.7	2.4	0.3	0.3	50.0	0.3	0.2	31.3	0.4	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.8	8.0	2.7	1.9	2.6	0.8	5.2	5.6	2.0	3.8	6.3	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	124.7	25.8	21.9	58.5	27.8	26.4	105.8	36.8	33.7	87.3	38.2	47.2
LnGrp LOS	F	C	C	E	C	C	F	D	C	F	D	D
Approach Vol, veh/h		1864			555			1037			1318	
Approach Delay, s/veh		53.6			34.6			52.4			47.8	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	39.3	10.8	58.0	13.0	38.4	21.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	7.5	42.9	8.4	50.0	8.4	* 43	16.4	42.0
Max Q Clear Time (g_c+I1), s	8.6	15.7	6.2	22.1	10.2	26.2	18.4	8.3
Green Ext Time (p_c), s	0.0	4.9	0.0	9.5	0.0	5.5	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	49.5
HCM 6th LOS	D

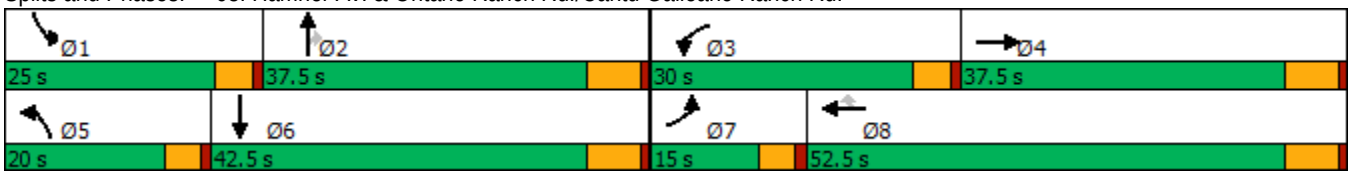
Notes

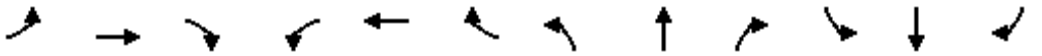
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	103	951	666	527	123	223	432	268	517	912
Future Volume (vph)	103	951	666	527	123	223	432	268	517	912
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.2	9.6	49.2	49.2	9.6	35.2	35.2	9.6	38.2
Total Split (s)	15.0	37.5	30.0	52.5	52.5	20.0	37.5	37.5	25.0	42.5
Total Split (%)	11.5%	28.8%	23.1%	40.4%	40.4%	15.4%	28.8%	28.8%	19.2%	32.7%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	None	Max	None	None	None	None	None	None	None
Act Effct Green (s)	10.5	28.8	25.6	44.0	44.0	12.9	23.6	23.6	20.6	31.3
Actuated g/C Ratio	0.09	0.24	0.21	0.37	0.37	0.11	0.20	0.20	0.17	0.26
v/c Ratio	0.41	0.77	1.07	0.28	0.20	0.71	0.43	0.54	1.04	0.78
Control Delay	59.6	44.6	102.7	28.2	4.1	65.8	43.3	8.6	99.2	45.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.6	44.6	102.7	28.2	4.1	65.8	43.3	8.6	99.2	45.1
LOS	E	D	F	C	A	E	D	A	F	D
Approach Delay		45.7		63.6			38.7			63.1
Approach LOS		D		E			D			E

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 120.4	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 54.3	Intersection LOS: D
Intersection Capacity Utilization 89.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	951	302	666	527	123	223	432	268	517	912	124
Future Volume (veh/h)	103	951	302	666	527	123	223	432	268	517	912	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	107	991	206	694	549	94	232	450	200	539	950	74
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	283	1317	269	690	1948	550	287	928	262	554	1285	100
Arrive On Green	0.09	0.23	0.23	0.23	0.36	0.36	0.09	0.17	0.17	0.18	0.26	0.26
Sat Flow, veh/h	3048	5800	1186	3048	5400	1525	3048	5400	1523	3048	4946	384
Grp Volume(v), veh/h	107	921	276	694	549	94	232	450	200	539	691	333
Grp Sat Flow(s),veh/h/ln	1524	1800	1587	1524	1800	1525	1524	1800	1523	1524	1800	1730
Q Serve(g_s), s	3.7	17.8	18.2	25.4	8.1	4.7	8.4	8.4	14.0	19.7	19.7	19.8
Cycle Q Clear(g_c), s	3.7	17.8	18.2	25.4	8.1	4.7	8.4	8.4	14.0	19.7	19.7	19.8
Prop In Lane	1.00		0.75	1.00		1.00	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	283	1226	360	690	1948	550	287	928	262	554	935	450
V/C Ratio(X)	0.38	0.75	0.77	1.01	0.28	0.17	0.81	0.48	0.76	0.97	0.74	0.74
Avail Cap(c_a), veh/h	283	1507	443	690	2230	630	419	1507	425	554	1165	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.8	40.4	40.5	43.4	25.5	24.4	49.8	41.9	44.3	45.6	38.0	38.0
Incr Delay (d2), s/veh	3.8	1.7	6.3	35.5	0.1	0.1	4.6	0.4	4.6	31.0	1.9	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	7.6	7.3	12.5	3.3	1.6	3.2	3.6	5.4	9.5	8.5	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.7	42.1	46.8	78.9	25.6	24.6	54.4	42.3	48.9	76.5	39.9	42.1
LnGrp LOS	D	D	D	F	C	C	D	D	D	E	D	D
Approach Vol, veh/h		1304			1337			882			1563	
Approach Delay, s/veh		43.9			53.2			47.0			53.0	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	25.5	30.0	31.7	15.1	35.3	15.0	46.7
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	20.4	31.3	25.4	31.3	15.4	36.3	10.4	46.3
Max Q Clear Time (g_c+I1), s	21.7	16.0	27.4	20.2	10.4	21.8	5.7	10.1
Green Ext Time (p_c), s	0.0	2.9	0.0	5.2	0.2	5.2	0.1	3.9

Intersection Summary	
HCM 6th Ctrl Delay	49.7
HCM 6th LOS	D

APPENDIX 8.10:

OPENING YEAR CUMULATIVE (2026) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

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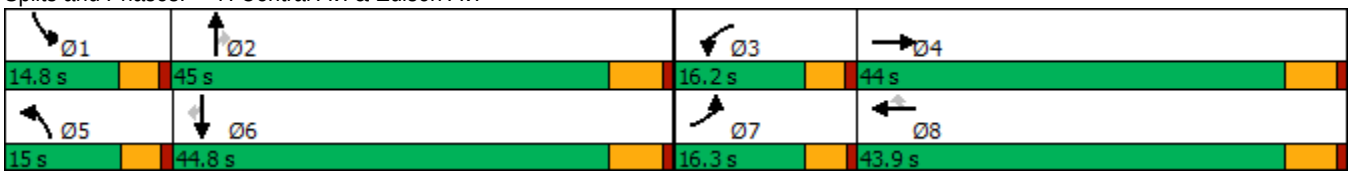
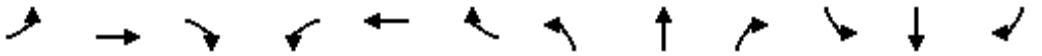
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	161	619	344	1113	129	83	858	335	101	1010	272
Future Volume (vph)	161	619	344	1113	129	83	858	335	101	1010	272
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	16.3	44.0	16.2	43.9	43.9	15.0	45.0	45.0	14.8	44.8	44.8
Total Split (%)	13.6%	36.7%	13.5%	36.6%	36.6%	12.5%	37.5%	37.5%	12.3%	37.3%	37.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	10.6	40.1	12.2	41.7	41.7	9.7	38.2	38.2	10.2	41.0	41.0
Actuated g/C Ratio	0.09	0.34	0.10	0.36	0.36	0.08	0.33	0.33	0.09	0.35	0.35
v/c Ratio	0.59	0.61	1.09	0.95	0.22	0.64	0.80	0.54	0.75	0.88	0.47
Control Delay	60.3	34.8	125.9	54.0	7.4	74.3	41.9	14.5	83.8	45.8	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.3	34.8	125.9	54.0	7.4	74.3	41.9	14.5	83.8	45.8	20.4
LOS	E	C	F	D	A	E	D	B	F	D	C
Approach Delay		39.7		65.8			36.8			43.6	
Approach LOS		D		E			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 48.2	Intersection LOS: D
Intersection Capacity Utilization 85.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	619	62	344	1113	129	83	858	335	101	1010	272
Future Volume (veh/h)	161	619	62	344	1113	129	83	858	335	101	1010	272
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	168	645	59	358	1159	106	86	894	167	105	1052	225
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	236	1091	100	330	1280	563	114	1126	495	135	1171	515
Arrive On Green	0.08	0.34	0.33	0.11	0.37	0.37	0.07	0.33	0.33	0.08	0.34	0.34
Sat Flow, veh/h	3141	3168	289	3141	3420	1505	1619	3420	1503	1619	3420	1504
Grp Volume(v), veh/h	168	348	356	358	1159	106	86	894	167	105	1052	225
Grp Sat Flow(s),veh/h/ln	1570	1710	1748	1570	1710	1505	1619	1710	1503	1619	1710	1504
Q Serve(g_s), s	6.1	19.4	19.5	12.2	37.2	5.5	6.1	27.6	9.7	7.4	33.9	13.4
Cycle Q Clear(g_c), s	6.1	19.4	19.5	12.2	37.2	5.5	6.1	27.6	9.7	7.4	33.9	13.4
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	236	589	602	330	1280	563	114	1126	495	135	1171	515
V/C Ratio(X)	0.71	0.59	0.59	1.08	0.91	0.19	0.76	0.79	0.34	0.78	0.90	0.44
Avail Cap(c_a), veh/h	333	589	602	330	1280	563	153	1208	531	151	1202	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.5	31.3	31.5	52.0	34.4	24.4	53.0	35.4	29.4	52.2	36.3	29.5
Incr Delay (d2), s/veh	1.7	4.3	4.2	74.1	10.7	0.7	8.7	3.5	0.4	17.7	9.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	8.4	8.6	8.1	16.5	2.0	2.7	11.5	3.4	3.6	14.9	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.1	35.6	35.7	126.1	45.1	25.2	61.7	38.9	29.8	69.8	45.4	30.1
LnGrp LOS	D	D	D	F	D	C	E	D	C	E	D	C
Approach Vol, veh/h		872			1623			1147			1382	
Approach Delay, s/veh		39.2			61.7			39.2			44.8	
Approach LOS		D			E			D			D	

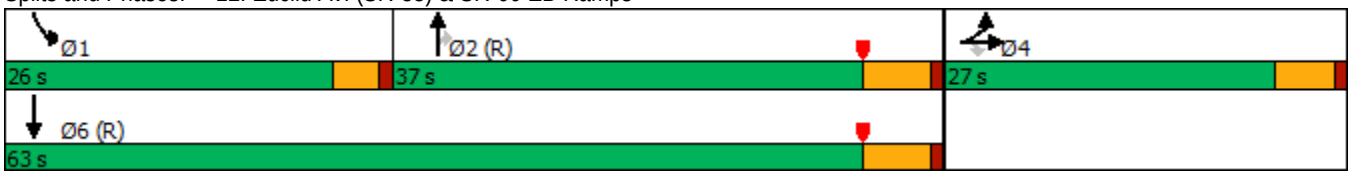
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	42.2	16.2	44.0	12.2	43.8	12.7	47.5
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.2	39.2	11.6	38.2	10.4	39.0	11.7	38.1
Max Q Clear Time (g_c+I1), s	9.4	29.6	14.2	21.5	8.1	35.9	8.1	39.2
Green Ext Time (p_c), s	0.0	4.3	0.0	3.6	0.0	2.0	0.1	0.0

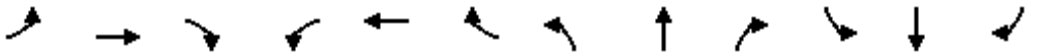
Intersection Summary	
HCM 6th Ctrl Delay	48.0
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	463	2	638	1091	788	417	1453
Future Volume (vph)	463	2	638	1091	788	417	1453
Turn Type	Split	NA	Perm	NA	Perm	Prot	NA
Protected Phases	4	4		2		1	6
Permitted Phases			4		2		
Detector Phase	4	4	4	2	2	1	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	27.0	27.0	27.0	37.0	37.0	26.0	63.0
Total Split (%)	30.0%	30.0%	30.0%	41.1%	41.1%	28.9%	70.0%
Yellow Time (s)	4.0	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	22.0	22.0	22.0	31.5	31.5	22.0	57.5
Actuated g/C Ratio	0.24	0.24	0.24	0.35	0.35	0.24	0.64
v/c Ratio	0.96	0.95	0.87	0.91	0.89	1.00	0.66
Control Delay	71.5	65.1	47.3	39.9	21.5	58.0	5.2
Queue Delay	40.9	41.3	0.0	0.0	0.0	0.0	1.2
Total Delay	112.4	106.5	47.3	39.9	21.5	58.0	6.5
LOS	F	F	D	D	C	E	A
Approach Delay		89.4		32.2			18.0
Approach LOS		F		C			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 39.7	Intersection LOS: D
Intersection Capacity Utilization 138.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	463	2	638	0	0	0	0	1091	788	417	1453	0
Future Volume (veh/h)	463	2	638	0	0	0	0	1091	788	417	1453	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	700	0	390				0	1148	630	439	1529	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	885	0	394				0	1264	549	442	2306	0
Arrive On Green	0.24	0.00	0.24				0.00	0.35	0.35	0.49	1.00	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1567	1810	3705	0
Grp Volume(v), veh/h	700	0	390				0	1148	630	439	1529	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1567	1810	1805	0
Q Serve(g_s), s	16.3	0.0	21.7				0.0	27.3	31.5	21.7	0.0	0.0
Cycle Q Clear(g_c), s	16.3	0.0	21.7				0.0	27.3	31.5	21.7	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	885	0	394				0	1264	549	442	2306	0
V/C Ratio(X)	0.79	0.00	0.99				0.00	0.91	1.15	0.99	0.66	0.00
Avail Cap(c_a), veh/h	885	0	394				0	1264	549	442	2306	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.56	0.56	0.09	0.09	0.00
Uniform Delay (d), s/veh	31.8	0.0	33.9				0.0	27.9	29.3	22.9	0.0	0.0
Incr Delay (d2), s/veh	4.5	0.0	42.8				0.0	6.8	78.9	11.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	0.0	12.6				0.0	12.1	22.9	6.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.4	0.0	76.7				0.0	34.7	108.1	34.0	0.1	0.0
LnGrp LOS	D	A	E				A	C	F	C	A	A
Approach Vol, veh/h		1090						1778			1968	
Approach Delay, s/veh		50.8						60.7			7.7	
Approach LOS		D						E			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	26.0	37.0		27.0		63.0
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	22.0	31.5		22.0		57.5
Max Q Clear Time (g_c+I1), s	23.7	33.5		23.7		2.0
Green Ext Time (p_c), s	0.0	0.0		0.0		25.9

Intersection Summary	
HCM 6th Ctrl Delay	36.9
HCM 6th LOS	D

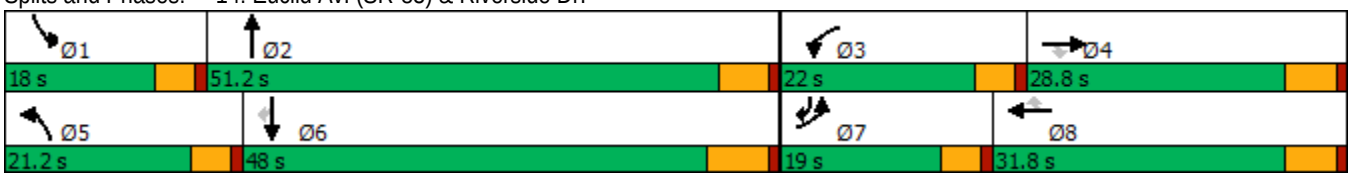
Notes

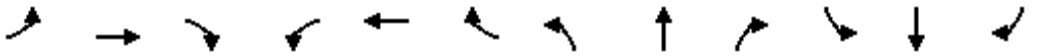
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	176	357	101	219	560	132	92	1216	199	1498	175
Future Volume (vph)	176	357	101	219	560	132	92	1216	199	1498	175
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2	1	6	7
Permitted Phases			4			8					6
Detector Phase	7	4	4	3	8	8	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	9.6	34.5	9.6
Total Split (s)	19.0	28.8	28.8	22.0	31.8	31.8	21.2	51.2	18.0	48.0	19.0
Total Split (%)	15.8%	24.0%	24.0%	18.3%	26.5%	26.5%	17.7%	42.7%	15.0%	40.0%	15.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	Max	None
Act Effct Green (s)	14.4	21.1	21.1	17.4	24.2	24.2	11.5	45.8	13.4	46.7	63.0
Actuated g/C Ratio	0.12	0.18	0.18	0.15	0.20	0.20	0.10	0.39	0.11	0.40	0.53
v/c Ratio	0.94	0.62	0.29	0.97	0.84	0.33	0.62	0.78	1.14	0.81	0.21
Control Delay	103.4	49.4	8.4	102.7	57.2	8.6	68.1	35.0	157.5	37.0	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.4	49.4	8.4	102.7	57.2	8.6	68.1	35.0	157.5	37.0	2.8
LOS	F	D	A	F	E	A	E	C	F	D	A
Approach Delay		57.9			61.2			37.0		46.6	
Approach LOS		E			E			D		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.2	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.14	
Intersection Signal Delay: 47.8	Intersection LOS: D
Intersection Capacity Utilization 85.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	357	101	219	560	132	92	1216	181	199	1498	175
Future Volume (veh/h)	176	357	101	219	560	132	92	1216	181	199	1498	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	185	376	90	231	589	110	97	1280	151	209	1577	125
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	197	587	262	238	674	300	119	1723	203	183	2096	836
Arrive On Green	0.12	0.17	0.17	0.15	0.20	0.20	0.07	0.39	0.39	0.11	0.43	0.43
Sat Flow, veh/h	1619	3420	1525	1619	3420	1525	1619	4456	526	1619	4914	1524
Grp Volume(v), veh/h	185	376	90	231	589	110	97	941	490	209	1577	125
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1525	1619	1638	1705	1619	1638	1524
Q Serve(g_s), s	13.4	12.1	6.2	16.8	19.8	7.4	7.0	29.3	29.3	13.4	32.1	4.8
Cycle Q Clear(g_c), s	13.4	12.1	6.2	16.8	19.8	7.4	7.0	29.3	29.3	13.4	32.1	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	197	587	262	238	674	300	119	1267	660	183	2096	836
V/C Ratio(X)	0.94	0.64	0.34	0.97	0.87	0.37	0.82	0.74	0.74	1.14	0.75	0.15
Avail Cap(c_a), veh/h	197	664	296	238	751	335	227	1267	660	183	2096	836
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.6	45.6	43.2	50.3	46.1	41.2	54.1	31.2	31.2	52.5	28.7	13.2
Incr Delay (d2), s/veh	46.6	1.7	0.8	49.8	10.4	0.7	5.1	4.0	7.4	109.5	2.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	5.1	2.3	9.9	9.1	2.8	2.9	11.4	12.5	10.9	12.5	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	98.2	47.4	44.0	100.1	56.5	41.9	59.2	35.2	38.7	162.0	31.2	13.5
LnGrp LOS	F	D	D	F	E	D	E	D	D	F	C	B
Approach Vol, veh/h		651			930			1528			1911	
Approach Delay, s/veh		61.3			65.6			37.8			44.4	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	52.3	22.0	26.1	13.3	57.0	19.0	29.1
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	13.4	* 46	17.4	23.0	16.6	41.5	14.4	26.0
Max Q Clear Time (g_c+I1), s	15.4	31.3	18.8	14.1	9.0	34.1	15.4	21.8
Green Ext Time (p_c), s	0.0	7.3	0.0	1.6	0.1	5.5	0.0	1.5

Intersection Summary	
HCM 6th Ctrl Delay	48.5
HCM 6th LOS	D

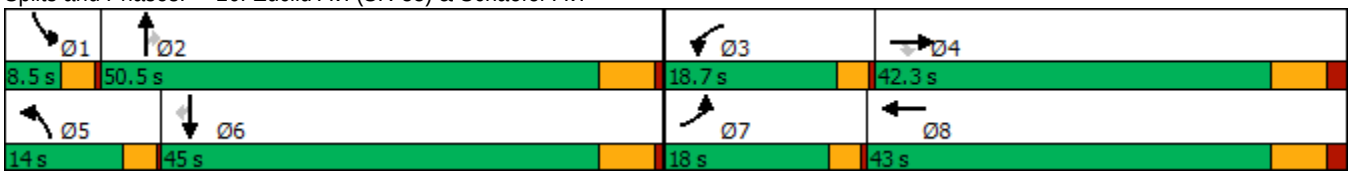
Notes

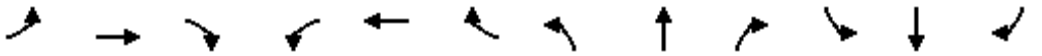
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	176	92	75	161	206	122	1272	40	33	1533	140
Future Volume (vph)	176	92	75	161	206	122	1272	40	33	1533	140
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	18.0	42.3	42.3	18.7	43.0	14.0	50.5	50.5	8.5	45.0	45.0
Total Split (%)	15.0%	35.3%	35.3%	15.6%	35.8%	11.7%	42.1%	42.1%	7.1%	37.5%	37.5%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	14.6	20.3	20.3	14.1	19.8	10.6	48.4	48.4	5.0	39.2	39.2
Actuated g/C Ratio	0.14	0.19	0.19	0.14	0.19	0.10	0.46	0.46	0.05	0.38	0.38
v/c Ratio	0.84	0.28	0.20	0.79	0.69	0.80	0.60	0.06	0.45	0.89	0.23
Control Delay	75.5	37.4	2.8	70.5	49.3	81.4	24.2	0.1	70.0	38.8	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.5	37.4	2.8	70.5	49.3	81.4	24.2	0.1	70.0	38.8	7.2
LOS	E	D	A	E	D	F	C	A	E	D	A
Approach Delay		49.3			58.3		28.4			36.8	
Approach LOS		D			E		C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 104.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 36.9	Intersection LOS: D
Intersection Capacity Utilization 81.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	92	75	161	206	13	122	1272	40	33	1533	140
Future Volume (veh/h)	176	92	75	161	206	13	122	1272	40	33	1533	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	189	99	62	173	222	12	131	1368	33	35	1648	117
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	219	316	268	203	280	15	158	2238	695	52	1915	593
Arrive On Green	0.14	0.18	0.18	0.13	0.17	0.17	0.10	0.46	0.46	0.03	0.39	0.39
Sat Flow, veh/h	1619	1800	1525	1619	1692	91	1619	4914	1525	1619	4914	1522
Grp Volume(v), veh/h	189	99	62	173	0	234	131	1368	33	35	1648	117
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1783	1619	1638	1525	1619	1638	1522
Q Serve(g_s), s	10.8	4.5	3.3	9.9	0.0	11.9	7.5	19.8	1.1	2.0	29.0	4.8
Cycle Q Clear(g_c), s	10.8	4.5	3.3	9.9	0.0	11.9	7.5	19.8	1.1	2.0	29.0	4.8
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	219	316	268	203	0	295	158	2238	695	52	1915	593
V/C Ratio(X)	0.86	0.31	0.23	0.85	0.00	0.79	0.83	0.61	0.05	0.68	0.86	0.20
Avail Cap(c_a), veh/h	249	674	571	261	0	680	180	2318	720	86	2032	629
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.9	33.9	33.4	40.4	0.0	37.8	41.8	19.4	14.3	45.2	26.4	19.0
Incr Delay (d2), s/veh	21.6	0.4	0.3	15.8	0.0	3.6	21.5	0.5	0.0	5.7	3.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	1.9	1.2	4.6	0.0	5.2	3.7	6.6	0.4	0.8	10.6	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.6	34.4	33.8	56.2	0.0	41.4	63.3	19.8	14.3	50.9	30.3	19.2
LnGrp LOS	E	C	C	E	A	D	E	B	B	D	C	B
Approach Vol, veh/h		350			407			1532			1800	
Approach Delay, s/veh		48.9			47.7			23.4			29.9	
Approach LOS		D			D			C			C	

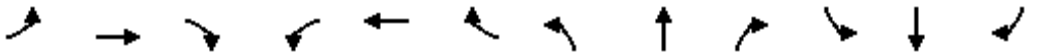
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	49.0	15.3	23.5	12.7	42.8	16.2	22.6
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	44.5	15.2	35.3	10.5	39.0	14.5	36.0
Max Q Clear Time (g_c+I1), s	4.0	21.8	11.9	6.5	9.5	31.0	12.8	13.9
Green Ext Time (p_c), s	0.0	9.3	0.1	0.5	0.0	5.7	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	30.9
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	421	147	41	519	94	257	1181	45	156	1326	192
Future Volume (vph)	179	421	147	41	519	94	257	1181	45	156	1326	192
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	52.0	26.0	54.0	54.0	14.0	42.0	42.0
Total Split (%)	43.3%	43.3%	43.3%	43.3%	43.3%	43.3%	21.7%	45.0%	45.0%	11.7%	35.0%	35.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	45.1	45.1	45.1	45.1	45.1	45.1	13.8	40.0	40.0	9.3	35.5	35.5
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.41	0.41	0.12	0.36	0.36	0.08	0.32	0.32
v/c Ratio	1.11	0.60	0.22	0.18	0.74	0.15	0.69	0.69	0.08	0.62	0.88	0.34
Control Delay	134.8	30.8	4.4	25.1	36.2	6.0	56.2	32.7	3.0	60.3	43.5	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	134.8	30.8	4.4	25.1	36.2	6.0	56.2	32.7	3.0	60.3	43.5	10.2
LOS	F	C	A	C	D	A	E	C	A	E	D	B
Approach Delay		50.5			31.1			35.9			41.2	
Approach LOS		D			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.9	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 39.6	Intersection LOS: D
Intersection Capacity Utilization 95.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	421	147	41	519	94	257	1181	45	156	1326	192
Future Volume (veh/h)	179	421	147	41	519	94	257	1181	45	156	1326	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	186	439	98	43	541	93	268	1230	39	162	1381	149
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	198	757	641	262	757	641	331	1749	543	218	1572	481
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.11	0.36	0.36	0.07	0.32	0.32
Sat Flow, veh/h	761	1800	1524	833	1800	1524	3141	4914	1525	3141	4914	1504
Grp Volume(v), veh/h	186	439	98	43	541	93	268	1230	39	162	1381	149
Grp Sat Flow(s),veh/h/ln	761	1800	1524	833	1800	1524	1570	1638	1525	1570	1638	1504
Q Serve(g_s), s	18.3	20.0	4.3	4.5	26.7	4.0	8.9	23.0	1.8	5.4	28.4	8.0
Cycle Q Clear(g_c), s	45.0	20.0	4.3	24.5	26.7	4.0	8.9	23.0	1.8	5.4	28.4	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	198	757	641	262	757	641	331	1749	543	218	1572	481
V/C Ratio(X)	0.94	0.58	0.15	0.16	0.71	0.15	0.81	0.70	0.07	0.74	0.88	0.31
Avail Cap(c_a), veh/h	198	757	641	262	757	641	660	2204	684	308	1653	506
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	23.8	19.2	33.1	25.7	19.1	46.8	29.6	22.8	48.9	34.4	27.5
Incr Delay (d2), s/veh	47.2	1.1	0.1	0.3	3.2	0.1	1.8	0.7	0.1	3.0	5.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	8.2	1.4	0.9	11.2	1.4	3.4	8.4	0.6	2.1	11.2	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	94.3	24.9	19.3	33.4	28.9	19.2	48.6	30.4	22.8	51.8	40.0	27.8
LnGrp LOS	F	C	B	C	C	B	D	C	C	D	D	C
Approach Vol, veh/h		723			677			1537			1692	
Approach Delay, s/veh		42.0			27.9			33.4			40.0	
Approach LOS		D			C			C			D	

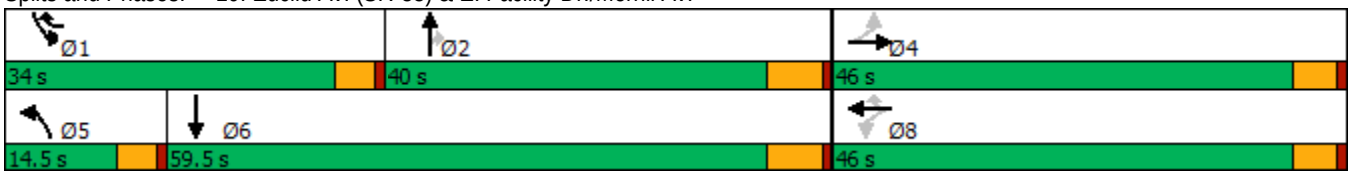
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.9	44.1		52.0	14.8	40.2		52.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	10.5	48.0		45.0	22.5	36.0		45.0				
Max Q Clear Time (g_c+I1), s	7.4	25.0		47.0	10.9	30.4		28.7				
Green Ext Time (p_c), s	0.1	8.3		0.0	0.3	3.8		3.4				

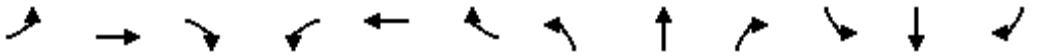
Intersection Summary												
HCM 6th Ctrl Delay			36.3									
HCM 6th LOS			D									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	4	9	324	55	420	11	1182	395	343	1261
Future Volume (vph)	4	9	324	55	420	11	1182	395	343	1261
Turn Type	Perm	NA	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	1	5	2		1	6
Permitted Phases	4		8		8			2		
Detector Phase	4	4	8	8	1	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	14.5	28.0	28.0	14.5	28.0
Total Split (s)	46.0	46.0	46.0	46.0	34.0	14.5	40.0	40.0	34.0	59.5
Total Split (%)	38.3%	38.3%	38.3%	38.3%	28.3%	12.1%	33.3%	33.3%	28.3%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	4.5	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		32.6	32.6	32.6	64.3	10.2	32.4	32.4	26.6	61.0
Actuated g/C Ratio		0.30	0.30	0.30	0.60	0.09	0.30	0.30	0.25	0.57
v/c Ratio		0.07	0.88	0.10	0.47	0.07	0.82	0.70	0.89	0.48
Control Delay		15.3	61.0	28.0	12.9	51.5	41.8	28.2	65.5	16.3
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		15.3	61.0	28.0	12.9	51.5	41.8	28.2	65.5	16.3
LOS		B	E	C	B	D	D	C	E	B
Approach Delay		15.3		33.5			38.4			26.5
Approach LOS		B		C			D			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.5	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 32.5	Intersection LOS: C
Intersection Capacity Utilization 85.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	9	19	324	55	420	11	1182	395	343	1261	44
Future Volume (veh/h)	4	9	19	324	55	420	11	1182	395	343	1261	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	4	9	19	334	57	406	11	1219	364	354	1300	31
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	72	145	252	448	496	784	43	1559	484	386	2610	62
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.03	0.32	0.32	0.24	0.53	0.53
Sat Flow, veh/h	101	526	916	1326	1800	1525	1619	4914	1525	1619	4934	118
Grp Volume(v), veh/h	32	0	0	334	57	406	11	1219	364	354	863	468
Grp Sat Flow(s),veh/h/ln	1543	0	0	1326	1800	1525	1619	1638	1525	1619	1638	1776
Q Serve(g_s), s	0.0	0.0	0.0	20.7	2.2	16.2	0.6	20.7	19.6	19.6	15.5	15.5
Cycle Q Clear(g_c), s	1.3	0.0	0.0	22.0	2.2	16.2	0.6	20.7	19.6	19.6	15.5	15.5
Prop In Lane	0.12		0.59	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	469	0	0	448	496	784	43	1559	484	386	1733	939
V/C Ratio(X)	0.07	0.00	0.00	0.75	0.11	0.52	0.25	0.78	0.75	0.92	0.50	0.50
Avail Cap(c_a), veh/h	722	0	0	675	804	1045	176	1820	565	520	1909	1035
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	0.0	0.0	31.9	24.9	14.8	43.8	28.5	28.1	34.1	13.8	13.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.9	0.0	0.2	1.1	2.0	4.8	15.1	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	6.6	0.9	4.8	0.2	7.5	7.1	8.6	4.8	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.6	0.0	0.0	32.9	24.9	15.0	44.9	30.4	32.9	49.2	14.0	14.2
LnGrp LOS	C	A	A	C	C	B	D	C	C	D	B	B
Approach Vol, veh/h		32			797			1594			1685	
Approach Delay, s/veh		24.6			23.2			31.1			21.5	
Approach LOS		C			C			C			C	

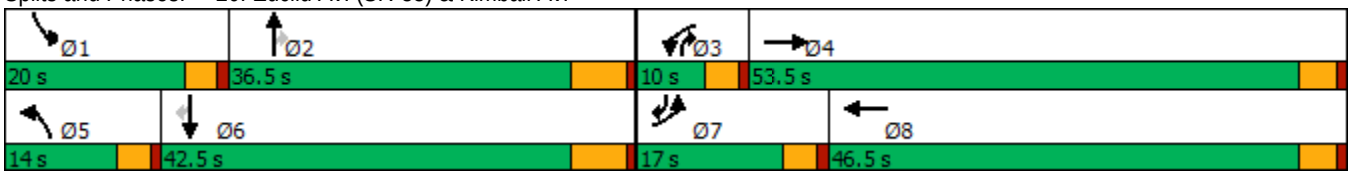
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.4	35.1		30.3	6.9	54.6		30.3				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	29.5	34.0		41.0	10.0	53.5		41.0				
Max Q Clear Time (g_c+I1), s	21.6	22.7		3.3	2.6	17.5		24.0				
Green Ext Time (p_c), s	0.3	6.4		0.1	0.0	9.5		1.3				

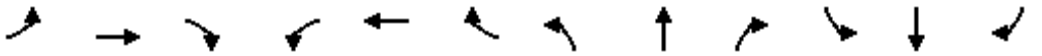
Intersection Summary			
HCM 6th Ctrl Delay		25.6	
HCM 6th LOS		C	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	155	292	62	856	124	1135	62	254	830	439
Future Volume (vph)	155	292	62	856	124	1135	62	254	830	439
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	9.0	45.5	14.0	36.0	9.0	9.0	33.0	14.0
Total Split (s)	17.0	53.5	10.0	46.5	14.0	36.5	10.0	20.0	42.5	17.0
Total Split (%)	14.2%	44.6%	8.3%	38.8%	11.7%	30.4%	8.3%	16.7%	35.4%	14.2%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	11.1	45.9	6.0	40.7	10.0	29.9	42.0	13.6	33.5	46.7
Actuated g/C Ratio	0.10	0.40	0.05	0.36	0.09	0.26	0.37	0.12	0.29	0.41
v/c Ratio	0.55	0.25	0.74	0.94	0.89	0.90	0.10	0.74	0.59	0.69
Control Delay	57.7	22.3	100.4	50.4	105.4	51.5	0.3	62.0	36.4	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.7	22.3	100.4	50.4	105.4	51.5	0.3	62.0	36.4	27.4
LOS	E	C	F	D	F	D	A	E	D	C
Approach Delay		33.4		53.0		54.2			38.1	
Approach LOS		C		D		D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 46.2	Intersection LOS: D
Intersection Capacity Utilization 89.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	292	46	62	856	254	124	1135	62	254	830	439
Future Volume (veh/h)	155	292	46	62	856	254	124	1135	62	254	830	439
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	158	298	38	63	873	223	127	1158	51	259	847	319
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	277	1219	154	78	954	244	152	1330	487	315	1393	570
Arrive On Green	0.09	0.40	0.40	0.05	0.35	0.35	0.09	0.27	0.27	0.11	0.28	0.28
Sat Flow, veh/h	2956	3055	386	1619	2697	689	1619	4914	1525	2956	4914	1506
Grp Volume(v), veh/h	158	166	170	63	553	543	127	1158	51	259	847	319
Grp Sat Flow(s),veh/h/ln	1478	1710	1731	1619	1710	1676	1619	1638	1525	1478	1638	1506
Q Serve(g_s), s	5.4	6.8	6.9	4.1	32.6	32.7	8.1	23.8	2.5	9.1	15.8	17.7
Cycle Q Clear(g_c), s	5.4	6.8	6.9	4.1	32.6	32.7	8.1	23.8	2.5	9.1	15.8	17.7
Prop In Lane	1.00		0.22	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	277	683	691	78	605	593	152	1330	487	315	1393	570
V/C Ratio(X)	0.57	0.24	0.25	0.80	0.91	0.92	0.84	0.87	0.10	0.82	0.61	0.56
Avail Cap(c_a), veh/h	364	793	803	92	680	666	153	1419	514	448	1698	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.8	21.1	21.1	49.8	32.6	32.6	47.1	36.8	25.3	46.2	32.8	26.0
Incr Delay (d2), s/veh	0.7	0.2	0.2	29.6	15.0	15.4	29.6	5.9	0.1	5.5	0.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	2.6	2.7	2.2	15.1	14.9	4.4	9.5	0.9	3.4	5.9	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.5	21.3	21.3	79.4	47.6	48.0	76.7	42.6	25.4	51.7	33.2	26.8
LnGrp LOS	D	C	C	E	D	D	E	D	C	D	C	C
Approach Vol, veh/h		494			1159			1336			1425	
Approach Delay, s/veh		29.4			49.5			45.2			35.1	
Approach LOS		C			D			D			D	

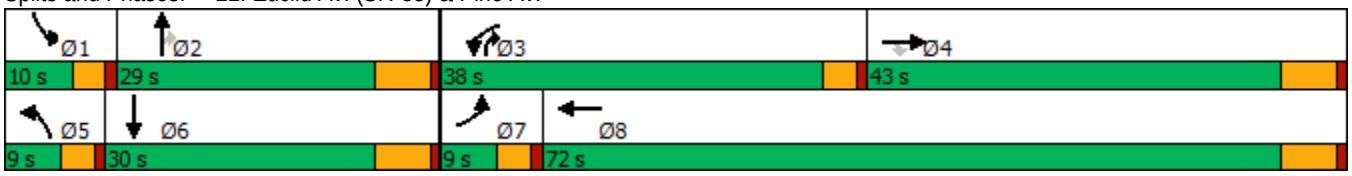
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	34.6	9.1	46.7	13.9	35.9	13.9	41.9
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	16.0	30.5	6.0	49.0	10.0	36.5	13.0	42.0
Max Q Clear Time (g_c+I1), s	11.1	25.8	6.1	8.9	10.1	19.7	7.4	34.7
Green Ext Time (p_c), s	0.2	2.8	0.0	1.8	0.0	5.8	0.1	2.7

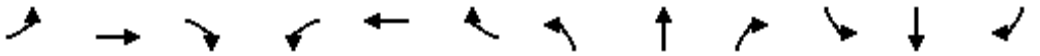
Intersection Summary	
HCM 6th Ctrl Delay	41.3
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	9	204	55	1199	367	65	994	776	71	818
Future Volume (vph)	9	204	55	1199	367	65	994	776	71	818
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	38.0	72.0	9.0	29.0	38.0	10.0	30.0
Total Split (%)	7.5%	35.8%	35.8%	31.7%	60.0%	7.5%	24.2%	31.7%	8.3%	25.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.0	15.7	15.7	34.3	52.6	5.0	23.2	59.6	6.1	24.2
Actuated g/C Ratio	0.05	0.16	0.16	0.34	0.53	0.05	0.23	0.60	0.06	0.24
v/c Ratio	0.11	0.39	0.16	1.22	0.54	0.83	0.89	0.42	0.74	0.72
Control Delay	52.8	38.6	1.0	136.8	17.5	109.5	49.0	2.1	89.1	39.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.8	38.6	1.0	136.8	17.5	109.5	49.0	2.1	89.1	39.7
LOS	D	D	A	F	B	F	D	A	F	D
Approach Delay		31.3			102.3		31.3			43.5
Approach LOS		C			F		C			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.22	
Intersection Signal Delay: 59.2	Intersection LOS: E
Intersection Capacity Utilization 87.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	204	55	1199	367	120	65	994	776	71	818	18
Future Volume (veh/h)	9	204	55	1199	367	120	65	994	776	71	818	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	9	210	0	1236	378	122	67	1025	544	73	843	15
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	18	343		1120	610	197	83	1189	1653	91	1226	22
Arrive On Green	0.01	0.10	0.00	0.38	0.47	0.47	0.05	0.24	0.24	0.06	0.25	0.25
Sat Flow, veh/h	1619	3420	1525	2956	1304	421	1619	4914	2627	1619	4972	88
Grp Volume(v), veh/h	9	210	0	1236	0	500	67	1025	544	73	555	303
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1478	0	1724	1619	1638	1313	1619	1638	1784
Q Serve(g_s), s	0.5	5.3	0.0	34.0	0.0	19.5	3.7	17.9	8.9	4.0	13.8	13.8
Cycle Q Clear(g_c), s	0.5	5.3	0.0	34.0	0.0	19.5	3.7	17.9	8.9	4.0	13.8	13.8
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	18	343		1120	0	807	83	1189	1653	91	808	440
V/C Ratio(X)	0.50	0.61		1.10	0.00	0.62	0.81	0.86	0.33	0.80	0.69	0.69
Avail Cap(c_a), veh/h	90	1410		1120	0	1268	90	1260	1691	108	876	477
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	38.7	0.0	27.9	0.0	17.9	42.1	32.6	8.1	41.9	30.7	30.7
Incr Delay (d2), s/veh	7.6	2.5	0.0	59.8	0.0	1.1	34.1	5.7	0.0	25.4	1.6	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.2	0.0	19.9	0.0	6.9	2.2	7.1	1.9	2.1	5.1	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.7	41.2	0.0	87.7	0.0	19.0	76.2	38.3	8.2	67.3	32.2	33.6
LnGrp LOS	D	D		F	A	B	E	D	A	E	C	C
Approach Vol, veh/h		219	A		1736			1636			931	
Approach Delay, s/veh		41.6			67.9			29.8			35.4	
Approach LOS		D			E			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	27.7	38.0	15.0	8.6	28.1	5.0	48.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	6.0	23.0	34.0	37.0	5.0	24.0	5.0	66.0
Max Q Clear Time (g_c+I1), s	6.0	19.9	36.0	7.3	5.7	15.8	2.5	21.5
Green Ext Time (p_c), s	0.0	1.8	0.0	1.7	0.0	2.1	0.0	4.8

Intersection Summary	
HCM 6th Ctrl Delay	46.2
HCM 6th LOS	D

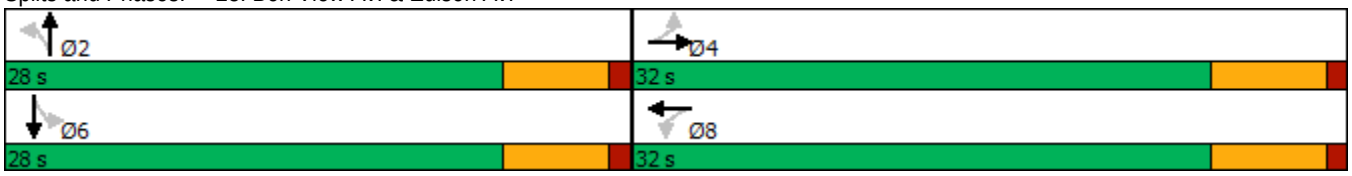
Notes

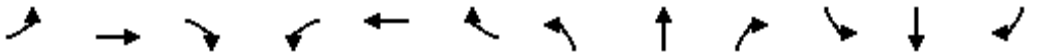
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	55	474	21	632	20	87	21	121
Future Volume (vph)	55	474	21	632	20	87	21	121
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	27.8	27.8	27.8	27.8
Total Split (s)	32.0	32.0	32.0	32.0	28.0	28.0	28.0	28.0
Total Split (%)	53.3%	53.3%	53.3%	53.3%	46.7%	46.7%	46.7%	46.7%
Yellow Time (s)	5.2	5.2	5.2	5.2	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		5.8		5.8
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)		25.8		25.8		12.6		12.6
Actuated g/C Ratio		0.51		0.51		0.25		0.25
v/c Ratio		0.74		0.83		0.32		0.48
Control Delay		19.1		23.0		15.9		17.1
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		19.1		23.0		15.9		17.1
LOS		B		C		B		B
Approach Delay		19.1		23.0		15.9		17.1
Approach LOS		B		C		B		B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 50.5	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 20.3	Intersection LOS: C
Intersection Capacity Utilization 77.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 23: Bon View Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	474	16	21	632	18	20	87	15	21	121	50
Future Volume (veh/h)	55	474	16	21	632	18	20	87	15	21	121	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	60	521	18	23	695	20	22	96	16	23	133	55
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	140	741	24	98	819	23	131	320	48	116	271	103
Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	96	1535	51	22	1698	48	136	1359	203	93	1153	439
Grp Volume(v), veh/h	599	0	0	738	0	0	134	0	0	211	0	0
Grp Sat Flow(s),veh/h/ln	1682	0	0	1768	0	0	1698	0	0	1685	0	0
Q Serve(g_s), s	0.0	0.0	0.0	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	11.5	0.0	0.0	15.6	0.0	0.0	2.7	0.0	0.0	4.5	0.0	0.0
Prop In Lane	0.10		0.03	0.03		0.03	0.16		0.12	0.11		0.26
Lane Grp Cap(c), veh/h	905	0	0	940	0	0	498	0	0	490	0	0
V/C Ratio(X)	0.66	0.00	0.00	0.78	0.00	0.00	0.27	0.00	0.00	0.43	0.00	0.00
Avail Cap(c_a), veh/h	1100	0	0	1157	0	0	968	0	0	965	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.6	0.0	0.0	9.7	0.0	0.0	13.4	0.0	0.0	14.2	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	0.0	2.9	0.0	0.0	0.3	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	0.0	3.7	0.0	0.0	0.8	0.0	0.0	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.7	0.0	0.0	12.6	0.0	0.0	13.7	0.0	0.0	14.8	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h		599			738			134			211	
Approach Delay, s/veh		9.7			12.6			13.7			14.8	
Approach LOS		A			B			B			B	

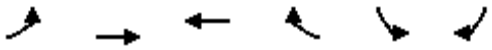
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.8		26.7		15.8		26.7				
Change Period (Y+Rc), s		5.8		6.2		5.8		6.2				
Max Green Setting (Gmax), s		22.2		25.8		22.2		25.8				
Max Q Clear Time (g_c+I1), s		4.7		13.5		6.5		17.6				
Green Ext Time (p_c), s		0.5		3.0		0.9		2.9				

Intersection Summary												
HCM 6th Ctrl Delay			11.9									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	69	658	858	39
Future Volume (vph)	69	658	858	39
Turn Type	Perm	NA	NA	Prot
Protected Phases		4	8	6
Permitted Phases	4			
Detector Phase	4	4	8	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	16.2	16.2	23.2	32.8
Total Split (s)	41.0	41.0	41.0	79.0
Total Split (%)	34.2%	34.2%	34.2%	65.8%
Yellow Time (s)	5.2	5.2	5.2	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0
Total Lost Time (s)		6.2	6.2	5.8
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	Min
Act Effct Green (s)		35.2	35.2	12.9
Actuated g/C Ratio		0.58	0.58	0.21
v/c Ratio		0.89	0.51	0.27
Control Delay		28.0	9.5	18.4
Queue Delay		0.0	0.0	0.0
Total Delay		28.0	9.5	18.4
LOS		C	A	B
Approach Delay		28.0	9.5	18.4
Approach LOS		C	A	B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 60.2	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 17.6	Intersection LOS: B
Intersection Capacity Utilization 91.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 25: Merrill Av. & Bon View Av.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	69	658	858	84	39	54
Future Volume (veh/h)	69	658	858	84	39	54
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	73	700	913	89	41	57
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	132	821	1710	167	138	191
Arrive On Green	0.54	0.54	0.54	0.54	0.21	0.21
Sat Flow, veh/h	92	1512	3238	307	663	922
Grp Volume(v), veh/h	773	0	496	506	99	0
Grp Sat Flow(s),veh/h/ln	1603	0	1710	1745	1601	0
Q Serve(g_s), s	10.4	0.0	9.0	9.0	2.5	0.0
Cycle Q Clear(g_c), s	19.6	0.0	9.0	9.0	2.5	0.0
Prop In Lane	0.09			0.18	0.41	0.58
Lane Grp Cap(c), veh/h	953	0	929	948	332	0
V/C Ratio(X)	0.81	0.00	0.53	0.53	0.30	0.00
Avail Cap(c_a), veh/h	1221	0	1235	1260	2433	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.1	0.0	7.1	7.1	16.1	0.0
Incr Delay (d2), s/veh	3.3	0.0	0.5	0.5	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	1.7	1.8	0.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.4	0.0	7.6	7.5	16.6	0.0
LnGrp LOS	B	A	A	A	B	A
Approach Vol, veh/h		773	1002		99	
Approach Delay, s/veh		12.4	7.5		16.6	
Approach LOS		B	A		B	

Timer - Assigned Phs			4		6	8
Phs Duration (G+Y+Rc), s			32.4		15.8	32.4
Change Period (Y+Rc), s			6.2		5.8	6.2
Max Green Setting (Gmax), s			34.8		73.2	34.8
Max Q Clear Time (g_c+I1), s			21.6		4.5	11.0
Green Ext Time (p_c), s			4.5		0.3	6.0

Intersection Summary		
HCM 6th Ctrl Delay		10.0
HCM 6th LOS		B

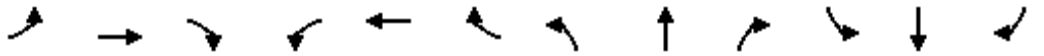
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	709	1	240	791	397	701
Future Volume (vph)	709	1	240	791	397	701
Turn Type	Split	NA	Perm	NA	Prot	NA
Protected Phases	4	4		2	1	6
Permitted Phases			4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	30.8	26.8	9.6	22.8
Total Split (s)	31.0	31.0	31.0	50.0	39.0	89.0
Total Split (%)	25.8%	25.8%	25.8%	41.7%	32.5%	74.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.6	5.8
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	25.2	25.2	25.2	47.2	31.4	83.2
Actuated g/C Ratio	0.21	0.21	0.21	0.39	0.26	0.69
v/c Ratio	1.07	1.07	0.48	0.94	0.92	0.30
Control Delay	112.4	114.0	8.0	46.9	70.1	8.3
Queue Delay	0.0	0.0	0.0	2.6	2.7	0.3
Total Delay	112.4	114.0	8.0	49.4	72.8	8.6
LOS	F	F	A	D	E	A
Approach Delay		86.6		49.4		31.9
Approach LOS		F		D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 54.4	Intersection LOS: D
Intersection Capacity Utilization 90.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	709	1	240	0	0	0	0	791	405	397	701	0
Future Volume (veh/h)	709	1	240	0	0	0	0	791	405	397	701	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	772	0	186				0	860	331	432	762	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	760	0	337				0	1035	397	450	2503	0
Arrive On Green	0.21	0.00	0.21				0.00	0.41	0.41	0.50	1.00	0.00
Sat Flow, veh/h	3619	0	1606				0	2644	978	1810	3705	0
Grp Volume(v), veh/h	772	0	186				0	608	583	432	762	0
Grp Sat Flow(s),veh/h/ln	1810	0	1606				0	1805	1721	1810	1805	0
Q Serve(g_s), s	25.2	0.0	12.4				0.0	36.2	36.5	27.5	0.0	0.0
Cycle Q Clear(g_c), s	25.2	0.0	12.4				0.0	36.2	36.5	27.5	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.57	1.00		0.00
Lane Grp Cap(c), veh/h	760	0	337				0	733	699	450	2503	0
V/C Ratio(X)	1.02	0.00	0.55				0.00	0.83	0.83	0.96	0.30	0.00
Avail Cap(c_a), veh/h	760	0	337				0	733	699	519	2503	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.59	0.59	0.39	0.39	0.00
Uniform Delay (d), s/veh	47.4	0.0	42.4				0.0	31.9	32.0	29.5	0.0	0.0
Incr Delay (d2), s/veh	36.6	0.0	1.9				0.0	6.5	7.0	14.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.8	0.0	5.0				0.0	16.2	15.7	9.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	84.0	0.0	44.3				0.0	38.4	39.0	43.8	0.1	0.0
LnGrp LOS	F	A	D				A	D	D	D	A	A
Approach Vol, veh/h		958						1191			1194	
Approach Delay, s/veh		76.3						38.7			15.9	
Approach LOS		E						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	34.5	54.5		31.0		89.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	34.4	44.2		25.2		83.2
Max Q Clear Time (g_c+I1), s	29.5	38.5		27.2		2.0
Green Ext Time (p_c), s	0.3	3.4		0.0		5.6

Intersection Summary	
HCM 6th Ctrl Delay	41.3
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	69	99	11	89	40	376	51	490
Future Volume (vph)	69	99	11	89	40	376	51	490
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Total Split (s)	38.0	38.0	38.0	38.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	31.7%	31.7%	68.3%	68.3%	68.3%	68.3%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		21.8		21.8		76.1		76.1
Actuated g/C Ratio		0.20		0.20		0.69		0.69
v/c Ratio		0.81		0.43		0.43		0.56
Control Delay		63.5		38.4		9.9		12.1
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		63.5		38.4		9.9		12.1
LOS		E		D		A		B
Approach Delay		63.5		38.4		9.9		12.1
Approach LOS		E		D		A		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.3	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 21.6	Intersection LOS: C
Intersection Capacity Utilization 77.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 30: Grove Av. & Chino Rd.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	99	30	11	89	33	40	376	15	51	490	34
Future Volume (veh/h)	69	99	30	11	89	33	40	376	15	51	490	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	77	110	33	12	99	37	44	418	17	57	544	38
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	123	141	38	48	204	72	117	1070	42	115	1059	72
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	463	846	231	66	1225	430	111	1494	59	109	1479	100
Grp Volume(v), veh/h	220	0	0	148	0	0	479	0	0	639	0	0
Grp Sat Flow(s),veh/h/ln	1539	0	0	1721	0	0	1664	0	0	1688	0	0
Q Serve(g_s), s	6.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.7	0.0	0.0	8.3	0.0	0.0	11.0	0.0	0.0	16.8	0.0	0.0
Prop In Lane	0.35		0.15	0.08		0.25	0.09		0.04	0.09		0.06
Lane Grp Cap(c), veh/h	302	0	0	323	0	0	1229	0	0	1246	0	0
V/C Ratio(X)	0.73	0.00	0.00	0.46	0.00	0.00	0.39	0.00	0.00	0.51	0.00	0.00
Avail Cap(c_a), veh/h	508	0	0	547	0	0	1229	0	0	1246	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.8	0.0	0.0	40.2	0.0	0.0	5.8	0.0	0.0	6.6	0.0	0.0
Incr Delay (d2), s/veh	3.4	0.0	0.0	1.0	0.0	0.0	0.9	0.0	0.0	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	0.0	0.0	3.4	0.0	0.0	3.3	0.0	0.0	5.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.1	0.0	0.0	41.2	0.0	0.0	6.7	0.0	0.0	8.2	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		220			148			479			639	
Approach Delay, s/veh		46.1			41.2			6.7			8.2	
Approach LOS		D			D			A			A	

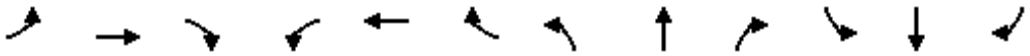
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		82.0		23.8		82.0		23.8				
Change Period (Y+Rc), s		6.2		6.2		6.2		6.2				
Max Green Setting (Gmax), s		75.8		31.8		75.8		31.8				
Max Q Clear Time (g_c+I1), s		13.0		16.7		18.8		10.3				
Green Ext Time (p_c), s		3.1		0.9		4.5		0.6				

Intersection Summary												
HCM 6th Ctrl Delay			16.6									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	48	51	39	111	41	313	46	404
Future Volume (vph)	48	51	39	111	41	313	46	404
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	41.0	41.0	41.0	41.0	79.0	79.0	79.0	79.0
Total Split (%)	34.2%	34.2%	34.2%	34.2%	65.8%	65.8%	65.8%	65.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.8		5.8		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		18.4		18.4		73.0		73.0
Actuated g/C Ratio		0.18		0.18		0.71		0.71
v/c Ratio		0.69		0.76		0.36		0.47
Control Delay		52.5		54.9		7.7		9.0
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		52.5		54.9		7.7		9.0
LOS		D		D		A		A
Approach Delay		52.5		54.9		7.7		9.0
Approach LOS		D		D		A		A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.4	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 20.9	Intersection LOS: C
Intersection Capacity Utilization 59.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 31: Grove Av. & Schaefer Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	51	34	39	111	44	41	313	11	46	404	47
Future Volume (veh/h)	48	51	34	39	111	44	41	313	11	46	404	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	53	57	38	43	123	49	46	348	12	51	449	52
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	107	103	56	81	161	59	144	1057	35	121	1027	115
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.73	0.73	0.73	0.73	0.73	0.73
Sat Flow, veh/h	374	664	359	244	1035	378	144	1458	49	113	1416	159
Grp Volume(v), veh/h	148	0	0	215	0	0	406	0	0	552	0	0
Grp Sat Flow(s),veh/h/ln	1397	0	0	1657	0	0	1651	0	0	1688	0	0
Q Serve(g_s), s	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.0	0.0	0.0	12.6	0.0	0.0	8.1	0.0	0.0	12.5	0.0	0.0
Prop In Lane	0.36		0.26	0.20		0.23	0.11		0.03	0.09		0.09
Lane Grp Cap(c), veh/h	266	0	0	300	0	0	1237	0	0	1263	0	0
V/C Ratio(X)	0.56	0.00	0.00	0.72	0.00	0.00	0.33	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	556	0	0	616	0	0	1237	0	0	1263	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	39.7	0.0	0.0	41.0	0.0	0.0	4.9	0.0	0.0	5.5	0.0	0.0
Incr Delay (d2), s/veh	1.8	0.0	0.0	3.2	0.0	0.0	0.7	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	0.0	5.2	0.0	0.0	2.3	0.0	0.0	3.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	0.0	0.0	44.2	0.0	0.0	5.6	0.0	0.0	6.6	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		148			215			406			552	
Approach Delay, s/veh		41.5			44.2			5.6			6.6	
Approach LOS		D			D			A			A	

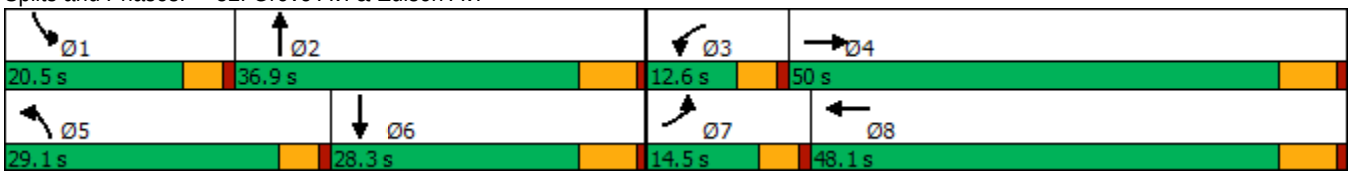
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		79.0		21.4		79.0		21.4				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		72.8		35.2		72.8		35.2				
Max Q Clear Time (g_c+I1), s		10.1		12.0		14.5		14.6				
Green Ext Time (p_c), s		2.5		0.7		3.7		1.0				

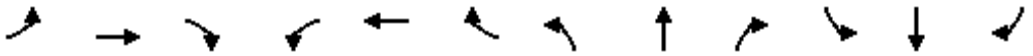
Intersection Summary												
HCM 6th Ctrl Delay			16.3									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	37	230	112	568	84	255	66	351
Future Volume (vph)	37	230	112	568	84	255	66	351
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	9.6	28.2	9.6	28.2
Total Split (s)	14.5	50.0	12.6	48.1	29.1	36.9	20.5	28.3
Total Split (%)	12.1%	41.7%	10.5%	40.1%	24.3%	30.8%	17.1%	23.6%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	7.1	44.3	8.1	49.8	10.1	18.2	8.9	17.1
Actuated g/C Ratio	0.07	0.45	0.08	0.50	0.10	0.18	0.09	0.17
v/c Ratio	0.35	0.67	0.93	0.74	0.56	0.52	0.50	0.71
Control Delay	55.1	26.8	112.1	30.5	57.2	38.5	57.1	46.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.1	26.8	112.1	30.5	57.2	38.5	57.1	46.0
LOS	E	C	F	C	E	D	E	D
Approach Delay		28.9		43.3		42.7		47.6
Approach LOS		C		D		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 40.6	Intersection LOS: D
Intersection Capacity Utilization 72.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	230	239	112	568	35	84	255	38	66	351	32
Future Volume (veh/h)	37	230	239	112	568	35	84	255	38	66	351	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	41	253	263	123	624	38	92	280	42	73	386	35
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	56	374	389	137	860	52	115	503	75	91	488	44
Arrive On Green	0.03	0.46	0.46	0.08	0.51	0.51	0.07	0.17	0.17	0.06	0.15	0.15
Sat Flow, veh/h	1619	808	840	1619	1679	102	1619	2987	443	1619	3172	286
Grp Volume(v), veh/h	41	0	516	123	0	662	92	159	163	73	207	214
Grp Sat Flow(s),veh/h/ln	1619	0	1649	1619	0	1782	1619	1710	1720	1619	1710	1748
Q Serve(g_s), s	2.4	0.0	23.2	7.1	0.0	27.3	5.3	8.1	8.2	4.2	11.0	11.2
Cycle Q Clear(g_c), s	2.4	0.0	23.2	7.1	0.0	27.3	5.3	8.1	8.2	4.2	11.0	11.2
Prop In Lane	1.00		0.51	1.00		0.06	1.00		0.26	1.00		0.16
Lane Grp Cap(c), veh/h	56	0	763	137	0	913	115	288	290	91	263	269
V/C Ratio(X)	0.73	0.00	0.68	0.90	0.00	0.73	0.80	0.55	0.56	0.80	0.79	0.79
Avail Cap(c_a), veh/h	169	0	763	137	0	913	419	554	558	272	399	408
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.3	0.0	19.9	42.9	0.0	17.9	43.3	36.1	36.2	44.1	38.6	38.6
Incr Delay (d2), s/veh	6.5	0.0	4.8	47.0	0.0	5.0	4.8	1.6	1.7	5.9	5.9	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	8.8	4.5	0.0	10.8	2.2	3.3	3.4	1.8	4.8	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.7	0.0	24.7	89.9	0.0	22.9	48.1	37.7	37.9	50.1	44.5	44.8
LnGrp LOS	D	A	C	F	A	C	D	D	D	D	D	D
Approach Vol, veh/h		557			785			414			494	
Approach Delay, s/veh		26.7			33.4			40.1			45.4	
Approach LOS		C			C			D			D	

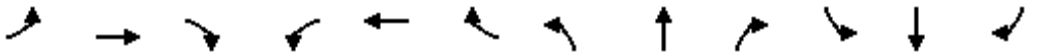
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	22.2	12.6	50.0	11.3	20.8	7.9	54.7
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	15.9	30.7	8.0	43.8	24.5	22.1	9.9	41.9
Max Q Clear Time (g_c+I1), s	6.2	10.2	9.1	25.2	7.3	13.2	4.4	29.3
Green Ext Time (p_c), s	0.0	1.5	0.0	2.9	0.1	1.4	0.0	3.2

Intersection Summary	
HCM 6th Ctrl Delay	35.6
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	42	75	13	104	69	340	271	337
Future Volume (vph)	42	75	13	104	69	340	271	337
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	27.8	27.8	27.8	27.8	92.2	92.2	92.2	92.2
Total Split (%)	23.2%	23.2%	23.2%	23.2%	76.8%	76.8%	76.8%	76.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	6.2	6.2	6.2	6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)	16.9	16.9	16.9	16.9	87.0	87.0	87.0	87.0
Actuated g/C Ratio	0.15	0.15	0.15	0.15	0.75	0.75	0.75	0.75
v/c Ratio	0.50	0.37	0.08	0.76	0.13	0.15	0.45	0.20
Control Delay	64.1	44.9	42.5	58.6	5.3	4.5	8.7	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.1	44.9	42.5	58.6	5.3	4.5	8.7	3.9
LOS	E	D	D	E	A	A	A	A
Approach Delay		51.0		57.6		4.6		5.7
Approach LOS		D		E		A		A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.9	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 16.4	Intersection LOS: B
Intersection Capacity Utilization 66.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	75	15	13	104	83	69	340	13	271	337	112
Future Volume (veh/h)	42	75	15	13	104	83	69	340	13	271	337	112
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	46	82	16	14	114	91	76	374	14	298	370	123
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	126	254	50	216	161	128	648	2439	91	721	1836	602
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.73	0.73	0.73	0.73	0.73	0.73
Sat Flow, veh/h	1129	1463	285	1245	927	740	867	3362	126	955	2531	830
Grp Volume(v), veh/h	46	0	98	14	0	205	76	190	198	298	248	245
Grp Sat Flow(s),veh/h/ln	1129	0	1749	1245	0	1667	867	1710	1777	955	1710	1651
Q Serve(g_s), s	4.7	0.0	5.8	1.2	0.0	13.7	3.7	4.1	4.1	16.6	5.5	5.7
Cycle Q Clear(g_c), s	18.5	0.0	5.8	7.0	0.0	13.7	9.3	4.1	4.1	20.7	5.5	5.7
Prop In Lane	1.00		0.16	1.00		0.44	1.00		0.07	1.00		0.50
Lane Grp Cap(c), veh/h	126	0	303	216	0	289	648	1240	1289	721	1240	1197
V/C Ratio(X)	0.37	0.00	0.32	0.06	0.00	0.71	0.12	0.15	0.15	0.41	0.20	0.20
Avail Cap(c_a), veh/h	139	0	324	231	0	309	648	1240	1289	721	1240	1197
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.9	0.0	42.9	46.0	0.0	46.2	6.8	5.0	5.0	8.2	5.2	5.2
Incr Delay (d2), s/veh	1.8	0.0	0.6	0.1	0.0	6.8	0.4	0.3	0.3	1.7	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	2.5	0.4	0.0	6.1	0.6	1.2	1.3	3.1	1.6	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.7	0.0	43.5	46.1	0.0	53.0	7.1	5.3	5.3	10.0	5.6	5.6
LnGrp LOS	E	A	D	D	A	D	A	A	A	A	A	A
Approach Vol, veh/h		144			219			464			791	
Approach Delay, s/veh		47.7			52.5			5.6			7.3	
Approach LOS		D			D			A			A	

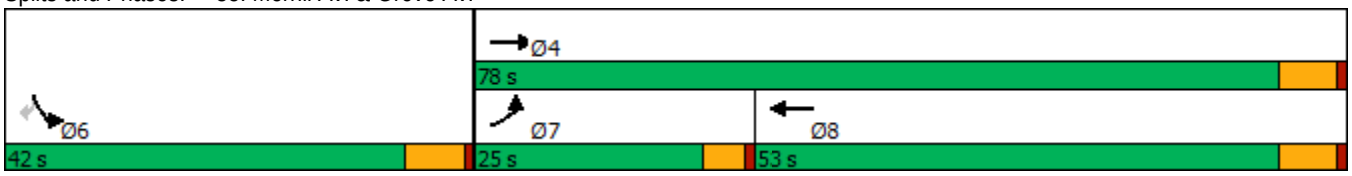
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		92.2		26.4		92.2		26.4				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		86.0		22.0		86.0		22.0				
Max Q Clear Time (g_c+I1), s		11.3		20.5		22.7		15.7				
Green Ext Time (p_c), s		2.6		0.1		4.7		0.5				

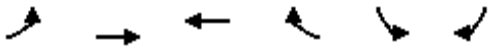
Intersection Summary												
HCM 6th Ctrl Delay			16.5									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	179	549	788	215	129
Future Volume (vph)	179	549	788	215	129
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	28.2	28.2
Total Split (s)	25.0	78.0	53.0	42.0	42.0
Total Split (%)	20.8%	65.0%	44.2%	35.0%	35.0%
Yellow Time (s)	3.6	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	6.2	6.2
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	Max	Max	None	None
Act Effct Green (s)	15.5	72.0	51.9	19.4	19.4
Actuated g/C Ratio	0.15	0.69	0.50	0.19	0.19
v/c Ratio	0.77	0.45	0.73	0.74	0.34
Control Delay	63.3	9.3	24.0	54.7	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.3	9.3	24.0	54.7	8.4
LOS	E	A	C	D	A
Approach Delay		22.6	24.0	37.4	
Approach LOS		C	C	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.8	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 25.6	Intersection LOS: C
Intersection Capacity Utilization 74.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	179	549	788	390	215	129
Future Volume (veh/h)	179	549	788	390	215	129
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	185	566	812	402	222	133
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	214	1285	1190	586	263	248
Arrive On Green	0.13	0.71	0.54	0.54	0.16	0.16
Sat Flow, veh/h	1619	1800	2310	1093	1619	1525
Grp Volume(v), veh/h	185	566	625	589	222	133
Grp Sat Flow(s),veh/h/ln	1619	1800	1710	1603	1619	1525
Q Serve(g_s), s	11.3	13.2	26.8	27.1	13.4	8.0
Cycle Q Clear(g_c), s	11.3	13.2	26.8	27.1	13.4	8.0
Prop In Lane	1.00			0.68	1.00	1.00
Lane Grp Cap(c), veh/h	214	1285	916	859	263	248
V/C Ratio(X)	0.86	0.44	0.68	0.69	0.84	0.54
Avail Cap(c_a), veh/h	328	1285	916	859	576	543
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.7	6.0	17.1	17.1	40.9	38.6
Incr Delay (d2), s/veh	9.1	1.1	4.1	4.4	7.2	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	3.9	10.1	9.6	5.6	6.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	51.8	7.1	21.1	21.6	48.1	40.4
LnGrp LOS	D	A	C	C	D	D
Approach Vol, veh/h		751	1214		355	
Approach Delay, s/veh		18.1	21.3		45.2	
Approach LOS		B	C		D	

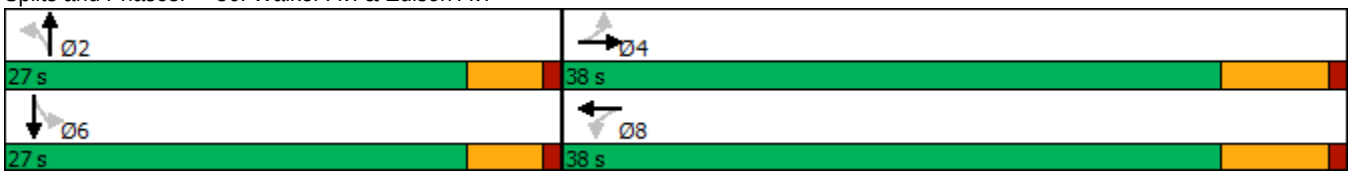
Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	78.0	22.6	17.9	60.1
Change Period (Y+Rc), s	6.2	6.2	4.6	6.2
Max Green Setting (Gmax), s	71.8	35.8	20.4	46.8
Max Q Clear Time (g_c+I1), s	15.2	15.4	13.3	29.1
Green Ext Time (p_c), s	3.6	1.0	0.1	7.1

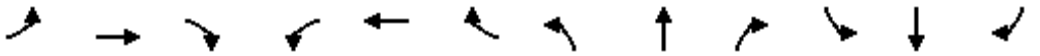
Intersection Summary	
HCM 6th Ctrl Delay	23.9
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	19	274	421	489	5	21	29	20
Future Volume (vph)	19	274	421	489	5	21	29	20
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	26.7	26.7	26.7	26.7
Total Split (s)	38.0	38.0	38.0	38.0	27.0	27.0	27.0	27.0
Total Split (%)	58.5%	58.5%	58.5%	58.5%	41.5%	41.5%	41.5%	41.5%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		4.7		4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		38.3		38.3		12.2		12.2
Actuated g/C Ratio		0.67		0.67		0.21		0.21
v/c Ratio		0.28		1.24		0.28		0.19
Control Delay		7.2		136.2		8.3		15.7
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		7.2		136.2		8.3		15.7
LOS		A		F		A		B
Approach Delay		7.2		136.2		8.3		15.7
Approach LOS		A		F		A		B

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 57	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.24	
Intersection Signal Delay: 96.7	Intersection LOS: F
Intersection Capacity Utilization 104.9%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	274	10	421	489	159	5	21	88	29	20	13
Future Volume (veh/h)	19	274	10	421	489	159	5	21	88	29	20	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	19	280	10	430	499	162	5	21	90	30	20	13
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	98	1012	35	446	408	132	77	58	217	203	122	58
Arrive On Green	0.61	0.61	0.61	0.61	0.61	0.61	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	40	1653	57	570	667	216	25	328	1221	563	687	325
Grp Volume(v), veh/h	309	0	0	1091	0	0	116	0	0	63	0	0
Grp Sat Flow(s),veh/h/ln	1750	0	0	1452	0	0	1573	0	0	1575	0	0
Q Serve(g_s), s	0.0	0.0	0.0	27.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.2	0.0	0.0	31.8	0.0	0.0	3.4	0.0	0.0	1.6	0.0	0.0
Prop In Lane	0.06		0.03	0.39		0.15	0.04		0.78	0.48		0.21
Lane Grp Cap(c), veh/h	1145	0	0	986	0	0	352	0	0	383	0	0
V/C Ratio(X)	0.27	0.00	0.00	1.11	0.00	0.00	0.33	0.00	0.00	0.16	0.00	0.00
Avail Cap(c_a), veh/h	1145	0	0	986	0	0	745	0	0	754	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.7	0.0	0.0	11.3	0.0	0.0	18.9	0.0	0.0	18.2	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	62.6	0.0	0.0	0.5	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	22.3	0.0	0.0	1.2	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.3	0.0	0.0	73.9	0.0	0.0	19.5	0.0	0.0	18.4	0.0	0.0
LnGrp LOS	A	A	A	F	A	A	B	A	A	B	A	A
Approach Vol, veh/h		309			1091			116			63	
Approach Delay, s/veh		5.3			73.9			19.5			18.4	
Approach LOS		A			E			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.9		38.0		13.9		38.0				
Change Period (Y+Rc), s		* 4.7		6.2		* 4.7		6.2				
Max Green Setting (Gmax), s		* 22		31.8		* 22		31.8				
Max Q Clear Time (g_c+I1), s		5.4		6.2		3.6		33.8				
Green Ext Time (p_c), s		0.5		1.7		0.2		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		54.2
HCM 6th LOS		D

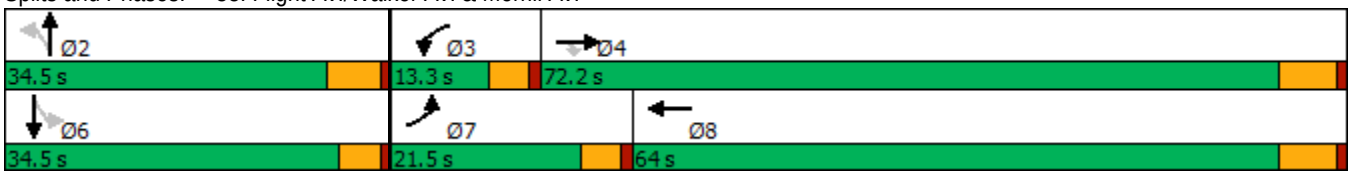
Notes

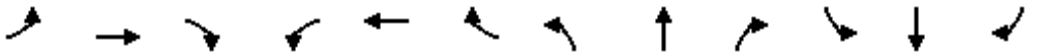
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	103	547	113	134	954	145	19	22	5
Future Volume (vph)	103	547	113	134	954	145	19	22	5
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.2	23.2	9.6	23.2	32.8	32.8	21.6	21.6
Total Split (s)	21.5	72.2	72.2	13.3	64.0	34.5	34.5	34.5	34.5
Total Split (%)	17.9%	60.2%	60.2%	11.1%	53.3%	28.8%	28.8%	28.8%	28.8%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	4.8	4.8	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	5.8	5.8		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	11.4	66.2	66.2	8.7	63.5	18.0	18.0		19.2
Actuated g/C Ratio	0.10	0.60	0.60	0.08	0.58	0.16	0.16		0.18
v/c Ratio	0.63	0.52	0.12	1.08	0.55	0.70	0.38		0.21
Control Delay	64.2	15.6	5.4	151.0	17.0	60.4	13.3		23.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	64.2	15.6	5.4	151.0	17.0	60.4	13.3		23.3
LOS	E	B	A	F	B	E	B		C
Approach Delay		20.7			32.3		38.2		23.3
Approach LOS		C			C		D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.6	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 28.9	Intersection LOS: C
Intersection Capacity Utilization 73.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 38: Flight Av./Walker Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	547	113	134	954	82	145	19	110	22	5	28
Future Volume (veh/h)	103	547	113	134	954	82	145	19	110	22	5	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	106	564	116	138	984	85	149	20	113	23	5	29
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	130	1092	926	129	1933	167	246	38	213	94	32	83
Arrive On Green	0.08	0.61	0.61	0.08	0.61	0.61	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1619	1800	1525	1619	3185	275	1319	235	1326	297	200	515
Grp Volume(v), veh/h	106	564	116	138	528	541	149	0	133	57	0	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	1750	1319	0	1561	1011	0	0
Q Serve(g_s), s	7.0	19.5	3.5	8.7	19.1	19.1	5.5	0.0	8.5	0.6	0.0	0.0
Cycle Q Clear(g_c), s	7.0	19.5	3.5	8.7	19.1	19.1	14.6	0.0	8.5	9.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.16	1.00		0.85	0.40		0.51
Lane Grp Cap(c), veh/h	130	1092	926	129	1037	1062	246	0	251	209	0	0
V/C Ratio(X)	0.82	0.52	0.13	1.07	0.51	0.51	0.61	0.00	0.53	0.27	0.00	0.00
Avail Cap(c_a), veh/h	252	1092	926	129	1037	1062	382	0	412	372	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	49.3	12.2	9.1	50.0	12.2	12.2	45.0	0.0	41.9	40.4	0.0	0.0
Incr Delay (d2), s/veh	4.7	1.7	0.3	97.8	1.8	1.7	2.4	0.0	1.7	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	7.2	1.1	6.9	6.7	6.8	3.9	0.0	3.3	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.0	14.0	9.4	147.8	14.0	13.9	47.4	0.0	43.6	41.1	0.0	0.0
LnGrp LOS	D	B	A	F	B	B	D	A	D	D	A	A
Approach Vol, veh/h		786			1207			282			57	
Approach Delay, s/veh		18.7			29.2			45.6			41.1	
Approach LOS		B			C			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.3	13.3	72.2		23.3	13.3	72.2				
Change Period (Y+Rc), s		5.8	4.6	6.2		* 5.8	4.6	6.2				
Max Green Setting (Gmax), s		28.7	8.7	66.0		* 30	16.9	57.8				
Max Q Clear Time (g_c+I1), s		16.6	10.7	21.5		11.1	9.0	21.1				
Green Ext Time (p_c), s		0.9	0.0	3.9		0.2	0.1	7.2				

Intersection Summary		
HCM 6th Ctrl Delay		28.0
HCM 6th LOS		C

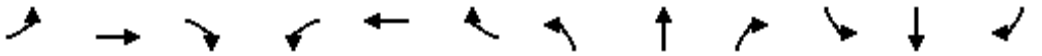
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	62	547	28	1133	20	0	20	0
Future Volume (vph)	62	547	28	1133	20	0	20	0
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	26.6	26.6
Total Split (s)	91.0	91.0	91.0	91.0	29.0	29.0	29.0	29.0
Total Split (%)	75.8%	75.8%	75.8%	75.8%	24.2%	24.2%	24.2%	24.2%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.2	6.2	6.2	6.2		6.2		4.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)	94.5	94.5	94.5	94.5		12.3		13.6
Actuated g/C Ratio	0.83	0.83	0.83	0.83		0.11		0.12
v/c Ratio	0.26	0.24	0.06	0.47		0.32		0.21
Control Delay	7.1	3.4	3.9	4.9		25.4		22.8
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	7.1	3.4	3.9	4.9		25.4		22.8
LOS	A	A	A	A		C		C
Approach Delay		3.7		4.9		25.4		22.8
Approach LOS		A		A		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.4	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay: 5.4	Intersection LOS: A
Intersection Capacity Utilization 67.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 40: Van Vliet Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	547	70	28	1133	72	20	0	36	20	0	17
Future Volume (veh/h)	62	547	70	28	1133	72	20	0	36	20	0	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	68	601	77	31	1245	79	22	0	40	22	0	19
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	333	2423	310	611	2595	164	78	16	88	112	14	65
Arrive On Green	0.79	0.79	0.79	0.79	0.79	0.79	0.09	0.00	0.09	0.09	0.00	0.09
Sat Flow, veh/h	397	3050	390	731	3266	207	364	176	983	679	157	723
Grp Volume(v), veh/h	68	336	342	31	651	673	62	0	0	41	0	0
Grp Sat Flow(s),veh/h/ln	397	1710	1730	731	1710	1763	1524	0	0	1560	0	0
Q Serve(g_s), s	7.3	5.4	5.4	1.2	13.5	13.5	1.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	20.9	5.4	5.4	6.6	13.5	13.5	4.0	0.0	0.0	2.4	0.0	0.0
Prop In Lane	1.00		0.23	1.00		0.12	0.35		0.65	0.54		0.46
Lane Grp Cap(c), veh/h	333	1359	1374	611	1359	1401	182	0	0	191	0	0
V/C Ratio(X)	0.20	0.25	0.25	0.05	0.48	0.48	0.34	0.00	0.00	0.21	0.00	0.00
Avail Cap(c_a), veh/h	333	1359	1374	611	1359	1401	366	0	0	393	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.1	2.8	2.8	3.7	3.6	3.6	46.0	0.0	0.0	45.4	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.4	0.4	0.2	1.2	1.2	1.1	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.1	1.1	0.1	2.9	3.0	1.6	0.0	0.0	1.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.5	3.2	3.2	3.8	4.9	4.8	47.1	0.0	0.0	45.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	A
Approach Vol, veh/h		746			1355			62			41	
Approach Delay, s/veh		3.7			4.8			47.1			45.9	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.7		91.0		15.7		91.0				
Change Period (Y+Rc), s		6.2		6.2		* 6.2		6.2				
Max Green Setting (Gmax), s		22.8		84.8		* 24		84.8				
Max Q Clear Time (g_c+I1), s		6.0		22.9		4.4		15.5				
Green Ext Time (p_c), s		0.2		5.5		0.1		11.2				

Intersection Summary												
HCM 6th Ctrl Delay			6.4									
HCM 6th LOS			A									

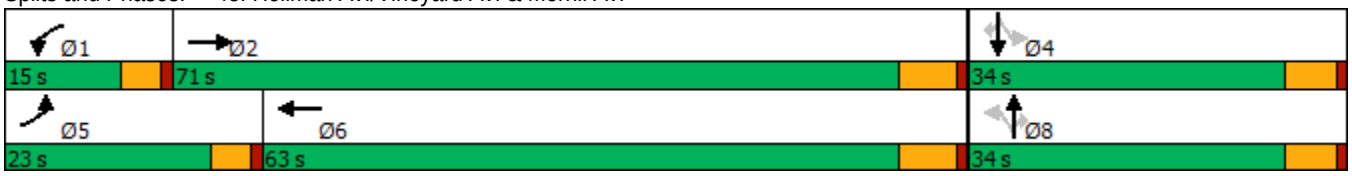
Notes

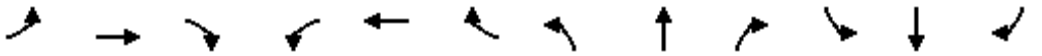
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	32	569	49	1070	156	19	40	28	5	9
Future Volume (vph)	32	569	49	1070	156	19	40	28	5	9
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	1	6		8			4	
Permitted Phases					8		8	4		4
Detector Phase	5	2	1	6	8	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	28.2	9.6	28.2	27.8	27.8	27.8	27.8	27.8	27.8
Total Split (s)	23.0	71.0	15.0	63.0	34.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	19.2%	59.2%	12.5%	52.5%	28.3%	28.3%	28.3%	28.3%	28.3%	28.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	5.8	5.8	5.8	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	Max	None	Max	None	None	None	None	None	None
Act Effct Green (s)	7.0	68.2	7.8	71.2	19.4	19.4	19.4	19.4	19.4	19.4
Actuated g/C Ratio	0.06	0.62	0.07	0.65	0.18	0.18	0.18	0.18	0.18	0.18
v/c Ratio	0.33	0.29	0.46	0.58	0.75	0.06	0.12	0.14	0.02	0.03
Control Delay	59.6	11.7	63.6	14.4	62.9	37.0	0.7	38.6	36.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.6	11.7	63.6	14.4	62.9	37.0	0.7	38.6	36.0	0.1
LOS	E	B	E	B	E	D	A	D	D	A
Approach Delay		14.3		16.4		49.0			29.8	
Approach LOS		B		B		D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 19.4	Intersection LOS: B
Intersection Capacity Utilization 69.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 43: Hellman Av./Vineyard Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	569	2	49	1070	103	156	19	40	28	5	9
Future Volume (veh/h)	32	569	2	49	1070	103	156	19	40	28	5	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	34	612	2	53	1151	111	168	20	43	30	5	10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	49	2254	7	66	2063	199	269	270	228	252	270	228
Arrive On Green	0.03	0.64	0.64	0.04	0.65	0.65	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1619	3497	11	1619	3152	304	1342	1800	1525	1285	1800	1525
Grp Volume(v), veh/h	34	299	315	53	624	638	168	20	43	30	5	10
Grp Sat Flow(s),veh/h/ln	1619	1710	1798	1619	1710	1745	1342	1800	1525	1285	1800	1525
Q Serve(g_s), s	2.1	7.6	7.6	3.3	19.9	20.0	12.3	1.0	2.5	2.1	0.2	0.6
Cycle Q Clear(g_c), s	2.1	7.6	7.6	3.3	19.9	20.0	12.5	1.0	2.5	3.0	0.2	0.6
Prop In Lane	1.00		0.01	1.00		0.17	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	49	1102	1159	66	1119	1143	269	270	228	252	270	228
V/C Ratio(X)	0.69	0.27	0.27	0.81	0.56	0.56	0.62	0.07	0.19	0.12	0.02	0.04
Avail Cap(c_a), veh/h	296	1102	1159	167	1119	1143	445	505	428	420	505	428
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.3	7.7	7.7	47.8	9.4	9.5	41.8	36.7	37.4	38.0	36.4	36.6
Incr Delay (d2), s/veh	6.2	0.6	0.6	8.4	2.0	2.0	2.4	0.1	0.4	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.4	2.5	1.4	6.4	6.5	4.1	0.4	0.9	0.6	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.5	8.3	8.3	56.2	11.4	11.4	44.1	36.9	37.8	38.3	36.5	36.7
LnGrp LOS	D	A	A	E	B	B	D	D	D	D	D	D
Approach Vol, veh/h		648			1315			231			45	
Approach Delay, s/veh		10.7			13.2			42.3			37.7	
Approach LOS		B			B			D			D	

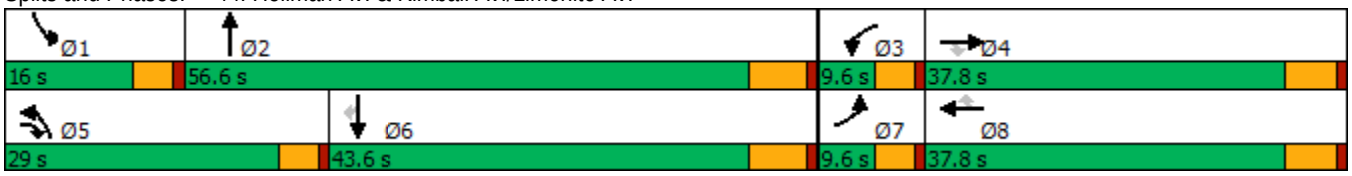
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	71.0		20.9	7.7	72.0		20.9				
Change Period (Y+Rc), s	4.6	6.2		5.8	4.6	6.2		5.8				
Max Green Setting (Gmax), s	10.4	64.8		28.2	18.4	56.8		28.2				
Max Q Clear Time (g_c+I1), s	5.3	9.6		5.0	4.1	22.0		14.5				
Green Ext Time (p_c), s	0.0	3.5		0.1	0.0	9.2		0.6				

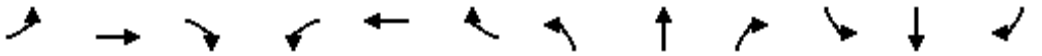
Intersection Summary												
HCM 6th Ctrl Delay			16.0									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	50	8	342	2	2	876	242	41	23	
Future Volume (vph)	50	8	342	2	2	876	242	41	23	
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	NA	Perm	
Protected Phases	7	4	5	3	8	5	2	6		1
Permitted Phases			4						6	
Detector Phase	7	4	5	3	8	5	2	6	6	
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	10.0	5.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	9.6	43.2	43.2	43.2	9.6
Total Split (s)	9.6	37.8	29.0	9.6	37.8	29.0	56.6	43.6	43.6	16.0
Total Split (%)	8.0%	31.5%	24.2%	8.0%	31.5%	24.2%	47.2%	36.3%	36.3%	13%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	5.2	5.2	5.2	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	4.6	6.2	6.2	6.2	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	None	None	Max	Max	None	None	None
Act Effct Green (s)	9.4	13.4	59.3	5.2	13.4	42.4	59.5	19.3	19.3	
Actuated g/C Ratio	0.12	0.16	0.73	0.06	0.16	0.52	0.73	0.24	0.24	
v/c Ratio	0.29	0.03	0.30	0.01	0.00	0.60	0.11	0.05	0.05	
Control Delay	43.1	30.1	2.1	45.0	30.0	26.3	6.2	23.6	0.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	43.1	30.1	2.1	45.0	30.0	26.3	6.2	23.6	0.2	
LOS	D	C	A	D	C	C	A	C	A	
Approach Delay		7.8			37.5		21.9	15.2		
Approach LOS		A			D		C	B		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 81.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 18.1	Intersection LOS: B
Intersection Capacity Utilization 60.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	8	342	2	2	0	876	242	6	0	41	23
Future Volume (veh/h)	50	8	342	2	2	0	876	242	6	0	41	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	53	8	360	2	2	0	922	255	6	0	43	24
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	69	352	744	8	534	238	863	2059	48	2	876	391
Arrive On Green	0.04	0.20	0.20	0.00	0.16	0.00	0.29	0.60	0.60	0.00	0.26	0.26
Sat Flow, veh/h	1619	1800	1525	2956	3420	1525	2956	3415	80	1619	3420	1525
Grp Volume(v), veh/h	53	8	360	2	2	0	922	127	134	0	43	24
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	1710	1525	1478	1710	1786	1619	1710	1525
Q Serve(g_s), s	2.7	0.3	13.2	0.1	0.0	0.0	24.4	2.7	2.7	0.0	0.8	1.0
Cycle Q Clear(g_c), s	2.7	0.3	13.2	0.1	0.0	0.0	24.4	2.7	2.7	0.0	0.8	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	69	352	744	8	534	238	863	1031	1077	2	876	391
V/C Ratio(X)	0.77	0.02	0.48	0.25	0.00	0.00	1.07	0.12	0.12	0.00	0.05	0.06
Avail Cap(c_a), veh/h	97	689	1029	177	1309	584	863	1031	1077	221	1530	682
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	27.2	14.4	41.6	29.8	0.0	29.6	7.1	7.1	0.0	23.4	23.5
Incr Delay (d2), s/veh	13.2	0.0	0.5	5.9	0.0	0.0	50.6	0.2	0.2	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.1	4.0	0.0	0.0	0.0	13.8	0.8	0.9	0.0	0.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.9	27.2	14.8	47.5	29.8	0.0	80.2	7.4	7.4	0.0	23.5	23.6
LnGrp LOS	D	C	B	D	C	A	F	A	A	A	C	C
Approach Vol, veh/h		421			4			1183			67	
Approach Delay, s/veh		19.9			38.6			64.2			23.5	
Approach LOS		B			D			E			C	

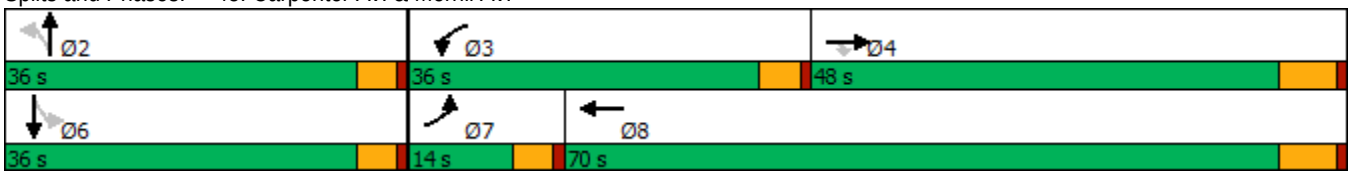
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	56.6	4.8	22.2	29.0	27.6	8.1	18.9
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	11.4	50.4	5.0	32.0	24.4	37.4	5.0	32.0
Max Q Clear Time (g_c+I1), s	0.0	4.7	2.1	15.2	26.4	3.0	4.7	2.0
Green Ext Time (p_c), s	0.0	1.3	0.0	1.1	0.0	0.3	0.0	0.0

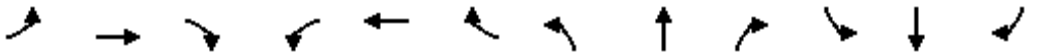
Intersection Summary	
HCM 6th Ctrl Delay	51.3
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	42	561	35	253	1179	23	0	146	0
Future Volume (vph)	42	561	35	253	1179	23	0	146	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	26.6	26.6
Total Split (s)	14.0	48.0	48.0	36.0	70.0	36.0	36.0	36.0	36.0
Total Split (%)	11.7%	40.0%	40.0%	30.0%	58.3%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2		4.6		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	7.0	47.4	47.4	19.7	64.7		14.7		14.7
Actuated g/C Ratio	0.07	0.49	0.49	0.20	0.66		0.15		0.15
v/c Ratio	0.37	0.36	0.05	0.78	0.61		0.48		0.82
Control Delay	55.0	18.4	0.1	53.6	12.8		14.0		45.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	55.0	18.4	0.1	53.6	12.8		14.0		45.8
LOS	D	B	A	D	B		B		D
Approach Delay		19.8			19.5		14.0		45.8
Approach LOS		B			B		B		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.4	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 21.0	Intersection LOS: C
Intersection Capacity Utilization 78.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 45: Carpenter Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	561	35	253	1179	106	23	0	136	146	0	20
Future Volume (veh/h)	42	561	35	253	1179	106	23	0	136	146	0	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	45	597	37	269	1254	113	24	0	145	155	0	21
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	60	1645	734	301	1972	177	68	17	273	244	3	25
Arrive On Green	0.04	0.48	0.48	0.18	0.62	0.62	0.19	0.00	0.19	0.19	0.00	0.19
Sat Flow, veh/h	1714	3420	1525	1714	3173	285	144	90	1412	923	17	127
Grp Volume(v), veh/h	45	597	37	269	674	693	169	0	0	176	0	0
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1749	1646	0	0	1068	0	0
Q Serve(g_s), s	2.7	11.3	1.3	15.8	25.3	25.5	0.0	0.0	0.0	7.2	0.0	0.0
Cycle Q Clear(g_c), s	2.7	11.3	1.3	15.8	25.3	25.5	9.8	0.0	0.0	17.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.16	0.14		0.86	0.88		0.12
Lane Grp Cap(c), veh/h	60	1645	734	301	1063	1087	358	0	0	272	0	0
V/C Ratio(X)	0.75	0.36	0.05	0.89	0.63	0.64	0.47	0.00	0.00	0.65	0.00	0.00
Avail Cap(c_a), veh/h	157	1645	734	524	1063	1087	528	0	0	417	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	49.1	16.8	14.2	41.4	12.1	12.2	37.4	0.0	0.0	41.1	0.0	0.0
Incr Delay (d2), s/veh	6.6	0.6	0.1	4.7	2.9	2.9	1.0	0.0	0.0	2.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	4.1	0.4	6.7	8.6	8.9	3.9	0.0	0.0	4.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.7	17.4	14.3	46.1	15.0	15.0	38.4	0.0	0.0	43.7	0.0	0.0
LnGrp LOS	E	B	B	D	B	B	D	A	A	D	A	A
Approach Vol, veh/h		679			1636			169			176	
Approach Delay, s/veh		19.7			20.1			38.4			43.7	
Approach LOS		B			C			D			D	

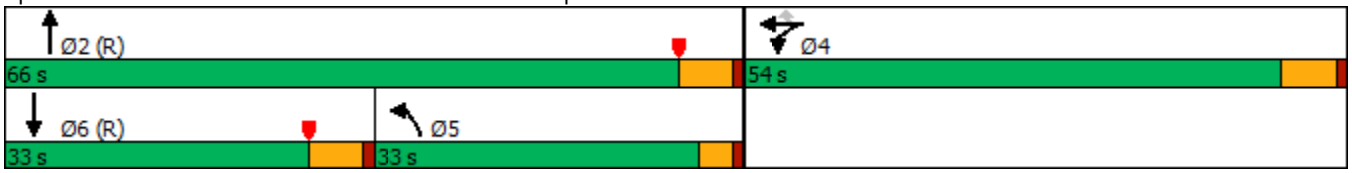
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		24.4	22.6	55.6		24.4	8.2	70.0				
Change Period (Y+Rc), s		4.6	4.6	6.2		4.6	4.6	6.2				
Max Green Setting (Gmax), s		31.4	31.4	41.8		31.4	9.4	63.8				
Max Q Clear Time (g_c+I1), s		11.8	17.8	13.3		19.0	4.7	27.5				
Green Ext Time (p_c), s		1.0	0.3	3.8		0.8	0.0	10.6				

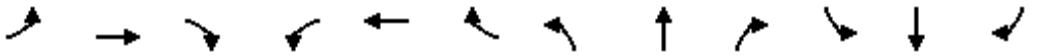
Intersection Summary	
HCM 6th Ctrl Delay	22.8
HCM 6th LOS	C

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	4	540	731	1161	459
Future Volume (vph)	4	540	731	1161	459
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	54.0	54.0	33.0	66.0	33.0
Total Split (%)	45.0%	45.0%	27.5%	55.0%	27.5%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	52.5	52.5	31.5	55.7	20.2
Actuated g/C Ratio	0.44	0.44	0.26	0.46	0.17
v/c Ratio	0.92	0.78	0.87	0.52	0.66
Control Delay	50.3	34.5	39.9	13.2	43.5
Queue Delay	0.0	0.0	1.4	0.7	0.0
Total Delay	50.3	34.5	41.3	13.9	43.5
LOS	D	C	D	B	D
Approach Delay	43.2			24.5	43.5
Approach LOS	D			C	D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 33.9	Intersection LOS: C
Intersection Capacity Utilization 82.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	664	4	540	731	1161	0	0	459	215
Future Volume (veh/h)	0	0	0	664	4	540	731	1161	0	0	459	215
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				722	4	404	795	1262	0	0	499	224
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				720	4	644	977	2602	0	0	859	281
Arrive On Green				0.40	0.40	0.40	0.09	0.17	0.00	0.00	0.18	0.18
Sat Flow, veh/h				1800	10	1610	3510	5358	0	0	5168	1606
Grp Volume(v), veh/h				726	0	404	795	1262	0	0	499	224
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1729	0	0	1634	1606
Q Serve(g_s), s				48.0	0.0	24.1	26.7	26.5	0.0	0.0	11.2	16.0
Cycle Q Clear(g_c), s				48.0	0.0	24.1	26.7	26.5	0.0	0.0	11.2	16.0
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				724	0	644	977	2602	0	0	859	281
V/C Ratio(X)				1.00	0.00	0.63	0.81	0.48	0.00	0.00	0.58	0.80
Avail Cap(c_a), veh/h				724	0	644	977	2602	0	0	1111	364
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.32	0.32	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				36.0	0.0	28.8	51.4	36.0	0.0	0.0	45.4	47.4
Incr Delay (d2), s/veh				34.1	0.0	2.8	1.7	0.2	0.0	0.0	2.9	20.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				26.7	0.0	22.0	12.7	12.2	0.0	0.0	4.7	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				70.1	0.0	31.6	53.1	36.2	0.0	0.0	48.3	67.9
LnGrp LOS				F	A	C	D	D	A	A	D	E
Approach Vol, veh/h					1130			2057			723	
Approach Delay, s/veh					56.4			42.7			54.4	
Approach LOS					E			D			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	66.0	54.0	39.2	26.8
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	60.2	48.0	29.0	* 27
Max Q Clear Time (g_c+I1), s	28.5	50.0	28.7	18.0
Green Ext Time (p_c), s	10.0	0.0	0.1	3.0

Intersection Summary	
HCM 6th Ctrl Delay	48.8
HCM 6th LOS	D

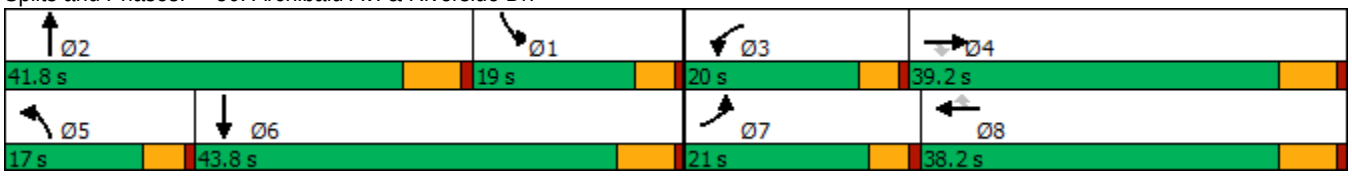
Notes

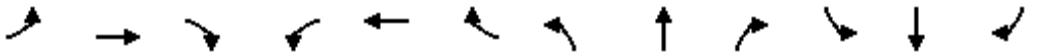
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	261	336	287	120	519	190	370	1270	146	816
Future Volume (vph)	261	336	287	120	519	190	370	1270	146	816
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.0	39.2	39.2	20.0	38.2	38.2	17.0	41.8	19.0	43.8
Total Split (%)	17.5%	32.7%	32.7%	16.7%	31.8%	31.8%	14.2%	34.8%	15.8%	36.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	16.6	27.5	27.5	11.7	22.7	22.7	12.5	34.4	9.9	31.7
Actuated g/C Ratio	0.16	0.26	0.26	0.11	0.22	0.22	0.12	0.33	0.09	0.30
v/c Ratio	1.04	0.38	0.48	0.67	0.71	0.40	1.00	0.84	0.50	0.74
Control Delay	110.1	34.3	6.5	64.4	44.0	7.4	93.6	39.2	52.4	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	110.1	34.3	6.5	64.4	44.0	7.4	93.6	39.2	52.4	34.6
LOS	F	C	A	E	D	A	F	D	D	C
Approach Delay		47.7			38.6			51.1		36.7
Approach LOS		D			D			D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 105.3	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 44.4	Intersection LOS: D
Intersection Capacity Utilization 82.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	261	336	287	120	519	190	370	1270	60	146	816	267
Future Volume (veh/h)	261	336	287	120	519	190	370	1270	60	146	816	267
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	278	357	171	128	552	120	394	1351	61	155	868	206
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	284	1035	453	157	766	335	417	1632	74	221	1165	275
Arrive On Green	0.17	0.29	0.29	0.09	0.21	0.21	0.13	0.32	0.32	0.07	0.28	0.28
Sat Flow, veh/h	1714	3610	1581	1714	3610	1578	3326	5086	230	3326	4190	989
Grp Volume(v), veh/h	278	357	171	128	552	120	394	918	494	155	716	358
Grp Sat Flow(s),veh/h/ln	1714	1805	1581	1714	1805	1578	1663	1729	1858	1663	1729	1721
Q Serve(g_s), s	16.0	7.7	8.6	7.2	14.1	4.8	11.6	24.3	24.3	4.5	18.6	18.8
Cycle Q Clear(g_c), s	16.0	7.7	8.6	7.2	14.1	4.8	11.6	24.3	24.3	4.5	18.6	18.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		0.57
Lane Grp Cap(c), veh/h	284	1035	453	157	766	335	417	1110	596	221	961	478
V/C Ratio(X)	0.98	0.34	0.38	0.82	0.72	0.36	0.94	0.83	0.83	0.70	0.74	0.75
Avail Cap(c_a), veh/h	284	1205	528	267	1169	511	417	1245	669	484	1315	654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	27.9	28.2	44.1	36.2	19.0	42.9	31.0	31.0	45.2	32.5	32.5
Incr Delay (d2), s/veh	46.9	0.2	0.5	3.9	1.3	0.6	30.0	4.3	7.8	1.5	1.5	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	3.2	3.1	3.1	5.9	2.3	6.3	10.0	11.3	1.8	7.4	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.9	28.1	28.7	48.0	37.5	19.7	72.9	35.4	38.8	46.7	34.0	35.7
LnGrp LOS	F	C	C	D	D	B	E	D	D	D	C	D
Approach Vol, veh/h		806			800			1806			1229	
Approach Delay, s/veh		48.9			36.5			44.5			36.1	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.8	37.9	13.6	34.5	17.0	33.7	21.0	27.2
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	14.4	* 36	15.4	33.0	12.4	37.6	16.4	32.0
Max Q Clear Time (g_c+I1), s	6.5	26.3	9.2	10.6	13.6	20.8	18.0	16.1
Green Ext Time (p_c), s	0.1	5.4	0.1	2.5	0.0	6.0	0.0	3.3

Intersection Summary	
HCM 6th Ctrl Delay	41.7
HCM 6th LOS	D

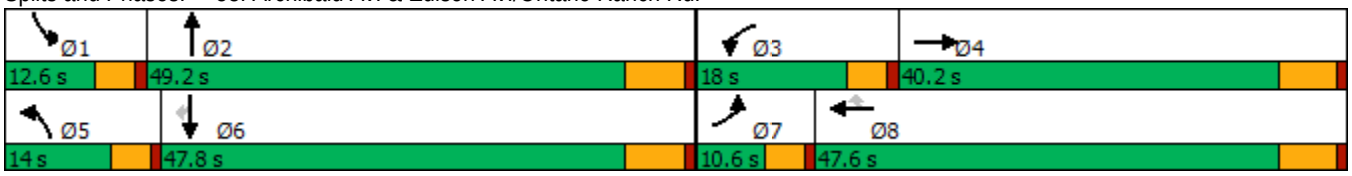
Notes

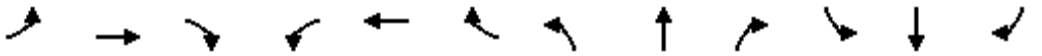
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	279	47	563	744	153	180	1164	475	72	628	206
Future Volume (vph)	54	279	47	563	744	153	180	1164	475	72	628	206
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	10.6	40.2		18.0	47.6	47.6	14.0	49.2		12.6	47.8	47.8
Total Split (%)	8.8%	33.5%		15.0%	39.7%	39.7%	11.7%	41.0%		10.5%	39.8%	39.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.8	22.3	104.5	13.8	32.9	32.9	9.7	41.2	104.5	7.6	36.2	36.2
Actuated g/C Ratio	0.06	0.21	1.00	0.13	0.31	0.31	0.09	0.39	1.00	0.07	0.35	0.35
v/c Ratio	0.34	0.40	0.03	1.49	0.71	0.27	1.25	0.89	0.32	0.64	0.55	0.34
Control Delay	58.4	37.1	0.0	268.2	37.4	5.6	197.5	40.9	0.6	76.2	29.8	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.4	37.1	0.0	268.2	37.4	5.6	197.5	40.9	0.6	76.2	29.8	9.8
LOS	E	D	A	F	D	A	F	D	A	E	C	A
Approach Delay		35.6			123.0			45.9			28.9	
Approach LOS		D			F			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 104.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.49	
Intersection Signal Delay: 66.3	Intersection LOS: E
Intersection Capacity Utilization 84.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	279	47	563	744	153	180	1164	475	72	628	206
Future Volume (veh/h)	54	279	47	563	744	153	180	1164	475	72	628	206
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	56	288	0	580	767	104	186	1200	0	74	647	179
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	119	619		410	955	426	157	1357		92	1219	544
Arrive On Green	0.04	0.18	0.00	0.14	0.28	0.28	0.10	0.40	0.00	0.06	0.36	0.36
Sat Flow, veh/h	2956	3420	1525	2956	3420	1525	1619	3420	1525	1619	3420	1525
Grp Volume(v), veh/h	56	288	0	580	767	104	186	1200	0	74	647	179
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1710	1525	1619	1710	1525	1619	1710	1525
Q Serve(g_s), s	1.8	7.3	0.0	13.4	20.1	5.1	9.4	31.5	0.0	4.4	14.5	8.3
Cycle Q Clear(g_c), s	1.8	7.3	0.0	13.4	20.1	5.1	9.4	31.5	0.0	4.4	14.5	8.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	119	619		410	955	426	157	1357		92	1219	544
V/C Ratio(X)	0.47	0.47		1.42	0.80	0.24	1.18	0.88		0.80	0.53	0.33
Avail Cap(c_a), veh/h	184	1203		410	1465	653	157	1511		134	1462	652
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.4	35.4	0.0	41.6	32.3	26.9	43.6	27.1	0.0	45.0	24.7	22.7
Incr Delay (d2), s/veh	1.1	0.5	0.0	200.7	1.9	0.3	128.7	6.1	0.0	12.3	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.9	0.0	16.0	7.9	1.8	9.2	12.4	0.0	2.0	5.3	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.4	35.9	0.0	242.3	34.2	27.2	172.3	33.2	0.0	57.4	25.0	23.0
LnGrp LOS	D	D		F	C	C	F	C		E	C	C
Approach Vol, veh/h		344	A		1451			1386	A		900	
Approach Delay, s/veh		37.7			116.9			51.9			27.3	
Approach LOS		D			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	44.9	18.0	23.7	14.0	41.0	8.5	33.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	8.0	42.7	13.4	34.0	9.4	41.3	6.0	41.4
Max Q Clear Time (g_c+I1), s	6.4	33.5	15.4	9.3	11.4	16.5	3.8	22.1
Green Ext Time (p_c), s	0.0	4.9	0.0	1.6	0.0	4.5	0.0	4.9

Intersection Summary	
HCM 6th Ctrl Delay	68.4
HCM 6th LOS	E

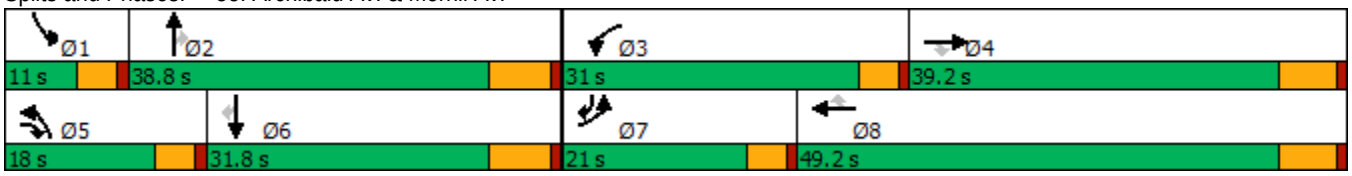
Notes

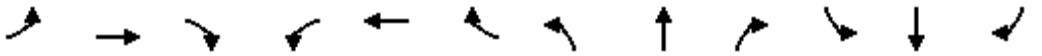
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	323	26	202	83	61	144	749	1344	41	44	607	574
Future Volume (vph)	323	26	202	83	61	144	749	1344	41	44	607	574
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	16.2	9.6	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	9.6
Total Split (s)	21.0	39.2	18.0	31.0	49.2	49.2	18.0	38.8	38.8	11.0	31.8	21.0
Total Split (%)	17.5%	32.7%	15.0%	25.8%	41.0%	41.0%	15.0%	32.3%	32.3%	9.2%	26.5%	17.5%
Yellow Time (s)	3.6	5.2	3.6	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	None
Act Effct Green (s)	13.4	19.7	32.9	18.4	15.1	15.1	13.9	34.6	34.6	5.8	22.0	42.1
Actuated g/C Ratio	0.15	0.23	0.38	0.21	0.17	0.17	0.16	0.40	0.40	0.07	0.25	0.48
v/c Ratio	0.69	0.07	0.29	0.25	0.20	0.37	1.55	1.02	0.06	0.23	0.72	0.61
Control Delay	45.3	28.6	3.3	36.5	32.2	7.0	285.5	58.4	0.2	47.0	37.0	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.3	28.6	3.3	36.5	32.2	7.0	285.5	58.4	0.2	47.0	37.0	7.6
LOS	D	C	A	D	C	A	F	E	A	D	D	A
Approach Delay		29.1			20.9			137.0			23.6	
Approach LOS		C			C			F			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 87	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.55	
Intersection Signal Delay: 81.7	Intersection LOS: F
Intersection Capacity Utilization 82.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	323	26	202	83	61	144	749	1344	41	44	607	574
Future Volume (veh/h)	323	26	202	83	61	144	749	1344	41	44	607	574
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	333	27	153	86	63	53	772	1386	23	45	626	526
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	413	338	538	108	221	188	518	1494	666	116	1064	675
Arrive On Green	0.13	0.19	0.19	0.07	0.12	0.12	0.16	0.44	0.44	0.04	0.31	0.31
Sat Flow, veh/h	3141	1800	1525	1619	1800	1525	3141	3420	1525	2956	3420	1525
Grp Volume(v), veh/h	333	27	153	86	63	53	772	1386	23	45	626	526
Grp Sat Flow(s),veh/h/ln	1570	1800	1525	1619	1800	1525	1570	1710	1525	1478	1710	1525
Q Serve(g_s), s	8.4	1.0	5.9	4.3	2.6	2.6	13.4	31.2	0.7	1.2	12.5	23.8
Cycle Q Clear(g_c), s	8.4	1.0	5.9	4.3	2.6	2.6	13.4	31.2	0.7	1.2	12.5	23.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	413	338	538	108	221	188	518	1494	666	116	1064	675
V/C Ratio(X)	0.81	0.08	0.28	0.79	0.28	0.28	1.49	0.93	0.03	0.39	0.59	0.78
Avail Cap(c_a), veh/h	634	731	871	526	952	807	518	1494	666	233	1064	675
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	27.2	18.9	37.4	32.4	32.4	33.9	21.7	13.1	38.1	23.6	19.3
Incr Delay (d2), s/veh	2.2	0.1	0.3	4.9	0.7	0.8	231.1	10.4	0.0	0.8	0.9	5.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.4	2.0	1.8	1.1	1.0	21.2	12.3	0.2	0.4	4.6	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.5	27.3	19.2	42.3	33.1	33.2	265.1	32.1	13.1	38.9	24.5	25.0
LnGrp LOS	D	C	B	D	C	C	F	C	B	D	C	C
Approach Vol, veh/h		513			202			2181			1197	
Approach Delay, s/veh		30.9			37.0			114.4			25.3	
Approach LOS		C			D			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	42.0	10.0	21.5	18.0	31.8	15.3	16.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	6.4	32.3	26.4	33.0	13.4	25.3	16.4	43.0
Max Q Clear Time (g_c+I1), s	3.2	33.2	6.3	7.9	15.4	25.8	10.4	4.6
Green Ext Time (p_c), s	0.0	0.0	0.1	0.6	0.0	0.0	0.3	0.5

Intersection Summary	
HCM 6th Ctrl Delay	74.0
HCM 6th LOS	E

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	370	1100	994	397	280	568
Future Volume (vph)	370	1100	994	397	280	568
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	39.0	18.0	63.0	39.0	18.0	81.0
Total Split (%)	32.5%	15.0%	52.5%	32.5%	15.0%	67.5%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min
Act Effct Green (s)	16.9	30.3	58.0	80.2	13.1	76.3
Actuated g/C Ratio	0.16	0.29	0.56	0.77	0.13	0.74
v/c Ratio	0.67	1.28	0.97	0.33	0.64	0.41
Control Delay	46.4	162.1	46.1	4.0	51.3	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.4	162.1	46.1	4.0	51.3	7.1
LOS	D	F	D	A	D	A
Approach Delay	133.0		34.1			21.7
Approach LOS	F		C			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.28	
Intersection Signal Delay: 70.4	Intersection LOS: E
Intersection Capacity Utilization 99.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	370	1100	994	397	280	568
Future Volume (veh/h)	370	1100	994	397	280	568
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1976	1976
Adj Flow Rate, veh/h	385	1000	1035	367	292	592
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	999	1081	925	1242	354	1237
Arrive On Green	0.28	0.28	0.49	0.49	0.10	0.63
Sat Flow, veh/h	3510	2834	1900	1610	3651	1976
Grp Volume(v), veh/h	385	1000	1035	367	292	592
Grp Sat Flow(s),veh/h/ln	1755	1417	1900	1610	1825	1976
Q Serve(g_s), s	10.4	33.7	57.7	8.0	9.3	18.9
Cycle Q Clear(g_c), s	10.4	33.7	57.7	8.0	9.3	18.9
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	999	1081	925	1242	354	1237
V/C Ratio(X)	0.39	0.93	1.12	0.30	0.83	0.48
Avail Cap(c_a), veh/h	999	1081	925	1242	401	1268
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	35.0	30.4	4.0	52.5	11.8
Incr Delay (d2), s/veh	0.1	12.9	67.8	0.2	12.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	14.7	41.0	6.3	4.7	7.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.2	47.9	98.2	4.2	64.6	11.9
LnGrp LOS	C	D	F	A	E	B
Approach Vol, veh/h	1385		1402			884
Approach Delay, s/veh	44.1		73.5			29.3
Approach LOS	D		E			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	16.5	63.0			79.5	39.0
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	13.0	57.7			* 76	33.7
Max Q Clear Time (g_c+I1), s	11.3	59.7			20.9	35.7
Green Ext Time (p_c), s	0.2	0.0			2.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	51.8
HCM 6th LOS	D

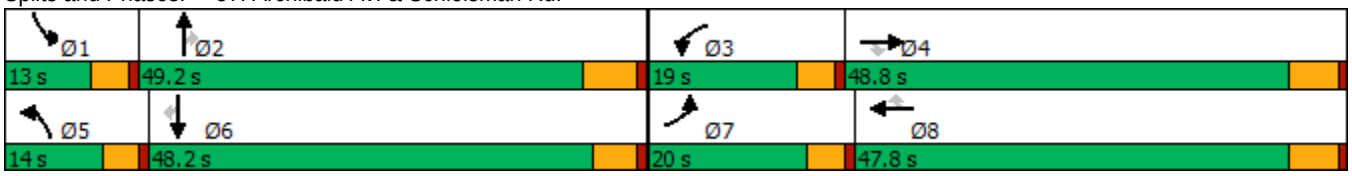
Notes

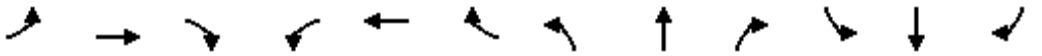
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	530	452	155	285	819	171	298	941	247	123	521	539
Future Volume (vph)	530	452	155	285	819	171	298	941	247	123	521	539
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	20.0	48.8	48.8	19.0	47.8	47.8	14.0	49.2	49.2	13.0	48.2	48.2
Total Split (%)	15.4%	37.5%	37.5%	14.6%	36.8%	36.8%	10.8%	37.8%	37.8%	10.0%	37.1%	37.1%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	Max	Max	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	15.5	43.3	43.3	13.4	41.2	41.2	9.5	37.2	37.2	7.8	36.4	36.4
Actuated g/C Ratio	0.13	0.35	0.35	0.11	0.33	0.33	0.08	0.30	0.30	0.06	0.30	0.30
v/c Ratio	1.30	0.25	0.26	0.81	0.48	0.30	1.19	0.61	0.40	0.60	0.34	0.92
Control Delay	191.9	30.0	5.4	70.8	34.2	9.7	165.4	38.1	5.4	69.0	34.1	43.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	191.9	30.0	5.4	70.8	34.2	9.7	165.4	38.1	5.4	69.0	34.1	43.8
LOS	F	C	A	E	C	A	F	D	A	E	C	D
Approach Delay		102.1			39.1			58.2			42.2	
Approach LOS		F			D			E			D	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 123.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.30	
Intersection Signal Delay: 59.5	Intersection LOS: E
Intersection Capacity Utilization 83.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	530	452	155	285	819	171	298	941	247	123	521	539
Future Volume (veh/h)	530	452	155	285	819	171	298	941	247	123	521	539
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	589	502	92	317	910	113	331	1046	137	137	579	360
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	475	2088	580	375	1931	539	290	1684	476	195	1535	428
Arrive On Green	0.20	0.55	0.37	0.16	0.51	0.34	0.08	0.44	0.30	0.05	0.40	0.27
Sat Flow, veh/h	3619	5700	1584	3619	5700	1590	3619	5700	1610	3619	5700	1588
Grp Volume(v), veh/h	589	502	92	317	910	113	331	1046	137	137	579	360
Grp Sat Flow(s),veh/h/ln	1810	1900	1584	1810	1900	1590	1810	1900	1610	1810	1900	1588
Q Serve(g_s), s	15.4	5.4	4.6	10.0	12.1	5.9	9.4	16.5	7.7	4.4	8.4	25.1
Cycle Q Clear(g_c), s	15.4	5.4	4.6	10.0	12.1	5.9	9.4	16.5	7.7	4.4	8.4	25.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	475	2088	580	375	1931	539	290	1684	476	195	1535	428
V/C Ratio(X)	1.24	0.24	0.16	0.85	0.47	0.21	1.14	0.62	0.29	0.70	0.38	0.84
Avail Cap(c_a), veh/h	475	2088	580	444	2040	569	290	2088	590	259	2079	579
HCM Platoon Ratio	1.50	1.50	1.00	1.50	1.50	1.00	1.00	1.50	1.00	1.00	1.50	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	18.0	25.0	48.7	22.1	27.6	54.0	27.6	31.8	54.6	28.1	40.5
Incr Delay (d2), s/veh	125.1	0.3	0.6	10.8	0.2	0.2	96.8	0.4	0.3	2.8	0.2	8.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.4	2.2	1.8	4.7	4.6	2.2	8.0	6.2	2.9	2.0	3.5	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	172.2	18.2	25.6	59.4	22.2	27.8	150.8	28.0	32.2	57.4	28.2	48.7
LnGrp LOS	F	B	C	E	C	C	F	C	C	E	C	D
Approach Vol, veh/h		1183			1340			1514			1076	
Approach Delay, s/veh		95.5			31.5			55.2			38.8	
Approach LOS		F			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	40.9	16.8	48.8	14.0	37.8	20.0	45.6
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	8.4	43.0	14.4	43.0	9.4	* 43	15.4	42.0
Max Q Clear Time (g_c+I1), s	6.4	18.5	12.0	7.4	11.4	27.1	17.4	14.1
Green Ext Time (p_c), s	0.0	7.6	0.2	3.6	0.0	4.3	0.0	6.8

Intersection Summary	
HCM 6th Ctrl Delay	54.9
HCM 6th LOS	D

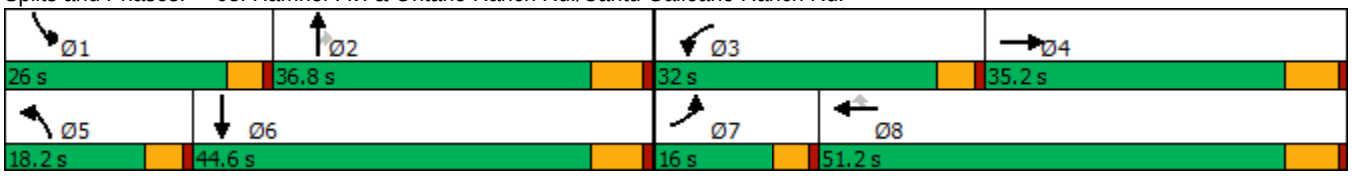
Notes

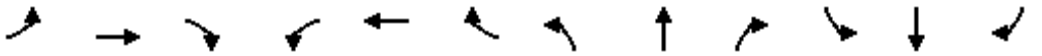
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	110	700	303	1231	224	190	778	556	170	233
Future Volume (vph)	110	700	303	1231	224	190	778	556	170	233
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.2	9.6	38.2	38.2	9.6	35.2	35.2	9.6	38.2
Total Split (s)	16.0	35.2	32.0	51.2	51.2	18.2	36.8	36.8	26.0	44.6
Total Split (%)	12.3%	27.1%	24.6%	39.4%	39.4%	14.0%	28.3%	28.3%	20.0%	34.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	None	Max	None	None	None	None	None	None	None
Act Effct Green (s)	12.1	25.8	28.3	42.0	42.0	12.3	30.1	30.1	12.3	30.1
Actuated g/C Ratio	0.11	0.23	0.25	0.37	0.37	0.11	0.27	0.27	0.11	0.27
v/c Ratio	0.38	0.55	0.45	0.70	0.35	0.65	0.61	0.88	0.58	0.27
Control Delay	53.5	38.8	40.0	32.5	4.5	59.6	38.9	27.6	56.6	25.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.5	38.8	40.0	32.5	4.5	59.6	38.9	27.6	56.6	25.8
LOS	D	D	D	C	A	E	D	C	E	C
Approach Delay		40.6		30.2			37.4			36.1
Approach LOS		D		C			D			D

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 112.8	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 35.2	Intersection LOS: D
Intersection Capacity Utilization 64.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	700	91	303	1231	224	190	778	556	170	233	102
Future Volume (veh/h)	110	700	91	303	1231	224	190	778	556	170	233	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	125	795	-69	344	1399	186	216	884	480	193	265	43
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	343	1373	0	801	1841	520	289	1663	470	268	1374	215
Arrive On Green	0.11	0.29	0.00	0.26	0.51	0.34	0.09	0.31	0.31	0.09	0.30	0.28
Sat Flow, veh/h	3048	7200	0	3048	5400	1525	3048	5400	1525	3048	4557	713
Grp Volume(v), veh/h	125	726	0	344	1399	186	216	884	480	193	207	101
Grp Sat Flow(s),veh/h/ln	1524	1800	0	1524	1800	1525	1524	1800	1525	1524	1800	1671
Q Serve(g_s), s	4.0	9.0	0.0	10.0	22.0	9.7	7.4	14.4	32.8	6.6	4.5	4.8
Cycle Q Clear(g_c), s	4.0	9.0	0.0	10.0	22.0	9.7	7.4	14.4	32.8	6.6	4.5	4.8
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		0.43
Lane Grp Cap(c), veh/h	343	1373	0	801	1841	520	289	1663	470	268	1085	504
V/C Ratio(X)	0.36	0.53	0.00	0.43	0.76	0.36	0.75	0.53	1.02	0.72	0.19	0.20
Avail Cap(c_a), veh/h	343	2109	0	801	2393	676	406	1663	470	630	1372	637
HCM Platoon Ratio	1.00	1.50	1.00	1.00	1.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	34.0	0.0	32.6	22.5	26.3	47.0	30.5	36.8	47.3	27.6	28.0
Incr Delay (d2), s/veh	3.0	0.3	0.0	1.7	1.1	0.4	2.5	0.3	47.1	1.4	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	3.5	0.0	3.7	6.9	3.4	2.8	5.9	17.5	2.4	1.9	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.7	34.3	0.0	34.3	23.6	26.8	49.5	30.8	84.0	48.6	27.7	28.2
LnGrp LOS	D	C	A	C	C	C	D	C	F	D	C	C
Approach Vol, veh/h		851			1929			1580			501	
Approach Delay, s/veh		36.1			25.8			49.5			35.8	
Approach LOS		D			C			D			D	

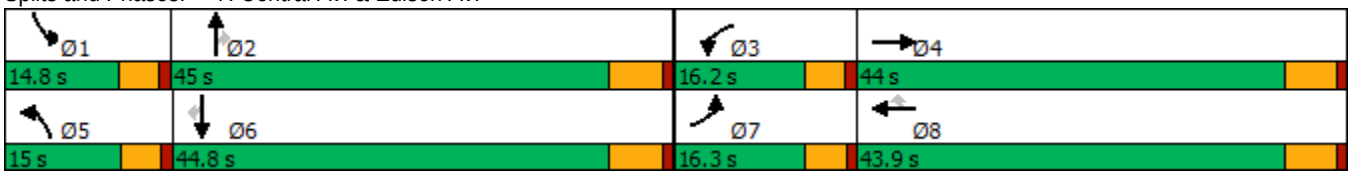
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	36.8	32.0	24.3	14.1	36.1	16.0	40.3
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	21.4	30.6	27.4	29.0	13.6	38.4	11.4	45.0
Max Q Clear Time (g_c+I1), s	8.6	34.8	12.0	11.0	9.4	6.8	6.0	24.0
Green Ext Time (p_c), s	0.2	0.0	0.5	4.0	0.1	1.7	0.1	10.1

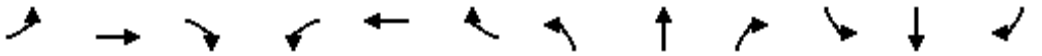
Intersection Summary	
HCM 6th Ctrl Delay	36.4
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	238	988	278	795	117	96	1094	449	127	877	148
Future Volume (vph)	238	988	278	795	117	96	1094	449	127	877	148
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	16.3	44.0	16.2	43.9	43.9	15.0	45.0	45.0	14.8	44.8	44.8
Total Split (%)	13.6%	36.7%	13.5%	36.6%	36.6%	12.5%	37.5%	37.5%	12.3%	37.3%	37.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	11.9	40.0	12.2	40.3	40.3	10.2	41.0	41.0	10.8	41.6	41.6
Actuated g/C Ratio	0.10	0.33	0.10	0.34	0.34	0.08	0.34	0.34	0.09	0.35	0.35
v/c Ratio	0.79	0.99	0.90	0.71	0.20	0.72	0.97	0.69	0.90	0.76	0.26
Control Delay	70.9	63.7	84.4	39.2	5.8	81.3	58.4	22.4	107.2	40.2	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.9	63.7	84.4	39.2	5.8	81.3	58.4	22.4	107.2	40.2	10.7
LOS	E	E	F	D	A	F	E	C	F	D	B
Approach Delay		65.0		46.5			49.9			43.8	
Approach LOS		E		D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 51.6	Intersection LOS: D
Intersection Capacity Utilization 94.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	988	94	278	795	117	96	1094	449	127	877	148
Future Volume (veh/h)	238	988	94	278	795	117	96	1094	449	127	877	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	245	1019	93	287	820	110	99	1128	382	131	904	119
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	308	1055	96	319	1152	514	128	1168	512	146	1206	538
Arrive On Green	0.10	0.33	0.32	0.10	0.34	0.34	0.08	0.34	0.34	0.09	0.35	0.35
Sat Flow, veh/h	3141	3165	289	3141	3420	1525	1619	3420	1499	1619	3420	1524
Grp Volume(v), veh/h	245	550	562	287	820	110	99	1128	382	131	904	119
Grp Sat Flow(s),veh/h/ln	1570	1710	1743	1570	1710	1525	1619	1710	1499	1619	1710	1524
Q Serve(g_s), s	9.2	38.0	38.0	10.8	25.1	6.2	7.2	38.9	27.0	9.6	27.9	6.6
Cycle Q Clear(g_c), s	9.2	38.0	38.0	10.8	25.1	6.2	7.2	38.9	27.0	9.6	27.9	6.6
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	308	570	581	319	1152	514	128	1169	512	146	1206	538
V/C Ratio(X)	0.79	0.97	0.97	0.90	0.71	0.21	0.77	0.97	0.75	0.90	0.75	0.22
Avail Cap(c_a), veh/h	322	570	581	319	1152	514	148	1169	512	146	1206	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.9	39.3	39.5	53.3	34.7	28.4	54.2	38.8	34.9	54.1	34.2	27.3
Incr Delay (d2), s/veh	11.3	30.1	29.9	25.9	3.8	1.0	16.2	18.5	5.9	45.0	2.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	19.9	20.3	5.3	10.6	2.3	3.4	18.5	10.3	5.6	11.5	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.2	69.4	69.4	79.2	38.5	29.4	70.4	57.3	40.8	99.1	36.8	27.5
LnGrp LOS	E	E	E	E	D	C	E	E	D	F	D	C
Approach Vol, veh/h		1357			1217			1609			1154	
Approach Delay, s/veh		68.5			47.3			54.2			42.9	
Approach LOS		E			D			D			D	

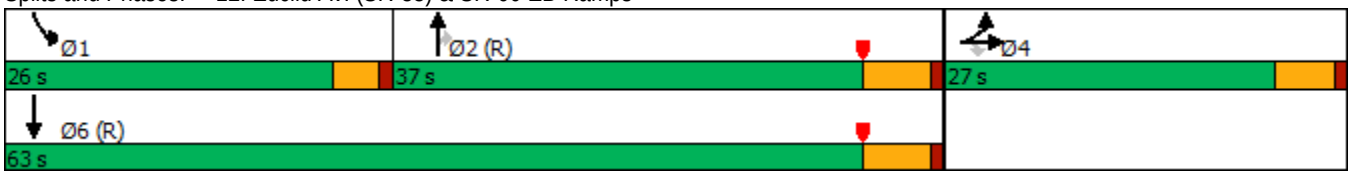
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	45.0	16.2	44.0	13.5	46.3	15.8	44.4
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.2	39.2	11.6	38.2	10.4	39.0	11.7	38.1
Max Q Clear Time (g_c+I1), s	11.6	40.9	12.8	40.0	9.2	29.9	11.2	27.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.1	0.0	4.1

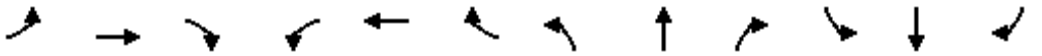
Intersection Summary	
HCM 6th Ctrl Delay	53.8
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	459	3	501	1346	721	414	1418
Future Volume (vph)	459	3	501	1346	721	414	1418
Turn Type	Split	NA	Perm	NA	Perm	Prot	NA
Protected Phases	4	4		2		1	6
Permitted Phases			4		2		
Detector Phase	4	4	4	2	2	1	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	27.0	27.0	27.0	37.0	37.0	26.0	63.0
Total Split (%)	30.0%	30.0%	30.0%	41.1%	41.1%	28.9%	70.0%
Yellow Time (s)	4.0	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	20.4	20.4	20.4	32.9	32.9	22.1	59.1
Actuated g/C Ratio	0.23	0.23	0.23	0.37	0.37	0.25	0.66
v/c Ratio	0.88	0.84	0.76	1.04	0.77	0.95	0.61
Control Delay	57.8	47.8	37.1	65.7	11.9	52.7	4.5
Queue Delay	59.9	59.6	0.0	0.0	0.0	0.0	0.7
Total Delay	117.7	107.4	37.1	65.7	11.9	52.7	5.2
LOS	F	F	D	E	B	D	A
Approach Delay		88.6		46.9			16.0
Approach LOS		F		D			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 43.5	Intersection LOS: D
Intersection Capacity Utilization 103.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	459	3	501	0	0	0	0	1346	721	414	1418	0
Future Volume (veh/h)	459	3	501	0	0	0	0	1346	721	414	1418	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	607	0	297				0	1373	542	422	1447	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	762	0	339				0	1386	604	442	2429	0
Arrive On Green	0.21	0.00	0.21				0.00	0.38	0.38	0.49	1.00	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1572	1810	3705	0
Grp Volume(v), veh/h	607	0	297				0	1373	542	422	1447	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1572	1810	1805	0
Q Serve(g_s), s	14.3	0.0	16.1				0.0	34.0	29.2	20.1	0.0	0.0
Cycle Q Clear(g_c), s	14.3	0.0	16.1				0.0	34.0	29.2	20.1	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	762	0	339				0	1386	604	442	2429	0
V/C Ratio(X)	0.80	0.00	0.88				0.00	0.99	0.90	0.95	0.60	0.00
Avail Cap(c_a), veh/h	885	0	394				0	1386	604	442	2429	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.09	0.09	0.09	0.09	0.00
Uniform Delay (d), s/veh	33.7	0.0	34.4				0.0	27.6	26.1	22.5	0.0	0.0
Incr Delay (d2), s/veh	3.8	0.0	16.1				0.0	5.4	2.2	5.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	0.0	7.4				0.0	14.4	10.4	5.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.5	0.0	50.5				0.0	32.9	28.3	28.0	0.1	0.0
LnGrp LOS	D	A	D				A	C	C	C	A	A
Approach Vol, veh/h		904						1915			1869	
Approach Delay, s/veh		41.7						31.6			6.4	
Approach LOS		D						C			A	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	26.0	40.1		23.9		66.1						
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5						
Max Green Setting (Gmax), s	22.0	31.5		22.0		57.5						
Max Q Clear Time (g_c+I1), s	22.1	36.0		18.1		2.0						
Green Ext Time (p_c), s	0.0	0.0		0.9		23.6						

Intersection Summary												
HCM 6th Ctrl Delay			23.5									
HCM 6th LOS			C									

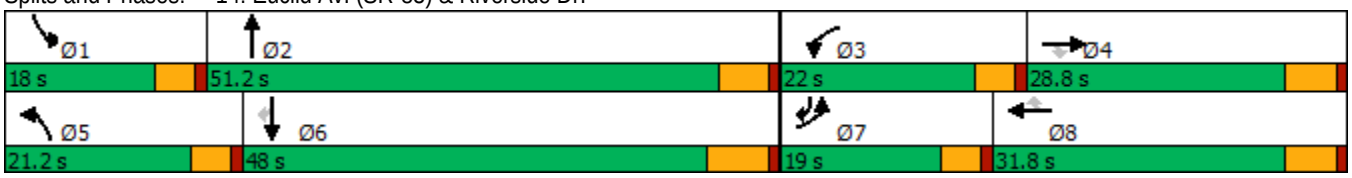
Notes

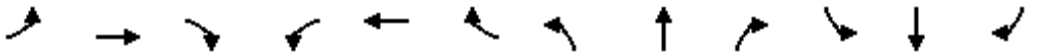
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	167	505	102	208	451	71	124	1563	153	1219	212
Future Volume (vph)	167	505	102	208	451	71	124	1563	153	1219	212
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2	1	6	7
Permitted Phases			4			8					6
Detector Phase	7	4	4	3	8	8	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	9.6	34.5	9.6
Total Split (s)	19.0	28.8	28.8	22.0	31.8	31.8	21.2	51.2	18.0	48.0	19.0
Total Split (%)	15.8%	24.0%	24.0%	18.3%	26.5%	26.5%	17.7%	42.7%	15.0%	40.0%	15.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	Max	None
Act Effct Green (s)	14.1	21.5	21.5	17.1	24.5	24.5	13.1	45.9	13.0	44.6	60.6
Actuated g/C Ratio	0.12	0.18	0.18	0.15	0.21	0.21	0.11	0.39	0.11	0.38	0.51
v/c Ratio	0.91	0.85	0.28	0.93	0.66	0.18	0.72	1.01	0.89	0.68	0.26
Control Delay	96.5	60.1	8.4	93.7	48.0	2.9	72.5	58.6	96.9	33.8	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.5	60.1	8.4	93.7	48.0	2.9	72.5	58.6	96.9	33.8	5.6
LOS	F	E	A	F	D	A	E	E	F	C	A
Approach Delay		61.2			56.6			59.5		36.1	
Approach LOS		E			E			E		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 52.0	Intersection LOS: D
Intersection Capacity Utilization 92.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	505	102	208	451	71	124	1563	268	153	1219	212
Future Volume (veh/h)	167	505	102	208	451	71	124	1563	268	153	1219	212
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	174	526	81	217	470	58	129	1628	225	159	1270	130
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	196	600	268	237	687	306	153	1681	232	182	1981	792
Arrive On Green	0.12	0.18	0.18	0.15	0.20	0.20	0.09	0.38	0.38	0.11	0.40	0.40
Sat Flow, veh/h	1619	3420	1525	1619	3420	1523	1619	4366	601	1619	4914	1506
Grp Volume(v), veh/h	174	526	81	217	470	58	129	1220	633	159	1270	130
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1710	1523	1619	1638	1692	1619	1638	1506
Q Serve(g_s), s	12.6	17.8	5.5	15.7	15.2	3.8	9.3	43.4	43.7	11.5	24.8	5.3
Cycle Q Clear(g_c), s	12.6	17.8	5.5	15.7	15.2	3.8	9.3	43.4	43.7	11.5	24.8	5.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	196	600	268	237	687	306	153	1261	651	182	1981	792
V/C Ratio(X)	0.89	0.88	0.30	0.92	0.68	0.19	0.84	0.97	0.97	0.87	0.64	0.16
Avail Cap(c_a), veh/h	196	661	295	237	747	333	226	1261	651	182	1981	792
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.5	47.8	42.7	50.1	44.1	39.5	53.0	35.9	36.0	52.0	28.6	14.7
Incr Delay (d2), s/veh	34.4	11.9	0.6	36.1	2.3	0.3	11.6	18.7	29.0	32.8	1.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	8.4	2.1	8.5	6.5	1.4	4.1	19.1	21.8	6.2	9.7	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.9	59.7	43.3	86.1	46.4	39.8	64.6	54.6	65.0	84.7	30.2	15.2
LnGrp LOS	F	E	D	F	D	D	E	D	E	F	C	B
Approach Vol, veh/h		781			745			1982			1559	
Approach Delay, s/veh		63.8			57.5			58.5			34.5	
Approach LOS		E			E			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	52.3	22.0	26.7	15.8	54.5	19.0	29.7
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	13.4	* 46	17.4	23.0	16.6	41.5	14.4	26.0
Max Q Clear Time (g_c+I1), s	13.5	45.7	17.7	19.8	11.3	26.8	14.6	17.2
Green Ext Time (p_c), s	0.0	0.0	0.0	1.1	0.1	7.7	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	51.8
HCM 6th LOS	D

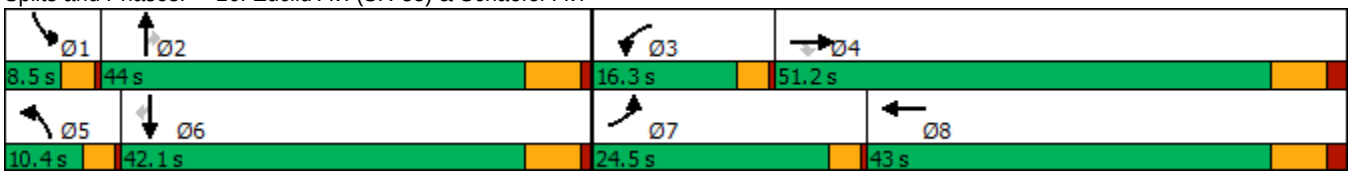
Notes

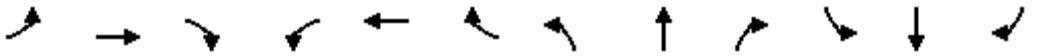
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	321	320	210	87	85	103	1771	91	32	1410	128
Future Volume (vph)	321	320	210	87	85	103	1771	91	32	1410	128
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	24.5	51.2	51.2	16.3	43.0	10.4	44.0	44.0	8.5	42.1	42.1
Total Split (%)	20.4%	42.7%	42.7%	13.6%	35.8%	8.7%	36.7%	36.7%	7.1%	35.1%	35.1%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	21.3	28.3	28.3	10.9	14.7	7.0	40.9	40.9	5.1	35.2	35.2
Actuated g/C Ratio	0.22	0.29	0.29	0.11	0.15	0.07	0.42	0.42	0.05	0.36	0.36
v/c Ratio	0.93	0.63	0.37	0.49	0.42	0.91	0.88	0.13	0.39	0.81	0.20
Control Delay	74.2	37.6	7.4	54.5	36.7	112.4	34.6	2.1	63.7	34.3	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.2	37.6	7.4	54.5	36.7	112.4	34.6	2.1	63.7	34.3	5.6
LOS	E	D	A	D	D	F	C	A	E	C	A
Approach Delay		44.0			44.5		37.2			32.6	
Approach LOS		D			D		D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 98.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 37.2	Intersection LOS: D
Intersection Capacity Utilization 84.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	321	320	210	87	85	28	103	1771	91	32	1410	128
Future Volume (veh/h)	321	320	210	87	85	28	103	1771	91	32	1410	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	324	323	171	88	86	23	104	1789	74	32	1424	99
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	356	388	329	165	133	36	128	2064	641	50	1827	567
Arrive On Green	0.22	0.22	0.22	0.10	0.10	0.10	0.08	0.42	0.42	0.03	0.37	0.37
Sat Flow, veh/h	1619	1800	1525	1619	1368	366	1619	4914	1525	1619	4914	1525
Grp Volume(v), veh/h	324	323	171	88	0	109	104	1789	74	32	1424	99
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	0	1734	1619	1638	1525	1619	1638	1525
Q Serve(g_s), s	16.8	14.8	8.6	4.5	0.0	5.2	5.5	28.7	2.6	1.7	22.1	3.8
Cycle Q Clear(g_c), s	16.8	14.8	8.6	4.5	0.0	5.2	5.5	28.7	2.6	1.7	22.1	3.8
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	388	329	165	0	169	128	2064	641	50	1827	567
V/C Ratio(X)	0.91	0.83	0.52	0.53	0.00	0.64	0.81	0.87	0.12	0.64	0.78	0.17
Avail Cap(c_a), veh/h	394	922	781	240	0	723	129	2163	672	94	2055	638
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.8	32.4	29.9	36.8	0.0	37.5	39.1	22.8	15.3	41.3	24.0	18.2
Incr Delay (d2), s/veh	22.4	3.5	0.9	1.0	0.0	3.0	28.7	3.9	0.1	4.9	1.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	6.4	3.0	1.7	0.0	2.2	3.0	10.0	0.8	0.7	7.7	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.2	35.9	30.9	37.8	0.0	40.6	67.8	26.7	15.3	46.2	25.7	18.4
LnGrp LOS	E	D	C	D	A	D	E	C	B	D	C	B
Approach Vol, veh/h		818			197			1967			1555	
Approach Delay, s/veh		42.5			39.3			28.4			25.7	
Approach LOS		D			D			C			C	

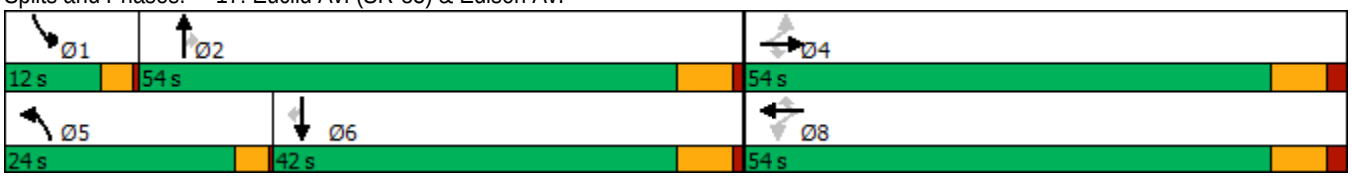
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	42.3	12.3	25.6	10.3	38.1	22.5	15.4
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	5.0	38.0	12.8	44.2	6.9	36.1	21.0	36.0
Max Q Clear Time (g_c+I1), s	3.7	30.7	6.5	16.8	7.5	24.1	18.8	7.2
Green Ext Time (p_c), s	0.0	5.6	0.0	1.8	0.0	6.9	0.1	0.4

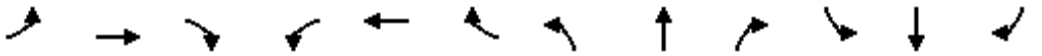
Intersection Summary	
HCM 6th Ctrl Delay	30.5
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	304	591	342	48	456	134	202	1631	83	127	1471	200
Future Volume (vph)	304	591	342	48	456	134	202	1631	83	127	1471	200
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	54.0	54.0	54.0	54.0	54.0	54.0	24.0	54.0	54.0	12.0	42.0	42.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	20.0%	45.0%	45.0%	10.0%	35.0%	35.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	47.1	47.1	47.1	47.1	47.1	47.1	12.4	46.6	46.6	8.0	42.2	42.2
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.10	0.39	0.39	0.07	0.36	0.36
v/c Ratio	1.62	0.87	0.45	0.50	0.67	0.21	0.65	0.89	0.14	0.64	0.88	0.33
Control Delay	327.1	47.6	6.4	48.9	35.3	10.4	60.2	40.0	8.2	68.1	43.0	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	327.1	47.6	6.4	48.9	35.3	10.4	60.2	40.0	8.2	68.1	43.0	11.2
LOS	F	D	A	D	D	B	E	D	A	E	D	B
Approach Delay		104.9			31.1			40.7			41.3	
Approach LOS		F			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.2	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.62	
Intersection Signal Delay: 54.0	Intersection LOS: D
Intersection Capacity Utilization 101.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	304	591	342	48	456	134	202	1631	83	127	1471	200
Future Volume (veh/h)	304	591	342	48	456	134	202	1631	83	127	1471	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	320	622	278	51	480	135	213	1717	79	134	1548	179
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	208	729	618	116	729	610	270	1938	601	184	1804	560
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.09	0.39	0.39	0.06	0.37	0.37
Sat Flow, veh/h	775	1800	1525	594	1800	1506	3141	4914	1523	3141	4914	1525
Grp Volume(v), veh/h	320	622	278	51	480	135	213	1717	79	134	1548	179
Grp Sat Flow(s),veh/h/ln	775	1800	1525	594	1800	1506	1570	1638	1523	1570	1638	1525
Q Serve(g_s), s	21.9	36.5	15.4	9.9	25.1	6.8	7.7	37.8	3.8	4.9	33.8	9.8
Cycle Q Clear(g_c), s	47.0	36.5	15.4	46.4	25.1	6.8	7.7	37.8	3.8	4.9	33.8	9.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	208	729	618	116	729	610	270	1938	601	184	1804	560
V/C Ratio(X)	1.54	0.85	0.45	0.44	0.66	0.22	0.79	0.89	0.13	0.73	0.86	0.32
Avail Cap(c_a), veh/h	208	729	618	116	729	610	555	2032	630	230	1804	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.4	31.4	25.1	52.5	28.0	22.6	52.0	32.7	22.5	53.7	33.9	26.3
Incr Delay (d2), s/veh	264.7	9.7	0.5	2.6	2.2	0.2	2.0	5.0	0.1	5.8	4.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.3	16.8	5.4	1.5	10.7	2.3	3.0	14.6	1.3	2.0	13.1	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	315.1	41.1	25.6	55.1	30.2	22.8	54.0	37.7	22.6	59.5	38.3	26.7
LnGrp LOS	F	D	C	E	C	C	D	D	C	E	D	C
Approach Vol, veh/h		1220			666			2009			1861	
Approach Delay, s/veh		109.4			30.6			38.8			38.7	
Approach LOS		F			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.3	51.8		54.0	13.5	48.6		54.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	8.5	48.0		47.0	20.5	36.0		47.0				
Max Q Clear Time (g_c+I1), s	6.9	39.8		49.0	9.7	35.8		48.4				
Green Ext Time (p_c), s	0.0	6.0		0.0	0.3	0.2		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		52.8	
HCM 6th LOS		D	

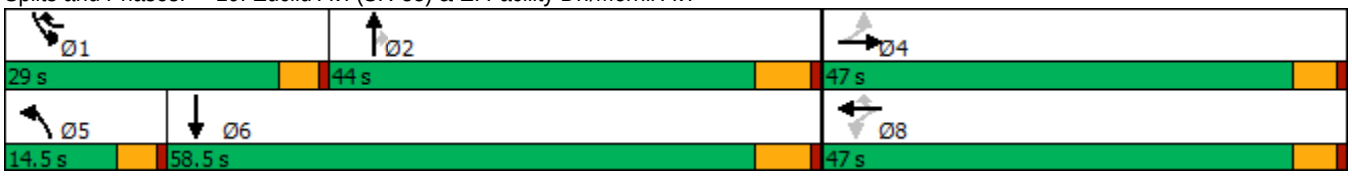
Notes

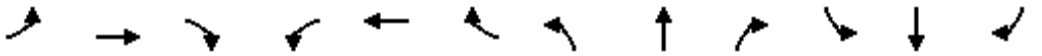
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	13	33	458	2	392	5	1433	345	359	1462
Future Volume (vph)	13	33	458	2	392	5	1433	345	359	1462
Turn Type	Perm	NA	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	1	5	2		1	6
Permitted Phases	4		8		8			2		
Detector Phase	4	4	8	8	1	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	14.5	28.0	28.0	14.5	28.0
Total Split (s)	47.0	47.0	47.0	47.0	29.0	14.5	44.0	44.0	29.0	58.5
Total Split (%)	39.2%	39.2%	39.2%	39.2%	24.2%	12.1%	36.7%	36.7%	24.2%	48.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	4.5	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)		42.0	42.0	42.0	71.5	10.0	38.0	38.0	24.5	64.1
Actuated g/C Ratio		0.35	0.35	0.35	0.60	0.08	0.32	0.32	0.20	0.53
v/c Ratio		0.11	1.14	0.00	0.47	0.04	1.01	0.66	1.20	0.61
Control Delay		21.7	123.0	25.5	14.6	51.4	66.7	29.5	157.4	21.4
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		21.7	123.0	25.5	14.6	51.4	66.7	29.5	157.4	21.4
LOS		C	F	C	B	D	E	C	F	C
Approach Delay		21.7		72.9			59.5			48.2
Approach LOS		C		E			E			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay: 57.0	Intersection LOS: E
Intersection Capacity Utilization 99.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	33	14	458	2	392	5	1433	345	359	1462	1
Future Volume (veh/h)	13	33	14	458	2	392	5	1433	345	359	1462	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	14	36	14	503	2	421	5	1575	314	395	1607	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	130	321	116	523	630	845	21	1556	483	331	2497	0
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.01	0.32	0.32	0.20	0.51	0.00
Sat Flow, veh/h	268	917	332	1300	1800	1525	1619	4914	1525	1619	5076	0
Grp Volume(v), veh/h	64	0	0	503	2	421	5	1575	314	395	1607	0
Grp Sat Flow(s),veh/h/ln	1516	0	0	1300	1800	1525	1619	1638	1525	1619	1638	0
Q Serve(g_s), s	0.0	0.0	0.0	39.0	0.1	20.4	0.4	38.0	21.3	24.5	28.7	0.0
Cycle Q Clear(g_c), s	3.0	0.0	0.0	42.0	0.1	20.4	0.4	38.0	21.3	24.5	28.7	0.0
Prop In Lane	0.22		0.22	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	567	0	0	523	630	845	21	1556	483	331	2497	0
V/C Ratio(X)	0.11	0.00	0.00	0.96	0.00	0.50	0.24	1.01	0.65	1.19	0.64	0.00
Avail Cap(c_a), veh/h	567	0	0	523	630	845	135	1556	483	331	2497	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.3	0.0	0.0	40.4	25.4	16.5	58.7	41.0	35.3	47.7	21.6	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	29.6	0.0	0.2	2.2	25.8	3.1	113.5	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	18.8	0.0	6.5	0.2	18.0	7.8	19.8	10.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.4	0.0	0.0	70.0	25.4	16.6	60.9	66.8	38.3	161.3	22.2	0.0
LnGrp LOS	C	A	A	E	C	B	E	F	D	F	C	A
Approach Vol, veh/h		64			926			1894			2002	
Approach Delay, s/veh		26.4			45.6			62.1			49.6	
Approach LOS		C			D			E			D	

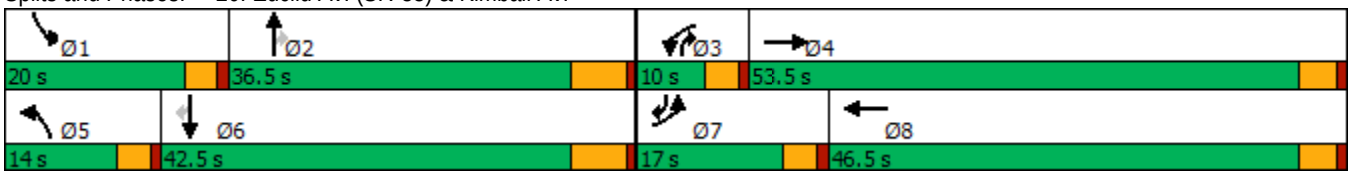
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	29.0	44.0		47.0	6.0	67.0		47.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	24.5	38.0		42.0	10.0	52.5		42.0				
Max Q Clear Time (g_c+I1), s	26.5	40.0		5.0	2.4	30.7		44.0				
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	11.0		0.0				

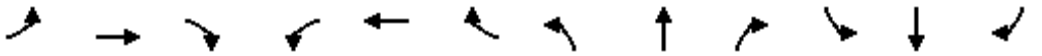
Intersection Summary			
HCM 6th Ctrl Delay		53.4	
HCM 6th LOS		D	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	403	886	96	395	88	1126	54	492	1184	276
Future Volume (vph)	403	886	96	395	88	1126	54	492	1184	276
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	9.0	45.5	14.0	36.0	9.0	9.0	33.0	14.0
Total Split (s)	17.0	53.5	10.0	46.5	14.0	36.5	10.0	20.0	42.5	17.0
Total Split (%)	14.2%	44.6%	8.3%	38.8%	11.7%	30.4%	8.3%	16.7%	35.4%	14.2%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	13.1	38.8	6.0	31.8	10.1	29.6	41.7	16.1	35.7	50.8
Actuated g/C Ratio	0.12	0.36	0.05	0.29	0.09	0.27	0.38	0.15	0.33	0.47
v/c Ratio	1.18	0.83	1.11	0.61	0.61	0.87	0.08	1.17	0.76	0.34
Control Delay	148.0	38.4	178.3	31.2	68.5	47.0	0.3	139.6	37.5	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	148.0	38.4	178.3	31.2	68.5	47.0	0.3	139.6	37.5	4.9
LOS	F	D	F	C	E	D	A	F	D	A
Approach Delay		70.6		51.8		46.5			58.6	
Approach LOS		E		D		D			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 57.9	Intersection LOS: E
Intersection Capacity Utilization 89.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	403	886	83	96	395	194	88	1126	54	492	1184	276
Future Volume (veh/h)	403	886	83	96	395	194	88	1126	54	492	1184	276
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	415	913	83	99	407	162	91	1161	41	507	1221	187
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	367	1083	98	93	659	259	144	1337	502	451	1652	701
Arrive On Green	0.12	0.34	0.34	0.06	0.27	0.27	0.09	0.27	0.27	0.15	0.34	0.34
Sat Flow, veh/h	2956	3170	288	1619	2397	943	1619	4914	1525	2956	4914	1524
Grp Volume(v), veh/h	415	493	503	99	289	280	91	1161	41	507	1221	187
Grp Sat Flow(s),veh/h/ln	1478	1710	1748	1619	1710	1630	1619	1638	1525	1478	1638	1524
Q Serve(g_s), s	13.0	27.9	27.9	6.0	15.5	15.8	5.7	23.6	1.9	16.0	23.0	7.9
Cycle Q Clear(g_c), s	13.0	27.9	27.9	6.0	15.5	15.8	5.7	23.6	1.9	16.0	23.0	7.9
Prop In Lane	1.00		0.16	1.00		0.58	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	367	584	597	93	470	448	144	1337	502	451	1652	701
V/C Ratio(X)	1.13	0.84	0.84	1.07	0.61	0.63	0.63	0.87	0.08	1.12	0.74	0.27
Avail Cap(c_a), veh/h	367	799	817	93	685	653	154	1430	531	451	1711	720
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.9	31.9	31.9	49.4	33.2	33.3	46.1	36.4	24.2	44.4	30.7	17.4
Incr Delay (d2), s/veh	87.9	6.1	6.0	113.3	0.5	0.5	5.2	5.7	0.1	80.7	1.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	11.8	12.0	5.3	6.2	6.0	2.4	9.4	0.7	10.6	8.6	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	133.9	38.0	37.9	162.7	33.7	33.8	51.3	42.1	24.3	125.1	32.4	17.6
LnGrp LOS	F	D	D	F	C	C	D	D	C	F	C	B
Approach Vol, veh/h		1411			668			1293			1915	
Approach Delay, s/veh		66.2			52.9			42.2			55.5	
Approach LOS		E			D			D			E	

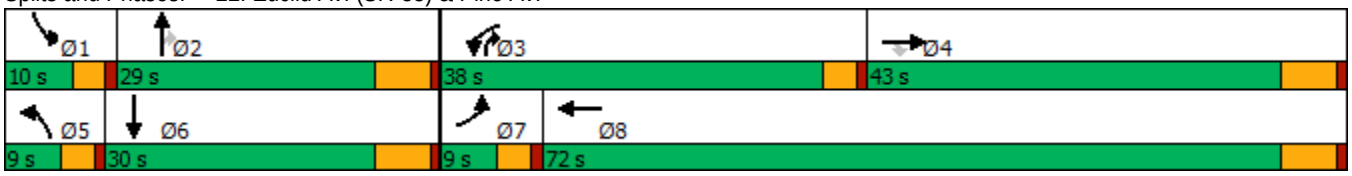
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	34.5	10.0	40.3	13.3	41.2	17.0	33.3
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	16.0	30.5	6.0	49.0	10.0	36.5	13.0	42.0
Max Q Clear Time (g_c+I1), s	18.0	25.6	8.0	29.9	7.7	25.0	15.0	17.8
Green Ext Time (p_c), s	0.0	2.9	0.0	5.7	0.0	6.1	0.0	2.0

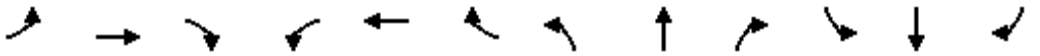
Intersection Summary	
HCM 6th Ctrl Delay	54.8
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	6	506	112	648	82	65	896	1301	162	1104
Future Volume (vph)	6	506	112	648	82	65	896	1301	162	1104
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	43.0	43.0	38.0	72.0	9.0	29.0	38.0	10.0	30.0
Total Split (%)	7.5%	35.8%	35.8%	31.7%	60.0%	7.5%	24.2%	31.7%	8.3%	25.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.1	23.7	23.7	27.8	54.0	5.1	23.4	57.2	6.1	24.4
Actuated g/C Ratio	0.05	0.23	0.23	0.27	0.53	0.05	0.23	0.56	0.06	0.24
v/c Ratio	0.07	0.65	0.25	0.82	0.18	0.81	0.81	0.83	1.70	0.96
Control Delay	54.5	39.1	4.7	44.2	7.6	111.7	45.1	21.8	388.4	57.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.5	39.1	4.7	44.2	7.6	111.7	45.1	21.8	388.4	57.8
LOS	D	D	A	D	A	F	D	C	F	E
Approach Delay		33.1			36.8		33.6			99.8
Approach LOS		C			D		C			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 101.3	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.70	
Intersection Signal Delay: 51.0	Intersection LOS: D
Intersection Capacity Utilization 84.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	506	112	648	82	81	65	896	1301	162	1104	5
Future Volume (veh/h)	6	506	112	648	82	81	65	896	1301	162	1104	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	6	516	0	661	84	81	66	914	911	165	1127	5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	13	719		739	381	367	82	1245	1351	107	1358	6
Arrive On Green	0.01	0.21	0.00	0.25	0.45	0.45	0.05	0.25	0.25	0.07	0.27	0.27
Sat Flow, veh/h	1619	3420	1525	2956	842	812	1619	4914	2685	1619	5050	22
Grp Volume(v), veh/h	6	516	0	661	0	165	66	914	911	165	731	401
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1478	0	1654	1619	1638	1342	1619	1638	1796
Q Serve(g_s), s	0.3	12.7	0.0	19.6	0.0	5.5	3.7	15.5	23.0	6.0	19.1	19.1
Cycle Q Clear(g_c), s	0.3	12.7	0.0	19.6	0.0	5.5	3.7	15.5	23.0	6.0	19.1	19.1
Prop In Lane	1.00		1.00	1.00		0.49	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	13	719		739	0	748	82	1245	1351	107	881	483
V/C Ratio(X)	0.48	0.72		0.89	0.00	0.22	0.81	0.73	0.67	1.54	0.83	0.83
Avail Cap(c_a), veh/h	89	1394		1107	0	1202	89	1245	1351	107	881	483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.9	33.3	0.0	32.9	0.0	15.1	42.7	31.1	17.0	42.4	31.2	31.2
Incr Delay (d2), s/veh	10.2	1.9	0.0	4.9	0.0	0.2	34.3	2.0	1.1	284.8	6.3	10.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.2	0.0	6.9	0.0	1.9	2.1	5.8	6.2	10.7	7.6	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.0	35.3	0.0	37.8	0.0	15.3	76.9	33.1	18.0	327.2	37.6	42.2
LnGrp LOS	E	D		D	A	B	E	C	B	F	D	D
Approach Vol, veh/h		522	A		826			1891			1297	
Approach Delay, s/veh		35.5			33.3			27.4			75.8	
Approach LOS		D			C			C			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	29.0	26.7	25.1	8.6	30.4	4.7	47.1
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	6.0	23.0	34.0	37.0	5.0	24.0	5.0	66.0
Max Q Clear Time (g_c+I1), s	8.0	25.0	21.6	14.7	5.7	21.1	2.3	7.5
Green Ext Time (p_c), s	0.0	0.0	1.1	4.4	0.0	1.3	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	43.2
HCM 6th LOS	D

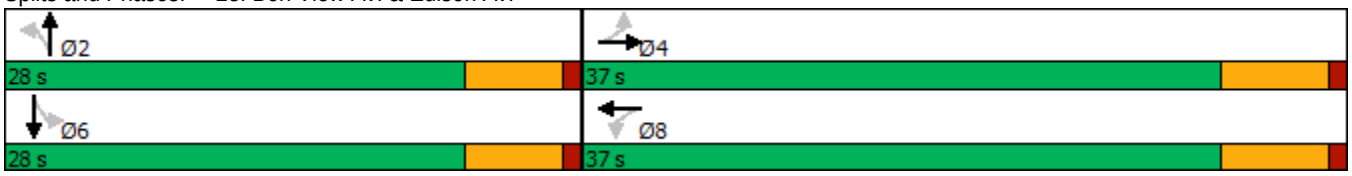
Notes

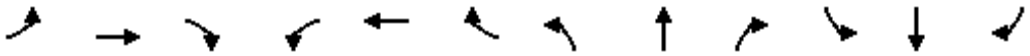
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	78	633	7	585	14	112	19	94
Future Volume (vph)	78	633	7	585	14	112	19	94
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	27.8	27.8	27.8	27.8
Total Split (s)	37.0	37.0	37.0	37.0	28.0	28.0	28.0	28.0
Total Split (%)	56.9%	56.9%	56.9%	56.9%	43.1%	43.1%	43.1%	43.1%
Yellow Time (s)	5.2	5.2	5.2	5.2	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		5.8		5.8
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)		31.0		31.0		12.4		12.4
Actuated g/C Ratio		0.56		0.56		0.22		0.22
v/c Ratio		0.88		0.63		0.38		0.44
Control Delay		26.3		13.3		19.8		17.6
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		26.3		13.3		19.8		17.6
LOS		C		B		B		B
Approach Delay		26.3		13.3		19.8		17.6
Approach LOS		C		B		B		B

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 55.5	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 20.1	Intersection LOS: C
Intersection Capacity Utilization 103.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 23: Bon View Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	633	25	7	585	7	14	112	11	19	94	53
Future Volume (veh/h)	78	633	25	7	585	7	14	112	11	19	94	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	82	666	26	7	616	7	15	118	12	20	99	56
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	147	788	29	82	919	10	104	330	31	108	226	116
Arrive On Green	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	116	1513	57	5	1765	20	81	1514	144	94	1039	533
Grp Volume(v), veh/h	774	0	0	630	0	0	145	0	0	175	0	0
Grp Sat Flow(s),veh/h/ln	1686	0	0	1790	0	0	1739	0	0	1666	0	0
Q Serve(g_s), s	6.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	18.0	0.0	0.0	11.9	0.0	0.0	3.2	0.0	0.0	4.1	0.0	0.0
Prop In Lane	0.11		0.03	0.01		0.01	0.10		0.08	0.11		0.32
Lane Grp Cap(c), veh/h	964	0	0	1011	0	0	465	0	0	450	0	0
V/C Ratio(X)	0.80	0.00	0.00	0.62	0.00	0.00	0.31	0.00	0.00	0.39	0.00	0.00
Avail Cap(c_a), veh/h	1203	0	0	1278	0	0	917	0	0	884	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.4	0.0	0.0	8.1	0.0	0.0	15.3	0.0	0.0	15.6	0.0	0.0
Incr Delay (d2), s/veh	3.2	0.0	0.0	0.6	0.0	0.0	0.4	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	0.0	2.4	0.0	0.0	1.1	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.6	0.0	0.0	8.8	0.0	0.0	15.7	0.0	0.0	16.2	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		774			630			145			175	
Approach Delay, s/veh		12.6			8.8			15.7			16.2	
Approach LOS		B			A			B			B	

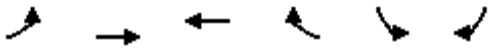
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.8		30.1		15.8		30.1				
Change Period (Y+Rc), s		5.8		6.2		5.8		6.2				
Max Green Setting (Gmax), s		22.2		30.8		22.2		30.8				
Max Q Clear Time (g_c+I1), s		5.2		20.0		6.1		13.9				
Green Ext Time (p_c), s		0.6		3.8		0.7		3.4				

Intersection Summary												
HCM 6th Ctrl Delay			11.8									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	103	847	789	72
Future Volume (vph)	103	847	789	72
Turn Type	Perm	NA	NA	Prot
Protected Phases		4	8	6
Permitted Phases	4			
Detector Phase	4	4	8	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	16.2	16.2	23.2	32.8
Total Split (s)	86.0	86.0	86.0	34.0
Total Split (%)	71.7%	71.7%	71.7%	28.3%
Yellow Time (s)	5.2	5.2	5.2	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0
Total Lost Time (s)		6.2	6.2	5.8
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	Min
Act Effct Green (s)		80.1	80.1	15.0
Actuated g/C Ratio		0.75	0.75	0.14
v/c Ratio		0.94	0.35	0.61
Control Delay		30.1	5.6	41.0
Queue Delay		0.0	0.0	0.0
Total Delay		30.1	5.6	41.0
LOS		C	A	D
Approach Delay		30.1	5.6	41.0
Approach LOS		C	A	D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 20.4	Intersection LOS: C
Intersection Capacity Utilization 102.4%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 25: Merrill Av. & Bon View Av.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	103	847	789	51	72	81
Future Volume (veh/h)	103	847	789	51	72	81
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	110	901	839	54	77	86
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	146	1003	2290	147	102	114
Arrive On Green	0.70	0.70	0.70	0.70	0.14	0.14
Sat Flow, veh/h	131	1429	3352	210	756	844
Grp Volume(v), veh/h	1011	0	440	453	164	0
Grp Sat Flow(s),veh/h/ln	1559	0	1710	1762	1610	0
Q Serve(g_s), s	28.8	0.0	7.6	7.6	7.2	0.0
Cycle Q Clear(g_c), s	39.2	0.0	7.6	7.6	7.2	0.0
Prop In Lane	0.11			0.12	0.47	0.52
Lane Grp Cap(c), veh/h	1149	0	1200	1237	218	0
V/C Ratio(X)	0.88	0.00	0.37	0.37	0.75	0.00
Avail Cap(c_a), veh/h	1717	0	1848	1905	615	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.5	0.0	4.4	4.4	30.7	0.0
Incr Delay (d2), s/veh	3.8	0.0	0.2	0.2	5.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	1.4	1.5	2.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.3	0.0	4.6	4.6	35.9	0.0
LnGrp LOS	B	A	A	A	D	A
Approach Vol, veh/h		1011	893		164	
Approach Delay, s/veh		12.3	4.6		35.9	
Approach LOS		B	A		D	

Timer - Assigned Phs			4		6	8
Phs Duration (G+Y+Rc), s			58.0		15.8	58.0
Change Period (Y+Rc), s			6.2		5.8	6.2
Max Green Setting (Gmax), s			79.8		28.2	79.8
Max Q Clear Time (g_c+I1), s			41.2		9.2	9.6
Green Ext Time (p_c), s			10.6		0.4	5.7

Intersection Summary		
HCM 6th Ctrl Delay	10.9	
HCM 6th LOS	B	

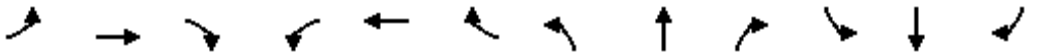
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	466	0	381	795	480	956
Future Volume (vph)	466	0	381	795	480	956
Turn Type	Split	NA	Perm	NA	Prot	NA
Protected Phases	4	4		2	1	6
Permitted Phases			4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	30.8	26.8	9.6	22.8
Total Split (s)	31.0	31.0	31.0	50.0	39.0	89.0
Total Split (%)	25.8%	25.8%	25.8%	41.7%	32.5%	74.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.6	5.8
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	23.6	23.6	23.6	45.1	35.1	84.8
Actuated g/C Ratio	0.20	0.20	0.20	0.38	0.29	0.71
v/c Ratio	0.74	0.74	0.93	0.95	0.98	0.40
Control Delay	59.1	59.3	57.5	49.7	88.5	6.2
Queue Delay	0.0	0.0	0.0	0.0	20.3	0.2
Total Delay	59.1	59.3	57.5	49.7	108.7	6.4
LOS	E	E	E	D	F	A
Approach Delay		58.4		49.7		40.6
Approach LOS		E		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 48.0	Intersection LOS: D
Intersection Capacity Utilization 91.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	466	0	381	0	0	0	0	795	369	480	956	0
Future Volume (veh/h)	466	0	381	0	0	0	0	795	369	480	956	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	501	0	323				0	855	314	516	1028	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	760	0	338				0	945	346	519	2503	0
Arrive On Green	0.21	0.00	0.21				0.00	0.37	0.37	0.57	1.00	0.00
Sat Flow, veh/h	3619	0	1610				0	2661	939	1810	3705	0
Grp Volume(v), veh/h	501	0	323				0	601	568	516	1028	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1700	1810	1805	0
Q Serve(g_s), s	15.2	0.0	23.8				0.0	37.8	38.1	34.0	0.0	0.0
Cycle Q Clear(g_c), s	15.2	0.0	23.8				0.0	37.8	38.1	34.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.55	1.00		0.00
Lane Grp Cap(c), veh/h	760	0	338				0	665	626	519	2503	0
V/C Ratio(X)	0.66	0.00	0.96				0.00	0.90	0.91	0.99	0.41	0.00
Avail Cap(c_a), veh/h	760	0	338				0	665	626	519	2503	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.64	0.64	0.66	0.66	0.00
Uniform Delay (d), s/veh	43.5	0.0	46.8				0.0	35.9	36.0	25.5	0.0	0.0
Incr Delay (d2), s/veh	2.1	0.0	37.1				0.0	12.6	13.6	30.7	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	0.0	12.7				0.0	18.1	17.3	12.9	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.6	0.0	84.0				0.0	48.5	49.6	56.2	0.3	0.0
LnGrp LOS	D	A	F				A	D	D	E	A	A
Approach Vol, veh/h		824						1169			1544	
Approach Delay, s/veh		60.6						49.0			19.0	
Approach LOS		E						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	39.0	50.0		31.0		89.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	34.4	44.2		25.2		83.2
Max Q Clear Time (g_c+I1), s	36.0	40.1		25.8		2.0
Green Ext Time (p_c), s	0.0	2.5		0.0		8.5

Intersection Summary		
HCM 6th Ctrl Delay		38.6
HCM 6th LOS		D

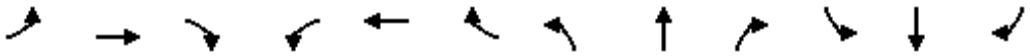
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	84	202	10	44	40	565	40	425
Future Volume (vph)	84	202	10	44	40	565	40	425
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Total Split (s)	38.0	38.0	38.0	38.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	31.7%	31.7%	68.3%	68.3%	68.3%	68.3%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		27.6		27.6		76.0		76.0
Actuated g/C Ratio		0.24		0.24		0.66		0.66
v/c Ratio		0.88		0.25		0.59		0.48
Control Delay		66.2		25.4		14.7		12.5
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		66.2		25.4		14.7		12.5
LOS		E		C		B		B
Approach Delay		66.2		25.4		14.7		12.5
Approach LOS		E		C		B		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 25.2	Intersection LOS: C
Intersection Capacity Utilization 78.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 30: Grove Av. & Chino Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	202	29	10	44	43	40	565	21	40	425	24
Future Volume (veh/h)	84	202	29	10	44	43	40	565	21	40	425	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	88	210	30	10	46	45	42	589	22	42	443	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	126	244	33	52	184	161	83	1068	39	99	1002	55
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.67	0.67	0.67	0.67	0.67	0.67
Sat Flow, veh/h	389	1113	151	75	838	734	73	1593	58	96	1493	82
Grp Volume(v), veh/h	328	0	0	101	0	0	653	0	0	510	0	0
Grp Sat Flow(s),veh/h/ln	1653	0	0	1648	0	0	1723	0	0	1671	0	0
Q Serve(g_s), s	16.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	21.7	0.0	0.0	5.7	0.0	0.0	21.4	0.0	0.0	14.9	0.0	0.0
Prop In Lane	0.27		0.09	0.10		0.45	0.06		0.03	0.08		0.05
Lane Grp Cap(c), veh/h	403	0	0	397	0	0	1190	0	0	1156	0	0
V/C Ratio(X)	0.81	0.00	0.00	0.25	0.00	0.00	0.55	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	503	0	0	495	0	0	1190	0	0	1156	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.7	0.0	0.0	36.6	0.0	0.0	9.6	0.0	0.0	8.6	0.0	0.0
Incr Delay (d2), s/veh	8.1	0.0	0.0	0.3	0.0	0.0	1.8	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	0.0	0.0	2.3	0.0	0.0	7.3	0.0	0.0	5.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.8	0.0	0.0	37.0	0.0	0.0	11.5	0.0	0.0	9.8	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	B	A	A	A	A	A
Approach Vol, veh/h		328			101			653			510	
Approach Delay, s/veh		50.8			37.0			11.5			9.8	
Approach LOS		D			D			B			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		82.0		31.0		82.0		31.0				
Change Period (Y+Rc), s		6.2		6.2		6.2		6.2				
Max Green Setting (Gmax), s		75.8		31.8		75.8		31.8				
Max Q Clear Time (g_c+I1), s		23.4		23.7		16.9		7.7				
Green Ext Time (p_c), s		4.6		1.0		3.4		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			20.6									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	110	159	2	51	32	495	59	326
Future Volume (vph)	110	159	2	51	32	495	59	326
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	41.0	41.0	41.0	41.0	79.0	79.0	79.0	79.0
Total Split (%)	34.2%	34.2%	34.2%	34.2%	65.8%	65.8%	65.8%	65.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.8		5.8		6.2		6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)		32.7		32.7		72.9		72.9
Actuated g/C Ratio		0.28		0.28		0.62		0.62
v/c Ratio		0.93		0.21		0.57		0.51
Control Delay		68.9		22.8		16.2		14.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		68.9		22.8		16.2		14.8
LOS		E		C		B		B
Approach Delay		68.9		22.8		16.2		14.8
Approach LOS		E		C		B		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.6	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 29.5	Intersection LOS: C
Intersection Capacity Utilization 81.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 31: Grove Av. & Schaefer Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	159	101	2	51	41	32	495	34	59	326	60
Future Volume (veh/h)	110	159	101	2	51	41	32	495	34	59	326	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	118	171	109	2	55	44	34	532	37	63	351	65
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	157	194	117	34	254	197	70	982	67	139	751	134
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.63	0.63	0.63	0.63	0.63	0.63
Sat Flow, veh/h	434	719	435	7	942	733	60	1565	106	166	1197	214
Grp Volume(v), veh/h	398	0	0	101	0	0	603	0	0	479	0	0
Grp Sat Flow(s),veh/h/ln	1588	0	0	1682	0	0	1731	0	0	1576	0	0
Q Serve(g_s), s	22.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	28.3	0.0	0.0	5.5	0.0	0.0	22.2	0.0	0.0	16.9	0.0	0.0
Prop In Lane	0.30		0.27	0.02		0.44	0.06		0.06	0.13		0.14
Lane Grp Cap(c), veh/h	468	0	0	485	0	0	1119	0	0	1024	0	0
V/C Ratio(X)	0.85	0.00	0.00	0.21	0.00	0.00	0.54	0.00	0.00	0.47	0.00	0.00
Avail Cap(c_a), veh/h	521	0	0	541	0	0	1119	0	0	1024	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	41.0	0.0	0.0	33.0	0.0	0.0	12.2	0.0	0.0	11.1	0.0	0.0
Incr Delay (d2), s/veh	11.7	0.0	0.0	0.2	0.0	0.0	1.9	0.0	0.0	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.1	0.0	0.0	2.2	0.0	0.0	8.1	0.0	0.0	5.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.8	0.0	0.0	33.2	0.0	0.0	14.1	0.0	0.0	12.6	0.0	0.0
LnGrp LOS	D	A	A	C	A	A	B	A	A	B	A	A
Approach Vol, veh/h		398			101			603			479	
Approach Delay, s/veh		52.8			33.2			14.1			12.6	
Approach LOS		D			C			B			B	

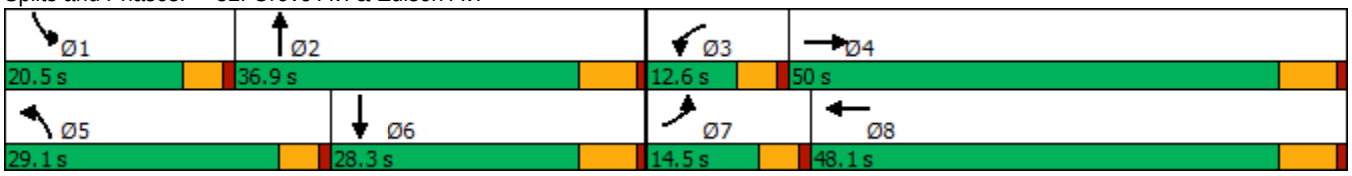
Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	79.0	37.1	79.0	37.1
Change Period (Y+Rc), s	6.2	5.8	6.2	5.8
Max Green Setting (Gmax), s	72.8	35.2	72.8	35.2
Max Q Clear Time (g_c+I1), s	24.2	30.3	18.9	7.5
Green Ext Time (p_c), s	4.0	1.0	3.2	0.5

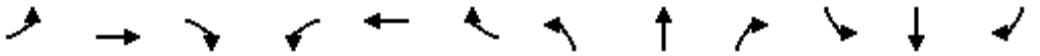
Intersection Summary	
HCM 6th Ctrl Delay	24.6
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	49	494	84	306	278	457	146	269
Future Volume (vph)	49	494	84	306	278	457	146	269
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	9.6	28.2	9.6	28.2
Total Split (s)	14.5	50.0	12.6	48.1	29.1	36.9	20.5	28.3
Total Split (%)	12.1%	41.7%	10.5%	40.1%	24.3%	30.8%	17.1%	23.6%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	7.9	44.0	7.9	46.2	23.3	27.2	14.0	18.0
Actuated g/C Ratio	0.07	0.38	0.07	0.40	0.20	0.24	0.12	0.16
v/c Ratio	0.48	0.95	0.81	0.55	0.91	0.86	0.80	0.59
Control Delay	67.3	59.2	100.7	32.0	78.1	50.1	78.1	48.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.3	59.2	100.7	32.0	78.1	50.1	78.1	48.8
LOS	E	E	F	C	E	D	E	D
Approach Delay		59.8		44.8		58.5		58.5
Approach LOS		E		D		E		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.8	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 56.4	Intersection LOS: E
Intersection Capacity Utilization 86.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	494	102	84	306	57	278	457	192	146	269	25
Future Volume (veh/h)	49	494	102	84	306	57	278	457	192	146	269	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	53	531	110	90	329	61	299	491	206	157	289	27
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	66	563	117	111	616	114	324	559	233	182	476	44
Arrive On Green	0.04	0.39	0.39	0.07	0.42	0.42	0.20	0.24	0.24	0.11	0.15	0.15
Sat Flow, veh/h	1619	1446	300	1619	1477	274	1619	2352	981	1619	3164	293
Grp Volume(v), veh/h	53	0	641	90	0	390	299	356	341	157	155	161
Grp Sat Flow(s),veh/h/ln	1619	0	1746	1619	0	1751	1619	1710	1623	1619	1710	1747
Q Serve(g_s), s	3.7	0.0	39.9	6.2	0.0	18.8	20.4	22.6	22.8	10.7	9.5	9.7
Cycle Q Clear(g_c), s	3.7	0.0	39.9	6.2	0.0	18.8	20.4	22.6	22.8	10.7	9.5	9.7
Prop In Lane	1.00		0.17	1.00		0.16	1.00		0.60	1.00		0.17
Lane Grp Cap(c), veh/h	66	0	680	111	0	730	324	407	386	182	257	263
V/C Ratio(X)	0.80	0.00	0.94	0.81	0.00	0.53	0.92	0.88	0.88	0.86	0.60	0.61
Avail Cap(c_a), veh/h	142	0	680	115	0	730	353	467	443	229	336	343
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.5	0.0	33.2	51.7	0.0	24.6	44.2	41.3	41.4	49.0	44.6	44.7
Incr Delay (d2), s/veh	8.2	0.0	23.1	31.2	0.0	2.8	27.1	15.4	17.0	19.6	2.3	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	19.9	3.4	0.0	7.8	10.2	10.7	10.5	5.2	4.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.7	0.0	56.2	82.9	0.0	27.4	71.3	56.7	58.4	68.6	46.9	47.0
LnGrp LOS	E	A	E	F	A	C	E	E	E	E	D	D
Approach Vol, veh/h		694			480			996			473	
Approach Delay, s/veh		56.6			37.8			61.7			54.1	
Approach LOS		E			D			E			D	

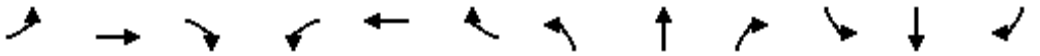
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.3	33.0	12.3	50.0	27.1	23.1	9.2	53.1
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	15.9	30.7	8.0	43.8	24.5	22.1	9.9	41.9
Max Q Clear Time (g_c+I1), s	12.7	24.8	8.2	41.9	22.4	11.7	5.7	20.8
Green Ext Time (p_c), s	0.1	2.0	0.0	0.8	0.1	1.1	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	54.7
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	166	110	6	64	16	498	115	282
Future Volume (vph)	166	110	6	64	16	498	115	282
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	28.2	28.2	28.2	28.2
Total Split (s)	42.0	42.0	42.0	42.0	78.0	78.0	78.0	78.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	65.0%	65.0%	65.0%	65.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	6.2	6.2	6.2	6.2
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)	36.2	36.2	36.2	36.2	71.8	71.8	71.8	71.8
Actuated g/C Ratio	0.30	0.30	0.30	0.30	0.60	0.60	0.60	0.60
v/c Ratio	1.45	0.39	0.03	0.85	0.03	0.93	2.29	0.18
Control Delay	273.4	30.7	30.0	56.1	10.2	30.9	650.3	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	273.4	30.7	30.0	56.1	10.2	30.9	650.3	10.0
LOS	F	C	C	E	B	C	F	A
Approach Delay		144.3		55.7		30.7		173.6
Approach LOS		F		E		C		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.29	
Intersection Signal Delay: 68.7	Intersection LOS: E
Intersection Capacity Utilization 76.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	110	78	6	64	306	16	498	5	115	282	54
Future Volume (veh/h)	166	110	78	6	64	306	16	498	5	115	282	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	184	122	87	7	71	340	18	1992	6	128	313	60
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.25	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	110	295	210	287	82	391	592	2146	6	80	1761	333
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.60	0.60	0.60	0.60	0.60	0.60
Sat Flow, veh/h	935	977	697	1125	271	1296	968	3587	11	207	2943	557
Grp Volume(v), veh/h	184	0	209	7	0	411	18	999	999	128	190	183
Grp Sat Flow(s),veh/h/ln	935	0	1675	1125	0	1567	968	1800	1798	207	1800	1700
Q Serve(g_s), s	6.4	0.0	12.0	0.6	0.0	29.8	1.0	60.1	60.3	11.5	5.7	5.8
Cycle Q Clear(g_c), s	36.2	0.0	12.0	12.6	0.0	29.8	6.8	60.1	60.3	71.8	5.7	5.8
Prop In Lane	1.00		0.42	1.00		0.83	1.00		0.01	1.00		0.33
Lane Grp Cap(c), veh/h	110	0	505	287	0	473	592	1077	1076	80	1077	1017
V/C Ratio(X)	1.67	0.00	0.41	0.02	0.00	0.87	0.03	0.93	0.93	1.60	0.18	0.18
Avail Cap(c_a), veh/h	110	0	505	287	0	473	592	1077	1076	80	1077	1017
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.5	0.0	33.4	38.4	0.0	39.7	12.4	21.8	21.8	58.6	10.8	10.8
Incr Delay (d2), s/veh	339.9	0.0	2.5	0.2	0.0	19.2	0.0	13.4	13.6	321.4	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.6	0.0	5.1	0.2	0.0	13.5	0.2	25.6	25.6	9.5	2.1	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	398.5	0.0	35.9	38.6	0.0	58.8	12.4	35.2	35.4	380.0	10.9	10.9
LnGrp LOS	F	A	D	D	A	E	B	D	D	F	B	B
Approach Vol, veh/h		393			418			2016			501	
Approach Delay, s/veh		205.7			58.5			35.1			105.2	
Approach LOS		F			E			D			F	

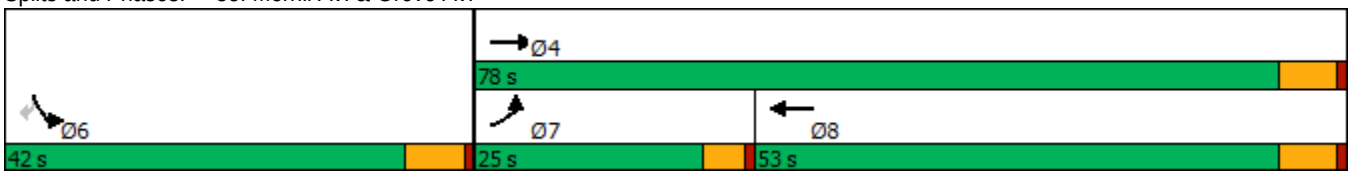
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		78.0		42.0		78.0		42.0				
Change Period (Y+Rc), s		6.2		5.8		6.2		5.8				
Max Green Setting (Gmax), s		71.8		36.2		71.8		36.2				
Max Q Clear Time (g_c+I1), s		62.3		38.2		73.8		31.8				
Green Ext Time (p_c), s		7.7		0.0		0.0		1.0				

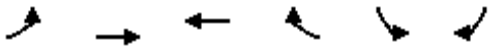
Intersection Summary												
HCM 6th Ctrl Delay			68.7									
HCM 6th LOS			E									

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	232	696	643	318	192
Future Volume (vph)	232	696	643	318	192
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	28.2	28.2
Total Split (s)	25.0	78.0	53.0	42.0	42.0
Total Split (%)	20.8%	65.0%	44.2%	35.0%	35.0%
Yellow Time (s)	3.6	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	6.2	6.2
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	Max	Max	None	None
Act Effct Green (s)	19.1	72.0	48.4	27.2	27.2
Actuated g/C Ratio	0.17	0.64	0.43	0.24	0.24
v/c Ratio	0.88	0.62	0.65	0.84	0.38
Control Delay	77.1	16.0	27.2	59.4	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	77.1	16.0	27.2	59.4	6.6
LOS	E	B	C	E	A
Approach Delay		31.3	27.2	39.5	
Approach LOS		C	C	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 31.5	Intersection LOS: C
Intersection Capacity Utilization 76.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	232	696	643	269	318	192
Future Volume (veh/h)	232	696	643	269	318	192
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1700	1800
Adj Flow Rate, veh/h	242	725	670	280	331	200
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	268	1184	1058	442	370	349
Arrive On Green	0.17	0.66	0.45	0.45	0.23	0.23
Sat Flow, veh/h	1619	1800	2441	982	1619	1525
Grp Volume(v), veh/h	242	725	487	463	331	200
Grp Sat Flow(s),veh/h/ln	1619	1800	1710	1623	1619	1525
Q Serve(g_s), s	16.0	25.2	23.9	23.9	21.6	12.7
Cycle Q Clear(g_c), s	16.0	25.2	23.9	23.9	21.6	12.7
Prop In Lane	1.00			0.61	1.00	1.00
Lane Grp Cap(c), veh/h	268	1184	769	730	370	349
V/C Ratio(X)	0.90	0.61	0.63	0.63	0.89	0.57
Avail Cap(c_a), veh/h	303	1184	769	730	531	500
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.7	10.7	23.1	23.1	40.8	37.4
Incr Delay (d2), s/veh	25.0	2.4	3.9	4.2	13.1	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	8.8	9.6	9.2	9.5	10.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	69.7	13.1	27.1	27.3	53.9	38.9
LnGrp LOS	E	B	C	C	D	D
Approach Vol, veh/h		967	950		531	
Approach Delay, s/veh		27.3	27.2		48.3	
Approach LOS		C	C		D	

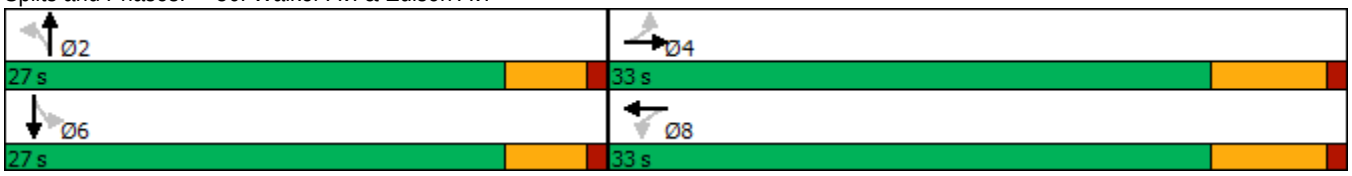
Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			78.0		31.2	22.7	55.3
Change Period (Y+Rc), s			6.2		6.2	4.6	6.2
Max Green Setting (Gmax), s			71.8		35.8	20.4	46.8
Max Q Clear Time (g_c+I1), s			27.2		23.6	18.0	25.9
Green Ext Time (p_c), s			5.1		1.3	0.1	5.6

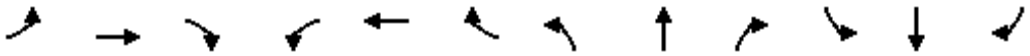
Intersection Summary	
HCM 6th Ctrl Delay	31.8
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	23	793	134	417	3	22	73	15
Future Volume (vph)	23	793	134	417	3	22	73	15
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	26.7	26.7	26.7	26.7
Total Split (s)	33.0	33.0	33.0	33.0	27.0	27.0	27.0	27.0
Total Split (%)	55.0%	55.0%	55.0%	55.0%	45.0%	45.0%	45.0%	45.0%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.2		6.2		4.7		4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)		27.0		27.0		17.2		17.2
Actuated g/C Ratio		0.49		0.49		0.31		0.31
v/c Ratio		1.00		1.14		0.81		0.37
Control Delay		50.9		105.9		25.9		17.0
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		50.9		105.9		25.9		17.0
LOS		D		F		C		B
Approach Delay		50.9		105.9		25.9		17.0
Approach LOS		D		F		C		B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 55.2	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.14	
Intersection Signal Delay: 60.4	Intersection LOS: E
Intersection Capacity Utilization 132.4%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	793	1	134	417	34	3	22	397	73	15	11
Future Volume (veh/h)	23	793	1	134	417	34	3	22	397	73	15	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	24	835	1	141	439	36	3	23	418	77	16	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	76	830	1	157	377	28	65	29	479	264	52	27
Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	21	1743	2	164	793	59	2	88	1449	465	158	80
Grp Volume(v), veh/h	860	0	0	616	0	0	444	0	0	105	0	0
Grp Sat Flow(s),veh/h/ln	1767	0	0	1016	0	0	1539	0	0	703	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	26.8	0.0	0.0	26.8	0.0	0.0	15.3	0.0	0.0	6.7	0.0	0.0
Prop In Lane	0.03		0.00	0.23		0.06	0.01		0.94	0.73		0.11
Lane Grp Cap(c), veh/h	907	0	0	562	0	0	573	0	0	343	0	0
V/C Ratio(X)	0.95	0.00	0.00	1.10	0.00	0.00	0.77	0.00	0.00	0.31	0.00	0.00
Avail Cap(c_a), veh/h	907	0	0	562	0	0	673	0	0	414	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	15.2	0.0	0.0	17.7	0.0	0.0	14.4	0.0	0.0
Incr Delay (d2), s/veh	19.8	0.0	0.0	66.7	0.0	0.0	4.8	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.3	0.0	0.0	15.4	0.0	0.0	5.5	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.7	0.0	0.0	81.9	0.0	0.0	22.5	0.0	0.0	14.9	0.0	0.0
LnGrp LOS	C	A	A	F	A	A	C	A	A	B	A	A
Approach Vol, veh/h		860			616			444			105	
Approach Delay, s/veh		34.7			81.9			22.5			14.9	
Approach LOS		C			F			C			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		23.3		33.0		23.3		33.0				
Change Period (Y+Rc), s		* 4.7		6.2		* 4.7		6.2				
Max Green Setting (Gmax), s		* 22		26.8		* 22		26.8				
Max Q Clear Time (g_c+I1), s		17.3		28.8		8.7		28.8				
Green Ext Time (p_c), s		1.3		0.0		0.5		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		45.3
HCM 6th LOS		D

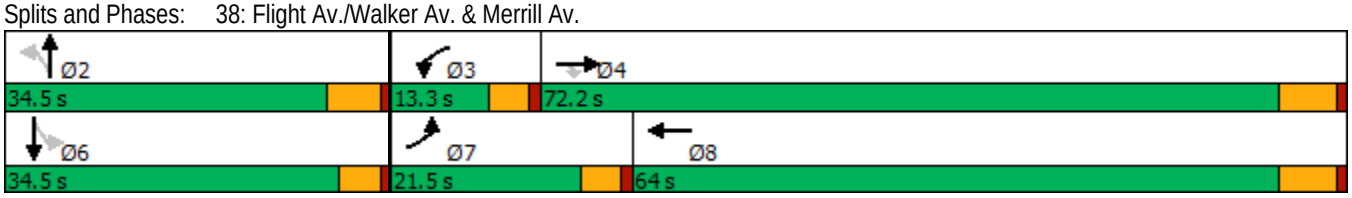
Notes

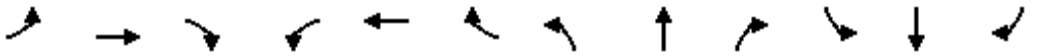
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	36	853	127	97	685	104	8	86	22
Future Volume (vph)	36	853	127	97	685	104	8	86	22
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.2	23.2	9.6	23.2	32.8	32.8	21.6	21.6
Total Split (s)	21.5	72.2	72.2	13.3	64.0	34.5	34.5	34.5	34.5
Total Split (%)	17.9%	60.2%	60.2%	11.1%	53.3%	28.8%	28.8%	28.8%	28.8%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	4.8	4.8	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	5.8	5.8		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	7.4	66.2	66.2	8.7	71.8	21.5	21.5		22.7
Actuated g/C Ratio	0.07	0.59	0.59	0.08	0.63	0.19	0.19		0.20
v/c Ratio	0.38	0.89	0.15	0.86	0.41	0.71	0.39		0.90
Control Delay	62.3	33.9	7.0	103.8	12.7	66.0	9.7		73.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	62.3	33.9	7.0	103.8	12.7	66.0	9.7		73.1
LOS	E	C	A	F	B	E	A		E
Approach Delay		31.5			22.7		32.7		73.1
Approach LOS		C			C		C		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113.1	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 32.0	Intersection LOS: C
Intersection Capacity Utilization 93.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 38: Flight Av./Walker Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	853	127	97	685	29	104	8	142	86	22	107
Future Volume (veh/h)	36	853	127	97	685	29	104	8	142	86	22	107
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	40	937	140	107	753	116	114	9	156	95	24	110
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.25	0.91	0.91	0.91	0.91	0.91	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	50	988	837	117	1754	270	242	20	350	130	42	120
Arrive On Green	0.03	0.55	0.55	0.07	0.59	0.59	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1619	1800	1525	1619	2970	457	1205	84	1454	364	176	499
Grp Volume(v), veh/h	40	937	140	107	433	436	114	0	165	229	0	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1710	1718	1205	0	1538	1039	0	0
Q Serve(g_s), s	3.0	58.9	5.5	7.9	16.7	16.7	0.0	0.0	11.0	15.8	0.0	0.0
Cycle Q Clear(g_c), s	3.0	58.9	5.5	7.9	16.7	16.7	17.2	0.0	11.0	26.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.27	1.00		0.95	0.41		0.48
Lane Grp Cap(c), veh/h	50	988	837	117	1010	1014	242	0	370	293	0	0
V/C Ratio(X)	0.81	0.95	0.17	0.91	0.43	0.43	0.47	0.00	0.45	0.78	0.00	0.00
Avail Cap(c_a), veh/h	228	988	837	117	1010	1014	242	0	370	304	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	57.9	25.5	13.5	55.4	13.5	13.5	41.2	0.0	38.8	47.3	0.0	0.0
Incr Delay (d2), s/veh	10.8	18.6	0.4	56.0	1.3	1.3	1.4	0.0	0.8	12.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	27.2	1.8	4.9	6.1	6.1	3.0	0.0	4.1	7.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.7	44.1	13.9	111.4	14.8	14.8	42.6	0.0	39.7	59.4	0.0	0.0
LnGrp LOS	E	D	B	F	B	B	D	A	D	E	A	A
Approach Vol, veh/h		1117			976			279			229	
Approach Delay, s/veh		41.2			25.4			40.9			59.4	
Approach LOS		D			C			D			E	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		34.8	13.3	72.2		34.8	8.3	77.2				
Change Period (Y+Rc), s		5.8	4.6	6.2		* 5.8	4.6	6.2				
Max Green Setting (Gmax), s		28.7	8.7	66.0		* 30	16.9	57.8				
Max Q Clear Time (g_c+I1), s		19.2	9.9	60.9		28.8	5.0	18.7				
Green Ext Time (p_c), s		0.9	0.0	2.9		0.2	0.0	5.5				

Intersection Summary		
HCM 6th Ctrl Delay		36.9
HCM 6th LOS		D

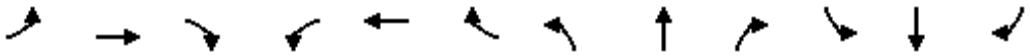
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	22	1038	11	703	45	0	75	0
Future Volume (vph)	22	1038	11	703	45	0	75	0
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	28.2	28.2	26.6	26.6
Total Split (s)	91.0	91.0	91.0	91.0	29.0	29.0	29.0	29.0
Total Split (%)	75.8%	75.8%	75.8%	75.8%	24.2%	24.2%	24.2%	24.2%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.2	6.2	6.2	6.2		6.2		4.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)	87.4	87.4	87.4	87.4		14.9		16.5
Actuated g/C Ratio	0.76	0.76	0.76	0.76		0.13		0.14
v/c Ratio	0.06	0.46	0.05	0.32		0.43		0.70
Control Delay	4.8	6.2	5.0	5.0		36.0		52.9
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	4.8	6.2	5.0	5.0		36.0		52.9
LOS	A	A	A	A		D		D
Approach Delay		6.2		5.0		36.0		52.9
Approach LOS		A		A		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.8	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 9.9	Intersection LOS: A
Intersection Capacity Utilization 49.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 40: Van Vliet Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	1038	21	11	703	26	45	0	20	75	0	64
Future Volume (veh/h)	22	1038	21	11	703	26	45	0	20	75	0	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	25	1180	24	12	799	30	51	0	23	85	0	73
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	505	2625	53	351	2574	97	156	10	50	145	7	87
Arrive On Green	0.77	0.77	0.77	0.77	0.77	0.77	0.12	0.00	0.12	0.12	0.00	0.12
Sat Flow, veh/h	635	3428	70	446	3361	126	823	78	406	778	53	714
Grp Volume(v), veh/h	25	589	615	12	406	423	74	0	0	158	0	0
Grp Sat Flow(s),veh/h/ln	635	1710	1787	446	1710	1777	1307	0	0	1545	0	0
Q Serve(g_s), s	1.4	13.6	13.6	1.1	8.1	8.1	0.0	0.0	0.0	5.1	0.0	0.0
Cycle Q Clear(g_c), s	9.5	13.6	13.6	14.7	8.1	8.1	5.8	0.0	0.0	10.9	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.07	0.69		0.31	0.54		0.46
Lane Grp Cap(c), veh/h	505	1309	1369	351	1309	1361	215	0	0	239	0	0
V/C Ratio(X)	0.05	0.45	0.45	0.03	0.31	0.31	0.34	0.00	0.00	0.66	0.00	0.00
Avail Cap(c_a), veh/h	505	1309	1369	351	1309	1361	332	0	0	382	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.4	4.6	4.6	7.3	4.0	4.0	45.1	0.0	0.0	47.3	0.0	0.0
Incr Delay (d2), s/veh	0.2	1.1	1.1	0.2	0.6	0.6	0.9	0.0	0.0	3.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.5	3.6	0.1	2.0	2.1	1.9	0.0	0.0	4.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.6	5.8	5.7	7.4	4.6	4.6	46.0	0.0	0.0	50.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1229			841			74			158	
Approach Delay, s/veh		5.7			4.6			46.0			50.4	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		19.7		91.0		19.7		91.0				
Change Period (Y+Rc), s		6.2		6.2		* 6.2		6.2				
Max Green Setting (Gmax), s		22.8		84.8		* 24		84.8				
Max Q Clear Time (g_c+I1), s		7.8		15.6		12.9		16.7				
Green Ext Time (p_c), s		0.2		9.4		0.6		5.4				

Intersection Summary		
HCM 6th Ctrl Delay		9.7
HCM 6th LOS		A

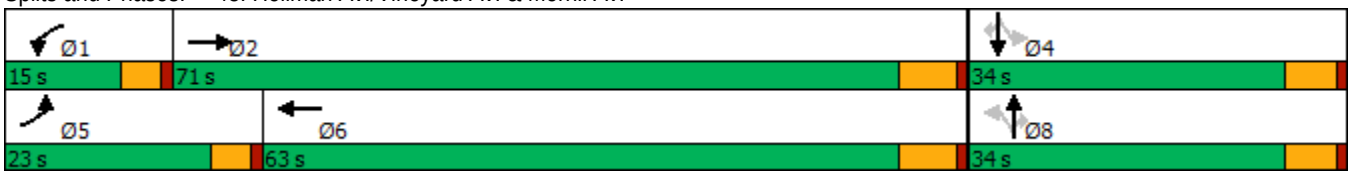
Notes

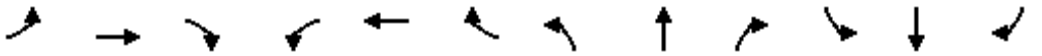
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	11	1122	62	646	60	8	74	107	22	33
Future Volume (vph)	11	1122	62	646	60	8	74	107	22	33
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	1	6		8			4	
Permitted Phases					8		8	4		4
Detector Phase	5	2	1	6	8	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	27.8	27.8	27.8	27.8	27.8	27.8
Total Split (s)	23.0	71.0	15.0	63.0	34.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	19.2%	59.2%	12.5%	52.5%	28.3%	28.3%	28.3%	28.3%	28.3%	28.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	5.8	5.8	5.8	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	Max	None	Max	None	None	None	None	None	None
Act Effct Green (s)	5.6	68.1	8.3	76.8	15.4	15.4	15.4	15.4	15.4	15.4
Actuated g/C Ratio	0.05	0.64	0.08	0.72	0.14	0.14	0.14	0.14	0.14	0.14
v/c Ratio	0.14	0.57	0.55	0.31	0.37	0.03	0.26	0.65	0.09	0.12
Control Delay	53.8	13.8	64.5	6.7	46.6	38.4	5.1	59.2	39.4	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.8	13.8	64.5	6.7	46.6	38.4	5.1	59.2	39.4	0.8
LOS	D	B	E	A	D	D	A	E	D	A
Approach Delay		14.1		11.5		24.6			44.6	
Approach LOS		B		B		C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 106.4	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 16.2	Intersection LOS: B
Intersection Capacity Utilization 64.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 43: Hellman Av./Vineyard Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1122	1	62	646	36	60	8	74	107	22	33
Future Volume (veh/h)	11	1122	1	62	646	36	60	8	74	107	22	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	12	1247	1	69	718	40	67	9	82	119	24	37
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	23	2302	2	86	2290	128	215	220	186	220	220	186
Arrive On Green	0.01	0.66	0.66	0.05	0.70	0.70	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1619	3507	3	1619	3294	183	1287	1800	1525	1253	1800	1525
Grp Volume(v), veh/h	12	608	640	69	373	385	67	9	82	119	24	37
Grp Sat Flow(s),veh/h/ln	1619	1710	1799	1619	1710	1767	1287	1800	1525	1253	1800	1525
Q Serve(g_s), s	0.7	18.7	18.7	4.2	8.4	8.4	4.8	0.4	4.9	9.1	1.2	2.2
Cycle Q Clear(g_c), s	0.7	18.7	18.7	4.2	8.4	8.4	6.0	0.4	4.9	9.6	1.2	2.2
Prop In Lane	1.00		0.00	1.00		0.10	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	23	1123	1181	86	1189	1229	215	220	186	220	220	186
V/C Ratio(X)	0.52	0.54	0.54	0.80	0.31	0.31	0.31	0.04	0.44	0.54	0.11	0.20
Avail Cap(c_a), veh/h	302	1123	1181	171	1189	1229	425	514	436	425	514	436
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.3	9.0	9.0	46.2	5.9	5.9	41.2	38.2	40.2	42.4	38.5	39.0
Incr Delay (d2), s/veh	6.7	1.9	1.8	6.3	0.7	0.7	0.8	0.1	1.6	2.0	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.9	6.2	1.7	2.4	2.5	1.5	0.2	1.9	2.8	0.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.0	10.9	10.8	52.5	6.5	6.5	42.0	38.3	41.8	44.5	38.8	39.5
LnGrp LOS	D	B	B	D	A	A	D	D	D	D	D	D
Approach Vol, veh/h		1260			827			158			180	
Approach Delay, s/veh		11.3			10.4			41.7			42.7	
Approach LOS		B			B			D			D	

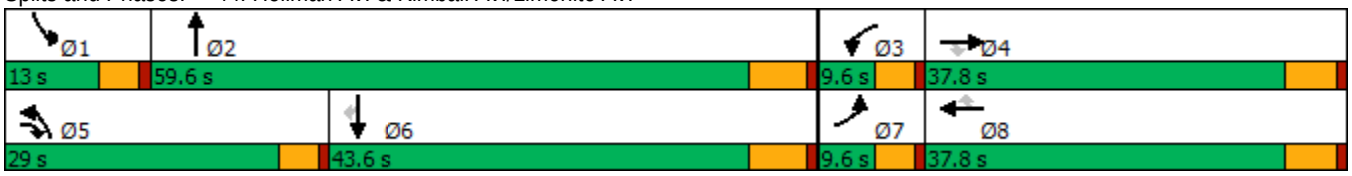
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	71.0		17.9	6.0	74.8		17.9				
Change Period (Y+Rc), s	4.6	6.2		5.8	4.6	6.2		5.8				
Max Green Setting (Gmax), s	10.4	64.8		28.2	18.4	56.8		28.2				
Max Q Clear Time (g_c+I1), s	6.2	20.7		11.6	2.7	10.4		8.0				
Green Ext Time (p_c), s	0.0	9.3		0.5	0.0	4.5		0.4				

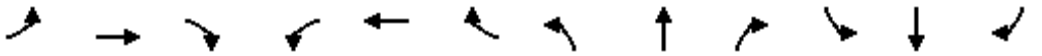
Intersection Summary			
HCM 6th Ctrl Delay		15.3	
HCM 6th LOS		B	

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	28	4	860	7	10	297	85	90	134	
Future Volume (vph)	28	4	860	7	10	297	85	90	134	
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	NA	Perm	
Protected Phases	7	4	5	3	8	5	2	6		1
Permitted Phases			4						6	
Detector Phase	7	4	5	3	8	5	2	6	6	
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	10.0	5.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	9.6	43.2	43.2	43.2	9.6
Total Split (s)	9.6	37.8	29.0	9.6	37.8	29.0	59.6	43.6	43.6	13.0
Total Split (%)	8.0%	31.5%	24.2%	8.0%	31.5%	24.2%	49.7%	36.3%	36.3%	11%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	5.2	5.2	5.2	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-2.2	-2.2	-2.2	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	None	None	Max	Max	None	None	None
Act Effct Green (s)	6.1	17.3	36.5	6.1	15.6	27.0	64.8	30.4	30.4	
Actuated g/C Ratio	0.08	0.23	0.48	0.08	0.20	0.35	0.84	0.40	0.40	
v/c Ratio	0.23	0.01	0.80	0.03	0.02	0.30	0.03	0.07	0.20	
Control Delay	47.4	27.2	8.8	45.0	29.4	24.6	5.8	19.8	4.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	47.4	27.2	8.8	45.0	29.4	24.6	5.8	19.8	4.8	
LOS	D	C	A	D	C	C	A	B	A	
Approach Delay		10.1			35.5		20.4	10.8		
Approach LOS		B			D		C	B		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 76.7	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 13.1	Intersection LOS: B
Intersection Capacity Utilization 78.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	4	860	7	10	0	297	85	2	0	90	134
Future Volume (veh/h)	28	4	860	7	10	0	297	85	2	0	90	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1600	1800	1800	1600	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	29	4	905	7	11	0	313	89	2	0	95	141
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	54	591	854	43	1060	473	718	1848	41	2	884	394
Arrive On Green	0.03	0.33	0.32	0.01	0.31	0.00	0.24	0.54	0.52	0.00	0.26	0.26
Sat Flow, veh/h	1619	1800	1525	2956	3420	1525	2956	3420	77	1619	3420	1525
Grp Volume(v), veh/h	29	4	905	7	11	0	313	44	47	0	95	141
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1478	1710	1525	1478	1710	1786	1619	1710	1525
Q Serve(g_s), s	1.8	0.2	32.6	0.2	0.2	0.0	9.2	1.3	1.3	0.0	2.2	7.8
Cycle Q Clear(g_c), s	1.8	0.2	32.6	0.2	0.2	0.0	9.2	1.3	1.3	0.0	2.2	7.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	54	591	854	43	1060	473	718	924	965	2	884	394
V/C Ratio(X)	0.54	0.01	1.06	0.16	0.01	0.00	0.44	0.05	0.05	0.00	0.11	0.36
Avail Cap(c_a), veh/h	88	591	854	161	1123	501	718	924	965	142	1316	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	49.0	23.3	22.7	50.1	24.6	0.0	33.0	11.2	11.2	0.0	29.1	31.2
Incr Delay (d2), s/veh	3.1	0.0	47.9	0.6	0.0	0.0	1.9	0.1	0.1	0.0	0.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.1	28.9	0.1	0.1	0.0	3.3	0.5	0.5	0.0	0.9	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.1	23.3	70.6	50.7	24.6	0.0	34.9	11.3	11.3	0.0	29.2	31.7
LnGrp LOS	D	C	F	D	C	A	C	B	B	A	C	C
Approach Vol, veh/h		938			18			404			236	
Approach Delay, s/veh		69.8			34.8			29.6			30.7	
Approach LOS		E			C			C			C	

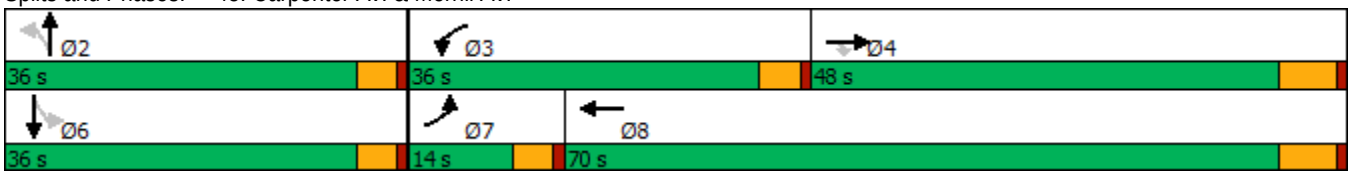
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	59.6	5.5	37.8	29.0	30.6	7.4	35.9
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	8.4	53.4	5.0	32.0	24.4	37.4	5.0	32.0
Max Q Clear Time (g_c+I1), s	0.0	3.3	2.2	34.6	11.2	9.8	3.8	2.2
Green Ext Time (p_c), s	0.0	0.4	0.0	0.0	0.5	0.9	0.0	0.0

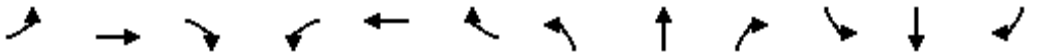
Intersection Summary	
HCM 6th Ctrl Delay	53.5
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	16	1263	25	46	664	46	5	125	6
Future Volume (vph)	16	1263	25	46	664	46	5	125	6
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	26.6	26.6
Total Split (s)	14.0	48.0	48.0	36.0	70.0	36.0	36.0	36.0	36.0
Total Split (%)	11.7%	40.0%	40.0%	30.0%	58.3%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2		4.6		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.9	58.6	58.6	7.7	64.6		23.9		23.9
Actuated g/C Ratio	0.06	0.57	0.57	0.07	0.62		0.23		0.23
v/c Ratio	0.19	0.73	0.03	0.40	0.36		0.53		0.88
Control Delay	55.4	21.8	0.1	58.2	11.8		20.9		74.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	55.4	21.8	0.1	58.2	11.8		20.9		74.6
LOS	E	C	A	E	B		C		E
Approach Delay		21.8			14.7		20.9		74.6
Approach LOS		C			B		C		E

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 103.6			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 23.1		Intersection LOS: C	
Intersection Capacity Utilization 76.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 45: Carpenter Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	1263	25	46	664	30	46	5	155	125	6	34
Future Volume (veh/h)	16	1263	25	46	664	30	46	5	155	125	6	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	18	1403	28	51	738	33	51	6	172	139	7	38
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	34	2063	920	65	2072	93	101	27	256	215	16	44
Arrive On Green	0.02	0.60	0.60	0.04	0.62	0.62	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1714	3420	1525	1714	3334	149	278	129	1227	735	79	212
Grp Volume(v), veh/h	18	1403	28	51	378	393	229	0	0	184	0	0
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1773	1634	0	0	1025	0	0
Q Serve(g_s), s	1.1	28.3	0.8	3.0	11.0	11.1	0.0	0.0	0.0	5.5	0.0	0.0
Cycle Q Clear(g_c), s	1.1	28.3	0.8	3.0	11.0	11.1	13.1	0.0	0.0	18.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.08	0.22		0.75	0.76		0.21
Lane Grp Cap(c), veh/h	34	2063	920	65	1063	1102	384	0	0	276	0	0
V/C Ratio(X)	0.54	0.68	0.03	0.79	0.36	0.36	0.60	0.00	0.00	0.67	0.00	0.00
Avail Cap(c_a), veh/h	157	2063	920	524	1063	1102	529	0	0	401	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	49.9	13.7	8.2	49.0	9.4	9.4	37.4	0.0	0.0	40.1	0.0	0.0
Incr Delay (d2), s/veh	4.9	1.8	0.1	7.6	0.9	0.9	1.5	0.0	0.0	2.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	9.5	0.2	1.4	3.7	3.8	5.5	0.0	0.0	4.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.7	15.5	8.3	56.5	10.4	10.3	38.9	0.0	0.0	42.9	0.0	0.0
LnGrp LOS	D	B	A	E	B	B	D	A	A	D	A	A
Approach Vol, veh/h		1449			822			229			184	
Approach Delay, s/veh		15.9			13.2			38.9			42.9	
Approach LOS		B			B			D			D	

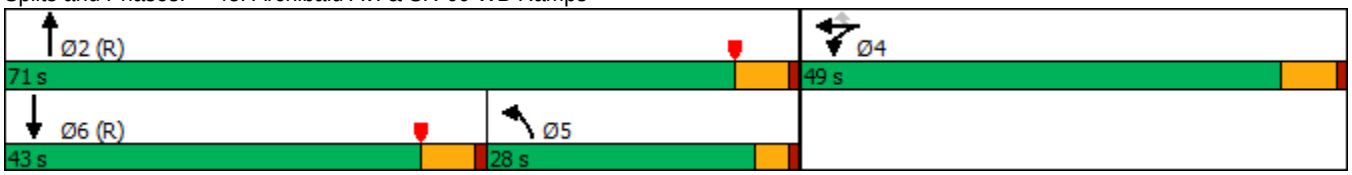
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		26.1	8.5	68.1		26.1	6.6	70.0				
Change Period (Y+Rc), s		4.6	4.6	6.2		4.6	4.6	6.2				
Max Green Setting (Gmax), s		31.4	31.4	41.8		31.4	9.4	63.8				
Max Q Clear Time (g_c+I1), s		15.1	5.0	30.3		20.7	3.1	13.1				
Green Ext Time (p_c), s		1.3	0.0	6.8		0.8	0.0	4.6				

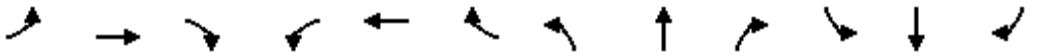
Intersection Summary												
HCM 6th Ctrl Delay			18.9									
HCM 6th LOS			B									

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	6	290	463	570	1210
Future Volume (vph)	6	290	463	570	1210
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	49.0	49.0	28.0	71.0	43.0
Total Split (%)	40.8%	40.8%	23.3%	59.2%	35.8%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	42.0	42.0	20.4	66.2	41.8
Actuated g/C Ratio	0.35	0.35	0.17	0.55	0.35
v/c Ratio	0.86	0.41	0.81	0.21	0.80
Control Delay	50.8	6.8	37.8	2.5	37.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	6.8	37.8	2.5	37.7
LOS	D	A	D	A	D
Approach Delay	35.1			18.3	37.7
Approach LOS	D			B	D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 31.5	Intersection LOS: C
Intersection Capacity Utilization 81.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	517	6	290	463	570	0	0	1210	499
Future Volume (veh/h)	0	0	0	517	6	290	463	570	0	0	1210	499
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				539	6	157	482	594	0	0	1260	385
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				595	7	535	792	2954	0	0	1472	448
Arrive On Green				0.33	0.33	0.33	0.07	0.19	0.00	0.00	0.30	0.30
Sat Flow, veh/h				1791	20	1610	3510	5358	0	0	5242	1515
Grp Volume(v), veh/h				545	0	157	482	594	0	0	1241	404
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1729	0	0	1634	1589
Q Serve(g_s), s				34.5	0.0	8.7	16.0	11.6	0.0	0.0	28.7	28.8
Cycle Q Clear(g_c), s				34.5	0.0	8.7	16.0	11.6	0.0	0.0	28.7	28.8
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.95
Lane Grp Cap(c), veh/h				601	0	535	792	2954	0	0	1450	470
V/C Ratio(X)				0.91	0.00	0.29	0.61	0.20	0.00	0.00	0.86	0.86
Avail Cap(c_a), veh/h				649	0	577	792	2954	0	0	1520	492
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.43	0.43	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				38.3	0.0	29.7	50.4	25.7	0.0	0.0	39.8	39.9
Incr Delay (d2), s/veh				17.1	0.0	0.6	0.4	0.1	0.0	0.0	6.7	18.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				17.4	0.0	8.8	7.5	5.2	0.0	0.0	11.9	13.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				55.4	0.0	30.3	50.8	25.7	0.0	0.0	46.5	58.1
LnGrp LOS				E	A	C	D	C	A	A	D	E
Approach Vol, veh/h					702			1076			1645	
Approach Delay, s/veh					49.8			37.0			49.4	
Approach LOS					D			D			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	74.2	45.8	32.9	41.3
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	65.2	43.0	24.0	* 37
Max Q Clear Time (g_c+I1), s	13.6	36.5	18.0	30.8
Green Ext Time (p_c), s	4.1	3.3	0.5	4.7

Intersection Summary	
HCM 6th Ctrl Delay	45.6
HCM 6th LOS	D

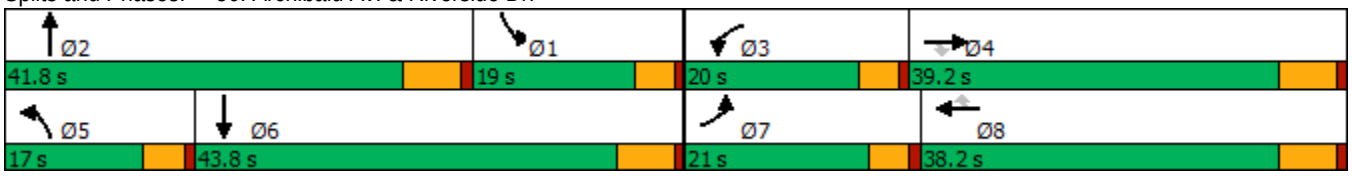
Notes

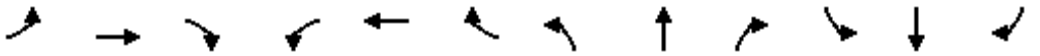
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	246	686	387	173	489	128	326	934	313	1072
Future Volume (vph)	246	686	387	173	489	128	326	934	313	1072
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.0	39.2	39.2	20.0	38.2	38.2	17.0	41.8	19.0	43.8
Total Split (%)	17.5%	32.7%	32.7%	16.7%	31.8%	31.8%	14.2%	34.8%	15.8%	36.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	16.5	29.5	29.5	14.5	27.5	27.5	12.5	31.1	17.5	36.2
Actuated g/C Ratio	0.14	0.26	0.26	0.13	0.24	0.24	0.11	0.27	0.15	0.32
v/c Ratio	1.07	0.78	0.67	0.85	0.60	0.27	0.96	0.78	0.66	0.88
Control Delay	123.6	46.5	18.6	82.6	41.6	3.8	90.5	42.3	54.5	43.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	123.6	46.5	18.6	82.6	41.6	3.8	90.5	42.3	54.5	43.5
LOS	F	D	B	F	D	A	F	D	D	D
Approach Delay		52.7			44.5			54.0		45.6
Approach LOS		D			D			D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 49.5	Intersection LOS: D
Intersection Capacity Utilization 85.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	246	686	387	173	489	128	326	934	86	313	1072	269
Future Volume (veh/h)	246	686	387	173	489	128	326	934	86	313	1072	269
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	262	730	255	184	520	77	347	994	82	333	1140	222
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	259	907	395	212	808	359	380	1252	103	513	1354	264
Arrive On Green	0.15	0.25	0.25	0.12	0.22	0.22	0.11	0.26	0.26	0.15	0.31	0.31
Sat Flow, veh/h	1714	3610	1573	1714	3610	1604	3326	4876	401	3326	4351	847
Grp Volume(v), veh/h	262	730	255	184	520	77	347	704	372	333	906	456
Grp Sat Flow(s),veh/h/ln	1714	1805	1573	1714	1805	1604	1663	1729	1820	1663	1729	1740
Q Serve(g_s), s	16.4	20.6	15.7	11.4	14.2	2.8	11.2	20.6	20.7	10.2	26.5	26.5
Cycle Q Clear(g_c), s	16.4	20.6	15.7	11.4	14.2	2.8	11.2	20.6	20.7	10.2	26.5	26.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		0.49
Lane Grp Cap(c), veh/h	259	907	395	212	808	359	380	888	467	513	1077	542
V/C Ratio(X)	1.01	0.80	0.64	0.87	0.64	0.21	0.91	0.79	0.80	0.65	0.84	0.84
Avail Cap(c_a), veh/h	259	1099	479	243	1065	473	380	1135	598	513	1199	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	38.1	36.3	46.6	38.2	14.7	47.5	37.6	37.6	43.1	34.8	34.8
Incr Delay (d2), s/veh	58.6	3.7	2.2	22.2	0.9	0.3	25.2	3.0	5.7	2.3	5.1	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.9	9.0	5.9	6.0	6.0	1.6	5.8	8.6	9.4	4.2	11.2	11.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	104.6	41.8	38.4	68.9	39.0	15.0	72.7	40.6	43.4	45.4	39.9	44.5
LnGrp LOS	F	D	D	E	D	B	E	D	D	D	D	D
Approach Vol, veh/h		1247			781			1423			1695	
Approach Delay, s/veh		54.3			43.7			49.2			42.2	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.9	34.0	18.0	33.5	17.0	40.0	21.0	30.5
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	14.4	* 36	15.4	33.0	12.4	37.6	16.4	32.0
Max Q Clear Time (g_c+I1), s	12.2	22.7	13.4	22.6	13.2	28.5	18.4	16.2
Green Ext Time (p_c), s	0.2	5.2	0.0	3.9	0.0	5.2	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	47.3
HCM 6th LOS	D

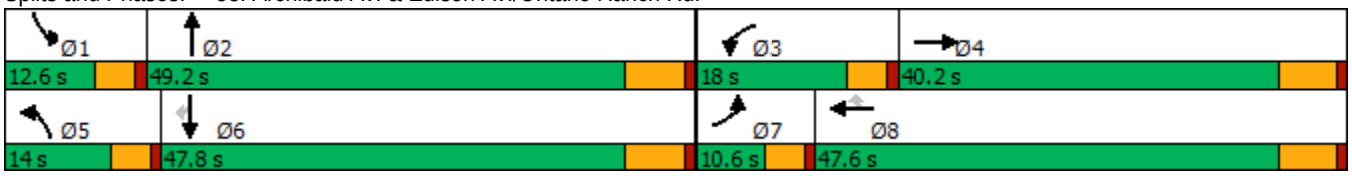
Notes

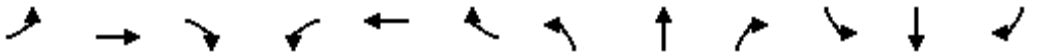
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	874	138	383	319	81	78	825	494	150	971	120
Future Volume (vph)	216	874	138	383	319	81	78	825	494	150	971	120
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	10.6	40.2		18.0	47.6	47.6	14.0	49.2		12.6	47.8	47.8
Total Split (%)	8.8%	33.5%		15.0%	39.7%	39.7%	11.7%	41.0%		10.5%	39.8%	39.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	6.1	32.5	114.1	13.5	40.0	40.0	8.5	37.9	114.1	8.1	40.0	40.0
Actuated g/C Ratio	0.05	0.28	1.00	0.12	0.35	0.35	0.07	0.33	1.00	0.07	0.35	0.35
v/c Ratio	1.43	0.92	0.09	1.13	0.27	0.14	0.67	0.75	0.34	1.36	0.83	0.20
Control Delay	265.6	56.0	0.1	135.2	28.2	2.6	80.3	38.5	0.6	251.3	42.3	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	265.6	56.0	0.1	135.2	28.2	2.6	80.3	38.5	0.6	251.3	42.3	2.8
LOS	F	E	A	F	C	A	F	D	A	F	D	A
Approach Delay		86.7			77.8			27.4			63.8	
Approach LOS		F			E			C			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.1	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.43	
Intersection Signal Delay: 61.3	Intersection LOS: E
Intersection Capacity Utilization 90.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	874	138	383	319	81	78	825	494	150	971	120
Future Volume (veh/h)	216	874	138	383	319	81	78	825	494	150	971	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	223	901	0	395	329	50	80	851	0	155	1001	102
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	160	989		356	1216	542	99	1100		116	1136	500
Arrive On Green	0.05	0.29	0.00	0.12	0.36	0.36	0.06	0.32	0.00	0.07	0.33	0.33
Sat Flow, veh/h	2956	3420	1525	2956	3420	1525	1619	3420	1525	1619	3420	1505
Grp Volume(v), veh/h	223	901	0	395	329	50	80	851	0	155	1001	102
Grp Sat Flow(s),veh/h/ln	1478	1710	1525	1478	1710	1525	1619	1710	1525	1619	1710	1505
Q Serve(g_s), s	6.0	28.3	0.0	13.4	7.6	2.4	5.4	25.0	0.0	8.0	30.7	5.4
Cycle Q Clear(g_c), s	6.0	28.3	0.0	13.4	7.6	2.4	5.4	25.0	0.0	8.0	30.7	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	160	989		356	1216	542	99	1100		116	1136	500
V/C Ratio(X)	1.40	0.91		1.11	0.27	0.09	0.81	0.77		1.33	0.88	0.20
Avail Cap(c_a), veh/h	160	1046		356	1273	568	137	1313		116	1270	559
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.6	38.2	0.0	48.9	25.5	23.9	51.5	34.1	0.0	51.6	35.1	26.6
Incr Delay (d2), s/veh	212.5	11.4	0.0	80.3	0.1	0.1	15.2	2.5	0.0	196.0	6.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	12.7	0.0	8.7	3.0	0.8	2.5	10.0	0.0	9.4	12.9	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	265.1	49.5	0.0	129.2	25.7	23.9	66.8	36.5	0.0	247.6	42.0	26.8
LnGrp LOS	F	D		F	C	C	E	D		F	D	C
Approach Vol, veh/h		1124	A		774			931	A		1258	
Approach Delay, s/veh		92.3			78.4			39.1			66.1	
Approach LOS		F			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	42.3	18.0	38.3	11.4	43.4	10.6	45.7
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	8.0	42.7	13.4	34.0	9.4	41.3	6.0	41.4
Max Q Clear Time (g_c+I1), s	10.0	27.0	15.4	30.3	7.4	32.7	8.0	9.6
Green Ext Time (p_c), s	0.0	4.6	0.0	1.9	0.0	4.1	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	69.5
HCM 6th LOS	E

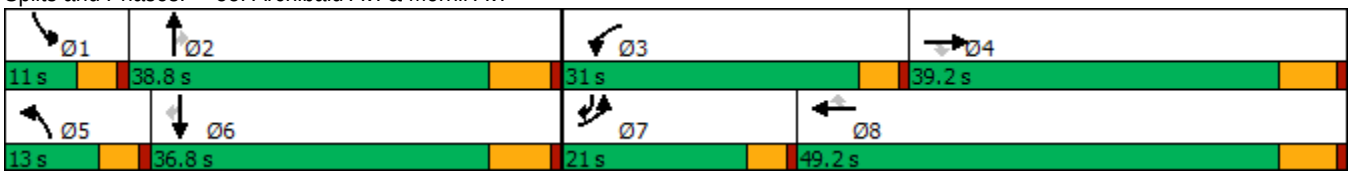
Notes

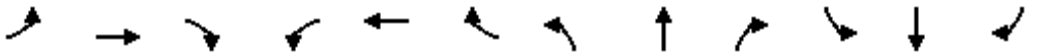
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	606	92	798	51	31	61	260	718	44	80	1098	306
Future Volume (vph)	606	92	798	51	31	61	260	718	44	80	1098	306
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	9.6
Total Split (s)	21.0	39.2	39.2	31.0	49.2	49.2	13.0	38.8	38.8	11.0	36.8	21.0
Total Split (%)	17.5%	32.7%	32.7%	25.8%	41.0%	41.0%	10.8%	32.3%	32.3%	9.2%	30.7%	17.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	None
Act Effct Green (s)	20.7	35.7	35.7	7.9	24.4	24.4	8.5	35.2	35.2	6.1	30.6	57.9
Actuated g/C Ratio	0.20	0.35	0.35	0.08	0.24	0.24	0.08	0.34	0.34	0.06	0.30	0.56
v/c Ratio	0.96	0.15	1.02	0.43	0.07	0.14	1.01	0.60	0.07	0.45	1.06	0.34
Control Delay	70.7	24.7	55.0	57.9	28.4	1.0	105.6	33.0	0.2	57.7	79.7	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.7	24.7	55.0	57.9	28.4	1.0	105.6	33.0	0.2	57.7	79.7	9.6
LOS	E	C	D	E	C	A	F	C	A	E	E	A
Approach Delay		59.5			27.3			50.1			64.1	
Approach LOS		E			C			D			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 57.7	Intersection LOS: E
Intersection Capacity Utilization 102.8%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	606	92	798	51	31	61	260	718	44	80	1098	306
Future Volume (veh/h)	606	92	798	51	31	61	260	718	44	80	1098	306
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	625	95	638	53	32	24	268	740	31	82	1132	257
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	544	609	516	66	380	322	279	1263	529	139	1118	730
Arrive On Green	0.17	0.34	0.34	0.04	0.21	0.21	0.09	0.35	0.35	0.05	0.31	0.31
Sat Flow, veh/h	3238	1800	1525	1619	1800	1525	3238	3600	1506	3048	3600	1525
Grp Volume(v), veh/h	625	95	638	53	32	24	268	740	31	82	1132	257
Grp Sat Flow(s),veh/h/ln	1619	1800	1525	1619	1800	1525	1619	1800	1506	1524	1800	1525
Q Serve(g_s), s	16.4	3.6	33.0	3.2	1.4	1.2	8.0	16.4	1.3	2.6	30.3	10.3
Cycle Q Clear(g_c), s	16.4	3.6	33.0	3.2	1.4	1.2	8.0	16.4	1.3	2.6	30.3	10.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	544	609	516	66	380	322	279	1263	529	139	1118	730
V/C Ratio(X)	1.15	0.16	1.24	0.80	0.08	0.07	0.96	0.59	0.06	0.59	1.01	0.35
Avail Cap(c_a), veh/h	544	609	516	438	793	672	279	1263	529	200	1118	730
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.6	22.6	32.3	46.4	30.9	30.9	44.4	25.9	21.0	45.7	33.6	15.9
Incr Delay (d2), s/veh	86.5	0.1	122.4	8.2	0.1	0.1	43.0	0.7	0.0	1.5	30.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.7	1.4	29.1	1.4	0.6	0.5	4.7	6.4	0.5	0.9	16.6	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	127.1	22.7	154.7	54.6	31.0	31.0	87.4	26.6	21.0	47.1	63.7	16.2
LnGrp LOS	F	C	F	D	C	C	F	C	C	D	F	B
Approach Vol, veh/h		1358			109			1039			1471	
Approach Delay, s/veh		132.7			42.5			42.1			54.5	
Approach LOS		F			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	40.7	8.6	39.2	13.0	36.8	21.0	26.8
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	6.4	32.3	26.4	33.0	8.4	30.3	16.4	43.0
Max Q Clear Time (g_c+I1), s	4.6	18.4	5.2	35.0	10.0	32.3	18.4	3.4
Green Ext Time (p_c), s	0.0	3.8	0.0	0.0	0.0	0.0	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	77.6
HCM 6th LOS	E

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	480	361	641	467	882	1070
Future Volume (vph)	480	361	641	467	882	1070
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	36.3	11.0	46.3	36.3	11.0	11.0
Total Split (s)	39.0	20.0	61.0	39.0	20.0	81.0
Total Split (%)	32.5%	16.7%	50.8%	32.5%	16.7%	67.5%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.0	5.3	5.3	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	Min	None	None	Min
Act Effct Green (s)	17.9	39.1	35.4	53.3	15.7	56.6
Actuated g/C Ratio	0.21	0.46	0.42	0.62	0.18	0.66
v/c Ratio	0.67	0.25	0.83	0.48	1.35	0.84
Control Delay	36.7	4.3	32.7	7.2	199.2	19.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.7	4.3	32.7	7.2	199.2	19.4
LOS	D	A	C	A	F	B
Approach Delay	22.8		21.9			100.6
Approach LOS	C		C			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 85.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.35	
Intersection Signal Delay: 61.5	Intersection LOS: E
Intersection Capacity Utilization 85.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	480	361	641	467	882	1070
Future Volume (veh/h)	480	361	641	467	882	1070
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1976	1976
Adj Flow Rate, veh/h	490	182	654	456	900	1092
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	599	1039	816	952	716	1365
Arrive On Green	0.17	0.17	0.43	0.43	0.20	0.69
Sat Flow, veh/h	3510	2834	1900	1577	3651	1976
Grp Volume(v), veh/h	490	182	654	456	900	1092
Grp Sat Flow(s),veh/h/ln	1755	1417	1900	1577	1825	1976
Q Serve(g_s), s	10.3	3.3	22.9	12.5	15.0	29.2
Cycle Q Clear(g_c), s	10.3	3.3	22.9	12.5	15.0	29.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	599	1039	816	952	716	1365
V/C Ratio(X)	0.82	0.18	0.80	0.48	1.26	0.80
Avail Cap(c_a), veh/h	1546	1803	1383	1422	716	1962
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.6	16.4	19.0	8.6	30.8	8.2
Incr Delay (d2), s/veh	1.1	0.0	2.3	0.5	127.2	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.9	8.8	5.5	18.5	6.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.6	16.4	21.3	9.1	158.0	9.1
LnGrp LOS	C	B	C	A	F	A
Approach Vol, veh/h	672		1110			1992
Approach Delay, s/veh	27.5		16.3			76.4
Approach LOS	C		B			E

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	20.0	38.2			58.2	18.4
Change Period (Y+Rc), s	5.0	5.3			* 5.3	5.3
Max Green Setting (Gmax), s	15.0	55.7			* 76	33.7
Max Q Clear Time (g_c+I1), s	17.0	24.9			31.2	12.3
Green Ext Time (p_c), s	0.0	7.9			5.4	0.8

Intersection Summary	
HCM 6th Ctrl Delay	50.0
HCM 6th LOS	D

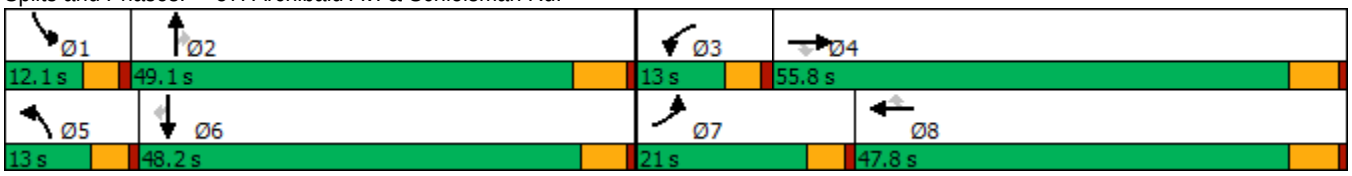
Notes

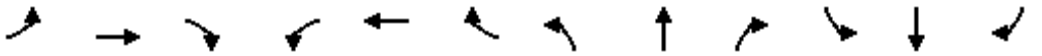
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	518	1161	227	123	379	71	234	704	125	201	795	451
Future Volume (vph)	518	1161	227	123	379	71	234	704	125	201	795	451
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	21.0	55.8	55.8	13.0	47.8	47.8	13.0	49.1	49.1	12.1	48.2	48.2
Total Split (%)	16.2%	42.9%	42.9%	10.0%	36.8%	36.8%	10.0%	37.8%	37.8%	9.3%	37.1%	37.1%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	16.5	51.0	51.0	7.7	42.2	42.2	8.4	28.3	28.3	7.5	28.2	28.2
Actuated g/C Ratio	0.14	0.44	0.44	0.07	0.36	0.36	0.07	0.24	0.24	0.06	0.24	0.24
v/c Ratio	1.06	0.52	0.29	0.54	0.20	0.11	0.94	0.57	0.26	0.90	0.64	0.69
Control Delay	105.9	25.6	7.1	62.8	26.7	0.3	97.0	39.7	5.6	93.8	41.3	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	105.9	25.6	7.1	62.8	26.7	0.3	97.0	39.7	5.6	93.8	41.3	14.3
LOS	F	C	A	E	C	A	F	D	A	F	D	B
Approach Delay		45.2			31.2			48.3			40.2	
Approach LOS		D			C			D			D	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 115.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 42.8	Intersection LOS: D
Intersection Capacity Utilization 90.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	518	1161	227	123	379	71	234	704	125	201	795	451
Future Volume (veh/h)	518	1161	227	123	379	71	234	704	125	201	795	451
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	529	1185	150	126	387	46	239	718	91	205	811	346
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	478	2248	698	181	1809	561	245	1436	446	219	1397	432
Arrive On Green	0.14	0.43	0.43	0.05	0.35	0.35	0.07	0.28	0.28	0.06	0.27	0.27
Sat Flow, veh/h	3510	5187	1610	3510	5187	1607	3510	5187	1610	3510	5187	1605
Grp Volume(v), veh/h	529	1185	150	126	387	46	239	718	91	205	811	346
Grp Sat Flow(s),veh/h/ln	1755	1729	1610	1755	1729	1607	1755	1729	1610	1755	1729	1605
Q Serve(g_s), s	16.4	20.2	7.0	4.3	6.3	2.3	8.2	14.0	5.2	7.0	16.3	24.2
Cycle Q Clear(g_c), s	16.4	20.2	7.0	4.3	6.3	2.3	8.2	14.0	5.2	7.0	16.3	24.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	478	2248	698	181	1809	561	245	1436	446	219	1397	432
V/C Ratio(X)	1.11	0.53	0.21	0.70	0.21	0.08	0.98	0.50	0.20	0.94	0.58	0.80
Avail Cap(c_a), veh/h	478	2248	698	245	1809	561	245	1848	574	219	1843	570
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	25.0	21.3	56.2	27.6	26.3	55.9	36.6	33.4	56.2	38.1	41.0
Incr Delay (d2), s/veh	73.5	0.9	0.7	2.4	0.3	0.3	50.4	0.3	0.2	43.2	0.4	6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	8.1	2.7	1.9	2.6	0.9	5.2	5.7	2.0	4.3	6.7	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	125.5	25.9	22.0	58.6	27.9	26.6	106.4	36.8	33.6	99.4	38.5	47.0
LnGrp LOS	F	C	C	E	C	C	F	D	C	F	D	D
Approach Vol, veh/h		1864			559			1048			1362	
Approach Delay, s/veh		53.9			34.7			52.4			49.8	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	39.5	10.8	58.0	13.0	38.6	21.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	7.5	42.9	8.4	50.0	8.4	* 43	16.4	42.0
Max Q Clear Time (g_c+I1), s	9.0	16.0	6.3	22.2	10.2	26.2	18.4	8.3
Green Ext Time (p_c), s	0.0	4.9	0.0	9.5	0.0	5.7	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	50.2
HCM 6th LOS	D

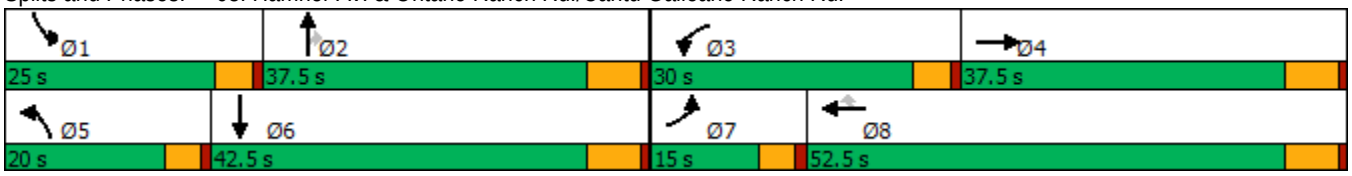
Notes

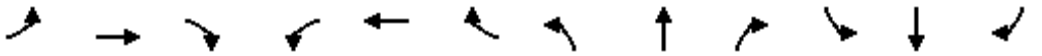
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	114	1233	666	623	123	223	432	268	517	912
Future Volume (vph)	114	1233	666	623	123	223	432	268	517	912
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.2	9.6	49.2	49.2	9.6	35.2	35.2	9.6	38.2
Total Split (s)	15.0	37.5	30.0	52.5	52.5	20.0	37.5	37.5	25.0	42.5
Total Split (%)	11.5%	28.8%	23.1%	40.4%	40.4%	15.4%	28.8%	28.8%	19.2%	32.7%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	None	Max	None	None	None	None	None	None	None
Act Effct Green (s)	10.4	31.3	25.5	46.3	46.3	13.0	24.2	24.2	20.5	31.6
Actuated g/C Ratio	0.08	0.25	0.21	0.38	0.38	0.11	0.20	0.20	0.17	0.26
v/c Ratio	0.46	0.88	1.10	0.32	0.19	0.72	0.42	0.54	1.07	0.79
Control Delay	61.6	50.4	113.2	28.5	4.1	67.3	44.1	8.6	108.1	46.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.6	50.4	113.2	28.5	4.1	67.3	44.1	8.6	108.1	46.4
LOS	E	D	F	C	A	E	D	A	F	D
Approach Delay		51.1		66.3			39.4			66.9
Approach LOS		D		E			D			E

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 123.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 57.5	Intersection LOS: E
Intersection Capacity Utilization 94.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	1233	302	666	623	123	223	432	268	517	912	128
Future Volume (veh/h)	114	1233	302	666	623	123	223	432	268	517	912	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1600	1800	1800	1600	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	119	1284	206	694	649	94	232	450	200	539	950	78
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	272	1528	244	664	2057	581	284	918	259	533	1239	101
Arrive On Green	0.09	0.25	0.25	0.22	0.38	0.38	0.09	0.17	0.17	0.17	0.25	0.25
Sat Flow, veh/h	3048	6058	967	3048	5400	1525	3048	5400	1523	3048	4924	403
Grp Volume(v), veh/h	119	1144	346	694	649	94	232	450	200	539	694	334
Grp Sat Flow(s),veh/h/ln	1524	1800	1626	1524	1800	1525	1524	1800	1523	1524	1800	1727
Q Serve(g_s), s	4.3	23.4	23.6	25.4	9.9	4.7	8.7	8.8	14.6	20.4	20.8	20.9
Cycle Q Clear(g_c), s	4.3	23.4	23.6	25.4	9.9	4.7	8.7	8.8	14.6	20.4	20.8	20.9
Prop In Lane	1.00		0.60	1.00		1.00	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	272	1362	410	664	2057	581	284	918	259	533	906	434
V/C Ratio(X)	0.44	0.84	0.84	1.05	0.32	0.16	0.82	0.49	0.77	1.01	0.77	0.77
Avail Cap(c_a), veh/h	272	1449	436	664	2143	605	402	1449	409	533	1120	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.4	41.4	41.4	45.6	25.4	23.8	51.9	43.8	46.3	48.1	40.5	40.5
Incr Delay (d2), s/veh	5.1	4.4	13.5	47.5	0.1	0.1	5.8	0.4	4.9	41.8	2.6	5.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	10.3	10.4	13.5	4.0	1.6	3.4	3.8	5.7	10.5	9.1	9.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.4	45.7	54.9	93.1	25.5	24.0	57.7	44.2	51.1	90.0	43.0	45.8
LnGrp LOS	E	D	D	F	C	C	E	D	D	F	D	D
Approach Vol, veh/h		1609			1437			882			1567	
Approach Delay, s/veh		48.4			58.1			49.4			59.8	
Approach LOS		D			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	26.0	30.0	35.6	15.5	35.5	15.0	50.6
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	20.4	31.3	25.4	31.3	15.4	36.3	10.4	46.3
Max Q Clear Time (g_c+I1), s	22.4	16.6	27.4	25.6	10.7	22.9	6.3	11.9
Green Ext Time (p_c), s	0.0	2.9	0.0	3.8	0.2	5.0	0.1	4.6

Intersection Summary	
HCM 6th Ctrl Delay	54.3
HCM 6th LOS	D

APPENDIX 9.1:

HORIZON YEAR (2040) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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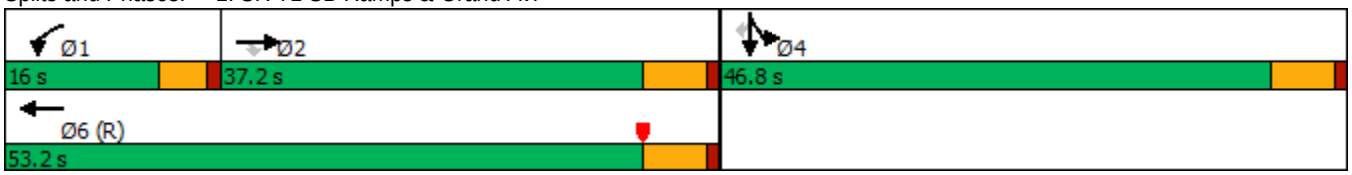
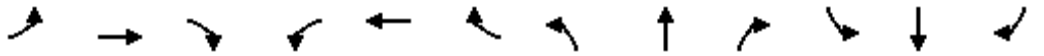
Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1138	241	206	1651	981	5	370
Future Volume (vph)	1138	241	206	1651	981	5	370
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	37.2	37.2	16.0	53.2	46.8	46.8	46.8
Total Split (%)	37.2%	37.2%	16.0%	53.2%	46.8%	46.8%	46.8%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1138	241	206	1651	0	0	0	0	981	5	370
Future Volume (veh/h)	0	1138	241	206	1651	0	0	0	0	981	5	370
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1237	179	224	1795	0				1070	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1882	584	313	2552	0				1254	0	
Arrive On Green	0.00	0.36	0.36	0.09	0.49	0.00				0.35	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	1237	179	224	1795	0				1070	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	20.0	8.0	6.2	26.9	0.0				27.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	20.0	8.0	6.2	26.9	0.0				27.4	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1882	584	313	2552	0				1254	0	
V/C Ratio(X)	0.00	0.66	0.31	0.72	0.70	0.00				0.85	0.00	
Avail Cap(c_a), veh/h	0	1882	584	421	2552	0				1549	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	26.7	22.8	44.3	19.7	0.0				30.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.8	1.4	0.2	0.2	0.0				4.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.0	3.1	2.6	9.7	0.0				11.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	28.5	24.2	44.5	19.9	0.0				34.3	0.0	0.0
LnGrp LOS	A	C	C	D	B	A				C	A	
Approach Vol, veh/h		1416			2019						1070	A
Approach Delay, s/veh		27.9			22.6						34.3	
Approach LOS		C			C						C	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	12.9	40.3		38.7		53.2						
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8						
Max Green Setting (Gmax), s	11.4	31.4		41.0		47.4						
Max Q Clear Time (g_c+I1), s	8.2	22.0		29.4		28.9						
Green Ext Time (p_c), s	0.1	5.6		3.4		11.7						

Intersection Summary		
HCM 6th Ctrl Delay		27.1
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

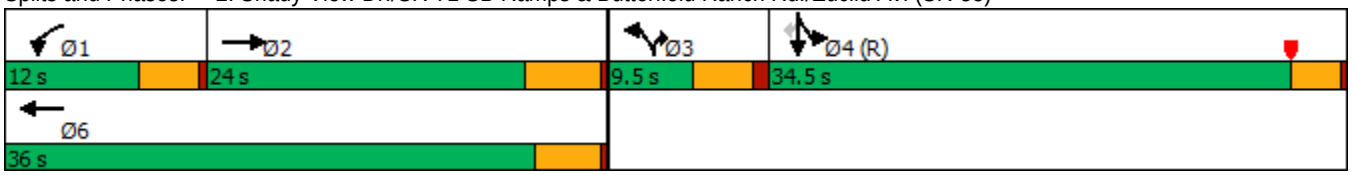
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

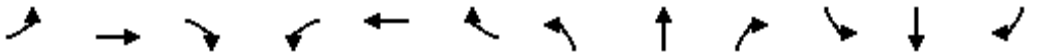
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	809	234	401	21	330	669	30	14
Future Volume (vph)	809	234	401	21	330	669	30	14
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	24.0	12.0	36.0	9.5	9.5	34.5	34.5	34.5
Total Split (%)	30.0%	15.0%	45.0%	11.9%	11.9%	43.1%	43.1%	43.1%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	809	36	234	401	0	21	0	330	669	30	14
Future Volume (veh/h)	0	809	36	234	401	0	21	0	330	669	30	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	826	28	239	409	0	21	0	268	705	0	-2
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	846	29	181	1399		0	0	0	1832	0	815
Arrive On Green	0.00	0.24	0.24	0.03	0.13	0.00	0.00	0.00	0.00	0.51	0.00	0.00
Sat Flow, veh/h	0	3658	121	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	418	436	239	409	0		0.0		705	0	-2
Grp Sat Flow(s),veh/h/ln	0	1805	1878	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	18.4	18.4	8.0	8.2	0.0				9.6	0.0	0.0
Cycle Q Clear(g_c), s	0.0	18.4	18.4	8.0	8.2	0.0				9.6	0.0	0.0
Prop In Lane	0.00		0.06	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	429	446	181	1399					1832	0	815
V/C Ratio(X)	0.00	0.98	0.98	1.32	0.29					0.38	0.00	0.00
Avail Cap(c_a), veh/h	0	429	446	181	1421					1832	0	815
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.68	0.68	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	30.3	30.3	38.7	24.9	0.0				12.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	37.0	36.2	168.2	0.1	0.0				0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.7	12.1	12.0	3.5	0.0				3.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	67.2	66.5	206.9	25.0	0.0				12.7	0.0	0.0
LnGrp LOS	A	E	E	F	C					B	A	A
Approach Vol, veh/h		854			648	A					703	
Approach Delay, s/veh		66.9			92.1						12.8	
Approach LOS		E			F						B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	12.0	24.0		44.0		36.0						
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5						
Max Green Setting (Gmax), s	8.0	19.0		31.0		* 32						
Max Q Clear Time (g_c+I1), s	10.0	20.4		11.6		10.2						
Green Ext Time (p_c), s	0.0	0.0		2.5		1.9						

Intersection Summary			
HCM 6th Ctrl Delay		57.0	
HCM 6th LOS		E	

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

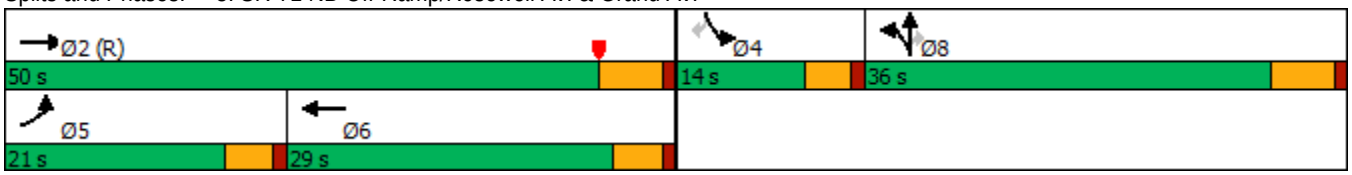
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

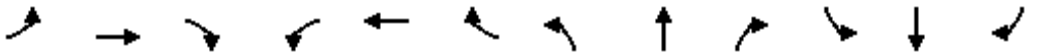
Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	632	1278	209	1498	564	84	78	117	809
Future Volume (vph)	632	1278	209	1498	564	84	78	117	809
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.6	34.8		14.7	34.8	34.8	34.8	9.5	9.5
Total Split (s)	21.0	50.0		29.0	36.0	36.0	36.0	14.0	14.0
Total Split (%)	21.0%	50.0%		29.0%	36.0%	36.0%	36.0%	14.0%	14.0%
Yellow Time (s)	3.6	4.8		3.7	4.8	4.8	4.8	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8		-0.7	-1.8	-1.8	-1.8	-0.5	-0.5
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	Max	Max	Max	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	632	1278	209	0	1498	148	564	84	78	117	0	809
Future Volume (veh/h)	632	1278	209	0	1498	148	564	84	78	117	0	809
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	687	1389	0	0	1628	161	678	0	45	127	0	603
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	308	3112		0	2309	228	1158	0	515	0	0	0
Arrive On Green	0.17	0.60	0.00	0.00	0.38	0.37	0.32	0.00	0.32	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6357	602	3619	0	1610		0	
Grp Volume(v), veh/h	687	1389	0	0	1310	479	678	0	45		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1792	1810	0	1610			
Q Serve(g_s), s	17.0	14.6	0.0	0.0	22.6	22.7	15.7	0.0	2.0			
Cycle Q Clear(g_c), s	17.0	14.6	0.0	0.0	22.6	22.7	15.7	0.0	2.0			
Prop In Lane	1.00		1.00	0.00		0.34	1.00		1.00			
Lane Grp Cap(c), veh/h	308	3112		0	1858	679	1158	0	515			
V/C Ratio(X)	2.23	0.45		0.00	0.71	0.71	0.59	0.00	0.09			
Avail Cap(c_a), veh/h	308	3112		0	1858	679	1158	0	515			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.68	0.68	0.00	0.00	0.85	0.85	1.00	0.00	1.00			
Uniform Delay (d), s/veh	41.5	10.9	0.0	0.0	26.3	26.4	28.4	0.0	23.8			
Incr Delay (d2), s/veh	562.1	0.3	0.0	0.0	1.1	2.8	2.2	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	55.2	4.9	0.0	0.0	8.6	9.8	6.7	0.0	0.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	603.6	11.2	0.0	0.0	27.4	29.3	30.6	0.0	24.1			
LnGrp LOS	F	B		A	C	C	C	A	C			
Approach Vol, veh/h		2076	A		1789			723				
Approach Delay, s/veh		207.3			27.9			30.2				
Approach LOS		F			C			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		64.0			21.0	43.0		36.0				
Change Period (Y+Rc), s		5.8			4.6	* 5.8		5.8				
Max Green Setting (Gmax), s		44.2			16.4	* 24		30.2				
Max Q Clear Time (g_c+I1), s		16.6			19.0	24.7		17.7				
Green Ext Time (p_c), s		10.8			0.0	0.0		2.2				

Intersection Summary	
HCM 6th Ctrl Delay	109.4
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

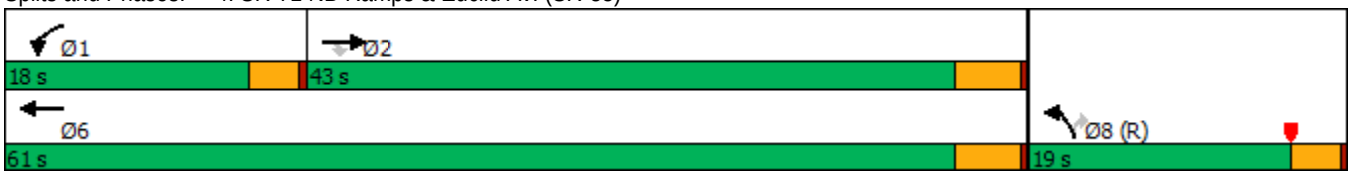
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	516	49	401	1614	156	404
Future Volume (vph)	516	49	401	1614	156	404
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	43.0	43.0	18.0	61.0	19.0	19.0
Total Split (%)	53.8%	53.8%	22.5%	76.3%	23.8%	23.8%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	516	49	401	1614	156	404
Future Volume (veh/h)	516	49	401	1614	156	404
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	549	0	427	1717	166	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1261		328	2074	1143	
Arrive On Green	0.46	0.00	0.18	0.57	0.33	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	549	0	427	1717	166	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	8.2	0.0	14.5	30.9	2.7	0.0
Cycle Q Clear(g_c), s	8.2	0.0	14.5	30.9	2.7	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1261		328	2074	1143	
V/C Ratio(X)	0.44		1.30	0.83	0.15	
Avail Cap(c_a), veh/h	1737		328	2550	1143	
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.16	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.1	0.0	32.8	13.8	19.1	0.0
Incr Delay (d2), s/veh	0.0	0.0	156.4	2.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	19.9	9.5	1.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.1	0.0	189.2	15.8	19.4	0.0
LnGrp LOS	B		F	B	B	
Approach Vol, veh/h	549	A		2144	166	A
Approach Delay, s/veh	16.1			50.3	19.4	
Approach LOS	B			D	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	18.0	32.5				50.5	29.5
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	14.5	38.5				56.5	15.5
Max Q Clear Time (g_c+I1), s	16.5	10.2				32.9	4.7
Green Ext Time (p_c), s	0.0	2.8				13.1	0.2

Intersection Summary	
HCM 6th Ctrl Delay	42.0
HCM 6th LOS	D

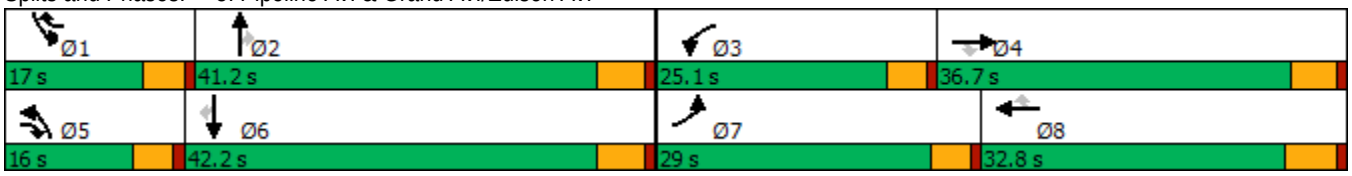
Notes

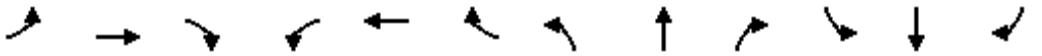
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	997	171	180	965	62	171	264	118	107	470	153
Future Volume (vph)	200	997	171	180	965	62	171	264	118	107	470	153
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	29.0	36.7	16.0	25.1	32.8	17.0	16.0	41.2	41.2	17.0	42.2	42.2
Total Split (%)	24.2%	30.6%	13.3%	20.9%	27.3%	14.2%	13.3%	34.3%	34.3%	14.2%	35.2%	35.2%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 91.2
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	997	171	180	965	62	171	264	118	107	470	153
Future Volume (veh/h)	200	997	171	180	965	62	171	264	118	107	470	153
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1700	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	206	1028	133	186	995	49	176	272	53	110	485	124
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	315	2074	764	292	2082	763	270	796	354	150	802	352
Arrive On Green	0.09	0.40	0.39	0.09	0.40	0.39	0.09	0.22	0.22	0.09	0.22	0.22
Sat Flow, veh/h	3326	5187	1589	3326	5187	1606	3141	3610	1604	1714	3610	1583
Grp Volume(v), veh/h	206	1028	133	186	995	49	176	272	53	110	485	124
Grp Sat Flow(s),veh/h/ln	1663	1729	1589	1663	1729	1606	1570	1805	1604	1714	1805	1583
Q Serve(g_s), s	4.9	12.1	3.9	4.4	11.6	1.4	4.4	5.2	2.2	5.1	9.9	5.4
Cycle Q Clear(g_c), s	4.9	12.1	3.9	4.4	11.6	1.4	4.4	5.2	2.2	5.1	9.9	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	315	2074	764	292	2082	763	270	796	354	150	802	352
V/C Ratio(X)	0.65	0.50	0.17	0.64	0.48	0.06	0.65	0.34	0.15	0.73	0.60	0.35
Avail Cap(c_a), veh/h	1017	2074	764	858	2082	763	461	1642	729	272	1686	739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	18.4	12.1	36.1	18.1	11.6	36.2	26.9	25.7	36.4	28.6	26.8
Incr Delay (d2), s/veh	0.9	0.8	0.5	0.9	0.8	0.2	1.0	0.3	0.2	2.6	0.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	4.7	1.3	1.7	4.3	0.5	1.7	2.1	0.8	2.2	4.1	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.6	19.2	12.6	36.9	18.9	11.8	37.2	27.1	25.9	38.9	29.3	27.4
LnGrp LOS	D	B	B	D	B	B	D	C	C	D	C	C
Approach Vol, veh/h		1367			1230			501			719	
Approach Delay, s/veh		21.2			21.4			30.5			30.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	22.0	11.2	37.4	11.0	22.2	11.7	36.8
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	12.4	35.8	20.5	* 32	11.4	36.8	24.4	27.0
Max Q Clear Time (g_c+I1), s	7.1	7.2	6.4	14.1	6.4	11.9	6.9	13.6
Green Ext Time (p_c), s	0.1	1.8	0.2	7.1	0.1	3.5	0.3	5.4

Intersection Summary	
HCM 6th Ctrl Delay	24.2
HCM 6th LOS	C

Notes

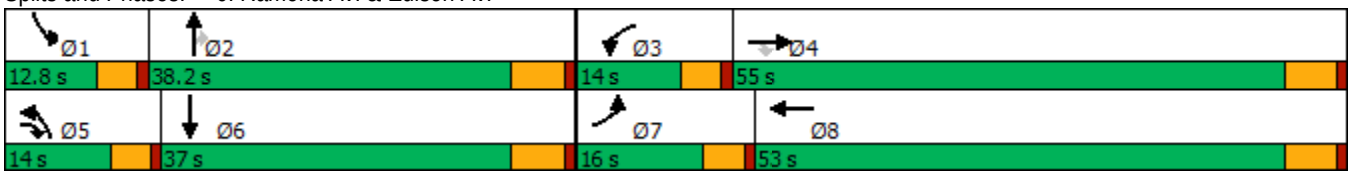
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

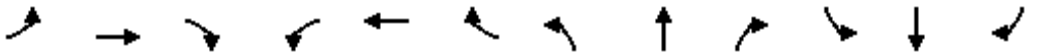
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	110	1023	74	139	1145	49	343	144	57	505
Future Volume (vph)	110	1023	74	139	1145	49	343	144	57	505
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	16.0	55.0	14.0	14.0	53.0	14.0	38.2	38.2	12.8	37.0
Total Split (%)	13.3%	45.8%	11.7%	11.7%	44.2%	11.7%	31.8%	31.8%	10.7%	30.8%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 110.9
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	1023	74	139	1145	78	49	343	144	57	505	103
Future Volume (veh/h)	110	1023	74	139	1145	78	49	343	144	57	505	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	120	1112	76	151	1245	81	53	373	127	62	549	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	155	1727	1421	161	1656	108	77	818	364	88	710	129
Arrive On Green	0.09	0.48	0.47	0.09	0.48	0.46	0.04	0.23	0.23	0.05	0.23	0.22
Sat Flow, veh/h	1714	3610	2772	1714	3438	223	1714	3610	1606	1714	3044	552
Grp Volume(v), veh/h	120	1112	76	151	653	673	53	373	127	62	325	324
Grp Sat Flow(s),veh/h/ln	1714	1805	1386	1714	1805	1856	1714	1805	1606	1714	1805	1792
Q Serve(g_s), s	7.3	24.8	1.5	9.3	31.3	31.5	3.2	9.5	7.1	3.8	17.9	18.1
Cycle Q Clear(g_c), s	7.3	24.8	1.5	9.3	31.3	31.5	3.2	9.5	7.1	3.8	17.9	18.1
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	155	1727	1421	161	869	894	77	818	364	88	421	418
V/C Ratio(X)	0.77	0.64	0.05	0.94	0.75	0.75	0.69	0.46	0.35	0.70	0.77	0.78
Avail Cap(c_a), veh/h	193	1727	1421	161	869	894	161	1158	515	141	559	555
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	21.0	13.1	48.0	22.4	22.6	50.2	35.6	34.6	49.8	38.2	38.6
Incr Delay (d2), s/veh	10.9	1.9	0.1	52.6	5.9	5.8	4.1	0.4	0.6	3.8	4.7	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	10.0	0.4	6.2	13.5	13.9	1.4	4.1	2.7	1.7	8.1	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.3	22.8	13.1	100.6	28.4	28.4	54.3	36.0	35.2	53.6	43.0	43.5
LnGrp LOS	E	C	B	F	C	C	D	D	D	D	D	D
Approach Vol, veh/h		1308			1477			553			711	
Approach Delay, s/veh		25.5			35.8			37.6			44.1	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	28.1	14.0	55.0	8.8	28.9	13.7	55.3
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	8.2	32.4	9.4	49.2	9.4	31.2	11.4	47.2
Max Q Clear Time (g_c+I1), s	5.8	11.5	11.3	26.8	5.2	20.1	9.3	33.5
Green Ext Time (p_c), s	0.0	2.5	0.0	8.1	0.0	2.7	0.0	6.9

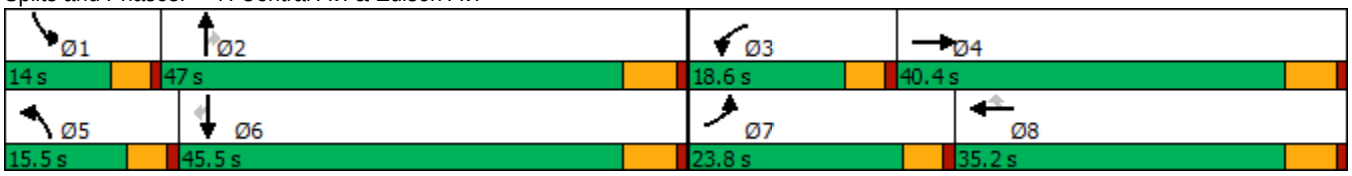
Intersection Summary	
HCM 6th Ctrl Delay	34.2
HCM 6th LOS	C

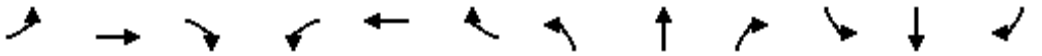
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	169	769	425	1267	135	87	901	465	107	1060	286
Future Volume (vph)	169	769	425	1267	135	87	901	465	107	1060	286
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	23.8	40.4	18.6	35.2	35.2	15.5	47.0	47.0	14.0	45.5	45.5
Total Split (%)	19.8%	33.7%	15.5%	29.3%	29.3%	12.9%	39.2%	39.2%	11.7%	37.9%	37.9%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 117.5
Natural Cycle: 110
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	769	65	425	1267	135	87	901	465	107	1060	286
Future Volume (veh/h)	169	769	65	425	1267	135	87	901	465	107	1060	286
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	176	801	62	443	1320	113	91	939	302	111	1104	240
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	212	1074	83	398	1154	508	122	1206	530	144	1252	551
Arrive On Green	0.12	0.32	0.30	0.13	0.32	0.32	0.07	0.33	0.33	0.08	0.35	0.35
Sat Flow, veh/h	1714	3395	263	3141	3610	1588	1714	3610	1587	1714	3610	1588
Grp Volume(v), veh/h	176	426	437	443	1320	113	91	939	302	111	1104	240
Grp Sat Flow(s),veh/h/ln	1714	1805	1853	1570	1805	1588	1714	1805	1587	1714	1805	1588
Q Serve(g_s), s	11.5	24.3	24.3	14.6	36.8	6.0	6.0	26.9	18.0	7.3	33.1	13.4
Cycle Q Clear(g_c), s	11.5	24.3	24.3	14.6	36.8	6.0	6.0	26.9	18.0	7.3	33.1	13.4
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	212	571	586	398	1154	508	122	1206	530	144	1252	551
V/C Ratio(X)	0.83	0.75	0.75	1.11	1.14	0.22	0.75	0.78	0.57	0.77	0.88	0.44
Avail Cap(c_a), veh/h	295	571	586	398	1154	508	171	1349	593	149	1302	573
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	35.2	35.3	50.2	39.1	28.7	52.4	34.5	31.5	51.7	35.4	28.9
Incr Delay (d2), s/veh	9.7	8.6	8.4	78.9	75.2	1.0	5.7	2.7	1.0	19.1	7.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	11.6	11.9	9.9	27.5	2.4	2.7	11.7	6.8	3.8	15.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.9	43.8	43.7	129.1	114.3	29.7	58.2	37.2	32.5	70.8	42.6	29.5
LnGrp LOS	E	D	D	F	F	C	E	D	C	E	D	C
Approach Vol, veh/h		1039			1876			1332			1455	
Approach Delay, s/veh		46.3			112.7			37.5			42.6	
Approach LOS		D			F			D			D	

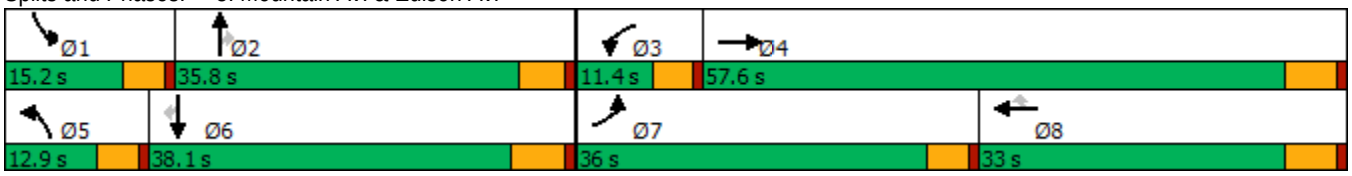
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	42.4	18.6	40.4	12.2	43.9	18.2	40.8
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	9.4	41.2	14.0	34.6	10.9	39.7	19.2	29.4
Max Q Clear Time (g_c+I1), s	9.3	28.9	16.6	26.3	8.0	35.1	13.5	38.8
Green Ext Time (p_c), s	0.0	5.6	0.0	3.1	0.0	3.0	0.1	0.0

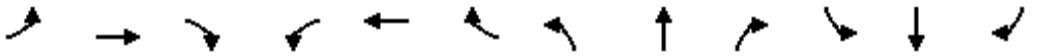
Intersection Summary	
HCM 6th Ctrl Delay	65.2
HCM 6th LOS	E

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	209	964	11	1353	124	96	176	49	128	90	302
Future Volume (vph)	209	964	11	1353	124	96	176	49	128	90	302
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	36.0	57.6	11.4	33.0	33.0	12.9	35.8	35.8	15.2	38.1	38.1
Total Split (%)	30.0%	48.0%	9.5%	27.5%	27.5%	10.8%	29.8%	29.8%	12.7%	31.8%	31.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 96.8
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	964	47	11	1353	124	96	176	49	128	90	302
Future Volume (veh/h)	209	964	47	11	1353	124	96	176	49	128	90	302
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	227	1048	47	12	1471	124	104	191	23	139	98	190
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	271	2854	128	35	1530	682	140	264	224	178	321	267
Arrive On Green	0.16	0.56	0.54	0.02	0.42	0.42	0.08	0.14	0.14	0.10	0.17	0.17
Sat Flow, veh/h	1714	5083	228	1714	3610	1608	1714	1900	1610	1714	1900	1580
Grp Volume(v), veh/h	227	713	382	12	1471	124	104	191	23	139	98	190
Grp Sat Flow(s),veh/h/ln	1714	1729	1853	1714	1805	1608	1714	1900	1610	1714	1900	1580
Q Serve(g_s), s	12.3	10.9	10.9	0.7	37.8	4.6	5.7	9.2	1.2	7.5	4.3	10.8
Cycle Q Clear(g_c), s	12.3	10.9	10.9	0.7	37.8	4.6	5.7	9.2	1.2	7.5	4.3	10.8
Prop In Lane	1.00		0.12	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	271	1942	1041	35	1530	682	140	264	224	178	321	267
V/C Ratio(X)	0.84	0.37	0.37	0.34	0.96	0.18	0.74	0.72	0.10	0.78	0.31	0.71
Avail Cap(c_a), veh/h	575	1942	1041	133	1530	682	160	633	536	201	679	564
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	11.6	11.6	46.1	26.7	17.2	42.9	39.3	35.9	41.7	34.8	37.5
Incr Delay (d2), s/veh	2.7	0.5	1.0	2.1	15.4	0.6	12.1	3.7	0.2	13.6	0.5	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	3.8	4.2	0.3	17.8	1.7	2.8	4.5	0.5	3.7	2.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	12.1	12.6	48.2	42.2	17.7	55.0	43.1	36.1	55.3	35.3	41.0
LnGrp LOS	D	B	B	D	D	B	D	D	D	E	D	D
Approach Vol, veh/h		1322			1607			318			427	
Approach Delay, s/veh		17.3			40.3			46.5			44.3	
Approach LOS		B			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	18.0	6.0	57.6	11.8	20.1	19.1	44.5
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.6	* 31	6.8	51.8	8.3	32.3	31.4	27.2
Max Q Clear Time (g_c+I1), s	9.5	11.2	2.7	12.9	7.7	12.8	14.3	39.8
Green Ext Time (p_c), s	0.0	1.0	0.0	8.0	0.0	1.0	0.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	33.1
HCM 6th LOS	C

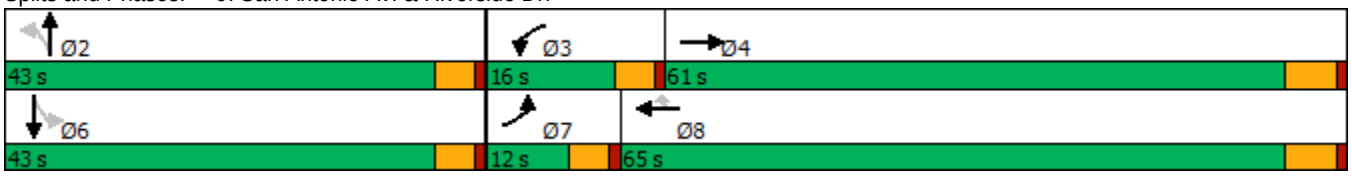
Notes

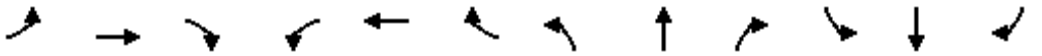
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	19	674	40	963	7	133	2	23	7
Future Volume (vph)	19	674	40	963	7	133	2	23	7
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	12.0	61.0	16.0	65.0	65.0	43.0	43.0	43.0	43.0
Total Split (%)	10.0%	50.8%	13.3%	54.2%	54.2%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 95.7
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	674	66	40	963	7	133	2	51	23	7	57
Future Volume (veh/h)	19	674	66	40	963	7	133	2	51	23	7	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	20	725	67	43	1035	7	143	2	32	25	8	44
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	49	2204	204	74	2434	1062	268	16	251	284	42	230
Arrive On Green	0.03	0.66	0.64	0.04	0.67	0.67	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1714	3341	309	1714	3610	1575	1374	95	1526	1394	254	1395
Grp Volume(v), veh/h	20	392	400	43	1035	7	143	0	34	25	0	52
Grp Sat Flow(s),veh/h/ln	1714	1805	1844	1714	1805	1575	1374	0	1622	1394	0	1649
Q Serve(g_s), s	1.0	8.5	8.6	2.2	11.8	0.1	9.1	0.0	1.6	1.4	0.0	2.5
Cycle Q Clear(g_c), s	1.0	8.5	8.6	2.2	11.8	0.1	11.5	0.0	1.6	3.0	0.0	2.5
Prop In Lane	1.00		0.17	1.00		1.00	1.00		0.94	1.00		0.85
Lane Grp Cap(c), veh/h	49	1191	1217	74	2434	1062	268	0	267	284	0	271
V/C Ratio(X)	0.41	0.33	0.33	0.58	0.43	0.01	0.53	0.00	0.13	0.09	0.00	0.19
Avail Cap(c_a), veh/h	152	1191	1217	227	2434	1062	634	0	699	656	0	711
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.2	6.7	6.8	42.5	6.7	4.8	37.6	0.0	32.5	33.5	0.0	32.8
Incr Delay (d2), s/veh	2.0	0.7	0.7	2.7	0.5	0.0	1.6	0.0	0.2	0.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.7	2.8	1.0	3.5	0.0	3.2	0.0	0.7	0.5	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	7.4	7.5	45.2	7.3	4.8	39.2	0.0	32.7	33.7	0.0	33.2
LnGrp LOS	D	A	A	D	A	A	D	A	C	C	A	C
Approach Vol, veh/h		812			1085			177			77	
Approach Delay, s/veh		8.4			8.8			38.0			33.3	
Approach LOS		A			A			D			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.9	7.9	63.7		18.9	6.6	65.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		38.4	11.4	55.2		38.4	7.4	59.2				
Max Q Clear Time (g_c+I1), s		13.5	4.2	10.6		5.0	3.0	13.8				
Green Ext Time (p_c), s		0.6	0.0	5.0		0.4	0.0	8.4				

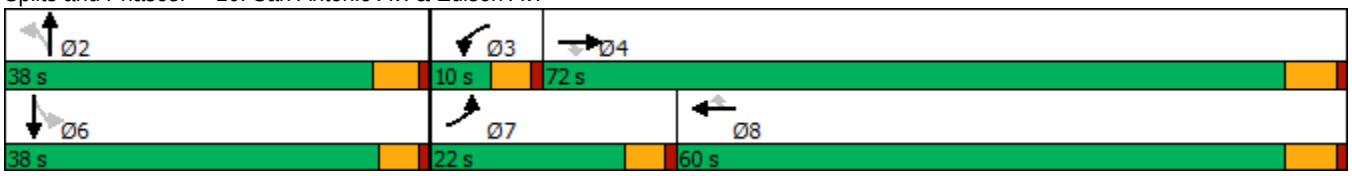
Intersection Summary												
HCM 6th Ctrl Delay			11.9									
HCM 6th LOS			B									

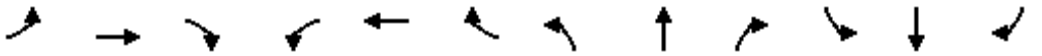
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	53	1148	32	6	1198	24	87	97	33	53
Future Volume (vph)	53	1148	32	6	1198	24	87	97	33	53
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	22.0	72.0	72.0	10.0	60.0	60.0	38.0	38.0	38.0	38.0
Total Split (%)	18.3%	60.0%	60.0%	8.3%	50.0%	50.0%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 106.2
Natural Cycle: 75
Control Type: Actuated-Uncoordinated

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	1148	32	6	1198	24	87	97	69	33	53	107
Future Volume (veh/h)	53	1148	32	6	1198	24	87	97	69	33	53	107
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	58	1248	27	7	1302	26	95	105	66	36	58	77
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	84	2374	1057	25	2251	1004	153	145	83	90	138	152
Arrive On Green	0.05	0.66	0.66	0.01	0.62	0.62	0.21	0.21	0.20	0.21	0.21	0.20
Sat Flow, veh/h	1714	3610	1608	1714	3610	1610	500	686	391	230	667	734
Grp Volume(v), veh/h	58	1248	27	7	1302	26	266	0	0	171	0	0
Grp Sat Flow(s),veh/h/ln	1714	1805	1608	1714	1805	1610	1578	0	0	1631	0	0
Q Serve(g_s), s	3.4	18.7	0.6	0.4	22.0	0.6	7.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.4	18.7	0.6	0.4	22.0	0.6	16.6	0.0	0.0	9.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.36		0.25	0.21		0.45
Lane Grp Cap(c), veh/h	84	2374	1057	25	2251	1004	381	0	0	379	0	0
V/C Ratio(X)	0.69	0.53	0.03	0.28	0.58	0.03	0.70	0.00	0.00	0.45	0.00	0.00
Avail Cap(c_a), veh/h	298	2374	1057	99	2251	1004	567	0	0	574	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	48.4	9.3	6.2	50.4	11.5	7.4	38.7	0.0	0.0	36.2	0.0	0.0
Incr Delay (d2), s/veh	3.8	0.8	0.0	2.2	1.1	0.0	2.3	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	6.3	0.2	0.2	7.7	0.2	6.5	0.0	0.0	3.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.2	10.1	6.2	52.6	12.6	7.5	41.1	0.0	0.0	37.1	0.0	0.0
LnGrp LOS	D	B	A	D	B	A	D	A	A	D	A	A
Approach Vol, veh/h		1333			1335			266			171	
Approach Delay, s/veh		11.8			12.7			41.1			37.1	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	25.9	5.5	72.0	25.9	9.0	68.5
Change Period (Y+Rc), s	5.1	4.6	5.8	* 5.1	4.6	5.8
Max Green Setting (Gmax), s	32.9	5.4	66.2	* 33	17.4	54.2
Max Q Clear Time (g_c+I1), s	18.6	2.4	20.7	11.2	5.4	24.0
Green Ext Time (p_c), s	1.3	0.0	11.3	1.0	0.0	10.8

Intersection Summary	
HCM 6th Ctrl Delay	16.1
HCM 6th LOS	B

Notes

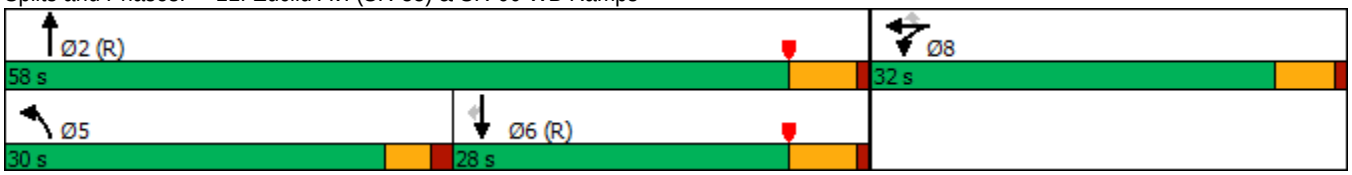
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

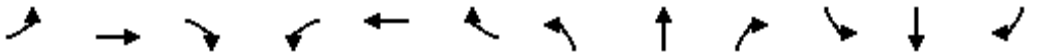
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	837	7	516	502	1181	1211	593
Future Volume (vph)	837	7	516	502	1181	1211	593
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	32.0	32.0	32.0	30.0	58.0	28.0	28.0
Total Split (%)	35.6%	35.6%	35.6%	33.3%	64.4%	31.1%	31.1%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	837	7	516	502	1181	0	0	1211	593
Future Volume (veh/h)	0	0	0	837	7	516	502	1181	0	0	1211	593
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				995	0	222	534	1256	0	0	1288	403
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				1064	0	473	513	2127	0	0	924	412
Arrive On Green				0.29	0.00	0.29	0.57	1.00	0.00	0.00	0.26	0.26
Sat Flow, veh/h				3619	0	1610	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				995	0	222	534	1256	0	0	1288	403
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1610
Q Serve(g_s), s				24.1	0.0	10.2	25.5	0.0	0.0	0.0	23.0	22.4
Cycle Q Clear(g_c), s				24.1	0.0	10.2	25.5	0.0	0.0	0.0	23.0	22.4
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1064	0	473	513	2127	0	0	924	412
V/C Ratio(X)				0.94	0.00	0.47	1.04	0.59	0.00	0.00	1.39	0.98
Avail Cap(c_a), veh/h				1086	0	483	513	2127	0	0	924	412
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.11	0.11	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				30.9	0.0	26.0	19.5	0.0	0.0	0.0	33.5	33.2
Incr Delay (d2), s/veh				14.0	0.0	0.3	25.7	0.1	0.0	0.0	183.8	39.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				11.7	0.0	3.7	9.1	0.0	0.0	0.0	33.1	12.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				44.9	0.0	26.3	45.2	0.1	0.0	0.0	217.3	72.3
LnGrp LOS				D	A	C	F	A	A	A	F	E
Approach Vol, veh/h					1217			1790			1691	
Approach Delay, s/veh					41.5			13.6			182.8	
Approach LOS					D			B			F	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	58.5		30.0	28.5		31.5						
Change Period (Y+Rc), s	5.5		4.5	5.5		5.0						
Max Green Setting (Gmax), s	52.5		25.5	22.5		27.0						
Max Q Clear Time (g_c+I1), s	2.0		27.5	25.0		26.1						
Green Ext Time (p_c), s	18.1		0.0	0.0		0.4						

Intersection Summary		
HCM 6th Ctrl Delay	81.7	
HCM 6th LOS	F	

Notes

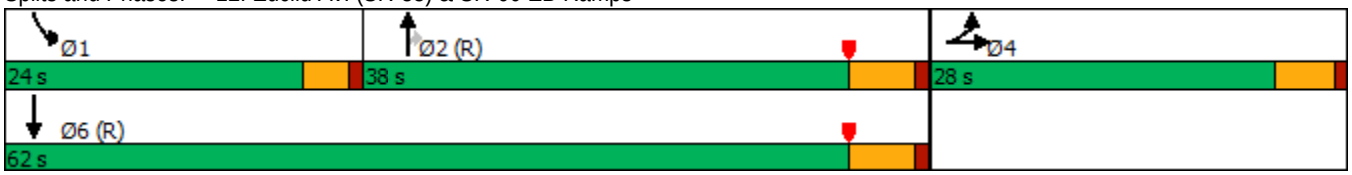
User approved volume balancing among the lanes for turning movement.

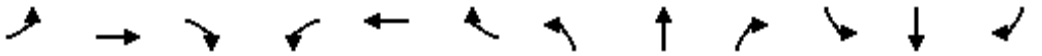
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	520	3	1162	867	459	1589
Future Volume (vph)	520	3	1162	867	459	1589
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	28.0	28.0	38.0	38.0	24.0	62.0
Total Split (%)	31.1%	31.1%	42.2%	42.2%	26.7%	68.9%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	520	3	495	0	0	0	0	1162	867	459	1589	0
Future Volume (veh/h)	520	3	495	0	0	0	0	1162	867	459	1589	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	508	57	466				0	1223	714	483	1673	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	462	46	373				0	1304	566	402	2266	0
Arrive On Green	0.26	0.26	0.26				0.00	0.36	0.36	0.44	1.00	0.00
Sat Flow, veh/h	1810	178	1459				0	3705	1568	1810	3705	0
Grp Volume(v), veh/h	508	0	523				0	1223	714	483	1673	0
Grp Sat Flow(s),veh/h/ln	1810	0	1637				0	1805	1568	1810	1805	0
Q Serve(g_s), s	23.0	0.0	23.0				0.0	29.5	32.5	20.0	0.0	0.0
Cycle Q Clear(g_c), s	23.0	0.0	23.0				0.0	29.5	32.5	20.0	0.0	0.0
Prop In Lane	1.00		0.89				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	462	0	418				0	1304	566	402	2266	0
V/C Ratio(X)	1.10	0.00	1.25				0.00	0.94	1.26	1.20	0.74	0.00
Avail Cap(c_a), veh/h	462	0	418				0	1304	566	402	2266	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.40	0.40	0.09	0.09	0.00
Uniform Delay (d), s/veh	33.5	0.0	33.5				0.0	27.8	28.8	25.0	0.0	0.0
Incr Delay (d2), s/veh	71.3	0.0	130.9				0.0	6.7	123.4	92.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.5	0.0	23.7				0.0	12.9	30.6	15.9	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	104.8	0.0	164.4				0.0	34.5	152.2	117.9	0.2	0.0
LnGrp LOS	F	A	F				A	C	F	F	A	A
Approach Vol, veh/h		1031						1937			2156	
Approach Delay, s/veh		135.1						77.9			26.6	
Approach LOS		F						E			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	24.0	38.0		28.0		62.0
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	20.0	32.5		23.0		56.5
Max Q Clear Time (g_c+I1), s	22.0	34.5		25.0		2.0
Green Ext Time (p_c), s	0.0	0.0		0.0		29.6

Intersection Summary	
HCM 6th Ctrl Delay	67.8
HCM 6th LOS	E

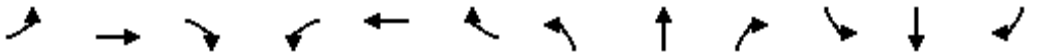
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	252	365	91	388	159	1546	58	189	1660	123
Future Volume (vph)	252	365	91	388	159	1546	58	189	1660	123
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	15.8	33.6	12.0	29.8	23.0	53.5	53.5	20.9	51.4	51.4
Total Split (%)	13.2%	28.0%	10.0%	24.8%	19.2%	44.6%	44.6%	17.4%	42.8%	42.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 115.6
Natural Cycle: 110
Control Type: Actuated-Uncoordinated

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	252	365	141	91	388	258	159	1546	58	189	1660	123
Future Volume (veh/h)	252	365	141	91	388	258	159	1546	58	189	1660	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	265	384	112	96	408	232	167	1627	43	199	1747	108
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	169	656	189	112	454	255	195	2266	703	255	2099	651
Arrive On Green	0.10	0.24	0.24	0.07	0.20	0.20	0.11	0.44	0.44	0.08	0.40	0.40
Sat Flow, veh/h	1714	2765	797	1714	2225	1251	1714	5187	1609	3141	5187	1609
Grp Volume(v), veh/h	265	249	247	96	330	310	167	1627	43	199	1747	108
Grp Sat Flow(s),veh/h/ln	1714	1805	1757	1714	1805	1671	1714	1729	1609	1570	1729	1609
Q Serve(g_s), s	11.2	13.9	14.2	6.3	20.3	20.6	10.9	29.3	1.8	7.1	34.4	4.9
Cycle Q Clear(g_c), s	11.2	13.9	14.2	6.3	20.3	20.6	10.9	29.3	1.8	7.1	34.4	4.9
Prop In Lane	1.00		0.45	1.00		0.75	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	169	428	417	112	368	341	195	2266	703	255	2099	651
V/C Ratio(X)	1.57	0.58	0.59	0.86	0.90	0.91	0.86	0.72	0.06	0.78	0.83	0.17
Avail Cap(c_a), veh/h	169	441	430	112	381	353	277	2266	703	450	2099	651
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.2	38.4	38.5	52.6	44.1	44.2	49.5	26.3	18.5	51.2	30.4	21.6
Incr Delay (d2), s/veh	282.7	1.8	2.1	43.6	22.6	26.2	12.5	2.0	0.2	2.0	4.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.9	6.2	6.1	4.0	11.0	10.7	5.2	11.9	0.7	2.8	14.4	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	334.0	40.2	40.5	96.2	66.7	70.5	62.0	28.3	18.7	53.2	34.4	22.1
LnGrp LOS	F	D	D	F	E	E	E	C	B	D	C	C
Approach Vol, veh/h		761			736			1837			2054	
Approach Delay, s/veh		142.6			72.1			31.1			35.6	
Approach LOS		F			E			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	55.1	12.0	32.8	17.5	51.4	15.8	29.0
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	16.3	48.1	7.4	27.8	18.4	46.0	11.2	24.0
Max Q Clear Time (g_c+I1), s	9.1	31.3	8.3	16.2	12.9	36.4	13.2	22.6
Green Ext Time (p_c), s	0.2	10.4	0.0	2.1	0.1	7.3	0.0	0.5

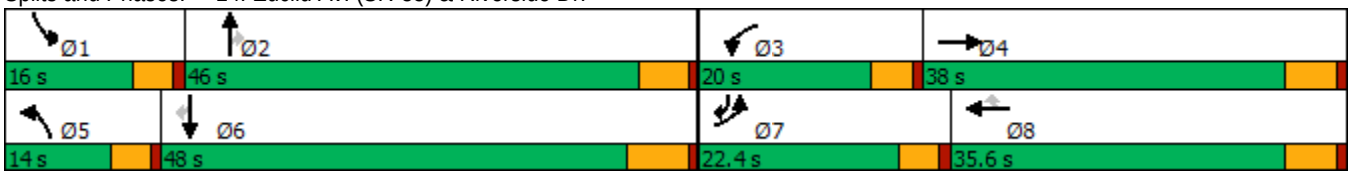
Intersection Summary	
HCM 6th Ctrl Delay	54.2
HCM 6th LOS	D

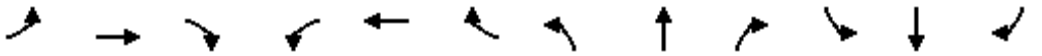
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	193	453	241	616	145	148	1278	201	219	1430	192
Future Volume (vph)	193	453	241	616	145	148	1278	201	219	1430	192
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	22.4	38.0	20.0	35.6	35.6	14.0	46.0	46.0	16.0	48.0	22.4
Total Split (%)	18.7%	31.7%	16.7%	29.7%	29.7%	11.7%	38.3%	38.3%	13.3%	40.0%	18.7%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	453	99	241	616	145	148	1278	201	219	1430	192
Future Volume (veh/h)	193	453	99	241	616	145	148	1278	201	219	1430	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	203	477	88	254	648	124	156	1345	172	231	1505	143
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	228	415	77	218	938	418	133	1210	540	161	1270	780
Arrive On Green	0.13	0.27	0.27	0.13	0.26	0.26	0.08	0.34	0.34	0.09	0.35	0.35
Sat Flow, veh/h	1714	1560	288	1714	3610	1610	1714	3610	1610	1714	3610	1609
Grp Volume(v), veh/h	203	0	565	254	648	124	156	1345	172	231	1505	143
Grp Sat Flow(s),veh/h/ln	1714	0	1848	1714	1805	1610	1714	1805	1610	1714	1805	1609
Q Serve(g_s), s	14.1	0.0	32.2	15.4	19.6	7.5	9.4	40.6	9.6	11.4	42.6	6.1
Cycle Q Clear(g_c), s	14.1	0.0	32.2	15.4	19.6	7.5	9.4	40.6	9.6	11.4	42.6	6.1
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	228	0	491	218	938	418	133	1210	540	161	1270	780
V/C Ratio(X)	0.89	0.00	1.15	1.17	0.69	0.30	1.17	1.11	0.32	1.43	1.19	0.18
Avail Cap(c_a), veh/h	252	0	491	218	938	418	133	1210	540	161	1270	780
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.6	0.0	44.5	52.8	40.4	35.9	55.8	40.3	30.0	54.9	39.2	17.6
Incr Delay (d2), s/veh	26.5	0.0	88.7	112.7	2.2	0.4	131.7	62.1	1.6	225.9	91.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	0.0	26.3	13.3	8.7	0.0	8.8	27.1	3.8	15.0	34.2	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.1	0.0	133.2	165.6	42.6	36.3	187.6	102.3	31.5	280.8	130.8	18.1
LnGrp LOS	E	A	F	F	D	D	F	F	C	F	F	B
Approach Vol, veh/h		768			1026			1673			1879	
Approach Delay, s/veh		118.6			72.3			103.0			140.7	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	47.1	20.0	38.0	14.0	49.1	20.7	37.3
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	11.4	* 41	15.4	32.2	9.4	41.5	17.8	29.8
Max Q Clear Time (g_c+I1), s	13.4	42.6	17.4	34.2	11.4	44.6	16.1	21.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8

Intersection Summary	
HCM 6th Ctrl Delay	112.6
HCM 6th LOS	F

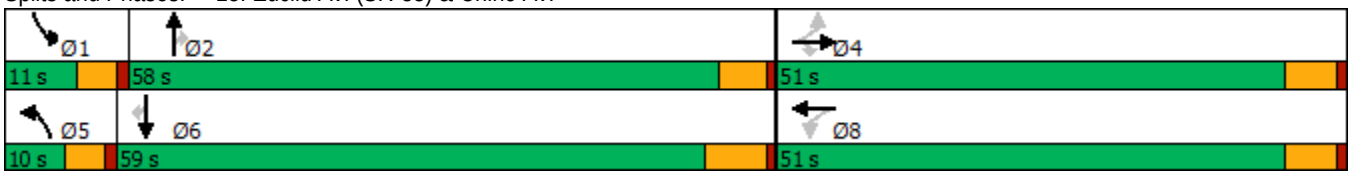
Notes

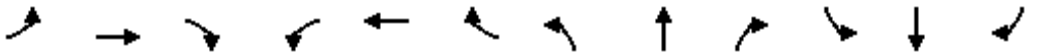
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	131	243	53	105	285	64	1370	180	70	1536	116
Future Volume (vph)	131	243	53	105	285	64	1370	180	70	1536	116
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	51.0	51.0	51.0	51.0	51.0	10.0	58.0	58.0	11.0	59.0	59.0
Total Split (%)	42.5%	42.5%	42.5%	42.5%	42.5%	8.3%	48.3%	48.3%	9.2%	49.2%	49.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 119.3
Natural Cycle: 110
Control Type: Actuated-Uncoordinated

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	243	53	105	285	80	64	1370	180	70	1536	116
Future Volume (veh/h)	131	243	53	105	285	80	64	1370	180	70	1536	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	139	259	40	112	303	73	68	1457	167	74	1634	92
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	230	708	600	138	329	76	76	1571	701	90	1601	699
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.04	0.44	0.44	0.05	0.44	0.44
Sat Flow, veh/h	1023	1900	1609	272	883	203	1714	3610	1610	1714	3610	1577
Grp Volume(v), veh/h	139	259	40	488	0	0	68	1457	167	74	1634	92
Grp Sat Flow(s),veh/h/ln	1023	1900	1609	1359	0	0	1714	1805	1610	1714	1805	1577
Q Serve(g_s), s	0.0	12.0	1.9	31.2	0.0	0.0	4.8	46.4	7.9	5.2	53.8	4.2
Cycle Q Clear(g_c), s	36.1	12.0	1.9	43.2	0.0	0.0	4.8	46.4	7.9	5.2	53.8	4.2
Prop In Lane	1.00		1.00	0.23		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	230	708	600	543	0	0	76	1571	701	90	1601	699
V/C Ratio(X)	0.60	0.37	0.07	0.90	0.00	0.00	0.89	0.93	0.24	0.82	1.02	0.13
Avail Cap(c_a), veh/h	230	708	600	543	0	0	76	1571	701	90	1601	699
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.2	27.6	24.5	40.0	0.0	0.0	57.7	32.4	21.6	56.9	33.7	19.9
Incr Delay (d2), s/veh	4.4	0.3	0.0	17.9	0.0	0.0	65.8	10.9	0.8	40.0	27.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	5.3	0.7	16.4	0.0	0.0	3.4	20.7	2.9	3.2	27.4	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.6	28.0	24.5	57.8	0.0	0.0	123.5	43.4	22.4	96.9	61.6	20.3
LnGrp LOS	D	C	C	E	A	A	F	D	C	F	F	C
Approach Vol, veh/h		438			488			1692			1800	
Approach Delay, s/veh		31.4			57.8			44.5			60.9	
Approach LOS		C			E			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	59.3		51.0	10.0	60.3		51.0				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	6.4	* 53		45.2	5.4	52.5		45.2				
Max Q Clear Time (g_c+I1), s	7.2	48.4		38.1	6.8	55.8		45.2				
Green Ext Time (p_c), s	0.0	3.3		1.2	0.0	0.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		51.4
HCM 6th LOS		D

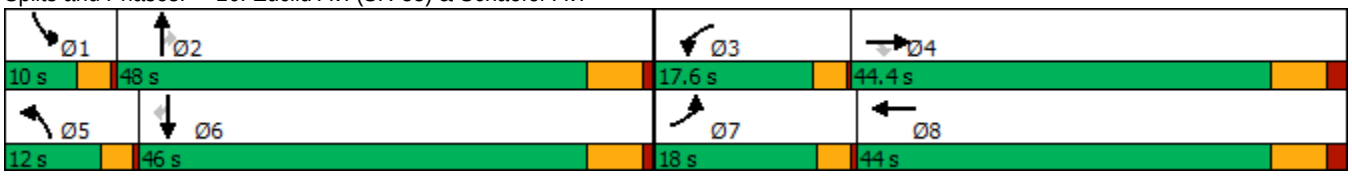
Notes

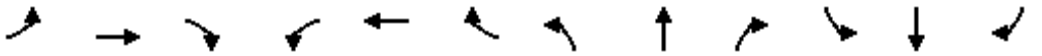
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	193	92	88	177	377	226	1329	44	39	1428	457
Future Volume (vph)	193	92	88	177	377	226	1329	44	39	1428	457
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	18.0	44.4	44.4	17.6	44.0	12.0	48.0	48.0	10.0	46.0	46.0
Total Split (%)	15.0%	37.0%	37.0%	14.7%	36.7%	10.0%	40.0%	40.0%	8.3%	38.3%	38.3%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	92	88	177	377	186	226	1329	44	39	1428	457
Future Volume (veh/h)	193	92	88	177	377	186	226	1329	44	39	1428	457
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	208	99	76	190	405	198	243	1429	37	42	1535	457
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	207	592	502	201	371	181	121	1346	600	54	1203	535
Arrive On Green	0.12	0.31	0.31	0.12	0.31	0.31	0.07	0.37	0.37	0.03	0.33	0.33
Sat Flow, veh/h	1714	1900	1610	1714	1204	588	1714	3610	1610	1714	3610	1605
Grp Volume(v), veh/h	208	99	76	190	0	603	243	1429	37	42	1535	457
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1714	0	1792	1714	1805	1610	1714	1805	1605
Q Serve(g_s), s	14.5	4.5	4.1	13.2	0.0	37.0	8.5	44.7	1.8	2.9	40.0	31.8
Cycle Q Clear(g_c), s	14.5	4.5	4.1	13.2	0.0	37.0	8.5	44.7	1.8	2.9	40.0	31.8
Prop In Lane	1.00		1.00	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	207	592	502	201	0	553	121	1346	600	54	1203	535
V/C Ratio(X)	1.00	0.17	0.15	0.94	0.00	1.09	2.00	1.06	0.06	0.78	1.28	0.85
Avail Cap(c_a), veh/h	207	592	502	201	0	553	121	1346	600	93	1203	535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	30.0	29.8	52.6	0.0	41.5	55.7	37.6	24.2	57.7	40.0	37.3
Incr Delay (d2), s/veh	63.6	0.1	0.1	46.9	0.0	65.5	478.4	42.8	0.0	8.8	130.6	12.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	2.0	1.6	8.1	0.0	25.6	19.7	26.1	0.7	1.3	38.3	13.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	116.3	30.1	29.9	99.5	0.0	107.0	534.2	80.4	24.2	66.5	170.6	50.0
LnGrp LOS	F	C	C	F	A	F	F	F	C	E	F	D
Approach Vol, veh/h		383			793			1709			2034	
Approach Delay, s/veh		76.9			105.2			143.7			141.4	
Approach LOS		E			F			F			F	

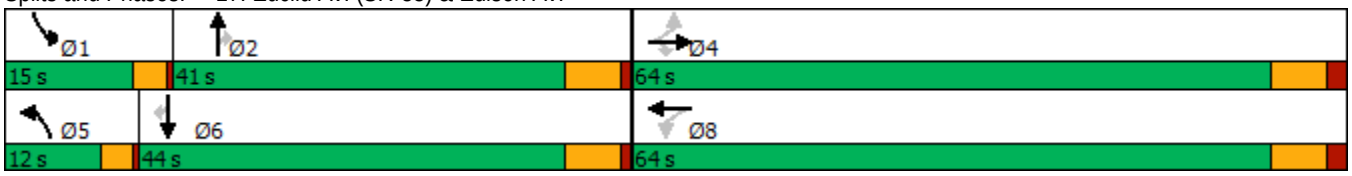
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	50.7	17.6	44.4	12.0	46.0	18.0	44.0
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	6.5	42.0	14.1	37.4	8.5	40.0	14.5	37.0
Max Q Clear Time (g_c+I1), s	4.9	46.7	15.2	6.5	10.5	42.0	16.5	39.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0

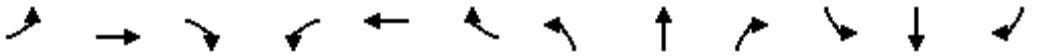
Intersection Summary	
HCM 6th Ctrl Delay	131.3
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	196	853	162	210	1089	282	1251	152	197	1283	211
Future Volume (vph)	196	853	162	210	1089	282	1251	152	197	1283	211
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	64.0	64.0	64.0	64.0	64.0	12.0	41.0	41.0	15.0	44.0	44.0
Total Split (%)	53.3%	53.3%	53.3%	53.3%	53.3%	10.0%	34.2%	34.2%	12.5%	36.7%	36.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	853	162	210	1089	312	282	1251	152	197	1283	211
Future Volume (veh/h)	196	853	162	210	1089	312	282	1251	152	197	1283	211
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	204	889	114	219	1134	320	294	1303	150	205	1336	169
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	60	902	764	68	677	191	121	1053	470	164	1143	498
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.47	0.07	0.29	0.29	0.10	0.32	0.32
Sat Flow, veh/h	372	1900	1609	571	1425	402	1714	3610	1610	1714	3610	1572
Grp Volume(v), veh/h	204	889	114	219	0	1454	294	1303	150	205	1336	169
Grp Sat Flow(s),veh/h/ln	372	1900	1609	571	0	1827	1714	1805	1610	1714	1805	1572
Q Serve(g_s), s	0.0	55.4	4.8	1.6	0.0	57.0	8.5	35.0	8.7	11.5	38.0	9.9
Cycle Q Clear(g_c), s	57.0	55.4	4.8	57.0	0.0	57.0	8.5	35.0	8.7	11.5	38.0	9.9
Prop In Lane	1.00		1.00	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	60	903	764	68	0	868	121	1053	470	164	1143	498
V/C Ratio(X)	3.40	0.99	0.15	3.24	0.00	1.68	2.42	1.24	0.32	1.25	1.17	0.34
Avail Cap(c_a), veh/h	60	903	764	68	0	868	121	1053	470	164	1143	498
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.0	31.1	17.8	59.9	0.0	31.5	55.7	42.5	33.2	54.2	41.0	31.4
Incr Delay (d2), s/veh	1120.9	26.2	0.1	1044.5	0.0	308.9	663.9	115.1	0.4	152.0	85.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.5	29.9	1.7	21.6	0.0	97.5	25.9	31.4	3.3	11.7	29.3	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1180.9	57.3	17.9	1104.5	0.0	340.4	719.6	157.6	33.6	206.2	126.6	31.8
LnGrp LOS	F	E	B	F	A	F	F	F	C	F	F	C
Approach Vol, veh/h		1207			1673			1747			1710	
Approach Delay, s/veh		243.5			440.4			241.6			126.8	
Approach LOS		F			F			F			F	

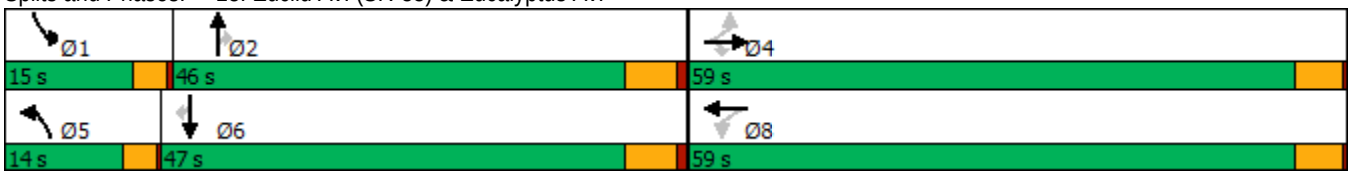
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.0	41.0		64.0	12.0	44.0		64.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	11.5	35.0		57.0	8.5	38.0		57.0				
Max Q Clear Time (g_c+I1), s	13.5	37.0		59.0	10.5	40.0		59.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0				

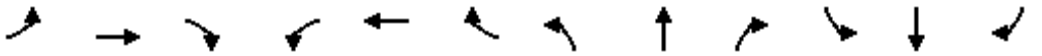
Intersection Summary		
HCM 6th Ctrl Delay		263.4
HCM 6th LOS		F

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	84	32	205	385	191	221	1497	133	94	1456	51
Future Volume (vph)	84	32	205	385	191	221	1497	133	94	1456	51
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	59.0	59.0	59.0	59.0	59.0	14.0	46.0	46.0	15.0	47.0	47.0
Total Split (%)	49.2%	49.2%	49.2%	49.2%	49.2%	11.7%	38.3%	38.3%	12.5%	39.2%	39.2%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 102
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	32	205	385	191	182	221	1497	133	94	1456	51
Future Volume (veh/h)	84	32	205	385	191	182	221	1497	133	94	1456	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	86	33	123	393	195	178	226	1528	135	96	1486	41
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	258	679	575	503	327	298	176	1573	702	120	1456	649
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.10	0.44	0.44	0.07	0.40	0.40
Sat Flow, veh/h	1025	1900	1610	1250	915	835	1714	3610	1610	1714	3610	1608
Grp Volume(v), veh/h	86	33	123	393	0	373	226	1528	135	96	1486	41
Grp Sat Flow(s),veh/h/ln	1025	1900	1610	1250	0	1750	1714	1805	1610	1714	1805	1608
Q Serve(g_s), s	7.7	1.2	5.4	30.7	0.0	17.8	10.5	42.4	5.3	5.6	41.3	1.6
Cycle Q Clear(g_c), s	25.5	1.2	5.4	31.9	0.0	17.8	10.5	42.4	5.3	5.6	41.3	1.6
Prop In Lane	1.00		1.00	1.00		0.48	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	258	679	575	503	0	625	176	1573	702	120	1456	649
V/C Ratio(X)	0.33	0.05	0.21	0.78	0.00	0.60	1.29	0.97	0.19	0.80	1.02	0.06
Avail Cap(c_a), veh/h	435	1006	852	718	0	926	176	1573	702	193	1456	649
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.3	21.5	22.9	31.9	0.0	26.9	45.9	28.3	17.8	46.9	30.5	18.7
Incr Delay (d2), s/veh	0.6	0.0	0.1	3.0	0.0	0.7	164.5	16.3	0.1	8.6	28.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.5	2.0	9.0	0.0	7.1	12.2	19.5	1.8	2.6	21.6	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.8	21.5	23.0	34.9	0.0	27.6	210.4	44.6	17.9	55.5	59.4	18.7
LnGrp LOS	D	C	C	C	A	C	F	D	B	E	F	B
Approach Vol, veh/h		242			766			1889			1623	
Approach Delay, s/veh		28.1			31.3			62.5			58.1	
Approach LOS		C			C			E			E	

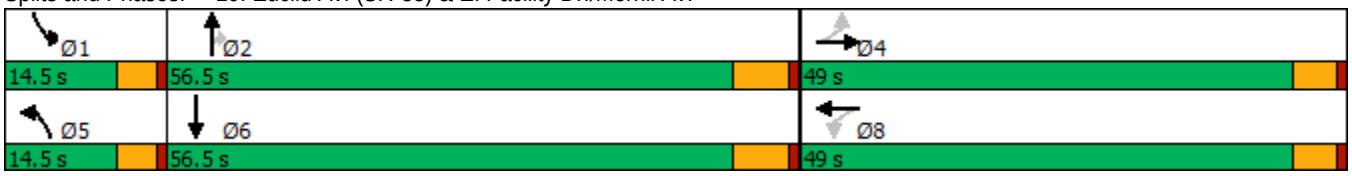
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.7	50.3		41.4	14.0	47.0		41.4				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	11.5	40.3		54.2	10.5	41.3		54.2				
Max Q Clear Time (g_c+I1), s	7.6	44.4		27.5	12.5	43.3		33.9				
Green Ext Time (p_c), s	0.0	0.0		0.7	0.0	0.0		2.7				

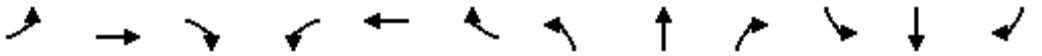
Intersection Summary			
HCM 6th Ctrl Delay		53.8	
HCM 6th LOS		D	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	10	10	340	60	13	1428	267	233	1764
Future Volume (vph)	10	10	340	60	13	1428	267	233	1764
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	49.0	49.0	49.0	49.0	14.5	56.5	56.5	14.5	56.5
Total Split (%)	40.8%	40.8%	40.8%	40.8%	12.1%	47.1%	47.1%	12.1%	47.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	21	340	60	422	13	1428	267	233	1764	49
Future Volume (veh/h)	10	10	21	340	60	422	13	1428	267	233	1764	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	10	10	21	351	62	408	13	1472	232	240	1819	37
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	148	154	278	291	44	288	50	1517	677	143	1716	35
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.03	0.42	0.42	0.08	0.47	0.47
Sat Flow, veh/h	301	420	756	676	119	785	1714	3610	1610	1714	3617	73
Grp Volume(v), veh/h	41	0	0	821	0	0	13	1472	232	240	905	951
Grp Sat Flow(s),veh/h/ln	1477	0	0	1580	0	0	1714	1805	1610	1714	1805	1885
Q Serve(g_s), s	0.0	0.0	0.0	42.2	0.0	0.0	0.9	47.9	11.7	10.0	56.9	56.9
Cycle Q Clear(g_c), s	1.8	0.0	0.0	44.0	0.0	0.0	0.9	47.9	11.7	10.0	56.9	56.9
Prop In Lane	0.24		0.51	0.43		0.50	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	579	0	0	623	0	0	50	1517	677	143	856	894
V/C Ratio(X)	0.07	0.00	0.00	1.32	0.00	0.00	0.26	0.97	0.34	1.68	1.06	1.06
Avail Cap(c_a), veh/h	579	0	0	623	0	0	143	1521	678	143	856	894
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	0.0	0.0	39.3	0.0	0.0	56.9	34.0	23.5	54.9	31.5	31.5
Incr Delay (d2), s/veh	0.0	0.0	0.0	154.3	0.0	0.0	1.0	16.5	0.3	333.8	46.8	48.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	44.5	0.0	0.0	0.4	22.5	4.2	17.4	33.2	35.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.6	0.0	0.0	193.6	0.0	0.0	57.9	50.5	23.8	388.8	78.4	80.0
LnGrp LOS	C	A	A	F	A	A	E	D	C	F	F	F
Approach Vol, veh/h		41			821			1717			2096	
Approach Delay, s/veh		24.6			193.6			46.9			114.6	
Approach LOS		C			F			D			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.5	56.4		49.0	8.0	62.9		49.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	10.0	50.5		44.0	10.0	50.5		44.0				
Max Q Clear Time (g_c+I1), s	12.0	49.9		3.8	2.9	58.9		46.0				
Green Ext Time (p_c), s	0.0	0.5		0.2	0.0	0.0		0.0				

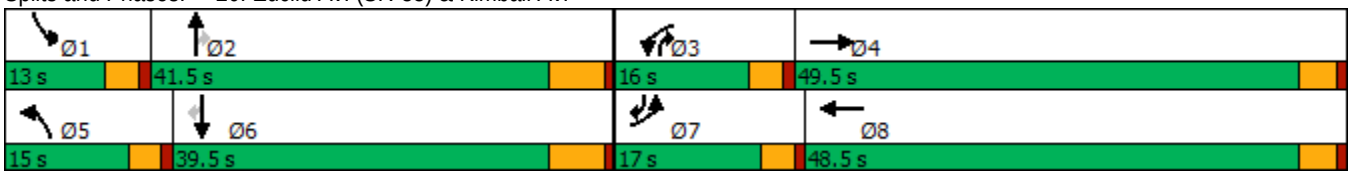
Intersection Summary			
HCM 6th Ctrl Delay		102.8	
HCM 6th LOS		F	

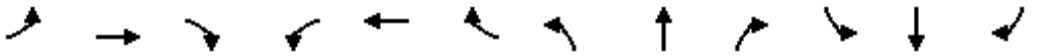
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	203	322	226	941	178	1069	68	280	1228	480
Future Volume (vph)	203	322	226	941	178	1069	68	280	1228	480
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	17.0	49.5	16.0	48.5	15.0	41.5	16.0	13.0	39.5	17.0
Total Split (%)	14.2%	41.3%	13.3%	40.4%	12.5%	34.6%	13.3%	10.8%	32.9%	14.2%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 118.8
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	322	109	226	941	418	178	1069	68	280	1228	480
Future Volume (veh/h)	203	322	109	226	941	418	178	1069	68	280	1228	480
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1800	1900	1900	1800	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	207	329	102	231	960	391	182	1091	57	286	1253	361
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	268	978	298	176	944	381	161	1095	654	242	1034	593
Arrive On Green	0.09	0.36	0.36	0.10	0.38	0.38	0.09	0.30	0.30	0.08	0.29	0.29
Sat Flow, veh/h	3141	2724	831	1714	2511	1012	1714	3610	1610	3141	3610	1590
Grp Volume(v), veh/h	207	216	215	231	687	664	182	1091	57	286	1253	361
Grp Sat Flow(s),veh/h/ln	1570	1805	1750	1714	1805	1718	1714	1805	1610	1570	1805	1590
Q Serve(g_s), s	7.5	10.2	10.5	12.0	44.0	44.0	11.0	35.3	2.6	9.0	33.5	21.6
Cycle Q Clear(g_c), s	7.5	10.2	10.5	12.0	44.0	44.0	11.0	35.3	2.6	9.0	33.5	21.6
Prop In Lane	1.00		0.47	1.00		0.59	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	268	648	628	176	679	646	161	1095	654	242	1034	593
V/C Ratio(X)	0.77	0.33	0.34	1.31	1.01	1.03	1.13	1.00	0.09	1.18	1.21	0.61
Avail Cap(c_a), veh/h	349	694	673	176	679	646	161	1095	654	242	1034	593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.4	27.3	27.4	52.5	36.5	36.5	53.0	40.7	21.4	54.0	41.7	29.9
Incr Delay (d2), s/veh	5.4	0.3	0.3	175.6	37.7	42.5	109.8	26.2	0.1	116.6	104.5	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	4.3	4.3	13.6	25.3	24.9	9.4	18.5	0.9	7.3	28.9	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.8	27.6	27.7	228.1	74.2	79.0	162.8	66.8	21.5	170.6	146.3	31.7
LnGrp LOS	E	C	C	F	F	F	F	E	C	F	F	C
Approach Vol, veh/h		638			1582			1330			1900	
Approach Delay, s/veh		37.4			98.7			78.0			128.2	
Approach LOS		D			F			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	41.5	16.0	46.5	15.0	39.5	14.0	48.5
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	9.0	35.5	12.0	45.0	11.0	33.5	13.0	44.0
Max Q Clear Time (g_c+I1), s	11.0	37.3	14.0	12.5	13.0	35.5	9.5	46.0
Green Ext Time (p_c), s	0.0	0.0	0.0	2.4	0.0	0.0	0.1	0.0

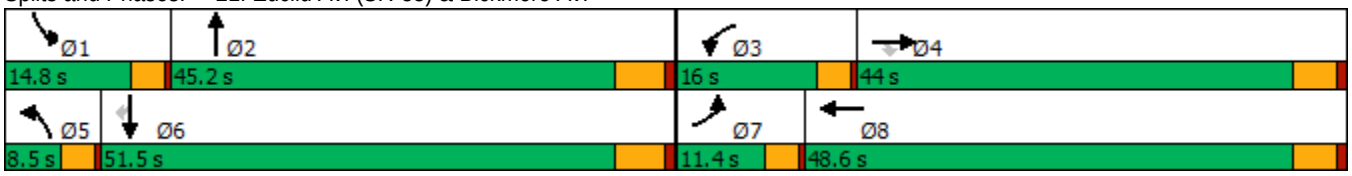
Intersection Summary	
HCM 6th Ctrl Delay	96.7
HCM 6th LOS	F

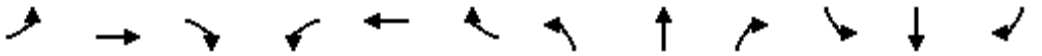
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	81	16	47	241	264	92	932	107	1220	245
Future Volume (vph)	81	16	47	241	264	92	932	107	1220	245
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	11.4	44.0	44.0	16.0	48.6	8.5	45.2	14.8	51.5	51.5
Total Split (%)	9.5%	36.7%	36.7%	13.3%	40.5%	7.1%	37.7%	12.3%	42.9%	42.9%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 107.7
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	16	47	241	264	215	92	932	40	107	1220	245
Future Volume (veh/h)	81	16	47	241	264	215	92	932	40	107	1220	245
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	88	17	47	262	287	196	100	1013	36	116	1326	219
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	111	453	384	216	316	216	87	1334	47	143	1474	657
Arrive On Green	0.06	0.24	0.24	0.13	0.30	0.30	0.05	0.38	0.38	0.08	0.41	0.41
Sat Flow, veh/h	1714	1900	1610	1714	1052	719	1714	3556	126	1714	3610	1610
Grp Volume(v), veh/h	88	17	47	262	0	483	100	514	535	116	1326	219
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1714	0	1771	1714	1805	1877	1714	1805	1610
Q Serve(g_s), s	5.0	0.7	2.3	12.5	0.0	26.0	5.0	24.7	24.7	6.6	34.0	9.2
Cycle Q Clear(g_c), s	5.0	0.7	2.3	12.5	0.0	26.0	5.0	24.7	24.7	6.6	34.0	9.2
Prop In Lane	1.00		1.00	1.00		0.41	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	111	453	384	216	0	531	87	677	704	143	1474	657
V/C Ratio(X)	0.79	0.04	0.12	1.21	0.00	0.91	1.16	0.76	0.76	0.81	0.90	0.33
Avail Cap(c_a), veh/h	137	748	634	216	0	779	87	723	752	196	1676	748
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.7	29.0	29.6	43.3	0.0	33.4	47.0	27.0	27.0	44.6	27.4	20.1
Incr Delay (d2), s/veh	18.1	0.0	0.1	129.9	0.0	8.4	144.8	3.8	3.6	11.9	6.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.3	0.9	12.9	0.0	11.8	5.5	10.2	10.6	3.1	14.1	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.8	29.0	29.6	173.2	0.0	41.8	191.8	30.8	30.7	56.6	33.4	20.2
LnGrp LOS	E	C	C	F	A	D	F	C	C	E	C	C
Approach Vol, veh/h		152			745			1149			1661	
Approach Delay, s/veh		49.4			88.0			44.8			33.3	
Approach LOS		D			F			D			C	

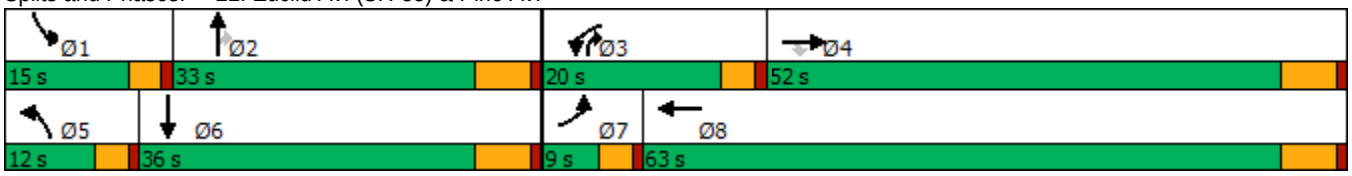
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.8	42.7	16.0	28.6	8.5	45.9	9.9	34.7
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	11.3	39.7	12.5	39.0	5.0	46.0	7.9	43.6
Max Q Clear Time (g_c+I1), s	8.6	26.7	14.5	4.3	7.0	36.0	7.0	28.0
Green Ext Time (p_c), s	0.0	3.0	0.0	0.1	0.0	4.4	0.0	1.7

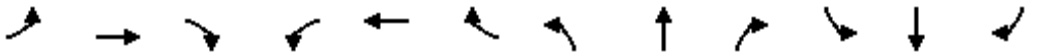
Intersection Summary	
HCM 6th Ctrl Delay	48.5
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	84	303	204	829	980	171	714	214	163	987
Future Volume (vph)	84	303	204	829	980	171	714	214	163	987
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	52.0	52.0	20.0	63.0	12.0	33.0	20.0	15.0	36.0
Total Split (%)	7.5%	43.3%	43.3%	16.7%	52.5%	10.0%	27.5%	16.7%	12.5%	30.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	303	204	829	980	341	171	714	214	163	987	130
Future Volume (veh/h)	84	303	204	829	980	341	171	714	214	163	987	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	87	312	0	855	1010	350	176	736	-35	168	1018	130
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	71	728		419	641	222	114	812	577	157	805	103
Arrive On Green	0.04	0.38	0.00	0.13	0.47	0.47	0.07	0.22	0.00	0.09	0.25	0.25
Sat Flow, veh/h	1714	1900	1610	3141	1349	467	1714	3610	1610	1714	3220	411
Grp Volume(v), veh/h	87	312	0	855	0	1360	176	736	-35	168	570	578
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1570	0	1816	1714	1805	1610	1714	1805	1826
Q Serve(g_s), s	5.0	14.5	0.0	16.0	0.0	57.0	8.0	23.8	0.0	11.0	30.0	30.0
Cycle Q Clear(g_c), s	5.0	14.5	0.0	16.0	0.0	57.0	8.0	23.8	0.0	11.0	30.0	30.0
Prop In Lane	1.00		1.00	1.00		0.26	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	71	728		419	0	863	114	812	577	157	451	457
V/C Ratio(X)	1.22	0.43		2.04	0.00	1.58	1.54	0.91	-0.06	1.07	1.26	1.27
Avail Cap(c_a), veh/h	71	728		419	0	863	114	812	577	157	451	457
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.5	27.3	0.0	52.0	0.0	31.5	56.0	45.3	0.0	54.5	45.0	45.0
Incr Delay (d2), s/veh	176.4	0.6	0.0	477.0	0.0	265.1	281.7	13.4	0.0	91.4	135.5	136.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	6.5	0.0	33.8	0.0	86.0	12.3	11.6	0.0	8.5	29.6	30.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	233.9	27.9	0.0	529.0	0.0	296.6	337.7	58.7	0.0	145.9	180.5	181.0
LnGrp LOS	F	C		F	A	F	F	E	A	F	F	F
Approach Vol, veh/h		399	A		2215			877			1316	
Approach Delay, s/veh		72.8			386.3			117.0			176.3	
Approach LOS		E			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	33.0	20.0	52.0	12.0	36.0	9.0	63.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	11.0	27.0	16.0	46.0	8.0	30.0	5.0	57.0
Max Q Clear Time (g_c+I1), s	13.0	25.8	18.0	16.5	10.0	32.0	7.0	59.0
Green Ext Time (p_c), s	0.0	0.4	0.0	2.5	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	253.7
HCM 6th LOS	F

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	1702.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	61	1559	114	51	2227	20	297	92	93	23	123	55
Future Vol, veh/h	61	1559	114	51	2227	20	297	92	93	23	123	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	66	1695	124	55	2421	22	323	100	101	25	134	60
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	1592.1	2241.1	206	93.3
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	62%	4%	2%	11%
Vol Thru, %	19%	90%	97%	61%
Vol Right, %	19%	7%	1%	27%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	482	1734	2298	201
LT Vol	297	61	51	23
Through Vol	92	1559	2227	123
RT Vol	93	114	20	55
Lane Flow Rate	524	1885	2498	218
Geometry Grp	1	1	1	1
Degree of Util (X)	1.237	4.428	5.89	0.574
Departure Headway (Hd)	23.482	20.483	17.153	43.366
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	162	207	250	85
Service Time	21.482	18.483	15.153	41.366
HCM Lane V/C Ratio	3.235	9.106	9.992	2.565
HCM Control Delay	206	1592.1	2241.1	93.3
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	11	79	131.8	2.6

Intersection	
Intersection Delay, s/veh	28.6
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	69	9	20	484	82	21	69	3	46	69	166
Future Vol, veh/h	38	69	9	20	484	82	21	69	3	46	69	166
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	41	74	10	22	520	88	23	74	3	49	74	178
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.1	41.5	11.4	14.8
HCM LOS	B	E	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	33%	3%	16%
Vol Thru, %	74%	59%	83%	25%
Vol Right, %	3%	8%	14%	59%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	93	116	586	281
LT Vol	21	38	20	46
Through Vol	69	69	484	69
RT Vol	3	9	82	166
Lane Flow Rate	100	125	630	302
Geometry Grp	1	1	1	1
Degree of Util (X)	0.188	0.219	0.924	0.5
Departure Headway (Hd)	6.77	6.307	5.28	5.959
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	532	570	681	607
Service Time	4.79	4.333	3.373	3.959
HCM Lane V/C Ratio	0.188	0.219	0.925	0.498
HCM Control Delay	11.4	11.1	41.5	14.8
HCM Lane LOS	B	B	E	B
HCM 95th-tile Q	0.7	0.8	12.4	2.8

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	76	390	852	89	54	59
Future Vol, veh/h	76	390	852	89	54	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	81	415	906	95	57	63

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1001	0	-	0	1531	954
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	577	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	700	-	-	-	199	391
Stage 1	-	-	-	-	377	-
Stage 2	-	-	-	-	566	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	700	-	-	-	169	391
Mov Cap-2 Maneuver	-	-	-	-	169	-
Stage 1	-	-	-	-	320	-
Stage 2	-	-	-	-	566	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	34.2
HCM LOS			D

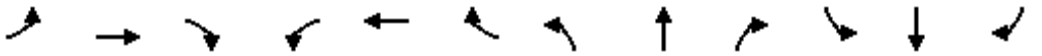
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	700	-	-	-	240
HCM Lane V/C Ratio	0.116	-	-	-	0.501
HCM Control Delay (s)	10.8	0	-	-	34.2
HCM Lane LOS	B	A	-	-	D
HCM 95th %tile Q(veh)	0.4	-	-	-	2.6

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	687	325	1426	853	700
Future Volume (vph)	0	687	325	1426	853	700
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	48.0	48.0	35.0	72.0	37.0	37.0
Total Split (%)	40.0%	40.0%	29.2%	60.0%	30.8%	30.8%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	303	0	687	325	1426	0	0	853	700
Future Volume (veh/h)	0	0	0	303	0	687	325	1426	0	0	853	700
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				329	0	618	353	1550	0	0	927	650
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				636	0	566	374	1992	0	0	1107	491
Arrive On Green				0.35	0.00	0.35	0.41	1.00	0.00	0.00	0.31	0.31
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1602
Grp Volume(v), veh/h				329	0	618	353	1550	0	0	927	650
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1602
Q Serve(g_s), s				17.3	0.0	42.2	22.5	0.0	0.0	0.0	28.7	36.8
Cycle Q Clear(g_c), s				17.3	0.0	42.2	22.5	0.0	0.0	0.0	28.7	36.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				636	0	566	374	1992	0	0	1107	491
V/C Ratio(X)				0.52	0.00	1.09	0.94	0.78	0.00	0.00	0.84	1.32
Avail Cap(c_a), veh/h				636	0	566	458	1992	0	0	1107	491
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				30.8	0.0	38.9	34.5	0.0	0.0	0.0	38.8	41.6
Incr Delay (d2), s/veh				0.7	0.0	65.1	3.7	0.3	0.0	0.0	7.6	159.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.4	0.0	26.0	7.6	0.1	0.0	0.0	13.4	35.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				31.6	0.0	104.0	38.2	0.3	0.0	0.0	46.4	200.7
LnGrp LOS				C	A	F	D	A	A	A	D	F
Approach Vol, veh/h					947			1903			1577	
Approach Delay, s/veh					78.8			7.3			110.0	
Approach LOS					E			A			F	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		72.0			29.4	42.6		48.0				
Change Period (Y+Rc), s		5.8			4.6	5.8		5.8				
Max Green Setting (Gmax), s		66.2			30.4	31.2		42.2				
Max Q Clear Time (g_c+I1), s		2.0			24.5	38.8		44.2				
Green Ext Time (p_c), s		17.3			0.3	0.0		0.0				

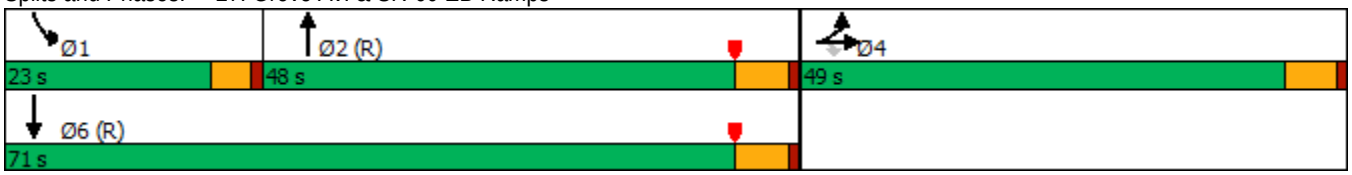
Intersection Summary												
HCM 6th Ctrl Delay			59.2									
HCM 6th LOS			E									

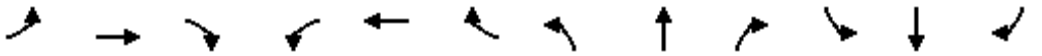
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	1	233	972	437	719
Future Volume (vph)	1	233	972	437	719
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	49.0	49.0	48.0	23.0	71.0
Total Split (%)	40.8%	40.8%	40.0%	19.2%	59.2%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	780	1	233	0	0	0	0	972	440	437	719	0
Future Volume (veh/h)	780	1	233	0	0	0	0	972	440	437	719	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	848	1	178				0	1057	369	475	782	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	651	1	579				0	926	319	277	1961	0
Arrive On Green	0.36	0.36	0.36				0.00	0.35	0.35	0.31	1.00	0.00
Sat Flow, veh/h	1807	2	1607				0	2727	907	1810	3705	0
Grp Volume(v), veh/h	849	0	178				0	721	705	475	782	0
Grp Sat Flow(s),veh/h/ln	1810	0	1607				0	1805	1734	1810	1805	0
Q Serve(g_s), s	43.2	0.0	9.6				0.0	42.2	42.2	18.4	0.0	0.0
Cycle Q Clear(g_c), s	43.2	0.0	9.6				0.0	42.2	42.2	18.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.52	1.00		0.00
Lane Grp Cap(c), veh/h	651	0	579				0	635	610	277	1961	0
V/C Ratio(X)	1.30	0.00	0.31				0.00	1.14	1.16	1.71	0.40	0.00
Avail Cap(c_a), veh/h	651	0	579				0	635	610	277	1961	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.66	0.66	0.35	0.35	0.00
Uniform Delay (d), s/veh	38.4	0.0	27.6				0.0	38.9	38.9	41.6	0.0	0.0
Incr Delay (d2), s/veh	147.4	0.0	0.3				0.0	73.8	82.9	325.7	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	44.8	0.0	3.6				0.0	30.7	31.0	31.5	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	185.8	0.0	27.9				0.0	112.7	121.8	367.3	0.2	0.0
LnGrp LOS	F	A	C				A	F	F	F	A	A
Approach Vol, veh/h		1027						1426			1257	
Approach Delay, s/veh		158.5						117.2			138.9	
Approach LOS		F						F			F	

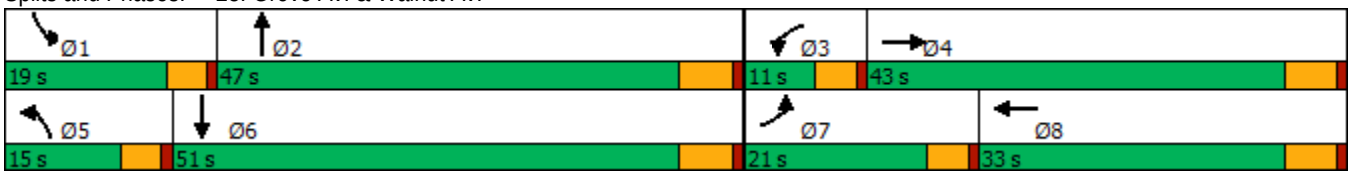
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.0	48.0		49.0		71.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	18.4	42.2		43.2		65.2
Max Q Clear Time (g_c+I1), s	20.4	44.2		45.2		2.0
Green Ext Time (p_c), s	0.0	0.0		0.0		5.8

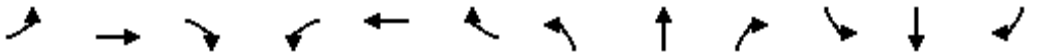
Intersection Summary		
HCM 6th Ctrl Delay		136.0
HCM 6th LOS		F

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	223	238	22	237	78	940	112	657
Future Volume (vph)	223	238	22	237	78	940	112	657
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	21.0	43.0	11.0	33.0	15.0	47.0	19.0	51.0
Total Split (%)	17.5%	35.8%	9.2%	27.5%	12.5%	39.2%	15.8%	42.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 102.9
Natural Cycle: 85
Control Type: Actuated-Uncoordinated

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	223	238	69	22	237	226	78	940	21	112	657	130
Future Volume (veh/h)	223	238	69	22	237	226	78	940	21	112	657	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	121	259	61	24	258	181	85	1022	22	122	714	107
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	149	692	160	42	361	244	107	1578	34	150	1454	218
Arrive On Green	0.09	0.24	0.24	0.02	0.18	0.18	0.06	0.44	0.44	0.09	0.46	0.46
Sat Flow, veh/h	1714	2901	670	1714	2053	1388	1714	3613	78	1714	3148	471
Grp Volume(v), veh/h	121	159	161	24	226	213	85	511	533	122	409	412
Grp Sat Flow(s),veh/h/ln	1714	1805	1765	1714	1805	1636	1714	1805	1886	1714	1805	1814
Q Serve(g_s), s	6.8	7.2	7.5	1.4	11.5	12.1	4.8	21.7	21.7	6.8	15.4	15.5
Cycle Q Clear(g_c), s	6.8	7.2	7.5	1.4	11.5	12.1	4.8	21.7	21.7	6.8	15.4	15.5
Prop In Lane	1.00		0.38	1.00		0.85	1.00		0.04	1.00		0.26
Lane Grp Cap(c), veh/h	149	431	421	42	317	288	107	788	824	150	834	838
V/C Ratio(X)	0.81	0.37	0.38	0.57	0.71	0.74	0.79	0.65	0.65	0.81	0.49	0.49
Avail Cap(c_a), veh/h	287	686	671	112	502	455	182	788	824	252	834	838
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	31.1	31.2	47.2	38.0	38.2	45.2	21.6	21.6	43.9	18.3	18.3
Incr Delay (d2), s/veh	3.9	0.5	0.6	4.5	2.9	3.8	4.8	4.1	3.9	4.0	2.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	3.1	3.1	0.6	5.1	4.9	2.1	9.3	9.7	3.0	6.3	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.8	31.7	31.8	51.7	40.9	42.0	50.1	25.7	25.6	47.8	20.4	20.4
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		441			463			1129			943	
Approach Delay, s/veh		36.1			42.0			27.5			23.9	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.2	48.6	7.0	29.1	10.7	51.0	13.1	23.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	41.2	6.4	37.2	10.4	45.2	16.4	27.2
Max Q Clear Time (g_c+I1), s	8.8	23.7	3.4	9.5	6.8	17.5	8.8	14.1
Green Ext Time (p_c), s	0.1	5.8	0.0	1.7	0.0	5.0	0.1	2.0

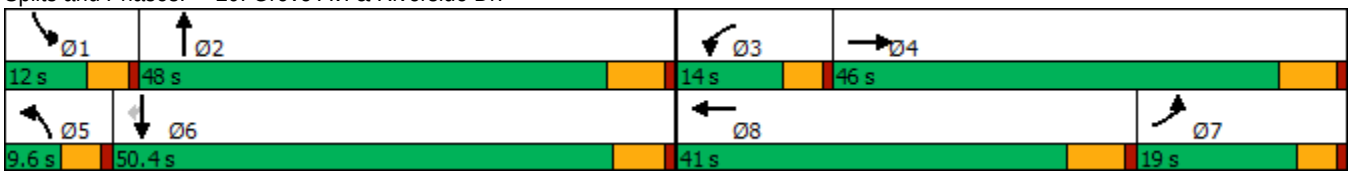
Intersection Summary	
HCM 6th Ctrl Delay	29.9
HCM 6th LOS	C

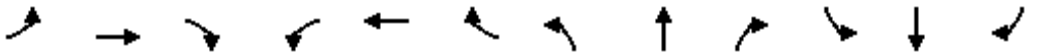
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	182	469	77	931	32	693	119	404	206
Future Volume (vph)	182	469	77	931	32	693	119	404	206
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	19.0	46.0	14.0	41.0	9.6	48.0	12.0	50.4	50.4
Total Split (%)	15.8%	38.3%	11.7%	34.2%	8.0%	40.0%	10.0%	42.0%	42.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	469	37	77	931	145	32	693	84	119	404	206
Future Volume (veh/h)	182	469	37	77	931	145	32	693	84	119	404	206
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	198	510	33	84	1012	133	35	753	69	129	439	140
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	203	630	41	105	916	120	49	588	54	104	715	606
Arrive On Green	0.12	0.36	0.36	0.06	0.29	0.29	0.03	0.34	0.34	0.06	0.38	0.38
Sat Flow, veh/h	1714	1765	114	1714	3201	420	1714	1711	157	1714	1900	1610
Grp Volume(v), veh/h	198	0	543	84	570	575	35	0	822	129	439	140
Grp Sat Flow(s),veh/h/ln	1714	0	1879	1714	1805	1817	1714	0	1868	1714	1900	1610
Q Serve(g_s), s	14.0	0.0	31.8	5.9	34.8	34.8	2.5	0.0	41.8	7.4	22.8	4.7
Cycle Q Clear(g_c), s	14.0	0.0	31.8	5.9	34.8	34.8	2.5	0.0	41.8	7.4	22.8	4.7
Prop In Lane	1.00		0.06	1.00		0.23	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	203	0	670	105	517	520	49	0	642	104	715	606
V/C Ratio(X)	0.98	0.00	0.81	0.80	1.10	1.11	0.72	0.00	1.28	1.24	0.61	0.23
Avail Cap(c_a), veh/h	203	0	670	133	517	520	70	0	642	104	715	606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	0.0	35.4	56.4	43.4	43.4	58.6	0.0	39.9	57.1	30.8	10.8
Incr Delay (d2), s/veh	55.7	0.0	7.4	18.8	71.1	71.5	7.1	0.0	137.8	164.7	3.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	0.0	15.1	3.0	24.9	25.1	1.1	0.0	42.6	7.9	10.8	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	109.1	0.0	42.8	75.1	114.5	114.9	65.6	0.0	177.7	221.8	34.7	11.7
LnGrp LOS	F	A	D	E	F	F	E	A	F	F	C	B
Approach Vol, veh/h		741			1229			857			708	
Approach Delay, s/veh		60.5			112.0			173.2			64.3	
Approach LOS		E			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	48.0	12.0	49.6	8.1	51.9	20.6	41.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	7.4	41.8	9.4	39.8	5.0	* 45	14.4	* 35
Max Q Clear Time (g_c+I1), s	9.4	43.8	7.9	33.8	4.5	24.8	16.0	36.8
Green Ext Time (p_c), s	0.0	0.0	0.0	1.6	0.0	2.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	106.5
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	226.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	89	173	57	26	119	50	67	661	39	58	437	38
Future Vol, veh/h	89	173	57	26	119	50	67	661	39	58	437	38
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	97	188	62	28	129	54	73	718	42	63	475	41
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	45.1	27	395.8	164.4
HCM LOS	E	D	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	28%	13%	11%
Vol Thru, %	86%	54%	61%	82%
Vol Right, %	5%	18%	26%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	767	319	195	533
LT Vol	67	89	26	58
Through Vol	661	173	119	437
RT Vol	39	57	50	38
Lane Flow Rate	834	347	212	579
Geometry Grp	1	1	1	1
Degree of Util (X)	1.814	0.801	0.526	1.259
Departure Headway (Hd)	8.482	10.584	11.701	9.481
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	434	347	312	388
Service Time	6.482	8.584	9.701	7.481
HCM Lane V/C Ratio	1.922	1	0.679	1.492
HCM Control Delay	395.8	45.1	27	164.4
HCM Lane LOS	F	E	D	F
HCM 95th-tile Q	49.1	6.7	2.9	20.9

Intersection	
Intersection Delay, s/veh	1104
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	262	1096	324	203	532	94	126	407	66	78	341	51
Future Vol, veh/h	262	1096	324	203	532	94	126	407	66	78	341	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	285	1191	352	221	578	102	137	442	72	85	371	55
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	1769.2	708.7	423.3	288.2
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	21%	16%	24%	17%
Vol Thru, %	68%	65%	64%	73%
Vol Right, %	11%	19%	11%	11%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	599	1682	829	470
LT Vol	126	262	203	78
Through Vol	407	1096	532	341
RT Vol	66	324	94	51
Lane Flow Rate	651	1828	901	511
Geometry Grp	1	1	1	1
Degree of Util (X)	1.731	4.831	2.397	1.357
Departure Headway (Hd)	30.455	18.844	29.68	36.07
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	130	219	135	107
Service Time	28.455	16.844	27.68	34.07
HCM Lane V/C Ratio	5.008	8.347	6.674	4.776
HCM Control Delay	423.3	1769.2	708.7	288.2
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	15.7	95.1	25.5	9.7

Intersection	
Intersection Delay, s/veh	1444.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	207	966	93	302	1570	59	63	404	42	73	365	37
Future Vol, veh/h	207	966	93	302	1570	59	63	404	42	73	365	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	225	1050	101	328	1707	64	68	439	46	79	397	40
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	1272.9	2124.5	347.2	315.9
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	16%	16%	15%
Vol Thru, %	79%	76%	81%	77%
Vol Right, %	8%	7%	3%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	509	1266	1931	475
LT Vol	63	207	302	73
Through Vol	404	966	1570	365
RT Vol	42	93	59	37
Lane Flow Rate	553	1376	2099	516
Geometry Grp	1	1	1	1
Degree of Util (X)	1.471	3.664	5.603	1.374
Departure Headway (Hd)	41.481	30.506	22.768	43.862
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	94	138	189	88
Service Time	39.481	28.506	20.768	41.862
HCM Lane V/C Ratio	5.883	9.971	11.106	5.864
HCM Control Delay	347.2	1272.9	2124.5	315.9
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	9.9	43.1	94.5	8.7

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	49	84	16	23	113	112	76	379	23	213	522	123
Future Vol, veh/h	49	84	16	23	113	112	76	379	23	213	522	123
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	53	91	17	25	123	122	83	412	25	232	567	134

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1811	1701	634	1743	1756	425	701	0	0	437	0	0
Stage 1	1098	1098	-	591	591	-	-	-	-	-	-	-
Stage 2	713	603	-	1152	1165	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	61	93	483	69	~ 86	634	905	-	-	1134	-	-
Stage 1	260	291	-	497	498	-	-	-	-	-	-	-
Stage 2	426	492	-	243	271	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 54	483	-	~ 50	634	905	-	-	1134	-	-
Mov Cap-2 Maneuver	-	~ 54	-	-	~ 50	-	-	-	-	-	-	-
Stage 1	228	191	-	436	437	-	-	-	-	-	-	-
Stage 2	217	432	-	80	178	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			1.5	2.2
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	905	-	-	-	-	1134	-	-
HCM Lane V/C Ratio	0.091	-	-	-	-	0.204	-	-
HCM Control Delay (s)	9.4	0	-	-	-	9	0	-
HCM Lane LOS	A	A	-	-	-	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	-	-	0.8	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	341.3
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	139	428	798	339	406	155
Future Vol, veh/h	139	428	798	339	406	155
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	143	441	823	349	419	160
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	119.9	566.8	108.2
HCM LOS	F	F	F

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	0%	72%
Vol Thru, %	75%	70%	0%
Vol Right, %	0%	30%	28%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	567	1137	561
LT Vol	139	0	406
Through Vol	428	798	0
RT Vol	0	339	155
Lane Flow Rate	585	1172	578
Geometry Grp	1	1	1
Degree of Util (X)	1.144	2.207	1.114
Departure Headway (Hd)	9.036	7.408	8.696
Convergence, Y/N	Yes	Yes	Yes
Cap	409	504	422
Service Time	7.036	5.408	6.696
HCM Lane V/C Ratio	1.43	2.325	1.37
HCM Control Delay	119.9	566.8	108.2
HCM Lane LOS	F	F	F
HCM 95th-tile Q	17.1	78.4	16.4

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	63	846	29	194	1282	285	87	245	98	59	36	45
Future Vol, veh/h	63	846	29	194	1282	285	87	245	98	59	36	45
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	64	863	30	198	1308	291	89	250	100	60	37	46

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1599	0	0	894	0	0	2898	3002	879	3031	2872	1454
Stage 1	-	-	-	-	-	-	1007	1007	-	1850	1850	-
Stage 2	-	-	-	-	-	-	1891	1995	-	1181	1022	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	415	-	-	767	-	-	~ 10	~ 14	350	~ 8	~ 17	161
Stage 1	-	-	-	-	-	-	293	321	-	96	126	-
Stage 2	-	-	-	-	-	-	91	~ 106	-	234	316	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	415	-	-	766	-	-	-	0	350	-	0	161
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	202	~ 222	-	66	0	-
Stage 2	-	-	-	-	-	-	-	0	-	-	218	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	1.2		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	415	-	-	766	-	-	-
HCM Lane V/C Ratio	-	0.155	-	-	0.258	-	-	-
HCM Control Delay (s)	-	15.3	0	-	11.3	0	-	-
HCM Lane LOS	-	C	A	-	B	A	-	-
HCM 95th %tile Q(veh)	-	0.5	-	-	1	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	70.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	41	87	10	10	319	111	10	18	10	153	88	308
Future Vol, veh/h	41	87	10	10	319	111	10	18	10	153	88	308
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	45	95	11	11	347	121	11	20	11	166	96	335

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	468	0	0	106	0	0	836	681	101	636	626	408
Stage 1	-	-	-	-	-	-	191	191	-	430	430	-
Stage 2	-	-	-	-	-	-	645	490	-	206	196	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1104	-	-	1498	-	-	289	375	960	393	403	648
Stage 1	-	-	-	-	-	-	815	746	-	607	587	-
Stage 2	-	-	-	-	-	-	464	552	-	801	742	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1104	-	-	1498	-	-	108	355	960	357	382	648
Mov Cap-2 Maneuver	-	-	-	-	-	-	108	355	-	357	382	-
Stage 1	-	-	-	-	-	-	780	714	-	581	581	-
Stage 2	-	-	-	-	-	-	185	546	-	737	710	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.5	0.2	22.5	147.8
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	247	1104	-	-	1498	-	-	484
HCM Lane V/C Ratio	0.167	0.04	-	-	0.007	-	-	1.233
HCM Control Delay (s)	22.5	8.4	0	-	7.4	0	-	147.8
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0	-	-	23.6

Intersection	
Int Delay, s/veh	265.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	60	600	174	148	922	10	159	14	121	14	45	56
Future Vol, veh/h	60	600	174	148	922	10	159	14	121	14	45	56
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	62	619	179	153	951	10	164	14	125	14	46	58

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	961	0	0	798	0	0	2057	2010	619	2164	2184	956
Stage 1	-	-	-	-	-	-	743	743	-	1262	1262	-
Stage 2	-	-	-	-	-	-	1314	1267	-	902	922	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	724	-	-	833	-	-	~ 41	60	492	35	~ 46	316
Stage 1	-	-	-	-	-	-	410	425	-	210	243	-
Stage 2	-	-	-	-	-	-	197	242	-	335	352	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	724	-	-	833	-	-	~ 17	45	492	19	~ 34	316
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 34	106	-	52	99	-
Stage 1	-	-	-	-	-	-	375	388	-	192	198	-
Stage 2	-	-	-	-	-	-	~ 101	197	-	220	322	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	1.4	$ 2042.5	126.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	58	724	-	-	833	-	-	128
HCM Lane V/C Ratio	5.226	0.085	-	-	0.183	-	-	0.926
HCM Control Delay (s)	$ 2042.5	10.4	-	-	10.3	-	-	126.1
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	34	0.3	-	-	0.7	-	-	6.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	697	38	36	1065	0	14	0	85	0	0	0
Future Vol, veh/h	0	697	38	36	1065	0	14	0	85	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	758	41	39	1158	0	15	0	92	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	799	0	0	2015	2015	400
Stage 1	-	-	-	-	-	-	779	779	-
Stage 2	-	-	-	-	-	-	1236	1236	-
Critical Hdwy	-	-	-	4.1	-	-	6.6	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	833	-	0	58	59	605
Stage 1	0	-	-	-	-	0	418	409	-
Stage 2	0	-	-	-	-	0	277	250	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	833	-	-	55	0	605
Mov Cap-2 Maneuver	-	-	-	-	-	-	171	0	-
Stage 1	-	-	-	-	-	-	418	0	-
Stage 2	-	-	-	-	-	-	264	0	-

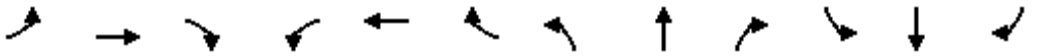
Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	15.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	445	-	-	833	-
HCM Lane V/C Ratio	0.242	-	-	0.047	-
HCM Control Delay (s)	15.7	-	-	9.5	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	19	1322	101	2380	46	18	61	24
Future Volume (vph)	19	1322	101	2380	46	18	61	24
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	27.8	27.8	27.8	27.8
Total Split (s)	9.6	78.0	12.0	80.4	30.0	30.0	30.0	30.0
Total Split (%)	8.0%	65.0%	10.0%	67.0%	25.0%	25.0%	25.0%	25.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	5.8	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 109.7
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 41: Vineyard Av. & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	1322	45	101	2380	43	46	18	108	61	24	30
Future Volume (veh/h)	19	1322	45	101	2380	43	46	18	108	61	24	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	21	1437	49	110	2587	47	50	20	117	66	26	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	39	1170	40	119	1274	23	230	35	205	156	111	141
Arrive On Green	0.02	0.64	0.64	0.07	0.68	0.68	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1810	1827	62	1810	1860	34	1441	240	1406	1343	761	966
Grp Volume(v), veh/h	21	0	1486	110	0	2634	50	0	137	66	0	59
Grp Sat Flow(s),veh/h/ln	1810	0	1889	1810	0	1894	1441	0	1647	1343	0	1726
Q Serve(g_s), s	1.3	0.0	71.8	6.8	0.0	76.8	3.6	0.0	8.7	5.4	0.0	3.4
Cycle Q Clear(g_c), s	1.3	0.0	71.8	6.8	0.0	76.8	7.0	0.0	8.7	14.1	0.0	3.4
Prop In Lane	1.00		0.03	1.00		0.02	1.00		0.85	1.00		0.56
Lane Grp Cap(c), veh/h	39	0	1210	119	0	1297	230	0	240	156	0	251
V/C Ratio(X)	0.54	0.00	1.23	0.92	0.00	2.03	0.22	0.00	0.57	0.42	0.00	0.23
Avail Cap(c_a), veh/h	81	0	1210	119	0	1297	332	0	355	250	0	373
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.3	0.0	20.2	52.1	0.0	17.7	45.5	0.0	44.6	51.2	0.0	42.4
Incr Delay (d2), s/veh	4.3	0.0	110.3	57.4	0.0	466.4	0.5	0.0	2.1	1.8	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	62.1	4.9	0.0	193.0	1.3	0.0	3.6	1.8	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.6	0.0	130.5	109.5	0.0	484.1	45.9	0.0	46.8	53.0	0.0	42.9
LnGrp LOS	E	A	F	F	A	F	D	A	D	D	A	D
Approach Vol, veh/h		1507			2744			187			125	
Approach Delay, s/veh		129.5			469.0			46.6			48.2	
Approach LOS		F			F			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.1	12.0	78.0		22.1	7.0	83.0				
Change Period (Y+Rc), s		5.8	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		24.2	7.4	71.8		24.2	5.0	74.2				
Max Q Clear Time (g_c+I1), s		10.7	8.8	73.8		16.1	3.3	78.8				
Green Ext Time (p_c), s		0.6	0.0	0.0		0.2	0.0	0.0				

Intersection Summary												
HCM 6th Ctrl Delay			328.0									
HCM 6th LOS			F									

Intersection	
Int Delay, s/veh	28.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	9	239	64	141	398	70	21	31	9	74	80	16
Future Vol, veh/h	9	239	64	141	398	70	21	31	9	74	80	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	10	260	70	153	433	76	23	34	10	80	87	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	509	0	0	330	0	0	1144	1130	295	1114	1127	471
Stage 1	-	-	-	-	-	-	315	315	-	777	777	-
Stage 2	-	-	-	-	-	-	829	815	-	337	350	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1066	-	-	1241	-	-	179	205	749	187	206	597
Stage 1	-	-	-	-	-	-	700	659	-	393	410	-
Stage 2	-	-	-	-	-	-	368	394	-	681	636	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1066	-	-	1241	-	-	90	167	749	135	168	597
Mov Cap-2 Maneuver	-	-	-	-	-	-	90	167	-	135	168	-
Stage 1	-	-	-	-	-	-	692	651	-	388	339	-
Stage 2	-	-	-	-	-	-	219	325	-	630	628	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.9	50.8	170.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	142	1066	-	-	1241	-	-	162
HCM Lane V/C Ratio	0.467	0.009	-	-	0.123	-	-	1.141
HCM Control Delay (s)	50.8	8.4	0	-	8.3	0	-	170.3
HCM Lane LOS	F	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	2.1	0	-	-	0.4	-	-	9.9

Intersection	
Int Delay, s/veh	102.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	243	521	18	54	853	257	121	100	45	203	86	127
Future Vol, veh/h	243	521	18	54	853	257	121	100	45	203	86	127
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	261	560	19	58	917	276	130	108	48	218	92	137

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1193	0	0	579	0	0	2378	2401	290	2027	2272	1055
Stage 1	-	-	-	-	-	-	1092	1092	-	1171	1171	-
Stage 2	-	-	-	-	-	-	1286	1309	-	856	1101	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	592	-	-	1005	-	-	~ 21	~ 34	713	~ 39	~ 41	277
Stage 1	-	-	-	-	-	-	232	293	-	237	269	-
Stage 2	-	-	-	-	-	-	204	231	-	323	290	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	592	-	-	1005	-	-	-	~ 11	713	~ 26	~ 13	277
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 127	~ -111	-	~ 174	~ 36	-
Stage 1	-	-	-	-	-	-	~ 81	~ 102	-	~ 82	253	-
Stage 2	-	-	-	-	-	-	~ 62	218	-	-	101	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.9	0.4		$ 634.6
HCM LOS			-	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	+	592	-	-	1005	-	-	174	75
HCM Lane V/C Ratio	-	-	0.441	-	-	0.058	-	-	1.254	3.054
HCM Control Delay (s)	-	-	15.8	-	-	8.8	-	-	205.3	$ 1043.8
HCM Lane LOS	-	-	C	-	-	A	-	-	F	F
HCM 95th %tile Q(veh)	-	-	2.2	-	-	0.2	-	-	12.2	23

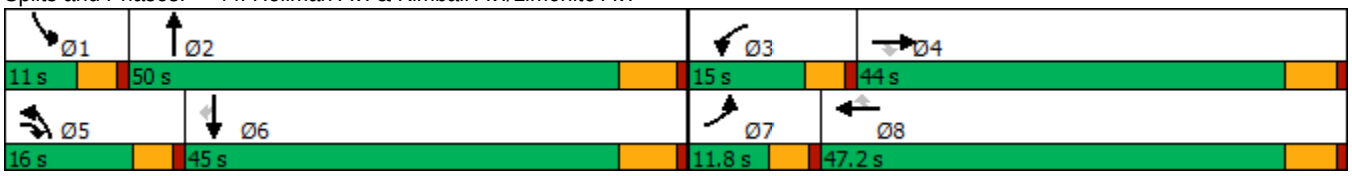
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

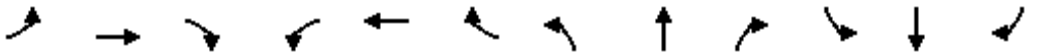
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	55	601	376	331	825	50	163	245	21	40	25
Future Volume (vph)	55	601	376	331	825	50	163	245	21	40	25
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	1	6	
Permitted Phases			4			8					6
Detector Phase	7	4	5	3	8	8	5	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	37.8	9.6	43.2	9.6	43.2	43.2
Total Split (s)	11.8	44.0	16.0	15.0	47.2	47.2	16.0	50.0	11.0	45.0	45.0
Total Split (%)	9.8%	36.7%	13.3%	12.5%	39.3%	39.3%	13.3%	41.7%	9.2%	37.5%	37.5%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	None	None	None	Max	Max	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 115.5
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	601	376	331	825	50	163	245	298	21	40	25
Future Volume (veh/h)	55	601	376	331	825	50	163	245	298	21	40	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	58	633	396	348	868	53	172	258	314	22	42	26
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	74	625	688	281	1356	605	168	681	607	38	1086	484
Arrive On Green	0.04	0.33	0.33	0.09	0.38	0.38	0.10	0.38	0.38	0.02	0.30	0.30
Sat Flow, veh/h	1714	1900	1610	3141	3610	1610	1714	1805	1610	1714	3610	1610
Grp Volume(v), veh/h	58	633	396	348	868	53	172	258	314	22	42	26
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1570	1805	1610	1714	1805	1610	1714	1805	1610
Q Serve(g_s), s	3.9	38.2	21.7	10.4	23.0	2.5	11.4	12.1	17.5	1.5	1.0	1.3
Cycle Q Clear(g_c), s	3.9	38.2	21.7	10.4	23.0	2.5	11.4	12.1	17.5	1.5	1.0	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	74	625	688	281	1356	605	168	681	607	38	1086	484
V/C Ratio(X)	0.79	1.01	0.58	1.24	0.64	0.09	1.02	0.38	0.52	0.59	0.04	0.05
Avail Cap(c_a), veh/h	106	625	688	281	1356	605	168	681	607	94	1206	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.1	39.0	25.3	52.9	29.8	23.4	52.4	26.3	28.0	56.3	28.7	28.9
Incr Delay (d2), s/veh	13.1	39.3	1.2	133.5	1.0	0.1	75.3	1.6	3.1	5.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	23.7	8.1	9.2	9.7	0.9	8.2	5.2	6.9	0.7	0.4	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.2	78.2	26.5	186.3	30.8	23.5	127.7	27.9	31.1	61.6	28.7	28.9
LnGrp LOS	E	F	C	F	C	C	F	C	C	E	C	C
Approach Vol, veh/h		1087			1269			744			90	
Approach Delay, s/veh		58.8			73.2			52.3			36.8	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	50.0	15.0	44.0	16.0	41.1	9.6	49.4
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	6.4	43.8	10.4	38.2	11.4	38.8	7.2	41.4
Max Q Clear Time (g_c+I1), s	3.5	19.5	12.4	40.2	13.4	3.3	5.9	25.0
Green Ext Time (p_c), s	0.0	3.2	0.0	0.0	0.0	0.3	0.0	5.2

Intersection Summary	
HCM 6th Ctrl Delay	62.4
HCM 6th LOS	E

Intersection	
Intersection Delay, s/veh	446.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	718	37	253	1022	58	78	0	153	164	0	64
Future Vol, veh/h	14	718	37	253	1022	58	78	0	153	164	0	64
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	15	764	39	269	1087	62	83	0	163	174	0	68
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

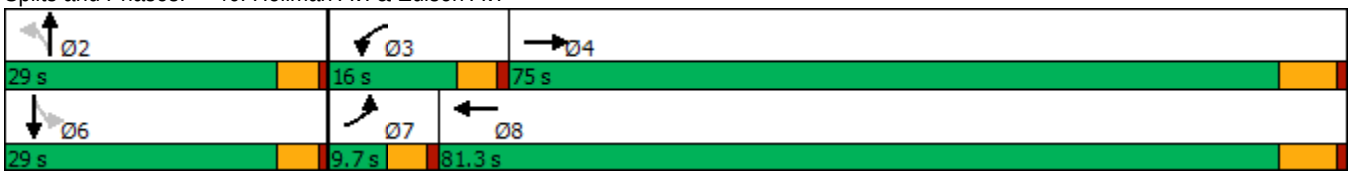
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	334.5	654.5	27.9	30
HCM LOS	F	F	D	D

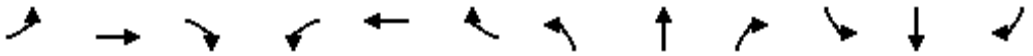
Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	34%	100%	0%	0%	100%	0%	72%
Vol Thru, %	0%	0%	100%	0%	0%	95%	0%
Vol Right, %	66%	0%	0%	100%	0%	5%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	231	14	718	37	253	1080	228
LT Vol	78	14	0	0	253	0	164
Through Vol	0	0	718	0	0	1022	0
RT Vol	153	0	0	37	0	58	64
Lane Flow Rate	246	15	764	39	269	1149	243
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.59	0.036	1.72	0.081	0.677	2.716	0.611
Departure Headway (Hd)	10.783	10	9.476	8.743	10.495	9.925	11.21
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	337	360	390	413	347	379	325
Service Time	8.483	7.7	7.176	6.443	8.195	7.625	8.91
HCM Lane V/C Ratio	0.73	0.042	1.959	0.094	0.775	3.032	0.748
HCM Control Delay	27.9	13.1	357.4	12.2	32.6	800.2	30
HCM Lane LOS	D	B	F	B	D	F	D
HCM 95th-tile Q	3.6	0.1	40.3	0.3	4.7	82.3	3.8

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	32	1275	175	2352	61	10	43	84
Future Volume (vph)	32	1275	175	2352	61	10	43	84
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	26.7	26.7	26.7	26.7
Total Split (s)	9.7	75.0	16.0	81.3	29.0	29.0	29.0	29.0
Total Split (%)	8.1%	62.5%	13.3%	67.8%	24.2%	24.2%	24.2%	24.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 109.9
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 46: Hellman Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1275	211	175	2352	48	61	10	49	43	84	53
Future Volume (veh/h)	32	1275	211	175	2352	48	61	10	49	43	84	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	35	1386	229	190	2557	52	66	11	53	47	91	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	51	972	161	174	1268	26	154	42	205	221	162	103
Arrive On Green	0.03	0.61	0.61	0.10	0.68	0.68	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1714	1590	263	1714	1855	38	1258	284	1369	1359	1084	691
Grp Volume(v), veh/h	35	0	1615	190	0	2609	66	0	64	47	0	149
Grp Sat Flow(s),veh/h/ln	1714	0	1853	1714	0	1893	1258	0	1654	1359	0	1776
Q Serve(g_s), s	2.3	0.0	68.8	11.4	0.0	76.9	5.8	0.0	3.9	3.6	0.0	8.8
Cycle Q Clear(g_c), s	2.3	0.0	68.8	11.4	0.0	76.9	14.5	0.0	3.9	7.4	0.0	8.8
Prop In Lane	1.00		0.14	1.00		0.02	1.00		0.83	1.00		0.39
Lane Grp Cap(c), veh/h	51	0	1133	174	0	1293	154	0	247	221	0	265
V/C Ratio(X)	0.69	0.00	1.43	1.09	0.00	2.02	0.43	0.00	0.26	0.21	0.00	0.56
Avail Cap(c_a), veh/h	78	0	1133	174	0	1293	238	0	357	311	0	383
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.1	0.0	21.9	50.6	0.0	17.8	51.2	0.0	42.3	45.6	0.0	44.4
Incr Delay (d2), s/veh	6.1	0.0	196.7	95.6	0.0	460.4	1.9	0.0	0.5	0.5	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	86.3	9.3	0.0	190.4	1.9	0.0	1.6	1.2	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.2	0.0	218.6	146.2	0.0	478.3	53.1	0.0	42.9	46.1	0.0	46.3
LnGrp LOS	E	A	F	F	A	F	D	A	D	D	A	D
Approach Vol, veh/h		1650			2799			130			196	
Approach Delay, s/veh		215.2			455.7			48.0			46.2	
Approach LOS		F			F			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		21.5	16.0	75.0		21.5	7.9	83.1				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		* 4.7	4.6	6.2				
Max Green Setting (Gmax), s		* 24	11.4	68.8		* 24	5.1	75.1				
Max Q Clear Time (g_c+I1), s		16.5	13.4	70.8		10.8	4.3	78.9				
Green Ext Time (p_c), s		0.3	0.0	0.0		0.7	0.0	0.0				

Intersection Summary		
HCM 6th Ctrl Delay		344.7
HCM 6th LOS		F

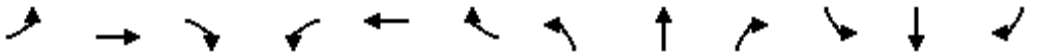
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	19	46	143	431	52	110	34	171
Future Volume (vph)	19	46	143	431	52	110	34	171
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	26.7	26.7	26.7	26.7
Total Split (s)	39.0	39.0	39.0	39.0	81.0	81.0	81.0	81.0
Total Split (%)	32.5%	32.5%	32.5%	32.5%	67.5%	67.5%	67.5%	67.5%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.7	4.7	4.7	4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 47: Hellman Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	46	26	143	431	102	52	110	30	34	171	57
Future Volume (veh/h)	19	46	26	143	431	102	52	110	30	34	171	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	21	50	28	155	468	111	57	120	33	37	186	62
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	60	317	177	387	411	97	725	912	251	815	867	289
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.64	0.64	0.64	0.64	0.64	0.64
Sat Flow, veh/h	848	1144	641	1342	1485	352	1150	1435	394	1254	1364	455
Grp Volume(v), veh/h	21	0	78	155	0	579	57	0	153	37	0	248
Grp Sat Flow(s),veh/h/ln	848	0	1785	1342	0	1837	1150	0	1829	1254	0	1818
Q Serve(g_s), s	0.0	0.0	4.0	11.9	0.0	33.2	2.6	0.0	4.0	1.5	0.0	6.9
Cycle Q Clear(g_c), s	33.2	0.0	4.0	15.8	0.0	33.2	9.5	0.0	4.0	5.4	0.0	6.9
Prop In Lane	1.00		0.36	1.00		0.19	1.00		0.22	1.00		0.25
Lane Grp Cap(c), veh/h	60	0	494	387	0	508	725	0	1163	815	0	1156
V/C Ratio(X)	0.35	0.00	0.16	0.40	0.00	1.14	0.08	0.00	0.13	0.05	0.00	0.21
Avail Cap(c_a), veh/h	60	0	494	387	0	508	725	0	1163	815	0	1156
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	60.0	0.0	32.8	38.8	0.0	43.4	11.2	0.0	8.7	9.8	0.0	9.2
Incr Delay (d2), s/veh	3.4	0.0	0.1	0.7	0.0	84.3	0.2	0.0	0.2	0.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	1.7	3.9	0.0	26.3	0.7	0.0	1.6	0.4	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.4	0.0	33.0	39.5	0.0	127.7	11.4	0.0	8.9	9.9	0.0	9.6
LnGrp LOS	E	A	C	D	A	F	B	A	A	A	A	A
Approach Vol, veh/h		99			734			210			285	
Approach Delay, s/veh		39.4			109.1			9.6			9.7	
Approach LOS		D			F			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		81.0		39.0		81.0		39.0				
Change Period (Y+Rc), s		* 4.7		5.8		* 4.7		5.8				
Max Green Setting (Gmax), s		* 76		33.2		* 76		33.2				
Max Q Clear Time (g_c+I1), s		11.5		35.2		8.9		35.2				
Green Ext Time (p_c), s		1.2		0.0		1.8		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		66.8
HCM 6th LOS		E

Notes

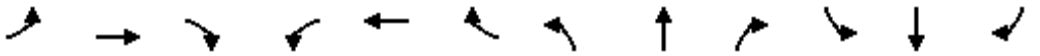
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	4	595	804	1604	653
Future Volume (vph)	4	595	804	1604	653
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (%)	32.2%	32.2%	31.1%	67.8%	36.7%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	560	4	595	804	1604	0	0	653	237
Future Volume (veh/h)	0	0	0	560	4	595	804	1604	0	0	653	237
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				609	4	464	874	1743	0	0	710	248
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				460	3	411	599	3181	0	0	1067	350
Arrive On Green				0.26	0.26	0.26	0.66	1.00	0.00	0.00	0.22	0.22
Sat Flow, veh/h				1798	12	1610	1810	5358	0	0	5168	1606
Grp Volume(v), veh/h				613	0	464	874	1743	0	0	710	248
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1729	0	0	1634	1606
Q Serve(g_s), s				23.0	0.0	23.0	29.8	0.0	0.0	0.0	11.9	12.9
Cycle Q Clear(g_c), s				23.0	0.0	23.0	29.8	0.0	0.0	0.0	11.9	12.9
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				463	0	411	599	3181	0	0	1067	350
V/C Ratio(X)				1.33	0.00	1.13	1.46	0.55	0.00	0.00	0.67	0.71
Avail Cap(c_a), veh/h				463	0	411	599	3181	0	0	1481	486
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.5	0.0	33.5	15.2	0.0	0.0	0.0	32.2	32.6
Incr Delay (d2), s/veh				160.8	0.0	83.9	207.0	0.1	0.0	0.0	3.3	11.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				30.0	0.0	27.5	39.2	0.0	0.0	0.0	4.8	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				194.3	0.0	117.4	222.2	0.1	0.0	0.0	35.5	44.1
LnGrp LOS				F	A	F	F	A	A	A	D	D
Approach Vol, veh/h					1077			2617			958	
Approach Delay, s/veh					161.1			74.2			37.7	
Approach LOS					F			E			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	61.0	29.0	35.6	25.4
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	55.2	23.0	24.0	* 27
Max Q Clear Time (g_c+I1), s	2.0	25.0	31.8	14.9
Green Ext Time (p_c), s	19.0	0.0	0.0	4.7

Intersection Summary	
HCM 6th Ctrl Delay	86.8
HCM 6th LOS	F

Notes

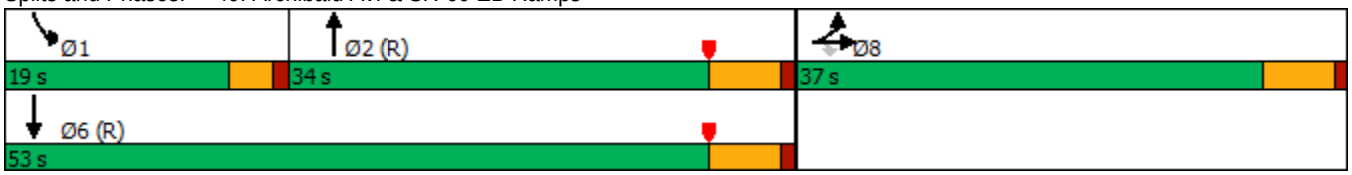
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

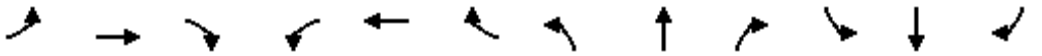
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	4	624	1934	246	967
Future Volume (vph)	4	624	1934	246	967
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (%)	41.1%	41.1%	37.8%	21.1%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	475	4	624	0	0	0	0	1934	755	246	967	0
Future Volume (veh/h)	475	4	624	0	0	0	0	1934	755	246	967	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	505	4	447				0	2057	572	262	1029	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	565	4	506				0	1772	484	300	2887	0
Arrive On Green	0.31	0.31	0.31				0.00	0.35	0.35	0.05	0.18	0.00
Sat Flow, veh/h	1796	14	1610				0	5382	1397	1810	5358	0
Grp Volume(v), veh/h	509	0	447				0	1970	659	262	1029	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1611	1810	1729	0
Q Serve(g_s), s	24.1	0.0	23.7				0.0	31.2	31.2	12.9	15.6	0.0
Cycle Q Clear(g_c), s	24.1	0.0	23.7				0.0	31.2	31.2	12.9	15.6	0.0
Prop In Lane	0.99		1.00				0.00		0.87	1.00		0.00
Lane Grp Cap(c), veh/h	569	0	506				0	1698	558	300	2887	0
V/C Ratio(X)	0.89	0.00	0.88				0.00	1.16	1.18	0.87	0.36	0.00
Avail Cap(c_a), veh/h	628	0	558				0	1698	558	302	2887	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.09	0.09	0.72	0.72	0.00
Uniform Delay (d), s/veh	29.4	0.0	29.3				0.0	29.4	29.4	41.6	22.7	0.0
Incr Delay (d2), s/veh	14.4	0.0	14.5				0.0	72.6	83.7	17.3	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	0.0	10.4				0.0	22.3	23.7	7.5	7.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.9	0.0	43.7				0.0	102.0	113.1	58.9	22.9	0.0
LnGrp LOS	D	A	D				A	F	F	E	C	A
Approach Vol, veh/h		956						2629			1291	
Approach Delay, s/veh		43.8						104.8			30.2	
Approach LOS		D						F			C	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	18.9	37.0				55.9		34.1				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	15.0	28.2				47.2		31.2				
Max Q Clear Time (g_c+I1), s	14.9	33.2				17.6		26.1				
Green Ext Time (p_c), s	0.0	0.0				7.3		2.2				

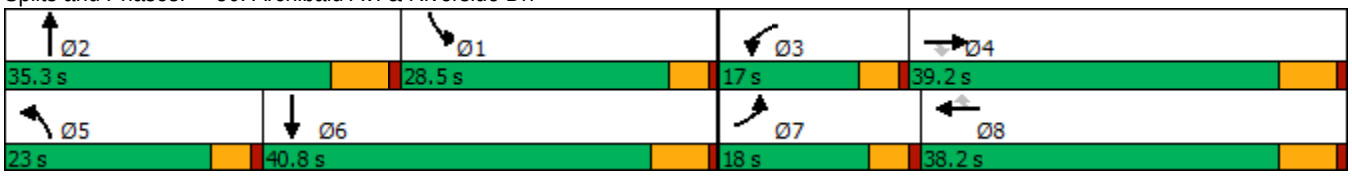
Intersection Summary			
HCM 6th Ctrl Delay			73.1
HCM 6th LOS			E

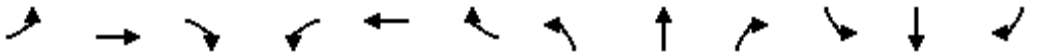
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	287	407	371	162	571	209	404	1710	162	719
Future Volume (vph)	287	407	371	162	571	209	404	1710	162	719
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	18.0	39.2	39.2	17.0	38.2	38.2	23.0	35.3	28.5	40.8
Total Split (%)	15.0%	32.7%	32.7%	14.2%	31.8%	31.8%	19.2%	29.4%	23.8%	34.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 107
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	287	407	371	162	571	209	404	1710	112	162	719	294
Future Volume (veh/h)	287	407	371	162	571	209	404	1710	112	162	719	294
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	305	433	261	172	607	140	430	1819	116	172	765	235
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	225	861	377	201	810	354	309	1422	90	226	994	302
Arrive On Green	0.13	0.24	0.24	0.12	0.22	0.22	0.18	0.29	0.29	0.13	0.25	0.25
Sat Flow, veh/h	1714	3610	1579	1714	3610	1579	1714	4983	317	1714	3942	1199
Grp Volume(v), veh/h	305	433	261	172	607	140	430	1261	674	172	670	330
Grp Sat Flow(s),veh/h/ln	1714	1805	1579	1714	1805	1579	1714	1729	1842	1714	1729	1683
Q Serve(g_s), s	13.4	10.6	15.4	10.0	16.0	5.2	18.4	29.1	29.1	9.9	18.3	18.6
Cycle Q Clear(g_c), s	13.4	10.6	15.4	10.0	16.0	5.2	18.4	29.1	29.1	9.9	18.3	18.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		0.71
Lane Grp Cap(c), veh/h	225	861	377	201	810	354	309	986	526	226	872	424
V/C Ratio(X)	1.35	0.50	0.69	0.86	0.75	0.40	1.39	1.28	1.28	0.76	0.77	0.78
Avail Cap(c_a), veh/h	225	1168	511	208	1132	495	309	986	526	402	1173	571
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.3	33.6	35.4	44.2	36.9	15.3	41.8	36.5	36.5	42.7	35.4	35.5
Incr Delay (d2), s/veh	185.7	0.5	2.5	25.8	1.8	0.7	194.5	133.1	141.1	2.0	2.2	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.0	4.4	5.8	5.5	6.8	2.8	24.0	29.6	32.7	4.1	7.5	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	230.0	34.1	37.9	70.0	38.7	16.0	236.3	169.6	177.6	44.8	37.6	40.2
LnGrp LOS	F	C	D	E	D	B	F	F	F	D	D	D
Approach Vol, veh/h		999			919			2365			1172	
Approach Delay, s/veh		94.9			41.1			184.0			39.4	
Approach LOS		F			D			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.6	35.3	16.6	30.5	23.0	31.9	18.0	29.1
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	23.9	* 29	12.4	33.0	18.4	34.6	13.4	32.0
Max Q Clear Time (g_c+I1), s	11.9	31.1	12.0	17.4	20.4	20.6	15.4	18.0
Green Ext Time (p_c), s	0.2	0.0	0.0	3.0	0.0	5.1	0.0	3.5

Intersection Summary	
HCM 6th Ctrl Delay	112.5
HCM 6th LOS	F

Notes

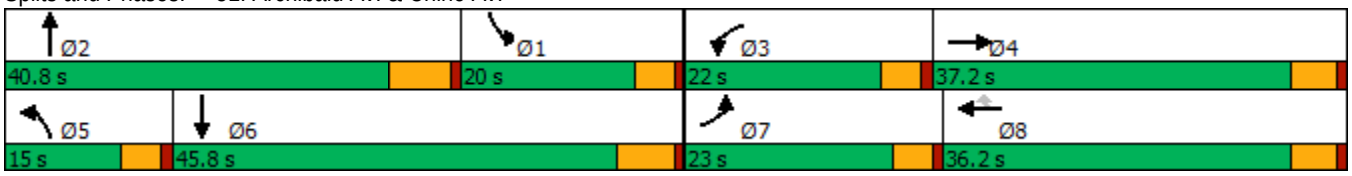
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

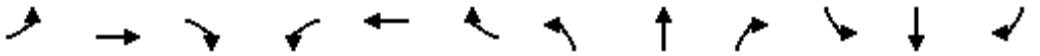
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	164	6	88	5	296	145	1856	182	965
Future Volume (vph)	164	6	88	5	296	145	1856	182	965
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	36.2	9.6	36.2	36.2	9.6	29.5	9.6	29.2
Total Split (s)	23.0	37.2	22.0	36.2	36.2	15.0	40.8	20.0	45.8
Total Split (%)	19.2%	31.0%	18.3%	30.2%	30.2%	12.5%	34.0%	16.7%	38.2%
Yellow Time (s)	3.6	4.2	3.6	4.2	4.2	3.6	5.5	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.2	4.6	5.2	5.2	4.6	6.5	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 98.9
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	6	41	88	5	296	145	1856	63	182	965	30
Future Volume (veh/h)	164	6	41	88	5	296	145	1856	63	182	965	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	178	7	28	96	5	186	158	2017	66	198	1049	31
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	211	55	221	122	217	184	189	1918	63	252	1536	45
Arrive On Green	0.12	0.17	0.17	0.07	0.11	0.11	0.11	0.37	0.37	0.15	0.43	0.43
Sat Flow, veh/h	1714	331	1325	1714	1900	1610	1714	5159	168	1714	3580	106
Grp Volume(v), veh/h	178	0	35	96	5	186	158	1351	732	198	529	551
Grp Sat Flow(s),veh/h/ln	1714	0	1656	1714	1900	1610	1714	1729	1869	1714	1805	1881
Q Serve(g_s), s	9.4	0.0	1.7	5.1	0.2	7.3	8.3	34.3	34.3	10.3	21.8	21.8
Cycle Q Clear(g_c), s	9.4	0.0	1.7	5.1	0.2	7.3	8.3	34.3	34.3	10.3	21.8	21.8
Prop In Lane	1.00		0.80	1.00		1.00	1.00		0.09	1.00		0.06
Lane Grp Cap(c), veh/h	211	0	276	122	217	184	189	1285	695	252	775	807
V/C Ratio(X)	0.84	0.00	0.13	0.79	0.02	1.01	0.84	1.05	1.05	0.79	0.68	0.68
Avail Cap(c_a), veh/h	342	0	574	323	638	541	193	1285	695	286	775	807
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	0.0	32.7	42.2	36.3	19.7	40.2	29.0	29.0	38.0	21.3	21.3
Incr Delay (d2), s/veh	5.0	0.0	0.2	4.3	0.0	33.7	24.5	39.6	49.2	10.3	4.8	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.0	0.7	2.2	0.1	5.6	4.6	19.4	22.9	4.8	9.2	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.6	0.0	32.9	46.5	36.3	53.4	64.7	68.6	78.2	48.2	26.1	25.9
LnGrp LOS	D	A	C	D	D	F	E	F	F	D	C	C
Approach Vol, veh/h		213			287			2241			1278	
Approach Delay, s/veh		42.7			50.8			71.5			29.5	
Approach LOS		D			D			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.8	40.8	11.1	20.6	14.8	45.8	16.0	15.7
Change Period (Y+Rc), s	6.2	* 6.5	4.6	5.2	4.6	6.2	4.6	5.2
Max Green Setting (Gmax), s	15.4	* 34	17.4	32.0	10.4	39.6	18.4	31.0
Max Q Clear Time (g_c+I1), s	12.3	36.3	7.1	3.7	10.3	23.8	11.4	9.3
Green Ext Time (p_c), s	0.1	0.0	0.1	0.1	0.0	5.6	0.1	0.6

Intersection Summary	
HCM 6th Ctrl Delay	55.1
HCM 6th LOS	E

Notes

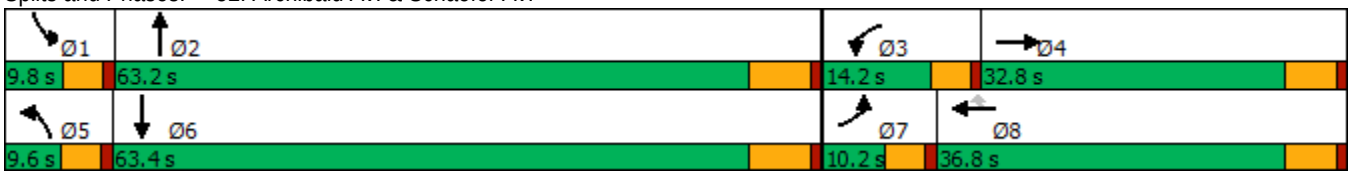
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

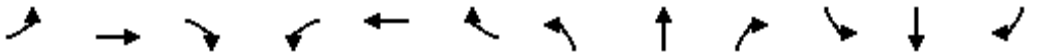
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	10	10	42	140	339	69	1502	22	776
Future Volume (vph)	10	10	42	140	339	69	1502	22	776
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	32.8	9.6	33.5	9.6	33.5
Total Split (s)	10.2	32.8	14.2	36.8	36.8	9.6	63.2	9.8	63.4
Total Split (%)	8.5%	27.3%	11.8%	30.7%	30.7%	8.0%	52.7%	8.2%	52.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6		5.8	4.6	6.5	4.6	6.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 104.6
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 52: Archibald Av. & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	10	42	140	339	69	1502	10	22	776	191
Future Volume (veh/h)	10	10	10	42	140	339	69	1502	10	22	776	191
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	11	11	11	46	152	368	75	1633	0	24	843	208
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	22	198	198	61	0	400	83	1826	0	41	1375	339
Arrive On Green	0.01	0.23	0.23	0.04	0.25	0.25	0.05	0.51	0.00	0.02	0.48	0.48
Sat Flow, veh/h	1714	872	872	1714	0	1606	1714	3705	0	1714	2856	704
Grp Volume(v), veh/h	11	0	22	46	0	368	75	1633	0	24	533	518
Grp Sat Flow(s),veh/h/ln	1714	0	1743	1714	0	1606	1714	1805	0	1714	1805	1756
Q Serve(g_s), s	0.7	0.0	1.0	2.8	0.0	23.1	4.5	42.2	0.0	1.4	22.5	22.5
Cycle Q Clear(g_c), s	0.7	0.0	1.0	2.8	0.0	23.1	4.5	42.2	0.0	1.4	22.5	22.5
Prop In Lane	1.00		0.50	1.00		1.00	1.00		0.00	1.00		0.40
Lane Grp Cap(c), veh/h	22	0	395	61	0	400	83	1826	0	41	869	845
V/C Ratio(X)	0.49	0.00	0.06	0.76	0.00	0.92	0.91	0.89	0.00	0.58	0.61	0.61
Avail Cap(c_a), veh/h	93	0	455	159	0	481	83	1978	0	86	993	965
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.7	0.0	31.3	49.5	0.0	37.8	49.0	23.1	0.0	50.0	19.7	19.7
Incr Delay (d2), s/veh	6.0	0.0	0.1	7.0	0.0	20.6	66.8	5.4	0.0	4.7	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.4	1.3	0.0	10.9	3.4	16.6	0.0	0.6	8.4	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.7	0.0	31.4	56.4	0.0	58.4	115.8	28.5	0.0	54.7	20.6	20.6
LnGrp LOS	E	A	C	E	A	E	F	C	A	D	C	C
Approach Vol, veh/h		33			414			1708			1075	
Approach Delay, s/veh		39.8			58.2			32.3			21.4	
Approach LOS		D			E			C			C	

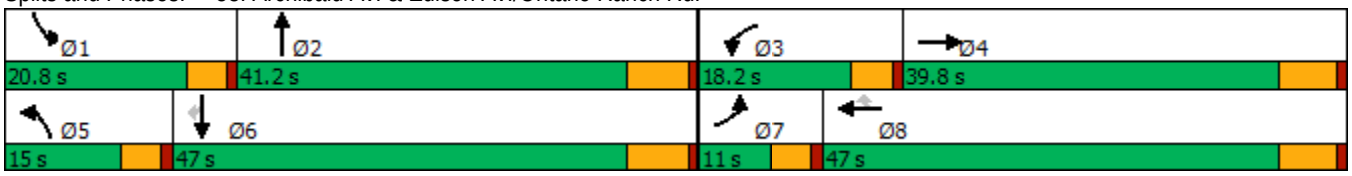
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	58.8	8.3	29.3	9.6	56.3	6.0	31.6
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	5.2	56.7	9.6	27.0	5.0	56.9	5.6	31.0
Max Q Clear Time (g_c+I1), s	3.4	44.2	4.8	3.0	6.5	24.5	2.7	25.1
Green Ext Time (p_c), s	0.0	8.1	0.0	0.1	0.0	6.8	0.0	0.7

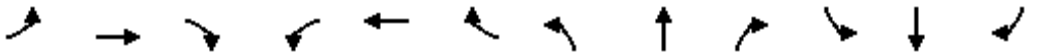
Intersection Summary	
HCM 6th Ctrl Delay	32.1
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	436	818	375	524	1635	299	502	1249	496	79	574	203
Future Volume (vph)	436	818	375	524	1635	299	502	1249	496	79	574	203
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	11.0	39.8		18.2	47.0	47.0	15.0	41.2		20.8	47.0	47.0
Total Split (%)	9.2%	33.2%		15.2%	39.2%	39.2%	12.5%	34.3%		17.3%	39.2%	39.2%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 111.9
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	436	818	375	524	1635	299	502	1249	496	79	574	203
Future Volume (veh/h)	436	818	375	524	1635	299	502	1249	496	79	574	203
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	449	843	0	540	1686	254	518	1288	0	81	592	176
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	182	1099		387	702	595	162	1135		102	1010	451
Arrive On Green	0.06	0.30	0.00	0.12	0.37	0.37	0.09	0.31	0.00	0.06	0.28	0.28
Sat Flow, veh/h	3141	3610	1610	3141	1900	1610	1714	3610	1610	1714	3610	1610
Grp Volume(v), veh/h	449	843	0	540	1686	254	518	1288	0	81	592	176
Grp Sat Flow(s),veh/h/ln	1570	1805	1610	1570	1900	1610	1714	1805	1610	1714	1805	1610
Q Serve(g_s), s	6.4	23.4	0.0	13.6	40.8	13.0	10.4	34.7	0.0	5.1	15.6	9.8
Cycle Q Clear(g_c), s	6.4	23.4	0.0	13.6	40.8	13.0	10.4	34.7	0.0	5.1	15.6	9.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	182	1099		387	702	595	162	1135		102	1010	451
V/C Ratio(X)	2.47	0.77		1.40	2.40	0.43	3.21	1.14		0.79	0.59	0.39
Avail Cap(c_a), veh/h	182	1099		387	702	595	162	1135		252	1324	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	34.8	0.0	48.4	34.8	26.0	50.0	37.8	0.0	51.2	34.2	32.1
Incr Delay (d2), s/veh	675.8	3.3	0.0	193.1	634.8	0.5	1009.3	72.0	0.0	5.1	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.5	10.2	0.0	15.5	141.1	4.8	49.5	25.4	0.0	2.3	6.5	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	727.8	38.2	0.0	241.5	669.6	26.5	1059.3	109.9	0.0	56.3	34.8	32.7
LnGrp LOS	F	D		F	F	C	F	F		E	C	C
Approach Vol, veh/h		1292	A		2480			1806	A		849	
Approach Delay, s/veh		277.8			510.5			382.2			36.4	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	41.2	18.2	39.8	15.0	37.4	11.0	47.0
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	16.2	34.7	13.6	33.6	10.4	40.5	6.4	40.8
Max Q Clear Time (g_c+I1), s	7.1	36.7	15.6	25.4	12.4	17.6	8.4	42.8
Green Ext Time (p_c), s	0.0	0.0	0.0	3.2	0.0	4.0	0.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay		365.0
HCM 6th LOS		F

Notes

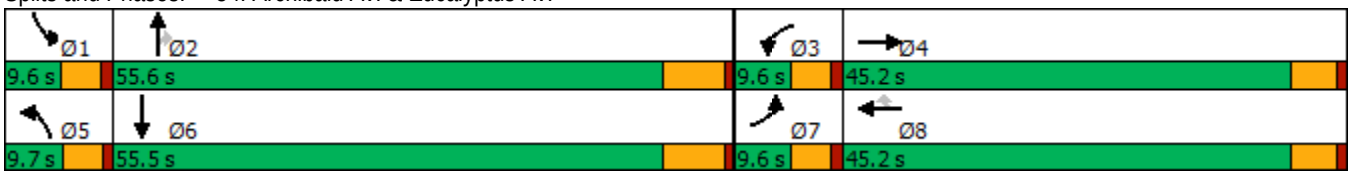
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	47	27	122	266	162	237	1924	84	60	1121
Future Volume (vph)	47	27	122	266	162	237	1924	84	60	1121
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	45.2	9.6	45.2	45.2	9.6	32.5	32.5	9.6	32.5
Total Split (s)	9.6	45.2	9.6	45.2	45.2	9.7	55.6	55.6	9.6	55.5
Total Split (%)	8.0%	37.7%	8.0%	37.7%	37.7%	8.1%	46.3%	46.3%	8.0%	46.3%
Yellow Time (s)	3.6	4.2	3.6	4.2	4.2	3.6	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.2	4.6	5.2	5.2	4.6	6.5	6.5	4.6	6.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 102.3
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	27	36	122	266	162	237	1924	84	60	1121	169
Future Volume (veh/h)	47	27	36	122	266	162	237	1924	84	60	1121	169
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	51	29	39	131	286	163	255	2069	87	65	1205	182
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	66	128	172	167	355	301	90	1843	822	82	1592	239
Arrive On Green	0.04	0.17	0.17	0.05	0.19	0.19	0.05	0.51	0.51	0.05	0.51	0.51
Sat Flow, veh/h	1714	734	988	3238	1900	1610	1714	3610	1610	1714	3147	473
Grp Volume(v), veh/h	51	0	68	131	286	163	255	2069	87	65	689	698
Grp Sat Flow(s),veh/h/ln	1714	0	1722	1619	1900	1610	1714	1805	1610	1714	1805	1815
Q Serve(g_s), s	2.9	0.0	3.3	3.9	14.0	8.9	5.1	49.4	2.7	3.6	29.5	29.9
Cycle Q Clear(g_c), s	2.9	0.0	3.3	3.9	14.0	8.9	5.1	49.4	2.7	3.6	29.5	29.9
Prop In Lane	1.00		0.57	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	66	0	300	167	355	301	90	1843	822	82	913	918
V/C Ratio(X)	0.77	0.00	0.23	0.78	0.80	0.54	2.82	1.12	0.11	0.79	0.75	0.76
Avail Cap(c_a), veh/h	89	0	711	167	785	665	90	1843	822	89	913	918
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.1	0.0	34.4	45.4	37.7	35.6	45.9	23.7	12.3	45.6	19.1	19.2
Incr Delay (d2), s/veh	17.4	0.0	0.4	19.5	4.3	1.5	850.9	63.0	0.3	31.4	5.7	5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	1.4	2.0	6.7	3.5	23.4	33.3	1.0	2.2	11.8	12.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.5	0.0	34.8	64.9	42.0	37.1	896.7	86.7	12.5	77.0	24.9	25.1
LnGrp LOS	E	A	C	E	D	D	F	F	B	E	C	C
Approach Vol, veh/h		119			580			2411			1452	
Approach Delay, s/veh		47.1			45.8			169.7			27.3	
Approach LOS		D			D			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	55.9	9.6	22.0	9.7	55.5	8.3	23.3
Change Period (Y+Rc), s	4.6	6.5	4.6	5.2	4.6	6.5	4.6	5.2
Max Green Setting (Gmax), s	5.0	49.1	5.0	40.0	5.1	49.0	5.0	40.0
Max Q Clear Time (g_c+I1), s	5.6	51.4	5.9	5.3	7.1	31.9	4.9	16.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.3	0.0	7.8	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	105.4
HCM 6th LOS	F

Notes

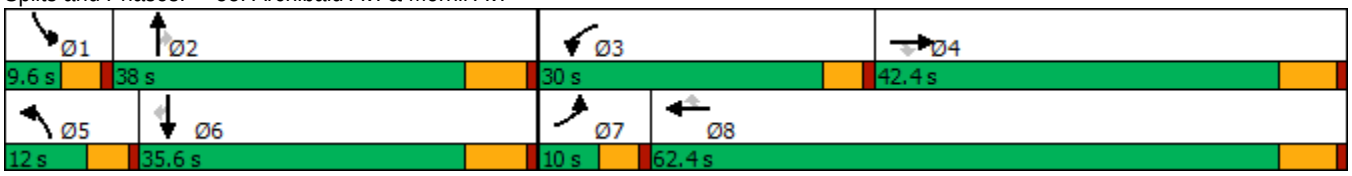
User approved volume balancing among the lanes for turning movement.

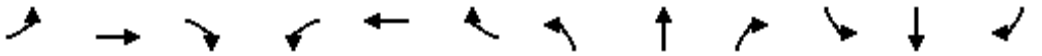
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	297	25	201	139	87	158	610	1479	88	48	889	419
Future Volume (vph)	297	25	201	139	87	158	610	1479	88	48	889	419
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	10.0	42.4	42.4	30.0	62.4	62.4	12.0	38.0	38.0	9.6	35.6	35.6
Total Split (%)	8.3%	35.3%	35.3%	25.0%	52.0%	52.0%	10.0%	31.7%	31.7%	8.0%	29.7%	29.7%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 84
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	297	25	201	139	87	158	610	1479	88	48	889	419
Future Volume (veh/h)	297	25	201	139	87	158	610	1479	88	48	889	419
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	306	26	152	143	90	68	629	1525	72	49	916	366
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	124	255	217	180	316	268	171	1529	682	134	1324	591
Arrive On Green	0.07	0.13	0.13	0.10	0.17	0.17	0.10	0.42	0.42	0.04	0.37	0.37
Sat Flow, veh/h	1714	1900	1610	1714	1900	1610	1714	3610	1610	3141	3610	1610
Grp Volume(v), veh/h	306	26	152	143	90	68	629	1525	72	49	916	366
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1714	1900	1610	1714	1805	1610	1570	1805	1610
Q Serve(g_s), s	5.4	0.9	6.7	6.1	3.1	2.7	7.4	31.4	2.0	1.1	16.0	13.9
Cycle Q Clear(g_c), s	5.4	0.9	6.7	6.1	3.1	2.7	7.4	31.4	2.0	1.1	16.0	13.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	124	255	217	180	316	268	171	1529	682	134	1324	591
V/C Ratio(X)	2.46	0.10	0.70	0.80	0.28	0.25	3.69	1.00	0.11	0.36	0.69	0.62
Avail Cap(c_a), veh/h	124	925	784	585	1436	1217	171	1529	682	211	1413	630
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.5	28.2	30.8	32.5	27.1	27.0	33.5	21.4	12.9	34.6	20.0	19.3
Incr Delay (d2), s/veh	679.8	0.2	4.1	3.0	0.5	0.5	1223.7	22.4	0.1	0.6	1.4	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.6	0.4	2.7	2.6	1.4	1.0	60.7	15.2	0.7	0.4	5.8	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	714.3	28.4	34.9	35.6	27.6	27.5	1257.2	43.7	13.0	35.2	21.3	21.0
LnGrp LOS	F	C	C	D	C	C	F	D	B	D	C	C
Approach Vol, veh/h		484			301			2226			1331	
Approach Delay, s/veh		464.1			31.4			385.6			21.7	
Approach LOS		F			C			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	38.0	12.4	16.2	12.0	33.8	10.0	18.6
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	31.5	25.4	36.2	7.4	29.1	5.4	56.2
Max Q Clear Time (g_c+I1), s	3.1	33.4	8.1	8.7	9.4	18.0	7.4	5.1
Green Ext Time (p_c), s	0.0	0.0	0.2	0.6	0.0	5.1	0.0	0.7

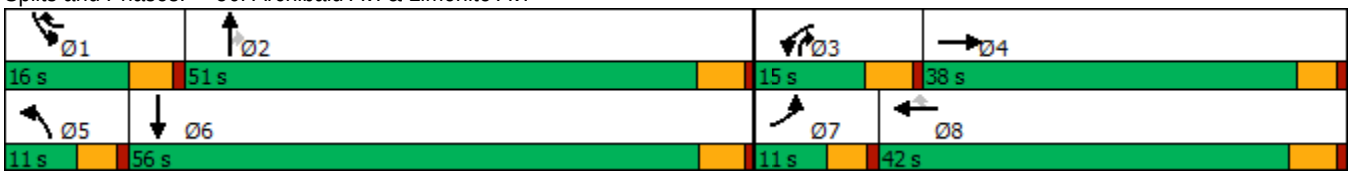
Intersection Summary	
HCM 6th Ctrl Delay	258.3
HCM 6th LOS	F

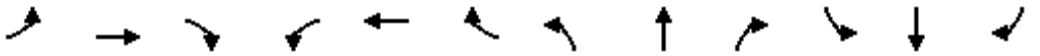
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	215	551	366	749	563	149	1078	372	381	758
Future Volume (vph)	215	551	366	749	563	149	1078	372	381	758
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4	3	8	1	5	2	3	1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	1	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.6	34.6	11.3	36.3	11.0	9.5	46.3	11.3	11.0	43.0
Total Split (s)	11.0	38.0	15.0	42.0	16.0	11.0	51.0	15.0	16.0	56.0
Total Split (%)	9.2%	31.7%	12.5%	35.0%	13.3%	9.2%	42.5%	12.5%	13.3%	46.7%
Yellow Time (s)	3.6	3.6	4.3	4.3	4.0	3.5	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	5.3	5.3	5.0	4.5	5.3	5.3	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	None	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 56: Archibald Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	551	113	366	749	563	149	1078	372	381	758	193
Future Volume (veh/h)	215	551	113	366	749	563	149	1078	372	381	758	193
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	234	599	123	398	814	553	162	1172	355	414	824	210
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	96	422	87	145	587	634	97	722	741	165	616	157
Arrive On Green	0.05	0.28	0.28	0.08	0.31	0.31	0.05	0.38	0.38	0.09	0.42	0.42
Sat Flow, veh/h	1810	1529	314	1810	1900	1576	1810	1900	1610	1810	1461	372
Grp Volume(v), veh/h	234	0	722	398	814	553	162	1172	355	414	0	1034
Grp Sat Flow(s),veh/h/ln	1810	0	1843	1810	1900	1576	1810	1900	1610	1810	0	1833
Q Serve(g_s), s	6.4	0.0	33.4	9.7	37.4	37.4	6.5	46.0	18.5	11.0	0.0	51.0
Cycle Q Clear(g_c), s	6.4	0.0	33.4	9.7	37.4	37.4	6.5	46.0	18.5	11.0	0.0	51.0
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	96	0	509	145	587	634	97	722	741	165	0	773
V/C Ratio(X)	2.44	0.00	1.42	2.74	1.39	0.87	1.67	1.62	0.48	2.52	0.00	1.34
Avail Cap(c_a), veh/h	96	0	509	145	587	634	97	722	741	165	0	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.3	0.0	43.8	55.7	41.8	33.6	57.3	37.5	22.6	55.0	0.0	35.0
Incr Delay (d2), s/veh	680.6	0.0	199.8	803.7	184.1	12.3	340.7	286.5	2.2	700.2	0.0	161.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.9	0.0	42.9	36.7	46.6	16.1	12.1	77.3	7.0	36.8	0.0	55.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	737.9	0.0	243.6	859.4	225.9	45.9	398.0	324.0	24.8	755.2	0.0	196.0
LnGrp LOS	F	A	F	F	F	D	F	F	C	F	A	F
Approach Vol, veh/h		956			1765			1689			1448	
Approach Delay, s/veh		364.6			312.3			268.2			355.9	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	51.3	15.0	38.7	11.0	56.3	11.0	42.7
Change Period (Y+Rc), s	5.0	5.3	5.3	* 5.3	4.5	* 5.3	4.6	5.3
Max Green Setting (Gmax), s	11.0	45.7	9.7	* 33	6.5	* 51	6.4	36.7
Max Q Clear Time (g_c+I1), s	13.0	48.0	11.7	35.4	8.5	53.0	8.4	39.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	318.9
HCM 6th LOS	F

Notes

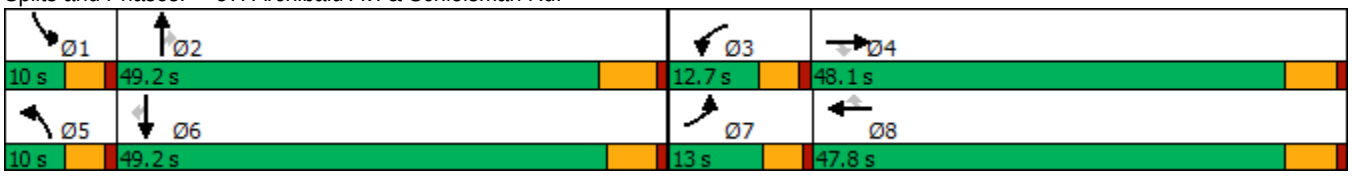
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

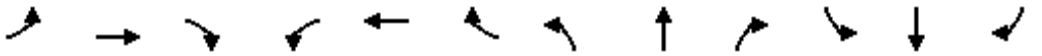
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	574	778	164	496	1067	350	291	918	388	316	691	528
Future Volume (vph)	574	778	164	496	1067	350	291	918	388	316	691	528
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	48.1	48.1	12.7	47.8	47.8	10.0	49.2	49.2	10.0	49.2	49.2
Total Split (%)	10.8%	40.1%	40.1%	10.6%	39.8%	39.8%	8.3%	41.0%	41.0%	8.3%	41.0%	41.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 114.6
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	574	778	164	496	1067	350	291	918	388	316	691	528
Future Volume (veh/h)	574	778	164	496	1067	350	291	918	388	316	691	528
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	624	846	115	539	1160	305	316	998	350	343	751	454
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	257	1915	585	248	1901	583	165	1702	528	165	1702	521
Arrive On Green	0.07	0.37	0.37	0.07	0.37	0.37	0.05	0.33	0.33	0.05	0.33	0.33
Sat Flow, veh/h	3510	5187	1584	3510	5187	1590	3510	5187	1610	3510	5187	1588
Grp Volume(v), veh/h	624	846	115	539	1160	305	316	998	350	343	751	454
Grp Sat Flow(s),veh/h/ln	1755	1729	1584	1755	1729	1590	1755	1729	1610	1755	1729	1588
Q Serve(g_s), s	8.4	14.1	5.7	8.1	20.9	17.2	5.4	18.3	21.4	5.4	13.0	30.8
Cycle Q Clear(g_c), s	8.4	14.1	5.7	8.1	20.9	17.2	5.4	18.3	21.4	5.4	13.0	30.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	257	1915	585	248	1901	583	165	1702	528	165	1702	521
V/C Ratio(X)	2.42	0.44	0.20	2.17	0.61	0.52	1.91	0.59	0.66	2.07	0.44	0.87
Avail Cap(c_a), veh/h	257	1915	585	248	1901	583	165	1946	604	165	1983	607
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.1	27.2	24.6	53.2	29.6	28.5	54.6	32.0	33.1	54.6	30.2	36.2
Incr Delay (d2), s/veh	652.9	0.7	0.8	540.6	1.5	3.3	431.3	0.4	2.2	503.3	0.2	11.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.9	5.7	2.2	22.1	8.5	6.8	12.2	7.3	8.3	13.9	5.2	13.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	706.0	28.0	25.3	593.9	31.1	31.8	485.9	32.4	35.3	557.9	30.4	48.0
LnGrp LOS	F	C	C	F	C	C	F	C	D	F	C	D
Approach Vol, veh/h		1585			2004			1664			1548	
Approach Delay, s/veh		294.7			182.6			119.1			152.4	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	43.8	12.7	48.1	10.0	43.8	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.4	43.0	8.1	42.3	5.4	* 44	8.4	42.0
Max Q Clear Time (g_c+I1), s	7.4	23.4	10.1	16.1	7.4	32.8	10.4	22.9
Green Ext Time (p_c), s	0.0	7.5	0.0	6.2	0.0	4.7	0.0	8.6

Intersection Summary	
HCM 6th Ctrl Delay	186.3
HCM 6th LOS	F

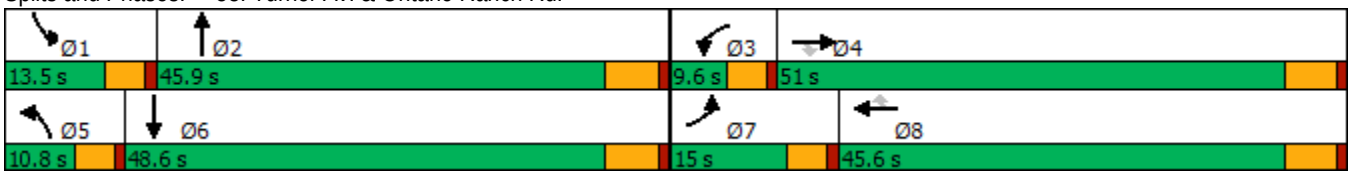
Notes

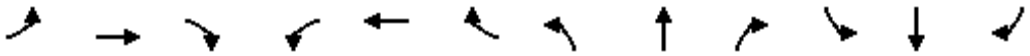
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	95	962	41	52	1984	93	70	30	96	19
Future Volume (vph)	95	962	41	52	1984	93	70	30	96	19
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	15.0	51.0	51.0	9.6	45.6	45.6	10.8	45.9	13.5	48.6
Total Split (%)	12.5%	42.5%	42.5%	8.0%	38.0%	38.0%	9.0%	38.3%	11.3%	40.5%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 94.8
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	962	41	52	1984	93	70	30	45	96	19	201
Future Volume (veh/h)	95	962	41	52	1984	93	70	30	45	96	19	201
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	103	1046	34	57	2157	92	76	33	36	104	21	195
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	129	1824	814	73	1705	760	96	119	130	130	26	242
Arrive On Green	0.08	0.51	0.51	0.04	0.47	0.47	0.06	0.14	0.14	0.08	0.16	0.16
Sat Flow, veh/h	1714	3610	1610	1714	3610	1610	1714	831	906	1714	159	1476
Grp Volume(v), veh/h	103	1046	34	57	2157	92	76	0	69	104	0	216
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1714	1805	1610	1714	0	1737	1714	0	1634
Q Serve(g_s), s	5.3	18.1	1.0	2.9	42.2	2.9	3.9	0.0	3.2	5.3	0.0	11.4
Cycle Q Clear(g_c), s	5.3	18.1	1.0	2.9	42.2	2.9	3.9	0.0	3.2	5.3	0.0	11.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.52	1.00		0.90
Lane Grp Cap(c), veh/h	129	1824	814	73	1705	760	96	0	250	130	0	268
V/C Ratio(X)	0.80	0.57	0.04	0.79	1.27	0.12	0.79	0.00	0.28	0.80	0.00	0.81
Avail Cap(c_a), veh/h	199	1824	814	96	1705	760	119	0	779	171	0	782
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.7	15.4	11.2	42.4	23.6	13.2	41.7	0.0	34.1	40.7	0.0	36.0
Incr Delay (d2), s/veh	5.7	1.3	0.1	19.3	124.3	0.3	19.6	0.0	0.6	13.4	0.0	5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	6.8	0.3	1.6	44.9	1.0	2.1	0.0	1.3	2.6	0.0	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.4	16.7	11.3	61.7	147.9	13.5	61.3	0.0	34.7	54.1	0.0	41.8
LnGrp LOS	D	B	B	E	F	B	E	A	C	D	A	D
Approach Vol, veh/h		1183			2306			145			320	
Approach Delay, s/veh		19.2			140.4			48.6			45.8	
Approach LOS		B			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.4	18.7	8.4	51.0	9.6	20.4	11.3	48.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	8.9	40.1	5.0	45.2	6.2	42.8	10.4	39.8
Max Q Clear Time (g_c+I1), s	7.3	5.2	4.9	20.1	5.9	13.4	7.3	44.2
Green Ext Time (p_c), s	0.0	0.3	0.0	7.6	0.0	1.2	0.0	0.0

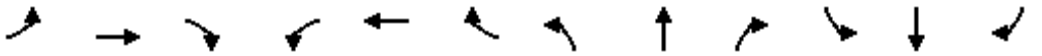
Intersection Summary	
HCM 6th Ctrl Delay	93.1
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	48	1220	55	163	1492	59	172	122	242	142	129
Future Volume (vph)	48	1220	55	163	1492	59	172	122	242	142	129
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	15.0	57.7	57.7	12.0	54.7	54.7	11.0	40.3	40.3	10.0	39.3
Total Split (%)	12.5%	48.1%	48.1%	10.0%	45.6%	45.6%	9.2%	33.6%	33.6%	8.3%	32.8%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 90.4
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 59: Harrison Av. & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	1220	55	163	1492	59	172	122	242	142	129	89
Future Volume (veh/h)	48	1220	55	163	1492	59	172	122	242	142	129	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	50	1271	50	170	1554	59	179	127	134	148	134	64
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	78	1986	599	167	2242	680	143	312	264	119	184	88
Arrive On Green	0.04	0.38	0.38	0.09	0.43	0.43	0.08	0.16	0.16	0.07	0.15	0.15
Sat Flow, veh/h	1810	5187	1565	1810	5187	1573	1810	1900	1604	1810	1215	580
Grp Volume(v), veh/h	50	1271	50	170	1554	59	179	127	134	148	0	198
Grp Sat Flow(s),veh/h/ln	1810	1729	1565	1810	1729	1573	1810	1900	1604	1810	0	1796
Q Serve(g_s), s	2.1	15.2	1.5	7.0	18.4	1.7	6.0	4.5	5.8	5.0	0.0	8.0
Cycle Q Clear(g_c), s	2.1	15.2	1.5	7.0	18.4	1.7	6.0	4.5	5.8	5.0	0.0	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	78	1986	599	167	2242	680	143	312	264	119	0	271
V/C Ratio(X)	0.64	0.64	0.08	1.02	0.69	0.09	1.25	0.41	0.51	1.24	0.00	0.73
Avail Cap(c_a), veh/h	239	3472	1048	167	3267	991	143	878	741	119	0	806
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.7	19.1	14.9	34.4	17.4	12.7	34.9	28.3	28.9	35.4	0.0	30.7
Incr Delay (d2), s/veh	3.3	0.3	0.1	74.0	0.4	0.1	156.9	0.9	1.5	160.0	0.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.2	0.5	6.3	6.1	0.5	8.7	2.0	2.2	7.4	0.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.9	19.5	15.0	108.3	17.8	12.7	191.7	29.2	30.4	195.4	0.0	34.4
LnGrp LOS	D	B	B	F	B	B	F	C	C	F	A	C
Approach Vol, veh/h		1371			1783			440			346	
Approach Delay, s/veh		20.0			26.3			95.7			103.3	
Approach LOS		B			C			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	36.0	11.0	16.7	8.3	39.7	10.0	17.7
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	7.0	50.7	6.0	34.0	10.0	47.7	5.0	35.0
Max Q Clear Time (g_c+I1), s	9.0	17.2	8.0	10.0	4.1	20.4	7.0	7.8
Green Ext Time (p_c), s	0.0	10.1	0.0	1.0	0.0	12.4	0.0	1.0

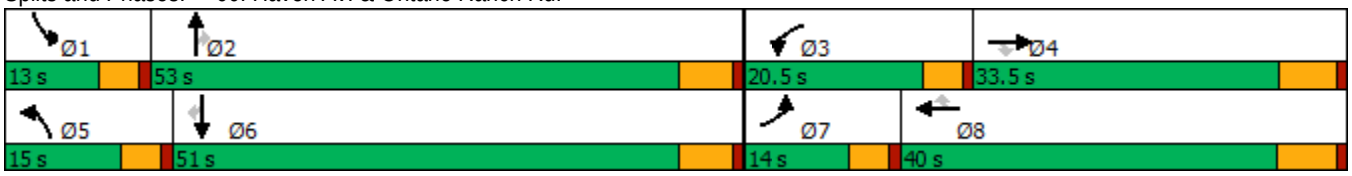
Intersection Summary	
HCM 6th Ctrl Delay	38.6
HCM 6th LOS	D

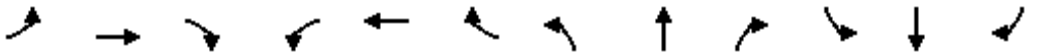
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	232	1116	44	26	1659	114	76	232	96	319	124	236
Future Volume (vph)	232	1116	44	26	1659	114	76	232	96	319	124	236
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	14.0	33.5	33.5	20.5	40.0	40.0	15.0	53.0	53.0	13.0	51.0	51.0
Total Split (%)	11.7%	27.9%	27.9%	17.1%	33.3%	33.3%	12.5%	44.2%	44.2%	10.8%	42.5%	42.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 93.5
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	232	1116	44	26	1659	114	76	232	96	319	124	236
Future Volume (veh/h)	232	1116	44	26	1659	114	76	232	96	319	124	236
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	247	1187	34	28	1765	76	81	247	52	339	132	218
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	185	2407	747	48	1388	619	103	313	265	165	382	324
Arrive On Green	0.11	0.46	0.46	0.03	0.38	0.38	0.06	0.16	0.16	0.10	0.20	0.20
Sat Flow, veh/h	1714	5187	1610	1714	3610	1610	1714	1900	1610	1714	1900	1610
Grp Volume(v), veh/h	247	1187	34	28	1765	76	81	247	52	339	132	218
Grp Sat Flow(s),veh/h/ln	1714	1729	1610	1714	1805	1610	1714	1900	1610	1714	1900	1610
Q Serve(g_s), s	9.4	13.9	1.0	1.4	33.5	2.7	4.1	10.9	2.4	8.4	5.2	10.9
Cycle Q Clear(g_c), s	9.4	13.9	1.0	1.4	33.5	2.7	4.1	10.9	2.4	8.4	5.2	10.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	185	2407	747	48	1388	619	103	313	265	165	382	324
V/C Ratio(X)	1.34	0.49	0.05	0.58	1.27	0.12	0.79	0.79	0.20	2.05	0.35	0.67
Avail Cap(c_a), veh/h	185	2407	747	313	1388	619	205	1029	872	165	985	835
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.9	16.2	12.8	41.8	26.8	17.3	40.4	34.9	31.4	39.4	29.9	32.2
Incr Delay (d2), s/veh	183.1	0.7	0.1	4.0	128.2	0.4	4.9	4.4	0.4	493.7	0.5	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.1	4.9	0.3	0.6	37.0	0.9	1.8	5.1	0.9	26.0	2.3	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	222.0	17.0	12.9	45.8	155.0	17.7	45.3	39.4	31.8	533.1	30.4	34.6
LnGrp LOS	F	B	B	D	F	B	D	D	C	F	C	C
Approach Vol, veh/h		1468			1869			380			689	
Approach Delay, s/veh		51.4			147.8			39.6			279.1	
Approach LOS		D			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	20.2	7.1	46.9	9.8	23.3	14.0	40.0
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	8.4	47.2	15.9	* 27	10.4	45.2	9.4	33.5
Max Q Clear Time (g_c+I1), s	10.4	12.9	3.4	15.9	6.1	12.9	11.4	35.5
Green Ext Time (p_c), s	0.0	1.5	0.0	5.7	0.0	1.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	126.9
HCM 6th LOS	F

Notes

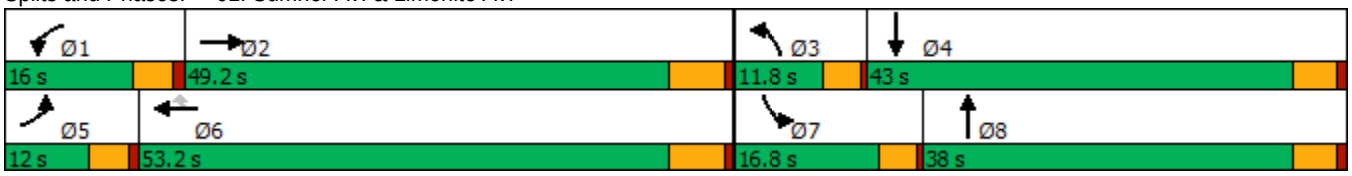
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	339	1035	125	1261	37	195	437	111	219
Future Volume (vph)	339	1035	125	1261	37	195	437	111	219
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	12.0	49.2	16.0	53.2	53.2	11.8	38.0	16.8	43.0
Total Split (%)	10.0%	41.0%	13.3%	44.3%	44.3%	9.8%	31.7%	14.0%	35.8%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 91
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 61: Sumner Av. & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	339	1035	45	125	1261	37	195	437	127	111	219	334
Future Volume (veh/h)	339	1035	45	125	1261	37	195	437	127	111	219	334
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	349	1067	40	129	1300	34	201	451	57	114	226	247
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	331	2044	77	205	1879	576	178	701	88	145	360	321
Arrive On Green	0.09	0.40	0.40	0.06	0.36	0.36	0.10	0.22	0.22	0.08	0.20	0.20
Sat Flow, veh/h	3510	5131	192	3510	5187	1590	1810	3226	406	1810	1805	1610
Grp Volume(v), veh/h	349	719	388	129	1300	34	201	251	257	114	226	247
Grp Sat Flow(s),veh/h/ln	1755	1729	1865	1755	1729	1590	1810	1805	1826	1810	1805	1610
Q Serve(g_s), s	7.5	12.5	12.6	2.9	16.9	1.1	7.8	10.1	10.2	4.9	9.1	11.5
Cycle Q Clear(g_c), s	7.5	12.5	12.6	2.9	16.9	1.1	7.8	10.1	10.2	4.9	9.1	11.5
Prop In Lane	1.00		0.10	1.00		1.00	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	331	1378	743	205	1879	576	178	392	397	145	360	321
V/C Ratio(X)	1.05	0.52	0.52	0.63	0.69	0.06	1.13	0.64	0.65	0.78	0.63	0.77
Avail Cap(c_a), veh/h	331	1880	1014	508	3082	945	178	750	759	292	863	770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	18.1	18.2	36.6	21.6	16.5	35.8	28.3	28.3	35.8	29.1	30.1
Incr Delay (d2), s/veh	64.0	0.3	0.6	1.2	0.5	0.0	107.2	1.3	1.3	3.5	1.3	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	4.4	4.8	1.2	6.0	0.4	8.5	4.1	4.2	2.2	3.8	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	100.0	18.5	18.7	37.8	22.0	16.5	143.0	29.6	29.6	39.3	30.4	33.0
LnGrp LOS	F	B	B	D	C	B	F	C	C	D	C	C
Approach Vol, veh/h		1456			1463			709			587	
Approach Delay, s/veh		38.1			23.3			61.7			33.2	
Approach LOS		D			C			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	37.7	11.8	20.9	12.0	34.8	10.4	22.3
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	11.5	43.2	7.8	38.0	7.5	47.2	12.8	33.0
Max Q Clear Time (g_c+I1), s	4.9	14.6	9.8	13.5	9.5	18.9	6.9	12.2
Green Ext Time (p_c), s	0.1	7.3	0.0	2.1	0.0	9.8	0.0	2.1

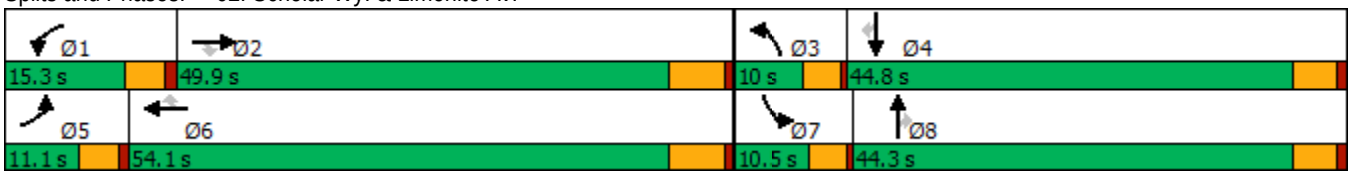
Intersection Summary	
HCM 6th Ctrl Delay	36.2
HCM 6th LOS	D

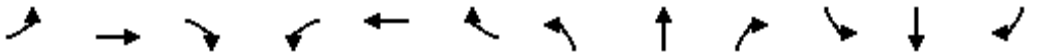
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	1099	73	47	1161	29	112	201	114	58	220	91
Future Volume (vph)	48	1099	73	47	1161	29	112	201	114	58	220	91
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	11.1	49.9	49.9	15.3	54.1	54.1	10.0	44.3	44.3	10.5	44.8	44.8
Total Split (%)	9.3%	41.6%	41.6%	12.8%	45.1%	45.1%	8.3%	36.9%	36.9%	8.8%	37.3%	37.3%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 84.7
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	1099	73	47	1161	29	112	201	114	58	220	91
Future Volume (veh/h)	48	1099	73	47	1161	29	112	201	114	58	220	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	52	1195	45	51	1262	21	122	218	82	63	239	97
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	66	1633	728	65	1630	727	151	373	316	81	570	242
Arrive On Green	0.04	0.45	0.45	0.04	0.45	0.45	0.08	0.20	0.20	0.04	0.16	0.16
Sat Flow, veh/h	1810	3610	1609	1810	3610	1610	1810	1900	1608	1810	3610	1532
Grp Volume(v), veh/h	52	1195	45	51	1262	21	122	218	82	63	239	97
Grp Sat Flow(s),veh/h/ln	1810	1805	1609	1810	1805	1610	1810	1900	1608	1810	1805	1532
Q Serve(g_s), s	2.1	19.5	1.1	2.0	21.2	0.5	4.8	7.5	3.1	2.5	4.3	4.1
Cycle Q Clear(g_c), s	2.1	19.5	1.1	2.0	21.2	0.5	4.8	7.5	3.1	2.5	4.3	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	66	1633	728	65	1630	727	151	373	316	81	570	242
V/C Ratio(X)	0.79	0.73	0.06	0.79	0.77	0.03	0.81	0.58	0.26	0.78	0.42	0.40
Avail Cap(c_a), veh/h	166	2201	981	271	2411	1075	151	1037	877	163	1995	846
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.4	16.1	11.1	34.5	16.7	11.0	32.4	26.3	24.5	34.1	27.3	27.3
Incr Delay (d2), s/veh	7.6	0.8	0.0	7.7	0.9	0.0	25.4	1.1	0.3	6.0	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	6.6	0.4	1.0	7.2	0.2	3.1	3.3	1.1	1.2	1.8	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.0	17.0	11.1	42.1	17.6	11.0	57.8	27.3	24.8	40.0	27.7	28.1
LnGrp LOS	D	B	B	D	B	B	E	C	C	D	C	C
Approach Vol, veh/h		1292			1334			422			399	
Approach Delay, s/veh		17.8			18.4			35.7			29.7	
Approach LOS		B			B			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	38.6	10.0	16.4	7.1	38.5	7.2	19.2
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	10.8	43.9	6.0	39.8	6.6	48.1	6.5	39.3
Max Q Clear Time (g_c+I1), s	4.0	21.5	6.8	6.3	4.1	23.2	4.5	9.5
Green Ext Time (p_c), s	0.0	8.4	0.0	1.5	0.0	9.3	0.0	1.2

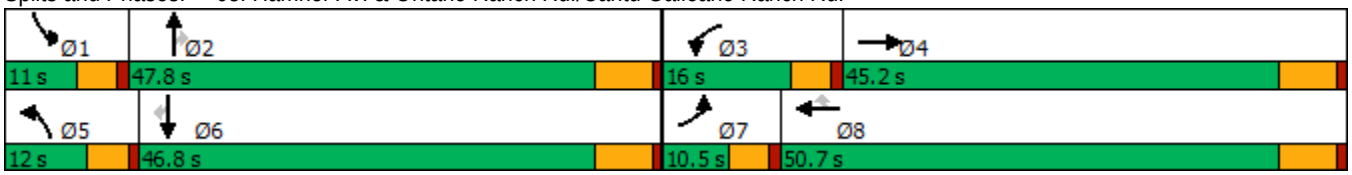
Intersection Summary	
HCM 6th Ctrl Delay	21.6
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	122	1023	388	1258	246	334	856	692	275	467	208
Future Volume (vph)	122	1023	388	1258	246	334	856	692	275	467	208
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	10.5	45.2	16.0	50.7	50.7	12.0	47.8	47.8	11.0	46.8	46.8
Total Split (%)	8.8%	37.7%	13.3%	42.3%	42.3%	10.0%	39.8%	39.8%	9.2%	39.0%	39.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	1023	195	388	1258	246	334	856	692	275	467	208
Future Volume (veh/h)	122	1023	195	388	1258	246	334	856	692	275	467	208
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1700	1900	1900	1700	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	133	1112	212	422	1367	267	363	930	745	299	508	226
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	154	1808	342	298	1339	597	194	1798	558	168	1221	544
Arrive On Green	0.05	0.33	0.33	0.09	0.37	0.37	0.06	0.35	0.35	0.05	0.34	0.34
Sat Flow, veh/h	3141	5562	1051	3141	3610	1610	3141	5187	1610	3141	3610	1609
Grp Volume(v), veh/h	133	979	345	422	1367	267	363	930	745	299	508	226
Grp Sat Flow(s),veh/h/ln	1570	1634	1711	1570	1805	1610	1570	1729	1610	1570	1805	1609
Q Serve(g_s), s	5.0	20.2	20.5	11.4	44.5	15.0	7.4	17.1	41.6	6.4	13.0	13.0
Cycle Q Clear(g_c), s	5.0	20.2	20.5	11.4	44.5	15.0	7.4	17.1	41.6	6.4	13.0	13.0
Prop In Lane	1.00		0.61	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	154	1593	556	298	1339	597	194	1798	558	168	1221	544
V/C Ratio(X)	0.86	0.61	0.62	1.41	1.02	0.45	1.87	0.52	1.33	1.78	0.42	0.42
Avail Cap(c_a), veh/h	154	1593	556	298	1339	597	194	1798	558	168	1221	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.6	34.2	34.2	54.3	37.8	28.5	56.3	31.2	39.2	56.8	30.6	30.6
Incr Delay (d2), s/veh	34.6	0.7	2.1	205.1	30.1	0.5	412.4	0.3	162.5	376.1	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	7.6	8.3	12.8	23.8	5.6	13.9	6.8	40.6	11.2	5.4	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	91.3	34.9	36.4	259.4	67.8	29.0	468.7	31.5	201.7	432.9	30.8	31.1
LnGrp LOS	F	C	D	F	F	C	F	C	F	F	C	C
Approach Vol, veh/h		1457			2056			2038			1033	
Approach Delay, s/veh		40.4			102.1			171.6			147.3	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	47.8	16.0	45.2	12.0	46.8	10.5	50.7
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	6.4	41.6	11.4	39.0	7.4	40.6	5.9	44.5
Max Q Clear Time (g_c+I1), s	8.4	43.6	13.4	22.5	9.4	15.0	7.0	46.5
Green Ext Time (p_c), s	0.0	0.0	0.0	7.3	0.0	3.8	0.0	0.0

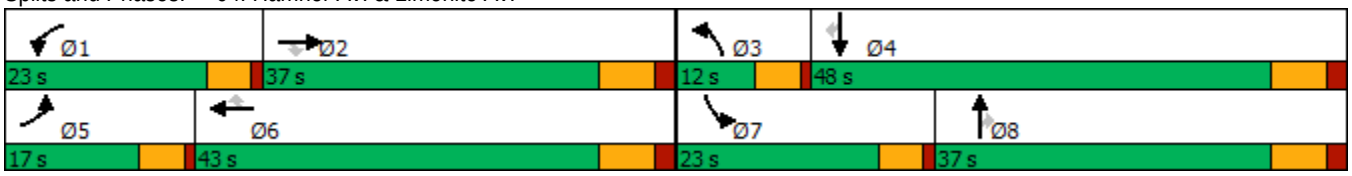
Intersection Summary	
HCM 6th Ctrl Delay	117.0
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	918	93	239	854	338	179	795	297	384	427	158
Future Volume (vph)	198	918	93	239	854	338	179	795	297	384	427	158
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	17.0	37.0	37.0	23.0	43.0	43.0	12.0	37.0	37.0	23.0	48.0	48.0
Total Split (%)	14.2%	30.8%	30.8%	19.2%	35.8%	35.8%	10.0%	30.8%	30.8%	19.2%	40.0%	40.0%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 114.4
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 64: Hamner Av. & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	198	918	93	239	854	338	179	795	297	384	427	158
Future Volume (veh/h)	198	918	93	239	854	338	179	795	297	384	427	158
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	211	977	86	254	909	334	190	846	218	409	454	128
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	276	1575	489	322	1143	510	234	1249	387	475	1605	498
Arrive On Green	0.08	0.30	0.30	0.09	0.32	0.32	0.07	0.24	0.24	0.14	0.31	0.31
Sat Flow, veh/h	3510	5187	1609	3510	3610	1610	3510	5187	1608	3510	5187	1610
Grp Volume(v), veh/h	211	977	86	254	909	334	190	846	218	409	454	128
Grp Sat Flow(s),veh/h/ln	1755	1729	1609	1755	1805	1610	1755	1729	1608	1755	1729	1610
Q Serve(g_s), s	6.2	17.0	4.1	7.4	24.1	18.8	5.6	15.5	12.5	12.0	7.0	6.3
Cycle Q Clear(g_c), s	6.2	17.0	4.1	7.4	24.1	18.8	5.6	15.5	12.5	12.0	7.0	6.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	276	1575	489	322	1143	510	234	1249	387	475	1605	498
V/C Ratio(X)	0.76	0.62	0.18	0.79	0.79	0.65	0.81	0.68	0.56	0.86	0.28	0.26
Avail Cap(c_a), veh/h	401	1575	489	602	1238	552	234	1482	459	602	2025	629
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	31.4	26.9	46.7	32.8	30.9	48.4	36.2	35.0	44.4	27.4	27.2
Incr Delay (d2), s/veh	2.6	1.1	0.4	1.6	4.2	3.8	17.9	1.6	2.7	8.5	0.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	6.9	1.6	3.2	10.6	7.4	3.0	6.4	5.0	5.6	2.8	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.1	32.5	27.3	48.3	36.9	34.7	66.3	37.8	37.7	52.9	27.6	27.8
LnGrp LOS	D	C	C	D	D	C	E	D	D	D	C	C
Approach Vol, veh/h		1274			1497			1254			991	
Approach Delay, s/veh		35.0			38.4			42.1			38.1	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	38.9	12.0	39.5	13.3	40.3	19.2	32.3
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	18.0	30.0	7.0	41.0	12.0	36.0	18.0	30.0
Max Q Clear Time (g_c+I1), s	9.4	19.0	7.6	9.0	8.2	26.1	14.0	17.5
Green Ext Time (p_c), s	0.2	7.2	0.0	6.8	0.1	7.1	0.2	7.7

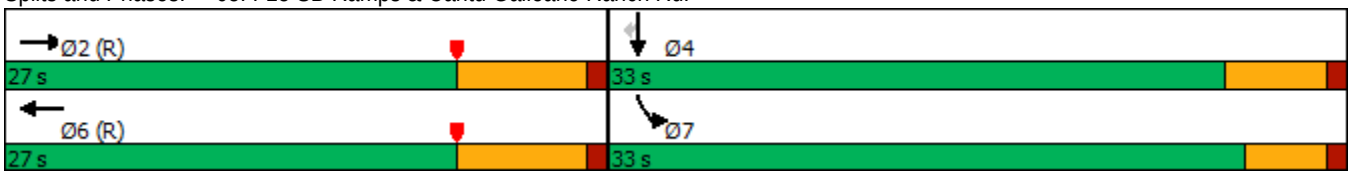
Intersection Summary	
HCM 6th Ctrl Delay	38.4
HCM 6th LOS	D

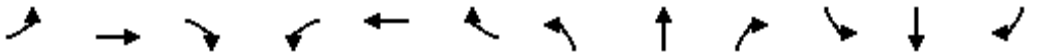
Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1379	510	710	221	392	0	1150
Future Volume (vph)	1379	510	710	221	392	0	1150
Turn Type	NA	Free	NA	Free	Prot	NA	Perm
Protected Phases	2		6		7	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		7	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		9.6	10.5	10.5
Total Split (s)	27.0		27.0		33.0	33.0	33.0
Total Split (%)	45.0%		45.0%		55.0%	55.0%	55.0%
Yellow Time (s)	5.8		5.8		3.6	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8		6.8		4.6	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Min		None	Min	Min

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 53 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	✣	↱
Traffic Volume (veh/h)	0	1379	510	0	710	221	0	0	0	392	0	1150
Future Volume (veh/h)	0	1379	510	0	710	221	0	0	0	392	0	1150
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1499	0	0	772	0				284	0	1111
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2092		0	1456					736	0	1310
Arrive On Green	0.00	0.40	0.00	0.00	0.40	0.00				0.41	0.00	0.41
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1499	0	0	772	0				284	0	1111
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	14.6	0.0	0.0	9.7	0.0				6.6	0.0	18.7
Cycle Q Clear(g_c), s	0.0	14.6	0.0	0.0	9.7	0.0				6.6	0.0	18.7
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2092		0	1456					736	0	1310
V/C Ratio(X)	0.00	0.72		0.00	0.53					0.39	0.00	0.85
Avail Cap(c_a), veh/h	0	2092		0	1456					857	0	1524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.24	0.00	0.00	0.90	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	15.0	0.0	0.0	13.6	0.0				12.5	0.0	16.1
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	1.2	0.0				0.3	0.0	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.4	0.0	0.0	3.3	0.0				2.2	0.0	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	15.5	0.0	0.0	14.8	0.0				12.9	0.0	20.3
LnGrp LOS	A	B		A	B					B	A	C
Approach Vol, veh/h		1499	A		772	A					1395	
Approach Delay, s/veh		15.5			14.8						18.8	
Approach LOS		B			B						B	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	31.0	29.0	31.0
Change Period (Y+Rc), s	6.8	4.6	6.8
Max Green Setting (Gmax), s	20.2	28.4	20.2
Max Q Clear Time (g_c+I1), s	16.6	20.7	11.7
Green Ext Time (p_c), s	2.7	3.7	3.0

Intersection Summary	
HCM 6th Ctrl Delay	16.6
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

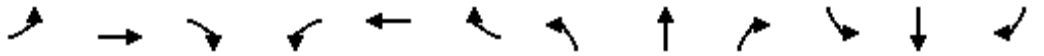
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1816	693	1459	951	547	0	482
Future Volume (vph)	1816	693	1459	951	547	0	482
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		4	4	
Permitted Phases		2		6			4
Detector Phase	2	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	36.5	36.5	23.5	23.5	23.5
Total Split (s)	73.0	73.0	73.0	73.0	37.0	37.0	37.0
Total Split (%)	66.4%	66.4%	66.4%	66.4%	33.6%	33.6%	33.6%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	Min	Min

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	↰	↱↱
Traffic Volume (veh/h)	0	1816	693	0	1459	951	0	0	0	547	0	482
Future Volume (veh/h)	0	1816	693	0	1459	951	0	0	0	547	0	482
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1932	615	0	1552	1012				582	0	215
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	3700	1148	0	3700	1149				675	0	593
Arrive On Green	0.00	0.71	0.71	0.00	0.71	0.71				0.19	0.00	0.19
Sat Flow, veh/h	0	5358	1609	0	5358	1610				3619	0	3178
Grp Volume(v), veh/h	0	1932	615	0	1552	1012				582	0	215
Grp Sat Flow(s),veh/h/ln	0	1729	1609	0	1729	1610				1810	0	1589
Q Serve(g_s), s	0.0	18.7	19.5	0.0	13.5	53.3				17.1	0.0	6.5
Cycle Q Clear(g_c), s	0.0	18.7	19.5	0.0	13.5	53.3				17.1	0.0	6.5
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3700	1148	0	3700	1149				675	0	593
V/C Ratio(X)	0.00	0.52	0.54	0.00	0.42	0.88				0.86	0.00	0.36
Avail Cap(c_a), veh/h	0	3700	1148	0	3700	1149				1036	0	910
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.76	0.76				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	7.2	7.3	0.0	6.4	12.2				43.4	0.0	39.0
Incr Delay (d2), s/veh	0.0	0.5	1.8	0.0	0.3	7.7				3.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.5	5.8	0.0	3.9	16.7				7.7	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.7	9.1	0.0	6.7	19.9				46.4	0.0	39.2
LnGrp LOS	A	A	A	A	A	B				D	A	D
Approach Vol, veh/h		2547			2564						797	
Approach Delay, s/veh		8.1			11.9						44.5	
Approach LOS		A			B						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		84.0		26.0		84.0						
Change Period (Y+Rc), s		5.5		5.5		5.5						
Max Green Setting (Gmax), s		67.5		31.5		67.5						
Max Q Clear Time (g_c+I1), s		21.5		19.1		55.3						
Green Ext Time (p_c), s		15.9		1.4		7.7						

Intersection Summary												
HCM 6th Ctrl Delay			14.6									
HCM 6th LOS			B									

Notes

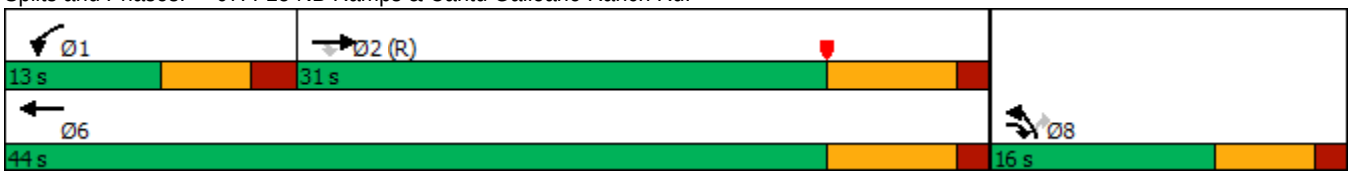
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	658	1113	445	618	313	365
Future Volume (vph)	658	1113	445	618	313	365
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	31.0	16.0	13.0	44.0	16.0	16.0
Total Split (%)	51.7%	26.7%	21.7%	73.3%	26.7%	26.7%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.0	6.0	7.3	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	658	1113	445	618	313	365
Future Volume (veh/h)	658	1113	445	618	313	365
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	715	880	484	672	391	197
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2049	904	410	3173	603	268
Arrive On Green	0.66	0.66	0.12	0.61	0.17	0.17
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	715	880	484	672	391	197
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	3.7	23.7	7.0	3.5	6.1	7.0
Cycle Q Clear(g_c), s	3.7	23.7	7.0	3.5	6.1	7.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2049	904	410	3173	603	268
V/C Ratio(X)	0.35	0.97	1.18	0.21	0.65	0.73
Avail Cap(c_a), veh/h	2049	904	410	3173	603	268
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.53	0.53	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.8	6.2	26.5	5.2	23.4	23.7
Incr Delay (d2), s/veh	0.2	16.3	104.2	0.0	5.3	16.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	8.6	8.5	0.7	2.7	3.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.0	22.4	130.7	5.2	28.7	40.0
LnGrp LOS	A	C	F	A	C	D
Approach Vol, veh/h	1595			1156	588	
Approach Delay, s/veh	15.5			57.8	32.5	
Approach LOS	B			E	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.0	31.0				44.0	16.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	7.0	23.7				36.7	10.0
Max Q Clear Time (g_c+I1), s	9.0	25.7				5.5	9.0
Green Ext Time (p_c), s	0.0	0.0				4.4	0.3

Intersection Summary	
HCM 6th Ctrl Delay	33.1
HCM 6th LOS	C

Notes

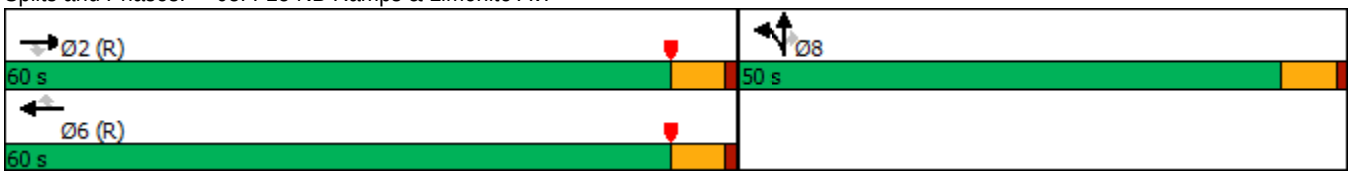
User approved volume balancing among the lanes for turning movement.

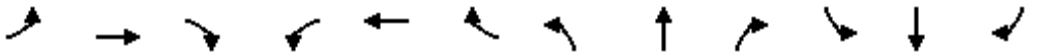
Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	1520	843	1876	450	534	0	565
Future Volume (vph)	1520	843	1876	450	534	0	565
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		8	8	
Permitted Phases		2		6			8
Detector Phase	2	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	60.0	60.0	60.0	60.0	50.0	50.0	50.0
Total Split (%)	54.5%	54.5%	54.5%	54.5%	45.5%	45.5%	45.5%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱	↰	↕	↱↱			
Traffic Volume (veh/h)	0	1520	843	0	1876	450	534	0	565	0	0	0
Future Volume (veh/h)	0	1520	843	0	1876	450	534	0	565	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	0	1583	878	0	1954	349	556	0	375			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	0	3647	1132	0	3647	1132	713	0	625			
Arrive On Green	0.00	1.00	1.00	0.00	0.70	0.70	0.20	0.00	0.20			
Sat Flow, veh/h	0	5358	1610	0	5358	1610	3619	0	3174			
Grp Volume(v), veh/h	0	1583	878	0	1954	349	556	0	375			
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1610	1810	0	1587			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	19.7	9.0	16.0	0.0	11.8			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	19.7	9.0	16.0	0.0	11.8			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3647	1132	0	3647	1132	713	0	625			
V/C Ratio(X)	0.00	0.43	0.78	0.00	0.54	0.31	0.78	0.00	0.60			
Avail Cap(c_a), veh/h	0	3647	1132	0	3647	1132	1464	0	1284			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.79	0.79	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	7.8	6.2	41.9	0.0	40.2			
Incr Delay (d2), s/veh	0.0	0.3	4.2	0.0	0.6	0.7	1.9	0.0	0.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	1.3	0.0	5.9	2.7	7.1	0.0	4.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.3	4.2	0.0	8.4	6.9	43.8	0.0	41.1			
LnGrp LOS	A	A	A	A	A	A	D	A	D			
Approach Vol, veh/h		2461			2303			931				
Approach Delay, s/veh		1.7			8.1			42.7				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		82.8				82.8		27.2				
Change Period (Y+Rc), s		5.5				5.5		5.5				
Max Green Setting (Gmax), s		54.5				54.5		44.5				
Max Q Clear Time (g_c+I1), s		2.0				21.7		18.0				
Green Ext Time (p_c), s		13.5				13.3		3.6				

Intersection Summary	
HCM 6th Ctrl Delay	11.0
HCM 6th LOS	B

Notes

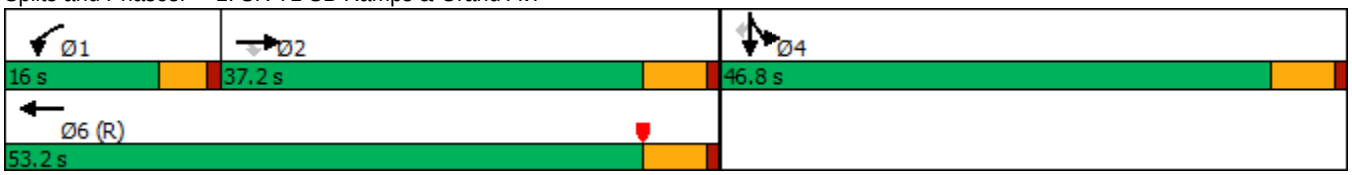
User approved volume balancing among the lanes for turning movement.

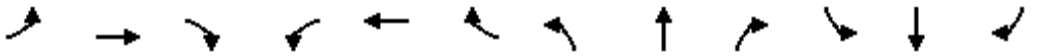
Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1782	630	337	1579	998	1	531
Future Volume (vph)	1782	630	337	1579	998	1	531
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	37.2	37.2	16.0	53.2	46.8	46.8	46.8
Total Split (%)	37.2%	37.2%	16.0%	53.2%	46.8%	46.8%	46.8%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1782	630	337	1579	0	0	0	0	998	1	531
Future Volume (veh/h)	0	1782	630	337	1579	0	0	0	0	998	1	531
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1937	602	366	1716	0				1086	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1722	535	421	2552	0				1269	0	
Arrive On Green	0.00	0.33	0.33	0.12	0.49	0.00				0.35	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	1937	602	366	1716	0				1086	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	33.2	33.2	10.2	25.1	0.0				27.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	33.2	33.2	10.2	25.1	0.0				27.8	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1722	535	421	2552	0				1269	0	
V/C Ratio(X)	0.00	1.12	1.13	0.87	0.67	0.00				0.86	0.00	
Avail Cap(c_a), veh/h	0	1722	535	421	2552	0				1549	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	33.4	33.4	43.2	19.3	0.0				30.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	64.4	78.5	1.9	0.1	0.0				4.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	23.1	23.7	4.4	9.0	0.0				12.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	97.8	111.9	45.1	19.4	0.0				34.3	0.0	0.0
LnGrp LOS	A	F	F	D	B	A				C	A	
Approach Vol, veh/h		2539			2082						1086	A
Approach Delay, s/veh		101.1			23.9						34.3	
Approach LOS		F			C						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.0	37.2		39.1		53.2
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	11.4	31.4		41.0		47.4
Max Q Clear Time (g_c+I1), s	12.2	35.2		29.8		27.1
Green Ext Time (p_c), s	0.0	0.0		3.4		11.9

Intersection Summary		
HCM 6th Ctrl Delay		60.2
HCM 6th LOS		E

Notes

User approved volume balancing among the lanes for turning movement.

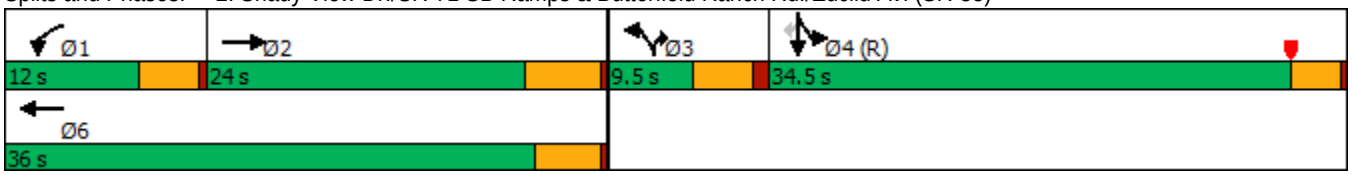
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

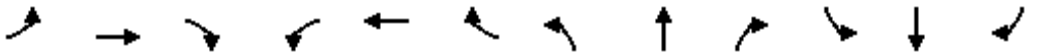
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	983	170	297	20	169	1040	75	37
Future Volume (vph)	983	170	297	20	169	1040	75	37
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	24.0	12.0	36.0	9.5	9.5	34.5	34.5	34.5
Total Split (%)	30.0%	15.0%	45.0%	11.9%	11.9%	43.1%	43.1%	43.1%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	983	67	170	297	0	20	0	169	1040	75	37
Future Volume (veh/h)	0	983	67	170	297	0	20	0	169	1040	75	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	1024	58	177	309	0	21	0	117	1139	0	12
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	825	47	181	1399		0	0	0	1832	0	815
Arrive On Green	0.00	0.24	0.24	0.03	0.13	0.00	0.00	0.00	0.00	0.51	0.00	0.51
Sat Flow, veh/h	0	3568	197	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	532	550	177	309	0		0.0		1139	0	12
Grp Sat Flow(s),veh/h/ln	0	1805	1865	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	19.0	19.0	7.8	6.1	0.0				18.1	0.0	0.3
Cycle Q Clear(g_c), s	0.0	19.0	19.0	7.8	6.1	0.0				18.1	0.0	0.3
Prop In Lane	0.00		0.11	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	429	443	181	1399					1832	0	815
V/C Ratio(X)	0.00	1.24	1.24	0.98	0.22					0.62	0.00	0.01
Avail Cap(c_a), veh/h	0	429	443	181	1421					1832	0	815
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.61	0.61	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	30.5	30.5	38.6	24.0	0.0				14.2	0.0	9.8
Incr Delay (d2), s/veh	0.0	127.1	126.7	46.1	0.0	0.0				1.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	22.6	23.3	5.8	2.5	0.0				6.6	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	157.6	157.2	84.7	24.1	0.0				15.8	0.0	9.9
LnGrp LOS	A	F	F	F	C					B	A	A
Approach Vol, veh/h		1082			486	A					1151	
Approach Delay, s/veh		157.4			46.2						15.8	
Approach LOS		F			D						B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	12.0	24.0		44.0		36.0
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5
Max Green Setting (Gmax), s	8.0	19.0		31.0		* 32
Max Q Clear Time (g_c+I1), s	9.8	21.0		20.1		8.1
Green Ext Time (p_c), s	0.0	0.0		3.6		1.4

Intersection Summary		
HCM 6th Ctrl Delay		77.5
HCM 6th LOS		E

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

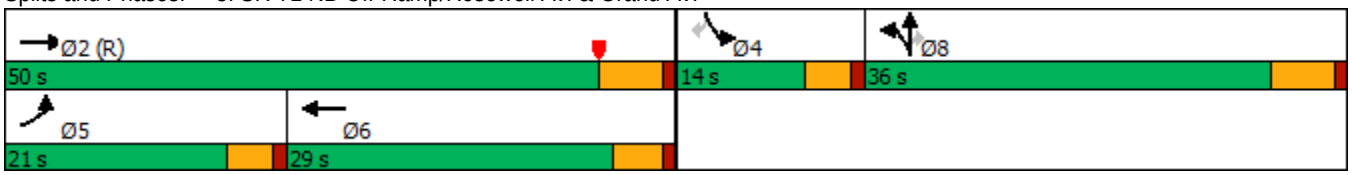
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

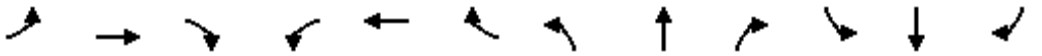
Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	449	1872	459	1961	431	156	244	185	908
Future Volume (vph)	449	1872	459	1961	431	156	244	185	908
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.5	34.8		14.7	34.8	34.8	34.8	9.5	9.5
Total Split (s)	21.0	50.0		29.0	36.0	36.0	36.0	14.0	14.0
Total Split (%)	21.0%	50.0%		29.0%	36.0%	36.0%	36.0%	14.0%	14.0%
Yellow Time (s)	3.5	4.8		3.7	4.8	4.8	4.8	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.8		4.7	5.8	5.8	5.8	4.5	4.5
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	None	None	None	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	449	1872	459	0	1961	217	431	156	244	185	0	908
Future Volume (veh/h)	449	1872	459	0	1961	217	431	156	244	185	0	908
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	488	2035	0	0	2132	236	319	379	124	201	0	669
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	299	3407		0	2689	297	411	432	366	0	0	0
Arrive On Green	0.17	0.66	0.00	0.00	0.45	0.45	0.23	0.23	0.23	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6284	665	1810	1900	1610		0	
Grp Volume(v), veh/h	488	2035	0	0	1736	632	319	379	124		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1780	1810	1900	1610			
Q Serve(g_s), s	16.5	22.2	0.0	0.0	30.3	30.5	16.5	19.3	6.4			
Cycle Q Clear(g_c), s	16.5	22.2	0.0	0.0	30.3	30.5	16.5	19.3	6.4			
Prop In Lane	1.00		1.00	0.00		0.37	1.00		1.00			
Lane Grp Cap(c), veh/h	299	3407		0	2190	795	411	432	366			
V/C Ratio(X)	1.63	0.60		0.00	0.79	0.79	0.78	0.88	0.34			
Avail Cap(c_a), veh/h	299	3407		0	2190	795	546	574	486			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.10	0.10	0.00	0.00	0.44	0.44	1.00	1.00	1.00			
Uniform Delay (d), s/veh	41.8	9.7	0.0	0.0	23.7	23.7	36.3	37.3	32.4			
Incr Delay (d2), s/veh	287.0	0.1	0.0	0.0	0.9	2.5	3.4	9.6	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	30.8	6.7	0.0	0.0	11.2	12.6	7.3	9.6	2.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	328.8	9.8	0.0	0.0	24.6	26.3	39.7	46.9	32.6			
LnGrp LOS	F	A		A	C	C	D	D	C			
Approach Vol, veh/h		2523	A		2368			822				
Approach Delay, s/veh		71.5			25.1			41.9				
Approach LOS		E			C			D				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		71.5			21.0	50.5		28.5				
Change Period (Y+Rc), s		5.8			4.5	* 5.8		5.8				
Max Green Setting (Gmax), s		44.2			16.5	* 24		30.2				
Max Q Clear Time (g_c+I1), s		24.2			18.5	32.5		21.3				
Green Ext Time (p_c), s		14.0			0.0	0.0		1.5				

Intersection Summary		
HCM 6th Ctrl Delay	48.0	
HCM 6th LOS	D	

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

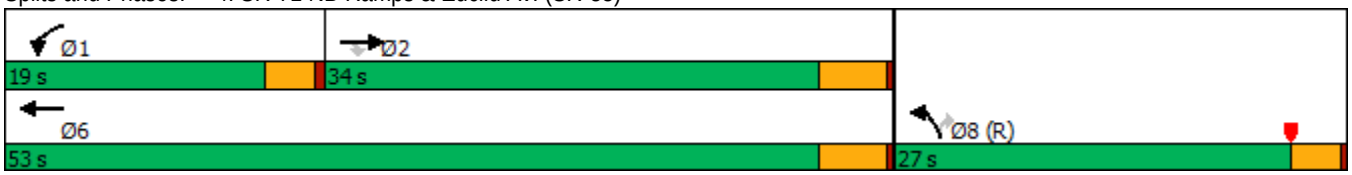
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1021	6	54	1453	181	1214
Future Volume (vph)	1021	6	54	1453	181	1214
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	34.0	34.0	19.0	53.0	27.0	27.0
Total Split (%)	42.5%	42.5%	23.8%	66.3%	33.8%	33.8%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1021	6	54	1453	181	1214
Future Volume (veh/h)	1021	6	54	1453	181	1214
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	1110	0	59	1579	197	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1549		83	1872	1339	
Arrive On Green	0.86	0.00	0.05	0.52	0.38	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	1110	0	59	1579	197	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	9.1	0.0	2.6	30.0	2.9	0.0
Cycle Q Clear(g_c), s	9.1	0.0	2.6	30.0	2.9	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1549		83	1872	1339	
V/C Ratio(X)	0.72		0.71	0.84	0.15	
Avail Cap(c_a), veh/h	1549		351	2189	1339	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	3.9	0.0	37.7	16.5	16.2	0.0
Incr Delay (d2), s/veh	0.1	0.0	8.2	2.8	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	1.2	10.2	1.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.0	0.0	45.9	19.3	16.4	0.0
LnGrp LOS	A		D	B	B	
Approach Vol, veh/h	1110	A		1638	197	A
Approach Delay, s/veh	4.0			20.3	16.4	
Approach LOS	A			C	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	7.2	38.8				46.0	34.0
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	15.5	29.5				48.5	23.5
Max Q Clear Time (g_c+I1), s	4.6	11.1				32.0	4.9
Green Ext Time (p_c), s	0.0	5.9				9.5	0.3

Intersection Summary	
HCM 6th Ctrl Delay	13.9
HCM 6th LOS	B

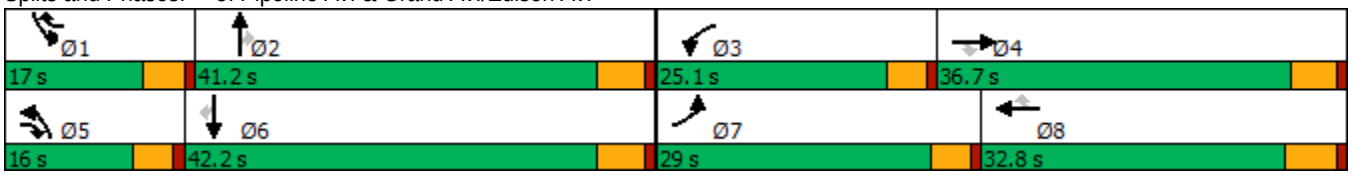
Notes

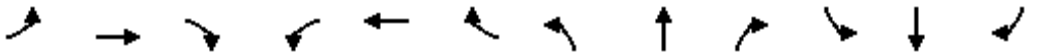
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	389	1194	271	265	1105	103	353	538	194	178	693	282
Future Volume (vph)	389	1194	271	265	1105	103	353	538	194	178	693	282
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	29.0	36.7	16.0	25.1	32.8	17.0	16.0	41.2	41.2	17.0	42.2	42.2
Total Split (%)	24.2%	30.6%	13.3%	20.9%	27.3%	14.2%	13.3%	34.3%	34.3%	14.2%	35.2%	35.2%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 107.2
Natural Cycle: 105
Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	389	1194	271	265	1105	103	353	538	194	178	693	282
Future Volume (veh/h)	389	1194	271	265	1105	103	353	538	194	178	693	282
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1700	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	423	1298	230	288	1201	74	384	585	125	193	753	232
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	515	1670	700	377	1490	649	371	984	439	219	1019	444
Arrive On Green	0.15	0.32	0.32	0.11	0.29	0.28	0.12	0.27	0.27	0.13	0.28	0.28
Sat Flow, veh/h	3326	5187	1607	3326	5187	1608	3141	3610	1610	1714	3610	1572
Grp Volume(v), veh/h	423	1298	230	288	1201	74	384	585	125	193	753	232
Grp Sat Flow(s),veh/h/ln	1663	1729	1607	1663	1729	1608	1570	1805	1610	1714	1805	1572
Q Serve(g_s), s	12.5	23.0	9.6	8.5	21.8	2.9	12.0	14.3	6.2	11.2	19.2	12.6
Cycle Q Clear(g_c), s	12.5	23.0	9.6	8.5	21.8	2.9	12.0	14.3	6.2	11.2	19.2	12.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	515	1670	700	377	1490	649	371	984	439	219	1019	444
V/C Ratio(X)	0.82	0.78	0.33	0.76	0.81	0.11	1.03	0.59	0.28	0.88	0.74	0.52
Avail Cap(c_a), veh/h	818	1670	700	691	1490	649	371	1322	590	219	1358	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	31.2	18.9	43.7	33.6	19.0	44.8	32.1	29.1	43.5	33.1	30.7
Incr Delay (d2), s/veh	1.7	3.6	1.3	1.2	4.8	0.4	56.0	0.6	0.4	30.1	1.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	9.8	3.6	3.4	9.3	1.1	7.4	6.1	2.3	6.5	8.3	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.3	34.8	20.2	45.0	38.4	19.3	100.8	32.7	29.5	73.6	34.5	31.7
LnGrp LOS	D	C	C	D	D	B	F	C	C	E	C	C
Approach Vol, veh/h		1951			1563			1094			1178	
Approach Delay, s/veh		34.9			38.7			56.2			40.4	
Approach LOS		C			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	31.7	15.5	37.4	16.0	32.7	19.7	33.2
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	12.4	35.8	20.5	* 32	11.4	36.8	24.4	27.0
Max Q Clear Time (g_c+I1), s	13.2	16.3	10.5	25.0	14.0	21.2	14.5	23.8
Green Ext Time (p_c), s	0.0	4.0	0.4	4.6	0.0	5.1	0.6	2.1

Intersection Summary	
HCM 6th Ctrl Delay	41.1
HCM 6th LOS	D

Notes

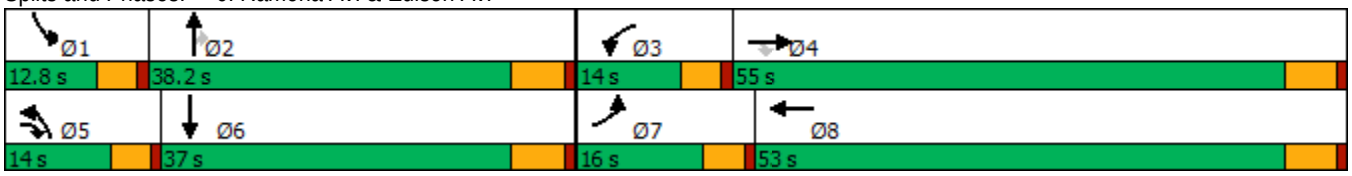
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

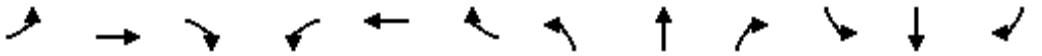
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	128	1388	128	188	1161	104	491	162	71	454
Future Volume (vph)	128	1388	128	188	1161	104	491	162	71	454
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	16.0	55.0	14.0	14.0	53.0	14.0	38.2	38.2	12.8	37.0
Total Split (%)	13.3%	45.8%	11.7%	11.7%	44.2%	11.7%	31.8%	31.8%	10.7%	30.8%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 113.2
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	1388	128	188	1161	75	104	491	162	71	454	115
Future Volume (veh/h)	128	1388	128	188	1161	75	104	491	162	71	454	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1800	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	139	1509	116	204	1262	80	113	534	154	77	493	104
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	174	1671	1443	156	1559	99	147	863	385	106	640	134
Arrive On Green	0.10	0.46	0.45	0.09	0.45	0.44	0.09	0.24	0.24	0.06	0.22	0.20
Sat Flow, veh/h	1714	3610	2685	1714	3447	218	1714	3610	1610	1714	2970	623
Grp Volume(v), veh/h	139	1509	116	204	660	682	113	534	154	77	299	298
Grp Sat Flow(s),veh/h/ln	1714	1805	1342	1714	1805	1861	1714	1805	1610	1714	1805	1788
Q Serve(g_s), s	8.7	42.5	2.3	10.0	34.8	35.0	7.1	14.6	8.9	4.9	17.1	17.3
Cycle Q Clear(g_c), s	8.7	42.5	2.3	10.0	34.8	35.0	7.1	14.6	8.9	4.9	17.1	17.3
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	174	1671	1443	156	816	841	147	863	385	106	389	385
V/C Ratio(X)	0.80	0.90	0.08	1.31	0.81	0.81	0.77	0.62	0.40	0.73	0.77	0.77
Avail Cap(c_a), veh/h	187	1671	1443	156	816	841	156	1121	500	137	541	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.4	27.3	12.3	50.1	26.1	26.2	49.3	37.4	35.3	50.8	40.6	41.0
Incr Delay (d2), s/veh	18.1	8.4	0.1	178.2	8.5	8.4	17.5	0.7	0.7	8.2	4.4	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	18.6	0.7	11.9	15.6	16.2	3.7	6.3	3.4	2.3	7.8	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.4	35.7	12.4	228.2	34.5	34.6	66.8	38.2	35.9	59.0	45.0	45.7
LnGrp LOS	E	D	B	F	C	C	E	D	D	E	D	D
Approach Vol, veh/h		1764			1546			801			674	
Approach Delay, s/veh		36.6			60.1			41.8			46.9	
Approach LOS		D			E			D			D	

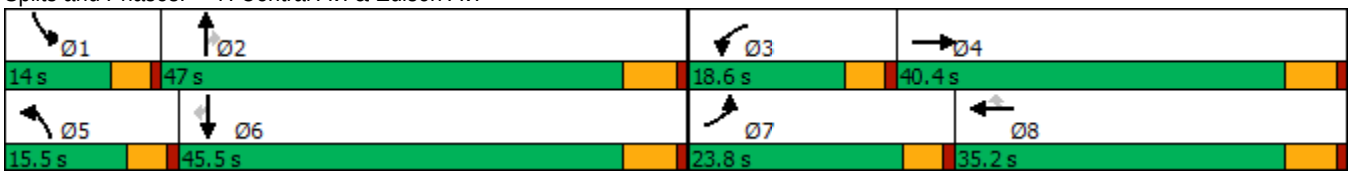
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	30.3	14.0	55.0	13.4	27.7	15.2	53.8
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	8.2	32.4	9.4	49.2	9.4	31.2	11.4	47.2
Max Q Clear Time (g_c+I1), s	6.9	16.6	12.0	44.5	9.1	19.3	10.7	37.0
Green Ext Time (p_c), s	0.0	3.4	0.0	3.6	0.0	2.6	0.0	5.7

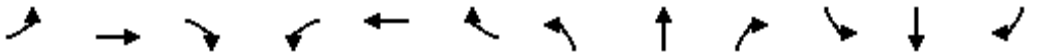
Intersection Summary	
HCM 6th Ctrl Delay	46.5
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	250	1201	378	928	111	128	1149	598	130	921	156
Future Volume (vph)	250	1201	378	928	111	128	1149	598	130	921	156
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	23.8	40.4	18.6	35.2	35.2	15.5	47.0	47.0	14.0	45.5	45.5
Total Split (%)	19.8%	33.7%	15.5%	29.3%	29.3%	12.9%	39.2%	39.2%	11.7%	37.9%	37.9%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	1201	117	378	928	111	128	1149	598	130	921	156
Future Volume (veh/h)	250	1201	117	378	928	111	128	1149	598	130	921	156
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	258	1238	117	390	957	103	132	1185	535	134	949	127
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	283	1010	95	405	939	419	164	1294	567	143	1248	556
Arrive On Green	0.17	0.30	0.29	0.12	0.26	0.26	0.10	0.36	0.36	0.08	0.35	0.35
Sat Flow, veh/h	1714	3330	314	3326	3610	1610	1714	3610	1582	1714	3610	1609
Grp Volume(v), veh/h	258	670	685	390	957	103	132	1185	535	134	949	127
Grp Sat Flow(s),veh/h/ln	1714	1805	1838	1663	1805	1610	1714	1805	1582	1714	1805	1609
Q Serve(g_s), s	17.8	36.4	36.4	14.0	31.2	6.1	9.1	37.6	39.3	9.3	28.0	6.7
Cycle Q Clear(g_c), s	17.8	36.4	36.4	14.0	31.2	6.1	9.1	37.6	39.3	9.3	28.0	6.7
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	283	548	558	405	939	419	164	1294	567	143	1248	556
V/C Ratio(X)	0.91	1.22	1.23	0.96	1.02	0.25	0.80	0.92	0.94	0.94	0.76	0.23
Avail Cap(c_a), veh/h	283	548	558	405	939	419	164	1294	567	143	1248	556
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	41.8	42.0	52.4	44.4	35.1	53.1	36.8	37.3	54.7	34.8	27.9
Incr Delay (d2), s/veh	31.0	115.9	118.2	35.1	34.4	1.4	22.7	10.4	24.6	56.1	2.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	33.1	34.1	7.7	17.9	2.5	4.8	17.6	18.3	6.1	12.2	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.3	157.7	160.1	87.5	78.8	36.5	75.9	47.1	61.9	110.8	37.6	28.1
LnGrp LOS	F	F	F	F	F	D	E	D	E	F	D	C
Approach Vol, veh/h		1613			1450			1852			1210	
Approach Delay, s/veh		146.4			78.1			53.5			44.7	
Approach LOS		F			E			D			D	

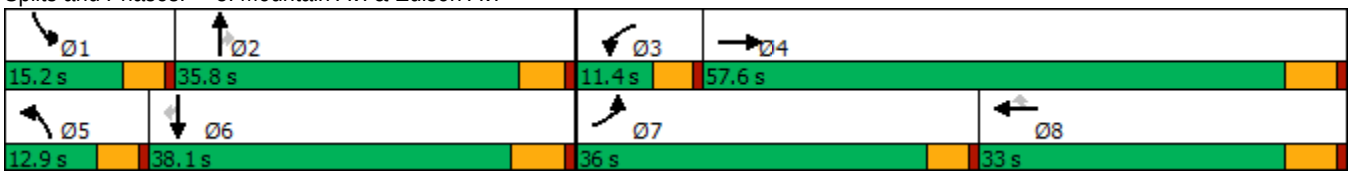
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	47.0	18.6	40.4	15.5	45.5	23.8	35.2
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	9.4	41.2	14.0	34.6	10.9	39.7	19.2	29.4
Max Q Clear Time (g_c+I1), s	11.3	41.3	16.0	38.4	11.1	30.0	19.8	33.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0

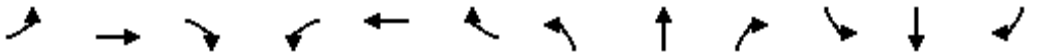
Intersection Summary	
HCM 6th Ctrl Delay	82.0
HCM 6th LOS	F

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	236	1646	49	1149	104	43	106	36	127	195	246
Future Volume (vph)	236	1646	49	1149	104	43	106	36	127	195	246
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	36.0	57.6	11.4	33.0	33.0	12.9	35.8	35.8	15.2	38.1	38.1
Total Split (%)	30.0%	48.0%	9.5%	27.5%	27.5%	10.8%	29.8%	29.8%	12.7%	31.8%	31.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 102.2
Natural Cycle: 105
Control Type: Actuated-Uncoordinated

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	236	1646	93	49	1149	104	43	106	36	127	195	246
Future Volume (veh/h)	236	1646	93	49	1149	104	43	106	36	127	195	246
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	241	1680	93	50	1172	94	44	108	22	130	199	186
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	285	2807	155	77	1580	705	72	235	195	169	355	301
Arrive On Green	0.17	0.56	0.54	0.04	0.44	0.44	0.04	0.12	0.12	0.10	0.19	0.19
Sat Flow, veh/h	1714	5021	278	1714	3610	1610	1714	1900	1574	1714	1900	1610
Grp Volume(v), veh/h	241	1156	617	50	1172	94	44	108	22	130	199	186
Grp Sat Flow(s),veh/h/ln	1714	1729	1841	1714	1805	1610	1714	1900	1574	1714	1900	1610
Q Serve(g_s), s	13.1	21.2	21.4	2.8	25.9	3.3	2.4	5.1	1.2	7.1	9.1	10.2
Cycle Q Clear(g_c), s	13.1	21.2	21.4	2.8	25.9	3.3	2.4	5.1	1.2	7.1	9.1	10.2
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	285	1933	1029	77	1580	705	72	235	195	169	355	301
V/C Ratio(X)	0.85	0.60	0.60	0.65	0.74	0.13	0.61	0.46	0.11	0.77	0.56	0.62
Avail Cap(c_a), veh/h	572	1933	1029	132	1580	705	159	630	522	200	676	573
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	14.0	14.1	45.1	22.4	16.1	45.1	39.0	37.3	42.2	35.4	35.8
Incr Delay (d2), s/veh	2.7	1.4	2.6	3.5	3.2	0.4	3.0	1.4	0.3	11.5	1.4	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	7.5	8.4	1.2	10.6	1.2	1.1	2.4	0.5	3.4	4.2	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	15.4	16.7	48.5	25.6	16.5	48.2	40.4	37.6	53.6	36.8	37.9
LnGrp LOS	D	B	B	D	C	B	D	D	D	D	D	D
Approach Vol, veh/h		2014			1316			174			515	
Approach Delay, s/veh		18.9			25.9			42.0			41.4	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	16.6	8.3	57.6	8.1	21.9	19.9	46.0
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.6	* 31	6.8	51.8	8.3	32.3	31.4	27.2
Max Q Clear Time (g_c+I1), s	9.1	7.1	4.8	23.4	4.4	12.2	15.1	27.9
Green Ext Time (p_c), s	0.0	0.6	0.0	14.3	0.0	1.5	0.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	25.1
HCM 6th LOS	C

Notes

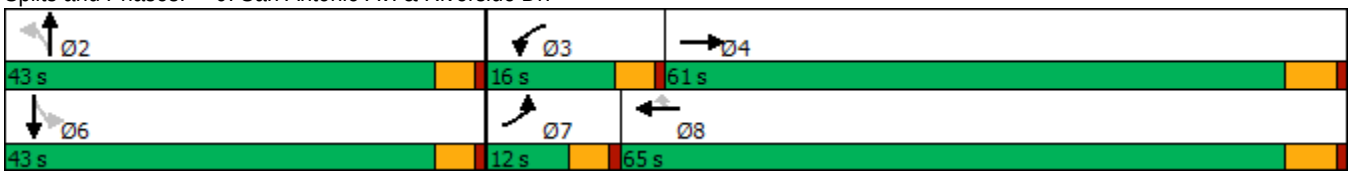
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

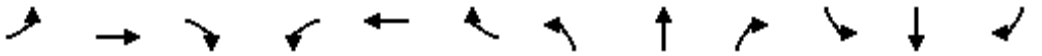
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	35	1119	68	1120	27	103	18	13	8
Future Volume (vph)	35	1119	68	1120	27	103	18	13	8
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	12.0	61.0	16.0	65.0	65.0	43.0	43.0	43.0	43.0
Total Split (%)	10.0%	50.8%	13.3%	54.2%	54.2%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 96.4
Natural Cycle: 75
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	1119	131	68	1120	27	103	18	47	13	8	35
Future Volume (veh/h)	35	1119	131	68	1120	27	103	18	47	13	8	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	36	1166	130	71	1167	28	107	19	25	14	8	13
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	69	2216	247	102	2518	1122	244	93	122	223	81	132
Arrive On Green	0.04	0.68	0.66	0.06	0.70	0.70	0.13	0.13	0.12	0.13	0.13	0.12
Sat Flow, veh/h	1714	3267	363	1714	3610	1609	1413	742	976	1378	651	1058
Grp Volume(v), veh/h	36	643	653	71	1167	28	107	0	44	14	0	21
Grp Sat Flow(s),veh/h/ln	1714	1805	1825	1714	1805	1609	1413	0	1718	1378	0	1710
Q Serve(g_s), s	1.8	15.6	15.8	3.6	12.6	0.5	6.3	0.0	2.0	0.8	0.0	1.0
Cycle Q Clear(g_c), s	1.8	15.6	15.8	3.6	12.6	0.5	7.3	0.0	2.0	2.8	0.0	1.0
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.57	1.00		0.62
Lane Grp Cap(c), veh/h	69	1225	1238	102	2518	1122	244	0	215	223	0	214
V/C Ratio(X)	0.52	0.53	0.53	0.70	0.46	0.02	0.44	0.00	0.20	0.06	0.00	0.10
Avail Cap(c_a), veh/h	157	1225	1238	235	2518	1122	697	0	766	665	0	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.1	7.0	7.2	40.4	5.9	4.1	37.1	0.0	34.5	35.6	0.0	34.1
Incr Delay (d2), s/veh	2.3	1.6	1.6	3.2	0.6	0.0	1.2	0.0	0.5	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.8	5.0	1.5	3.5	0.1	2.3	0.0	0.9	0.3	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.4	8.6	8.8	43.6	6.5	4.1	38.4	0.0	35.0	35.7	0.0	34.3
LnGrp LOS	D	A	A	D	A	A	D	A	C	D	A	C
Approach Vol, veh/h		1332			1266			151			35	
Approach Delay, s/veh		9.6			8.6			37.4			34.8	
Approach LOS		A			A			D			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.9	9.2	63.3		14.9	7.5	65.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		38.4	11.4	55.2		38.4	7.4	59.2				
Max Q Clear Time (g_c+I1), s		9.3	5.6	17.8		4.8	3.8	14.6				
Green Ext Time (p_c), s		0.5	0.0	10.3		0.1	0.0	10.1				

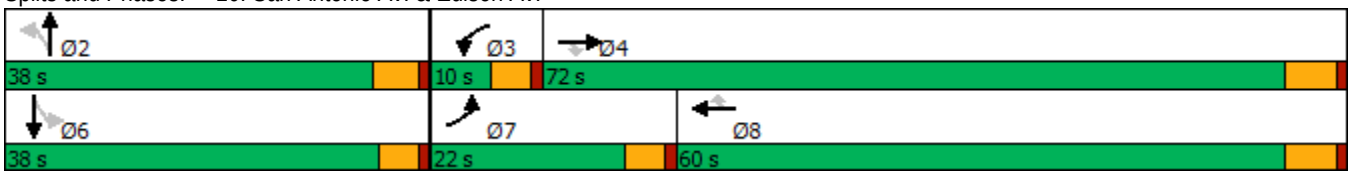
Intersection Summary												
HCM 6th Ctrl Delay			11.0									
HCM 6th LOS			B									

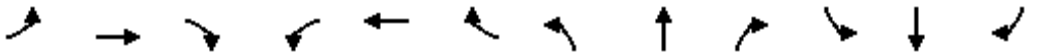
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	97	1613	64	15	1263	20	31	35	14	52
Future Volume (vph)	97	1613	64	15	1263	20	31	35	14	52
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	22.0	72.0	72.0	10.0	60.0	60.0	38.0	38.0	38.0	38.0
Total Split (%)	18.3%	60.0%	60.0%	8.3%	50.0%	50.0%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 96.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	1613	64	15	1263	20	31	35	15	14	52	57
Future Volume (veh/h)	97	1613	64	15	1263	20	31	35	15	14	52	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	103	1716	67	16	1344	18	33	37	12	15	55	31
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	140	2631	1173	42	2425	1081	116	112	30	62	120	61
Arrive On Green	0.08	0.73	0.73	0.02	0.67	0.67	0.12	0.12	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1714	3610	1610	1714	3610	1610	524	953	253	155	1062	539
Grp Volume(v), veh/h	103	1716	67	16	1344	18	82	0	0	101	0	0
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1714	1805	1610	1731	0	0	1756	0	0
Q Serve(g_s), s	5.5	22.9	1.1	0.9	18.2	0.3	0.0	0.0	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	5.5	22.9	1.1	0.9	18.2	0.3	3.8	0.0	0.0	5.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.40		0.15	0.15		0.31
Lane Grp Cap(c), veh/h	140	2631	1173	42	2425	1081	258	0	0	242	0	0
V/C Ratio(X)	0.74	0.65	0.06	0.38	0.55	0.02	0.32	0.00	0.00	0.42	0.00	0.00
Avail Cap(c_a), veh/h	331	2631	1173	110	2425	1081	659	0	0	677	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	41.9	6.5	3.6	44.8	8.0	5.1	38.0	0.0	0.0	39.0	0.0	0.0
Incr Delay (d2), s/veh	2.8	1.3	0.1	2.1	0.9	0.0	0.7	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	6.2	0.3	0.4	5.6	0.1	1.7	0.0	0.0	2.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.7	7.8	3.7	46.9	8.9	5.1	38.7	0.0	0.0	40.2	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1886			1378			82			101	
Approach Delay, s/veh		9.7			9.3			38.7			40.2	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.0	6.3	72.0		15.0	11.6	66.7				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		32.9	5.4	66.2		* 33	17.4	54.2				
Max Q Clear Time (g_c+I1), s		5.8	2.9	24.9		7.0	7.5	20.2				
Green Ext Time (p_c), s		0.4	0.0	18.8		0.5	0.1	11.8				

Intersection Summary	
HCM 6th Ctrl Delay	11.1
HCM 6th LOS	B

Notes

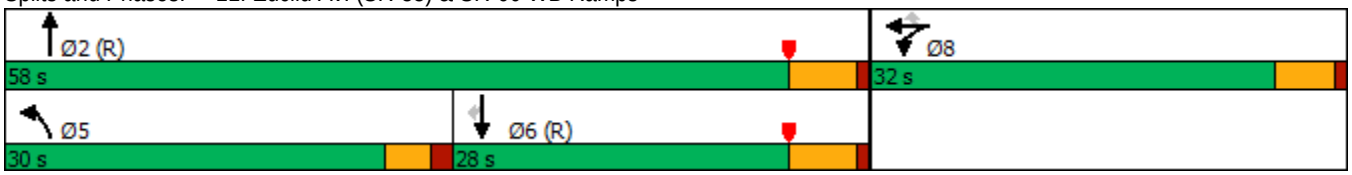
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

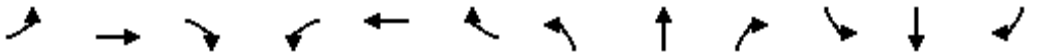
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	779	8	495	437	1324	1242	598
Future Volume (vph)	779	8	495	437	1324	1242	598
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	32.0	32.0	32.0	30.0	58.0	28.0	28.0
Total Split (%)	35.6%	35.6%	35.6%	33.3%	64.4%	31.1%	31.1%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	779	8	495	437	1324	0	0	1242	598
Future Volume (veh/h)	0	0	0	779	8	495	437	1324	0	0	1242	598
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				918	0	226	455	1379	0	0	1294	418
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				1006	0	447	477	2185	0	0	1054	470
Arrive On Green				0.28	0.00	0.28	0.53	1.00	0.00	0.00	0.29	0.29
Sat Flow, veh/h				3619	0	1608	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				918	0	226	455	1379	0	0	1294	418
Grp Sat Flow(s),veh/h/ln				1810	0	1608	1810	1805	0	0	1805	1610
Q Serve(g_s), s				22.1	0.0	10.6	21.5	0.0	0.0	0.0	26.3	22.3
Cycle Q Clear(g_c), s				22.1	0.0	10.6	21.5	0.0	0.0	0.0	26.3	22.3
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1006	0	447	477	2185	0	0	1054	470
V/C Ratio(X)				0.91	0.00	0.51	0.95	0.63	0.00	0.00	1.23	0.89
Avail Cap(c_a), veh/h				1086	0	483	513	2185	0	0	1054	470
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.4	0.0	27.3	20.8	0.0	0.0	0.0	31.9	30.5
Incr Delay (d2), s/veh				10.5	0.0	0.3	4.6	0.1	0.0	0.0	111.2	21.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				10.4	0.0	3.8	5.9	0.0	0.0	0.0	27.0	10.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				42.0	0.0	27.6	25.3	0.1	0.0	0.0	143.1	52.0
LnGrp LOS				D	A	C	C	A	A	A	F	D
Approach Vol, veh/h					1144			1834			1712	
Approach Delay, s/veh					39.1			6.4			120.8	
Approach LOS					D			A			F	

Timer - Assigned Phs	2		5	6		8				
Phs Duration (G+Y+Rc), s	60.0		28.2	31.8		30.0				
Change Period (Y+Rc), s	5.5		4.5	5.5		5.0				
Max Green Setting (Gmax), s	52.5		25.5	22.5		27.0				
Max Q Clear Time (g_c+I1), s	2.0		23.5	28.3		24.1				
Green Ext Time (p_c), s	21.1		0.2	0.0		0.9				

Intersection Summary	
HCM 6th Ctrl Delay	56.2
HCM 6th LOS	E

Notes

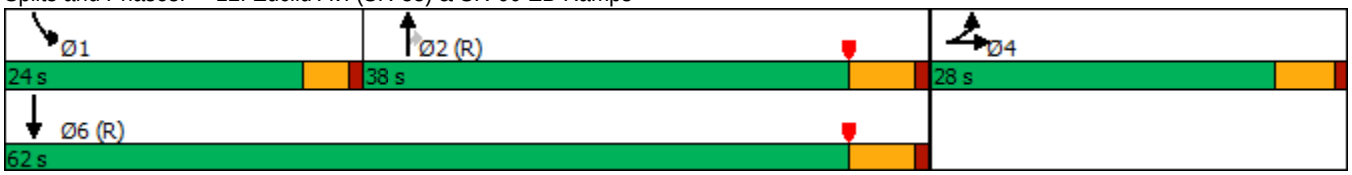
User approved volume balancing among the lanes for turning movement.

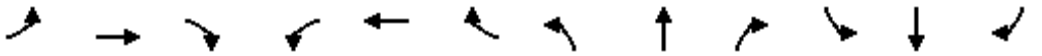
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	505	4	1256	793	458	1564
Future Volume (vph)	505	4	1256	793	458	1564
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	28.0	28.0	38.0	38.0	24.0	62.0
Total Split (%)	31.1%	31.1%	42.2%	42.2%	26.7%	68.9%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	505	4	479	0	0	0	0	1256	793	458	1564	0
Future Volume (veh/h)	505	4	479	0	0	0	0	1256	793	458	1564	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	470	67	422				0	1282	615	467	1596	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	462	58	363				0	1304	568	402	2266	0
Arrive On Green	0.26	0.26	0.26				0.00	0.36	0.36	0.44	1.00	0.00
Sat Flow, veh/h	1810	225	1419				0	3705	1572	1810	3705	0
Grp Volume(v), veh/h	470	0	489				0	1282	615	467	1596	0
Grp Sat Flow(s),veh/h/ln	1810	0	1645				0	1805	1572	1810	1805	0
Q Serve(g_s), s	23.0	0.0	23.0				0.0	31.7	32.5	20.0	0.0	0.0
Cycle Q Clear(g_c), s	23.0	0.0	23.0				0.0	31.7	32.5	20.0	0.0	0.0
Prop In Lane	1.00		0.86				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	462	0	420				0	1304	568	402	2266	0
V/C Ratio(X)	1.02	0.00	1.16				0.00	0.98	1.08	1.16	0.70	0.00
Avail Cap(c_a), veh/h	462	0	420				0	1304	568	402	2266	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.33	0.33	0.09	0.09	0.00
Uniform Delay (d), s/veh	33.5	0.0	33.5				0.0	28.5	28.8	25.0	0.0	0.0
Incr Delay (d2), s/veh	46.0	0.0	96.8				0.0	11.0	48.1	75.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.3	0.0	19.8				0.0	14.5	18.8	13.9	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.5	0.0	130.3				0.0	39.4	76.9	100.4	0.2	0.0
LnGrp LOS	F	A	F				A	D	F	F	A	A
Approach Vol, veh/h		959						1897			2063	
Approach Delay, s/veh		105.4						51.6			22.9	
Approach LOS		F						D			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	24.0	38.0		28.0		62.0
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	20.0	32.5		23.0		56.5
Max Q Clear Time (g_c+I1), s	22.0	34.5		25.0		2.0
Green Ext Time (p_c), s	0.0	0.0		0.0		27.5

Intersection Summary	
HCM 6th Ctrl Delay	50.0
HCM 6th LOS	D

Notes

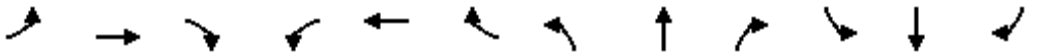
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	179	449	85	449	229	1720	90	320	1490	265
Future Volume (vph)	179	449	85	449	229	1720	90	320	1490	265
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	15.8	33.6	12.0	29.8	23.0	53.5	53.5	20.9	51.4	51.4
Total Split (%)	13.2%	28.0%	10.0%	24.8%	19.2%	44.6%	44.6%	17.4%	42.8%	42.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 119.2
Natural Cycle: 110
Control Type: Actuated-Uncoordinated

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	449	174	85	449	170	229	1720	90	320	1490	265
Future Volume (veh/h)	179	449	174	85	449	170	229	1720	90	320	1490	265
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	190	478	162	90	478	155	244	1830	69	340	1585	228
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	161	604	203	106	526	169	264	2151	667	390	1996	619
Arrive On Green	0.09	0.23	0.23	0.06	0.20	0.20	0.15	0.41	0.41	0.12	0.38	0.38
Sat Flow, veh/h	1714	2641	889	1714	2669	859	1714	5187	1608	3141	5187	1609
Grp Volume(v), veh/h	190	326	314	90	322	311	244	1830	69	340	1585	228
Grp Sat Flow(s),veh/h/ln	1714	1805	1725	1714	1805	1723	1714	1729	1608	1570	1729	1609
Q Serve(g_s), s	11.2	20.3	20.6	6.2	20.9	21.1	16.8	38.1	3.1	12.7	32.4	12.1
Cycle Q Clear(g_c), s	11.2	20.3	20.6	6.2	20.9	21.1	16.8	38.1	3.1	12.7	32.4	12.1
Prop In Lane	1.00		0.52	1.00		0.50	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	413	394	106	355	339	264	2151	667	390	1996	619
V/C Ratio(X)	1.18	0.79	0.80	0.85	0.91	0.92	0.92	0.85	0.10	0.87	0.79	0.37
Avail Cap(c_a), veh/h	161	420	401	106	362	346	264	2151	667	428	1996	619
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.2	43.4	43.5	55.5	46.9	47.0	49.9	31.6	21.4	51.4	32.6	26.4
Incr Delay (d2), s/veh	128.7	9.6	10.6	42.2	25.3	28.1	35.3	4.5	0.3	15.4	3.4	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.4	9.8	9.6	3.9	11.5	11.4	9.6	16.1	1.2	5.7	13.6	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	182.8	53.0	54.1	97.7	72.2	75.1	85.2	36.1	21.7	66.8	35.9	28.0
LnGrp LOS	F	D	D	F	E	E	F	D	C	E	D	C
Approach Vol, veh/h		830			723			2143			2153	
Approach Delay, s/veh		83.1			76.6			41.2			40.0	
Approach LOS		F			E			D			D	

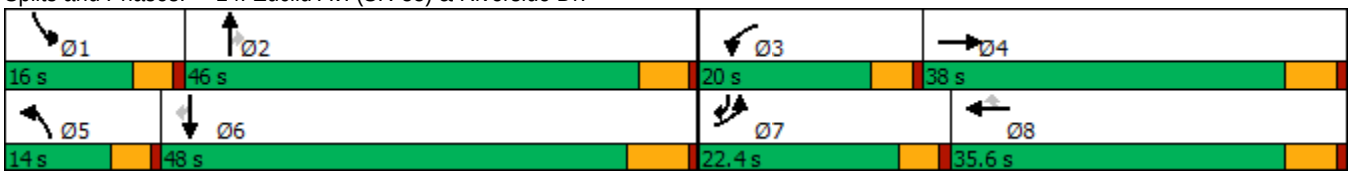
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.4	55.0	12.0	33.1	23.0	51.4	15.8	29.3
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	16.3	48.1	7.4	27.8	18.4	46.0	11.2	24.0
Max Q Clear Time (g_c+I1), s	14.7	40.1	8.2	22.6	18.8	34.4	13.2	23.1
Green Ext Time (p_c), s	0.1	6.3	0.0	1.7	0.0	8.1	0.0	0.3

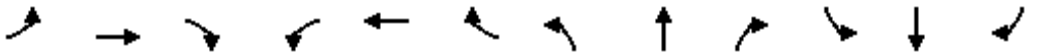
Intersection Summary	
HCM 6th Ctrl Delay	51.1
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	234	721	229	499	78	166	1494	295	169	1265	345
Future Volume (vph)	234	721	229	499	78	166	1494	295	169	1265	345
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	22.4	38.0	20.0	35.6	35.6	14.0	46.0	46.0	16.0	48.0	22.4
Total Split (%)	18.7%	31.7%	16.7%	29.7%	29.7%	11.7%	38.3%	38.3%	13.3%	40.0%	18.7%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	721	187	229	499	78	166	1494	295	169	1265	345
Future Volume (veh/h)	234	721	187	229	499	78	166	1494	295	169	1265	345
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	244	751	170	239	520	65	173	1556	253	176	1318	268
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	252	399	90	218	888	396	133	1210	540	161	1270	796
Arrive On Green	0.15	0.27	0.27	0.13	0.25	0.25	0.08	0.34	0.34	0.09	0.35	0.35
Sat Flow, veh/h	1714	1499	339	1714	3610	1608	1714	3610	1610	1714	3610	1590
Grp Volume(v), veh/h	244	0	921	239	520	65	173	1556	253	176	1318	268
Grp Sat Flow(s),veh/h/ln	1714	0	1839	1714	1805	1608	1714	1805	1610	1714	1805	1590
Q Serve(g_s), s	17.1	0.0	32.2	15.4	15.4	3.8	9.4	40.6	15.0	11.4	42.6	12.3
Cycle Q Clear(g_c), s	17.1	0.0	32.2	15.4	15.4	3.8	9.4	40.6	15.0	11.4	42.6	12.3
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	252	0	489	218	888	396	133	1210	540	161	1270	796
V/C Ratio(X)	0.97	0.00	1.88	1.10	0.59	0.16	1.30	1.29	0.47	1.09	1.04	0.34
Avail Cap(c_a), veh/h	252	0	489	218	888	396	133	1210	540	161	1270	796
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	0.0	44.5	52.8	40.2	35.9	55.8	40.3	31.7	54.9	39.2	18.3
Incr Delay (d2), s/veh	47.5	0.0	405.3	89.1	1.0	0.2	179.2	134.9	2.9	97.1	35.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.5	0.0	69.1	11.8	6.7	1.5	10.5	39.4	6.1	9.2	24.3	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	98.9	0.0	449.8	141.9	41.2	36.1	235.1	175.2	34.6	152.0	74.9	19.4
LnGrp LOS	F	A	F	F	D	D	F	F	C	F	F	B
Approach Vol, veh/h		1165			824			1982			1762	
Approach Delay, s/veh		376.3			70.0			162.5			74.1	
Approach LOS		F			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	47.1	20.0	38.0	14.0	49.1	22.4	35.6
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	11.4	* 41	15.4	32.2	9.4	41.5	17.8	29.8
Max Q Clear Time (g_c+I1), s	13.4	42.6	17.4	34.2	11.4	44.6	19.1	17.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7

Intersection Summary	
HCM 6th Ctrl Delay	165.5
HCM 6th LOS	F

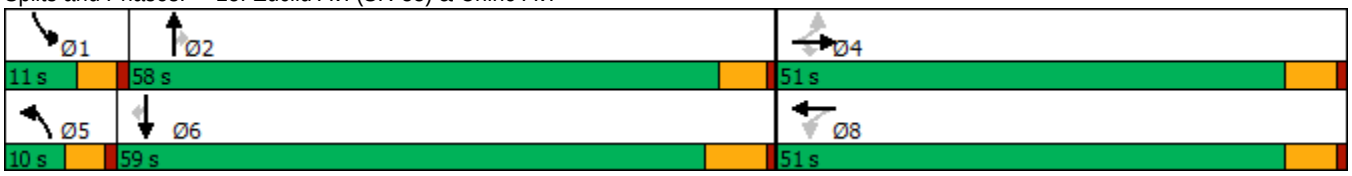
Notes

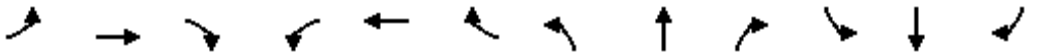
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	134	487	65	137	223	57	1758	278	35	1430	87
Future Volume (vph)	134	487	65	137	223	57	1758	278	35	1430	87
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	51.0	51.0	51.0	51.0	51.0	10.0	58.0	58.0	11.0	59.0	59.0
Total Split (%)	42.5%	42.5%	42.5%	42.5%	42.5%	8.3%	48.3%	48.3%	9.2%	49.2%	49.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	487	65	137	223	18	57	1758	278	35	1430	87
Future Volume (veh/h)	134	487	65	137	223	18	57	1758	278	35	1430	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	144	524	47	147	240	15	61	1890	228	38	1538	61
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	309	716	606	110	148	8	77	1634	714	51	1579	690
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.05	0.45	0.45	0.03	0.44	0.44
Sat Flow, veh/h	1142	1900	1610	182	392	22	1714	3610	1577	1714	3610	1577
Grp Volume(v), veh/h	144	524	47	402	0	0	61	1890	228	38	1538	61
Grp Sat Flow(s),veh/h/ln	1142	1900	1610	597	0	0	1714	1805	1577	1714	1805	1577
Q Serve(g_s), s	0.0	28.5	2.2	16.7	0.0	0.0	4.2	54.3	11.1	2.6	50.1	2.7
Cycle Q Clear(g_c), s	20.9	28.5	2.2	45.2	0.0	0.0	4.2	54.3	11.1	2.6	50.1	2.7
Prop In Lane	1.00		1.00	0.37		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	309	716	606	266	0	0	77	1634	714	51	1579	690
V/C Ratio(X)	0.47	0.73	0.08	1.51	0.00	0.00	0.79	1.16	0.32	0.74	0.97	0.09
Avail Cap(c_a), veh/h	309	716	606	266	0	0	77	1634	714	91	1579	690
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.8	32.2	24.0	47.9	0.0	0.0	56.7	32.8	21.0	57.7	33.1	19.7
Incr Delay (d2), s/veh	1.1	3.9	0.1	249.3	0.0	0.0	38.5	77.9	1.2	7.6	17.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	13.2	0.8	26.3	0.0	0.0	2.6	38.9	4.0	1.2	23.5	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.9	36.1	24.1	297.2	0.0	0.0	95.2	110.8	22.2	65.3	50.3	20.0
LnGrp LOS	C	D	C	F	A	A	F	F	C	E	D	C
Approach Vol, veh/h		715			402			2179			1637	
Approach Delay, s/veh		34.2			297.2			101.1			49.5	
Approach LOS		C			F			F			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	60.8		51.0	10.0	59.0		51.0				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	6.4	* 53		45.2	5.4	52.5		45.2				
Max Q Clear Time (g_c+I1), s	4.6	56.3		30.5	6.2	52.1		47.2				
Green Ext Time (p_c), s	0.0	0.0		3.3	0.0	0.3		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		90.3	
HCM 6th LOS		F	

Notes

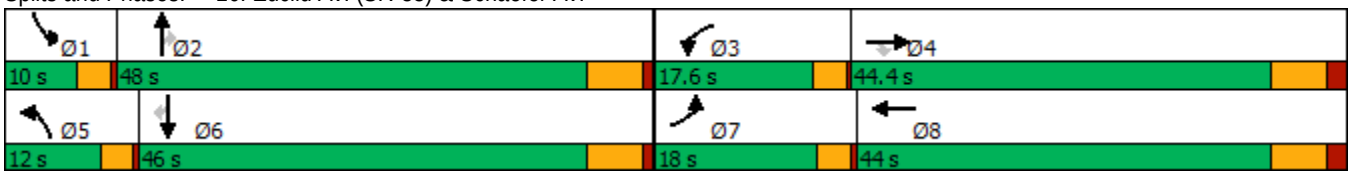
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

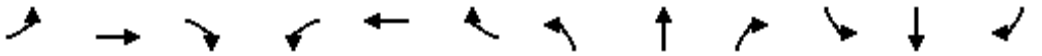
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	487	463	260	95	158	228	1676	100	199	1459	455
Future Volume (vph)	487	463	260	95	158	228	1676	100	199	1459	455
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	18.0	44.4	44.4	17.6	44.0	12.0	48.0	48.0	10.0	46.0	46.0
Total Split (%)	15.0%	37.0%	37.0%	14.7%	36.7%	10.0%	40.0%	40.0%	8.3%	38.3%	38.3%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 110.3
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	487	463	260	95	158	73	228	1676	100	199	1459	455
Future Volume (veh/h)	487	463	260	95	158	73	228	1676	100	199	1459	455
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	492	468	222	96	160	69	230	1693	83	201	1474	430
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	231	521	442	151	286	123	136	1412	630	104	1344	600
Arrive On Green	0.14	0.27	0.27	0.09	0.23	0.23	0.08	0.39	0.39	0.06	0.37	0.37
Sat Flow, veh/h	1714	1900	1610	1714	1259	543	1714	3610	1610	1714	3610	1610
Grp Volume(v), veh/h	492	468	222	96	0	229	230	1693	83	201	1474	430
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1714	0	1802	1714	1805	1610	1714	1805	1610
Q Serve(g_s), s	14.5	25.5	12.5	5.8	0.0	12.1	8.5	42.0	3.6	6.5	40.0	24.6
Cycle Q Clear(g_c), s	14.5	25.5	12.5	5.8	0.0	12.1	8.5	42.0	3.6	6.5	40.0	24.6
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	231	521	442	151	0	410	136	1412	630	104	1344	600
V/C Ratio(X)	2.13	0.90	0.50	0.64	0.00	0.56	1.70	1.20	0.13	1.94	1.10	0.72
Avail Cap(c_a), veh/h	231	662	561	225	0	621	136	1412	630	104	1344	600
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.5	37.5	32.8	47.3	0.0	36.7	49.5	32.7	21.0	50.5	33.7	28.9
Incr Delay (d2), s/veh	520.9	12.2	0.7	1.7	0.0	0.9	342.4	96.8	0.1	455.1	55.3	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	39.4	13.0	4.7	2.5	0.0	5.2	16.4	35.4	1.3	15.8	26.1	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	567.4	49.7	33.5	49.0	0.0	37.6	391.9	129.5	21.1	505.5	89.0	33.0
LnGrp LOS	F	D	C	D	A	D	F	F	C	F	F	C
Approach Vol, veh/h		1182			325			2006			2105	
Approach Delay, s/veh		262.1			41.0			155.1			117.3	
Approach LOS		F			D			F			F	

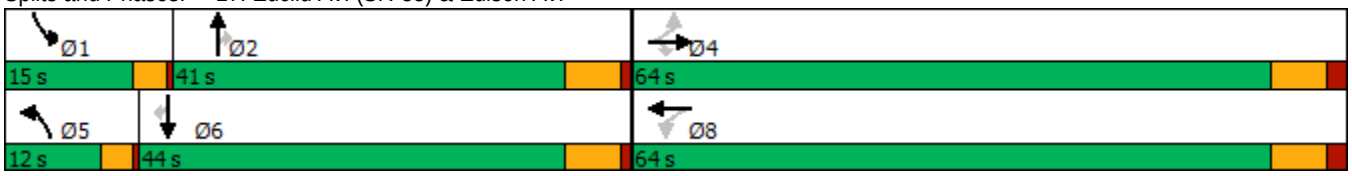
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	48.0	12.9	36.5	12.0	46.0	18.0	31.4
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	6.5	42.0	14.1	37.4	8.5	40.0	14.5	37.0
Max Q Clear Time (g_c+I1), s	8.5	44.0	7.8	27.5	10.5	42.0	16.5	14.1
Green Ext Time (p_c), s	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.9

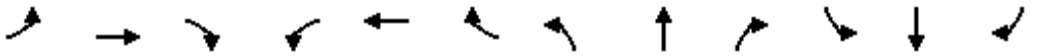
Intersection Summary	
HCM 6th Ctrl Delay	156.9
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	334	1147	377	428	585	223	1618	281	165	1558	220
Future Volume (vph)	334	1147	377	428	585	223	1618	281	165	1558	220
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	64.0	64.0	64.0	64.0	64.0	12.0	41.0	41.0	15.0	44.0	44.0
Total Split (%)	53.3%	53.3%	53.3%	53.3%	53.3%	10.0%	34.2%	34.2%	12.5%	36.7%	36.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	334	1147	377	428	585	237	223	1618	281	165	1558	220
Future Volume (veh/h)	334	1147	377	428	585	237	223	1618	281	165	1558	220
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	352	1207	315	451	616	243	235	1703	288	174	1640	200
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	60	902	765	60	613	242	121	1053	468	164	1143	510
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.47	0.07	0.29	0.29	0.10	0.32	0.32
Sat Flow, veh/h	653	1900	1610	348	1291	509	1714	3610	1605	1714	3610	1610
Grp Volume(v), veh/h	352	1207	315	451	0	859	235	1703	288	174	1640	200
Grp Sat Flow(s),veh/h/ln	653	1900	1610	348	0	1801	1714	1805	1605	1714	1805	1610
Q Serve(g_s), s	0.0	57.0	15.3	0.0	0.0	57.0	8.5	35.0	18.6	11.5	38.0	11.6
Cycle Q Clear(g_c), s	57.0	57.0	15.3	57.0	0.0	57.0	8.5	35.0	18.6	11.5	38.0	11.6
Prop In Lane	1.00		1.00	1.00		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	60	903	765	60	0	855	121	1053	468	164	1143	510
V/C Ratio(X)	5.87	1.34	0.41	7.52	0.00	1.00	1.94	1.62	0.62	1.06	1.43	0.39
Avail Cap(c_a), veh/h	60	903	765	60	0	855	121	1053	468	164	1143	510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.0	31.5	20.6	60.0	0.0	31.5	55.7	42.5	36.7	54.2	41.0	32.0
Incr Delay (d2), s/veh	2225.6	159.4	0.4	2966.7	0.0	31.8	449.6	282.2	2.4	86.8	200.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	38.9	63.9	5.5	51.2	0.0	30.3	18.7	55.8	7.2	8.7	47.6	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2285.6	190.9	20.9	3026.7	0.0	63.3	505.3	324.7	39.1	141.0	241.6	32.5
LnGrp LOS	F	F	C	F	A	F	F	F	D	F	F	C
Approach Vol, veh/h		1874			1310			2226			2014	
Approach Delay, s/veh		555.8			1083.5			306.9			212.2	
Approach LOS		F			F			F			F	

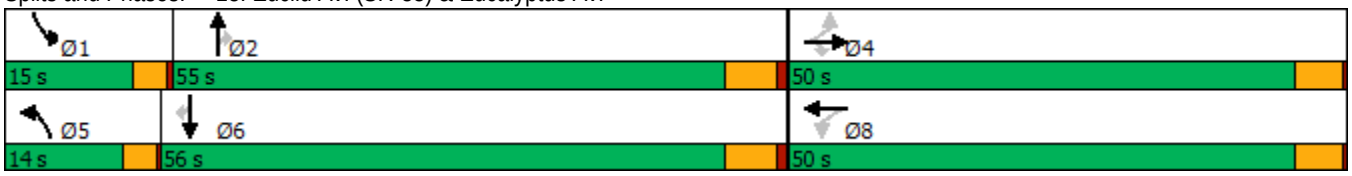
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.0	41.0		64.0	12.0	44.0		64.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	11.5	35.0		57.0	8.5	38.0		57.0				
Max Q Clear Time (g_c+I1), s	13.5	37.0		59.0	10.5	40.0		59.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0				

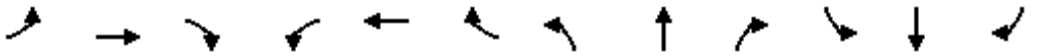
Intersection Summary												
HCM 6th Ctrl Delay			481.0									
HCM 6th LOS			F									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	47	198	266	413	146	148	1642	383	252	1749	78
Future Volume (vph)	47	198	266	413	146	148	1642	383	252	1749	78
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	50.0	50.0	50.0	50.0	50.0	14.0	55.0	55.0	15.0	56.0	56.0
Total Split (%)	41.7%	41.7%	41.7%	41.7%	41.7%	11.7%	45.8%	45.8%	12.5%	46.7%	46.7%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	198	266	413	146	214	148	1642	383	252	1749	78
Future Volume (veh/h)	47	198	266	413	146	214	148	1642	383	252	1749	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	51	215	177	449	159	230	161	1785	415	274	1901	73
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	256	716	606	359	264	382	150	1483	662	164	1513	661
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.09	0.41	0.41	0.10	0.42	0.42
Sat Flow, veh/h	1010	1900	1610	1008	702	1015	1714	3610	1610	1714	3610	1577
Grp Volume(v), veh/h	51	215	177	449	0	389	161	1785	415	274	1901	73
Grp Sat Flow(s),veh/h/ln	1010	1900	1610	1008	0	1717	1714	1805	1610	1714	1805	1577
Q Serve(g_s), s	5.1	9.5	9.2	35.7	0.0	21.9	10.5	49.3	24.5	11.5	50.3	3.4
Cycle Q Clear(g_c), s	27.0	9.5	9.2	45.2	0.0	21.9	10.5	49.3	24.5	11.5	50.3	3.4
Prop In Lane	1.00		1.00	1.00		0.59	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	256	716	606	359	0	647	150	1483	662	164	1513	661
V/C Ratio(X)	0.20	0.30	0.29	1.25	0.00	0.60	1.07	1.20	0.63	1.67	1.26	0.11
Avail Cap(c_a), veh/h	256	716	606	359	0	647	150	1483	662	164	1513	661
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	26.3	26.2	45.1	0.0	30.1	54.8	35.3	28.1	54.2	34.8	21.2
Incr Delay (d2), s/veh	0.3	0.2	0.2	133.3	0.0	1.4	94.4	98.3	1.9	325.8	120.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.3	3.5	24.0	0.0	8.9	8.3	39.9	9.1	19.6	45.4	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	26.5	26.4	178.4	0.0	31.5	149.1	133.6	29.9	380.0	155.7	21.3
LnGrp LOS	D	C	C	F	A	C	F	F	C	F	F	C
Approach Vol, veh/h		443			838			2361			2248	
Approach Delay, s/veh		28.1			110.2			116.5			178.7	
Approach LOS		C			F			F			F	

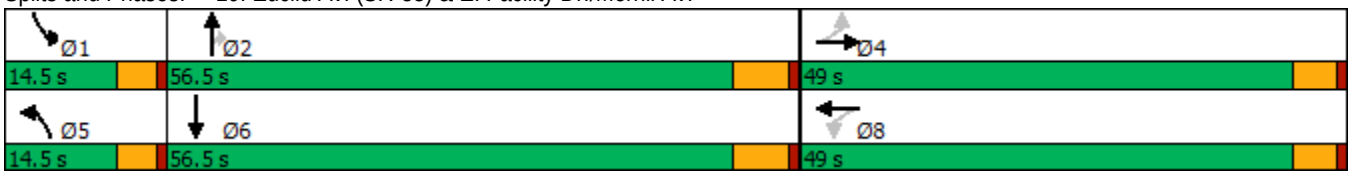
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.0	55.0		50.0	14.0	56.0		50.0				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	11.5	49.3		45.2	10.5	50.3		45.2				
Max Q Clear Time (g_c+I1), s	13.5	51.3		29.0	12.5	52.3		47.2				
Green Ext Time (p_c), s	0.0	0.0		1.4	0.0	0.0		0.0				

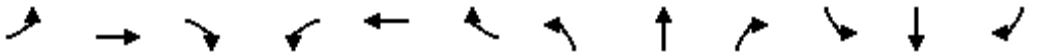
Intersection Summary		
HCM 6th Ctrl Delay		132.7
HCM 6th LOS		F

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	14	37	443	3	5	1838	735	347	2080
Future Volume (vph)	14	37	443	3	5	1838	735	347	2080
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	49.0	49.0	49.0	49.0	14.5	56.5	56.5	14.5	56.5
Total Split (%)	40.8%	40.8%	40.8%	40.8%	12.1%	47.1%	47.1%	12.1%	47.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	37	15	443	3	291	5	1838	735	347	2080	1
Future Volume (veh/h)	14	37	15	443	3	291	5	1838	735	347	2080	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	15	40	15	482	3	306	5	1998	735	377	2261	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	146	379	133	390	2	217	22	1519	678	143	1774	0
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.01	0.42	0.42	0.08	0.49	0.00
Sat Flow, veh/h	299	1035	364	932	6	592	1714	3610	1610	1714	3705	0
Grp Volume(v), veh/h	70	0	0	791	0	0	5	1998	735	377	2261	0
Grp Sat Flow(s),veh/h/ln	1697	0	0	1530	0	0	1714	1805	1610	1714	1805	0
Q Serve(g_s), s	0.0	0.0	0.0	41.0	0.0	0.0	0.3	50.5	50.5	10.0	59.0	0.0
Cycle Q Clear(g_c), s	3.0	0.0	0.0	44.0	0.0	0.0	0.3	50.5	50.5	10.0	59.0	0.0
Prop In Lane	0.21		0.21	0.61		0.39	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	659	0	0	609	0	0	22	1519	678	143	1774	0
V/C Ratio(X)	0.11	0.00	0.00	1.30	0.00	0.00	0.23	1.32	1.08	2.64	1.27	0.00
Avail Cap(c_a), veh/h	659	0	0	609	0	0	143	1519	678	143	1774	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.0	0.0	0.0	39.5	0.0	0.0	58.6	34.8	34.8	55.0	30.5	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	146.0	0.0	0.0	1.9	146.6	59.8	757.3	128.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	42.2	0.0	0.0	0.2	51.0	29.1	34.2	54.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.1	0.0	0.0	185.4	0.0	0.0	60.6	181.4	94.5	812.3	158.6	0.0
LnGrp LOS	C	A	A	F	A	A	E	F	F	F	F	A
Approach Vol, veh/h		70			791			2738			2638	
Approach Delay, s/veh		25.1			185.4			157.8			252.1	
Approach LOS		C			F			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.5	56.5		49.0	6.0	65.0		49.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	10.0	50.5		44.0	10.0	50.5		44.0				
Max Q Clear Time (g_c+I1), s	12.0	52.5		5.0	2.3	61.0		46.0				
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	0.0		0.0				

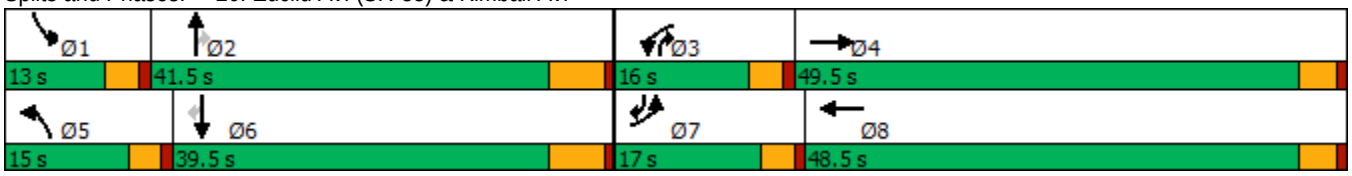
Intersection Summary		
HCM 6th Ctrl Delay		199.7
HCM 6th LOS		F

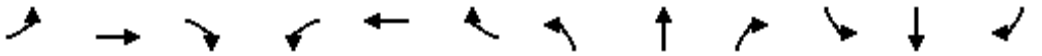
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	587	975	105	435	147	1270	159	541	1240	408
Future Volume (vph)	587	975	105	435	147	1270	159	541	1240	408
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	17.0	49.5	16.0	48.5	15.0	41.5	16.0	13.0	39.5	17.0
Total Split (%)	14.2%	41.3%	13.3%	40.4%	12.5%	34.6%	13.3%	10.8%	32.9%	14.2%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 117.9
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	587	975	206	105	435	293	147	1270	159	541	1240	408
Future Volume (veh/h)	587	975	206	105	435	293	147	1270	159	541	1240	408
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1800	1900	1900	1800	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	605	1005	209	108	448	264	152	1309	149	558	1278	323
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	354	1101	228	144	748	437	163	1111	631	245	1048	649
Arrive On Green	0.11	0.37	0.37	0.08	0.34	0.34	0.10	0.31	0.31	0.08	0.29	0.29
Sat Flow, veh/h	3141	2976	617	1714	2192	1282	1714	3610	1610	3141	3610	1609
Grp Volume(v), veh/h	605	609	605	108	368	344	152	1309	149	558	1278	323
Grp Sat Flow(s),veh/h/ln	1570	1805	1788	1714	1805	1669	1714	1805	1610	1570	1805	1609
Q Serve(g_s), s	13.0	37.0	37.2	7.1	19.5	19.7	10.2	35.5	7.2	9.0	33.5	17.3
Cycle Q Clear(g_c), s	13.0	37.0	37.2	7.1	19.5	19.7	10.2	35.5	7.2	9.0	33.5	17.3
Prop In Lane	1.00		0.35	1.00		0.77	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	354	668	661	144	616	569	163	1111	631	245	1048	649
V/C Ratio(X)	1.71	0.91	0.92	0.75	0.60	0.60	0.93	1.18	0.24	2.28	1.22	0.50
Avail Cap(c_a), veh/h	354	704	698	178	689	637	163	1111	631	245	1048	649
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.2	34.6	34.6	51.6	31.5	31.5	51.8	39.9	23.5	53.2	40.9	25.7
Incr Delay (d2), s/veh	330.9	15.7	16.3	9.5	0.6	0.7	49.5	89.7	0.2	587.4	107.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.2	18.2	18.2	3.4	8.2	7.7	6.4	28.4	2.6	23.4	29.5	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	382.1	50.3	50.9	61.2	32.1	32.3	101.3	129.7	23.7	640.6	148.2	26.3
LnGrp LOS	F	D	D	E	C	C	F	F	C	F	F	C
Approach Vol, veh/h		1819			820			1610			2159	
Approach Delay, s/veh		160.8			36.0			117.2			257.2	
Approach LOS		F			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	41.5	13.7	47.2	15.0	39.5	17.0	43.8
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	9.0	35.5	12.0	45.0	11.0	33.5	13.0	44.0
Max Q Clear Time (g_c+I1), s	11.0	37.5	9.1	39.2	12.2	35.5	15.0	21.7
Green Ext Time (p_c), s	0.0	0.0	0.0	3.4	0.0	0.0	0.0	2.6

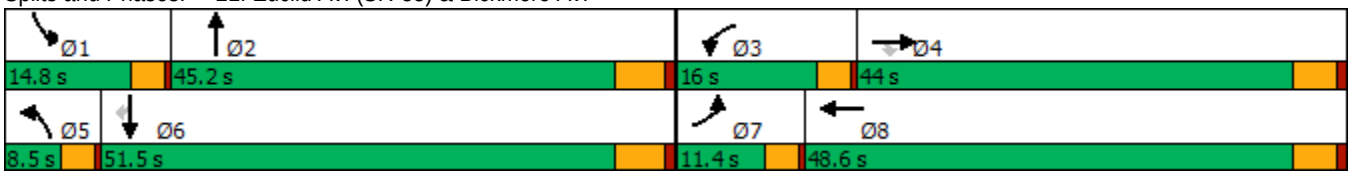
Intersection Summary	
HCM 6th Ctrl Delay	166.4
HCM 6th LOS	F

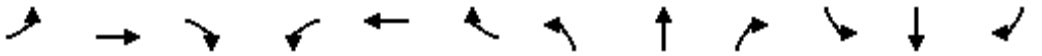
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	219	143	138	70	37	55	1323	187	1289	199
Future Volume (vph)	219	143	138	70	37	55	1323	187	1289	199
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	11.4	44.0	44.0	16.0	48.6	8.5	45.2	14.8	51.5	51.5
Total Split (%)	9.5%	36.7%	36.7%	13.3%	40.5%	7.1%	37.7%	12.3%	42.9%	42.9%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 93.4
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	219	143	138	70	37	166	55	1323	126	187	1289	199
Future Volume (veh/h)	219	143	138	70	37	166	55	1323	126	187	1289	199
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	238	155	135	76	40	152	60	1438	114	203	1401	184
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	153	333	282	97	49	188	76	1504	119	218	1902	848
Arrive On Green	0.09	0.18	0.18	0.06	0.14	0.14	0.04	0.44	0.44	0.13	0.53	0.53
Sat Flow, veh/h	1714	1900	1610	1714	346	1317	1714	3389	267	1714	3610	1610
Grp Volume(v), veh/h	238	155	135	76	0	192	60	763	789	203	1401	184
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1714	0	1663	1714	1805	1852	1714	1805	1610
Q Serve(g_s), s	7.9	6.5	6.7	3.9	0.0	9.9	3.1	36.1	36.7	10.4	26.6	5.4
Cycle Q Clear(g_c), s	7.9	6.5	6.7	3.9	0.0	9.9	3.1	36.1	36.7	10.4	26.6	5.4
Prop In Lane	1.00		1.00	1.00		0.79	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	153	333	282	97	0	237	76	801	822	218	1902	848
V/C Ratio(X)	1.56	0.47	0.48	0.79	0.00	0.81	0.79	0.95	0.96	0.93	0.74	0.22
Avail Cap(c_a), veh/h	153	835	708	242	0	817	97	808	829	218	1902	848
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	32.9	32.9	41.3	0.0	36.9	42.0	23.8	23.9	38.3	16.2	11.2
Incr Delay (d2), s/veh	280.9	0.4	0.5	5.2	0.0	2.5	22.2	20.5	21.9	41.2	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.1	2.9	2.5	1.7	0.0	4.0	1.7	17.4	18.3	6.5	9.1	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	321.4	33.2	33.4	46.5	0.0	39.4	64.2	44.3	45.8	79.5	17.6	11.3
LnGrp LOS	F	C	C	D	A	D	E	D	D	E	B	B
Approach Vol, veh/h		528			268			1612			1788	
Approach Delay, s/veh		163.1			41.4			45.8			24.0	
Approach LOS		F			D			D			C	

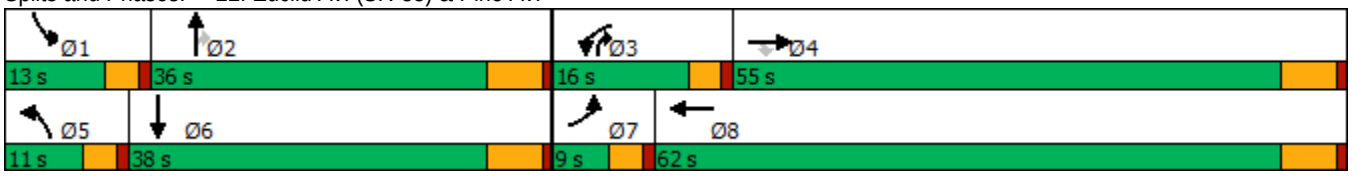
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	44.9	8.5	20.5	7.4	52.2	11.4	17.6
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	11.3	39.7	12.5	39.0	5.0	46.0	7.9	43.6
Max Q Clear Time (g_c+I1), s	12.4	38.7	5.9	8.7	5.1	28.6	9.9	11.9
Green Ext Time (p_c), s	0.0	0.7	0.0	0.7	0.0	6.1	0.0	0.7

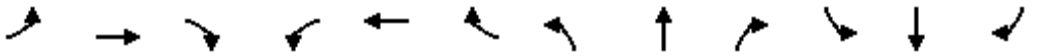
Intersection Summary	
HCM 6th Ctrl Delay	51.0
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	115	911	224	482	611	278	1011	891	391	1024
Future Volume (vph)	115	911	224	482	611	278	1011	891	391	1024
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	55.0	55.0	16.0	62.0	11.0	36.0	16.0	13.0	38.0
Total Split (%)	7.5%	45.8%	45.8%	13.3%	51.7%	9.2%	30.0%	13.3%	10.8%	31.7%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	911	224	482	611	247	278	1011	891	391	1024	122
Future Volume (veh/h)	115	911	224	482	611	247	278	1011	891	391	1024	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	117	930	0	492	623	250	284	1032	492	399	1045	124
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	71	776		314	602	241	100	902	564	129	867	103
Arrive On Green	0.04	0.41	0.00	0.10	0.47	0.47	0.06	0.25	0.25	0.08	0.27	0.27
Sat Flow, veh/h	1714	1900	1610	3141	1289	517	1714	3610	1610	1714	3250	385
Grp Volume(v), veh/h	117	930	0	492	0	873	284	1032	492	399	580	589
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1570	0	1807	1714	1805	1610	1714	1805	1831
Q Serve(g_s), s	5.0	49.0	0.0	12.0	0.0	56.0	7.0	30.0	30.0	9.0	32.0	32.0
Cycle Q Clear(g_c), s	5.0	49.0	0.0	12.0	0.0	56.0	7.0	30.0	30.0	9.0	32.0	32.0
Prop In Lane	1.00		1.00	1.00		0.29	1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	71	776		314	0	843	100	903	564	129	481	488
V/C Ratio(X)	1.64	1.20		1.57	0.00	1.04	2.84	1.14	0.87	3.10	1.20	1.21
Avail Cap(c_a), veh/h	71	776		314	0	843	100	903	564	129	481	488
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.5	35.5	0.0	54.0	0.0	32.0	56.5	45.0	36.5	55.5	44.0	44.0
Incr Delay (d2), s/veh	341.5	101.7	0.0	269.9	0.0	40.5	854.9	77.8	13.6	966.7	110.5	111.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	43.1	0.0	16.3	0.0	31.6	26.7	22.4	14.8	38.3	28.2	28.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	399.0	137.2	0.0	323.9	0.0	72.5	911.4	122.8	50.1	1022.2	154.5	155.0
LnGrp LOS	F	F		F	A	F	F	F	D	F	F	F
Approach Vol, veh/h		1047	A		1365			1808			1568	
Approach Delay, s/veh		166.5			163.1			226.9			375.5	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	36.0	16.0	55.0	11.0	38.0	9.0	62.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	9.0	30.0	12.0	49.0	7.0	32.0	5.0	56.0
Max Q Clear Time (g_c+I1), s	11.0	32.0	14.0	51.0	9.0	34.0	7.0	58.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	241.2
HCM 6th LOS	F

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	1829.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	86	2304	279	95	1982	9	164	111	65	21	99	58
Future Vol, veh/h	86	2304	279	95	1982	9	164	111	65	21	99	58
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	91	2425	294	100	2086	9	173	117	68	22	104	61
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	2268.1	1705.4	77	59
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	48%	3%	5%	12%
Vol Thru, %	33%	86%	95%	56%
Vol Right, %	19%	10%	0%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	340	2669	2086	178
LT Vol	164	86	95	21
Through Vol	111	2304	1982	99
RT Vol	65	279	9	58
Lane Flow Rate	358	2809	2196	187
Geometry Grp	1	1	1	1
Degree of Util (X)	0.811	5.964	4.7	0.463
Departure Headway (Hd)	20.366	14.293	16.571	31.423
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	183	281	242	118
Service Time	18.366	12.293	14.571	29.423
HCM Lane V/C Ratio	1.956	9.996	9.074	1.585
HCM Control Delay	77	2268.1	1705.4	59
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	5.5	159.8	104.2	2

Intersection	
Intersection Delay, s/veh	136.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	110	607	5	3	373	114	6	100	9	110	78	65
Future Vol, veh/h	110	607	5	3	373	114	6	100	9	110	78	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	120	660	5	3	405	124	7	109	10	120	85	71
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	246.5	61.7	16.5	22.9
HCM LOS	F	F	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	15%	1%	43%
Vol Thru, %	87%	84%	76%	31%
Vol Right, %	8%	1%	23%	26%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	115	722	490	253
LT Vol	6	110	3	110
Through Vol	100	607	373	78
RT Vol	9	5	114	65
Lane Flow Rate	125	785	533	275
Geometry Grp	1	1	1	1
Degree of Util (X)	0.291	1.483	0.974	0.581
Departure Headway (Hd)	9.59	6.801	7.389	8.605
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	377	534	495	424
Service Time	7.59	4.859	5.389	6.605
HCM Lane V/C Ratio	0.332	1.47	1.077	0.649
HCM Control Delay	16.5	246.5	61.7	22.9
HCM Lane LOS	C	F	F	C
HCM 95th-tile Q	1.2	39.1	12.6	3.6

Intersection	
Int Delay, s/veh	9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	113	924	527	44	74	89
Future Vol, veh/h	113	924	527	44	74	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	120	983	561	47	79	95

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	608	0	-	0	1808	585
Stage 1	-	-	-	-	585	-
Stage 2	-	-	-	-	1223	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	980	-	-	-	145	586
Stage 1	-	-	-	-	561	-
Stage 2	-	-	-	-	281	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	980	-	-	-	106	586
Mov Cap-2 Maneuver	-	-	-	-	106	-
Stage 1	-	-	-	-	410	-
Stage 2	-	-	-	-	281	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	91.9
HCM LOS			F

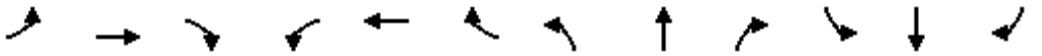
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	980	-	-	-	192
HCM Lane V/C Ratio	0.123	-	-	-	0.903
HCM Control Delay (s)	9.2	0	-	-	91.9
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0.4	-	-	-	7

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	414	251	1064	1451	803
Future Volume (vph)	0	414	251	1064	1451	803
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	48.0	48.0	35.0	72.0	37.0	37.0
Total Split (%)	40.0%	40.0%	29.2%	60.0%	30.8%	30.8%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	355	0	414	251	1064	0	0	1451	803
Future Volume (veh/h)	0	0	0	355	0	414	251	1064	0	0	1451	803
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				370	0	251	261	1108	0	0	1511	661
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				426	0	379	285	2411	0	0	1703	743
Arrive On Green				0.24	0.00	0.24	0.32	1.00	0.00	0.00	0.47	0.47
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1575
Grp Volume(v), veh/h				370	0	251	261	1108	0	0	1511	661
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1575
Q Serve(g_s), s				23.6	0.0	16.9	16.7	0.0	0.0	0.0	45.6	45.8
Cycle Q Clear(g_c), s				23.6	0.0	16.9	16.7	0.0	0.0	0.0	45.6	45.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				426	0	379	285	2411	0	0	1703	743
V/C Ratio(X)				0.87	0.00	0.66	0.91	0.46	0.00	0.00	0.89	0.89
Avail Cap(c_a), veh/h				636	0	566	458	2411	0	0	1703	743
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				44.1	0.0	41.5	40.3	0.0	0.0	0.0	28.8	28.9
Incr Delay (d2), s/veh				8.4	0.0	2.0	1.2	0.1	0.0	0.0	7.3	15.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				11.2	0.0	6.7	6.0	0.0	0.0	0.0	20.0	19.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				52.4	0.0	43.5	41.5	0.1	0.0	0.0	36.1	43.9
LnGrp LOS				D	A	D	D	A	A	A	D	D
Approach Vol, veh/h					621			1369			2172	
Approach Delay, s/veh					48.8			8.0			38.4	
Approach LOS					D			A			D	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	85.9		23.5	62.4		34.1						
Change Period (Y+Rc), s	5.8		4.6	5.8		5.8						
Max Green Setting (Gmax), s	66.2		30.4	31.2		42.2						
Max Q Clear Time (g_c+I1), s	2.0		18.7	47.8		25.6						
Green Ext Time (p_c), s	9.5		0.3	0.0		2.7						

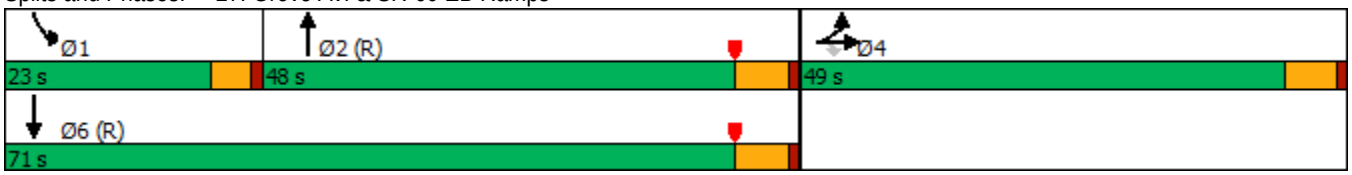
Intersection Summary		
HCM 6th Ctrl Delay	30.0	
HCM 6th LOS	C	

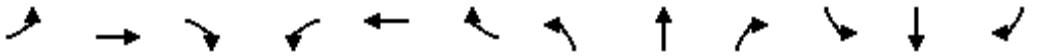
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	406	802	594	1212
Future Volume (vph)	0	406	802	594	1212
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	49.0	49.0	48.0	23.0	71.0
Total Split (%)	40.8%	40.8%	40.0%	19.2%	59.2%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	513	0	406	0	0	0	0	802	382	594	1212	0
Future Volume (veh/h)	513	0	406	0	0	0	0	802	382	594	1212	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	552	0	350				0	862	328	639	1303	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	598	0	532				0	968	367	277	2068	0
Arrive On Green	0.33	0.00	0.33				0.00	0.38	0.38	0.31	1.00	0.00
Sat Flow, veh/h	1810	0	1610				0	2633	962	1810	3705	0
Grp Volume(v), veh/h	552	0	350				0	612	578	639	1303	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1696	1810	1805	0
Q Serve(g_s), s	35.3	0.0	22.3				0.0	38.1	38.4	18.4	0.0	0.0
Cycle Q Clear(g_c), s	35.3	0.0	22.3				0.0	38.1	38.4	18.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.57	1.00		0.00
Lane Grp Cap(c), veh/h	598	0	532				0	688	646	277	2068	0
V/C Ratio(X)	0.92	0.00	0.66				0.00	0.89	0.89	2.30	0.63	0.00
Avail Cap(c_a), veh/h	651	0	580				0	688	646	277	2068	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.76	0.76	0.09	0.09	0.00
Uniform Delay (d), s/veh	38.7	0.0	34.4				0.0	34.8	34.9	41.6	0.0	0.0
Incr Delay (d2), s/veh	18.1	0.0	2.4				0.0	12.7	13.8	587.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.9	0.0	8.7				0.0	18.2	17.5	51.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.8	0.0	36.8				0.0	47.5	48.7	629.0	0.1	0.0
LnGrp LOS	E	A	D				A	D	D	F	A	A
Approach Vol, veh/h		902						1190			1942	
Approach Delay, s/veh		49.0						48.1			207.1	
Approach LOS		D						D			F	

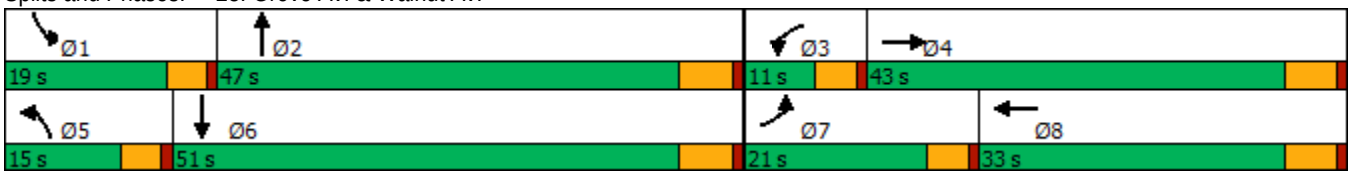
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	23.0	51.5		45.5		74.5						
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8						
Max Green Setting (Gmax), s	18.4	42.2		43.2		65.2						
Max Q Clear Time (g_c+I1), s	20.4	40.4		37.3		2.0						
Green Ext Time (p_c), s	0.0	1.2		2.4		12.5						

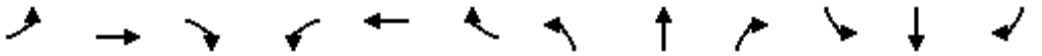
Intersection Summary												
HCM 6th Ctrl Delay			124.8									
HCM 6th LOS			F									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	184	358	22	194	101	719	212	957
Future Volume (vph)	184	358	22	194	101	719	212	957
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	21.0	43.0	11.0	33.0	15.0	47.0	19.0	51.0
Total Split (%)	17.5%	35.8%	9.2%	27.5%	12.5%	39.2%	15.8%	42.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 106
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	358	97	22	194	152	101	719	31	212	957	208
Future Volume (veh/h)	184	358	97	22	194	152	101	719	31	212	957	208
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	192	373	86	23	202	123	105	749	22	221	997	149
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	222	688	157	40	283	164	130	1431	42	239	1460	218
Arrive On Green	0.13	0.24	0.24	0.02	0.13	0.13	0.08	0.40	0.40	0.14	0.46	0.46
Sat Flow, veh/h	1714	2919	666	1714	2185	1265	1714	3581	105	1714	3150	470
Grp Volume(v), veh/h	192	229	230	23	165	160	105	377	394	221	571	575
Grp Sat Flow(s),veh/h/ln	1714	1805	1780	1714	1805	1645	1714	1805	1881	1714	1805	1815
Q Serve(g_s), s	11.3	11.5	11.7	1.4	9.0	9.7	6.2	16.4	16.4	13.1	25.6	25.6
Cycle Q Clear(g_c), s	11.3	11.5	11.7	1.4	9.0	9.7	6.2	16.4	16.4	13.1	25.6	25.6
Prop In Lane	1.00		0.37	1.00		0.77	1.00		0.06	1.00		0.26
Lane Grp Cap(c), veh/h	222	425	419	40	234	213	130	721	752	239	836	841
V/C Ratio(X)	0.87	0.54	0.55	0.57	0.71	0.75	0.81	0.52	0.52	0.92	0.68	0.68
Avail Cap(c_a), veh/h	273	651	642	106	476	434	173	721	752	239	836	841
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.0	34.5	34.6	49.8	43.0	43.3	46.9	23.5	23.5	43.8	21.7	21.7
Incr Delay (d2), s/veh	18.3	1.1	1.1	4.7	3.9	5.3	13.8	2.7	2.6	37.2	4.5	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	4.9	5.0	0.6	4.1	4.1	3.1	7.0	7.3	7.8	10.9	11.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.3	35.6	35.7	54.6	46.9	48.5	60.7	26.2	26.1	81.0	26.2	26.2
LnGrp LOS	E	D	D	D	D	D	E	C	C	F	C	C
Approach Vol, veh/h		651			348			876			1367	
Approach Delay, s/veh		43.5			48.1			30.3			35.1	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	47.0	7.0	30.1	12.4	53.6	17.9	19.2
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	41.2	6.4	37.2	10.4	45.2	16.4	27.2
Max Q Clear Time (g_c+I1), s	15.1	18.4	3.4	13.7	8.2	27.6	13.3	11.7
Green Ext Time (p_c), s	0.0	4.4	0.0	2.4	0.0	6.7	0.1	1.5

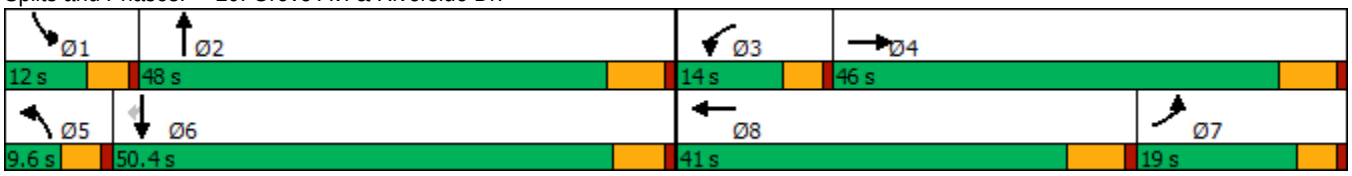
Intersection Summary	
HCM 6th Ctrl Delay	36.9
HCM 6th LOS	D

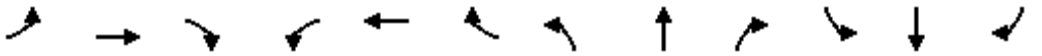
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	202	786	120	670	27	486	190	671	212
Future Volume (vph)	202	786	120	670	27	486	190	671	212
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	19.0	46.0	14.0	41.0	9.6	48.0	12.0	50.4	50.4
Total Split (%)	15.8%	38.3%	11.7%	34.2%	8.0%	40.0%	10.0%	42.0%	42.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	202	786	41	120	670	158	27	486	112	190	671	212
Future Volume (veh/h)	202	786	41	120	670	158	27	486	112	190	671	212
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	210	819	42	125	698	119	28	506	100	198	699	164
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	242	593	30	134	788	134	43	537	106	106	731	619
Arrive On Green	0.14	0.33	0.33	0.08	0.26	0.26	0.03	0.35	0.35	0.06	0.38	0.38
Sat Flow, veh/h	1714	1789	92	1714	3084	525	1714	1541	304	1714	1900	1610
Grp Volume(v), veh/h	210	0	861	125	408	409	28	0	606	198	699	164
Grp Sat Flow(s),veh/h/ln	1714	0	1881	1714	1805	1805	1714	0	1845	1714	1900	1610
Q Serve(g_s), s	14.4	0.0	39.8	8.7	26.1	26.2	1.9	0.0	38.2	7.4	43.0	5.0
Cycle Q Clear(g_c), s	14.4	0.0	39.8	8.7	26.1	26.2	1.9	0.0	38.2	7.4	43.0	5.0
Prop In Lane	1.00		0.05	1.00		0.29	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	242	0	624	134	461	461	43	0	643	106	731	619
V/C Ratio(X)	0.87	0.00	1.38	0.93	0.89	0.89	0.65	0.00	0.94	1.87	0.96	0.26
Avail Cap(c_a), veh/h	242	0	624	134	523	523	71	0	643	106	731	619
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.4	0.0	40.1	55.0	43.0	43.0	58.0	0.0	37.9	56.3	35.9	9.2
Incr Delay (d2), s/veh	25.7	0.0	180.9	56.2	15.3	15.4	5.9	0.0	23.9	426.5	24.2	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	0.0	48.6	5.7	13.1	13.1	0.9	0.0	20.4	15.6	23.7	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.1	0.0	221.0	111.1	58.2	58.4	63.8	0.0	61.9	482.8	60.1	10.2
LnGrp LOS	E	A	F	F	E	E	E	A	E	F	E	B
Approach Vol, veh/h		1071			942			634			1061	
Approach Delay, s/veh		192.6			65.3			62.0			131.3	
Approach LOS		F			E			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	48.0	14.0	46.0	7.6	52.4	23.1	36.9
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	7.4	41.8	9.4	39.8	5.0	* 45	14.4	* 35
Max Q Clear Time (g_c+I1), s	9.4	40.2	10.7	41.8	3.9	45.0	16.4	28.2
Green Ext Time (p_c), s	0.0	0.6	0.0	0.0	0.0	0.0	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	120.4
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	283.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	93	284	50	25	79	55	71	517	42	63	735	34
Future Vol, veh/h	93	284	50	25	79	55	71	517	42	63	735	34
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	97	296	52	26	82	57	74	539	44	66	766	35
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	81.6	26.2	254.3	457.6
HCM LOS	F	D	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	22%	16%	8%
Vol Thru, %	82%	67%	50%	88%
Vol Right, %	7%	12%	35%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	630	427	159	832
LT Vol	71	93	25	63
Through Vol	517	284	79	735
RT Vol	42	50	55	34
Lane Flow Rate	656	445	166	867
Geometry Grp	1	1	1	1
Degree of Util (X)	1.475	0.993	0.429	1.95
Departure Headway (Hd)	10.004	10.777	13.48	9.128
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	368	342	270	407
Service Time	8.004	8.777	11.48	7.128
HCM Lane V/C Ratio	1.783	1.301	0.615	2.13
HCM Control Delay	254.3	81.6	26.2	457.6
HCM Lane LOS	F	F	D	F
HCM 95th-tile Q	28.4	11	2	52.3

Intersection	
Intersection Delay, s/veh	245.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	121	174	147	6	59	55	28	514	63	90	619	66
Future Vol, veh/h	121	174	147	6	59	55	28	514	63	90	619	66
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	130	187	158	6	63	59	30	553	68	97	666	71
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	83	22.1	221.2	390.8
HCM LOS	F	C	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	27%	5%	12%
Vol Thru, %	85%	39%	49%	80%
Vol Right, %	10%	33%	46%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	605	442	120	775
LT Vol	28	121	6	90
Through Vol	514	174	59	619
RT Vol	63	147	55	66
Lane Flow Rate	651	475	129	833
Geometry Grp	1	1	1	1
Degree of Util (X)	1.401	1.014	0.333	1.801
Departure Headway (Hd)	9.392	9.828	12.859	8.721
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	390	375	281	425
Service Time	7.392	7.828	10.859	6.721
HCM Lane V/C Ratio	1.669	1.267	0.459	1.96
HCM Control Delay	221.2	83	22.1	390.8
HCM Lane LOS	F	F	C	F
HCM 95th-tile Q	26.7	12.1	1.4	47.2

Intersection	
Intersection Delay, s/veh	1304.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	82	1465	28	179	1164	96	63	432	383	322	401	69
Future Vol, veh/h	82	1465	28	179	1164	96	63	432	383	322	401	69
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	88	1575	30	192	1252	103	68	465	412	346	431	74
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	1681.6	1511.4	802.4	736.4
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	5%	12%	41%
Vol Thru, %	49%	93%	81%	51%
Vol Right, %	44%	2%	7%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	878	1575	1439	792
LT Vol	63	82	179	322
Through Vol	432	1465	1164	401
RT Vol	383	28	96	69
Lane Flow Rate	944	1694	1547	852
Geometry Grp	1	1	1	1
Degree of Util (X)	2.452	4.515	4.118	2.277
Departure Headway (Hd)	58.624	43.184	46.433	62.779
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	76	102	108	68
Service Time	56.624	41.184	44.433	60.779
HCM Lane V/C Ratio	12.421	16.608	14.324	12.529
HCM Control Delay	802.4	1681.6	1511.4	736.4
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	14.9	40.1	33.8	12.9

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	182	153	85	20	230	130	40	704	12	66	360	169
Future Vol, veh/h	182	153	85	20	230	130	40	704	12	66	360	169
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	198	166	92	22	250	141	43	765	13	72	391	184

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1680	1491	483	1614	1577	772	575	0	0	778	0	0
Stage 1	627	627	-	858	858	-	-	-	-	-	-	-
Stage 2	1053	864	-	756	719	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 76	~ 125	588	85	~ 111	403	1008	-	-	848	-	-
Stage 1	475	479	-	354	376	-	-	-	-	-	-	-
Stage 2	276	374	-	403	436	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 101	588	-	~ 89	403	1008	-	-	848	-	-
Mov Cap-2 Maneuver	-	~ 101	-	-	~ 89	-	-	-	-	-	-	-
Stage 1	439	417	-	327	348	-	-	-	-	-	-	-
Stage 2	~ 47	346	-	178	380	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			0.5	1.1
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1008	-	-	-	-	848	-	-
HCM Lane V/C Ratio	0.043	-	-	-	-	0.085	-	-
HCM Control Delay (s)	8.7	0	-	-	-	9.6	0	-
HCM Lane LOS	A	A	-	-	-	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	-	-	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	399.7
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	355	813	448	401	272	193
Future Vol, veh/h	355	813	448	401	272	193
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	370	847	467	418	283	201
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	610.5	297	57.8
HCM LOS	F	F	F

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	30%	0%	58%
Vol Thru, %	70%	53%	0%
Vol Right, %	0%	47%	42%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	1168	849	465
LT Vol	355	0	272
Through Vol	813	448	0
RT Vol	0	401	193
Lane Flow Rate	1217	884	484
Geometry Grp	1	1	1
Degree of Util (X)	2.303	1.589	0.924
Departure Headway (Hd)	7.735	8.251	8.859
Convergence, Y/N	Yes	Yes	Yes
Cap	487	451	412
Service Time	5.735	6.251	6.859
HCM Lane V/C Ratio	2.499	1.96	1.175
HCM Control Delay	610.5	297	57.8
HCM Lane LOS	F	F	F
HCM 95th-tile Q	80.8	38.8	10.1

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	95	1972	25	167	1305	65	14	56	87	173	292	69
Future Vol, veh/h	95	1972	25	167	1305	65	14	56	87	173	292	69
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	100	2076	26	176	1374	68	15	59	92	182	307	73

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1442	0	0	2102	0	0	4239	4083	2089	4125	4062	1408
Stage 1	-	-	-	-	-	-	2289	2289	-	1760	1760	-
Stage 2	-	-	-	-	-	-	1950	1794	-	2365	2302	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	476	-	-	265	-	-	~ 1	~ 3	~ 67	~ 1	~ 3	172
Stage 1	-	-	-	-	-	-	53	75	-	~ 109	~ 139	-
Stage 2	-	-	-	-	-	-	84	134	-	~ 48	~ 74	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	476	-	-	265	-	-	-	0	~ 67	-	0	172
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	53	75	-	~ 109	0	-
Stage 2	-	-	-	-	-	-	-	0	-	-	~ 74	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	4.5		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	476	-	-	265	-	-	-
HCM Lane V/C Ratio	-	0.21	-	-	0.663	-	-	-
HCM Control Delay (s)	-	14.6	0	-	41.8	0	-	-
HCM Lane LOS	-	B	A	-	E	A	-	-
HCM 95th %tile Q(veh)	-	0.8	-	-	4.3	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	54.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	410	300	10	10	120	210	10	93	10	140	33	110
Future Vol, veh/h	410	300	10	10	120	210	10	93	10	140	33	110
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	446	326	11	11	130	228	11	101	11	152	36	120

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	358	0	0	337	0	0	1568	1604	332	1546	1495	244
Stage 1	-	-	-	-	-	-	1224	1224	-	266	266	-
Stage 2	-	-	-	-	-	-	344	380	-	1280	1229	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1212	-	-	1234	-	-	91	107	714	~ 94	124	800
Stage 1	-	-	-	-	-	-	221	254	-	744	692	-
Stage 2	-	-	-	-	-	-	676	617	-	206	252	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1212	-	-	1234	-	-	30	~ 58	714	-	67	800
Mov Cap-2 Maneuver	-	-	-	-	-	-	30	~ 58	-	-	67	-
Stage 1	-	-	-	-	-	-	121	139	-	407	684	-
Stage 2	-	-	-	-	-	-	539	610	-	~ 30	138	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.5	0.2	$ 668.4	
HCM LOS			F	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	58	1212	-	-	1234	-	-	-
HCM Lane V/C Ratio	2.118	0.368	-	-	0.009	-	-	-
HCM Control Delay (s)	$ 668.4	9.7	0	-	7.9	0	-	-
HCM Lane LOS	F	A	A	-	A	A	-	-
HCM 95th %tile Q(veh)	12	1.7	-	-	0	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	90

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	930	139	107	675	17	114	57	157	10	27	60
Future Vol, veh/h	16	930	139	107	675	17	114	57	157	10	27	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	17	1011	151	116	734	18	124	62	171	11	29	65

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	752	0	0	1162	0	0	2067	2029	1011	2212	2171	743
Stage 1	-	-	-	-	-	-	1045	1045	-	975	975	-
Stage 2	-	-	-	-	-	-	1022	984	-	1237	1196	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	867	-	-	608	-	-	~ 40	~ 58	293	32	47	418
Stage 1	-	-	-	-	-	-	279	308	-	305	332	-
Stage 2	-	-	-	-	-	-	287	329	-	217	262	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	867	-	-	608	-	-	~ 22	~ 46	293	~ 8	37	418
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 101	145	-	~ -52	99	-
Stage 1	-	-	-	-	-	-	273	302	-	299	269	-
Stage 2	-	-	-	-	-	-	175	266	-	71	257	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.6	$ 624.9	16
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	159	867	-	-	608	-	-	433
HCM Lane V/C Ratio	2.242	0.02	-	-	0.191	-	-	0.243
HCM Control Delay (s)	$ 624.9	9.2	-	-	12.3	-	-	16
HCM Lane LOS	F	A	-	-	B	-	-	C
HCM 95th %tile Q(veh)	29.3	0.1	-	-	0.7	-	-	0.9

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1043	54	14	761	0	38	0	25	0	0	0
Future Vol, veh/h	0	1043	54	14	761	0	38	0	25	0	0	0
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	1134	59	15	827	0	41	0	27	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	1194	0	0	2022	2022	598
Stage 1	-	-	-	-	-	-	1165	1165	-
Stage 2	-	-	-	-	-	-	857	857	-
Critical Hdwy	-	-	-	4.1	-	-	6.6	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	592	-	0	58	59	450
Stage 1	0	-	-	-	-	0	263	271	-
Stage 2	0	-	-	-	-	0	419	377	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	591	-	-	56	0	450
Mov Cap-2 Maneuver	-	-	-	-	-	-	170	0	-
Stage 1	-	-	-	-	-	-	263	0	-
Stage 2	-	-	-	-	-	-	409	0	-

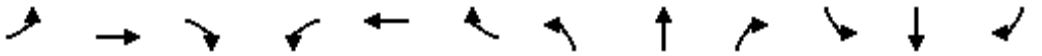
Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	27.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	226	-	-	591	-
HCM Lane V/C Ratio	0.303	-	-	0.026	-
HCM Control Delay (s)	27.7	-	-	11.3	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	1.2	-	-	0.1	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	40	2589	135	1775	75	43	64	22
Future Volume (vph)	40	2589	135	1775	75	43	64	22
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	27.8	27.8	27.8	27.8
Total Split (s)	9.6	78.0	12.0	80.4	30.0	30.0	30.0	30.0
Total Split (%)	8.0%	65.0%	10.0%	67.0%	25.0%	25.0%	25.0%	25.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	5.8	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 113.7
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 41: Vineyard Av. & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	2589	63	135	1775	87	75	43	193	64	22	25
Future Volume (veh/h)	40	2589	63	135	1775	87	75	43	193	64	22	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	43	2814	68	147	1929	95	82	47	210	70	24	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	57	1105	27	112	1128	56	318	61	273	126	165	185
Arrive On Green	0.03	0.60	0.60	0.06	0.63	0.63	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1810	1847	45	1810	1796	88	1452	303	1353	1204	816	918
Grp Volume(v), veh/h	43	0	2882	147	0	2024	82	0	257	70	0	51
Grp Sat Flow(s),veh/h/ln	1810	0	1892	1810	0	1884	1452	0	1656	1204	0	1735
Q Serve(g_s), s	2.8	0.0	71.8	7.4	0.0	75.4	5.9	0.0	17.6	6.6	0.0	2.9
Cycle Q Clear(g_c), s	2.8	0.0	71.8	7.4	0.0	75.4	8.8	0.0	17.6	24.2	0.0	2.9
Prop In Lane	1.00		0.02	1.00		0.05	1.00		0.82	1.00		0.53
Lane Grp Cap(c), veh/h	57	0	1132	112	0	1184	318	0	334	126	0	350
V/C Ratio(X)	0.75	0.00	2.55	1.32	0.00	1.71	0.26	0.00	0.77	0.55	0.00	0.15
Avail Cap(c_a), veh/h	75	0	1132	112	0	1184	318	0	334	126	0	350
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.6	0.0	24.1	56.3	0.0	22.3	43.0	0.0	45.3	56.9	0.0	39.4
Incr Delay (d2), s/veh	17.0	0.0	698.3	192.5	0.0	323.1	0.4	0.0	10.4	5.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	246.6	9.2	0.0	133.7	2.1	0.0	8.0	2.3	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.7	0.0	722.4	248.8	0.0	345.4	43.4	0.0	55.7	62.1	0.0	39.6
LnGrp LOS	E	A	F	F	A	F	D	A	E	E	A	D
Approach Vol, veh/h		2925			2171			339			121	
Approach Delay, s/veh		712.8			338.8			52.7			52.6	
Approach LOS		F			F			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	12.0	78.0		30.0	8.4	81.6				
Change Period (Y+Rc), s		5.8	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		24.2	7.4	71.8		24.2	5.0	74.2				
Max Q Clear Time (g_c+I1), s		19.6	9.4	73.8		26.2	4.8	77.4				
Green Ext Time (p_c), s		0.7	0.0	0.0		0.0	0.0	0.0				

Intersection Summary												
HCM 6th Ctrl Delay			512.0									
HCM 6th LOS			F									

Intersection	
Int Delay, s/veh	238.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	35	395	38	31	173	116	147	129	276	114	51	15
Future Vol, veh/h	35	395	38	31	173	116	147	129	276	114	51	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	38	429	41	34	188	126	160	140	300	124	55	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	314	0	0	470	0	0	881	908	450	1065	865	251
Stage 1	-	-	-	-	-	-	526	526	-	319	319	-
Stage 2	-	-	-	-	-	-	355	382	-	746	546	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1258	-	-	1102	-	-	269	277	613	202	294	793
Stage 1	-	-	-	-	-	-	539	532	-	697	657	-
Stage 2	-	-	-	-	-	-	666	616	-	409	521	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1258	-	-	1102	-	-	209	256	613	~ 55	271	793
Mov Cap-2 Maneuver	-	-	-	-	-	-	209	256	-	~ 55	271	-
Stage 1	-	-	-	-	-	-	517	510	-	668	632	-
Stage 2	-	-	-	-	-	-	572	593	-	145	500	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.8	$ 399.5	$ 784.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	333	1258	-	-	1102	-	-	79
HCM Lane V/C Ratio	1.802	0.03	-	-	0.031	-	-	2.477
HCM Control Delay (s)	$ 399.5	8	0	-	8.4	0	-	$ 784.3
HCM Lane LOS	F	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	39.1	0.1	-	-	0.1	-	-	18.5

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	120.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	231	826	11	68	493	299	66	108	82	327	108	216
Future Vol, veh/h	231	826	11	68	493	299	66	108	82	327	108	216
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	251	898	12	74	536	325	72	117	89	355	117	235

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	861	0	0	911	0	0	2430	2416	456	1857	2260	699
Stage 1	-	-	-	-	-	-	1407	1407	-	847	847	-
Stage 2	-	-	-	-	-	-	1023	1009	-	1010	1413	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	789	-	-	756	-	-	~ 19	~ 33	557	~ 51	~ 42	443
Stage 1	-	-	-	-	-	-	149	207	-	359	381	-
Stage 2	-	-	-	-	-	-	287	320	-	~ 261	206	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	789	-	-	755	-	-	245	~ 11	556	-	~ 13	443
Mov Cap-2 Maneuver	-	-	-	-	-	-	104	~ 27	-	~ -161	-	-
Stage 1	-	-	-	-	-	-	~ 53	~ 73	-	~ 127	344	-
Stage 2	-	-	-	-	-	-	80	289	-	-	~ 73	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.5	0.8	$ 1322.2	
HCM LOS			F	-

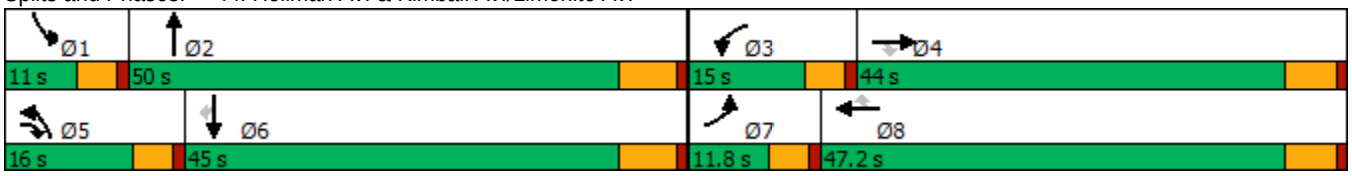
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	104	46	789	-	-	755	-	-	-	443
HCM Lane V/C Ratio	0.69	4.49	0.318	-	-	0.098	-	-	-	0.795
HCM Control Delay (s)	94.8	$ 1748.5	11.7	-	-	10.3	-	-	-	38
HCM Lane LOS	F	F	B	-	-	B	-	-	-	E
HCM 95th %tile Q(veh)	3.5	23.4	1.4	-	-	0.3	-	-	-	7.1

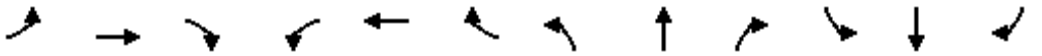
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	30	967	258	483	809	34	326	85	43	75	148
Future Volume (vph)	30	967	258	483	809	34	326	85	43	75	148
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	1	6	
Permitted Phases			4			8					6
Detector Phase	7	4	5	3	8	8	5	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	37.8	9.6	43.2	9.6	43.2	43.2
Total Split (s)	11.8	44.0	16.0	15.0	47.2	47.2	16.0	50.0	11.0	45.0	45.0
Total Split (%)	9.8%	36.7%	13.3%	12.5%	39.3%	39.3%	13.3%	41.7%	9.2%	37.5%	37.5%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	None	None	None	Max	Max	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 117.8
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	967	258	483	809	34	326	85	430	43	75	148
Future Volume (veh/h)	30	967	258	483	809	34	326	85	430	43	75	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	32	1018	272	508	852	36	343	89	453	45	79	156
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	47	618	680	278	1394	622	166	673	600	57	1115	497
Arrive On Green	0.03	0.33	0.33	0.09	0.39	0.39	0.10	0.37	0.37	0.03	0.31	0.31
Sat Flow, veh/h	1714	1900	1610	3141	3610	1610	1714	1805	1610	1714	3610	1610
Grp Volume(v), veh/h	32	1018	272	508	852	36	343	89	453	45	79	156
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1570	1805	1610	1714	1805	1610	1714	1805	1610
Q Serve(g_s), s	2.2	38.2	13.8	10.4	22.3	1.6	11.4	3.8	28.9	3.1	1.8	8.7
Cycle Q Clear(g_c), s	2.2	38.2	13.8	10.4	22.3	1.6	11.4	3.8	28.9	3.1	1.8	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	47	618	680	278	1394	622	166	673	600	57	1115	497
V/C Ratio(X)	0.68	1.65	0.40	1.83	0.61	0.06	2.06	0.13	0.75	0.79	0.07	0.31
Avail Cap(c_a), veh/h	105	618	680	278	1394	622	166	673	600	93	1192	532
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.6	39.6	23.6	53.5	29.0	22.7	53.0	24.3	32.2	56.4	28.7	31.1
Incr Delay (d2), s/veh	6.1	298.8	0.4	386.1	0.8	0.0	498.2	0.4	8.6	8.8	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	68.2	5.1	18.9	9.3	0.6	27.7	1.6	11.9	1.4	0.8	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.7	338.5	24.0	439.6	29.8	22.7	551.2	24.7	40.7	65.2	28.7	31.4
LnGrp LOS	E	F	C	F	C	C	F	C	D	E	C	C
Approach Vol, veh/h		1322			1396			885			280	
Approach Delay, s/veh		267.1			178.7			237.0			36.1	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	50.0	15.0	44.0	16.0	42.5	7.8	51.2
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	6.4	43.8	10.4	38.2	11.4	38.8	7.2	41.4
Max Q Clear Time (g_c+I1), s	5.1	30.9	12.4	40.2	13.4	10.7	4.2	24.3
Green Ext Time (p_c), s	0.0	2.7	0.0	0.0	0.0	0.9	0.0	5.2

Intersection Summary	
HCM 6th Ctrl Delay	211.8
HCM 6th LOS	F

Intersection	
Intersection Delay, s/veh	437.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	56	1099	80	36	728	10	79	6	143	75	7	53
Future Vol, veh/h	56	1099	80	36	728	10	79	6	143	75	7	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	61	1195	87	39	791	11	86	7	155	82	8	58
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

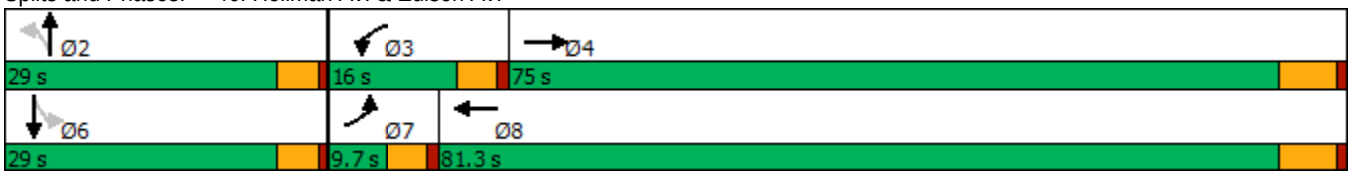
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	595.2	379.7	26.4	21
HCM LOS	F	F	D	C

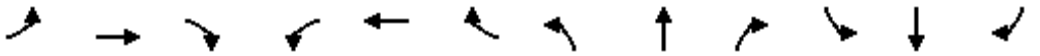
Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	35%	100%	0%	0%	100%	0%	56%
Vol Thru, %	3%	0%	100%	0%	0%	99%	5%
Vol Right, %	63%	0%	0%	100%	0%	1%	39%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	228	56	1099	80	36	738	135
LT Vol	79	56	0	0	36	0	75
Through Vol	6	0	1099	0	0	728	7
RT Vol	143	0	0	80	0	10	53
Lane Flow Rate	248	61	1195	87	39	802	147
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.561	0.132	2.427	0.16	0.094	1.806	0.359
Departure Headway (Hd)	10.772	8.948	8.427	7.697	10.839	10.302	11.851
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	337	403	442	469	333	361	307
Service Time	8.472	6.648	6.127	5.397	8.539	8.002	9.551
HCM Lane V/C Ratio	0.736	0.151	2.704	0.186	0.117	2.222	0.479
HCM Control Delay	26.4	13	667.3	11.9	14.7	397.5	21
HCM Lane LOS	D	B	F	B	B	F	C
HCM 95th-tile Q	3.3	0.5	81	0.6	0.3	41	1.6

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	64	2575	100	1754	205	89	58	24
Future Volume (vph)	64	2575	100	1754	205	89	58	24
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	26.7	26.7	26.7	26.7
Total Split (s)	9.7	75.0	16.0	81.3	29.0	29.0	29.0	29.0
Total Split (%)	8.1%	62.5%	13.3%	67.8%	24.2%	24.2%	24.2%	24.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 46: Hellman Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	2575	96	100	1754	67	205	89	256	58	24	38
Future Volume (veh/h)	64	2575	96	100	1754	67	205	89	256	58	24	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	70	2799	104	109	1907	73	223	97	278	63	26	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	73	1076	40	133	1138	44	290	88	252	60	134	212
Arrive On Green	0.04	0.59	0.59	0.08	0.63	0.63	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1714	1820	68	1714	1818	70	1355	434	1243	1024	664	1047
Grp Volume(v), veh/h	70	0	2903	109	0	1980	223	0	375	63	0	67
Grp Sat Flow(s),veh/h/ln	1714	0	1888	1714	0	1887	1355	0	1676	1024	0	1711
Q Serve(g_s), s	4.9	0.0	70.9	7.5	0.0	75.1	19.6	0.0	24.3	0.0	0.0	3.9
Cycle Q Clear(g_c), s	4.9	0.0	70.9	7.5	0.0	75.1	23.5	0.0	24.3	24.3	0.0	3.9
Prop In Lane	1.00		0.04	1.00		0.04	1.00		0.74	1.00		0.61
Lane Grp Cap(c), veh/h	73	0	1116	133	0	1181	290	0	339	60	0	347
V/C Ratio(X)	0.96	0.00	2.60	0.82	0.00	1.68	0.77	0.00	1.10	1.05	0.00	0.19
Avail Cap(c_a), veh/h	73	0	1116	163	0	1181	290	0	339	60	0	347
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.4	0.0	24.5	54.5	0.0	22.5	49.5	0.0	47.9	60.0	0.0	39.7
Incr Delay (d2), s/veh	91.1	0.0	723.6	19.7	0.0	308.0	11.7	0.0	80.1	130.8	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	251.1	3.9	0.0	128.5	7.6	0.0	17.6	4.0	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	148.5	0.0	748.1	74.2	0.0	330.5	61.2	0.0	127.9	190.8	0.0	40.0
LnGrp LOS	F	A	F	E	A	F	E	A	F	F	A	D
Approach Vol, veh/h		2973			2089			598			130	
Approach Delay, s/veh		734.0			317.1			103.0			113.1	
Approach LOS		F			F			F			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		29.0	13.9	77.1		29.0	9.7	81.3				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		* 4.7	4.6	6.2				
Max Green Setting (Gmax), s		* 24	11.4	68.8		* 24	5.1	75.1				
Max Q Clear Time (g_c+I1), s		26.3	9.5	72.9		26.3	6.9	77.1				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	0.0				

Intersection Summary		
HCM 6th Ctrl Delay		504.5
HCM 6th LOS		F

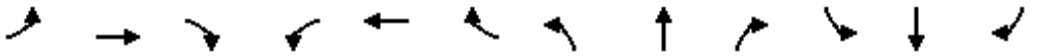
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	58	561	72	134	57	216	78	94
Future Volume (vph)	58	561	72	134	57	216	78	94
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	17.8	17.8	26.7	26.7	16.7	16.7
Total Split (s)	39.0	39.0	39.0	39.0	81.0	81.0	81.0	81.0
Total Split (%)	32.5%	32.5%	32.5%	32.5%	67.5%	67.5%	67.5%	67.5%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.7	4.7	4.7	4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 47: Hellman Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	561	75	72	134	56	57	216	230	78	94	19
Future Volume (veh/h)	58	561	75	72	134	56	57	216	230	78	94	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	63	610	82	78	146	61	62	235	250	85	102	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	278	454	61	60	352	147	846	536	570	518	972	200
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.64	0.64	0.64	0.64	0.64	0.64
Sat Flow, veh/h	1194	1640	220	764	1273	532	1288	842	896	925	1529	315
Grp Volume(v), veh/h	63	0	692	78	0	207	62	0	485	85	0	123
Grp Sat Flow(s),veh/h/ln	1194	0	1860	764	0	1804	1288	0	1739	925	0	1843
Q Serve(g_s), s	5.5	0.0	33.2	0.0	0.0	11.2	2.4	0.0	16.9	6.1	0.0	3.1
Cycle Q Clear(g_c), s	16.7	0.0	33.2	33.2	0.0	11.2	5.5	0.0	16.9	23.0	0.0	3.1
Prop In Lane	1.00		0.12	1.00		0.29	1.00		0.52	1.00		0.17
Lane Grp Cap(c), veh/h	278	0	515	60	0	499	846	0	1106	518	0	1172
V/C Ratio(X)	0.23	0.00	1.34	1.30	0.00	0.41	0.07	0.00	0.44	0.16	0.00	0.10
Avail Cap(c_a), veh/h	278	0	515	60	0	499	846	0	1106	518	0	1172
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.3	0.0	43.4	60.0	0.0	35.5	9.6	0.0	11.0	16.9	0.0	8.5
Incr Delay (d2), s/veh	0.4	0.0	167.6	216.2	0.0	0.6	0.2	0.0	1.3	0.7	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	38.6	5.4	0.0	4.9	0.7	0.0	6.6	1.4	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.7	0.0	211.0	276.2	0.0	36.0	9.8	0.0	12.3	17.5	0.0	8.7
LnGrp LOS	D	A	F	F	A	D	A	A	B	B	A	A
Approach Vol, veh/h		755			285			547			208	
Approach Delay, s/veh		197.0			101.7			12.0			12.3	
Approach LOS		F			F			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		81.0		39.0		81.0		39.0				
Change Period (Y+Rc), s		* 4.7		5.8		* 4.7		5.8				
Max Green Setting (Gmax), s		* 76		33.2		* 76		33.2				
Max Q Clear Time (g_c+I1), s		18.9		35.2		25.0		35.2				
Green Ext Time (p_c), s		4.0		0.0		1.3		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		104.1
HCM 6th LOS		F

Notes

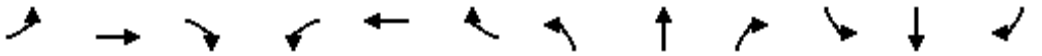
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	6	319	509	706	1747
Future Volume (vph)	6	319	509	706	1747
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (%)	32.2%	32.2%	31.1%	67.8%	36.7%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	531	6	319	509	706	0	0	1747	549
Future Volume (veh/h)	0	0	0	531	6	319	509	706	0	0	1747	549
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				553	6	187	530	735	0	0	1820	437
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				458	5	411	621	3682	0	0	1595	382
Arrive On Green				0.26	0.26	0.26	0.69	1.00	0.00	0.00	0.30	0.30
Sat Flow, veh/h				1791	19	1610	1810	5358	0	0	5545	1263
Grp Volume(v), veh/h				559	0	187	530	735	0	0	1690	567
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1729	0	0	1634	1640
Q Serve(g_s), s				23.0	0.0	8.8	20.0	0.0	0.0	0.0	27.2	27.2
Cycle Q Clear(g_c), s				23.0	0.0	8.8	20.0	0.0	0.0	0.0	27.2	27.2
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.77
Lane Grp Cap(c), veh/h				463	0	411	621	3682	0	0	1481	496
V/C Ratio(X)				1.21	0.00	0.45	0.85	0.20	0.00	0.00	1.14	1.14
Avail Cap(c_a), veh/h				463	0	411	621	3682	0	0	1481	496
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.29	0.29	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.5	0.0	28.2	12.4	0.0	0.0	0.0	31.4	31.4
Incr Delay (d2), s/veh				112.5	0.0	1.7	3.4	0.0	0.0	0.0	71.9	86.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				23.8	0.0	8.3	4.4	0.0	0.0	0.0	19.7	21.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				146.0	0.0	29.9	15.8	0.0	0.0	0.0	103.3	118.0
LnGrp LOS				F	A	C	B	A	A	A	F	F
Approach Vol, veh/h					746			1265			2257	
Approach Delay, s/veh					116.9			6.6			107.0	
Approach LOS					F			A			F	

Timer - Assigned Phs	2		4	5	6							
Phs Duration (G+Y+Rc), s	69.7		29.0	36.7	33.0							
Change Period (Y+Rc), s	5.8		6.0	5.8	* 5.8							
Max Green Setting (Gmax), s	55.2		23.0	24.0	* 27							
Max Q Clear Time (g_c+I1), s	2.0		25.0	22.0	29.2							
Green Ext Time (p_c), s	5.3		0.0	0.2	0.0							

Intersection Summary		
HCM 6th Ctrl Delay	79.0	
HCM 6th LOS	E	

Notes

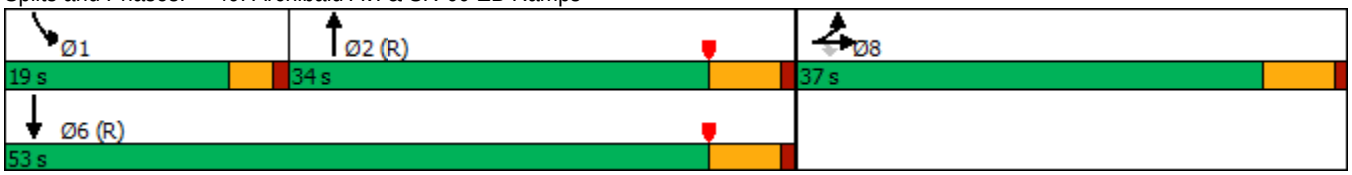
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

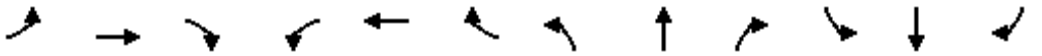
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	687	1081	466	1811
Future Volume (vph)	0	687	1081	466	1811
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	10.8	10.8	25.8	9.0	25.8
Total Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (%)	41.1%	41.1%	37.8%	21.1%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	0	687	0	0	0	0	1081	706	466	1811	0
Future Volume (veh/h)	134	0	687	0	0	0	0	1081	706	466	1811	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	140	0	466				0	1126	560	485	1886	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	567	0	504				0	1700	557	302	2894	0
Arrive On Green	0.31	0.00	0.31				0.00	0.35	0.35	0.17	0.56	0.00
Sat Flow, veh/h	1810	0	1610				0	5168	1606	1810	5358	0
Grp Volume(v), veh/h	140	0	466				0	1126	560	485	1886	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1606	1810	1729	0
Q Serve(g_s), s	5.2	0.0	25.2				0.0	17.5	31.2	15.0	22.7	0.0
Cycle Q Clear(g_c), s	5.2	0.0	25.2				0.0	17.5	31.2	15.0	22.7	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	567	0	504				0	1700	557	302	2894	0
V/C Ratio(X)	0.25	0.00	0.92				0.00	0.66	1.01	1.61	0.65	0.00
Avail Cap(c_a), veh/h	627	0	558				0	1700	557	302	2894	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.32	0.32	0.09	0.09	0.00
Uniform Delay (d), s/veh	23.0	0.0	29.9				0.0	24.9	29.4	37.5	13.8	0.0
Incr Delay (d2), s/veh	0.2	0.0	20.3				0.0	0.7	22.9	275.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	11.8				0.0	6.2	14.2	29.2	7.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	0.0	50.1				0.0	25.6	52.3	312.6	13.9	0.0
LnGrp LOS	C	A	D				A	C	F	F	B	A
Approach Vol, veh/h		606						1686			2371	
Approach Delay, s/veh		43.9						34.5			75.0	
Approach LOS		D						C			E	

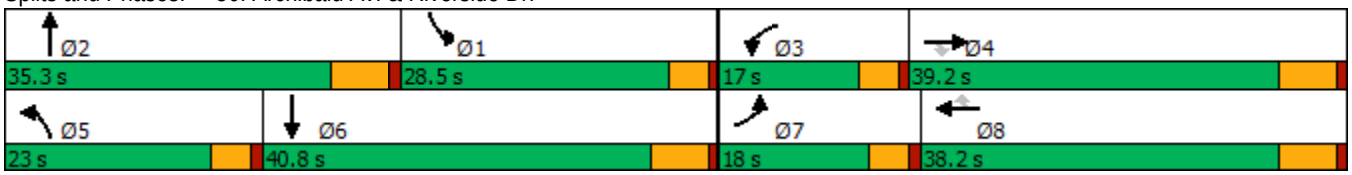
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	19.0	37.0				56.0		34.0				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	15.0	28.2				47.2		31.2				
Max Q Clear Time (g_c+I1), s	17.0	33.2				24.7		27.2				
Green Ext Time (p_c), s	0.0	0.0				13.7		1.0				

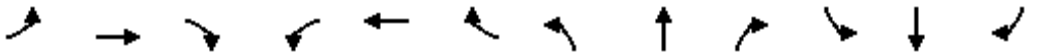
Intersection Summary			
HCM 6th Ctrl Delay			56.3
HCM 6th LOS			E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	270	755	515	195	538	140	387	837	344	1415
Future Volume (vph)	270	755	515	195	538	140	387	837	344	1415
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	18.0	39.2	39.2	17.0	38.2	38.2	23.0	35.3	28.5	40.8
Total Split (%)	15.0%	32.7%	32.7%	14.2%	31.8%	31.8%	19.2%	29.4%	23.8%	34.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 118.5
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	755	515	195	538	140	387	837	70	344	1415	316
Future Volume (veh/h)	270	755	515	195	538	140	387	837	70	344	1415	316
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	287	803	391	207	572	90	412	890	65	366	1505	272
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	193	973	425	178	943	419	265	1061	77	371	1282	231
Arrive On Green	0.11	0.27	0.27	0.10	0.26	0.26	0.15	0.22	0.22	0.22	0.29	0.29
Sat Flow, veh/h	1714	3610	1575	1714	3610	1605	1714	4927	359	1714	4412	795
Grp Volume(v), veh/h	287	803	391	207	572	90	412	624	331	366	1179	598
Grp Sat Flow(s),veh/h/ln	1714	1805	1575	1714	1805	1605	1714	1729	1828	1714	1729	1749
Q Serve(g_s), s	13.4	24.9	28.7	12.4	16.6	3.0	18.4	20.6	20.7	25.3	34.6	34.6
Cycle Q Clear(g_c), s	13.4	24.9	28.7	12.4	16.6	3.0	18.4	20.6	20.7	25.3	34.6	34.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		0.45
Lane Grp Cap(c), veh/h	193	973	425	178	943	419	265	745	394	371	1004	508
V/C Ratio(X)	1.49	0.82	0.92	1.16	0.61	0.21	1.56	0.84	0.84	0.99	1.17	1.18
Avail Cap(c_a), veh/h	193	1000	436	178	970	431	265	845	447	371	1004	508
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.9	40.9	42.3	53.4	38.6	11.1	50.4	44.7	44.8	46.5	42.3	42.3
Incr Delay (d2), s/veh	245.2	5.6	24.5	117.0	1.0	0.3	267.9	6.7	12.3	43.3	88.7	99.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.7	11.3	13.5	10.9	7.2	1.9	27.3	9.1	10.3	14.8	26.3	28.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	298.1	46.5	66.8	170.4	39.7	11.3	318.3	51.5	57.1	89.8	131.0	141.3
LnGrp LOS	F	D	E	F	D	B	F	D	E	F	F	F
Approach Vol, veh/h		1481			869			1367			2143	
Approach Delay, s/veh		100.6			67.9			133.2			126.8	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.9	31.9	17.0	38.3	23.0	40.8	18.0	37.3
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	23.9	* 29	12.4	33.0	18.4	34.6	13.4	32.0
Max Q Clear Time (g_c+I1), s	27.3	22.7	14.4	30.7	20.4	36.6	15.4	18.6
Green Ext Time (p_c), s	0.0	2.9	0.0	1.4	0.0	0.0	0.0	3.0

Intersection Summary	
HCM 6th Ctrl Delay	112.9
HCM 6th LOS	F

Notes

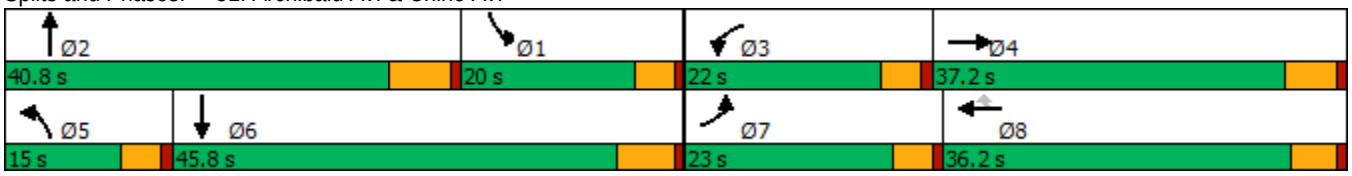
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

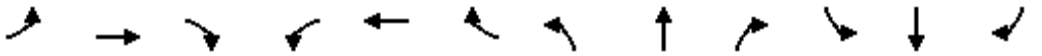
Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	25	2	80	164	57	1097	173	1934
Future Volume (vph)	25	2	80	164	57	1097	173	1934
Turn Type	Prot	NA	Prot	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3		5	2	1	6
Permitted Phases				8				
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	36.8	9.6	36.2	9.6	29.5	9.6	29.2
Total Split (s)	23.0	37.2	22.0	36.2	15.0	40.8	20.0	45.8
Total Split (%)	19.2%	31.0%	18.3%	30.2%	12.5%	34.0%	16.7%	38.2%
Yellow Time (s)	3.6	4.8	3.6	4.2	3.6	5.5	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.2	4.6	6.5	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 85.7
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	2	16	80	0	164	57	1097	99	173	1934	17
Future Volume (veh/h)	25	2	16	80	0	164	57	1097	99	173	1934	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	27	2	15	87	0	95	62	1192	99	188	2102	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	48	22	167	111	289	245	78	2010	167	224	1907	15
Arrive On Green	0.03	0.12	0.12	0.06	0.00	0.15	0.05	0.41	0.41	0.13	0.52	0.52
Sat Flow, veh/h	1714	193	1447	1714	1900	1610	1714	4879	405	1714	3670	30
Grp Volume(v), veh/h	27	0	17	87	0	95	62	845	446	188	1032	1087
Grp Sat Flow(s),veh/h/ln	1714	0	1640	1714	1900	1610	1714	1729	1826	1714	1805	1895
Q Serve(g_s), s	1.3	0.0	0.8	4.2	0.0	3.0	3.0	15.8	15.8	8.9	43.3	43.3
Cycle Q Clear(g_c), s	1.3	0.0	0.8	4.2	0.0	3.0	3.0	15.8	15.8	8.9	43.3	43.3
Prop In Lane	1.00		0.88	1.00		1.00	1.00		0.22	1.00		0.02
Lane Grp Cap(c), veh/h	48	0	189	111	289	245	78	1425	752	224	938	984
V/C Ratio(X)	0.56	0.00	0.09	0.78	0.00	0.39	0.79	0.59	0.59	0.84	1.10	1.10
Avail Cap(c_a), veh/h	379	0	618	358	707	600	214	1425	752	317	938	984
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	0.0	32.9	38.4	0.0	14.5	39.3	19.0	19.1	35.3	20.0	20.0
Incr Delay (d2), s/veh	3.8	0.0	0.2	4.5	0.0	1.0	6.5	1.8	3.4	9.4	60.9	61.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.3	1.8	0.0	1.7	1.3	5.7	6.4	4.0	30.2	31.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.8	0.0	33.1	42.9	0.0	15.5	45.8	20.9	22.5	44.7	80.9	81.5
LnGrp LOS	D	A	C	D	A	B	D	C	C	D	F	F
Approach Vol, veh/h		44			182			1353			2307	
Approach Delay, s/veh		39.7			28.6			22.5			78.3	
Approach LOS		D			C			C			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.1	40.8	10.0	15.4	8.4	49.5	6.9	18.5
Change Period (Y+Rc), s	6.2	* 6.5	4.6	5.8	4.6	6.2	4.6	* 5.8
Max Green Setting (Gmax), s	15.4	* 34	17.4	31.4	10.4	39.6	18.4	* 31
Max Q Clear Time (g_c+I1), s	10.9	17.8	6.2	2.8	5.0	45.3	3.3	5.0
Green Ext Time (p_c), s	0.1	7.0	0.1	0.0	0.0	0.0	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	56.1
HCM 6th LOS	E

Notes

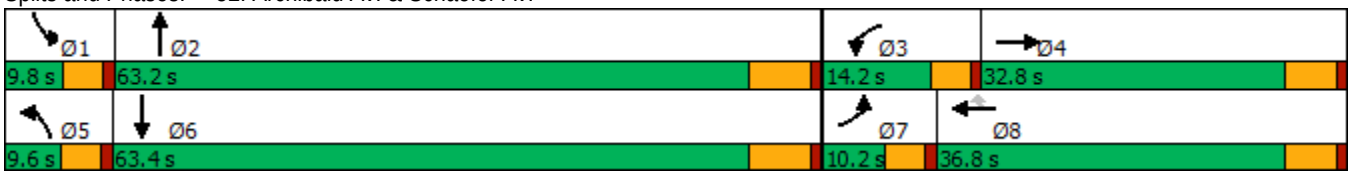
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

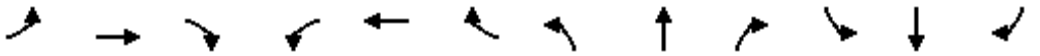
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	351	268	23	10	64	10	995	322	1360
Future Volume (vph)	351	268	23	10	64	10	995	322	1360
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	32.8	9.6	33.5	9.6	33.5
Total Split (s)	10.2	32.8	14.2	36.8	36.8	9.6	63.2	9.8	63.4
Total Split (%)	8.5%	27.3%	11.8%	30.7%	30.7%	8.0%	52.7%	8.2%	52.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6		5.8	4.6	6.5	4.6	6.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 102.5
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 52: Archibald Av. & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	351	268	126	23	10	64	10	995	73	322	1360	29
Future Volume (veh/h)	351	268	126	23	10	64	10	995	73	322	1360	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	382	291	137	25	11	70	11	1082	68	350	1478	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	99	317	149	43	0	364	23	1514	95	92	1731	37
Arrive On Green	0.06	0.26	0.26	0.03	0.23	0.23	0.01	0.44	0.44	0.05	0.48	0.48
Sat Flow, veh/h	1714	1221	575	1714	0	1606	1714	3449	217	1714	3611	78
Grp Volume(v), veh/h	382	0	428	25	0	70	11	566	584	350	738	772
Grp Sat Flow(s),veh/h/ln	1714	0	1796	1714	0	1606	1714	1805	1861	1714	1805	1884
Q Serve(g_s), s	5.6	0.0	22.4	1.4	0.0	3.4	0.6	24.8	24.8	5.2	34.8	34.9
Cycle Q Clear(g_c), s	5.6	0.0	22.4	1.4	0.0	3.4	0.6	24.8	24.8	5.2	34.8	34.9
Prop In Lane	1.00		0.32	1.00		1.00	1.00		0.12	1.00		0.04
Lane Grp Cap(c), veh/h	99	0	466	43	0	364	23	792	817	92	865	903
V/C Ratio(X)	3.84	0.00	0.92	0.58	0.00	0.19	0.49	0.71	0.72	3.79	0.85	0.85
Avail Cap(c_a), veh/h	99	0	502	170	0	515	89	1060	1093	92	1063	1110
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.5	0.0	34.8	46.6	0.0	30.2	47.3	22.2	22.2	45.7	22.1	22.2
Incr Delay (d2), s/veh	1303.4	0.0	21.2	4.4	0.0	0.3	5.8	1.5	1.5	1282.3	5.8	5.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	38.3	0.0	11.9	0.6	0.0	1.3	0.3	9.4	9.7	35.0	13.8	14.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1348.8	0.0	55.9	51.0	0.0	30.4	53.2	23.7	23.6	1328.0	27.9	27.8
LnGrp LOS	F	A	E	D	A	C	D	C	C	F	C	C
Approach Vol, veh/h		810			95			1161			1860	
Approach Delay, s/veh		665.7			35.8			23.9			272.5	
Approach LOS		F			D			C			F	

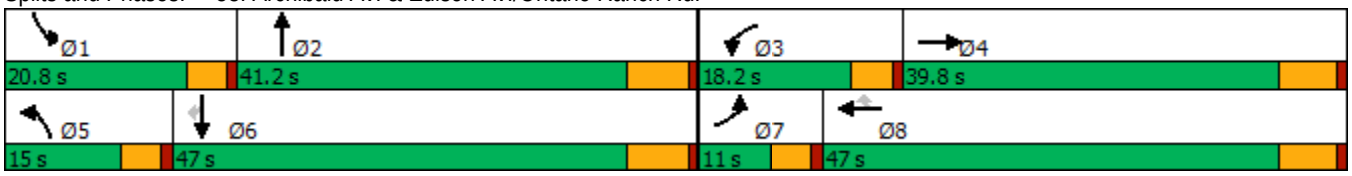
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	48.9	7.0	30.9	5.9	52.8	10.2	27.7
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	5.2	56.7	9.6	27.0	5.0	56.9	5.6	31.0
Max Q Clear Time (g_c+I1), s	7.2	26.8	3.4	24.4	2.6	36.9	7.6	5.4
Green Ext Time (p_c), s	0.0	7.4	0.0	0.6	0.0	9.4	0.0	0.2

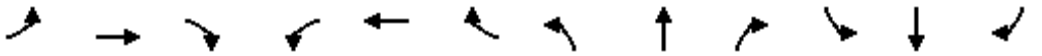
Intersection Summary	
HCM 6th Ctrl Delay	274.4
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	322	1798	591	391	1270	157	397	790	450	278	1028	403
Future Volume (vph)	322	1798	591	391	1270	157	397	790	450	278	1028	403
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	11.0	39.8		18.2	47.0	47.0	15.0	41.2		20.8	47.0	47.0
Total Split (%)	9.2%	33.2%		15.2%	39.2%	39.2%	12.5%	34.3%		17.3%	39.2%	39.2%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 118.6
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	322	1798	591	391	1270	157	397	790	450	278	1028	403
Future Volume (veh/h)	322	1798	591	391	1270	157	397	790	450	278	1028	403
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	332	1854	0	403	1309	128	409	814	0	287	1060	393
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	170	1027		362	657	556	151	1002		235	1179	514
Arrive On Green	0.05	0.28	0.00	0.12	0.35	0.35	0.09	0.28	0.00	0.14	0.33	0.33
Sat Flow, veh/h	3141	3610	1610	3141	1900	1610	1714	3610	1610	1714	3610	1574
Grp Volume(v), veh/h	332	1854	0	403	1309	128	409	814	0	287	1060	393
Grp Sat Flow(s),veh/h/ln	1570	1805	1610	1570	1900	1610	1714	1805	1610	1714	1805	1574
Q Serve(g_s), s	6.4	33.6	0.0	13.6	40.8	6.7	10.4	24.8	0.0	16.2	33.0	26.5
Cycle Q Clear(g_c), s	6.4	33.6	0.0	13.6	40.8	6.7	10.4	24.8	0.0	16.2	33.0	26.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	170	1027		362	657	556	151	1002		235	1179	514
V/C Ratio(X)	1.95	1.80		1.11	1.99	0.23	2.71	0.81		1.22	0.90	0.76
Avail Cap(c_a), veh/h	170	1027		362	657	556	151	1061		235	1238	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.8	42.2	0.0	52.2	38.6	27.5	53.8	39.8	0.0	50.9	37.9	35.7
Incr Delay (d2), s/veh	448.2	366.0	0.0	81.8	452.6	0.2	787.4	4.7	0.0	131.1	8.8	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.0	66.3	0.0	9.3	100.3	2.5	37.3	11.0	0.0	15.2	15.0	10.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	504.1	408.3	0.0	134.0	491.3	27.7	841.2	44.5	0.0	182.1	46.7	41.8
LnGrp LOS	F	F		F	F	C	F	D		F	D	D
Approach Vol, veh/h		2186	A		1840			1223	A		1740	
Approach Delay, s/veh		422.8			380.8			310.9			67.9	
Approach LOS		F			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.8	39.3	18.2	39.8	15.0	45.1	11.0	47.0
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	16.2	34.7	13.6	33.6	10.4	40.5	6.4	40.8
Max Q Clear Time (g_c+I1), s	18.2	26.8	15.6	35.6	12.4	35.0	8.4	42.8
Green Ext Time (p_c), s	0.0	2.9	0.0	0.0	0.0	3.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	303.8
HCM 6th LOS	F

Notes

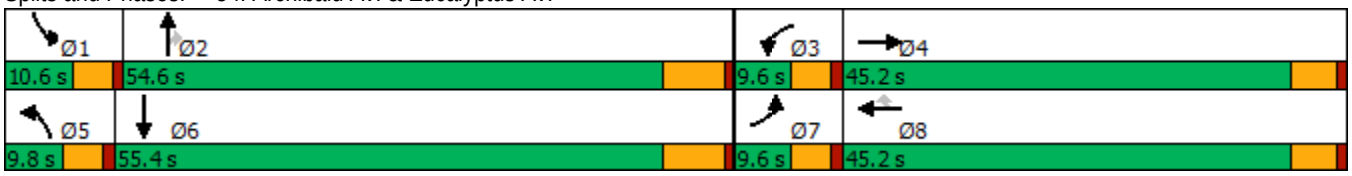
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

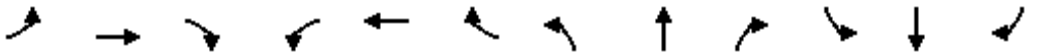
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	207	358	107	70	73	89	1313	160	184	1559
Future Volume (vph)	207	358	107	70	73	89	1313	160	184	1559
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	45.2	9.6	45.2	45.2	9.6	32.5	32.5	9.6	32.5
Total Split (s)	9.6	45.2	9.6	45.2	45.2	9.8	54.6	54.6	10.6	55.4
Total Split (%)	8.0%	37.7%	8.0%	37.7%	37.7%	8.2%	45.5%	45.5%	8.8%	46.2%
Yellow Time (s)	3.6	4.2	3.6	4.2	4.2	3.6	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.2	4.6	5.2	5.2	4.6	6.5	6.5	4.6	6.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	358	305	107	70	73	89	1313	160	184	1559	102
Future Volume (veh/h)	207	358	305	107	70	73	89	1313	160	184	1559	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	220	381	324	114	74	69	95	1397	170	196	1659	109
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	71	316	269	135	633	529	74	1447	645	86	1402	91
Arrive On Green	0.04	0.33	0.33	0.04	0.33	0.33	0.04	0.40	0.40	0.05	0.41	0.41
Sat Flow, veh/h	1714	948	806	3238	1900	1588	1714	3610	1608	1714	3440	224
Grp Volume(v), veh/h	220	0	705	114	74	69	95	1397	170	196	865	903
Grp Sat Flow(s),veh/h/ln	1714	0	1755	1619	1900	1588	1714	1805	1608	1714	1805	1860
Q Serve(g_s), s	5.0	0.0	40.0	4.2	3.2	3.6	5.2	45.4	8.5	6.0	48.9	48.9
Cycle Q Clear(g_c), s	5.0	0.0	40.0	4.2	3.2	3.6	5.2	45.4	8.5	6.0	48.9	48.9
Prop In Lane	1.00		0.46	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	71	0	585	135	633	529	74	1447	645	86	736	758
V/C Ratio(X)	3.08	0.00	1.21	0.84	0.12	0.13	1.28	0.97	0.26	2.29	1.18	1.19
Avail Cap(c_a), veh/h	71	0	585	135	633	529	74	1447	645	86	736	758
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.5	0.0	40.0	57.1	27.7	27.9	57.4	35.1	24.1	57.0	35.6	35.6
Incr Delay (d2), s/veh	971.9	0.0	107.8	34.7	0.1	0.1	196.5	16.7	1.0	614.2	92.8	99.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.4	0.0	34.3	2.4	1.5	1.4	6.2	21.5	3.4	17.1	38.5	41.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1029.4	0.0	147.8	91.8	27.8	28.0	253.9	51.9	25.1	671.2	128.4	134.9
LnGrp LOS	F	A	F	F	C	C	F	D	C	F	F	F
Approach Vol, veh/h		925			257			1662			1964	
Approach Delay, s/veh		357.5			56.3			60.7			185.6	
Approach LOS		F			E			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	54.6	9.6	45.2	9.8	55.4	9.6	45.2
Change Period (Y+Rc), s	4.6	6.5	4.6	5.2	4.6	6.5	4.6	5.2
Max Green Setting (Gmax), s	6.0	48.1	5.0	40.0	5.2	48.9	5.0	40.0
Max Q Clear Time (g_c+I1), s	8.0	47.4	6.2	42.0	7.2	50.9	7.0	5.6
Green Ext Time (p_c), s	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	168.6
HCM 6th LOS	F

Notes

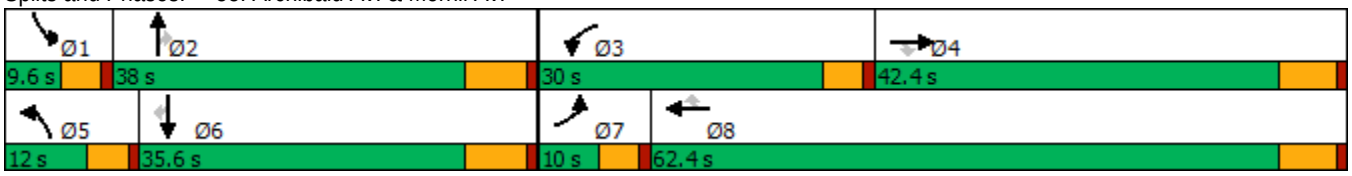
User approved volume balancing among the lanes for turning movement.

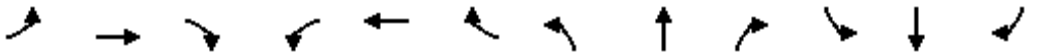
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	457	89	638	129	60	67	270	1021	193	88	1488	266
Future Volume (vph)	457	89	638	129	60	67	270	1021	193	88	1488	266
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	10.0	42.4	42.4	30.0	62.4	62.4	12.0	38.0	38.0	9.6	35.6	35.6
Total Split (%)	8.3%	35.3%	35.3%	25.0%	52.0%	52.0%	10.0%	31.7%	31.7%	8.0%	29.7%	29.7%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 105.4
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	457	89	638	129	60	67	270	1021	193	88	1488	266
Future Volume (veh/h)	457	89	638	129	60	67	270	1021	193	88	1488	266
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	471	92	473	133	62	30	278	1053	185	91	1534	216
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	93	601	509	163	679	575	128	1161	511	145	1059	472
Arrive On Green	0.05	0.32	0.32	0.10	0.36	0.36	0.07	0.32	0.32	0.05	0.29	0.29
Sat Flow, veh/h	1714	1900	1610	1714	1900	1610	1714	3610	1590	3141	3610	1610
Grp Volume(v), veh/h	471	92	473	133	62	30	278	1053	185	91	1534	216
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1714	1900	1610	1714	1805	1590	1570	1805	1610
Q Serve(g_s), s	5.4	3.5	28.2	7.6	2.2	1.2	7.4	27.7	8.9	2.8	29.1	10.9
Cycle Q Clear(g_c), s	5.4	3.5	28.2	7.6	2.2	1.2	7.4	27.7	8.9	2.8	29.1	10.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	93	601	509	163	679	575	128	1161	511	145	1059	472
V/C Ratio(X)	5.05	0.15	0.93	0.82	0.09	0.05	2.17	0.91	0.36	0.63	1.45	0.46
Avail Cap(c_a), veh/h	93	693	587	439	1076	912	128	1161	511	158	1059	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.9	24.4	32.8	44.0	21.2	20.9	45.9	32.2	25.8	46.5	35.1	28.6
Incr Delay (d2), s/veh	1845.9	0.1	19.8	3.7	0.1	0.0	553.5	10.4	0.4	4.4	207.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	50.0	1.5	13.3	3.3	0.9	0.5	22.6	12.6	3.3	1.1	42.1	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1892.8	24.5	52.6	47.8	21.3	20.9	599.5	42.6	26.3	50.9	242.5	29.3
LnGrp LOS	F	C	D	D	C	C	F	D	C	D	F	C
Approach Vol, veh/h		1036			225			1516			1841	
Approach Delay, s/veh		886.7			36.9			142.7			208.0	
Approach LOS		F			D			F			F	

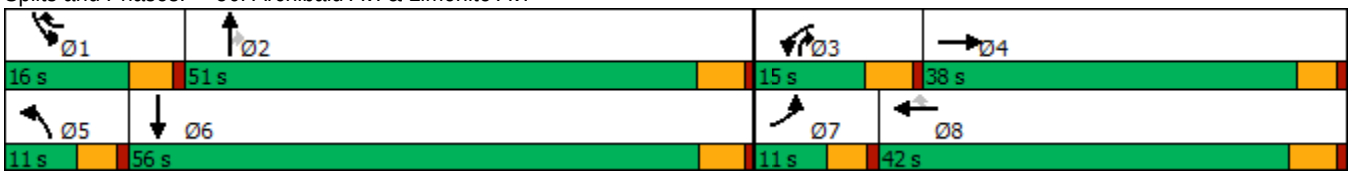
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	38.4	14.0	37.6	12.0	35.6	10.0	41.6
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	31.5	25.4	36.2	7.4	29.1	5.4	56.2
Max Q Clear Time (g_c+I1), s	4.8	29.7	9.6	30.2	9.4	31.1	7.4	4.2
Green Ext Time (p_c), s	0.0	1.2	0.1	1.2	0.0	0.0	0.0	0.4

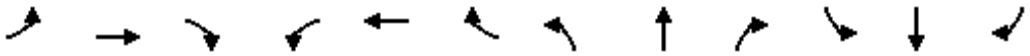
Intersection Summary	
HCM 6th Ctrl Delay	330.5
HCM 6th LOS	F

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	212	700	470	713	651	131	1143	484	554	1446
Future Volume (vph)	212	700	470	713	651	131	1143	484	554	1446
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4	3	8	1	5	2	3	1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	1	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.6	34.6	11.3	36.3	11.0	9.5	46.3	11.3	11.0	43.0
Total Split (s)	11.0	38.0	15.0	42.0	16.0	11.0	51.0	15.0	16.0	56.0
Total Split (%)	9.2%	31.7%	12.5%	35.0%	13.3%	9.2%	42.5%	12.5%	13.3%	46.7%
Yellow Time (s)	3.6	3.6	4.3	4.3	4.0	3.5	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	5.3	5.3	5.0	4.5	5.3	5.3	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	None	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 56: Archibald Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	700	127	470	713	651	131	1143	484	554	1446	282
Future Volume (veh/h)	212	700	127	470	713	651	131	1143	484	554	1446	282
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	230	761	138	511	775	655	142	1242	503	602	1572	307
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	96	432	78	145	587	644	97	722	734	165	651	127
Arrive On Green	0.05	0.28	0.28	0.08	0.31	0.31	0.05	0.38	0.38	0.09	0.42	0.42
Sat Flow, veh/h	1810	1565	284	1810	1900	1610	1810	1900	1590	1810	1544	302
Grp Volume(v), veh/h	230	0	899	511	775	655	142	1242	503	602	0	1879
Grp Sat Flow(s),veh/h/ln	1810	0	1849	1810	1900	1610	1810	1900	1590	1810	0	1846
Q Serve(g_s), s	6.4	0.0	33.4	9.7	37.4	37.4	6.5	46.0	30.2	11.0	0.0	51.0
Cycle Q Clear(g_c), s	6.4	0.0	33.4	9.7	37.4	37.4	6.5	46.0	30.2	11.0	0.0	51.0
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	96	0	510	145	587	644	97	722	734	165	0	778
V/C Ratio(X)	2.40	0.00	1.76	3.52	1.32	1.02	1.46	1.72	0.69	3.66	0.00	2.42
Avail Cap(c_a), veh/h	96	0	510	145	587	644	97	722	734	165	0	778
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.3	0.0	43.8	55.7	41.8	36.3	57.3	37.5	25.8	55.0	0.0	35.0
Incr Delay (d2), s/veh	662.1	0.0	350.6	1152.3	155.5	39.8	255.1	329.6	5.2	1211.7	0.0	640.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.5	0.0	64.4	50.7	41.9	24.7	9.8	86.0	11.6	60.2	0.0	159.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	719.4	0.0	394.4	1207.9	197.3	76.1	312.3	367.1	30.9	1266.7	0.0	675.8
LnGrp LOS	F	A	F	F	F	F	F	F	C	F	A	F
Approach Vol, veh/h		1129			1941			1887			2481	
Approach Delay, s/veh		460.6			422.5			273.4			819.2	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	51.3	15.0	38.7	11.0	56.3	11.0	42.7
Change Period (Y+Rc), s	5.0	5.3	5.3	* 5.3	4.5	* 5.3	4.6	5.3
Max Green Setting (Gmax), s	11.0	45.7	9.7	* 33	6.5	* 51	6.4	36.7
Max Q Clear Time (g_c+I1), s	13.0	48.0	11.7	35.4	8.5	53.0	8.4	39.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	522.8
HCM 6th LOS	F

Notes

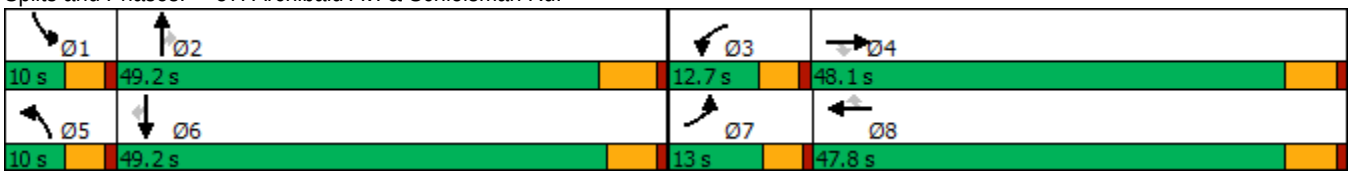
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

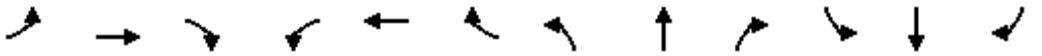
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	522	1577	234	329	870	286	238	1031	242	504	915	467
Future Volume (vph)	522	1577	234	329	870	286	238	1031	242	504	915	467
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	48.1	48.1	12.7	47.8	47.8	10.0	49.2	49.2	10.0	49.2	49.2
Total Split (%)	10.8%	40.1%	40.1%	10.6%	39.8%	39.8%	8.3%	41.0%	41.0%	8.3%	41.0%	41.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 109.9
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	522	1577	234	329	870	286	238	1031	242	504	915	467
Future Volume (veh/h)	522	1577	234	329	870	286	238	1031	242	504	915	467
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	533	1609	157	336	888	266	243	1052	210	514	934	363
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	271	2013	625	261	1999	619	174	1523	473	174	1523	471
Arrive On Green	0.08	0.39	0.39	0.07	0.39	0.39	0.05	0.29	0.29	0.05	0.29	0.29
Sat Flow, veh/h	3510	5187	1610	3510	5187	1608	3510	5187	1610	3510	5187	1605
Grp Volume(v), veh/h	533	1609	157	336	888	266	243	1052	210	514	934	363
Grp Sat Flow(s),veh/h/ln	1755	1729	1610	1755	1729	1608	1755	1729	1610	1755	1729	1605
Q Serve(g_s), s	8.4	30.0	7.2	8.1	13.8	13.3	5.4	19.6	11.5	5.4	16.9	22.5
Cycle Q Clear(g_c), s	8.4	30.0	7.2	8.1	13.8	13.3	5.4	19.6	11.5	5.4	16.9	22.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	271	2013	625	261	1999	619	174	1523	473	174	1523	471
V/C Ratio(X)	1.97	0.80	0.25	1.29	0.44	0.43	1.40	0.69	0.44	2.96	0.61	0.77
Avail Cap(c_a), veh/h	271	2013	625	261	1999	619	174	2046	635	174	2084	645
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.3	29.6	22.6	50.5	24.8	24.7	51.8	34.1	31.3	51.8	33.2	35.1
Incr Delay (d2), s/veh	449.8	3.4	1.0	155.4	0.7	2.2	209.8	0.6	0.7	895.4	0.4	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.5	12.3	2.8	9.1	5.5	5.2	7.4	7.8	4.4	23.9	6.7	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	500.1	33.0	23.6	205.8	25.6	26.8	261.6	34.7	31.9	947.2	33.6	39.0
LnGrp LOS	F	C	C	F	C	C	F	C	C	F	C	D
Approach Vol, veh/h		2299			1490			1505			1811	
Approach Delay, s/veh		140.7			66.4			71.0			294.0	
Approach LOS		F			E			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	38.2	12.7	48.1	10.0	38.2	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.4	43.0	8.1	42.3	5.4	* 44	8.4	42.0
Max Q Clear Time (g_c+I1), s	7.4	21.6	10.1	32.0	7.4	24.5	10.4	15.8
Green Ext Time (p_c), s	0.0	7.6	0.0	7.2	0.0	7.0	0.0	7.2

Intersection Summary		
HCM 6th Ctrl Delay		149.4
HCM 6th LOS		F

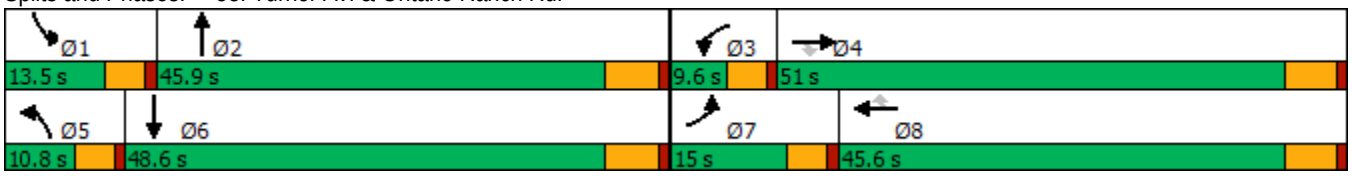
Notes

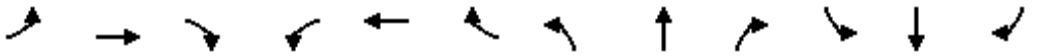
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	185	2140	48	39	1585	142	32	10	126	10
Future Volume (vph)	185	2140	48	39	1585	142	32	10	126	10
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	15.0	51.0	51.0	9.6	45.6	45.6	10.8	45.9	13.5	48.6
Total Split (%)	12.5%	42.5%	42.5%	8.0%	38.0%	38.0%	9.0%	38.3%	11.3%	40.5%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 93.2
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	2140	48	39	1585	142	32	10	48	126	10	122
Future Volume (veh/h)	185	2140	48	39	1585	142	32	10	48	126	10	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	201	2326	40	42	1723	151	35	11	34	137	11	119
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	207	1927	859	73	1645	734	67	59	182	177	29	313
Arrive On Green	0.12	0.53	0.53	0.04	0.46	0.46	0.04	0.15	0.13	0.10	0.21	0.19
Sat Flow, veh/h	1714	3610	1610	1714	3610	1610	1714	406	1254	1714	138	1493
Grp Volume(v), veh/h	201	2326	40	42	1723	151	35	0	45	137	0	130
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1714	1805	1610	1714	0	1660	1714	0	1631
Q Serve(g_s), s	10.7	48.7	1.1	2.2	41.6	5.1	1.8	0.0	2.2	7.1	0.0	6.3
Cycle Q Clear(g_c), s	10.7	48.7	1.1	2.2	41.6	5.1	1.8	0.0	2.2	7.1	0.0	6.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.76	1.00		0.92
Lane Grp Cap(c), veh/h	207	1927	859	73	1645	734	67	0	241	177	0	342
V/C Ratio(X)	0.97	1.21	0.05	0.58	1.05	0.21	0.53	0.00	0.19	0.77	0.00	0.38
Avail Cap(c_a), veh/h	207	1927	859	105	1645	734	128	0	762	178	0	797
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.0	21.3	10.2	42.9	24.8	14.9	43.1	0.0	34.9	39.9	0.0	31.7
Incr Delay (d2), s/veh	54.5	98.4	0.1	2.7	35.8	0.6	2.4	0.0	0.4	17.1	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	43.4	0.4	0.9	23.6	1.8	0.8	0.0	0.9	3.7	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	94.5	119.7	10.3	45.6	60.6	15.6	45.4	0.0	35.3	57.0	0.0	32.4
LnGrp LOS	F	F	B	D	F	B	D	A	D	E	A	C
Approach Vol, veh/h		2567			1916			80			267	
Approach Delay, s/veh		116.0			56.7			39.7			45.0	
Approach LOS		F			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	17.3	7.9	52.7	7.5	23.2	15.0	45.6
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	8.9	40.1	5.0	45.2	6.2	42.8	10.4	39.8
Max Q Clear Time (g_c+I1), s	9.1	4.2	4.2	50.7	3.8	8.3	12.7	43.6
Green Ext Time (p_c), s	0.0	0.2	0.0	0.0	0.0	0.7	0.0	0.0

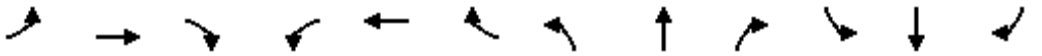
Intersection Summary	
HCM 6th Ctrl Delay	87.3
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	109	1773	173	241	1682	126	88	56	179	66	53
Future Volume (vph)	109	1773	173	241	1682	126	88	56	179	66	53
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	15.0	53.7	53.7	16.0	54.7	54.7	11.0	40.3	40.3	10.0	39.3
Total Split (%)	12.5%	44.8%	44.8%	13.3%	45.6%	45.6%	9.2%	33.6%	33.6%	8.3%	32.8%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 95.9
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 59: Harrison Av. & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	1773	173	241	1682	126	88	56	179	66	53	51
Future Volume (veh/h)	109	1773	173	241	1682	126	88	56	179	66	53	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	111	1809	172	246	1716	127	90	57	98	67	54	43
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	141	2398	744	234	2665	827	116	187	156	86	81	64
Arrive On Green	0.08	0.46	0.46	0.13	0.51	0.51	0.06	0.10	0.10	0.05	0.08	0.08
Sat Flow, veh/h	1810	5187	1610	1810	5187	1610	1810	1900	1587	1810	980	780
Grp Volume(v), veh/h	111	1809	172	246	1716	127	90	57	98	67	0	97
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1610	1810	1900	1587	1810	0	1760
Q Serve(g_s), s	5.1	24.5	5.5	11.0	20.4	3.5	4.2	2.4	5.0	3.1	0.0	4.6
Cycle Q Clear(g_c), s	5.1	24.5	5.5	11.0	20.4	3.5	4.2	2.4	5.0	3.1	0.0	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	141	2398	744	234	2665	827	116	187	156	86	0	145
V/C Ratio(X)	0.79	0.75	0.23	1.05	0.64	0.15	0.78	0.31	0.63	0.77	0.00	0.67
Avail Cap(c_a), veh/h	213	2849	884	234	2910	903	128	782	653	106	0	704
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.5	18.9	13.8	37.0	15.0	10.9	39.2	35.6	36.8	40.0	0.0	37.9
Incr Delay (d2), s/veh	5.4	1.0	0.2	72.8	0.4	0.1	20.7	0.9	4.1	19.2	0.0	5.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	8.5	1.8	9.2	6.7	1.1	2.4	1.1	2.0	1.8	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.9	19.9	13.9	109.9	15.5	11.0	59.9	36.5	41.0	59.2	0.0	43.2
LnGrp LOS	D	B	B	F	B	B	E	D	D	E	A	D
Approach Vol, veh/h		2092			2089			245			164	
Approach Delay, s/veh		20.6			26.3			46.9			49.7	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	46.3	10.4	12.3	11.6	50.7	9.1	13.7
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	11.0	46.7	6.0	34.0	10.0	47.7	5.0	35.0
Max Q Clear Time (g_c+I1), s	13.0	26.5	6.2	6.6	7.1	22.4	5.1	7.0
Green Ext Time (p_c), s	0.0	12.8	0.0	0.4	0.0	13.7	0.0	0.5

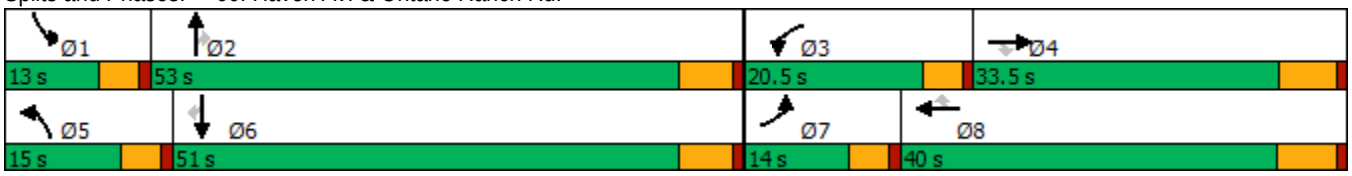
Intersection Summary	
HCM 6th Ctrl Delay	25.7
HCM 6th LOS	C

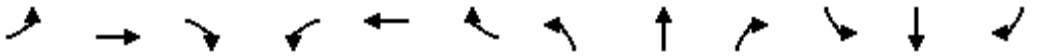
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	329	1741	81	75	1396	349	79	242	47	283	320	255
Future Volume (vph)	329	1741	81	75	1396	349	79	242	47	283	320	255
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	14.0	33.5	33.5	20.5	40.0	40.0	15.0	53.0	53.0	13.0	51.0	51.0
Total Split (%)	11.7%	27.9%	27.9%	17.1%	33.3%	33.3%	12.5%	44.2%	44.2%	10.8%	42.5%	42.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2	-2.2	-0.6	-2.5	-2.5	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 97.3
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	329	1741	81	75	1396	349	79	242	47	283	320	255
Future Volume (veh/h)	329	1741	81	75	1396	349	79	242	47	283	320	255
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	343	1814	53	78	1454	290	82	252	35	295	333	193
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	193	2339	726	111	1466	654	115	379	321	174	444	376
Arrive On Green	0.11	0.45	0.45	0.06	0.41	0.41	0.07	0.20	0.20	0.10	0.23	0.23
Sat Flow, veh/h	1714	5187	1610	1714	3610	1610	1714	1900	1610	1714	1900	1610
Grp Volume(v), veh/h	343	1814	53	78	1454	290	82	252	35	295	333	193
Grp Sat Flow(s),veh/h/ln	1714	1729	1610	1714	1805	1610	1714	1900	1610	1714	1900	1610
Q Serve(g_s), s	10.0	26.2	1.7	4.0	35.5	11.6	4.2	10.9	1.6	9.0	14.4	9.3
Cycle Q Clear(g_c), s	10.0	26.2	1.7	4.0	35.5	11.6	4.2	10.9	1.6	9.0	14.4	9.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	193	2339	726	111	1466	654	115	379	321	174	444	376
V/C Ratio(X)	1.77	0.78	0.07	0.71	0.99	0.44	0.71	0.67	0.11	1.70	0.75	0.51
Avail Cap(c_a), veh/h	193	2339	726	319	1466	654	213	1050	890	174	1007	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.3	20.6	13.8	40.7	26.2	19.1	40.5	32.8	29.1	39.8	31.6	29.6
Incr Delay (d2), s/veh	368.6	2.6	0.2	3.1	21.7	2.2	3.0	2.0	0.1	336.4	2.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.7	9.6	0.6	1.6	17.3	4.1	1.8	4.9	0.6	19.9	6.5	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	407.9	23.2	14.0	43.7	47.9	21.3	43.5	34.8	29.2	376.3	34.2	30.7
LnGrp LOS	F	C	B	D	D	C	D	C	C	F	C	C
Approach Vol, veh/h		2210			1822			369			821	
Approach Delay, s/veh		82.7			43.5			36.2			156.3	
Approach LOS		F			D			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	21.7	9.7	44.3	10.0	24.7	14.0	40.0
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	8.4	47.2	15.9	* 27	10.4	45.2	9.4	33.5
Max Q Clear Time (g_c+I1), s	11.0	12.9	6.0	28.2	6.2	16.4	12.0	37.5
Green Ext Time (p_c), s	0.0	1.5	0.0	0.0	0.0	2.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	77.3
HCM 6th LOS	E

Notes

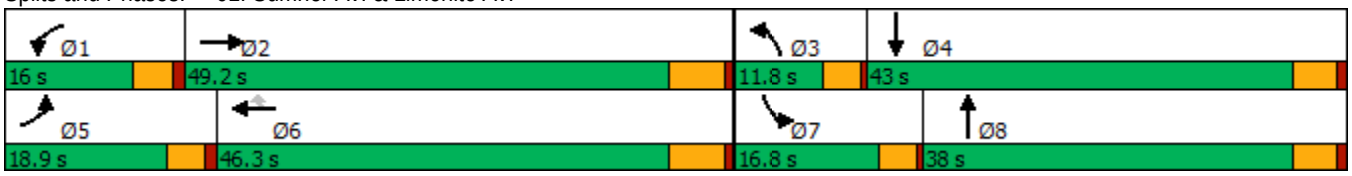
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	321	1382	246	1524	52	72	247	134	510
Future Volume (vph)	321	1382	246	1524	52	72	247	134	510
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	18.9	49.2	16.0	46.3	46.3	11.8	38.0	16.8	43.0
Total Split (%)	15.8%	41.0%	13.3%	38.6%	38.6%	9.8%	31.7%	14.0%	35.8%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 108
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 61: Sumner Av. & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	321	1382	101	246	1524	52	72	247	161	134	510	416
Future Volume (veh/h)	321	1382	101	246	1524	52	72	247	161	134	510	416
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	331	1425	92	254	1571	46	74	255	95	138	526	331
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	396	1897	122	319	1862	578	95	638	231	168	611	384
Arrive On Green	0.11	0.38	0.38	0.09	0.36	0.36	0.05	0.25	0.25	0.09	0.29	0.29
Sat Flow, veh/h	3510	4978	321	3510	5187	1610	1810	2582	935	1810	2128	1337
Grp Volume(v), veh/h	331	990	527	254	1571	46	74	176	174	138	446	411
Grp Sat Flow(s),veh/h/ln	1755	1729	1842	1755	1729	1610	1810	1805	1712	1810	1805	1659
Q Serve(g_s), s	9.6	25.7	25.7	7.3	28.8	2.0	4.2	8.4	8.8	7.8	24.2	24.3
Cycle Q Clear(g_c), s	9.6	25.7	25.7	7.3	28.8	2.0	4.2	8.4	8.8	7.8	24.2	24.3
Prop In Lane	1.00		0.17	1.00		1.00	1.00		0.55	1.00		0.81
Lane Grp Cap(c), veh/h	396	1318	702	319	1862	578	95	446	423	168	518	477
V/C Ratio(X)	0.83	0.75	0.75	0.80	0.84	0.08	0.78	0.39	0.41	0.82	0.86	0.86
Avail Cap(c_a), veh/h	488	1442	768	390	2018	626	136	575	546	224	662	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	27.8	27.8	46.1	30.5	21.9	48.5	32.5	32.7	46.2	35.0	35.0
Incr Delay (d2), s/veh	8.4	2.1	3.8	7.3	3.3	0.1	9.6	0.4	0.5	12.7	8.5	9.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	10.1	11.1	3.4	11.6	0.7	2.1	3.6	3.6	4.0	11.3	10.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.4	29.9	31.6	53.5	33.8	22.0	58.0	32.9	33.1	58.8	43.5	44.3
LnGrp LOS	D	C	C	D	C	C	E	C	C	E	D	D
Approach Vol, veh/h		1848			1871			424			995	
Approach Delay, s/veh		34.6			36.2			37.4			45.9	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	45.5	9.5	34.7	16.2	43.2	13.6	30.6
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	11.5	43.2	7.8	38.0	14.4	40.3	12.8	33.0
Max Q Clear Time (g_c+I1), s	9.3	27.7	6.2	26.3	11.6	30.8	9.8	10.8
Green Ext Time (p_c), s	0.1	8.2	0.0	3.3	0.1	6.3	0.0	1.4

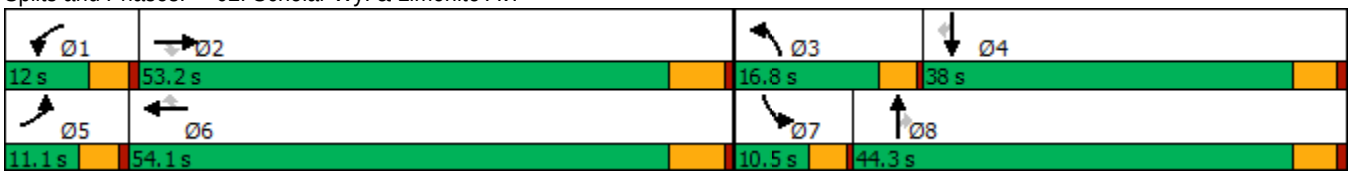
Intersection Summary	
HCM 6th Ctrl Delay	37.6
HCM 6th LOS	D

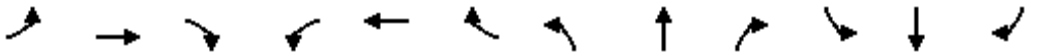
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	1201	209	142	1423	64	179	108	145	33	152	94
Future Volume (vph)	86	1201	209	142	1423	64	179	108	145	33	152	94
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	11.1	53.2	53.2	12.0	54.1	54.1	16.8	44.3	44.3	10.5	38.0	38.0
Total Split (%)	9.3%	44.3%	44.3%	10.0%	45.1%	45.1%	14.0%	36.9%	36.9%	8.8%	31.7%	31.7%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 100.5
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	1201	209	142	1423	64	179	108	145	33	152	94
Future Volume (veh/h)	86	1201	209	142	1423	64	179	108	145	33	152	94
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	91	1278	208	151	1514	44	190	115	74	35	162	93
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	117	1681	750	154	1755	783	225	385	326	47	376	164
Arrive On Green	0.06	0.47	0.47	0.08	0.49	0.49	0.12	0.20	0.20	0.03	0.10	0.10
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	1900	1610	1810	3610	1569
Grp Volume(v), veh/h	91	1278	208	151	1514	44	190	115	74	35	162	93
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1900	1610	1810	1805	1569
Q Serve(g_s), s	4.4	25.9	7.0	7.4	32.8	1.3	9.1	4.5	3.4	1.7	3.7	5.0
Cycle Q Clear(g_c), s	4.4	25.9	7.0	7.4	32.8	1.3	9.1	4.5	3.4	1.7	3.7	5.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	117	1681	750	154	1755	783	225	385	326	47	376	164
V/C Ratio(X)	0.78	0.76	0.28	0.98	0.86	0.06	0.84	0.30	0.23	0.74	0.43	0.57
Avail Cap(c_a), veh/h	135	1929	860	154	1966	877	262	845	716	133	1349	586
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.7	19.5	14.5	40.4	20.1	12.0	37.8	29.9	29.4	42.7	37.1	37.7
Incr Delay (d2), s/veh	18.4	1.6	0.2	67.1	3.9	0.0	17.1	0.3	0.3	8.2	0.6	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	9.6	2.4	5.9	12.5	0.4	5.0	2.0	1.3	0.8	1.6	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.1	21.1	14.7	107.4	24.0	12.0	54.9	30.2	29.7	50.9	37.7	40.0
LnGrp LOS	E	C	B	F	C	B	D	C	C	D	D	D
Approach Vol, veh/h		1577			1709			379			290	
Approach Delay, s/veh		22.4			31.0			42.5			40.0	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	47.1	15.0	14.2	10.2	48.9	6.3	22.9
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	7.5	47.2	12.8	33.0	6.6	48.1	6.5	39.3
Max Q Clear Time (g_c+I1), s	9.4	27.9	11.1	7.0	6.4	34.8	3.7	6.5
Green Ext Time (p_c), s	0.0	9.1	0.0	1.0	0.0	8.1	0.0	0.7

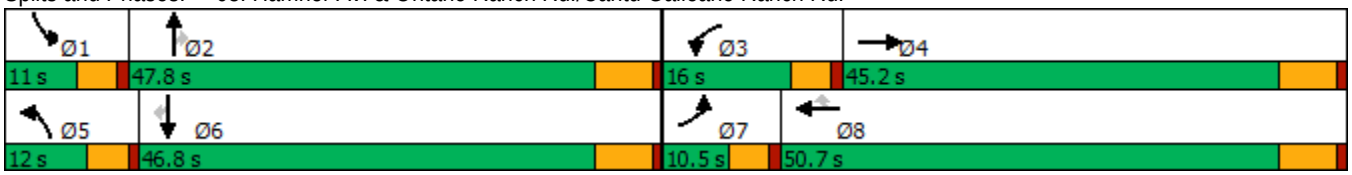
Intersection Summary	
HCM 6th Ctrl Delay	29.4
HCM 6th LOS	C

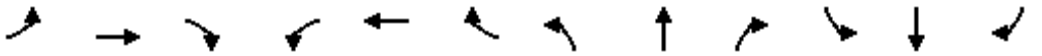
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	172	1331	940	1063	167	391	475	294	569	1050	221
Future Volume (vph)	172	1331	940	1063	167	391	475	294	569	1050	221
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	10.5	45.2	16.0	50.7	50.7	12.0	47.8	47.8	11.0	46.8	46.8
Total Split (%)	8.8%	37.7%	13.3%	42.3%	42.3%	10.0%	39.8%	39.8%	9.2%	39.0%	39.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2	-2.2
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 118.8
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	1331	537	940	1063	167	391	475	294	569	1050	221
Future Volume (veh/h)	172	1331	537	940	1063	167	391	475	294	569	1050	221
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1700	1900	1900	1700	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	179	1386	502	979	1107	140	407	495	227	593	1094	175
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	174	1703	559	320	1423	635	214	1842	571	187	1251	558
Arrive On Green	0.06	0.35	0.33	0.10	0.39	0.39	0.07	0.36	0.36	0.06	0.35	0.35
Sat Flow, veh/h	3141	4902	1610	3141	3610	1610	3141	5187	1609	3141	3610	1609
Grp Volume(v), veh/h	179	1386	502	979	1107	140	407	495	227	593	1094	175
Grp Sat Flow(s),veh/h/ln	1570	1634	1610	1570	1805	1610	1570	1729	1609	1570	1805	1609
Q Serve(g_s), s	6.5	30.3	34.9	12.0	31.5	6.8	8.0	8.0	12.5	7.0	33.4	9.4
Cycle Q Clear(g_c), s	6.5	30.3	34.9	12.0	31.5	6.8	8.0	8.0	12.5	7.0	33.4	9.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	174	1703	559	320	1423	635	214	1842	571	187	1251	558
V/C Ratio(X)	1.03	0.81	0.90	3.06	0.78	0.22	1.91	0.27	0.40	3.17	0.87	0.31
Avail Cap(c_a), veh/h	174	1716	564	320	1433	639	214	1931	599	187	1313	585
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.6	34.9	37.5	52.8	31.1	23.6	54.8	27.1	28.5	55.3	36.0	28.2
Incr Delay (d2), s/veh	76.9	3.1	17.0	933.7	2.8	0.2	424.7	0.1	0.4	992.0	6.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	11.6	15.6	46.1	13.3	2.5	15.7	3.2	4.6	28.4	14.9	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	132.5	38.0	54.5	986.5	33.9	23.8	479.5	27.1	28.9	1047.4	42.7	28.5
LnGrp LOS	F	D	D	F	C	C	F	C	C	F	D	C
Approach Vol, veh/h		2067			2226			1129			1862	
Approach Delay, s/veh		50.2			452.2			190.6			361.3	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	45.8	16.0	44.9	12.0	44.8	10.5	50.4
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	6.4	41.6	11.4	39.0	7.4	40.6	5.9	44.5
Max Q Clear Time (g_c+I1), s	9.0	14.5	14.0	36.9	10.0	35.4	8.5	33.5
Green Ext Time (p_c), s	0.0	3.8	0.0	1.8	0.0	3.1	0.0	5.5

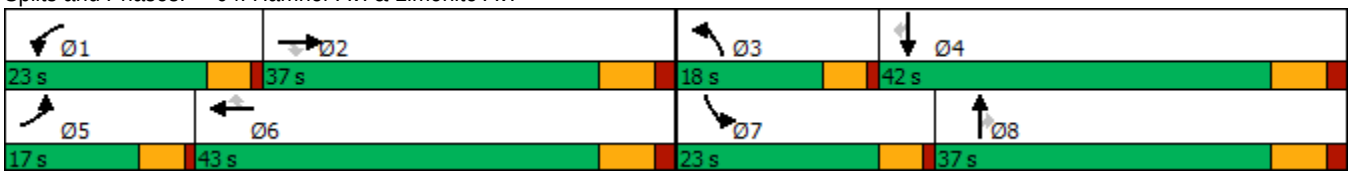
Intersection Summary	
HCM 6th Ctrl Delay	274.4
HCM 6th LOS	F

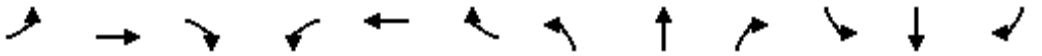
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	331	918	137	424	1021	432	225	666	370	490	720	253
Future Volume (vph)	331	918	137	424	1021	432	225	666	370	490	720	253
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	17.0	37.0	37.0	23.0	43.0	43.0	18.0	37.0	37.0	23.0	42.0	42.0
Total Split (%)	14.2%	30.8%	30.8%	19.2%	35.8%	35.8%	15.0%	30.8%	30.8%	19.2%	35.0%	35.0%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 117.4
Natural Cycle: 105
Control Type: Actuated-Uncoordinated

Splits and Phases: 64: Hamner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	331	918	137	424	1021	432	225	666	370	490	720	253
Future Volume (veh/h)	331	918	137	424	1021	432	225	666	370	490	720	253
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	341	946	120	437	1053	400	232	687	297	505	742	198
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	358	1384	429	492	1102	484	290	1226	372	536	1590	485
Arrive On Green	0.10	0.27	0.27	0.14	0.31	0.31	0.08	0.24	0.24	0.15	0.31	0.31
Sat Flow, veh/h	3510	5187	1607	3510	3610	1587	3510	5187	1576	3510	5187	1582
Grp Volume(v), veh/h	341	946	120	437	1053	400	232	687	297	505	742	198
Grp Sat Flow(s),veh/h/ln	1755	1729	1607	1755	1805	1587	1755	1729	1576	1755	1729	1582
Q Serve(g_s), s	11.4	19.3	7.0	14.4	33.7	27.6	7.6	13.7	20.9	16.8	13.6	11.7
Cycle Q Clear(g_c), s	11.4	19.3	7.0	14.4	33.7	27.6	7.6	13.7	20.9	16.8	13.6	11.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	358	1384	429	492	1102	484	290	1226	372	536	1590	485
V/C Ratio(X)	0.95	0.68	0.28	0.89	0.96	0.83	0.80	0.56	0.80	0.94	0.47	0.41
Avail Cap(c_a), veh/h	358	1384	429	536	1103	485	387	1321	401	536	1590	485
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.6	38.7	34.2	49.7	40.1	38.0	53.1	39.6	42.3	49.4	33.1	32.4
Incr Delay (d2), s/veh	35.2	1.8	0.8	14.7	17.7	12.3	6.1	0.9	12.1	24.8	0.5	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	8.1	2.7	7.1	17.0	11.9	3.5	5.8	9.1	9.0	5.6	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.9	40.5	35.0	64.4	57.8	50.4	59.2	40.5	54.5	74.2	33.5	33.6
LnGrp LOS	F	D	C	E	E	D	E	D	D	E	C	C
Approach Vol, veh/h		1407			1890			1216			1445	
Approach Delay, s/veh		51.5			57.8			47.5			47.7	
Approach LOS		D			E			D			D	

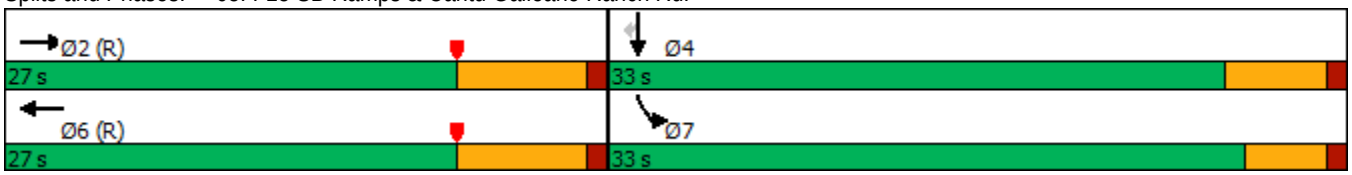
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.5	38.4	14.7	43.1	17.0	43.0	23.0	34.8
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	18.0	30.0	13.0	35.0	12.0	36.0	18.0	30.0
Max Q Clear Time (g_c+I1), s	16.4	21.3	9.6	15.6	13.4	35.7	18.8	22.9
Green Ext Time (p_c), s	0.1	5.9	0.1	9.2	0.0	0.3	0.0	4.5

Intersection Summary	
HCM 6th Ctrl Delay	51.8
HCM 6th LOS	D

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1626	620	879	528	522	0	1228
Future Volume (vph)	1626	620	879	528	522	0	1228
Turn Type	NA	Free	NA	Free	Prot	NA	Perm
Protected Phases	2		6		7	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		7	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		9.6	10.5	10.5
Total Split (s)	27.0		27.0		33.0	33.0	33.0
Total Split (%)	45.0%		45.0%		55.0%	55.0%	55.0%
Yellow Time (s)	5.8		5.8		3.6	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-2.8		-2.8		-0.6	-1.5	-1.5
Total Lost Time (s)	4.0		4.0		4.0	4.0	4.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Min		None	Min	Min

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 53 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	✣	↱
Traffic Volume (veh/h)	0	1626	620	0	879	528	0	0	0	522	0	1228
Future Volume (veh/h)	0	1626	620	0	879	528	0	0	0	522	0	1228
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1676	0	0	906	0				359	0	1126
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2339		0	1628					752	0	1387
Arrive On Green	0.00	0.45	0.00	0.00	0.45	0.00				0.42	0.00	0.43
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1676	0	0	906	0				359	0	1126
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	15.7	0.0	0.0	11.0	0.0				8.7	0.0	18.4
Cycle Q Clear(g_c), s	0.0	15.7	0.0	0.0	11.0	0.0				8.7	0.0	18.4
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2339		0	1628					752	0	1387
V/C Ratio(X)	0.00	0.72		0.00	0.56					0.48	0.00	0.81
Avail Cap(c_a), veh/h	0	2339		0	1628					875	0	1605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.09	0.00	0.00	0.89	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.4	0.0	0.0	12.1	0.0				12.8	0.0	15.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	1.2	0.0				0.5	0.0	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.5	0.0	0.0	3.5	0.0				2.9	0.0	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.5	0.0	0.0	13.3	0.0				13.2	0.0	17.8
LnGrp LOS	A	B		A	B					B	A	B
Approach Vol, veh/h		1676	A		906	A					1485	
Approach Delay, s/veh		13.5			13.3						16.7	
Approach LOS		B			B						B	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	31.1	28.9	31.1
Change Period (Y+Rc), s	6.8	4.6	6.8
Max Green Setting (Gmax), s	20.2	28.4	20.2
Max Q Clear Time (g_c+I1), s	17.7	20.4	13.0
Green Ext Time (p_c), s	2.0	4.0	3.1

Intersection Summary	
HCM 6th Ctrl Delay	14.6
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

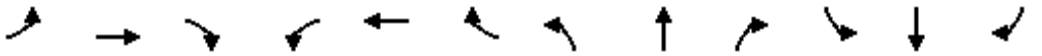
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1798	680	1746	837	511	1	507
Future Volume (vph)	1798	680	1746	837	511	1	507
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		4	4	
Permitted Phases		2		6			4
Detector Phase	2	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	36.5	36.5	23.5	23.5	23.5
Total Split (s)	73.0	73.0	73.0	73.0	37.0	37.0	37.0
Total Split (%)	66.4%	66.4%	66.4%	66.4%	33.6%	33.6%	33.6%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	Min	Min

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	↰	↱↱
Traffic Volume (veh/h)	0	1798	680	0	1746	837	0	0	0	511	1	507
Future Volume (veh/h)	0	1798	680	0	1746	837	0	0	0	511	1	507
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1835	548	0	1782	854				522	0	283
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	3781	1174	0	3781	1174				619	0	551
Arrive On Green	0.00	0.73	0.73	0.00	0.73	0.73				0.17	0.00	0.17
Sat Flow, veh/h	0	5358	1610	0	5358	1610				3619	0	3220
Grp Volume(v), veh/h	0	1835	548	0	1782	854				522	0	283
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1610				1810	0	1610
Q Serve(g_s), s	0.0	16.3	15.4	0.0	15.6	33.7				15.4	0.0	8.8
Cycle Q Clear(g_c), s	0.0	16.3	15.4	0.0	15.6	33.7				15.4	0.0	8.8
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3781	1174	0	3781	1174				619	0	551
V/C Ratio(X)	0.00	0.49	0.47	0.00	0.47	0.73				0.84	0.00	0.51
Avail Cap(c_a), veh/h	0	3781	1174	0	3781	1174				1036	0	922
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.63	0.63				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.3	6.1	0.0	6.2	8.6				44.2	0.0	41.4
Incr Delay (d2), s/veh	0.0	0.4	1.3	0.0	0.3	2.5				1.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.6	4.4	0.0	4.4	9.4				6.7	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	6.7	7.5	0.0	6.4	11.1				45.5	0.0	41.7
LnGrp LOS	A	A	A	A	A	B				D	A	D
Approach Vol, veh/h		2383			2636						805	
Approach Delay, s/veh		6.9			7.9						44.2	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		85.7		24.3		85.7						
Change Period (Y+Rc), s		5.5		5.5		5.5						
Max Green Setting (Gmax), s		67.5		31.5		67.5						
Max Q Clear Time (g_c+I1), s		18.3		17.4		35.7						
Green Ext Time (p_c), s		14.3		1.4		13.9						

Intersection Summary												
HCM 6th Ctrl Delay			12.5									
HCM 6th LOS			B									

Notes

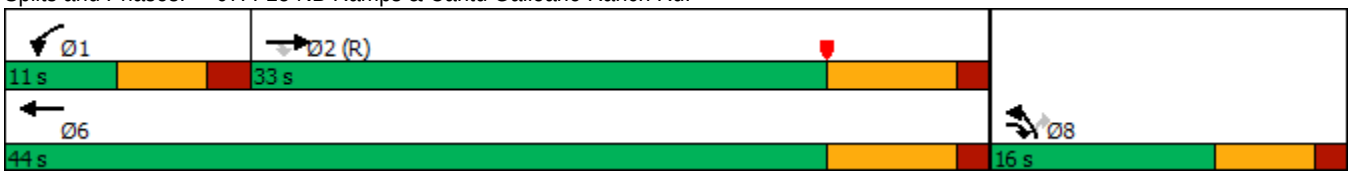
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	890	1258	368	1021	386	289
Future Volume (vph)	890	1258	368	1021	386	289
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	33.0	16.0	11.0	44.0	16.0	16.0
Total Split (%)	55.0%	26.7%	18.3%	73.3%	26.7%	26.7%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	-3.3	-2.0	-2.0	-3.3	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	890	1258	368	1021	386	289
Future Volume (veh/h)	890	1258	368	1021	386	289
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	937	1108	387	1075	406	201
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2507	1065	410	3458	724	322
Arrive On Green	0.81	0.77	0.12	0.67	0.20	0.20
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	937	1108	387	1075	406	201
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	3.0	27.7	6.6	5.2	6.1	6.8
Cycle Q Clear(g_c), s	3.0	27.7	6.6	5.2	6.1	6.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2507	1065	410	3458	724	322
V/C Ratio(X)	0.37	1.04	0.94	0.31	0.56	0.62
Avail Cap(c_a), veh/h	2507	1065	410	3458	724	322
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.52	0.52	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.3	3.5	26.3	4.2	21.6	21.9
Incr Delay (d2), s/veh	0.2	31.2	32.6	0.1	3.1	8.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	12.5	4.2	0.8	2.5	3.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.5	34.6	58.9	4.3	24.8	30.8
LnGrp LOS	A	F	E	A	C	C
Approach Vol, veh/h	2045			1462	607	
Approach Delay, s/veh	20.4			18.7	26.7	
Approach LOS	C			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	11.0	33.0				44.0	16.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	5.0	25.7				36.7	10.0
Max Q Clear Time (g_c+I1), s	8.6	29.7				7.2	8.8
Green Ext Time (p_c), s	0.0	0.0				7.7	0.3

Intersection Summary		
HCM 6th Ctrl Delay		20.7
HCM 6th LOS		C

Notes

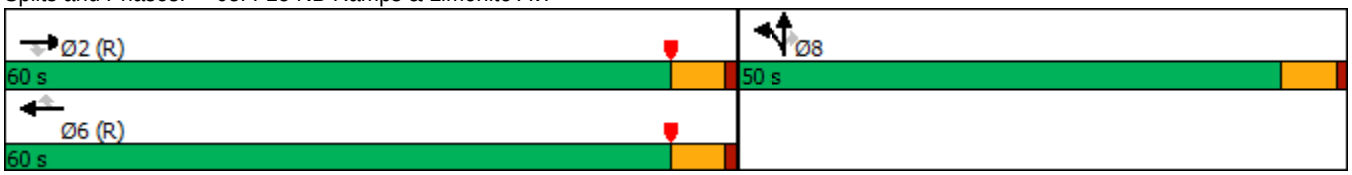
User approved volume balancing among the lanes for turning movement.

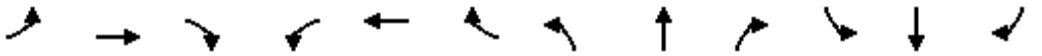
Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	1749	560	2008	455	576	2	901
Future Volume (vph)	1749	560	2008	455	576	2	901
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		8	8	
Permitted Phases		2		6			8
Detector Phase	2	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	60.0	60.0	60.0	60.0	50.0	50.0	50.0
Total Split (%)	54.5%	54.5%	54.5%	54.5%	45.5%	45.5%	45.5%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱	↰	↕	↱↱			
Traffic Volume (veh/h)	0	1749	560	0	2008	455	576	2	901	0	0	0
Future Volume (veh/h)	0	1749	560	0	2008	455	576	2	901	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	0	1767	566	0	2028	369	583	0	617			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	0	3399	1055	0	3399	1054	886	0	777			
Arrive On Green	0.00	0.66	0.66	0.00	0.66	0.66	0.24	0.00	0.24			
Sat Flow, veh/h	0	5358	1610	0	5358	1609	3619	0	3176			
Grp Volume(v), veh/h	0	1767	566	0	2028	369	583	0	617			
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1609	1810	0	1588			
Q Serve(g_s), s	0.0	19.6	20.6	0.0	24.3	11.3	16.0	0.0	20.0			
Cycle Q Clear(g_c), s	0.0	19.6	20.6	0.0	24.3	11.3	16.0	0.0	20.0			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3399	1055	0	3399	1054	886	0	777			
V/C Ratio(X)	0.00	0.52	0.54	0.00	0.60	0.35	0.66	0.00	0.79			
Avail Cap(c_a), veh/h	0	3399	1055	0	3399	1054	1464	0	1285			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.82	0.82	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	9.9	10.1	0.0	10.7	8.5	37.4	0.0	38.9			
Incr Delay (d2), s/veh	0.0	0.5	1.6	0.0	0.8	0.9	0.8	0.0	1.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	6.4	6.6	0.0	8.0	3.6	6.9	0.0	7.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	10.4	11.7	0.0	11.5	9.4	38.2	0.0	40.8			
LnGrp LOS	A	B	B	A	B	A	D	A	D			
Approach Vol, veh/h		2333			2397			1200				
Approach Delay, s/veh		10.7			11.2			39.6				
Approach LOS		B			B			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		77.6				77.6		32.4				
Change Period (Y+Rc), s		5.5				5.5		5.5				
Max Green Setting (Gmax), s		54.5				54.5		44.5				
Max Q Clear Time (g_c+I1), s		22.6				26.3		22.0				
Green Ext Time (p_c), s		12.2				13.3		4.9				
Intersection Summary												
HCM 6th Ctrl Delay			16.7									
HCM 6th LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.

APPENDIX 9.2:

HORIZON YEAR (2040) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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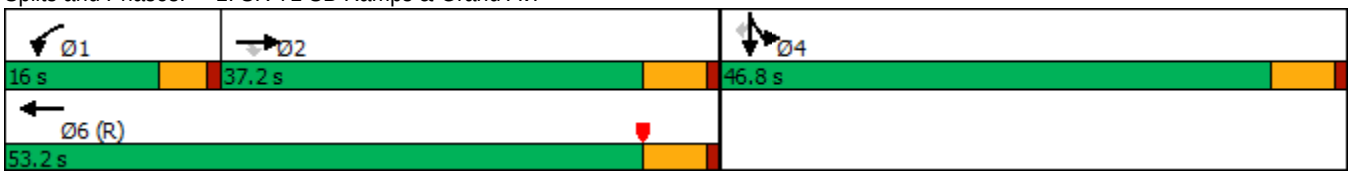
Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1147	241	206	1654	1066	5	370
Future Volume (vph)	1147	241	206	1654	1066	5	370
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	37.2	37.2	16.0	53.2	46.8	46.8	46.8
Total Split (%)	37.2%	37.2%	16.0%	53.2%	46.8%	46.8%	46.8%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1147	241	206	1654	0	0	0	0	1066	5	370
Future Volume (veh/h)	0	1147	241	206	1654	0	0	0	0	1066	5	370
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1247	179	224	1798	0				1163	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1882	584	313	2552	0				1339	0	
Arrive On Green	0.00	0.36	0.36	0.09	0.49	0.00				0.37	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	1247	179	224	1798	0				1163	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	20.2	8.0	6.2	27.0	0.0				29.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	20.2	8.0	6.2	27.0	0.0				29.8	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1882	584	313	2552	0				1339	0	
V/C Ratio(X)	0.00	0.66	0.31	0.72	0.70	0.00				0.87	0.00	
Avail Cap(c_a), veh/h	0	1882	584	421	2552	0				1549	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	26.7	22.8	44.3	19.7	0.0				29.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.9	1.4	0.2	0.2	0.0				5.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.1	3.1	2.6	9.7	0.0				12.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	28.6	24.2	44.5	19.9	0.0				34.3	0.0	0.0
LnGrp LOS	A	C	C	D	B	A				C	A	
Approach Vol, veh/h		1426			2022						1163	A
Approach Delay, s/veh		28.0			22.6						34.3	
Approach LOS		C			C						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	12.9	40.3		41.0		53.2
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	11.4	31.4		41.0		47.4
Max Q Clear Time (g_c+I1), s	8.2	22.2		31.8		29.0
Green Ext Time (p_c), s	0.1	5.5		3.4		11.7

Intersection Summary		
HCM 6th Ctrl Delay		27.2
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

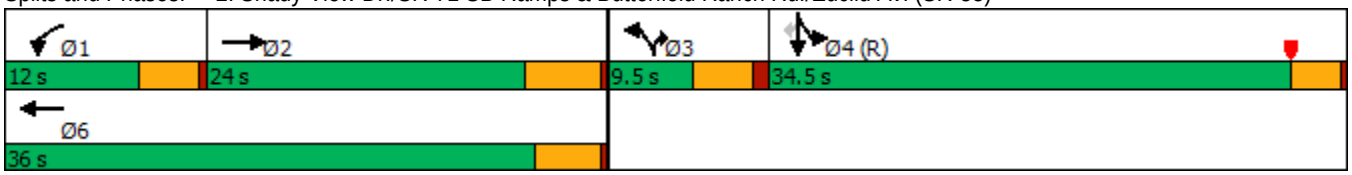
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

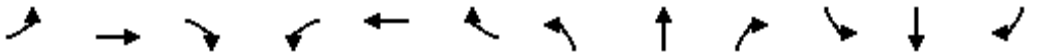
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	818	234	404	21	330	669	30	14
Future Volume (vph)	818	234	404	21	330	669	30	14
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	24.0	12.0	36.0	9.5	9.5	34.5	34.5	34.5
Total Split (%)	30.0%	15.0%	45.0%	11.9%	11.9%	43.1%	43.1%	43.1%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	818	36	234	404	0	21	0	330	669	30	14
Future Volume (veh/h)	0	818	36	234	404	0	21	0	330	669	30	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	835	28	239	412	0	21	0	268	705	0	-2
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	846	28	181	1399		0	0	0	1832	0	815
Arrive On Green	0.00	0.24	0.24	0.03	0.13	0.00	0.00	0.00	0.00	0.51	0.00	0.00
Sat Flow, veh/h	0	3659	120	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	423	440	239	412	0		0.0		705	0	-2
Grp Sat Flow(s),veh/h/ln	0	1805	1878	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	18.7	18.7	8.0	8.3	0.0				9.6	0.0	0.0
Cycle Q Clear(g_c), s	0.0	18.7	18.7	8.0	8.3	0.0				9.6	0.0	0.0
Prop In Lane	0.00		0.06	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	429	446	181	1399					1832	0	815
V/C Ratio(X)	0.00	0.99	0.99	1.32	0.29					0.38	0.00	0.00
Avail Cap(c_a), veh/h	0	429	446	181	1421					1832	0	815
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.67	0.67	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	30.4	30.4	38.7	25.0	0.0				12.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	39.7	38.9	167.9	0.1	0.0				0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.1	12.5	12.0	3.5	0.0				3.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	70.1	69.3	206.6	25.0	0.0				12.7	0.0	0.0
LnGrp LOS	A	E	E	F	C					B	A	A
Approach Vol, veh/h		863			651	A					703	
Approach Delay, s/veh		69.6			91.7						12.8	
Approach LOS		E			F						B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	12.0	24.0		44.0		36.0						
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5						
Max Green Setting (Gmax), s	8.0	19.0		31.0		* 32						
Max Q Clear Time (g_c+I1), s	10.0	20.7		11.6		10.3						
Green Ext Time (p_c), s	0.0	0.0		2.5		1.9						

Intersection Summary												
HCM 6th Ctrl Delay			58.1									
HCM 6th LOS			E									

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

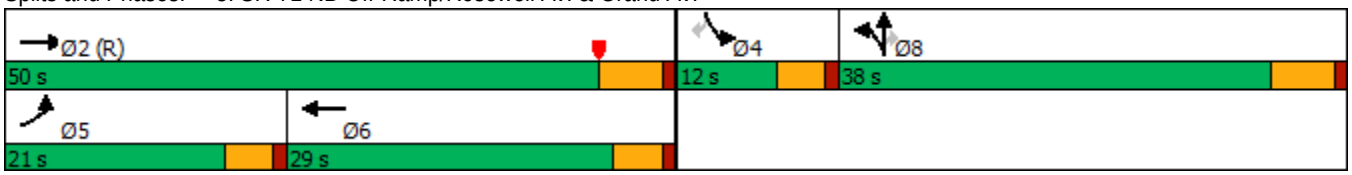
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

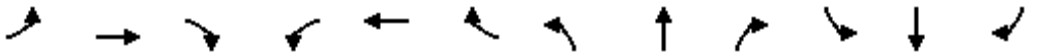
Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	632	1373	209	1501	564	84	78	117	809
Future Volume (vph)	632	1373	209	1501	564	84	78	117	809
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.6	34.8		14.7	34.8	34.8	34.8	9.5	9.5
Total Split (s)	21.0	50.0		29.0	38.0	38.0	38.0	12.0	12.0
Total Split (%)	21.0%	50.0%		29.0%	38.0%	38.0%	38.0%	12.0%	12.0%
Yellow Time (s)	3.6	4.8		3.7	4.8	4.8	4.8	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8		-0.7	-1.8	-1.8	-1.8	-0.5	-0.5
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	Max	Max	Max	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	632	1373	209	0	1501	171	564	84	78	117	0	809
Future Volume (veh/h)	632	1373	209	0	1501	171	564	84	78	117	0	809
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	687	1492	0	0	1632	186	678	0	45	127	0	603
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	308	3008		0	2153	245	1230	0	547	0	0	0
Arrive On Green	0.17	0.58	0.00	0.00	0.36	0.35	0.34	0.00	0.34	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6262	683	3619	0	1610		0	
Grp Volume(v), veh/h	687	1492	0	0	1334	484	678	0	45		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1777	1810	0	1610			
Q Serve(g_s), s	17.0	17.0	0.0	0.0	24.0	24.0	15.2	0.0	1.9			
Cycle Q Clear(g_c), s	17.0	17.0	0.0	0.0	24.0	24.0	15.2	0.0	1.9			
Prop In Lane	1.00		1.00	0.00		0.38	1.00		1.00			
Lane Grp Cap(c), veh/h	308	3008		0	1760	638	1230	0	547			
V/C Ratio(X)	2.23	0.50		0.00	0.76	0.76	0.55	0.00	0.08			
Avail Cap(c_a), veh/h	308	3008		0	1760	638	1230	0	547			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.64	0.64	0.00	0.00	0.84	0.84	1.00	0.00	1.00			
Uniform Delay (d), s/veh	41.5	12.4	0.0	0.0	28.2	28.4	26.8	0.0	22.4			
Incr Delay (d2), s/veh	561.7	0.4	0.0	0.0	1.6	4.4	1.8	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	55.2	5.8	0.0	0.0	9.2	10.6	6.5	0.0	0.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	603.2	12.8	0.0	0.0	29.9	32.8	28.6	0.0	22.7			
LnGrp LOS	F	B		A	C	C	C	A	C			
Approach Vol, veh/h		2179	A		1818			723				
Approach Delay, s/veh		198.9			30.7			28.2				
Approach LOS		F			C			C				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		62.0			21.0	41.0		38.0				
Change Period (Y+Rc), s		5.8			4.6	* 5.8		5.8				
Max Green Setting (Gmax), s		44.2			16.4	* 24		32.2				
Max Q Clear Time (g_c+I1), s		19.0			19.0	26.0		17.2				
Green Ext Time (p_c), s		11.4			0.0	0.0		2.4				

Intersection Summary		
HCM 6th Ctrl Delay	108.0	
HCM 6th LOS	F	

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

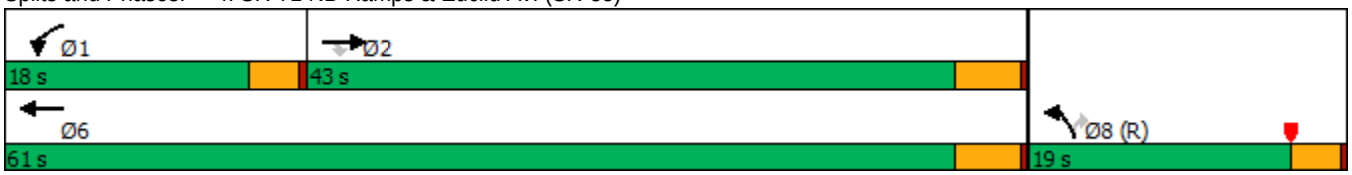
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	525	49	401	1658	156	558
Future Volume (vph)	525	49	401	1658	156	558
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	43.0	43.0	18.0	61.0	19.0	19.0
Total Split (%)	53.8%	53.8%	22.5%	76.3%	23.8%	23.8%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	525	49	401	1658	156	558
Future Volume (veh/h)	525	49	401	1658	156	558
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	559	0	427	1764	166	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1304		328	2116	1102	
Arrive On Green	0.48	0.00	0.18	0.59	0.31	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	559	0	427	1764	166	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	8.1	0.0	14.5	31.6	2.7	0.0
Cycle Q Clear(g_c), s	8.1	0.0	14.5	31.6	2.7	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1304		328	2116	1102	
V/C Ratio(X)	0.43		1.30	0.83	0.15	
Avail Cap(c_a), veh/h	1737		328	2550	1102	
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.14	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.4	0.0	32.8	13.4	19.8	0.0
Incr Delay (d2), s/veh	0.0	0.0	156.4	2.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	19.9	9.6	1.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.4	0.0	189.2	15.5	20.1	0.0
LnGrp LOS	B		F	B	C	
Approach Vol, veh/h	559	A		2191	166	A
Approach Delay, s/veh	15.4			49.4	20.1	
Approach LOS	B			D	C	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	18.0	33.4			51.4	28.6
Change Period (Y+Rc), s	3.5	4.5			4.5	3.5
Max Green Setting (Gmax), s	14.5	38.5			56.5	15.5
Max Q Clear Time (g_c+I1), s	16.5	10.1			33.6	4.7
Green Ext Time (p_c), s	0.0	2.9			13.3	0.2

Intersection Summary	
HCM 6th Ctrl Delay	41.2
HCM 6th LOS	D

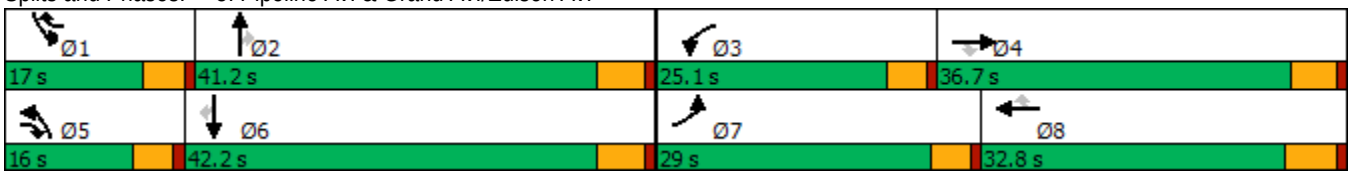
Notes

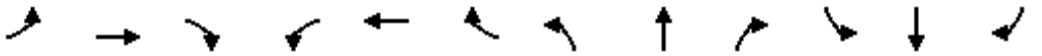
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	1092	171	180	991	62	171	264	118	107	470	153
Future Volume (vph)	200	1092	171	180	991	62	171	264	118	107	470	153
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	29.0	36.7	16.0	25.1	32.8	17.0	16.0	41.2	41.2	17.0	42.2	42.2
Total Split (%)	24.2%	30.6%	13.3%	20.9%	27.3%	14.2%	13.3%	34.3%	34.3%	14.2%	35.2%	35.2%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 91.2
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	1092	171	180	991	62	171	264	118	107	470	153
Future Volume (veh/h)	200	1092	171	180	991	62	171	264	118	107	470	153
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1700	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	206	1126	133	186	1022	49	176	272	53	110	485	124
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	315	2074	764	292	2082	763	270	796	354	150	802	352
Arrive On Green	0.09	0.40	0.39	0.09	0.40	0.39	0.09	0.22	0.22	0.09	0.22	0.22
Sat Flow, veh/h	3326	5187	1589	3326	5187	1606	3141	3610	1604	1714	3610	1583
Grp Volume(v), veh/h	206	1126	133	186	1022	49	176	272	53	110	485	124
Grp Sat Flow(s),veh/h/ln	1663	1729	1589	1663	1729	1606	1570	1805	1604	1714	1805	1583
Q Serve(g_s), s	4.9	13.6	3.9	4.4	12.0	1.4	4.4	5.2	2.2	5.1	9.9	5.4
Cycle Q Clear(g_c), s	4.9	13.6	3.9	4.4	12.0	1.4	4.4	5.2	2.2	5.1	9.9	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	315	2074	764	292	2082	763	270	796	354	150	802	352
V/C Ratio(X)	0.65	0.54	0.17	0.64	0.49	0.06	0.65	0.34	0.15	0.73	0.60	0.35
Avail Cap(c_a), veh/h	1017	2074	764	858	2082	763	461	1642	729	272	1686	739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	18.8	12.1	36.1	18.2	11.6	36.2	26.9	25.7	36.4	28.6	26.8
Incr Delay (d2), s/veh	0.9	1.0	0.5	0.9	0.8	0.2	1.0	0.3	0.2	2.6	0.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	5.2	1.3	1.7	4.4	0.5	1.7	2.1	0.8	2.2	4.1	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.6	19.8	12.6	36.9	19.1	11.8	37.2	27.1	25.9	38.9	29.3	27.4
LnGrp LOS	D	B	B	D	B	B	D	C	C	D	C	C
Approach Vol, veh/h		1465			1257			501			719	
Approach Delay, s/veh		21.5			21.4			30.5			30.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	22.0	11.2	37.4	11.0	22.2	11.7	36.8
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	12.4	35.8	20.5	* 32	11.4	36.8	24.4	27.0
Max Q Clear Time (g_c+I1), s	7.1	7.2	6.4	15.6	6.4	11.9	6.9	14.0
Green Ext Time (p_c), s	0.1	1.8	0.2	7.4	0.1	3.5	0.3	5.4

Intersection Summary	
HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

Notes

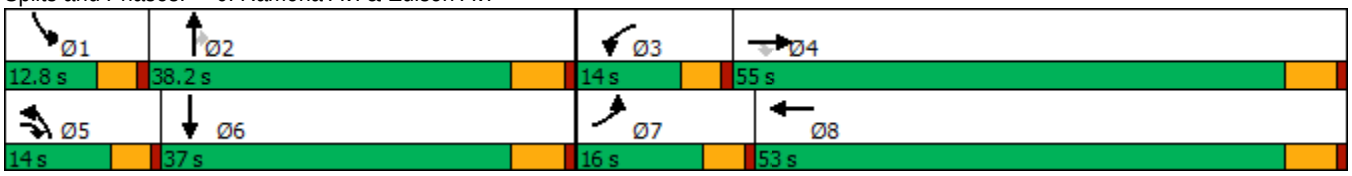
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

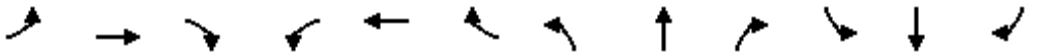
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	110	1118	74	139	1171	49	343	144	57	505
Future Volume (vph)	110	1118	74	139	1171	49	343	144	57	505
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	16.0	55.0	14.0	14.0	53.0	14.0	38.2	38.2	12.8	37.0
Total Split (%)	13.3%	45.8%	11.7%	11.7%	44.2%	11.7%	31.8%	31.8%	10.7%	30.8%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 110.9
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	1118	74	139	1171	78	49	343	144	57	505	103
Future Volume (veh/h)	110	1118	74	139	1171	78	49	343	144	57	505	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	120	1215	76	151	1273	81	53	373	127	62	549	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	155	1727	1421	161	1658	105	77	818	364	88	710	129
Arrive On Green	0.09	0.48	0.47	0.09	0.48	0.46	0.04	0.23	0.23	0.05	0.23	0.22
Sat Flow, veh/h	1714	3610	2772	1714	3444	219	1714	3610	1606	1714	3044	552
Grp Volume(v), veh/h	120	1215	76	151	666	688	53	373	127	62	325	324
Grp Sat Flow(s),veh/h/ln	1714	1805	1386	1714	1805	1857	1714	1805	1606	1714	1805	1792
Q Serve(g_s), s	7.3	28.2	1.5	9.3	32.3	32.6	3.2	9.5	7.1	3.8	17.9	18.1
Cycle Q Clear(g_c), s	7.3	28.2	1.5	9.3	32.3	32.6	3.2	9.5	7.1	3.8	17.9	18.1
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	155	1727	1421	161	869	894	77	818	364	88	421	418
V/C Ratio(X)	0.77	0.70	0.05	0.94	0.77	0.77	0.69	0.46	0.35	0.70	0.77	0.78
Avail Cap(c_a), veh/h	193	1727	1421	161	869	894	161	1158	515	141	559	555
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	21.9	13.1	48.0	22.7	22.9	50.2	35.6	34.6	49.8	38.2	38.6
Incr Delay (d2), s/veh	10.9	2.4	0.1	52.6	6.4	6.3	4.1	0.4	0.6	3.8	4.7	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	11.5	0.4	6.2	14.0	14.5	1.4	4.1	2.7	1.7	8.1	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.3	24.3	13.1	100.6	29.1	29.2	54.3	36.0	35.2	53.6	43.0	43.5
LnGrp LOS	E	C	B	F	C	C	D	D	D	D	D	D
Approach Vol, veh/h		1411			1505			553			711	
Approach Delay, s/veh		26.6			36.3			37.6			44.1	
Approach LOS		C			D			D			D	

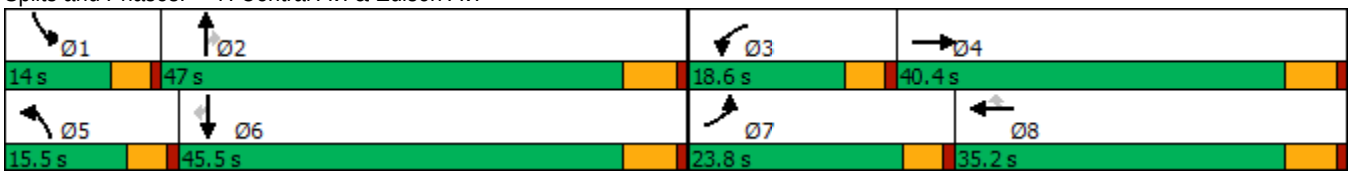
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	28.1	14.0	55.0	8.8	28.9	13.7	55.3
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	8.2	32.4	9.4	49.2	9.4	31.2	11.4	47.2
Max Q Clear Time (g_c+I1), s	5.8	11.5	11.3	30.2	5.2	20.1	9.3	34.6
Green Ext Time (p_c), s	0.0	2.5	0.0	8.3	0.0	2.7	0.0	6.7

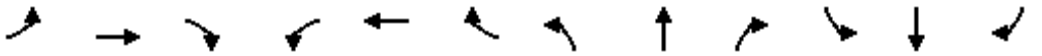
Intersection Summary	
HCM 6th Ctrl Delay	34.5
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	169	864	425	1293	138	87	901	465	116	1060	286
Future Volume (vph)	169	864	425	1293	138	87	901	465	116	1060	286
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	23.8	40.4	18.6	35.2	35.2	15.5	47.0	47.0	14.0	45.5	45.5
Total Split (%)	19.8%	33.7%	15.5%	29.3%	29.3%	12.9%	39.2%	39.2%	11.7%	37.9%	37.9%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 117.5
Natural Cycle: 110
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	864	65	425	1293	138	87	901	465	116	1060	286
Future Volume (veh/h)	169	864	65	425	1293	138	87	901	465	116	1060	286
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	176	900	62	443	1347	116	91	939	302	121	1104	240
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	212	1084	75	398	1154	508	122	1194	525	149	1252	551
Arrive On Green	0.12	0.32	0.30	0.13	0.32	0.32	0.07	0.33	0.33	0.09	0.35	0.35
Sat Flow, veh/h	1714	3426	236	3141	3610	1588	1714	3610	1587	1714	3610	1588
Grp Volume(v), veh/h	176	474	488	443	1347	116	91	939	302	121	1104	240
Grp Sat Flow(s),veh/h/ln	1714	1805	1858	1570	1805	1588	1714	1805	1587	1714	1805	1588
Q Serve(g_s), s	11.5	28.0	28.0	14.6	36.8	6.2	6.0	27.1	18.1	8.0	33.1	13.4
Cycle Q Clear(g_c), s	11.5	28.0	28.0	14.6	36.8	6.2	6.0	27.1	18.1	8.0	33.1	13.4
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	212	571	588	398	1154	508	122	1194	525	149	1252	551
V/C Ratio(X)	0.83	0.83	0.83	1.11	1.17	0.23	0.75	0.79	0.58	0.81	0.88	0.44
Avail Cap(c_a), veh/h	295	571	588	398	1154	508	171	1349	593	149	1302	573
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	36.5	36.6	50.2	39.1	28.7	52.4	34.8	31.8	51.6	35.4	28.9
Incr Delay (d2), s/veh	9.7	13.2	12.8	78.9	84.7	1.0	5.7	2.8	1.1	26.1	7.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	13.8	14.2	9.9	29.0	2.4	2.7	11.8	6.8	4.4	15.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.9	49.6	49.4	129.1	123.8	29.8	58.2	37.6	32.9	77.8	42.6	29.5
LnGrp LOS	E	D	D	F	F	C	E	D	C	E	D	C
Approach Vol, veh/h		1138			1906			1332			1465	
Approach Delay, s/veh		51.0			119.4			38.0			43.3	
Approach LOS		D			F			D			D	

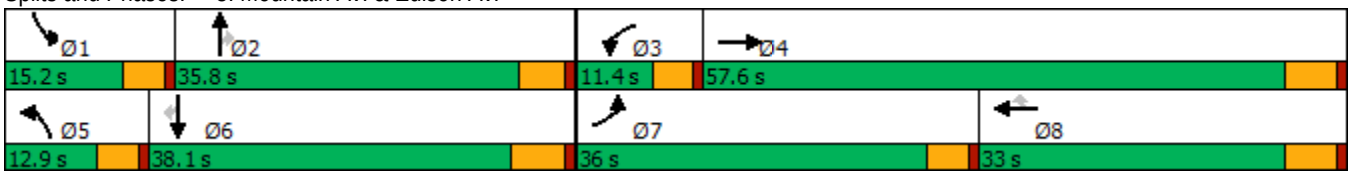
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	42.1	18.6	40.4	12.2	43.9	18.2	40.8
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	9.4	41.2	14.0	34.6	10.9	39.7	19.2	29.4
Max Q Clear Time (g_c+I1), s	10.0	29.1	16.6	30.0	8.0	35.1	13.5	38.8
Green Ext Time (p_c), s	0.0	5.6	0.0	2.2	0.0	3.0	0.1	0.0

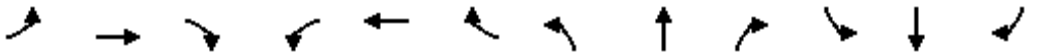
Intersection Summary	
HCM 6th Ctrl Delay	68.4
HCM 6th LOS	E

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	209	1068	11	1381	127	96	176	49	137	90	302
Future Volume (vph)	209	1068	11	1381	127	96	176	49	137	90	302
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	36.0	57.6	11.4	33.0	33.0	12.9	35.8	35.8	15.2	38.1	38.1
Total Split (%)	30.0%	48.0%	9.5%	27.5%	27.5%	10.8%	29.8%	29.8%	12.7%	31.8%	31.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 97.1
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	1068	47	11	1381	127	96	176	49	137	90	302
Future Volume (veh/h)	209	1068	47	11	1381	127	96	176	49	137	90	302
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	227	1161	47	12	1501	127	104	191	23	149	98	190
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	271	2847	115	35	1516	675	140	264	223	188	331	276
Arrive On Green	0.16	0.56	0.54	0.02	0.42	0.42	0.08	0.14	0.14	0.11	0.17	0.17
Sat Flow, veh/h	1714	5109	207	1714	3610	1608	1714	1900	1610	1714	1900	1581
Grp Volume(v), veh/h	227	786	422	12	1501	127	104	191	23	149	98	190
Grp Sat Flow(s),veh/h/ln	1714	1729	1857	1714	1805	1608	1714	1900	1610	1714	1900	1581
Q Serve(g_s), s	12.4	12.5	12.6	0.7	39.7	4.8	5.7	9.3	1.2	8.1	4.3	10.8
Cycle Q Clear(g_c), s	12.4	12.5	12.6	0.7	39.7	4.8	5.7	9.3	1.2	8.1	4.3	10.8
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	271	1927	1035	35	1516	675	140	264	223	188	331	276
V/C Ratio(X)	0.84	0.41	0.41	0.34	0.99	0.19	0.74	0.72	0.10	0.79	0.30	0.69
Avail Cap(c_a), veh/h	570	1927	1035	132	1516	675	159	628	532	200	674	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.3	12.2	12.3	46.5	27.7	17.6	43.2	39.7	36.2	41.7	34.6	37.3
Incr Delay (d2), s/veh	2.7	0.6	1.2	2.1	20.9	0.6	12.4	3.8	0.2	16.4	0.5	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	4.4	4.9	0.3	19.8	1.8	2.9	4.5	0.5	4.2	2.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.0	12.8	13.5	48.6	48.6	18.2	55.6	43.4	36.4	58.2	35.1	40.3
LnGrp LOS	D	B	B	D	D	B	E	D	D	E	D	D
Approach Vol, veh/h		1435			1640			318			437	
Approach Delay, s/veh		17.6			46.3			46.9			45.2	
Approach LOS		B			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	18.0	6.0	57.6	11.8	20.8	19.2	44.4
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.6	* 31	6.8	51.8	8.3	32.3	31.4	27.2
Max Q Clear Time (g_c+I1), s	10.1	11.3	2.7	14.6	7.7	12.8	14.4	41.7
Green Ext Time (p_c), s	0.0	1.0	0.0	9.1	0.0	1.0	0.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	35.5
HCM 6th LOS	D

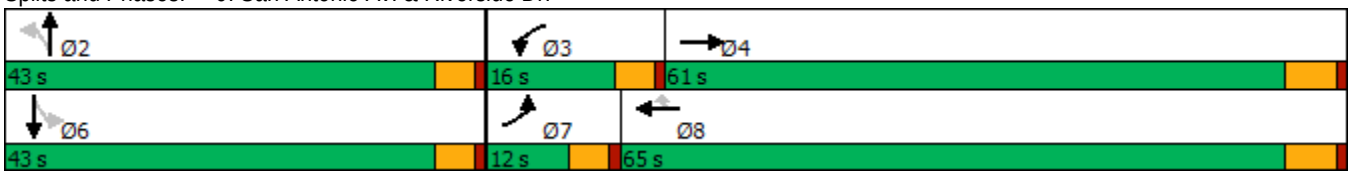
Notes

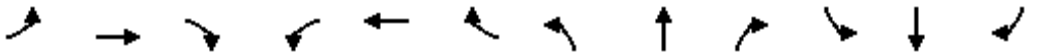
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	19	683	40	966	12	133	2	42	7
Future Volume (vph)	19	683	40	966	12	133	2	42	7
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	12.0	61.0	16.0	65.0	65.0	43.0	43.0	43.0	43.0
Total Split (%)	10.0%	50.8%	13.3%	54.2%	54.2%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 95.7
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	683	66	40	966	12	133	2	51	42	7	57
Future Volume (veh/h)	19	683	66	40	966	12	133	2	51	42	7	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	20	734	67	43	1039	12	143	2	32	45	8	44
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	49	2206	201	74	2434	1062	268	16	251	284	42	230
Arrive On Green	0.03	0.66	0.64	0.04	0.67	0.67	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1714	3345	305	1714	3610	1575	1374	95	1526	1394	254	1395
Grp Volume(v), veh/h	20	396	405	43	1039	12	143	0	34	45	0	52
Grp Sat Flow(s),veh/h/ln	1714	1805	1845	1714	1805	1575	1374	0	1622	1394	0	1649
Q Serve(g_s), s	1.0	8.7	8.7	2.2	11.9	0.2	9.1	0.0	1.6	2.6	0.0	2.5
Cycle Q Clear(g_c), s	1.0	8.7	8.7	2.2	11.9	0.2	11.5	0.0	1.6	4.2	0.0	2.5
Prop In Lane	1.00		0.17	1.00		1.00	1.00		0.94	1.00		0.85
Lane Grp Cap(c), veh/h	49	1190	1217	74	2434	1062	268	0	267	284	0	272
V/C Ratio(X)	0.41	0.33	0.33	0.58	0.43	0.01	0.53	0.00	0.13	0.16	0.00	0.19
Avail Cap(c_a), veh/h	152	1190	1217	227	2434	1062	634	0	699	655	0	711
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.2	6.7	6.8	42.5	6.7	4.8	37.6	0.0	32.5	34.0	0.0	32.8
Incr Delay (d2), s/veh	2.0	0.8	0.7	2.7	0.5	0.0	1.6	0.0	0.2	0.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.8	2.9	1.0	3.6	0.1	3.2	0.0	0.7	0.9	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	7.5	7.5	45.2	7.3	4.9	39.2	0.0	32.7	34.3	0.0	33.2
LnGrp LOS	D	A	A	D	A	A	D	A	C	C	A	C
Approach Vol, veh/h		821			1094			177			97	
Approach Delay, s/veh		8.4			8.8			38.0			33.7	
Approach LOS		A			A			D			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.9	7.9	63.7		18.9	6.6	65.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		38.4	11.4	55.2		38.4	7.4	59.2				
Max Q Clear Time (g_c+I1), s		13.5	4.2	10.7		6.2	3.0	13.9				
Green Ext Time (p_c), s		0.6	0.0	5.1		0.4	0.0	8.5				

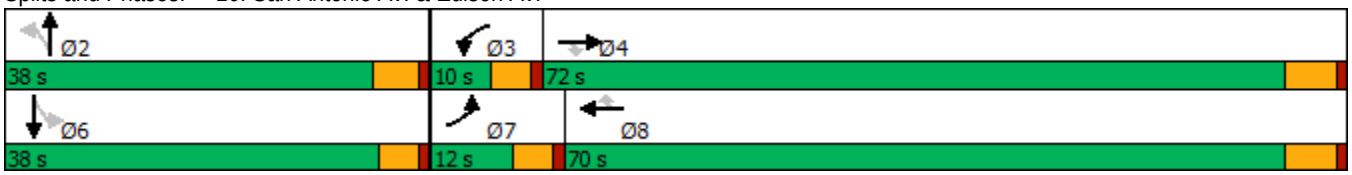
Intersection Summary												
HCM 6th Ctrl Delay			12.1									
HCM 6th LOS			B									

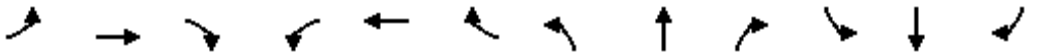
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	53	1262	32	6	1229	24	87	97	33	53
Future Volume (vph)	53	1262	32	6	1229	24	87	97	33	53
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	12.0	72.0	72.0	10.0	70.0	70.0	38.0	38.0	38.0	38.0
Total Split (%)	10.0%	60.0%	60.0%	8.3%	58.3%	58.3%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 111
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	1262	32	6	1229	24	87	97	69	33	53	107
Future Volume (veh/h)	53	1262	32	6	1229	24	87	97	69	33	53	107
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	58	1372	27	7	1336	26	95	105	66	36	58	77
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	83	2384	1062	25	2261	1009	152	144	82	89	137	151
Arrive On Green	0.05	0.66	0.66	0.01	0.63	0.63	0.21	0.21	0.20	0.21	0.21	0.20
Sat Flow, veh/h	1714	3610	1608	1714	3610	1610	499	682	390	230	664	732
Grp Volume(v), veh/h	58	1372	27	7	1336	26	266	0	0	171	0	0
Grp Sat Flow(s),veh/h/ln	1714	1805	1608	1714	1805	1610	1571	0	0	1626	0	0
Q Serve(g_s), s	3.5	21.9	0.6	0.4	23.1	0.6	7.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.5	21.9	0.6	0.4	23.1	0.6	17.0	0.0	0.0	9.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.36		0.25	0.21		0.45
Lane Grp Cap(c), veh/h	83	2384	1062	25	2261	1009	378	0	0	377	0	0
V/C Ratio(X)	0.70	0.58	0.03	0.28	0.59	0.03	0.70	0.00	0.00	0.45	0.00	0.00
Avail Cap(c_a), veh/h	130	2384	1062	98	2261	1009	555	0	0	563	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	49.4	9.8	6.2	51.4	11.7	7.5	39.6	0.0	0.0	36.9	0.0	0.0
Incr Delay (d2), s/veh	3.9	1.0	0.0	2.3	1.1	0.0	2.4	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	7.4	0.2	0.2	8.2	0.2	6.7	0.0	0.0	4.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.3	10.8	6.2	53.6	12.8	7.5	42.0	0.0	0.0	37.8	0.0	0.0
LnGrp LOS	D	B	A	D	B	A	D	A	A	D	A	A
Approach Vol, veh/h		1457			1369			266			171	
Approach Delay, s/veh		12.4			12.9			42.0			37.8	
Approach LOS		B			B			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		26.3	5.5	73.6		26.3	9.1	70.0				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		32.9	5.4	66.2		* 33	7.4	64.2				
Max Q Clear Time (g_c+I1), s		19.0	2.4	23.9		11.4	5.5	25.1				
Green Ext Time (p_c), s		1.3	0.0	12.9		1.0	0.0	12.2				

Intersection Summary		
HCM 6th Ctrl Delay		16.4
HCM 6th LOS		B

Notes

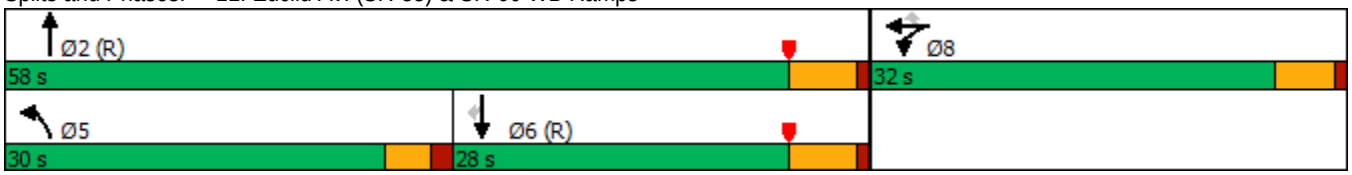
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

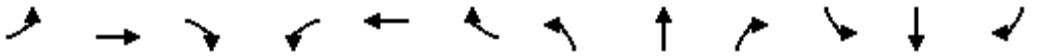
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	837	7	516	548	1184	1220	593
Future Volume (vph)	837	7	516	548	1184	1220	593
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	32.0	32.0	32.0	30.0	58.0	28.0	28.0
Total Split (%)	35.6%	35.6%	35.6%	33.3%	64.4%	31.1%	31.1%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	837	7	516	548	1184	0	0	1220	593
Future Volume (veh/h)	0	0	0	837	7	516	548	1184	0	0	1220	593
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				995	0	222	583	1260	0	0	1298	403
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				1064	0	473	513	2127	0	0	924	412
Arrive On Green				0.29	0.00	0.29	0.57	1.00	0.00	0.00	0.26	0.26
Sat Flow, veh/h				3619	0	1610	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				995	0	222	583	1260	0	0	1298	403
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1610
Q Serve(g_s), s				24.1	0.0	10.2	25.5	0.0	0.0	0.0	23.0	22.4
Cycle Q Clear(g_c), s				24.1	0.0	10.2	25.5	0.0	0.0	0.0	23.0	22.4
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1064	0	473	513	2127	0	0	924	412
V/C Ratio(X)				0.94	0.00	0.47	1.14	0.59	0.00	0.00	1.40	0.98
Avail Cap(c_a), veh/h				1086	0	483	513	2127	0	0	924	412
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				30.9	0.0	26.0	19.5	0.0	0.0	0.0	33.5	33.2
Incr Delay (d2), s/veh				14.0	0.0	0.3	64.2	0.1	0.0	0.0	188.6	39.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				11.7	0.0	3.7	14.6	0.0	0.0	0.0	33.7	12.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				44.9	0.0	26.3	83.7	0.1	0.0	0.0	222.1	72.3
LnGrp LOS				D	A	C	F	A	A	A	F	E
Approach Vol, veh/h					1217			1843			1701	
Approach Delay, s/veh					41.5			26.6			186.6	
Approach LOS					D			C			F	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		58.5			30.0	28.5		31.5				
Change Period (Y+Rc), s		5.5			4.5	5.5		5.0				
Max Green Setting (Gmax), s		52.5			25.5	22.5		27.0				
Max Q Clear Time (g_c+I1), s		2.0			27.5	25.0		26.1				
Green Ext Time (p_c), s		18.2			0.0	0.0		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			87.6									
HCM 6th LOS			F									

Notes

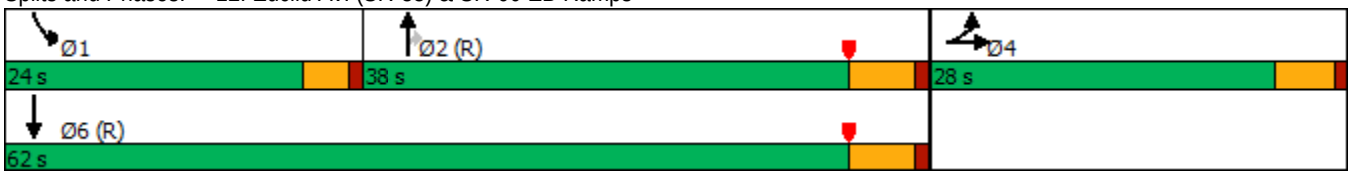
User approved volume balancing among the lanes for turning movement.

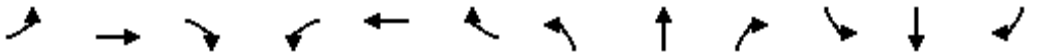
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	520	3	1211	867	459	1598
Future Volume (vph)	520	3	1211	867	459	1598
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	28.0	28.0	38.0	38.0	24.0	62.0
Total Split (%)	31.1%	31.1%	42.2%	42.2%	26.7%	68.9%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	520	3	664	0	0	0	0	1211	867	459	1598	0
Future Volume (veh/h)	520	3	664	0	0	0	0	1211	867	459	1598	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	547	3	644				0	1275	714	483	1682	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	462	2	410				0	1304	566	402	2266	0
Arrive On Green	0.26	0.26	0.26				0.00	0.36	0.36	0.44	1.00	0.00
Sat Flow, veh/h	1810	7	1604				0	3705	1568	1810	3705	0
Grp Volume(v), veh/h	547	0	647				0	1275	714	483	1682	0
Grp Sat Flow(s),veh/h/ln	1810	0	1611				0	1805	1568	1810	1805	0
Q Serve(g_s), s	23.0	0.0	23.0				0.0	31.4	32.5	20.0	0.0	0.0
Cycle Q Clear(g_c), s	23.0	0.0	23.0				0.0	31.4	32.5	20.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	462	0	412				0	1304	566	402	2266	0
V/C Ratio(X)	1.18	0.00	1.57				0.00	0.98	1.26	1.20	0.74	0.00
Avail Cap(c_a), veh/h	462	0	412				0	1304	566	402	2266	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.37	0.37	0.09	0.09	0.00
Uniform Delay (d), s/veh	33.5	0.0	33.5				0.0	28.4	28.8	25.0	0.0	0.0
Incr Delay (d2), s/veh	102.5	0.0	268.6				0.0	10.8	123.0	92.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.5	0.0	39.0				0.0	14.4	30.5	15.9	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	136.0	0.0	302.1				0.0	39.2	151.8	117.9	0.2	0.0
LnGrp LOS	F	A	F				A	D	F	F	A	A
Approach Vol, veh/h		1194						1989			2165	
Approach Delay, s/veh		226.0						79.6			26.5	
Approach LOS		F						E			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	24.0	38.0		28.0		62.0
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	20.0	32.5		23.0		56.5
Max Q Clear Time (g_c+I1), s	22.0	34.5		25.0		2.0
Green Ext Time (p_c), s	0.0	0.0		0.0		29.9

Intersection Summary	
HCM 6th Ctrl Delay	90.8
HCM 6th LOS	F

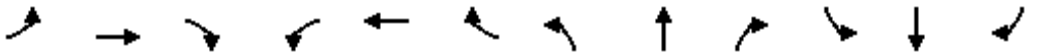
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	252	365	91	388	162	1595	58	189	1838	123
Future Volume (vph)	252	365	91	388	162	1595	58	189	1838	123
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	15.8	33.6	12.0	29.8	23.0	53.5	53.5	20.9	51.4	51.4
Total Split (%)	13.2%	28.0%	10.0%	24.8%	19.2%	44.6%	44.6%	17.4%	42.8%	42.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 115.7
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	252	365	150	91	388	258	162	1595	58	189	1838	123
Future Volume (veh/h)	252	365	150	91	388	258	162	1595	58	189	1838	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	265	384	122	96	408	232	171	1679	43	199	1935	108
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	168	641	201	111	453	255	199	2272	705	255	2092	649
Arrive On Green	0.10	0.24	0.24	0.06	0.20	0.20	0.12	0.44	0.44	0.08	0.40	0.40
Sat Flow, veh/h	1714	2704	848	1714	2225	1251	1714	5187	1609	3141	5187	1609
Grp Volume(v), veh/h	265	255	251	96	330	310	171	1679	43	199	1935	108
Grp Sat Flow(s),veh/h/ln	1714	1805	1747	1714	1805	1671	1714	1729	1609	1570	1729	1609
Q Serve(g_s), s	11.2	14.3	14.6	6.3	20.3	20.7	11.2	30.7	1.8	7.1	40.5	4.9
Cycle Q Clear(g_c), s	11.2	14.3	14.6	6.3	20.3	20.7	11.2	30.7	1.8	7.1	40.5	4.9
Prop In Lane	1.00		0.49	1.00		0.75	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	168	428	414	111	368	340	199	2272	705	255	2092	649
V/C Ratio(X)	1.57	0.60	0.61	0.86	0.90	0.91	0.86	0.74	0.06	0.78	0.92	0.17
Avail Cap(c_a), veh/h	168	440	426	111	380	352	277	2272	705	449	2092	649
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	38.7	38.8	52.8	44.3	44.4	49.5	26.6	18.5	51.4	32.4	21.8
Incr Delay (d2), s/veh	284.8	2.1	2.4	44.3	22.9	26.5	13.7	2.2	0.2	2.0	8.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.0	6.4	6.3	4.0	11.1	10.7	5.4	12.4	0.7	2.8	17.6	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	336.2	40.7	41.1	97.1	67.1	70.9	63.2	28.8	18.7	53.3	40.8	22.3
LnGrp LOS	F	D	D	F	E	E	E	C	B	D	D	C
Approach Vol, veh/h		771			736			1893			2242	
Approach Delay, s/veh		142.4			72.6			31.7			41.0	
Approach LOS		F			E			C			D	

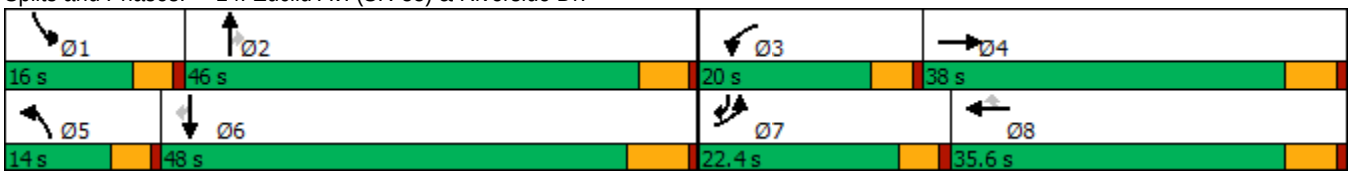
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	55.3	12.0	32.8	17.8	51.4	15.8	29.0
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	16.3	48.1	7.4	27.8	18.4	46.0	11.2	24.0
Max Q Clear Time (g_c+I1), s	9.1	32.7	8.3	16.6	13.2	42.5	13.2	22.7
Green Ext Time (p_c), s	0.2	10.0	0.0	2.1	0.1	3.1	0.0	0.5

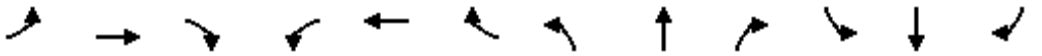
Intersection Summary	
HCM 6th Ctrl Delay	55.9
HCM 6th LOS	E

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	193	453	241	616	145	156	1329	201	219	1618	192
Future Volume (vph)	193	453	241	616	145	156	1329	201	219	1618	192
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	22.4	38.0	20.0	35.6	35.6	14.0	46.0	46.0	16.0	48.0	22.4
Total Split (%)	18.7%	31.7%	16.7%	29.7%	29.7%	11.7%	38.3%	38.3%	13.3%	40.0%	18.7%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.4	-1.4	-0.6	-2.5	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	453	127	241	616	145	156	1329	201	219	1618	192
Future Volume (veh/h)	193	453	127	241	616	145	156	1329	201	219	1618	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	203	477	118	254	648	124	164	1399	172	231	1703	143
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	236	413	102	226	994	443	142	1252	558	170	1344	795
Arrive On Green	0.14	0.28	0.27	0.13	0.28	0.28	0.08	0.35	0.35	0.10	0.37	0.36
Sat Flow, veh/h	1714	1471	364	1714	3610	1610	1714	3610	1610	1714	3610	1609
Grp Volume(v), veh/h	203	0	595	254	648	124	164	1399	172	231	1703	143
Grp Sat Flow(s),veh/h/ln	1714	0	1835	1714	1805	1610	1714	1805	1610	1714	1805	1609
Q Serve(g_s), s	14.0	0.0	34.0	16.0	19.2	7.3	10.0	42.0	9.5	12.0	45.1	6.0
Cycle Q Clear(g_c), s	14.0	0.0	34.0	16.0	19.2	7.3	10.0	42.0	9.5	12.0	45.1	6.0
Prop In Lane	1.00		0.20	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	236	0	515	226	994	443	142	1252	558	170	1344	795
V/C Ratio(X)	0.86	0.00	1.16	1.12	0.65	0.28	1.16	1.12	0.31	1.36	1.27	0.18
Avail Cap(c_a), veh/h	260	0	515	226	994	443	142	1252	558	170	1344	795
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	0.0	43.7	52.5	38.8	34.5	55.5	39.5	28.9	54.5	38.0	17.0
Incr Delay (d2), s/veh	21.0	0.0	90.0	96.3	1.5	0.3	124.6	64.1	1.4	195.2	126.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	0.0	27.7	12.7	8.4	2.8	9.0	28.4	3.8	14.3	42.6	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.1	0.0	133.8	148.8	40.3	34.8	180.1	103.7	30.4	249.7	164.1	17.5
LnGrp LOS	E	A	F	F	D	C	F	F	C	F	F	B
Approach Vol, veh/h		798			1026			1735			2077	
Approach Delay, s/veh		118.1			66.5			103.6			163.5	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	47.1	20.0	38.0	14.0	49.1	20.7	37.3
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	11.4	* 41	15.4	32.2	9.4	41.5	17.8	29.8
Max Q Clear Time (g_c+I1), s	14.0	44.0	18.0	36.0	12.0	47.1	16.0	21.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.9

Intersection Summary	
HCM 6th Ctrl Delay	121.0
HCM 6th LOS	F

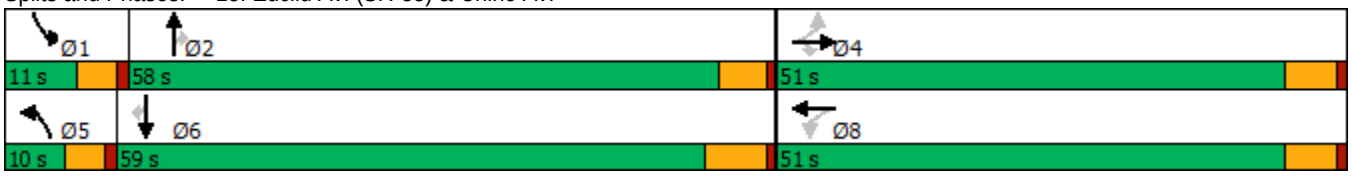
Notes

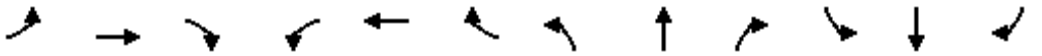
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	131	243	62	105	285	67	1429	180	70	1752	116
Future Volume (vph)	131	243	62	105	285	67	1429	180	70	1752	116
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	51.0	51.0	51.0	51.0	51.0	10.0	58.0	58.0	11.0	59.0	59.0
Total Split (%)	42.5%	42.5%	42.5%	42.5%	42.5%	8.3%	48.3%	48.3%	9.2%	49.2%	49.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-1.8		-1.8	-0.6	-1.2	-1.2	-0.6	-2.5	-2.5
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 118
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	243	62	105	285	80	67	1429	180	70	1752	116
Future Volume (veh/h)	131	243	62	105	285	80	67	1429	180	70	1752	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	139	259	50	112	303	73	71	1520	167	74	1864	92
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	246	730	618	143	341	79	85	1616	721	99	1684	736
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.37	0.05	0.45	0.45	0.06	0.47	0.47
Sat Flow, veh/h	1023	1900	1609	276	888	205	1714	3610	1610	1714	3610	1577
Grp Volume(v), veh/h	139	259	50	488	0	0	71	1520	167	74	1864	92
Grp Sat Flow(s),veh/h/ln	1023	1900	1609	1370	0	0	1714	1805	1610	1714	1805	1577
Q Serve(g_s), s	0.0	11.7	2.4	30.5	0.0	0.0	5.0	48.5	7.7	5.1	56.3	4.0
Cycle Q Clear(g_c), s	35.1	11.7	2.4	42.3	0.0	0.0	5.0	48.5	7.7	5.1	56.3	4.0
Prop In Lane	1.00		1.00	0.23		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	246	730	618	563	0	0	85	1616	721	99	1684	736
V/C Ratio(X)	0.56	0.35	0.08	0.87	0.00	0.00	0.83	0.94	0.23	0.74	1.11	0.13
Avail Cap(c_a), veh/h	252	740	627	571	0	0	85	1616	721	99	1684	736
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.7	26.5	23.6	38.4	0.0	0.0	56.8	31.8	20.5	56.0	32.2	18.2
Incr Delay (d2), s/veh	2.8	0.3	0.1	13.2	0.0	0.0	45.4	12.2	0.8	23.2	57.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	5.2	0.9	15.4	0.0	0.0	3.1	21.8	2.9	2.8	35.3	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.5	26.8	23.7	51.6	0.0	0.0	102.3	44.0	21.3	79.1	89.5	18.6
LnGrp LOS	D	C	C	D	A	A	F	D	C	E	F	B
Approach Vol, veh/h		448			488			1758			2030	
Approach Delay, s/veh		29.4			51.6			44.2			85.9	
Approach LOS		C			D			D			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	59.3		50.4	10.0	60.3		50.4				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	6.4	* 53		45.2	5.4	52.5		45.2				
Max Q Clear Time (g_c+I1), s	7.1	50.5		37.1	7.0	58.3		44.3				
Green Ext Time (p_c), s	0.0	1.9		1.4	0.0	0.0		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		61.5
HCM 6th LOS		E

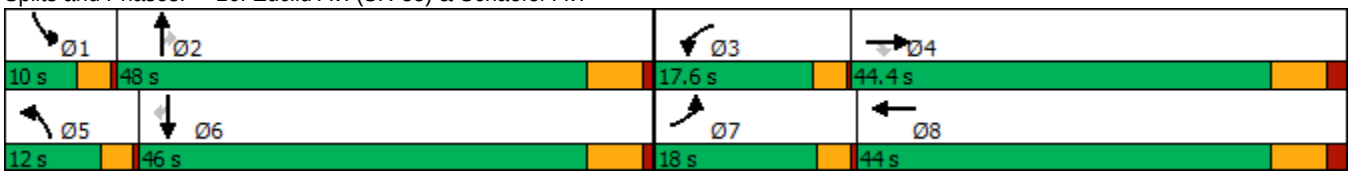
Notes

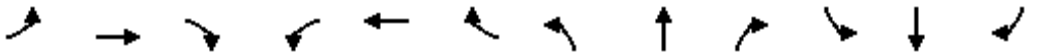
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	193	92	97	177	377	229	1391	44	39	1654	457
Future Volume (vph)	193	92	97	177	377	229	1391	44	39	1654	457
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	18.0	44.4	44.4	17.6	44.0	12.0	48.0	48.0	10.0	46.0	46.0
Total Split (%)	15.0%	37.0%	37.0%	14.7%	36.7%	10.0%	40.0%	40.0%	8.3%	38.3%	38.3%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.5	-3.0	-3.0	0.5	-3.0	0.5	-2.0	-2.0	0.5	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	92	97	177	377	186	229	1391	44	39	1654	457
Future Volume (veh/h)	193	92	97	177	377	186	229	1391	44	39	1654	457
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	208	99	85	190	405	198	246	1496	37	42	1778	457
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	200	640	542	194	401	196	114	1406	627	47	1264	562
Arrive On Green	0.12	0.34	0.34	0.11	0.33	0.31	0.07	0.39	0.39	0.03	0.35	0.35
Sat Flow, veh/h	1714	1900	1610	1714	1204	588	1714	3610	1610	1714	3610	1606
Grp Volume(v), veh/h	208	99	85	190	0	603	246	1496	37	42	1778	457
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1714	0	1792	1714	1805	1610	1714	1805	1606
Q Serve(g_s), s	14.0	4.4	4.4	13.3	0.0	40.0	8.0	46.7	1.7	2.9	42.0	31.0
Cycle Q Clear(g_c), s	14.0	4.4	4.4	13.3	0.0	40.0	8.0	46.7	1.7	2.9	42.0	31.0
Prop In Lane	1.00		1.00	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	200	640	542	194	0	597	114	1406	627	47	1264	562
V/C Ratio(X)	1.04	0.15	0.16	0.98	0.00	1.01	2.15	1.06	0.06	0.90	1.41	0.81
Avail Cap(c_a), veh/h	200	640	542	194	0	597	114	1406	627	86	1264	562
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.0	27.9	27.9	53.1	0.0	40.5	56.0	36.6	22.9	58.2	39.0	35.4
Incr Delay (d2), s/veh	74.5	0.1	0.1	57.8	0.0	39.2	546.5	43.1	0.0	19.4	188.0	8.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	1.9	1.7	8.7	0.0	23.3	20.7	27.2	0.6	1.5	50.2	13.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	127.5	27.9	28.0	110.8	0.0	79.7	602.5	79.7	22.9	77.6	227.0	44.4
LnGrp LOS	F	C	C	F	A	F	F	F	C	E	F	D
Approach Vol, veh/h		392			793			1779			2277	
Approach Delay, s/veh		80.8			87.1			150.8			187.6	
Approach LOS		F			F			F			F	

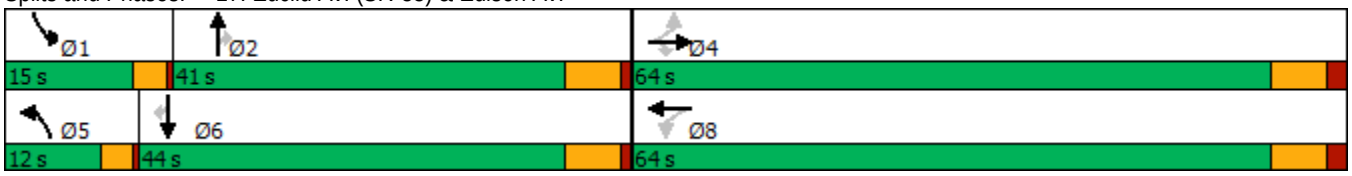
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	50.7	17.6	44.4	12.0	46.0	18.0	44.0
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	6.5	42.0	14.1	37.4	8.5	40.0	14.5	37.0
Max Q Clear Time (g_c+I1), s	4.9	48.7	15.3	6.4	10.0	44.0	16.0	42.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0

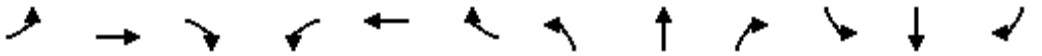
Intersection Summary	
HCM 6th Ctrl Delay	151.9
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	196	967	162	210	1120	282	1292	152	282	1433	211
Future Volume (vph)	196	967	162	210	1120	282	1292	152	282	1433	211
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	64.0	64.0	64.0	64.0	64.0	12.0	41.0	41.0	15.0	44.0	44.0
Total Split (%)	53.3%	53.3%	53.3%	53.3%	53.3%	10.0%	34.2%	34.2%	12.5%	36.7%	36.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	-3.0	-3.0	-3.0	-3.0	-3.0	0.5	-2.0	-2.0	0.5	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	967	162	210	1120	335	282	1292	152	282	1433	211
Future Volume (veh/h)	196	967	162	210	1120	335	282	1292	152	282	1433	211
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	204	1007	114	219	1167	344	294	1346	150	294	1493	169
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	60	950	805	60	705	208	114	1113	496	157	1203	524
Arrive On Green	0.50	0.50	0.50	0.50	0.50	0.47	0.07	0.31	0.31	0.09	0.33	0.33
Sat Flow, veh/h	352	1900	1609	510	1409	415	1714	3610	1610	1714	3610	1572
Grp Volume(v), veh/h	204	1007	114	219	0	1511	294	1346	150	294	1493	169
Grp Sat Flow(s),veh/h/ln	352	1900	1609	510	0	1825	1714	1805	1610	1714	1805	1572
Q Serve(g_s), s	0.0	60.0	4.6	0.0	0.0	60.0	8.0	37.0	8.5	11.0	40.0	9.6
Cycle Q Clear(g_c), s	60.0	60.0	4.6	60.0	0.0	60.0	8.0	37.0	8.5	11.0	40.0	9.6
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	60	950	805	60	0	912	114	1113	496	157	1203	524
V/C Ratio(X)	3.40	1.06	0.14	3.65	0.00	1.66	2.57	1.21	0.30	1.87	1.24	0.32
Avail Cap(c_a), veh/h	60	950	805	60	0	912	114	1113	496	157	1203	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.0	30.0	16.1	60.0	0.0	30.3	56.0	41.5	31.7	54.5	40.0	29.9
Incr Delay (d2), s/veh	1120.9	46.5	0.1	1232.5	0.0	300.1	732.5	102.7	0.3	415.1	115.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.5	37.1	1.6	22.3	0.0	100.1	26.6	31.2	3.2	22.7	35.7	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1180.9	76.5	16.2	1292.5	0.0	330.4	788.5	144.2	32.0	469.6	155.6	30.2
LnGrp LOS	F	F	B	F	A	F	F	F	C	F	F	C
Approach Vol, veh/h		1325			1730			1790			1956	
Approach Delay, s/veh		241.3			452.2			240.6			191.9	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.0	41.0		64.0	12.0	44.0		64.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	11.5	35.0		57.0	8.5	38.0		57.0				
Max Q Clear Time (g_c+I1), s	13.0	39.0		62.0	10.0	42.0		62.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0				

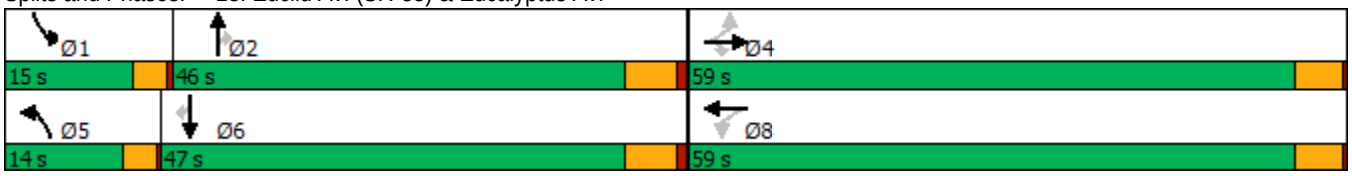
Intersection Summary			
HCM 6th Ctrl Delay		280.6	
HCM 6th LOS		F	

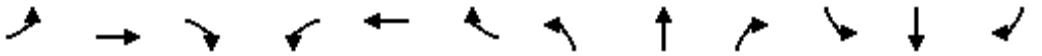
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	84	41	205	385	194	221	1533	133	113	1587	51
Future Volume (vph)	84	41	205	385	194	221	1533	133	113	1587	51
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	59.0	59.0	59.0	59.0	59.0	14.0	46.0	46.0	15.0	47.0	47.0
Total Split (%)	49.2%	49.2%	49.2%	49.2%	49.2%	11.7%	38.3%	38.3%	12.5%	39.2%	39.2%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	-0.8	-0.8	-0.8	-0.8	-0.8	0.5	-1.7	-1.7	0.5	-1.7	-1.7
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 102.3
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	41	205	385	194	187	221	1533	133	113	1587	51
Future Volume (veh/h)	84	41	205	385	194	187	221	1533	133	113	1587	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	86	42	123	393	198	183	226	1564	135	115	1619	41
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	265	700	593	509	335	309	167	1578	704	134	1509	672
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.36	0.10	0.44	0.44	0.08	0.42	0.42
Sat Flow, veh/h	1018	1900	1610	1240	909	840	1714	3610	1610	1714	3610	1608
Grp Volume(v), veh/h	86	42	123	393	0	381	226	1564	135	115	1619	41
Grp Sat Flow(s),veh/h/ln	1018	1900	1610	1240	0	1749	1714	1805	1610	1714	1805	1608
Q Serve(g_s), s	7.7	1.5	5.4	30.8	0.0	18.2	10.0	44.3	5.3	6.8	43.0	1.6
Cycle Q Clear(g_c), s	25.8	1.5	5.4	32.3	0.0	18.2	10.0	44.3	5.3	6.8	43.0	1.6
Prop In Lane	1.00		1.00	1.00		0.48	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	265	700	593	509	0	644	167	1578	704	134	1509	672
V/C Ratio(X)	0.32	0.06	0.21	0.77	0.00	0.59	1.36	0.99	0.19	0.86	1.07	0.06
Avail Cap(c_a), veh/h	434	1016	861	715	0	935	167	1578	704	183	1509	672
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	21.0	22.2	31.4	0.0	26.4	46.4	28.8	17.8	46.9	29.9	17.9
Incr Delay (d2), s/veh	0.5	0.0	0.1	2.8	0.0	0.6	194.3	20.5	0.1	22.7	45.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.6	2.0	9.0	0.0	7.2	13.0	21.2	1.8	3.6	25.9	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.2	21.0	22.4	34.3	0.0	27.1	240.7	49.3	17.9	69.5	75.4	17.9
LnGrp LOS	D	C	C	C	A	C	F	D	B	E	F	B
Approach Vol, veh/h		251			774			1925			1775	
Approach Delay, s/veh		27.2			30.7			69.5			73.7	
Approach LOS		C			C			E			E	

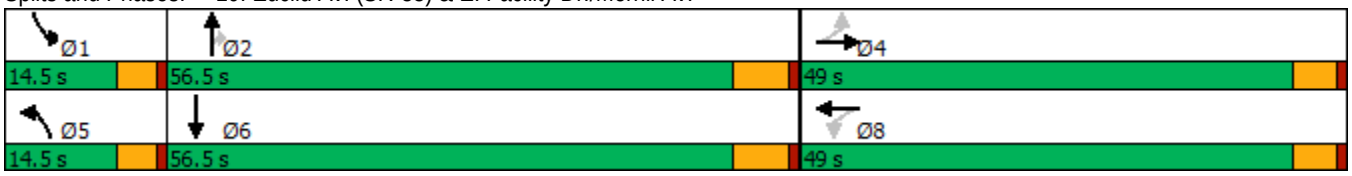
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	49.0		41.9	14.0	47.0		41.9				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	11.5	40.3		54.2	10.5	41.3		54.2				
Max Q Clear Time (g_c+I1), s	8.8	46.3		27.8	12.0	45.0		34.3				
Green Ext Time (p_c), s	0.0	0.0		0.7	0.0	0.0		2.8				

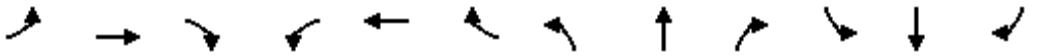
Intersection Summary												
HCM 6th Ctrl Delay			62.5									
HCM 6th LOS			E									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	10	10	387	60	13	1428	440	364	1764
Future Volume (vph)	10	10	387	60	13	1428	440	364	1764
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	49.0	49.0	49.0	49.0	14.5	56.5	56.5	14.5	56.5
Total Split (%)	40.8%	40.8%	40.8%	40.8%	12.1%	47.1%	47.1%	12.1%	47.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		-1.0		-1.0	-0.5	-2.0	-2.0	-0.5	-2.0
Total Lost Time (s)		4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	21	387	60	458	13	1428	440	364	1764	49
Future Volume (veh/h)	10	10	21	387	60	458	13	1428	440	364	1764	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	10	10	21	399	62	445	13	1472	411	375	1819	37
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	152	159	287	304	41	291	57	1574	702	150	1773	36
Arrive On Green	0.38	0.38	0.37	0.38	0.38	0.37	0.03	0.44	0.44	0.09	0.49	0.47
Sat Flow, veh/h	305	422	764	694	108	774	1714	3610	1610	1714	3617	73
Grp Volume(v), veh/h	41	0	0	906	0	0	13	1472	411	375	905	951
Grp Sat Flow(s),veh/h/ln	1491	0	0	1577	0	0	1714	1805	1610	1714	1805	1885
Q Serve(g_s), s	0.0	0.0	0.0	43.2	0.0	0.0	0.9	46.5	23.1	10.5	58.7	58.7
Cycle Q Clear(g_c), s	1.8	0.0	0.0	45.0	0.0	0.0	0.9	46.5	23.1	10.5	58.7	58.7
Prop In Lane	0.24		0.51	0.44		0.49	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	598	0	0	636	0	0	57	1574	702	150	885	924
V/C Ratio(X)	0.07	0.00	0.00	1.42	0.00	0.00	0.23	0.94	0.59	2.49	1.02	1.03
Avail Cap(c_a), veh/h	598	0	0	636	0	0	150	1584	706	150	885	924
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	0.0	0.0	39.0	0.0	0.0	56.3	32.1	25.6	54.6	30.5	30.5
Incr Delay (d2), s/veh	0.0	0.0	0.0	199.8	0.0	0.0	0.7	10.8	1.2	691.3	36.1	37.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	53.5	0.0	0.0	0.4	20.6	8.4	33.2	31.3	33.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.0	0.0	0.0	238.8	0.0	0.0	57.1	42.9	26.8	745.9	66.6	67.9
LnGrp LOS	C	A	A	F	A	A	E	D	C	F	F	F
Approach Vol, veh/h		41			906			1896			2231	
Approach Delay, s/veh		24.0			238.8			39.5			181.4	
Approach LOS		C			F			D			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.5	56.2		49.0	8.0	62.7		49.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	10.0	50.5		44.0	10.0	50.5		44.0				
Max Q Clear Time (g_c+I1), s	12.5	48.5		3.8	2.9	60.7		47.0				
Green Ext Time (p_c), s	0.0	1.7		0.2	0.0	0.0		0.0				

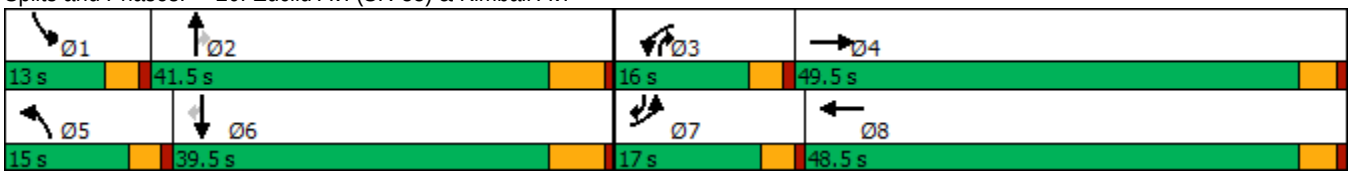
Intersection Summary												
HCM 6th Ctrl Delay			137.3									
HCM 6th LOS			F									

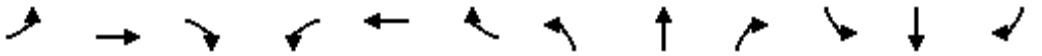
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	212	322	226	941	178	1232	68	280	1272	483
Future Volume (vph)	212	322	226	941	178	1232	68	280	1272	483
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	17.0	49.5	16.0	48.5	15.0	41.5	16.0	13.0	39.5	17.0
Total Split (%)	14.2%	41.3%	13.3%	40.4%	12.5%	34.6%	13.3%	10.8%	32.9%	14.2%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-0.5	0.0	-0.5	0.0	-2.0	0.0	0.0	-2.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 118.9
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	322	109	226	941	418	178	1232	68	280	1272	483
Future Volume (veh/h)	212	322	109	226	941	418	178	1232	68	280	1272	483
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1800	1900	1900	1800	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	216	329	102	231	960	391	182	1257	57	286	1298	364
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	269	990	302	176	955	385	161	1157	654	242	1095	593
Arrive On Green	0.09	0.36	0.36	0.10	0.38	0.38	0.09	0.32	0.30	0.08	0.30	0.29
Sat Flow, veh/h	3141	2724	831	1714	2511	1012	1714	3610	1610	3141	3610	1590
Grp Volume(v), veh/h	216	216	215	231	687	664	182	1257	57	286	1298	364
Grp Sat Flow(s),veh/h/ln	1570	1805	1750	1714	1805	1718	1714	1805	1610	1570	1805	1590
Q Serve(g_s), s	7.9	10.1	10.4	12.0	44.5	44.5	11.0	37.5	2.6	9.0	35.5	21.8
Cycle Q Clear(g_c), s	7.9	10.1	10.4	12.0	44.5	44.5	11.0	37.5	2.6	9.0	35.5	21.8
Prop In Lane	1.00		0.47	1.00		0.59	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	269	656	636	176	686	653	161	1157	654	242	1095	593
V/C Ratio(X)	0.80	0.33	0.34	1.31	1.00	1.02	1.13	1.09	0.09	1.18	1.19	0.61
Avail Cap(c_a), veh/h	349	702	681	176	686	653	161	1157	654	242	1095	593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.5	26.9	27.1	52.5	36.3	36.4	53.0	39.8	21.4	54.0	40.8	29.9
Incr Delay (d2), s/veh	7.6	0.3	0.3	175.7	34.6	39.2	109.9	53.2	0.1	116.7	92.7	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	4.2	4.3	13.6	25.0	24.6	9.4	23.9	0.9	7.3	28.8	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.1	27.2	27.4	228.2	70.9	75.6	162.9	93.0	21.5	170.7	133.5	31.8
LnGrp LOS	E	C	C	F	F	F	F	F	C	F	F	C
Approach Vol, veh/h		647			1582			1496			1948	
Approach Delay, s/veh		38.3			95.9			98.7			120.0	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	41.5	16.0	46.5	15.0	39.5	14.0	48.5
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	9.0	35.5	12.0	45.0	11.0	33.5	13.0	44.0
Max Q Clear Time (g_c+I1), s	11.0	39.5	14.0	12.4	13.0	37.5	9.9	46.5
Green Ext Time (p_c), s	0.0	0.0	0.0	2.4	0.0	0.0	0.1	0.0

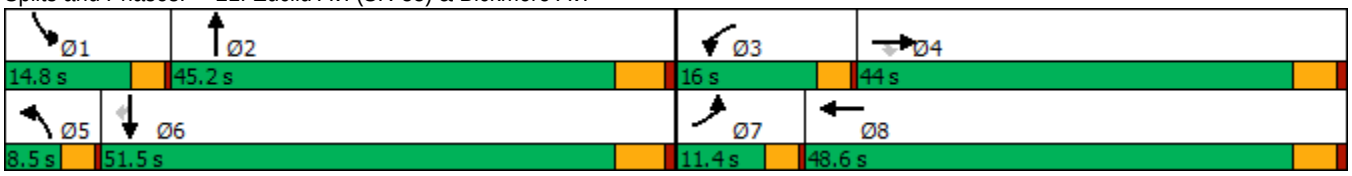
Intersection Summary	
HCM 6th Ctrl Delay	98.3
HCM 6th LOS	F

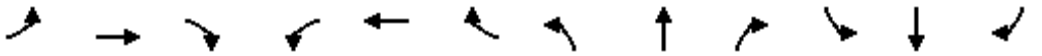
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	81	16	47	241	264	92	1095	107	1264	245
Future Volume (vph)	81	16	47	241	264	92	1095	107	1264	245
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	11.4	44.0	44.0	16.0	48.6	8.5	45.2	14.8	51.5	51.5
Total Split (%)	9.5%	36.7%	36.7%	13.3%	40.5%	7.1%	37.7%	12.3%	42.9%	42.9%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.5	-1.0	-1.0	0.5	-1.0	0.5	-1.5	0.5	-1.5	-1.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 109.4
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	16	47	241	264	215	92	1095	40	107	1264	245
Future Volume (veh/h)	81	16	47	241	264	215	92	1095	40	107	1264	245
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	88	17	47	262	287	196	100	1190	36	116	1374	219
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	102	470	398	205	323	221	77	1412	43	135	1547	690
Arrive On Green	0.06	0.25	0.25	0.12	0.31	0.30	0.04	0.39	0.38	0.08	0.43	0.43
Sat Flow, veh/h	1714	1900	1610	1714	1052	719	1714	3577	108	1714	3610	1610
Grp Volume(v), veh/h	88	17	47	262	0	483	100	600	626	116	1374	219
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1714	0	1771	1714	1805	1881	1714	1805	1610
Q Serve(g_s), s	5.1	0.7	2.3	12.0	0.0	26.1	4.5	30.2	30.3	6.7	35.2	9.0
Cycle Q Clear(g_c), s	5.1	0.7	2.3	12.0	0.0	26.1	4.5	30.2	30.3	6.7	35.2	9.0
Prop In Lane	1.00		1.00	1.00		0.41	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	102	470	398	205	0	544	77	712	742	135	1547	690
V/C Ratio(X)	0.86	0.04	0.12	1.28	0.00	0.89	1.30	0.84	0.84	0.86	0.89	0.32
Avail Cap(c_a), veh/h	127	759	643	205	0	788	77	742	773	185	1711	763
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.7	28.6	29.2	44.1	0.0	33.3	47.8	27.5	27.6	45.6	26.4	18.9
Incr Delay (d2), s/veh	31.4	0.0	0.0	156.4	0.0	6.7	202.1	7.9	7.6	19.7	5.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.3	0.9	13.9	0.0	11.7	6.1	13.1	13.6	3.4	14.4	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.0	28.7	29.3	200.5	0.0	39.9	249.9	35.4	35.2	65.3	31.8	19.0
LnGrp LOS	E	C	C	F	A	D	F	D	D	E	C	B
Approach Vol, veh/h		152			745			1326			1709	
Approach Delay, s/veh		57.4			96.4			51.5			32.4	
Approach LOS		E			F			D			C	

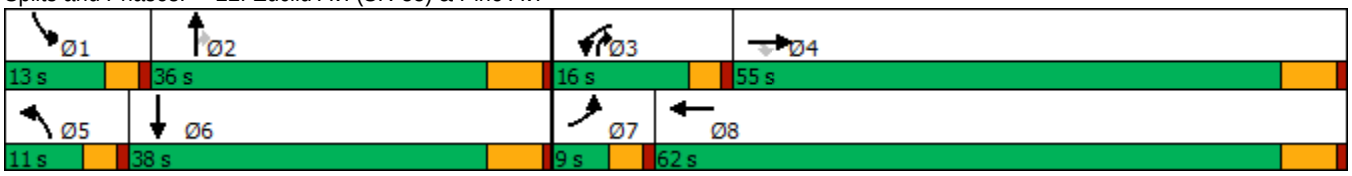
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	43.5	16.0	28.8	8.5	46.9	10.0	34.8
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	11.3	39.7	12.5	39.0	5.0	46.0	7.9	43.6
Max Q Clear Time (g_c+I1), s	8.7	32.3	14.0	4.3	6.5	37.2	7.1	28.1
Green Ext Time (p_c), s	0.0	2.8	0.0	0.1	0.0	4.2	0.0	1.7

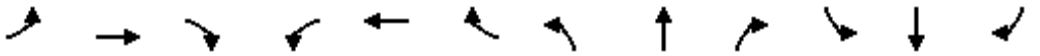
Intersection Summary	
HCM 6th Ctrl Delay	51.9
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	84	303	204	829	980	171	877	214	163	1031
Future Volume (vph)	84	303	204	829	980	171	877	214	163	1031
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	55.0	55.0	16.0	62.0	11.0	36.0	16.0	13.0	38.0
Total Split (%)	7.5%	45.8%	45.8%	13.3%	51.7%	9.2%	30.0%	13.3%	10.8%	31.7%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-2.0	-2.0	0.0	-2.0	0.0	-2.0	0.0	0.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	303	204	829	980	341	171	877	214	163	1031	130
Future Volume (veh/h)	84	303	204	829	980	341	171	877	214	163	1031	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	87	312	0	855	1010	350	176	904	-35	168	1063	130
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	71	808		314	652	226	100	963	564	129	917	112
Arrive On Green	0.04	0.43	0.00	0.10	0.48	0.47	0.06	0.27	0.00	0.08	0.28	0.27
Sat Flow, veh/h	1714	1900	1610	3141	1349	467	1714	3610	1610	1714	3238	396
Grp Volume(v), veh/h	87	312	0	855	0	1360	176	904	-35	168	592	601
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1570	0	1816	1714	1805	1610	1714	1805	1829
Q Serve(g_s), s	5.0	13.6	0.0	12.0	0.0	58.0	7.0	29.4	0.0	9.0	34.0	34.0
Cycle Q Clear(g_c), s	5.0	13.6	0.0	12.0	0.0	58.0	7.0	29.4	0.0	9.0	34.0	34.0
Prop In Lane	1.00		1.00	1.00		0.26	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	71	808		314	0	878	100	963	564	129	511	518
V/C Ratio(X)	1.22	0.39		2.72	0.00	1.55	1.76	0.94	-0.06	1.31	1.16	1.16
Avail Cap(c_a), veh/h	71	808		314	0	878	100	963	564	129	511	518
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.5	23.7	0.0	54.0	0.0	31.3	56.5	43.0	0.0	55.5	43.0	43.2
Incr Delay (d2), s/veh	176.4	0.4	0.0	783.9	0.0	252.9	379.6	16.1	0.0	183.0	91.1	91.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	5.9	0.0	38.8	0.0	84.6	13.5	14.5	0.0	10.3	27.1	27.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	233.9	24.2	0.0	837.9	0.0	284.2	436.1	59.2	0.0	238.5	134.1	134.9
LnGrp LOS	F	C		F	A	F	F	E	A	F	F	F
Approach Vol, veh/h		399	A		2215			1045			1361	
Approach Delay, s/veh		69.9			497.9			124.6			147.3	
Approach LOS		E			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	36.0	16.0	55.0	11.0	38.0	9.0	62.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	9.0	30.0	12.0	49.0	7.0	32.0	5.0	56.0
Max Q Clear Time (g_c+I1), s	11.0	31.4	14.0	15.6	9.0	36.0	7.0	60.0
Green Ext Time (p_c), s	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	291.1
HCM 6th LOS	F

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	1839.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	61	1758	114	51	2281	20	297	95	93	23	132	55
Future Vol, veh/h	61	1758	114	51	2281	20	297	95	93	23	132	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	66	1911	124	55	2479	22	323	103	101	25	143	60
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	1840.3	2328.7	218.3	105.8
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	61%	3%	2%	11%
Vol Thru, %	20%	91%	97%	63%
Vol Right, %	19%	6%	1%	26%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	485	1933	2352	210
LT Vol	297	61	51	23
Through Vol	95	1758	2281	132
RT Vol	93	114	20	55
Lane Flow Rate	527	2101	2557	228
Geometry Grp	1	1	1	1
Degree of Util (X)	1.254	4.977	6.077	0.6
Departure Headway (Hd)	25.413	21.332	18.766	47.841
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	148	210	230	78
Service Time	23.413	19.332	16.766	45.841
HCM Lane V/C Ratio	3.561	10.005	11.117	2.923
HCM Control Delay	218.3	1840.3	2328.7	105.8
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	10.7	87.5	125.2	2.6

Intersection	
Intersection Delay, s/veh	36.6
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	107	9	20	494	82	21	72	3	46	78	166
Future Vol, veh/h	38	107	9	20	494	82	21	72	3	46	78	166
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	41	115	10	22	531	88	23	77	3	49	84	178
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.3	56.7	12	16.2
HCM LOS	B	F	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	25%	3%	16%
Vol Thru, %	75%	69%	83%	27%
Vol Right, %	3%	6%	14%	57%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	96	154	596	290
LT Vol	21	38	20	46
Through Vol	72	107	494	78
RT Vol	3	9	82	166
Lane Flow Rate	103	166	641	312
Geometry Grp	1	1	1	1
Degree of Util (X)	0.203	0.298	0.992	0.536
Departure Headway (Hd)	7.072	6.472	5.572	6.185
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	505	553	654	580
Service Time	5.15	4.538	3.572	4.246
HCM Lane V/C Ratio	0.204	0.3	0.98	0.538
HCM Control Delay	12	12.3	56.7	16.2
HCM Lane LOS	B	B	F	C
HCM 95th-tile Q	0.8	1.2	15.2	3.2

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	76	693	935	92	63	59
Future Vol, veh/h	76	693	935	92	63	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	81	737	995	98	67	63

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1093	0	-	0	1943	1044
Stage 1	-	-	-	-	1044	-
Stage 2	-	-	-	-	899	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	646	-	-	-	124	354
Stage 1	-	-	-	-	342	-
Stage 2	-	-	-	-	401	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	646	-	-	-	98	354
Mov Cap-2 Maneuver	-	-	-	-	98	-
Stage 1	-	-	-	-	269	-
Stage 2	-	-	-	-	401	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	98.3
HCM LOS			F

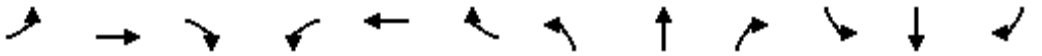
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	646	-	-	-	151
HCM Lane V/C Ratio	0.125	-	-	-	0.86
HCM Control Delay (s)	11.4	0	-	-	98.3
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0.4	-	-	-	5.8

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	687	335	1434	881	700
Future Volume (vph)	0	687	335	1434	881	700
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	48.0	48.0	35.0	72.0	37.0	37.0
Total Split (%)	40.0%	40.0%	29.2%	60.0%	30.8%	30.8%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	341	0	687	335	1434	0	0	881	700
Future Volume (veh/h)	0	0	0	341	0	687	335	1434	0	0	881	700
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				371	0	618	364	1559	0	0	958	650
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				636	0	566	385	1992	0	0	1086	482
Arrive On Green				0.35	0.00	0.35	0.43	1.00	0.00	0.00	0.30	0.30
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1602
Grp Volume(v), veh/h				371	0	618	364	1559	0	0	958	650
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1602
Q Serve(g_s), s				20.1	0.0	42.2	23.2	0.0	0.0	0.0	30.3	36.1
Cycle Q Clear(g_c), s				20.1	0.0	42.2	23.2	0.0	0.0	0.0	30.3	36.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				636	0	566	385	1992	0	0	1086	482
V/C Ratio(X)				0.58	0.00	1.09	0.95	0.78	0.00	0.00	0.88	1.35
Avail Cap(c_a), veh/h				636	0	566	458	1992	0	0	1086	482
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.7	0.0	38.9	33.8	0.0	0.0	0.0	39.9	42.0
Incr Delay (d2), s/veh				1.4	0.0	65.1	4.0	0.3	0.0	0.0	10.4	170.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.6	0.0	26.0	7.8	0.1	0.0	0.0	14.5	36.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				33.1	0.0	104.0	37.8	0.3	0.0	0.0	50.3	212.2
LnGrp LOS				C	A	F	D	A	A	A	D	F
Approach Vol, veh/h					989			1923			1608	
Approach Delay, s/veh					77.4			7.4			115.7	
Approach LOS					E			A			F	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		72.0			30.1	41.9		48.0				
Change Period (Y+Rc), s		5.8			4.6	5.8		5.8				
Max Green Setting (Gmax), s		66.2			30.4	31.2		42.2				
Max Q Clear Time (g_c+I1), s		2.0			25.2	38.1		44.2				
Green Ext Time (p_c), s		17.4			0.3	0.0		0.0				

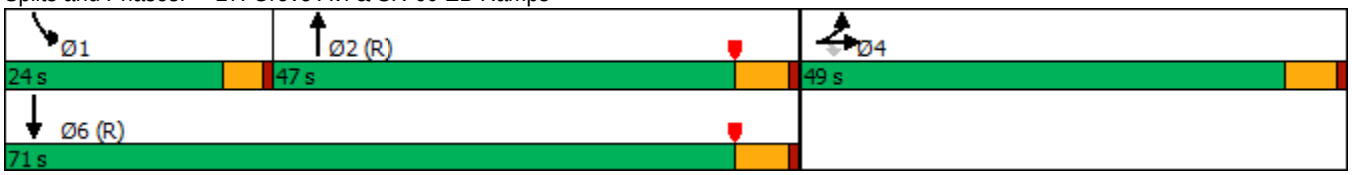
Intersection Summary												
HCM 6th Ctrl Delay			61.3									
HCM 6th LOS			E									

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	1	271	990	437	785
Future Volume (vph)	1	271	990	437	785
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	49.0	49.0	47.0	24.0	71.0
Total Split (%)	40.8%	40.8%	39.2%	20.0%	59.2%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	780	1	271	0	0	0	0	990	450	437	785	0
Future Volume (veh/h)	780	1	271	0	0	0	0	990	450	437	785	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	848	1	220				0	1076	380	475	853	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	651	1	579				0	901	313	293	1961	0
Arrive On Green	0.36	0.36	0.36				0.00	0.34	0.34	0.32	1.00	0.00
Sat Flow, veh/h	1807	2	1607				0	2719	913	1810	3705	0
Grp Volume(v), veh/h	849	0	220				0	735	721	475	853	0
Grp Sat Flow(s),veh/h/ln	1810	0	1607				0	1805	1733	1810	1805	0
Q Serve(g_s), s	43.2	0.0	12.2				0.0	41.2	41.2	19.4	0.0	0.0
Cycle Q Clear(g_c), s	43.2	0.0	12.2				0.0	41.2	41.2	19.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.53	1.00		0.00
Lane Grp Cap(c), veh/h	651	0	579				0	620	595	293	1961	0
V/C Ratio(X)	1.30	0.00	0.38				0.00	1.19	1.21	1.62	0.43	0.00
Avail Cap(c_a), veh/h	651	0	579				0	620	595	293	1961	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.63	0.63	0.26	0.26	0.00
Uniform Delay (d), s/veh	38.4	0.0	28.5				0.0	39.4	39.4	40.6	0.0	0.0
Incr Delay (d2), s/veh	147.4	0.0	0.4				0.0	94.0	105.4	284.8	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	44.8	0.0	4.6				0.0	33.5	34.0	29.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	185.8	0.0	28.9				0.0	133.4	144.8	325.4	0.2	0.0
LnGrp LOS	F	A	C				A	F	F	F	A	A
Approach Vol, veh/h		1069						1456			1328	
Approach Delay, s/veh		153.5						139.1			116.5	
Approach LOS		F						F			F	

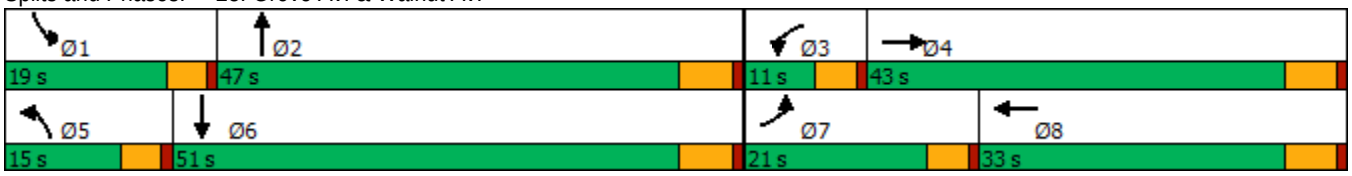
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	24.0	47.0		49.0		71.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	19.4	41.2		43.2		65.2
Max Q Clear Time (g_c+I1), s	21.4	43.2		45.2		2.0
Green Ext Time (p_c), s	0.0	0.0		0.0		6.5

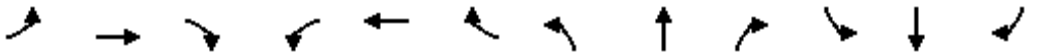
Intersection Summary		
HCM 6th Ctrl Delay		135.3
HCM 6th LOS		F

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	223	238	22	237	78	968	112	761
Future Volume (vph)	223	238	22	237	78	968	112	761
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	21.0	43.0	11.0	33.0	15.0	47.0	19.0	51.0
Total Split (%)	17.5%	35.8%	9.2%	27.5%	12.5%	39.2%	15.8%	42.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 102.9
Natural Cycle: 85
Control Type: Actuated-Uncoordinated

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	223	238	69	22	237	226	78	968	21	112	761	130
Future Volume (veh/h)	223	238	69	22	237	226	78	968	21	112	761	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	121	259	61	24	258	181	85	1052	22	122	827	107
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	149	692	160	42	361	244	107	1579	33	150	1484	192
Arrive On Green	0.09	0.24	0.24	0.02	0.18	0.18	0.06	0.44	0.44	0.09	0.46	0.46
Sat Flow, veh/h	1714	2901	670	1714	2053	1388	1714	3616	76	1714	3214	416
Grp Volume(v), veh/h	121	159	161	24	226	213	85	525	549	122	464	470
Grp Sat Flow(s),veh/h/ln	1714	1805	1765	1714	1805	1636	1714	1805	1886	1714	1805	1825
Q Serve(g_s), s	6.8	7.2	7.5	1.4	11.5	12.1	4.8	22.6	22.6	6.8	18.3	18.3
Cycle Q Clear(g_c), s	6.8	7.2	7.5	1.4	11.5	12.1	4.8	22.6	22.6	6.8	18.3	18.3
Prop In Lane	1.00		0.38	1.00		0.85	1.00		0.04	1.00		0.23
Lane Grp Cap(c), veh/h	149	431	421	42	317	288	107	788	824	150	834	843
V/C Ratio(X)	0.81	0.37	0.38	0.57	0.71	0.74	0.79	0.67	0.67	0.81	0.56	0.56
Avail Cap(c_a), veh/h	287	686	671	112	502	455	182	788	824	252	834	843
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	31.1	31.2	47.2	38.0	38.2	45.2	21.9	21.9	43.9	19.1	19.1
Incr Delay (d2), s/veh	3.9	0.5	0.6	4.5	2.9	3.8	4.8	4.4	4.2	4.0	2.7	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	3.1	3.1	0.6	5.1	4.9	2.1	9.7	10.1	3.0	7.5	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.8	31.7	31.8	51.7	40.9	42.0	50.1	26.3	26.1	47.8	21.8	21.7
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		441			463			1159			1056	
Approach Delay, s/veh		36.1			42.0			28.0			24.8	
Approach LOS		D			D			C			C	

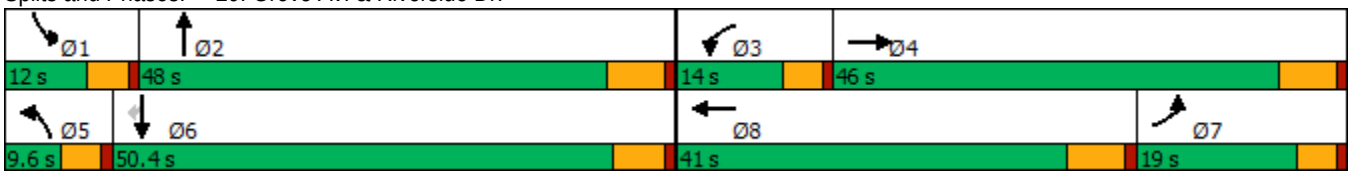
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.2	48.6	7.0	29.1	10.7	51.0	13.1	23.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	41.2	6.4	37.2	10.4	45.2	16.4	27.2
Max Q Clear Time (g_c+I1), s	8.8	24.6	3.4	9.5	6.8	20.3	8.8	14.1
Green Ext Time (p_c), s	0.1	5.9	0.0	1.7	0.0	5.8	0.1	2.0

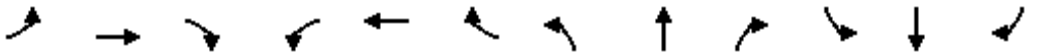
Intersection Summary	
HCM 6th Ctrl Delay	30.1
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	182	469	77	931	32	721	119	508	206
Future Volume (vph)	182	469	77	931	32	721	119	508	206
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	19.0	46.0	14.0	41.0	9.6	48.0	12.0	50.4	50.4
Total Split (%)	15.8%	38.3%	11.7%	34.2%	8.0%	40.0%	10.0%	42.0%	42.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	469	37	77	931	145	32	721	84	119	508	206
Future Volume (veh/h)	182	469	37	77	931	145	32	721	84	119	508	206
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	198	510	33	84	1012	133	35	784	69	129	552	140
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	203	630	41	105	916	120	49	590	52	104	715	606
Arrive On Green	0.12	0.36	0.36	0.06	0.29	0.29	0.03	0.34	0.34	0.06	0.38	0.38
Sat Flow, veh/h	1714	1765	114	1714	3201	420	1714	1718	151	1714	1900	1610
Grp Volume(v), veh/h	198	0	543	84	570	575	35	0	853	129	552	140
Grp Sat Flow(s),veh/h/ln	1714	0	1879	1714	1805	1817	1714	0	1869	1714	1900	1610
Q Serve(g_s), s	14.0	0.0	31.8	5.9	34.8	34.8	2.5	0.0	41.8	7.4	31.1	4.7
Cycle Q Clear(g_c), s	14.0	0.0	31.8	5.9	34.8	34.8	2.5	0.0	41.8	7.4	31.1	4.7
Prop In Lane	1.00		0.06	1.00		0.23	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	203	0	670	105	517	520	49	0	642	104	715	606
V/C Ratio(X)	0.98	0.00	0.81	0.80	1.10	1.11	0.72	0.00	1.33	1.24	0.77	0.23
Avail Cap(c_a), veh/h	203	0	670	133	517	520	70	0	642	104	715	606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	0.0	35.4	56.4	43.4	43.4	58.6	0.0	39.9	57.1	33.4	10.8
Incr Delay (d2), s/veh	55.7	0.0	7.4	18.8	71.1	71.5	7.1	0.0	158.1	164.7	7.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	0.0	15.1	3.0	24.9	25.1	1.1	0.0	46.2	7.9	15.2	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	109.1	0.0	42.8	75.1	114.5	114.9	65.6	0.0	198.0	221.8	41.3	11.7
LnGrp LOS	F	A	D	E	F	F	E	A	F	F	D	B
Approach Vol, veh/h		741			1229			888			821	
Approach Delay, s/veh		60.5			112.0			192.8			64.6	
Approach LOS		E			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	48.0	12.0	49.6	8.1	51.9	20.6	41.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	7.4	41.8	9.4	39.8	5.0	* 45	14.4	* 35
Max Q Clear Time (g_c+I1), s	9.4	43.8	7.9	33.8	4.5	33.1	16.0	36.8
Green Ext Time (p_c), s	0.0	0.0	0.0	1.6	0.0	2.9	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	110.6
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	272.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	89	173	57	26	119	50	67	689	39	58	541	38
Future Vol, veh/h	89	173	57	26	119	50	67	689	39	58	541	38
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	97	188	62	28	129	54	73	749	42	63	588	41
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	46.3	28.3	428.3	267.2
HCM LOS	E	D	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	28%	13%	9%
Vol Thru, %	87%	54%	61%	85%
Vol Right, %	5%	18%	26%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	795	319	195	637
LT Vol	67	89	26	58
Through Vol	689	173	119	541
RT Vol	39	57	50	38
Lane Flow Rate	864	347	212	692
Geometry Grp	1	1	1	1
Degree of Util (X)	1.885	0.795	0.522	1.509
Departure Headway (Hd)	8.905	11.161	12.454	9.578
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	415	329	293	388
Service Time	6.905	9.161	10.454	7.578
HCM Lane V/C Ratio	2.082	1.055	0.724	1.784
HCM Control Delay	428.3	46.3	28.3	267.2
HCM Lane LOS	F	E	D	F
HCM 95th-tile Q	50.4	6.5	2.8	30.8

Intersection	
Intersection Delay, s/veh	1107.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	262	1096	324	203	532	94	126	435	66	78	445	51
Future Vol, veh/h	262	1096	324	203	532	94	126	435	66	78	445	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	285	1191	352	221	578	102	137	473	72	85	484	55
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	1774.1	718.9	469.5	411.8
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	16%	24%	14%
Vol Thru, %	69%	65%	64%	78%
Vol Right, %	11%	19%	11%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	627	1682	829	574
LT Vol	126	262	203	78
Through Vol	435	1096	532	445
RT Vol	66	324	94	51
Lane Flow Rate	682	1828	901	624
Geometry Grp	1	1	1	1
Degree of Util (X)	1.812	4.831	2.397	1.659
Departure Headway (Hd)	34.996	21.045	33.813	37.293
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	116	201	117	106
Service Time	32.996	19.045	31.813	35.293
HCM Lane V/C Ratio	5.879	9.095	7.701	5.887
HCM Control Delay	469.5	1774.1	718.9	411.8
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	15.1	85.5	22.8	12.7

Intersection	
Intersection Delay, s/veh	1536.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	207	1061	197	302	1596	59	91	432	42	73	469	37
Future Vol, veh/h	207	1061	197	302	1596	59	91	432	42	73	469	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	225	1153	214	328	1735	64	99	470	46	79	510	40
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	1535.1	2172.1	444.3	457.8
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	14%	15%	13%
Vol Thru, %	76%	72%	82%	81%
Vol Right, %	7%	13%	3%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	565	1465	1957	579
LT Vol	91	207	302	73
Through Vol	432	1061	1596	469
RT Vol	42	197	59	37
Lane Flow Rate	614	1592	2127	629
Geometry Grp	1	1	1	1
Degree of Util (X)	1.635	4.222	5.678	1.675
Departure Headway (Hd)	53.681	36.217	29.165	52.56
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	74	127	149	76
Service Time	51.681	34.217	27.165	50.56
HCM Lane V/C Ratio	8.297	12.535	14.275	8.276
HCM Control Delay	444.3	1535.1	2172.1	457.8
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	9.6	43.6	75.7	10.1

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	49	122	16	23	123	150	76	397	23	355	588	123
Future Vol, veh/h	49	122	16	23	123	150	76	397	23	355	588	123
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	53	133	17	25	134	163	83	432	25	386	639	134

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2237	2101	706	2164	2156	445	773	0	0	457	0	0
Stage 1	1478	1478	-	611	611	-	-	-	-	-	-	-
Stage 2	759	623	-	1553	1545	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 31	~ 52	439	35	~ 48	617	851	-	-	1114	-	-
Stage 1	158	192	-	484	487	-	-	-	-	-	-	-
Stage 2	402	481	-	143	178	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 17	439	-	~ 16	617	851	-	-	1114	-	-
Mov Cap-2 Maneuver	-	~ 17	-	-	~ 16	-	-	-	-	-	-	-
Stage 1	137	~ 72	-	421	423	-	-	-	-	-	-	-
Stage 2	176	418	-	-	~ 67	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			1.5	3.3
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	851	-	-	-	-	1114	-	-
HCM Lane V/C Ratio	0.097	-	-	-	-	0.346	-	-
HCM Control Delay (s)	9.7	0	-	-	-	9.9	0	-
HCM Lane LOS	A	A	-	-	-	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	-	-	1.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	45	478	66	561
Future Volume (vph)	45	478	66	561
Turn Type	Prot	NA	Prot	NA
Protected Phases	8	2	1	6
Permitted Phases				
Detector Phase	8	2	1	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	5.0	10.0
Minimum Split (s)	26.7	28.2	9.6	16.2
Total Split (s)	27.0	75.0	18.0	93.0
Total Split (%)	22.5%	62.5%	15.0%	77.5%
Yellow Time (s)	3.7	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	6.2	4.6	6.2
Lead/Lag		Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	
Recall Mode	None	Max	None	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 110.2
Natural Cycle: 75
Control Type: Actuated-Uncoordinated

Splits and Phases: 34: Grove Av. & Street A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	45	18	478	166	66	561
Future Volume (veh/h)	45	18	478	166	66	561
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1800	1900
Adj Flow Rate, veh/h	49	20	520	180	72	610
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	100	41	970	336	92	1549
Arrive On Green	0.08	0.08	0.72	0.72	0.05	0.82
Sat Flow, veh/h	1224	500	1349	467	1714	1900
Grp Volume(v), veh/h	70	0	0	700	72	610
Grp Sat Flow(s),veh/h/ln	1749	0	0	1816	1714	1900
Q Serve(g_s), s	4.1	0.0	0.0	18.8	4.4	9.3
Cycle Q Clear(g_c), s	4.1	0.0	0.0	18.8	4.4	9.3
Prop In Lane	0.70	0.29		0.26	1.00	
Lane Grp Cap(c), veh/h	144	0	0	1305	92	1549
V/C Ratio(X)	0.49	0.00	0.00	0.54	0.79	0.39
Avail Cap(c_a), veh/h	366	0	0	1305	216	1549
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.7	0.0	0.0	6.8	49.8	2.7
Incr Delay (d2), s/veh	2.5	0.0	0.0	1.6	5.5	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	5.7	2.0	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	49.3	0.0	0.0	8.4	55.3	3.4
LnGrp LOS	D	A	A	A	E	A
Approach Vol, veh/h	70		700			682
Approach Delay, s/veh	49.3		8.4			8.9
Approach LOS	D		A			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	10.3	82.7			93.0	13.4
Change Period (Y+Rc), s	4.6	6.2			6.2	4.7
Max Green Setting (Gmax), s	13.4	68.8			86.8	22.3
Max Q Clear Time (g_c+I1), s	6.4	20.8			11.3	6.1
Green Ext Time (p_c), s	0.0	5.0			4.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	10.6
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	475.9
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	223	657	860	420	428	178
Future Vol, veh/h	223	657	860	420	428	178
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	230	677	887	433	441	184
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	382.8	697.2	143.7
HCM LOS	F	F	F

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	0%	71%
Vol Thru, %	75%	67%	0%
Vol Right, %	0%	33%	29%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	880	1280	606
LT Vol	223	0	428
Through Vol	657	860	0
RT Vol	0	420	178
Lane Flow Rate	907	1320	625
Geometry Grp	1	1	1
Degree of Util (X)	1.776	2.493	1.208
Departure Headway (Hd)	9.698	8.47	9.173
Convergence, Y/N	Yes	Yes	Yes
Cap	381	449	400
Service Time	7.698	6.47	7.173
HCM Lane V/C Ratio	2.381	2.94	1.563
HCM Control Delay	382.8	697.2	143.7
HCM Lane LOS	F	F	F
HCM 95th-tile Q	41.9	84	19.4

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	63	874	96	298	1290	285	105	248	126	59	45	45
Future Vol, veh/h	63	874	96	298	1290	285	105	248	126	59	45	45
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	64	892	98	304	1316	291	107	253	129	60	46	46

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1607	0	0	991	0	0	3186	3285	942	3330	3189	1462
Stage 1	-	-	-	-	-	-	1070	1070	-	2070	2070	-
Stage 2	-	-	-	-	-	-	2116	2215	-	1260	1119	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	412	-	-	706	-	-	~ 6	~ 9	322	~ 5	~ 10	160
Stage 1	-	-	-	-	-	-	270	300	-	72	97	-
Stage 2	-	-	-	-	-	-	~ 67	~ 82	-	211	285	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	412	-	-	705	-	-	-	0	322	-	0	160
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	174	~ 194	-	~ 47	0	-
Stage 2	-	-	-	-	-	-	-	0	-	-	184	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	2.2		
HCM LOS			-	-

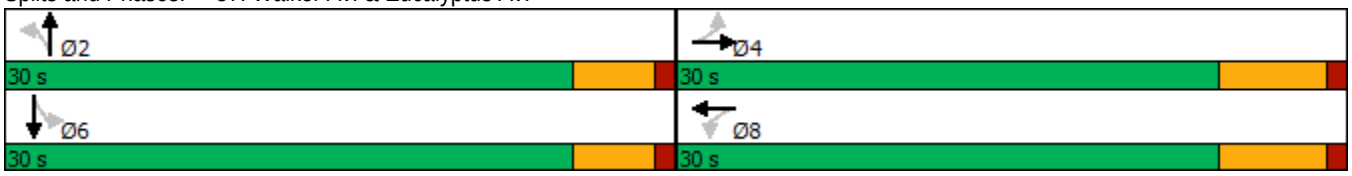
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	412	-	-	705	-	-	-
HCM Lane V/C Ratio	-	0.156	-	-	0.431	-	-	-
HCM Control Delay (s)	-	15.3	0	-	13.9	0	-	-
HCM Lane LOS	-	C	A	-	B	A	-	-
HCM 95th %tile Q(veh)	-	0.5	-	-	2.2	-	-	-

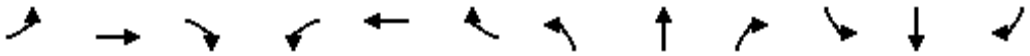
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	41	201	19	350	28	67	153	268
Future Volume (vph)	41	201	19	350	28	67	153	268
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.8	22.8	22.8	22.8	21.6	21.6	21.6	21.6
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.8		5.8		4.6		4.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)		19.3		19.3		25.6		25.6
Actuated g/C Ratio		0.35		0.35		0.46		0.46
v/c Ratio		0.60		0.81		0.16		1.01
Control Delay		17.8		26.1		9.9		53.5
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		17.8		26.1		9.9		53.5
LOS		B		C		A		D
Approach Delay		17.8		26.1		9.9		53.5
Approach LOS		B		C		A		D

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 55.3	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 35.6	Intersection LOS: D
Intersection Capacity Utilization 89.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 37: Walker Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	201	76	19	350	111	28	67	13	153	268	308
Future Volume (veh/h)	41	201	76	19	350	111	28	67	13	153	268	308
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	45	218	83	21	380	121	30	73	14	166	291	335
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	119	402	141	80	459	142	192	436	74	220	311	331
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	130	1185	415	32	1354	418	232	930	158	299	664	705
Grp Volume(v), veh/h	346	0	0	522	0	0	117	0	0	792	0	0
Grp Sat Flow(s),veh/h/ln	1730	0	0	1804	0	0	1321	0	0	1668	0	0
Q Serve(g_s), s	0.0	0.0	0.0	4.4	0.0	0.0	0.0	0.0	0.0	21.9	0.0	0.0
Cycle Q Clear(g_c), s	8.5	0.0	0.0	14.5	0.0	0.0	1.9	0.0	0.0	25.4	0.0	0.0
Prop In Lane	0.13		0.24	0.04		0.23	0.26		0.12	0.21		0.42
Lane Grp Cap(c), veh/h	662	0	0	681	0	0	702	0	0	862	0	0
V/C Ratio(X)	0.52	0.00	0.00	0.77	0.00	0.00	0.17	0.00	0.00	0.92	0.00	0.00
Avail Cap(c_a), veh/h	836	0	0	872	0	0	702	0	0	862	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.6	0.0	0.0	16.6	0.0	0.0	8.2	0.0	0.0	14.5	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	3.1	0.0	0.0	0.1	0.0	0.0	14.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	0.0	5.3	0.0	0.0	0.7	0.0	0.0	11.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.2	0.0	0.0	19.7	0.0	0.0	8.3	0.0	0.0	29.2	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	C	A	A
Approach Vol, veh/h		346			522			117			792	
Approach Delay, s/veh		15.2			19.7			8.3			29.2	
Approach LOS		B			B			A			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		30.0		24.2		30.0		24.2				
Change Period (Y+Rc), s		4.6		5.8		4.6		5.8				
Max Green Setting (Gmax), s		25.4		24.2		25.4		24.2				
Max Q Clear Time (g_c+I1), s		3.9		10.5		27.4		16.5				
Green Ext Time (p_c), s		0.7		1.7		0.0		1.9				

Intersection Summary												
HCM 6th Ctrl Delay			22.3									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	76.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	163	747	174	148	1038	91	159	33	121	36	50	84
Future Vol, veh/h	163	747	174	148	1038	91	159	33	121	36	50	84
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	168	770	179	153	1070	94	164	34	125	37	52	87

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1164	0	0	949	0	0	2599	2576	770	2698	2708	1117
Stage 1	-	-	-	-	-	-	1106	1106	-	1423	1423	-
Stage 2	-	-	-	-	-	-	1493	1470	-	1275	1285	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	607	-	-	732	-	-	~ 17	~ 26	404	~ 14	~ 21	255
Stage 1	-	-	-	-	-	-	258	289	-	170	204	-
Stage 2	-	-	-	-	-	-	~ 155	193	-	207	237	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	607	-	-	732	-	-	-	~ 15	404	~ 14	~ 12	255
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ -254	~ -19	-	~ -262	~ 16	-
Stage 1	-	-	-	-	-	-	187	209	-	123	161	-
Stage 2	-	-	-	-	-	-	~ 55	153	-	87	171	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	1.3		$ 1263.8
HCM LOS			-	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	607	-	-	732	-	-	51
HCM Lane V/C Ratio	-	0.277	-	-	0.208	-	-	3.436
HCM Control Delay (s)	-	13.2	-	-	11.2	-	-	$ 1263.8
HCM Lane LOS	-	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	-	1.1	-	-	0.8	-	-	19

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	291	66	57	166	18	15
Future Vol, veh/h	291	66	57	166	18	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	316	72	62	180	20	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	388	0	656	352
Stage 1	-	-	-	-	352	-
Stage 2	-	-	-	-	304	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1182	-	433	696
Stage 1	-	-	-	-	716	-
Stage 2	-	-	-	-	753	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1182	-	410	696
Mov Cap-2 Maneuver	-	-	-	-	410	-
Stage 1	-	-	-	-	716	-
Stage 2	-	-	-	-	714	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	12.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	504	-	-	1182	-
HCM Lane V/C Ratio	0.071	-	-	0.052	-
HCM Control Delay (s)	12.7	-	-	8.2	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	804	38	36	1245	72	14	0	85	20	0	17
Future Vol, veh/h	62	804	38	36	1245	72	14	0	85	20	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	67	874	41	39	1353	78	15	0	92	22	0	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1431	0	0	915	0	0	2508	2538	458	2041	2519	1392
Stage 1	-	-	-	-	-	-	1029	1029	-	1470	1470	-
Stage 2	-	-	-	-	-	-	1479	1509	-	571	1049	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	481	-	-	754	-	-	17	28	555	38	28	176
Stage 1	-	-	-	-	-	-	254	314	-	160	193	-
Stage 2	-	-	-	-	-	-	158	185	-	478	307	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	481	-	-	754	-	-	~ 11	19	555	24	19	176
Mov Cap-2 Maneuver	-	-	-	-	-	-	48	74	-	80	92	-
Stage 1	-	-	-	-	-	-	181	224	-	114	183	-
Stage 2	-	-	-	-	-	-	134	175	-	284	219	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.3	35.3	57.6
HCM LOS			E	F

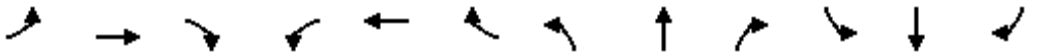
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	223	481	-	-	754	-	-	107
HCM Lane V/C Ratio	0.483	0.14	-	-	0.052	-	-	0.376
HCM Control Delay (s)	35.3	13.7	-	-	10	-	-	57.6
HCM Lane LOS	E	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	2.4	0.5	-	-	0.2	-	-	1.5

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	19	1350	243	2484	54	21	61	33
Future Volume (vph)	19	1350	243	2484	54	21	61	33
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	27.8	27.8	27.8	27.8
Total Split (s)	9.6	78.0	12.0	80.4	30.0	30.0	30.0	30.0
Total Split (%)	8.0%	65.0%	10.0%	67.0%	25.0%	25.0%	25.0%	25.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	5.8	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 109.8
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 41: Vineyard Av. & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	1350	73	243	2484	43	54	21	146	61	33	30
Future Volume (veh/h)	19	1350	73	243	2484	43	54	21	146	61	33	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	21	1467	79	264	2700	47	59	23	159	66	36	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	38	1108	60	116	1235	21	260	36	247	151	157	144
Arrive On Green	0.02	0.62	0.62	0.06	0.66	0.66	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1810	1786	96	1810	1862	32	1428	207	1434	1289	913	837
Grp Volume(v), veh/h	21	0	1546	264	0	2747	59	0	182	66	0	69
Grp Sat Flow(s),veh/h/ln	1810	0	1883	1810	0	1894	1428	0	1642	1289	0	1749
Q Serve(g_s), s	1.3	0.0	71.8	7.4	0.0	76.7	4.3	0.0	11.9	5.8	0.0	3.9
Cycle Q Clear(g_c), s	1.3	0.0	71.8	7.4	0.0	76.7	8.2	0.0	11.9	17.8	0.0	3.9
Prop In Lane	1.00		0.05	1.00		0.02	1.00		0.87	1.00		0.48
Lane Grp Cap(c), veh/h	38	0	1168	116	0	1256	260	0	283	151	0	301
V/C Ratio(X)	0.55	0.00	1.32	2.28	0.00	2.19	0.23	0.00	0.64	0.44	0.00	0.23
Avail Cap(c_a), veh/h	78	0	1168	116	0	1256	312	0	343	199	0	366
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.1	0.0	22.0	54.2	0.0	19.5	44.8	0.0	44.6	52.9	0.0	41.3
Incr Delay (d2), s/veh	4.5	0.0	151.6	603.2	0.0	536.7	0.4	0.0	3.0	2.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	75.1	22.6	0.0	213.5	1.5	0.0	4.9	1.9	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.5	0.0	173.6	657.3	0.0	556.2	45.3	0.0	47.6	54.8	0.0	41.7
LnGrp LOS	E	A	F	F	A	F	D	A	D	D	A	D
Approach Vol, veh/h		1567			3011			241			135	
Approach Delay, s/veh		172.1			565.0			47.0			48.1	
Approach LOS		F			F			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.7	12.0	78.0		25.7	7.1	82.9				
Change Period (Y+Rc), s		5.8	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		24.2	7.4	71.8		24.2	5.0	74.2				
Max Q Clear Time (g_c+I1), s		13.9	9.4	73.8		19.8	3.3	78.7				
Green Ext Time (p_c), s		0.8	0.0	0.0		0.2	0.0	0.0				

Intersection Summary	
HCM 6th Ctrl Delay	401.4
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	218.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	24	242	111	150	407	80	34	54	12	112	165	73
Future Vol, veh/h	24	242	111	150	407	80	34	54	12	112	165	73
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	26	263	121	163	442	87	37	59	13	122	179	79

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	529	0	0	384	0	0	1317	1231	324	1224	1248	486
Stage 1	-	-	-	-	-	-	376	376	-	812	812	-
Stage 2	-	-	-	-	-	-	941	855	-	412	436	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1048	-	-	1186	-	-	136	179	722	157	~ 175	585
Stage 1	-	-	-	-	-	-	649	620	-	376	395	-
Stage 2	-	-	-	-	-	-	319	378	-	621	583	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1048	-	-	1186	-	-	-	139	722	~ 87	~ 136	585
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	139	-	~ 87	~ 136	-
Stage 1	-	-	-	-	-	-	628	600	-	364	317	-
Stage 2	-	-	-	-	-	-	96	304	-	533	564	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	2		$ 909
HCM LOS			-	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1048	-	-	1186	-	-	133
HCM Lane V/C Ratio	-	0.025	-	-	0.137	-	-	2.86
HCM Control Delay (s)	-	8.5	0	-	8.5	0	-	$ 909
HCM Lane LOS	-	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	-	0.1	-	-	0.5	-	-	35

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	275	601	33	54	1040	351	177	129	45	229	94	136
Future Vol, veh/h	275	601	33	54	1040	351	177	129	45	229	94	136
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	296	646	35	58	1118	377	190	139	48	246	101	146

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1495	0	0	681	0	0	2802	2867	341	2408	2696	1307
Stage 1	-	-	-	-	-	-	1256	1256	-	1423	1423	-
Stage 2	-	-	-	-	-	-	1546	1611	-	985	1273	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	455	-	-	921	-	-	~ 10	~ 17	661	~ 20	~ 22	197
Stage 1	-	-	-	-	-	-	~ 184	245	-	~ 170	204	-
Stage 2	-	-	-	-	-	-	~ 145	165	-	270	241	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	455	-	-	921	-	-	-	0	661	-	0	197
Mov Cap-2 Maneuver	-	-	-	-	-	-	500	0	-	~ -81	~ -76	-
Stage 1	-	-	-	-	-	-	~ 184	0	-	~ 170	191	-
Stage 2	-	-	-	-	-	-	~ 16	155	-	-	0	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8	0.3		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	661	455	-	-	921	-	-	-	+
HCM Lane V/C Ratio	-	0.283	0.65	-	-	0.063	-	-	-	-
HCM Control Delay (s)	-	12.6	26.4	-	-	9.2	-	-	-	-
HCM Lane LOS	-	B	D	-	-	A	-	-	-	-
HCM 95th %tile Q(veh)	-	1.2	4.5	-	-	0.2	-	-	-	-

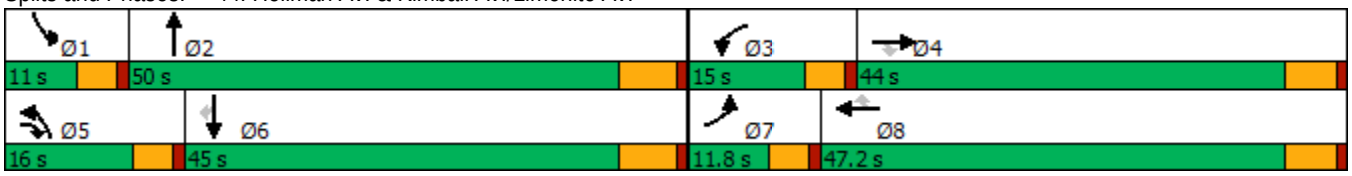
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

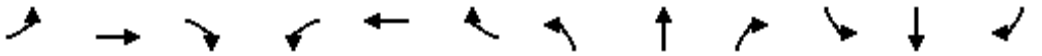
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	55	601	376	331	825	116	163	264	39	45	25
Future Volume (vph)	55	601	376	331	825	116	163	264	39	45	25
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	1	6	
Permitted Phases			4			8					6
Detector Phase	7	4	5	3	8	8	5	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	37.8	9.6	43.2	9.6	43.2	43.2
Total Split (s)	11.8	44.0	16.0	15.0	47.2	47.2	16.0	50.0	11.0	45.0	45.0
Total Split (%)	9.8%	36.7%	13.3%	12.5%	39.3%	39.3%	13.3%	41.7%	9.2%	37.5%	37.5%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	None	None	None	Max	Max	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 117.7
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	601	376	331	825	116	163	264	298	39	45	25
Future Volume (veh/h)	55	601	376	331	825	116	163	264	298	39	45	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	58	633	396	348	868	122	172	278	314	41	47	26
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	74	619	681	279	1341	598	167	674	601	54	1111	495
Arrive On Green	0.04	0.33	0.33	0.09	0.37	0.37	0.10	0.37	0.37	0.03	0.31	0.31
Sat Flow, veh/h	1714	1900	1610	3141	3610	1610	1714	1805	1610	1714	3610	1610
Grp Volume(v), veh/h	58	633	396	348	868	122	172	278	314	41	47	26
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1570	1805	1610	1714	1805	1610	1714	1805	1610
Q Serve(g_s), s	3.9	38.2	22.1	10.4	23.3	6.0	11.4	13.4	17.8	2.8	1.1	1.3
Cycle Q Clear(g_c), s	3.9	38.2	22.1	10.4	23.3	6.0	11.4	13.4	17.8	2.8	1.1	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	74	619	681	279	1341	598	167	674	601	54	1111	495
V/C Ratio(X)	0.79	1.02	0.58	1.25	0.65	0.20	1.03	0.41	0.52	0.76	0.04	0.05
Avail Cap(c_a), veh/h	105	619	681	279	1341	598	167	674	601	94	1194	533
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.6	39.5	25.9	53.4	30.5	25.1	52.9	27.2	28.6	56.4	28.5	28.6
Incr Delay (d2), s/veh	13.8	42.1	1.3	138.5	1.1	0.2	78.5	1.9	3.2	8.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	24.1	8.2	9.3	9.9	2.3	8.4	5.8	7.0	1.3	0.4	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.4	81.6	27.2	191.9	31.6	25.2	131.4	29.1	31.8	64.3	28.5	28.6
LnGrp LOS	E	F	C	F	C	C	F	C	C	E	C	C
Approach Vol, veh/h		1087			1338			764			114	
Approach Delay, s/veh		61.1			72.7			53.2			41.4	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	50.0	15.0	44.0	16.0	42.3	9.6	49.4
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	6.4	43.8	10.4	38.2	11.4	38.8	7.2	41.4
Max Q Clear Time (g_c+I1), s	4.8	19.8	12.4	40.2	13.4	3.3	5.9	25.3
Green Ext Time (p_c), s	0.0	3.4	0.0	0.0	0.0	0.3	0.0	5.4

Intersection Summary	
HCM 6th Ctrl Delay	63.3
HCM 6th LOS	E

Intersection	
Intersection Delay, s/veh	695
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	792	37	253	1294	118	78	0	153	180	0	73
Future Vol, veh/h	45	792	37	253	1294	118	78	0	153	180	0	73
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	48	843	39	269	1377	126	83	0	163	191	0	78
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	412.9	1035.3	30.6	36.7
HCM LOS	F	F	D	E

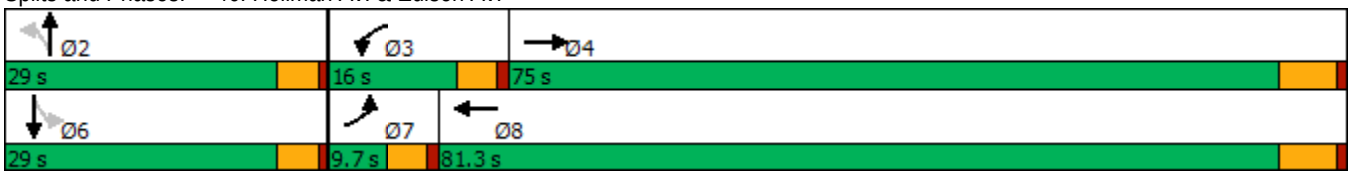
Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	34%	100%	0%	0%	100%	0%	71%
Vol Thru, %	0%	0%	100%	0%	0%	92%	0%
Vol Right, %	66%	0%	0%	100%	0%	8%	29%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	231	45	792	37	253	1412	253
LT Vol	78	45	0	0	253	0	180
Through Vol	0	0	792	0	0	1294	0
RT Vol	153	0	0	37	0	118	73
Lane Flow Rate	246	48	843	39	269	1502	269
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.602	0.117	1.936	0.083	0.694	3.638	0.682
Departure Headway (Hd)	11.693	10.726	10.199	9.461	11.057	10.462	11.906
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	312	337	362	381	328	361	307
Service Time	9.393	8.426	7.899	7.161	8.757	8.162	9.606
HCM Lane V/C Ratio	0.788	0.142	2.329	0.102	0.82	4.161	0.876
HCM Control Delay	30.6	14.8	454.2	13	35.4	1214.5	36.7
HCM Lane LOS	D	B	F	B	E	F	E
HCM 95th-tile Q	3.7	0.4	46.8	0.3	4.9	117.5	4.6

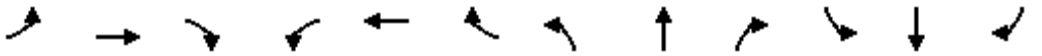
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	35	1339	175	2589	61	10	43	84
Future Volume (vph)	35	1339	175	2589	61	10	43	84
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	26.7	26.7	26.7	26.7
Total Split (s)	9.7	75.0	16.0	81.3	29.0	29.0	29.0	29.0
Total Split (%)	8.1%	62.5%	13.3%	67.8%	24.2%	24.2%	24.2%	24.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.7	4.7		4.7
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 113.6
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 46: Hellman Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	1339	211	175	2589	48	61	10	49	43	84	62
Future Volume (veh/h)	35	1339	211	175	2589	48	61	10	49	43	84	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	38	1455	229	190	2814	52	66	11	53	47	91	67
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	53	985	155	175	1275	24	174	41	198	82	119	79
Arrive On Green	0.03	0.61	0.61	0.10	0.69	0.69	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1714	1602	252	1714	1859	34	1248	284	1369	293	824	542
Grp Volume(v), veh/h	38	0	1684	190	0	2866	66	0	64	205	0	0
Grp Sat Flow(s),veh/h/ln	1714	0	1855	1714	0	1894	1248	0	1654	1660	0	0
Q Serve(g_s), s	2.5	0.0	68.8	11.4	0.0	76.7	0.0	0.0	3.9	9.7	0.0	0.0
Cycle Q Clear(g_c), s	2.5	0.0	68.8	11.4	0.0	76.7	10.6	0.0	3.9	13.5	0.0	0.0
Prop In Lane	1.00		0.14	1.00		0.02	1.00		0.83	0.23		0.33
Lane Grp Cap(c), veh/h	53	0	1140	175	0	1298	174	0	240	280	0	0
V/C Ratio(X)	0.72	0.00	1.48	1.09	0.00	2.21	0.38	0.00	0.27	0.73	0.00	0.00
Avail Cap(c_a), veh/h	78	0	1140	175	0	1298	264	0	359	401	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	53.7	0.0	21.6	50.3	0.0	17.6	45.4	0.0	42.6	46.7	0.0	0.0
Incr Delay (d2), s/veh	6.5	0.0	219.5	93.6	0.0	545.8	1.4	0.0	0.6	4.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	93.8	9.2	0.0	221.6	1.8	0.0	1.6	5.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.3	0.0	241.1	143.9	0.0	563.4	46.8	0.0	43.2	50.7	0.0	0.0
LnGrp LOS	E	A	F	F	A	F	D	A	D	D	A	A
Approach Vol, veh/h		1722			3056			130			205	
Approach Delay, s/veh		237.1			537.3			45.0			50.7	
Approach LOS		F			F			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		20.9	16.0	75.0		20.9	8.1	82.9				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		* 4.7	4.6	6.2				
Max Green Setting (Gmax), s		* 24	11.4	68.8		* 24	5.1	75.1				
Max Q Clear Time (g_c+I1), s		12.6	13.4	70.8		15.5	4.5	78.7				
Green Ext Time (p_c), s		0.4	0.0	0.0		0.7	0.0	0.0				

Intersection Summary		
HCM 6th Ctrl Delay		404.2
HCM 6th LOS		F

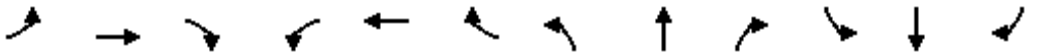
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	22	49	143	440	61	110	34	171
Future Volume (vph)	22	49	143	440	61	110	34	171
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	26.7	26.7	26.7	26.7
Total Split (s)	39.0	39.0	39.0	39.0	81.0	81.0	81.0	81.0
Total Split (%)	32.5%	32.5%	32.5%	32.5%	67.5%	67.5%	67.5%	67.5%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.7	4.7	4.7	4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 47: Hellman Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	49	29	143	440	102	61	110	30	34	171	66
Future Volume (veh/h)	22	49	29	143	440	102	61	110	30	34	171	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	24	53	32	155	478	111	66	120	33	37	186	72
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	60	307	185	381	413	96	715	912	251	815	829	321
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.64	0.64	0.64	0.64	0.64	0.64
Sat Flow, veh/h	840	1110	670	1333	1491	346	1139	1435	394	1254	1304	505
Grp Volume(v), veh/h	24	0	85	155	0	589	66	0	153	37	0	258
Grp Sat Flow(s),veh/h/ln	840	0	1779	1333	0	1838	1139	0	1829	1254	0	1809
Q Serve(g_s), s	0.0	0.0	4.4	12.0	0.0	33.2	3.1	0.0	4.0	1.5	0.0	7.3
Cycle Q Clear(g_c), s	33.2	0.0	4.4	16.3	0.0	33.2	10.4	0.0	4.0	5.4	0.0	7.3
Prop In Lane	1.00		0.38	1.00		0.19	1.00		0.22	1.00		0.28
Lane Grp Cap(c), veh/h	60	0	492	381	0	508	715	0	1163	815	0	1150
V/C Ratio(X)	0.40	0.00	0.17	0.41	0.00	1.16	0.09	0.00	0.13	0.05	0.00	0.22
Avail Cap(c_a), veh/h	60	0	492	381	0	508	715	0	1163	815	0	1150
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	60.0	0.0	33.0	39.2	0.0	43.4	11.5	0.0	8.7	9.8	0.0	9.3
Incr Delay (d2), s/veh	4.3	0.0	0.2	0.7	0.0	91.5	0.3	0.0	0.2	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	1.9	3.9	0.0	27.4	0.8	0.0	1.6	0.4	0.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.3	0.0	33.1	39.9	0.0	134.9	11.7	0.0	8.9	9.9	0.0	9.7
LnGrp LOS	E	A	C	D	A	F	B	A	A	A	A	A
Approach Vol, veh/h		109			744			219			295	
Approach Delay, s/veh		40.0			115.1			9.8			9.7	
Approach LOS		D			F			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		81.0		39.0		81.0		39.0				
Change Period (Y+Rc), s		* 4.7		5.8		* 4.7		5.8				
Max Green Setting (Gmax), s		* 76		33.2		* 76		33.2				
Max Q Clear Time (g_c+I1), s		12.4		35.2		9.3		35.2				
Green Ext Time (p_c), s		1.2		0.0		1.9		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		69.5
HCM 6th LOS		E

Notes

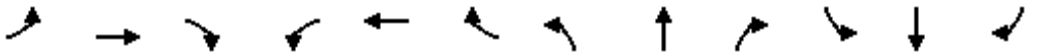
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	4	595	804	1607	662
Future Volume (vph)	4	595	804	1607	662
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (%)	32.2%	32.2%	31.1%	67.8%	36.7%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	685	4	595	804	1607	0	0	662	237
Future Volume (veh/h)	0	0	0	685	4	595	804	1607	0	0	662	237
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				745	4	464	874	1747	0	0	720	248
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				460	2	411	599	3181	0	0	1069	350
Arrive On Green				0.26	0.26	0.26	0.66	1.00	0.00	0.00	0.22	0.22
Sat Flow, veh/h				1800	10	1610	1810	5358	0	0	5168	1606
Grp Volume(v), veh/h				749	0	464	874	1747	0	0	720	248
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1729	0	0	1634	1606
Q Serve(g_s), s				23.0	0.0	23.0	29.8	0.0	0.0	0.0	12.1	12.8
Cycle Q Clear(g_c), s				23.0	0.0	23.0	29.8	0.0	0.0	0.0	12.1	12.8
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				463	0	411	599	3181	0	0	1069	350
V/C Ratio(X)				1.62	0.00	1.13	1.46	0.55	0.00	0.00	0.67	0.71
Avail Cap(c_a), veh/h				463	0	411	599	3181	0	0	1481	486
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.5	0.0	33.5	15.2	0.0	0.0	0.0	32.2	32.5
Incr Delay (d2), s/veh				288.5	0.0	83.9	207.9	0.1	0.0	0.0	3.4	11.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				46.4	0.0	27.5	39.4	0.0	0.0	0.0	4.8	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				322.0	0.0	117.4	223.2	0.1	0.0	0.0	35.6	44.0
LnGrp LOS				F	A	F	F	A	A	A	D	D
Approach Vol, veh/h					1213			2621			968	
Approach Delay, s/veh					243.7			74.5			37.8	
Approach LOS					F			E			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	61.0	29.0	35.6	25.4
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	55.2	23.0	24.0	* 27
Max Q Clear Time (g_c+I1), s	2.0	25.0	31.8	14.8
Green Ext Time (p_c), s	19.1	0.0	0.0	4.8

Intersection Summary	
HCM 6th Ctrl Delay	109.8
HCM 6th LOS	F

Notes

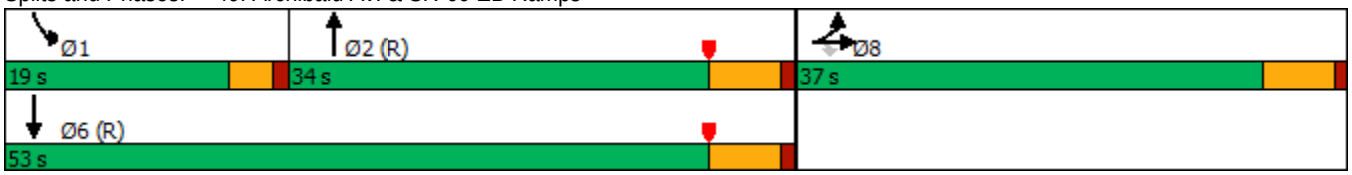
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

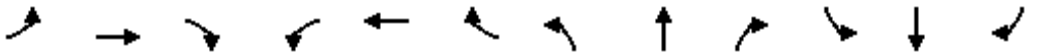
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	4	624	1937	246	1102
Future Volume (vph)	4	624	1937	246	1102
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (%)	41.1%	41.1%	37.8%	21.1%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	475	4	624	0	0	0	0	1937	789	246	1102	0
Future Volume (veh/h)	475	4	624	0	0	0	0	1937	789	246	1102	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	505	4	447				0	2061	608	262	1172	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	565	4	506				0	1748	505	300	2887	0
Arrive On Green	0.31	0.31	0.31				0.00	0.35	0.35	0.05	0.18	0.00
Sat Flow, veh/h	1796	14	1610				0	5310	1456	1810	5358	0
Grp Volume(v), veh/h	509	0	447				0	2002	667	262	1172	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1598	1810	1729	0
Q Serve(g_s), s	24.1	0.0	23.7				0.0	31.2	31.2	12.9	17.9	0.0
Cycle Q Clear(g_c), s	24.1	0.0	23.7				0.0	31.2	31.2	12.9	17.9	0.0
Prop In Lane	0.99		1.00				0.00		0.91	1.00		0.00
Lane Grp Cap(c), veh/h	569	0	506				0	1698	554	300	2887	0
V/C Ratio(X)	0.89	0.00	0.88				0.00	1.18	1.21	0.87	0.41	0.00
Avail Cap(c_a), veh/h	628	0	558				0	1698	554	302	2887	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.09	0.09	0.71	0.71	0.00
Uniform Delay (d), s/veh	29.4	0.0	29.3				0.0	29.4	29.4	41.6	23.6	0.0
Incr Delay (d2), s/veh	14.4	0.0	14.5				0.0	81.0	94.0	17.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	0.0	10.4				0.0	23.6	25.1	7.5	8.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.9	0.0	43.7				0.0	110.4	123.4	58.8	23.9	0.0
LnGrp LOS	D	A	D				A	F	F	E	C	A
Approach Vol, veh/h		956						2669			1434	
Approach Delay, s/veh		43.8						113.7			30.3	
Approach LOS		D						F			C	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	18.9	37.0				55.9		34.1				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	15.0	28.2				47.2		31.2				
Max Q Clear Time (g_c+I1), s	14.9	33.2				19.9		26.1				
Green Ext Time (p_c), s	0.0	0.0				8.4		2.2				

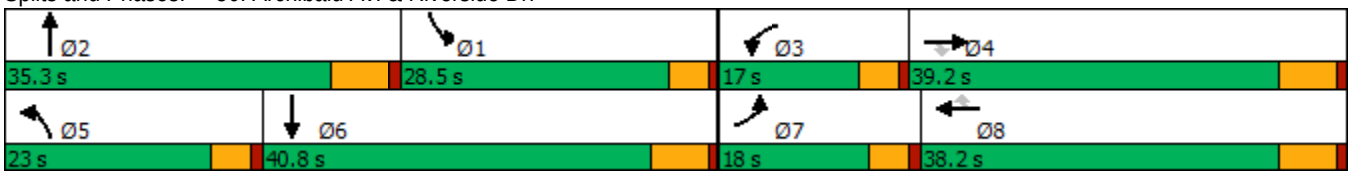
Intersection Summary			
HCM 6th Ctrl Delay			76.8
HCM 6th LOS			E

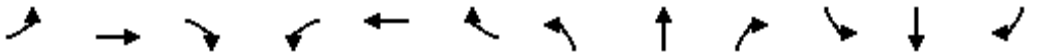
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	287	407	371	181	571	209	404	1747	162	854
Future Volume (vph)	287	407	371	181	571	209	404	1747	162	854
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	18.0	39.2	39.2	17.0	38.2	38.2	23.0	35.3	28.5	40.8
Total Split (%)	15.0%	32.7%	32.7%	14.2%	31.8%	31.8%	19.2%	29.4%	23.8%	34.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 110.3
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	287	407	371	181	571	209	404	1747	117	162	854	294
Future Volume (veh/h)	287	407	371	181	571	209	404	1747	117	162	854	294
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	305	433	261	193	607	140	430	1859	121	172	909	235
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	217	834	365	201	800	350	298	1370	89	269	1123	289
Arrive On Green	0.13	0.23	0.23	0.12	0.22	0.22	0.17	0.28	0.28	0.16	0.27	0.27
Sat Flow, veh/h	1714	3610	1579	1714	3610	1579	1714	4976	323	1714	4108	1058
Grp Volume(v), veh/h	305	433	261	193	607	140	430	1290	690	172	765	379
Grp Sat Flow(s),veh/h/ln	1714	1805	1579	1714	1805	1579	1714	1729	1841	1714	1729	1708
Q Serve(g_s), s	13.4	11.1	16.1	11.8	16.6	5.2	18.4	29.1	29.1	9.9	21.8	21.9
Cycle Q Clear(g_c), s	13.4	11.1	16.1	11.8	16.6	5.2	18.4	29.1	29.1	9.9	21.8	21.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.62
Lane Grp Cap(c), veh/h	217	834	365	201	800	350	298	952	507	269	946	467
V/C Ratio(X)	1.40	0.52	0.72	0.96	0.76	0.40	1.44	1.36	1.36	0.64	0.81	0.81
Avail Cap(c_a), veh/h	217	1127	493	201	1093	478	298	952	507	388	1132	559
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.2	35.5	37.5	46.4	38.5	14.7	43.7	38.3	38.3	41.7	35.8	35.9
Incr Delay (d2), s/veh	207.0	0.5	3.2	51.5	2.1	0.7	216.6	167.0	174.9	0.9	3.8	7.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.9	4.7	6.2	7.7	7.2	2.9	25.3	33.6	36.9	4.1	9.1	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	253.1	36.0	40.6	97.9	40.6	15.5	260.3	205.3	213.2	42.7	39.6	43.5
LnGrp LOS	F	D	D	F	D	B	F	F	F	D	D	D
Approach Vol, veh/h		999			940			2410			1316	
Approach Delay, s/veh		103.5			48.6			217.4			41.1	
Approach LOS		F			D			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.8	35.3	17.0	30.6	23.0	35.1	18.0	29.6
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	23.9	* 29	12.4	33.0	18.4	34.6	13.4	32.0
Max Q Clear Time (g_c+I1), s	11.9	31.1	13.8	18.1	20.4	23.9	15.4	18.6
Green Ext Time (p_c), s	0.2	0.0	0.0	3.0	0.0	5.0	0.0	3.4

Intersection Summary	
HCM 6th Ctrl Delay	128.4
HCM 6th LOS	F

Notes

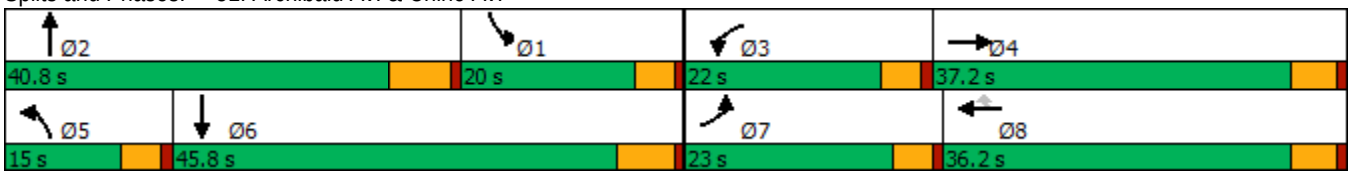
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

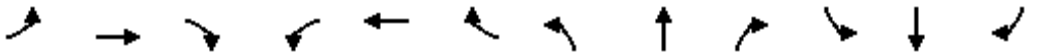
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	164	6	97	5	296	145	1898	182	1119
Future Volume (vph)	164	6	97	5	296	145	1898	182	1119
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	36.2	9.6	36.2	36.2	9.6	29.5	9.6	29.2
Total Split (s)	23.0	37.2	22.0	36.2	36.2	15.0	40.8	20.0	45.8
Total Split (%)	19.2%	31.0%	18.3%	30.2%	30.2%	12.5%	34.0%	16.7%	38.2%
Yellow Time (s)	3.6	4.2	3.6	4.2	4.2	3.6	5.5	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.2	4.6	5.2	5.2	4.6	6.5	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 98.9
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	6	41	97	5	296	145	1898	66	182	1119	30
Future Volume (veh/h)	164	6	41	97	5	296	145	1898	66	182	1119	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	178	7	28	105	5	186	158	2063	70	198	1216	31
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	211	53	213	132	217	184	189	1915	65	252	1544	39
Arrive On Green	0.12	0.16	0.16	0.08	0.11	0.11	0.11	0.37	0.37	0.15	0.43	0.43
Sat Flow, veh/h	1714	331	1325	1714	1900	1610	1714	5152	174	1714	3597	92
Grp Volume(v), veh/h	178	0	35	105	5	186	158	1383	750	198	610	637
Grp Sat Flow(s),veh/h/ln	1714	0	1656	1714	1900	1610	1714	1729	1868	1714	1805	1884
Q Serve(g_s), s	9.4	0.0	1.7	5.6	0.2	7.3	8.3	34.3	34.3	10.3	26.9	26.9
Cycle Q Clear(g_c), s	9.4	0.0	1.7	5.6	0.2	7.3	8.3	34.3	34.3	10.3	26.9	26.9
Prop In Lane	1.00		0.80	1.00		1.00	1.00		0.09	1.00		0.05
Lane Grp Cap(c), veh/h	211	0	266	132	217	184	189	1285	694	252	775	808
V/C Ratio(X)	0.84	0.00	0.13	0.79	0.02	1.01	0.84	1.08	1.08	0.79	0.79	0.79
Avail Cap(c_a), veh/h	342	0	574	323	638	541	193	1285	694	286	775	808
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	0.0	33.2	41.9	36.3	19.7	40.2	29.0	29.0	38.0	22.7	22.7
Incr Delay (d2), s/veh	5.0	0.0	0.2	4.0	0.0	33.7	24.5	48.3	57.8	10.3	8.0	7.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.0	0.7	2.4	0.1	5.6	4.6	21.0	24.5	4.8	11.7	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.6	0.0	33.4	45.9	36.3	53.4	64.7	77.3	86.7	48.2	30.7	30.4
LnGrp LOS	D	A	C	D	D	F	E	F	F	D	C	C
Approach Vol, veh/h		213			296			2291			1445	
Approach Delay, s/veh		42.8			50.5			79.5			33.0	
Approach LOS		D			D			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.8	40.8	11.7	20.0	14.8	45.8	16.0	15.7
Change Period (Y+Rc), s	6.2	* 6.5	4.6	5.2	4.6	6.2	4.6	5.2
Max Green Setting (Gmax), s	15.4	* 34	17.4	32.0	10.4	39.6	18.4	31.0
Max Q Clear Time (g_c+I1), s	12.3	36.3	7.6	3.7	10.3	28.9	11.4	9.3
Green Ext Time (p_c), s	0.1	0.0	0.1	0.1	0.0	5.3	0.1	0.6

Intersection Summary	
HCM 6th Ctrl Delay	59.8
HCM 6th LOS	E

Notes

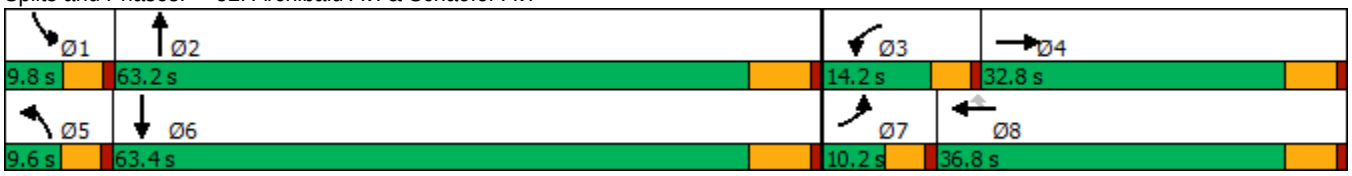
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

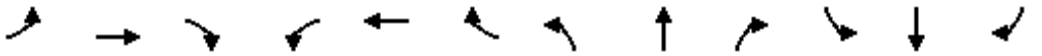
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	10	10	42	140	339	69	1546	22	939
Future Volume (vph)	10	10	42	140	339	69	1546	22	939
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	32.8	9.6	33.5	9.6	33.5
Total Split (s)	10.2	32.8	14.2	36.8	36.8	9.6	63.2	9.8	63.4
Total Split (%)	8.5%	27.3%	11.8%	30.7%	30.7%	8.0%	52.7%	8.2%	52.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6		5.8	4.6	6.5	4.6	6.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 107.1
Natural Cycle: 110
Control Type: Actuated-Uncoordinated

Splits and Phases: 52: Archibald Av. & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	10	42	140	339	69	1546	10	22	939	191
Future Volume (veh/h)	10	10	10	42	140	339	69	1546	10	22	939	191
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	11	11	11	46	152	368	75	1680	0	24	1021	208
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	22	197	197	60	0	399	81	1843	0	41	1449	294
Arrive On Green	0.01	0.23	0.23	0.04	0.25	0.25	0.05	0.51	0.00	0.02	0.49	0.49
Sat Flow, veh/h	1714	872	872	1714	0	1606	1714	3705	0	1714	2976	605
Grp Volume(v), veh/h	11	0	22	46	0	368	75	1680	0	24	618	611
Grp Sat Flow(s),veh/h/ln	1714	0	1743	1714	0	1606	1714	1805	0	1714	1805	1776
Q Serve(g_s), s	0.7	0.0	1.0	2.8	0.0	23.5	4.6	44.9	0.0	1.5	28.2	28.3
Cycle Q Clear(g_c), s	0.7	0.0	1.0	2.8	0.0	23.5	4.6	44.9	0.0	1.5	28.2	28.3
Prop In Lane	1.00		0.50	1.00		1.00	1.00		0.00	1.00		0.34
Lane Grp Cap(c), veh/h	22	0	395	60	0	399	81	1843	0	41	879	865
V/C Ratio(X)	0.49	0.00	0.06	0.76	0.00	0.92	0.92	0.91	0.00	0.58	0.70	0.71
Avail Cap(c_a), veh/h	91	0	447	156	0	472	81	1942	0	85	975	959
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	31.9	50.4	0.0	38.6	50.0	23.6	0.0	50.9	21.1	21.1
Incr Delay (d2), s/veh	6.1	0.0	0.1	7.3	0.0	21.6	72.9	6.8	0.0	4.8	2.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.4	1.3	0.0	11.2	3.5	18.0	0.0	0.7	10.8	10.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.7	0.0	32.0	57.7	0.0	60.2	122.9	30.4	0.0	55.7	23.1	23.3
LnGrp LOS	E	A	C	E	A	E	F	C	A	E	C	C
Approach Vol, veh/h		33			414			1755			1253	
Approach Delay, s/veh		40.6			59.9			34.4			23.8	
Approach LOS		D			E			C			C	

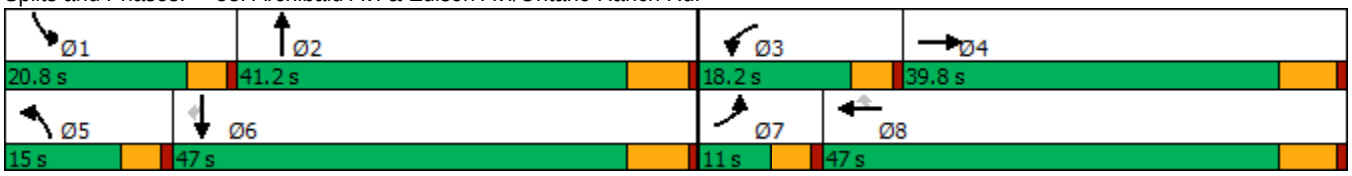
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	60.3	8.3	29.7	9.6	57.8	6.0	32.0
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	5.2	56.7	9.6	27.0	5.0	56.9	5.6	31.0
Max Q Clear Time (g_c+I1), s	3.5	46.9	4.8	3.0	6.6	30.3	2.7	25.5
Green Ext Time (p_c), s	0.0	6.9	0.0	0.1	0.0	8.1	0.0	0.6

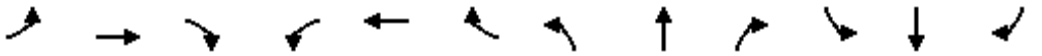
Intersection Summary	
HCM 6th Ctrl Delay	33.7
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	454	864	375	611	1806	299	502	1276	520	79	671	269
Future Volume (vph)	454	864	375	611	1806	299	502	1276	520	79	671	269
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	11.0	39.8		18.2	47.0	47.0	15.0	41.2		20.8	47.0	47.0
Total Split (%)	9.2%	33.2%		15.2%	39.2%	39.2%	12.5%	34.3%		17.3%	39.2%	39.2%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 111.9
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	454	864	375	611	1806	299	502	1276	520	79	671	269
Future Volume (veh/h)	454	864	375	611	1806	299	502	1276	520	79	671	269
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	468	891	0	630	1862	254	518	1315	0	81	692	244
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	182	1099		387	702	595	162	1135		102	1010	451
Arrive On Green	0.06	0.30	0.00	0.12	0.37	0.37	0.09	0.31	0.00	0.06	0.28	0.28
Sat Flow, veh/h	3141	3610	1610	3141	1900	1610	1714	3610	1610	1714	3610	1610
Grp Volume(v), veh/h	468	891	0	630	1862	254	518	1315	0	81	692	244
Grp Sat Flow(s),veh/h/ln	1570	1805	1610	1570	1900	1610	1714	1805	1610	1714	1805	1610
Q Serve(g_s), s	6.4	25.2	0.0	13.6	40.8	13.0	10.4	34.7	0.0	5.1	18.9	14.2
Cycle Q Clear(g_c), s	6.4	25.2	0.0	13.6	40.8	13.0	10.4	34.7	0.0	5.1	18.9	14.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	182	1099		387	702	595	162	1135		102	1010	451
V/C Ratio(X)	2.57	0.81		1.63	2.65	0.43	3.21	1.16		0.79	0.68	0.54
Avail Cap(c_a), veh/h	182	1099		387	702	595	162	1135		252	1324	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	35.5	0.0	48.4	34.8	26.0	50.0	37.8	0.0	51.2	35.4	33.7
Incr Delay (d2), s/veh	722.4	4.7	0.0	294.2	747.3	0.5	1009.3	81.6	0.0	5.1	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.7	11.1	0.0	20.9	163.1	4.8	49.5	27.0	0.0	2.3	7.9	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	774.3	40.1	0.0	342.6	782.1	26.5	1059.3	119.5	0.0	56.3	36.4	34.8
LnGrp LOS	F	D		F	F	C	F	F		E	D	C
Approach Vol, veh/h		1359	A		2746			1833	A		1017	
Approach Delay, s/veh		293.0			611.4			385.0			37.6	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	41.2	18.2	39.8	15.0	37.4	11.0	47.0
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	16.2	34.7	13.6	33.6	10.4	40.5	6.4	40.8
Max Q Clear Time (g_c+I1), s	7.1	36.7	15.6	27.2	12.4	20.9	8.4	42.8
Green Ext Time (p_c), s	0.0	0.0	0.0	2.9	0.0	4.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	405.6
HCM 6th LOS	F

Notes

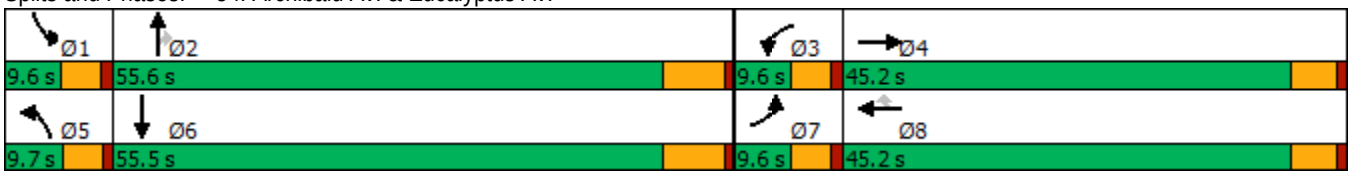
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

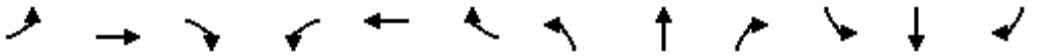
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	47	30	122	275	162	237	1975	84	60	1305
Future Volume (vph)	47	30	122	275	162	237	1975	84	60	1305
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	45.2	9.6	45.2	45.2	9.6	32.5	32.5	9.6	32.5
Total Split (s)	9.6	45.2	9.6	45.2	45.2	9.7	55.6	55.6	9.6	55.5
Total Split (%)	8.0%	37.7%	8.0%	37.7%	37.7%	8.1%	46.3%	46.3%	8.0%	46.3%
Yellow Time (s)	3.6	4.2	3.6	4.2	4.2	3.6	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.2	4.6	5.2	5.2	4.6	6.5	6.5	4.6	6.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 102.8
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	30	36	122	275	162	237	1975	84	60	1305	169
Future Volume (veh/h)	47	30	36	122	275	162	237	1975	84	60	1305	169
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	51	32	39	131	296	163	255	2124	87	65	1403	182
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	66	140	170	166	365	310	90	1830	816	82	1617	208
Arrive On Green	0.04	0.18	0.18	0.05	0.19	0.19	0.05	0.51	0.51	0.05	0.50	0.50
Sat Flow, veh/h	1714	779	950	3238	1900	1610	1714	3610	1610	1714	3217	414
Grp Volume(v), veh/h	51	0	71	131	296	163	255	2124	87	65	782	803
Grp Sat Flow(s),veh/h/ln	1714	0	1729	1619	1900	1610	1714	1805	1610	1714	1805	1826
Q Serve(g_s), s	2.9	0.0	3.4	3.9	14.5	8.9	5.1	49.4	2.7	3.7	37.1	38.1
Cycle Q Clear(g_c), s	2.9	0.0	3.4	3.9	14.5	8.9	5.1	49.4	2.7	3.7	37.1	38.1
Prop In Lane	1.00		0.55	1.00		1.00	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	66	0	310	166	365	310	90	1830	816	82	907	918
V/C Ratio(X)	0.77	0.00	0.23	0.79	0.81	0.53	2.84	1.16	0.11	0.79	0.86	0.88
Avail Cap(c_a), veh/h	88	0	709	166	780	661	90	1830	816	88	907	918
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.5	0.0	34.2	45.7	37.7	35.4	46.2	24.0	12.5	45.9	21.3	21.5
Incr Delay (d2), s/veh	18.2	0.0	0.4	20.4	4.3	1.4	859.5	78.9	0.3	31.9	10.6	11.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	1.4	2.0	7.0	3.5	23.5	37.4	1.0	2.2	15.7	16.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.6	0.0	34.6	66.1	42.0	36.8	905.7	102.9	12.8	77.8	31.8	33.0
LnGrp LOS	E	A	C	E	D	D	F	F	B	E	C	C
Approach Vol, veh/h		122			590			2466			1650	
Approach Delay, s/veh		47.1			45.9			182.7			34.2	
Approach LOS		D			D			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	55.9	9.6	22.7	9.7	55.5	8.3	23.9
Change Period (Y+Rc), s	4.6	6.5	4.6	5.2	4.6	6.5	4.6	5.2
Max Green Setting (Gmax), s	5.0	49.1	5.0	40.0	5.1	49.0	5.0	40.0
Max Q Clear Time (g_c+I1), s	5.7	51.4	5.9	5.4	7.1	40.1	4.9	16.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.4	0.0	5.9	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	111.8
HCM 6th LOS	F

Notes

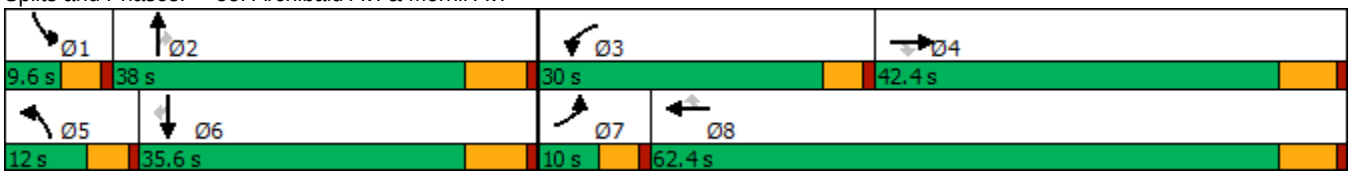
User approved volume balancing among the lanes for turning movement.

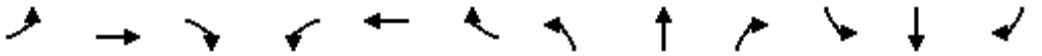
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	348	28	233	139	96	158	730	1479	88	48	889	603
Future Volume (vph)	348	28	233	139	96	158	730	1479	88	48	889	603
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	10.0	42.4	42.4	30.0	62.4	62.4	12.0	38.0	38.0	9.6	35.6	35.6
Total Split (%)	8.3%	35.3%	35.3%	25.0%	52.0%	52.0%	10.0%	31.7%	31.7%	8.0%	29.7%	29.7%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 84
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	348	28	233	139	96	158	730	1479	88	48	889	603
Future Volume (veh/h)	348	28	233	139	96	158	730	1479	88	48	889	603
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	359	29	185	143	99	68	753	1525	72	49	916	556
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	120	277	234	179	342	290	164	1533	684	132	1340	598
Arrive On Green	0.07	0.15	0.15	0.10	0.18	0.18	0.10	0.42	0.42	0.04	0.37	0.37
Sat Flow, veh/h	1714	1900	1610	1714	1900	1610	1714	3610	1610	3141	3610	1610
Grp Volume(v), veh/h	359	29	185	143	99	68	753	1525	72	49	916	556
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1714	1900	1610	1714	1805	1610	1570	1805	1610
Q Serve(g_s), s	5.4	1.0	8.6	6.3	3.5	2.8	7.4	32.5	2.1	1.2	16.5	25.6
Cycle Q Clear(g_c), s	5.4	1.0	8.6	6.3	3.5	2.8	7.4	32.5	2.1	1.2	16.5	25.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	120	277	234	179	342	290	164	1533	684	132	1340	598
V/C Ratio(X)	3.00	0.10	0.79	0.80	0.29	0.23	4.59	0.99	0.11	0.37	0.68	0.93
Avail Cap(c_a), veh/h	120	890	754	563	1381	1171	164	1533	684	203	1359	606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.9	28.7	31.9	33.8	27.4	27.1	34.9	22.1	13.4	36.0	20.5	23.4
Incr Delay (d2), s/veh	921.0	0.2	5.9	3.1	0.5	0.4	1628.7	21.6	0.1	0.6	1.4	21.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	32.7	0.4	3.6	2.7	1.6	1.1	77.0	15.6	0.7	0.4	6.1	12.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	956.9	28.8	37.7	36.9	27.9	27.5	1663.6	43.8	13.5	36.7	21.9	44.4
LnGrp LOS	F	C	D	D	C	C	F	D	B	D	C	D
Approach Vol, veh/h		573			310			2350			1521	
Approach Delay, s/veh		613.2			32.0			561.9			30.6	
Approach LOS		F			C			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	39.3	12.7	17.5	12.0	35.2	10.0	20.1
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	31.5	25.4	36.2	7.4	29.1	5.4	56.2
Max Q Clear Time (g_c+I1), s	3.2	34.5	8.3	10.6	9.4	27.6	7.4	5.5
Green Ext Time (p_c), s	0.0	0.0	0.2	0.7	0.0	1.0	0.0	0.8

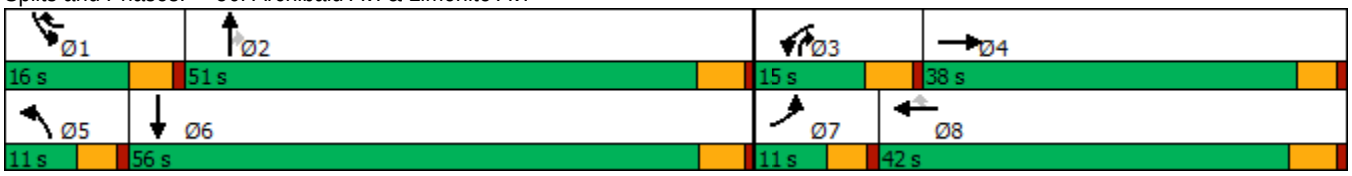
Intersection Summary	
HCM 6th Ctrl Delay	363.5
HCM 6th LOS	F

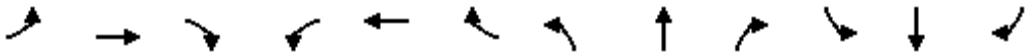
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	215	570	366	818	656	149	1108	372	406	766
Future Volume (vph)	215	570	366	818	656	149	1108	372	406	766
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4	3	8	1	5	2	3	1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	1	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.6	34.6	11.3	36.3	11.0	9.5	46.3	11.3	11.0	43.0
Total Split (s)	11.0	38.0	15.0	42.0	16.0	11.0	51.0	15.0	16.0	56.0
Total Split (%)	9.2%	31.7%	12.5%	35.0%	13.3%	9.2%	42.5%	12.5%	13.3%	46.7%
Yellow Time (s)	3.6	3.6	4.3	4.3	4.0	3.5	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	5.3	5.3	5.0	4.5	5.3	5.3	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	None	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 56: Archibald Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	570	113	366	818	656	149	1108	372	406	766	193
Future Volume (veh/h)	215	570	113	366	818	656	149	1108	372	406	766	193
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	234	620	123	398	889	654	162	1204	355	441	833	210
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	96	425	84	145	587	634	97	722	741	165	617	156
Arrive On Green	0.05	0.28	0.28	0.08	0.31	0.31	0.05	0.38	0.38	0.09	0.42	0.42
Sat Flow, veh/h	1810	1540	305	1810	1900	1576	1810	1900	1610	1810	1464	369
Grp Volume(v), veh/h	234	0	743	398	889	654	162	1204	355	441	0	1043
Grp Sat Flow(s),veh/h/ln	1810	0	1845	1810	1900	1576	1810	1900	1610	1810	0	1834
Q Serve(g_s), s	6.4	0.0	33.4	9.7	37.4	37.4	6.5	46.0	18.5	11.0	0.0	51.0
Cycle Q Clear(g_c), s	6.4	0.0	33.4	9.7	37.4	37.4	6.5	46.0	18.5	11.0	0.0	51.0
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	96	0	509	145	587	634	97	722	741	165	0	773
V/C Ratio(X)	2.44	0.00	1.46	2.74	1.51	1.03	1.67	1.67	0.48	2.68	0.00	1.35
Avail Cap(c_a), veh/h	96	0	509	145	587	634	97	722	741	165	0	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.3	0.0	43.8	55.7	41.8	36.4	57.3	37.5	22.6	55.0	0.0	35.0
Incr Delay (d2), s/veh	680.6	0.0	217.2	803.7	239.9	44.3	340.7	306.2	2.2	773.4	0.0	165.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.9	0.0	45.3	36.7	55.7	25.1	12.1	81.3	7.0	40.1	0.0	56.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	737.9	0.0	261.0	859.4	281.7	80.7	398.0	343.7	24.8	828.4	0.0	200.9
LnGrp LOS	F	A	F	F	F	F	F	F	C	F	A	F
Approach Vol, veh/h		977			1941			1721			1484	
Approach Delay, s/veh		375.2			332.4			283.0			387.3	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	51.3	15.0	38.7	11.0	56.3	11.0	42.7
Change Period (Y+Rc), s	5.0	5.3	5.3	* 5.3	4.5	* 5.3	4.6	5.3
Max Green Setting (Gmax), s	11.0	45.7	9.7	* 33	6.5	* 51	6.4	36.7
Max Q Clear Time (g_c+I1), s	13.0	48.0	11.7	35.4	8.5	53.0	8.4	39.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	338.7
HCM 6th LOS	F

Notes

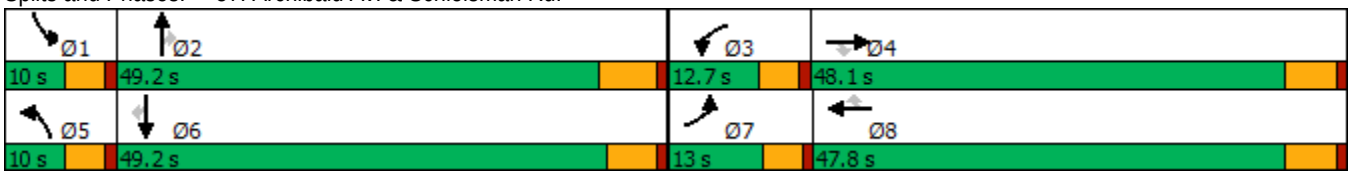
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

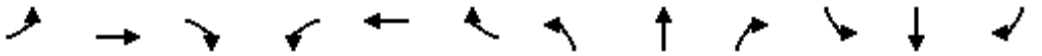
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	574	778	164	496	1067	360	291	938	388	319	696	528
Future Volume (vph)	574	778	164	496	1067	360	291	938	388	319	696	528
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	48.1	48.1	12.7	47.8	47.8	10.0	49.2	49.2	10.0	49.2	49.2
Total Split (%)	10.8%	40.1%	40.1%	10.6%	39.8%	39.8%	8.3%	41.0%	41.0%	8.3%	41.0%	41.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 114.6
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	574	778	164	496	1067	360	291	938	388	319	696	528
Future Volume (veh/h)	574	778	164	496	1067	360	291	938	388	319	696	528
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	624	846	115	539	1160	316	316	1020	350	347	757	454
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	257	1914	584	248	1901	583	165	1703	529	165	1703	521
Arrive On Green	0.07	0.37	0.37	0.07	0.37	0.37	0.05	0.33	0.33	0.05	0.33	0.33
Sat Flow, veh/h	3510	5187	1584	3510	5187	1590	3510	5187	1610	3510	5187	1588
Grp Volume(v), veh/h	624	846	115	539	1160	316	316	1020	350	347	757	454
Grp Sat Flow(s),veh/h/ln	1755	1729	1584	1755	1729	1590	1755	1729	1610	1755	1729	1588
Q Serve(g_s), s	8.4	14.1	5.7	8.1	20.9	18.0	5.4	18.8	21.4	5.4	13.2	30.8
Cycle Q Clear(g_c), s	8.4	14.1	5.7	8.1	20.9	18.0	5.4	18.8	21.4	5.4	13.2	30.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	257	1914	584	248	1901	583	165	1703	529	165	1703	521
V/C Ratio(X)	2.43	0.44	0.20	2.17	0.61	0.54	1.91	0.60	0.66	2.10	0.44	0.87
Avail Cap(c_a), veh/h	257	1914	584	248	1901	583	165	1946	604	165	1982	607
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.1	27.3	24.6	53.3	29.6	28.7	54.6	32.2	33.0	54.6	30.3	36.2
Incr Delay (d2), s/veh	653.2	0.7	0.8	540.9	1.5	3.6	431.5	0.4	2.2	514.2	0.2	11.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.9	5.7	2.2	22.1	8.5	7.1	12.2	7.5	8.3	14.1	5.2	13.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	706.3	28.0	25.4	594.1	31.1	32.3	486.1	32.6	35.3	568.8	30.5	47.9
LnGrp LOS	F	C	C	F	C	C	F	C	D	F	C	D
Approach Vol, veh/h		1585			2015			1686			1558	
Approach Delay, s/veh		294.9			181.9			118.2			155.4	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	43.8	12.7	48.1	10.0	43.8	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.4	43.0	8.1	42.3	5.4	* 44	8.4	42.0
Max Q Clear Time (g_c+I1), s	7.4	23.4	10.1	16.1	7.4	32.8	10.4	22.9
Green Ext Time (p_c), s	0.0	7.6	0.0	6.2	0.0	4.7	0.0	8.6

Intersection Summary		
HCM 6th Ctrl Delay		186.3
HCM 6th LOS		F

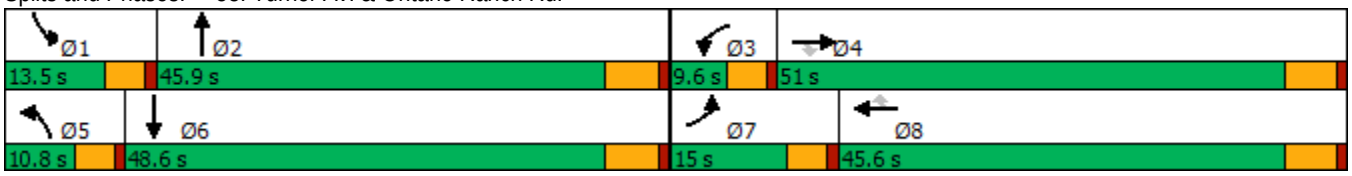
Notes

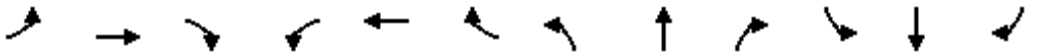
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	98	1029	41	52	2233	93	70	30	96	19
Future Volume (vph)	98	1029	41	52	2233	93	70	30	96	19
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	15.0	51.0	51.0	9.6	45.6	45.6	10.8	45.9	13.5	48.6
Total Split (%)	12.5%	42.5%	42.5%	8.0%	38.0%	38.0%	9.0%	38.3%	11.3%	40.5%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 95
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	1029	41	52	2233	93	70	30	45	96	19	210
Future Volume (veh/h)	98	1029	41	52	2233	93	70	30	45	96	19	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	107	1118	34	57	2427	92	76	33	36	104	21	205
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	134	1809	807	72	1679	749	96	125	136	130	26	252
Arrive On Green	0.08	0.50	0.50	0.04	0.47	0.47	0.06	0.15	0.15	0.08	0.17	0.17
Sat Flow, veh/h	1714	3610	1610	1714	3610	1610	1714	831	906	1714	152	1482
Grp Volume(v), veh/h	107	1118	34	57	2427	92	76	0	69	104	0	226
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1714	1805	1610	1714	0	1737	1714	0	1633
Q Serve(g_s), s	5.5	20.2	1.0	3.0	42.0	2.9	3.9	0.0	3.2	5.4	0.0	12.0
Cycle Q Clear(g_c), s	5.5	20.2	1.0	3.0	42.0	2.9	3.9	0.0	3.2	5.4	0.0	12.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.52	1.00		0.91
Lane Grp Cap(c), veh/h	134	1809	807	72	1679	749	96	0	261	130	0	278
V/C Ratio(X)	0.80	0.62	0.04	0.79	1.45	0.12	0.79	0.00	0.26	0.80	0.00	0.81
Avail Cap(c_a), veh/h	198	1809	807	95	1679	749	118	0	772	169	0	775
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.9	16.3	11.5	42.8	24.1	13.7	42.0	0.0	33.9	41.0	0.0	36.1
Incr Delay (d2), s/veh	7.7	1.6	0.1	20.3	203.8	0.3	20.1	0.0	0.5	13.9	0.0	5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	7.6	0.3	1.6	63.0	1.0	2.1	0.0	1.3	2.7	0.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.6	17.9	11.6	63.1	228.0	14.0	62.1	0.0	34.5	54.9	0.0	41.8
LnGrp LOS	D	B	B	E	F	B	E	A	C	D	A	D
Approach Vol, veh/h		1259			2576			145			330	
Approach Delay, s/veh		20.3			216.7			49.0			45.9	
Approach LOS		C			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	19.3	8.4	51.0	9.7	21.1	11.6	47.8
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	8.9	40.1	5.0	45.2	6.2	42.8	10.4	39.8
Max Q Clear Time (g_c+I1), s	7.4	5.2	5.0	22.2	5.9	14.0	7.5	44.0
Green Ext Time (p_c), s	0.0	0.3	0.0	8.0	0.0	1.3	0.0	0.0

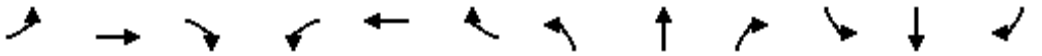
Intersection Summary	
HCM 6th Ctrl Delay	140.6
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	48	1264	55	163	1654	59	172	122	242	142	129
Future Volume (vph)	48	1264	55	163	1654	59	172	122	242	142	129
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	15.0	57.7	57.7	12.0	54.7	54.7	11.0	40.3	40.3	10.0	39.3
Total Split (%)	12.5%	48.1%	48.1%	10.0%	45.6%	45.6%	9.2%	33.6%	33.6%	8.3%	32.8%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 93.6
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 59: Harrison Av. & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	1264	55	163	1654	59	172	122	242	142	129	89
Future Volume (veh/h)	48	1264	55	163	1654	59	172	122	242	142	129	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	50	1317	50	170	1723	59	179	127	134	148	134	64
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	76	2139	646	157	2374	720	135	306	259	112	181	86
Arrive On Green	0.04	0.41	0.41	0.09	0.46	0.46	0.07	0.16	0.16	0.06	0.15	0.15
Sat Flow, veh/h	1810	5187	1566	1810	5187	1573	1810	1900	1604	1810	1215	580
Grp Volume(v), veh/h	50	1317	50	170	1723	59	179	127	134	148	0	198
Grp Sat Flow(s),veh/h/ln	1810	1729	1566	1810	1729	1573	1810	1900	1604	1810	0	1796
Q Serve(g_s), s	2.2	16.1	1.6	7.0	21.7	1.7	6.0	4.8	6.2	5.0	0.0	8.5
Cycle Q Clear(g_c), s	2.2	16.1	1.6	7.0	21.7	1.7	6.0	4.8	6.2	5.0	0.0	8.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	76	2139	646	157	2374	720	135	306	259	112	0	267
V/C Ratio(X)	0.66	0.62	0.08	1.08	0.73	0.08	1.33	0.41	0.52	1.32	0.00	0.74
Avail Cap(c_a), veh/h	225	3269	987	157	3075	933	135	827	698	112	0	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.0	18.6	14.3	36.7	17.7	12.3	37.2	30.3	30.9	37.7	0.0	32.8
Incr Delay (d2), s/veh	3.6	0.3	0.1	94.6	0.6	0.0	189.0	0.9	1.6	191.7	0.0	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.5	0.5	7.0	7.3	0.5	9.6	2.1	2.3	8.1	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	18.9	14.4	131.4	18.3	12.3	226.3	31.2	32.5	229.4	0.0	36.8
LnGrp LOS	D	B	B	F	B	B	F	C	C	F	A	D
Approach Vol, veh/h		1417			1952			440			346	
Approach Delay, s/veh		19.5			28.0			111.0			119.2	
Approach LOS		B			C			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	40.2	11.0	17.3	8.4	43.8	10.0	18.3
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	7.0	50.7	6.0	34.0	10.0	47.7	5.0	35.0
Max Q Clear Time (g_c+I1), s	9.0	18.1	8.0	10.5	4.2	23.7	7.0	8.2
Green Ext Time (p_c), s	0.0	10.6	0.0	1.0	0.0	13.1	0.0	1.0

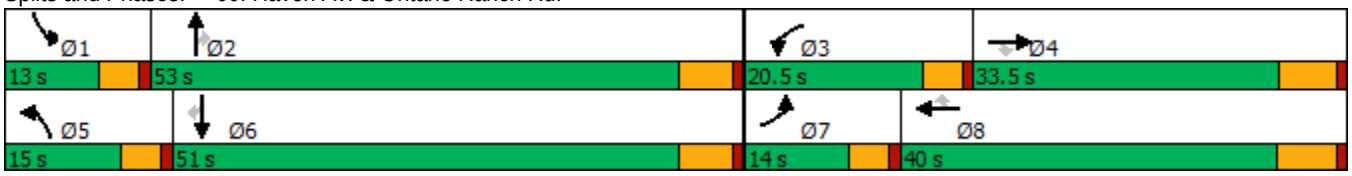
Intersection Summary	
HCM 6th Ctrl Delay	41.5
HCM 6th LOS	D

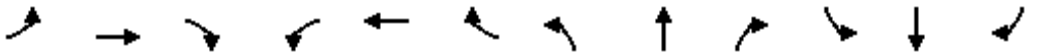
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	237	1178	44	26	1889	114	76	232	96	319	124	255
Future Volume (vph)	237	1178	44	26	1889	114	76	232	96	319	124	255
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	14.0	33.5	33.5	20.5	40.0	40.0	15.0	53.0	53.0	13.0	51.0	51.0
Total Split (%)	11.7%	27.9%	27.9%	17.1%	33.3%	33.3%	12.5%	44.2%	44.2%	10.8%	42.5%	42.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 93.5
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	237	1178	44	26	1889	114	76	232	96	319	124	255
Future Volume (veh/h)	237	1178	44	26	1889	114	76	232	96	319	124	255
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	252	1253	34	28	2010	76	81	247	52	339	132	238
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	185	2407	747	48	1388	619	103	313	265	165	382	324
Arrive On Green	0.11	0.46	0.46	0.03	0.38	0.38	0.06	0.16	0.16	0.10	0.20	0.20
Sat Flow, veh/h	1714	5187	1610	1714	3610	1610	1714	1900	1610	1714	1900	1610
Grp Volume(v), veh/h	252	1253	34	28	2010	76	81	247	52	339	132	238
Grp Sat Flow(s),veh/h/ln	1714	1729	1610	1714	1805	1610	1714	1900	1610	1714	1900	1610
Q Serve(g_s), s	9.4	14.9	1.0	1.4	33.5	2.7	4.1	10.9	2.4	8.4	5.2	12.1
Cycle Q Clear(g_c), s	9.4	14.9	1.0	1.4	33.5	2.7	4.1	10.9	2.4	8.4	5.2	12.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	185	2407	747	48	1388	619	103	313	265	165	382	324
V/C Ratio(X)	1.36	0.52	0.05	0.58	1.45	0.12	0.79	0.79	0.20	2.05	0.35	0.74
Avail Cap(c_a), veh/h	185	2407	747	313	1388	619	205	1029	872	165	985	835
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.9	16.5	12.8	41.8	26.8	17.3	40.4	34.9	31.4	39.4	29.9	32.6
Incr Delay (d2), s/veh	194.1	0.8	0.1	4.0	206.0	0.4	4.9	4.4	0.4	493.7	0.5	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.7	5.2	0.3	0.6	52.0	0.9	1.8	5.1	0.9	26.0	2.3	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	233.0	17.3	12.9	45.8	232.8	17.7	45.3	39.4	31.8	533.1	30.4	35.9
LnGrp LOS	F	B	B	D	F	B	D	D	C	F	C	D
Approach Vol, veh/h		1539			2114			380			709	
Approach Delay, s/veh		52.5			222.6			39.6			272.6	
Approach LOS		D			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	20.2	7.1	46.9	9.8	23.3	14.0	40.0
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	8.4	47.2	15.9	* 27	10.4	45.2	9.4	33.5
Max Q Clear Time (g_c+I1), s	10.4	12.9	3.4	16.9	6.1	14.1	11.4	35.5
Green Ext Time (p_c), s	0.0	1.5	0.0	5.6	0.0	1.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	160.2
HCM 6th LOS	F

Notes

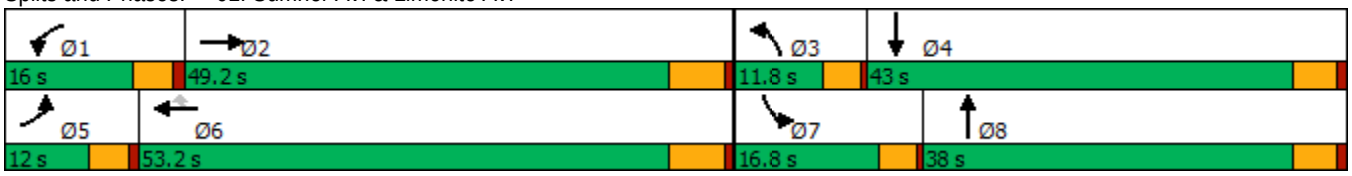
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

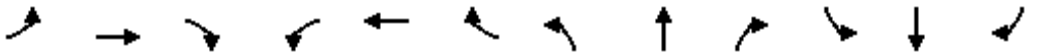
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	339	1076	125	1413	37	205	437	111	219
Future Volume (vph)	339	1076	125	1413	37	205	437	111	219
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	12.0	49.2	16.0	53.2	53.2	11.8	38.0	16.8	43.0
Total Split (%)	10.0%	41.0%	13.3%	44.3%	44.3%	9.8%	31.7%	14.0%	35.8%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 95.9
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 61: Sumner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	339	1076	48	125	1413	37	205	437	127	111	219	334
Future Volume (veh/h)	339	1076	48	125	1413	37	205	437	127	111	219	334
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	349	1109	43	129	1457	34	211	451	57	114	226	247
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	312	2162	84	202	2026	621	167	675	85	145	355	317
Arrive On Green	0.09	0.42	0.42	0.06	0.39	0.39	0.09	0.21	0.21	0.08	0.20	0.20
Sat Flow, veh/h	3510	5124	199	3510	5187	1590	1810	3226	406	1810	1805	1610
Grp Volume(v), veh/h	349	748	404	129	1457	34	211	251	257	114	226	247
Grp Sat Flow(s),veh/h/ln	1755	1729	1864	1755	1729	1590	1810	1805	1826	1810	1805	1610
Q Serve(g_s), s	7.5	13.5	13.5	3.0	20.1	1.1	7.8	10.8	10.9	5.2	9.7	12.3
Cycle Q Clear(g_c), s	7.5	13.5	13.5	3.0	20.1	1.1	7.8	10.8	10.9	5.2	9.7	12.3
Prop In Lane	1.00		0.11	1.00		1.00	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	312	1459	787	202	2026	621	167	378	382	145	355	317
V/C Ratio(X)	1.12	0.51	0.51	0.64	0.72	0.05	1.26	0.67	0.67	0.79	0.64	0.78
Avail Cap(c_a), veh/h	312	1771	955	479	2903	890	167	706	715	275	813	726
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.4	18.0	18.0	38.9	21.8	16.0	38.3	30.6	30.7	38.1	31.1	32.1
Incr Delay (d2), s/veh	86.6	0.3	0.5	1.3	0.5	0.0	156.4	1.5	1.5	3.5	1.4	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	4.7	5.1	1.3	7.2	0.4	10.5	4.5	4.6	2.3	4.1	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	125.0	18.3	18.5	40.1	22.3	16.0	194.6	32.1	32.2	41.6	32.5	35.2
LnGrp LOS	F	B	B	D	C	B	F	C	C	D	C	D
Approach Vol, veh/h		1501			1620			719			587	
Approach Delay, s/veh		43.1			23.6			79.8			35.4	
Approach LOS		D			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	41.6	11.8	21.6	12.0	38.9	10.7	22.7
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	11.5	43.2	7.8	38.0	7.5	47.2	12.8	33.0
Max Q Clear Time (g_c+I1), s	5.0	15.5	9.8	14.3	9.5	22.1	7.2	12.9
Green Ext Time (p_c), s	0.1	7.6	0.0	2.1	0.0	10.9	0.0	2.1

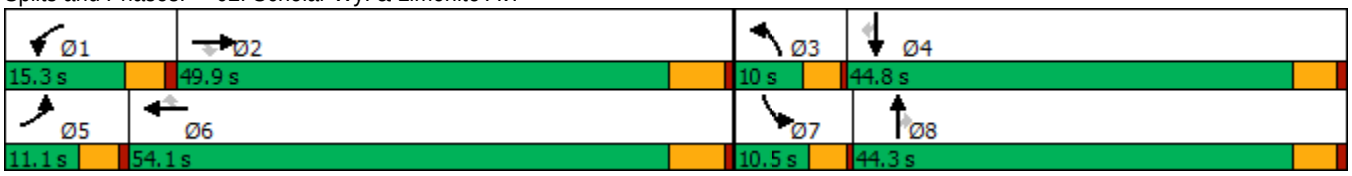
Intersection Summary	
HCM 6th Ctrl Delay	40.9
HCM 6th LOS	D

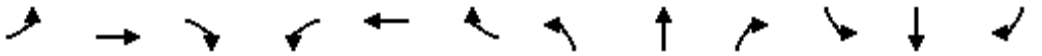
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	1140	73	47	1313	29	112	201	114	58	220	91
Future Volume (vph)	48	1140	73	47	1313	29	112	201	114	58	220	91
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	11.1	49.9	49.9	15.3	54.1	54.1	10.0	44.3	44.3	10.5	44.8	44.8
Total Split (%)	9.3%	41.6%	41.6%	12.8%	45.1%	45.1%	8.3%	36.9%	36.9%	8.8%	37.3%	37.3%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 92.6
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	1140	73	47	1313	29	112	201	114	58	220	91
Future Volume (veh/h)	48	1140	73	47	1313	29	112	201	114	58	220	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	52	1239	45	51	1427	21	122	218	82	63	239	97
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	66	1751	781	65	1749	780	137	356	301	81	564	239
Arrive On Green	0.04	0.49	0.49	0.04	0.48	0.48	0.08	0.19	0.19	0.04	0.16	0.16
Sat Flow, veh/h	1810	3610	1609	1810	3610	1610	1810	1900	1608	1810	3610	1531
Grp Volume(v), veh/h	52	1239	45	51	1427	21	122	218	82	63	239	97
Grp Sat Flow(s),veh/h/ln	1810	1805	1609	1810	1805	1610	1810	1900	1608	1810	1805	1531
Q Serve(g_s), s	2.3	21.3	1.2	2.2	26.6	0.5	5.3	8.3	3.5	2.7	4.7	4.5
Cycle Q Clear(g_c), s	2.3	21.3	1.2	2.2	26.6	0.5	5.3	8.3	3.5	2.7	4.7	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	66	1751	781	65	1749	780	137	356	301	81	564	239
V/C Ratio(X)	0.78	0.71	0.06	0.78	0.82	0.03	0.89	0.61	0.27	0.78	0.42	0.41
Avail Cap(c_a), veh/h	151	2005	894	247	2197	980	137	945	799	149	1818	771
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.8	16.0	10.8	37.8	17.4	10.6	36.2	29.5	27.5	37.4	30.1	30.0
Incr Delay (d2), s/veh	7.3	1.0	0.0	7.4	2.0	0.0	44.1	1.3	0.4	5.8	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	7.3	0.4	1.0	9.4	0.2	3.9	3.8	1.3	1.3	2.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.1	16.9	10.8	45.2	19.4	10.7	80.3	30.7	27.9	43.2	30.5	30.9
LnGrp LOS	D	B	B	D	B	B	F	C	C	D	C	C
Approach Vol, veh/h		1336			1499			422			399	
Approach Delay, s/veh		17.8			20.1			44.5			32.6	
Approach LOS		B			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	44.3	10.0	17.4	7.4	44.3	7.5	19.8
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	10.8	43.9	6.0	39.8	6.6	48.1	6.5	39.3
Max Q Clear Time (g_c+I1), s	4.2	23.3	7.3	6.7	4.3	28.6	4.7	10.3
Green Ext Time (p_c), s	0.0	8.5	0.0	1.5	0.0	9.6	0.0	1.2

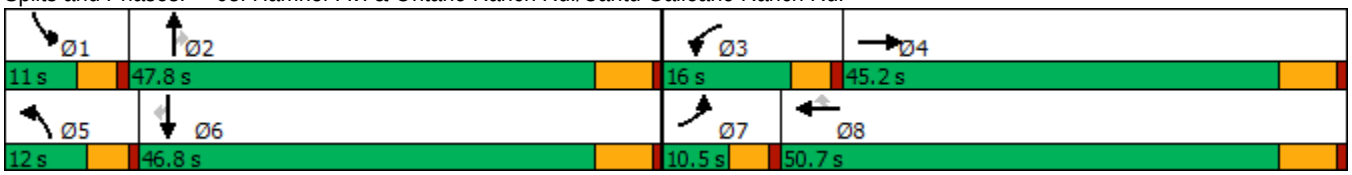
Intersection Summary	
HCM 6th Ctrl Delay	23.5
HCM 6th LOS	C

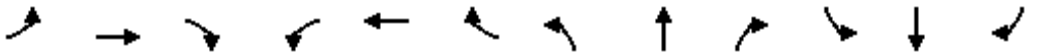
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	125	1083	388	1478	246	334	856	692	275	467	217
Future Volume (vph)	125	1083	388	1478	246	334	856	692	275	467	217
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	10.5	45.2	16.0	50.7	50.7	12.0	47.8	47.8	11.0	46.8	46.8
Total Split (%)	8.8%	37.7%	13.3%	42.3%	42.3%	10.0%	39.8%	39.8%	9.2%	39.0%	39.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	1083	195	388	1478	246	334	856	692	275	467	217
Future Volume (veh/h)	125	1083	195	388	1478	246	334	856	692	275	467	217
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1700	1900	1900	1700	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	136	1177	212	422	1607	267	363	930	745	299	508	236
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	154	1825	327	298	1339	597	194	1798	558	168	1221	544
Arrive On Green	0.05	0.33	0.33	0.09	0.37	0.37	0.06	0.35	0.35	0.05	0.34	0.34
Sat Flow, veh/h	3141	5616	1005	3141	3610	1610	3141	5187	1610	3141	3610	1609
Grp Volume(v), veh/h	136	1026	363	422	1607	267	363	930	745	299	508	236
Grp Sat Flow(s),veh/h/ln	1570	1634	1719	1570	1805	1610	1570	1729	1610	1570	1805	1609
Q Serve(g_s), s	5.2	21.4	21.7	11.4	44.5	15.0	7.4	17.1	41.6	6.4	13.0	13.7
Cycle Q Clear(g_c), s	5.2	21.4	21.7	11.4	44.5	15.0	7.4	17.1	41.6	6.4	13.0	13.7
Prop In Lane	1.00		0.58	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	154	1593	559	298	1339	597	194	1798	558	168	1221	544
V/C Ratio(X)	0.88	0.64	0.65	1.41	1.20	0.45	1.87	0.52	1.33	1.78	0.42	0.43
Avail Cap(c_a), veh/h	154	1593	559	298	1339	597	194	1798	558	168	1221	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.7	34.6	34.6	54.3	37.8	28.5	56.3	31.2	39.2	56.8	30.6	30.8
Incr Delay (d2), s/veh	38.9	0.9	2.6	205.1	97.6	0.5	412.4	0.3	162.5	376.1	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	8.1	8.9	12.8	36.4	5.6	13.9	6.8	40.6	11.2	5.4	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	95.6	35.5	37.3	259.4	135.4	29.0	468.7	31.5	201.7	432.9	30.8	31.3
LnGrp LOS	F	D	D	F	F	C	F	C	F	F	C	C
Approach Vol, veh/h		1525			2296			2038			1043	
Approach Delay, s/veh		41.3			145.8			171.6			146.2	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	47.8	16.0	45.2	12.0	46.8	10.5	50.7
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	6.4	41.6	11.4	39.0	7.4	40.6	5.9	44.5
Max Q Clear Time (g_c+I1), s	8.4	43.6	13.4	23.7	9.4	15.7	7.2	46.5
Green Ext Time (p_c), s	0.0	0.0	0.0	7.3	0.0	3.8	0.0	0.0

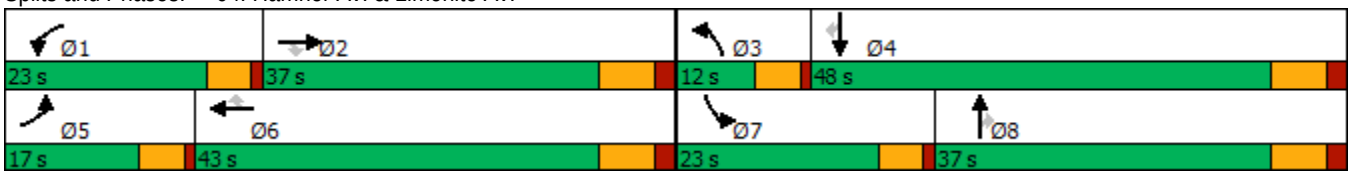
Intersection Summary	
HCM 6th Ctrl Delay	130.4
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	957	96	239	996	338	189	795	297	384	427	158
Future Volume (vph)	198	957	96	239	996	338	189	795	297	384	427	158
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	17.0	37.0	37.0	23.0	43.0	43.0	12.0	37.0	37.0	23.0	48.0	48.0
Total Split (%)	14.2%	30.8%	30.8%	19.2%	35.8%	35.8%	10.0%	30.8%	30.8%	19.2%	40.0%	40.0%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 115.5
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 64: Hamner Av. & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	198	957	96	239	996	338	189	795	297	384	427	158
Future Volume (veh/h)	198	957	96	239	996	338	189	795	297	384	427	158
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	211	1018	89	254	1060	334	201	846	218	409	454	128
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	274	1634	507	320	1184	528	228	1228	381	473	1590	494
Arrive On Green	0.08	0.32	0.32	0.09	0.33	0.33	0.06	0.24	0.24	0.13	0.31	0.31
Sat Flow, veh/h	3510	5187	1609	3510	3610	1610	3510	5187	1608	3510	5187	1610
Grp Volume(v), veh/h	211	1018	89	254	1060	334	201	846	218	409	454	128
Grp Sat Flow(s),veh/h/ln	1755	1729	1609	1755	1805	1610	1755	1729	1608	1755	1729	1610
Q Serve(g_s), s	6.4	18.1	4.3	7.7	30.1	19.0	6.1	16.1	12.9	12.3	7.2	6.5
Cycle Q Clear(g_c), s	6.4	18.1	4.3	7.7	30.1	19.0	6.1	16.1	12.9	12.3	7.2	6.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	274	1634	507	320	1184	528	228	1228	381	473	1590	494
V/C Ratio(X)	0.77	0.62	0.18	0.79	0.89	0.63	0.88	0.69	0.57	0.87	0.29	0.26
Avail Cap(c_a), veh/h	390	1634	507	585	1204	537	228	1442	447	585	1970	612
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.8	31.5	26.8	48.1	34.5	30.7	50.1	37.6	36.4	45.7	28.4	28.2
Incr Delay (d2), s/veh	3.3	1.1	0.3	1.7	9.4	3.4	29.9	1.8	2.9	9.4	0.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	7.3	1.6	3.3	14.0	7.5	3.6	6.7	5.2	5.8	2.9	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.1	32.6	27.2	49.8	43.9	34.1	79.9	39.4	39.3	55.2	28.7	28.8
LnGrp LOS	D	C	C	D	D	C	E	D	D	E	C	C
Approach Vol, veh/h		1318			1648			1265			991	
Approach Delay, s/veh		35.3			42.8			45.8			39.6	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	41.0	12.0	40.1	13.4	42.4	19.5	32.6
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	18.0	30.0	7.0	41.0	12.0	36.0	18.0	30.0
Max Q Clear Time (g_c+I1), s	9.7	20.1	8.1	9.2	8.4	32.1	14.3	18.1
Green Ext Time (p_c), s	0.2	6.8	0.0	6.8	0.1	3.3	0.2	7.4

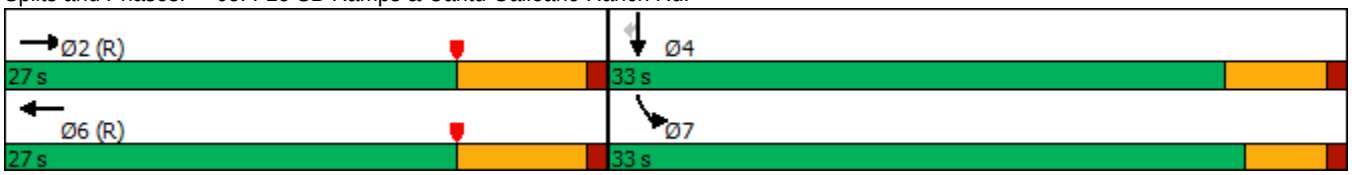
Intersection Summary	
HCM 6th Ctrl Delay	41.0
HCM 6th LOS	D

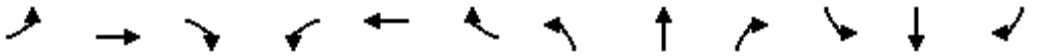
Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1439	510	719	221	392	0	1361
Future Volume (vph)	1439	510	719	221	392	0	1361
Turn Type	NA	Free	NA	Free	Prot	NA	Perm
Protected Phases	2		6		7	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		7	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		9.6	10.5	10.5
Total Split (s)	27.0		27.0		33.0	33.0	33.0
Total Split (%)	45.0%		45.0%		55.0%	55.0%	55.0%
Yellow Time (s)	5.8		5.8		3.6	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8		6.8		4.6	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Min		None	Min	Min

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 53 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	✣	↱
Traffic Volume (veh/h)	0	1439	510	0	719	221	0	0	0	392	0	1361
Future Volume (veh/h)	0	1439	510	0	719	221	0	0	0	392	0	1361
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1564	0	0	782	0				284	0	1340
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1837		0	1278					825	0	1468
Arrive On Green	0.00	0.35	0.00	0.00	0.35	0.00				0.46	0.00	0.46
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1564	0	0	782	0				284	0	1340
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	16.7	0.0	0.0	10.7	0.0				6.1	0.0	23.3
Cycle Q Clear(g_c), s	0.0	16.7	0.0	0.0	10.7	0.0				6.1	0.0	23.3
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1837		0	1278					825	0	1468
V/C Ratio(X)	0.00	0.85		0.00	0.61					0.34	0.00	0.91
Avail Cap(c_a), veh/h	0	1837		0	1278					857	0	1524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.22	0.00	0.00	0.90	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	17.9	0.0	0.0	16.0	0.0				10.5	0.0	15.2
Incr Delay (d2), s/veh	0.0	1.2	0.0	0.0	2.0	0.0				0.2	0.0	8.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.4	0.0	0.0	3.8	0.0				1.9	0.0	8.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	19.1	0.0	0.0	18.0	0.0				10.8	0.0	23.7
LnGrp LOS	A	B		A	B					B	A	C
Approach Vol, veh/h		1564	A		782	A					1624	
Approach Delay, s/veh		19.1			18.0						21.5	
Approach LOS		B			B						C	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		28.0		32.0		28.0						
Change Period (Y+Rc), s		6.8		4.6		6.8						
Max Green Setting (Gmax), s		20.2		28.4		20.2						
Max Q Clear Time (g_c+I1), s		18.7		25.3		12.7						
Green Ext Time (p_c), s		1.2		2.1		2.8						

Intersection Summary		
HCM 6th Ctrl Delay		19.9
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1824	724	1601	951	547	0	482
Future Volume (vph)	1824	724	1601	951	547	0	482
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		4	4	
Permitted Phases		2		6			4
Detector Phase	2	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	36.5	36.5	23.5	23.5	23.5
Total Split (s)	69.0	69.0	69.0	69.0	41.0	41.0	41.0
Total Split (%)	62.7%	62.7%	62.7%	62.7%	37.3%	37.3%	37.3%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	Min	Min

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	↰	↱↱
Traffic Volume (veh/h)	0	1824	724	0	1601	951	0	0	0	547	0	482
Future Volume (veh/h)	0	1824	724	0	1601	951	0	0	0	547	0	482
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1940	648	0	1703	1012				582	0	215
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	3697	1147	0	3697	1148				678	0	595
Arrive On Green	0.00	0.71	0.71	0.00	0.48	0.48				0.19	0.00	0.19
Sat Flow, veh/h	0	5358	1609	0	5358	1610				3619	0	3178
Grp Volume(v), veh/h	0	1940	648	0	1703	1012				582	0	215
Grp Sat Flow(s),veh/h/ln	0	1729	1609	0	1729	1610				1810	0	1589
Q Serve(g_s), s	0.0	18.9	21.3	0.0	24.2	62.4				17.1	0.0	6.5
Cycle Q Clear(g_c), s	0.0	18.9	21.3	0.0	24.2	62.4				17.1	0.0	6.5
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3697	1147	0	3697	1148				678	0	595
V/C Ratio(X)	0.00	0.52	0.56	0.00	0.46	0.88				0.86	0.00	0.36
Avail Cap(c_a), veh/h	0	3697	1147	0	3697	1148				1168	0	1026
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.67	0.67				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.73	0.73				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	7.2	7.6	0.0	14.6	24.6				43.3	0.0	39.0
Incr Delay (d2), s/veh	0.0	0.5	2.0	0.0	0.3	7.5				1.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.6	6.3	0.0	10.0	26.1				7.5	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.8	9.6	0.0	14.9	32.0				44.6	0.0	39.1
LnGrp LOS	A	A	A	A	B	C				D	A	D
Approach Vol, veh/h		2588			2715						797	
Approach Delay, s/veh		8.2			21.3						43.1	
Approach LOS		A			C						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		83.9		26.1		83.9						
Change Period (Y+Rc), s		5.5		5.5		5.5						
Max Green Setting (Gmax), s		63.5		35.5		63.5						
Max Q Clear Time (g_c+I1), s		23.3		19.1		64.4						
Green Ext Time (p_c), s		15.6		1.5		0.0						

Intersection Summary	
HCM 6th Ctrl Delay	18.6
HCM 6th LOS	B

Notes

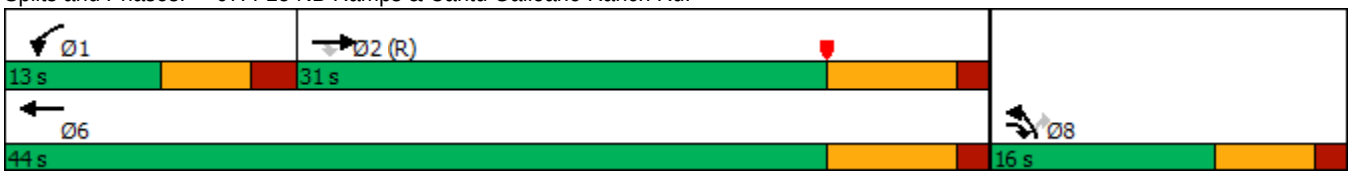
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	661	1170	445	627	313	365
Future Volume (vph)	661	1170	445	627	313	365
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	31.0	16.0	13.0	44.0	16.0	16.0
Total Split (%)	51.7%	26.7%	21.7%	73.3%	26.7%	26.7%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.0	6.0	7.3	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	661	1170	445	627	313	365
Future Volume (veh/h)	661	1170	445	627	313	365
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	718	942	484	682	391	197
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2049	904	410	3173	603	268
Arrive On Green	0.66	0.66	0.12	0.61	0.17	0.17
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	718	942	484	682	391	197
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	3.7	23.7	7.0	3.5	6.1	7.0
Cycle Q Clear(g_c), s	3.7	23.7	7.0	3.5	6.1	7.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2049	904	410	3173	603	268
V/C Ratio(X)	0.35	1.04	1.18	0.21	0.65	0.73
Avail Cap(c_a), veh/h	2049	904	410	3173	603	268
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.48	0.48	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.8	6.2	26.5	5.2	23.4	23.7
Incr Delay (d2), s/veh	0.2	32.5	104.2	0.0	5.3	16.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	12.8	8.5	0.7	2.7	3.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.0	38.7	130.7	5.2	28.7	40.0
LnGrp LOS	A	F	F	A	C	D
Approach Vol, veh/h	1660			1166	588	
Approach Delay, s/veh	25.0			57.3	32.5	
Approach LOS	C			E	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.0	31.0				44.0	16.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	7.0	23.7				36.7	10.0
Max Q Clear Time (g_c+I1), s	9.0	25.7				5.5	9.0
Green Ext Time (p_c), s	0.0	0.0				4.5	0.3

Intersection Summary			
HCM 6th Ctrl Delay		37.3	
HCM 6th LOS		D	

Notes

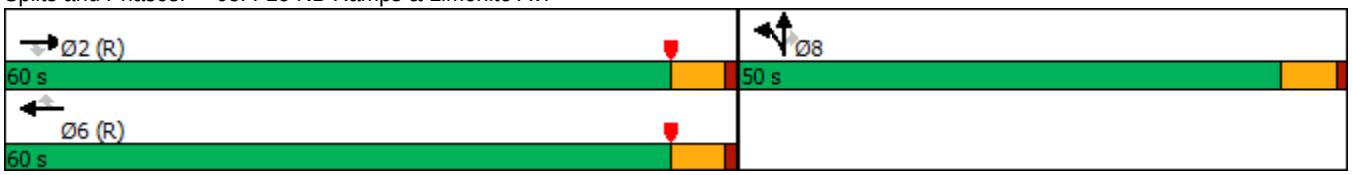
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	1528	843	1906	450	646	0	565
Future Volume (vph)	1528	843	1906	450	646	0	565
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		8	8	
Permitted Phases		2		6			8
Detector Phase	2	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	60.0	60.0	60.0	60.0	50.0	50.0	50.0
Total Split (%)	54.5%	54.5%	54.5%	54.5%	45.5%	45.5%	45.5%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱	↰	↕	↱↱			
Traffic Volume (veh/h)	0	1528	843	0	1906	450	646	0	565	0	0	0
Future Volume (veh/h)	0	1528	843	0	1906	450	646	0	565	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	0	1592	878	0	1985	349	673	0	375			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	0	3470	1077	0	3470	1077	836	0	734			
Arrive On Green	0.00	1.00	1.00	0.00	0.67	0.67	0.23	0.00	0.23			
Sat Flow, veh/h	0	5358	1610	0	5358	1610	3619	0	3176			
Grp Volume(v), veh/h	0	1592	878	0	1985	349	673	0	375			
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1610	1810	0	1588			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	22.6	10.1	19.3	0.0	11.3			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	22.6	10.1	19.3	0.0	11.3			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3470	1077	0	3470	1077	836	0	734			
V/C Ratio(X)	0.00	0.46	0.82	0.00	0.57	0.32	0.80	0.00	0.51			
Avail Cap(c_a), veh/h	0	3470	1077	0	3470	1077	1464	0	1285			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.79	0.79	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	9.8	7.7	40.0	0.0	36.9			
Incr Delay (d2), s/veh	0.0	0.3	5.5	0.0	0.7	0.8	1.9	0.0	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	1.6	0.0	7.2	3.2	8.5	0.0	4.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.3	5.5	0.0	10.5	8.5	41.8	0.0	37.4			
LnGrp LOS	A	A	A	A	B	A	D	A	D			
Approach Vol, veh/h		2470			2334			1048				
Approach Delay, s/veh		2.2			10.2			40.3				
Approach LOS		A			B			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		79.1				79.1		30.9				
Change Period (Y+Rc), s		5.5				5.5		5.5				
Max Green Setting (Gmax), s		54.5				54.5		44.5				
Max Q Clear Time (g_c+I1), s		2.0				24.6		21.3				
Green Ext Time (p_c), s		13.7				13.1		4.1				
Intersection Summary												
HCM 6th Ctrl Delay			12.2									
HCM 6th LOS			B									

Notes

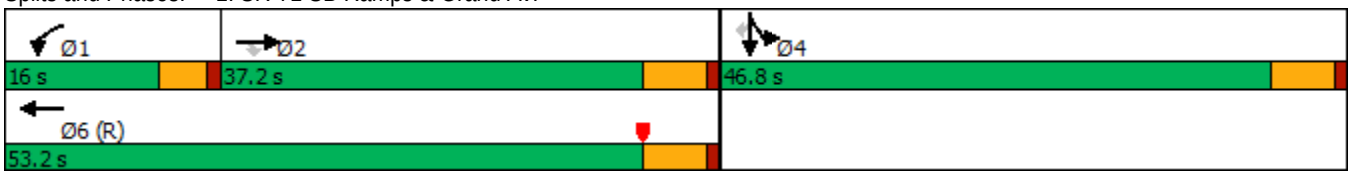
User approved volume balancing among the lanes for turning movement.

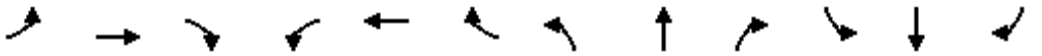
Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1786	630	337	1590	1032	1	531
Future Volume (vph)	1786	630	337	1590	1032	1	531
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	37.2	37.2	16.0	53.2	46.8	46.8	46.8
Total Split (%)	37.2%	37.2%	16.0%	53.2%	46.8%	46.8%	46.8%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1786	630	337	1590	0	0	0	0	1032	1	531
Future Volume (veh/h)	0	1786	630	337	1590	0	0	0	0	1032	1	531
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1941	602	366	1728	0				1123	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1722	535	421	2552	0				1303	0	
Arrive On Green	0.00	0.33	0.33	0.12	0.49	0.00				0.36	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	1941	602	366	1728	0				1123	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	33.2	33.2	10.2	25.4	0.0				28.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	33.2	33.2	10.2	25.4	0.0				28.8	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1722	535	421	2552	0				1303	0	
V/C Ratio(X)	0.00	1.13	1.13	0.87	0.68	0.00				0.86	0.00	
Avail Cap(c_a), veh/h	0	1722	535	421	2552	0				1549	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	33.4	33.4	43.2	19.3	0.0				29.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	65.3	78.5	1.9	0.1	0.0				4.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	23.3	23.7	4.4	9.1	0.0				12.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	98.7	111.9	45.1	19.5	0.0				34.3	0.0	0.0
LnGrp LOS	A	F	F	D	B	A				C	A	
Approach Vol, veh/h		2543			2094						1123	A
Approach Delay, s/veh		101.8			24.0						34.3	
Approach LOS		F			C						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.0	37.2		40.0		53.2
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	11.4	31.4		41.0		47.4
Max Q Clear Time (g_c+I1), s	12.2	35.2		30.8		27.4
Green Ext Time (p_c), s	0.0	0.0		3.4		11.9

Intersection Summary		
HCM 6th Ctrl Delay		60.3
HCM 6th LOS		E

Notes

User approved volume balancing among the lanes for turning movement.

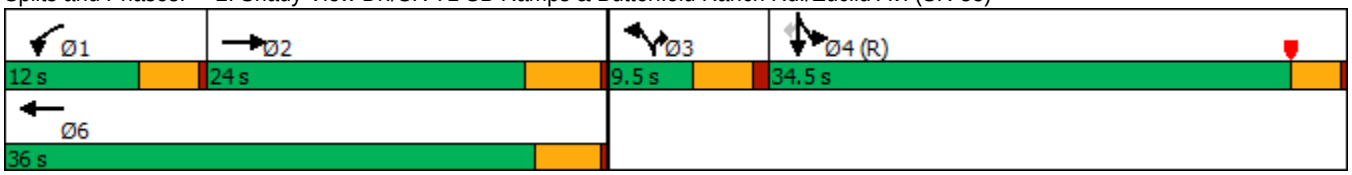
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

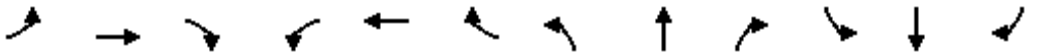
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	987	170	308	20	169	1040	75	37
Future Volume (vph)	987	170	308	20	169	1040	75	37
Turn Type	NA	Prot	NA	Prot	Prot	Split	NA	Perm
Protected Phases	2	1	6	3	3	4	4	
Permitted Phases								4
Detector Phase	2	1	6	3	3	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	9.0	26.5	9.5	9.5	32.5	32.5	32.5
Total Split (s)	24.0	12.0	36.0	9.5	9.5	34.5	34.5	34.5
Total Split (%)	30.0%	15.0%	45.0%	11.9%	11.9%	43.1%	43.1%	43.1%
Yellow Time (s)	4.5	3.5	4.0	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: Shady View Dr./SR-71 SB Ramps & Butterfield Ranch Rd./Euclid Av. (SR-83)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	987	67	170	308	0	20	0	169	1040	75	37
Future Volume (veh/h)	0	987	67	170	308	0	20	0	169	1040	75	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0	1900	0	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	1028	58	177	321	0	21	0	117	1139	0	12
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	0	825	47	181	1399		0	0	0	1832	0	815
Arrive On Green	0.00	0.24	0.24	0.03	0.13	0.00	0.00	0.00	0.00	0.51	0.00	0.51
Sat Flow, veh/h	0	3569	196	1810	3705	0		0		3619	0	1610
Grp Volume(v), veh/h	0	534	552	177	321	0		0.0		1139	0	12
Grp Sat Flow(s),veh/h/ln	0	1805	1865	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	19.0	19.0	7.8	6.4	0.0				18.1	0.0	0.3
Cycle Q Clear(g_c), s	0.0	19.0	19.0	7.8	6.4	0.0				18.1	0.0	0.3
Prop In Lane	0.00		0.11	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	429	443	181	1399					1832	0	815
V/C Ratio(X)	0.00	1.25	1.25	0.98	0.23					0.62	0.00	0.01
Avail Cap(c_a), veh/h	0	429	443	181	1421					1832	0	815
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.60	0.60	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	30.5	30.5	38.6	24.2	0.0				14.2	0.0	9.8
Incr Delay (d2), s/veh	0.0	128.9	128.5	45.7	0.0	0.0				1.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	22.9	23.6	5.8	2.6	0.0				6.6	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	159.4	159.0	84.3	24.2	0.0				15.8	0.0	9.9
LnGrp LOS	A	F	F	F	C					B	A	A
Approach Vol, veh/h		1086			498	A					1151	
Approach Delay, s/veh		159.2			45.6						15.8	
Approach LOS		F			D						B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	12.0	24.0		44.0		36.0						
Change Period (Y+Rc), s	4.0	5.0		3.5		* 5						
Max Green Setting (Gmax), s	8.0	19.0		31.0		* 32						
Max Q Clear Time (g_c+I1), s	9.8	21.0		20.1		8.4						
Green Ext Time (p_c), s	0.0	0.0		3.6		1.5						

Intersection Summary												
HCM 6th Ctrl Delay			78.1									
HCM 6th LOS			E									

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

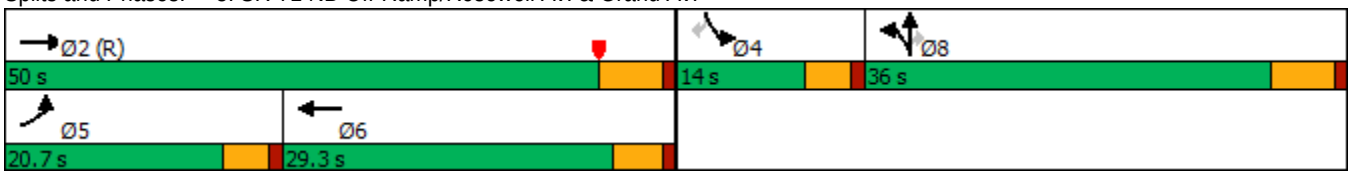
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

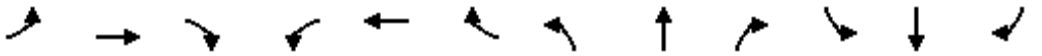
Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	449	1910	459	1972	431	156	244	185	908
Future Volume (vph)	449	1910	459	1972	431	156	244	185	908
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.5	34.8		14.7	34.8	34.8	34.8	9.5	9.5
Total Split (s)	20.7	50.0		29.3	36.0	36.0	36.0	14.0	14.0
Total Split (%)	20.7%	50.0%		29.3%	36.0%	36.0%	36.0%	14.0%	14.0%
Yellow Time (s)	3.5	4.8		3.7	4.8	4.8	4.8	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.8		4.7	5.8	5.8	5.8	4.5	4.5
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	None	None	None	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	449	1910	459	0	1972	316	431	156	244	185	0	908
Future Volume (veh/h)	449	1910	459	0	1972	316	431	156	244	185	0	908
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	488	2076	0	0	2143	343	319	379	124	201	0	669
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	293	3407		0	2576	410	411	432	366	0	0	0
Arrive On Green	0.16	0.66	0.00	0.00	0.45	0.45	0.23	0.23	0.23	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	5993	911	1810	1900	1610		0	
Grp Volume(v), veh/h	488	2076	0	0	1833	653	319	379	124		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1736	1810	1900	1610			
Q Serve(g_s), s	16.2	22.9	0.0	0.0	32.9	33.2	16.5	19.3	6.4			
Cycle Q Clear(g_c), s	16.2	22.9	0.0	0.0	32.9	33.2	16.5	19.3	6.4			
Prop In Lane	1.00		1.00	0.00		0.52	1.00		1.00			
Lane Grp Cap(c), veh/h	293	3407		0	2205	781	411	432	366			
V/C Ratio(X)	1.66	0.61		0.00	0.83	0.84	0.78	0.88	0.34			
Avail Cap(c_a), veh/h	293	3407		0	2205	781	546	574	486			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	0.33	0.33	1.00	1.00	1.00			
Uniform Delay (d), s/veh	41.9	9.8	0.0	0.0	24.2	24.3	36.3	37.3	32.4			
Incr Delay (d2), s/veh	300.5	0.1	0.0	0.0	1.0	2.8	3.4	9.6	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	31.4	6.9	0.0	0.0	12.1	13.4	7.3	9.6	2.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	342.4	9.9	0.0	0.0	25.1	27.1	39.7	46.9	32.6			
LnGrp LOS	F	A		A	C	C	D	D	C			
Approach Vol, veh/h		2564	A		2486			822				
Approach Delay, s/veh		73.2			25.6			41.9				
Approach LOS		E			C			D				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		71.5			20.7	50.8		28.5				
Change Period (Y+Rc), s		5.8			4.5	* 5.8		5.8				
Max Green Setting (Gmax), s		44.2			16.2	* 25		30.2				
Max Q Clear Time (g_c+I1), s		24.9			18.2	35.2		21.3				
Green Ext Time (p_c), s		13.9			0.0	0.0		1.5				

Intersection Summary	
HCM 6th Ctrl Delay	48.7
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

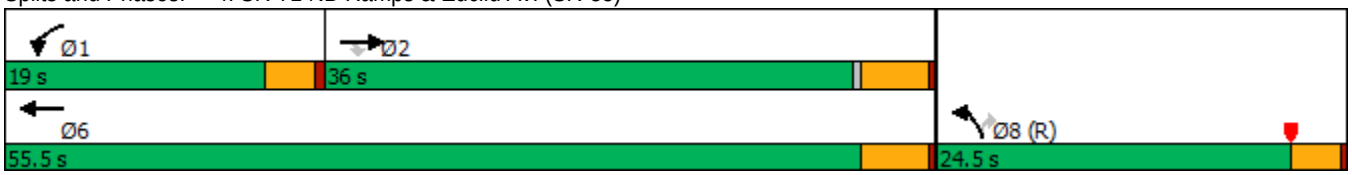
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1025	6	54	1626	181	1269
Future Volume (vph)	1025	6	54	1626	181	1269
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	32.5	8.5	9.5	8.5	8.5
Total Split (s)	36.0	36.0	19.0	55.5	24.5	24.5
Total Split (%)	45.0%	45.0%	23.8%	69.4%	30.6%	30.6%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	3.5	4.5	3.5	3.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Max	C-Max

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 9.5 (12%), Referenced to phase 4: and 8:NBL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 4: SR-71 NB Ramps & Euclid Av. (SR-83)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1025	6	54	1626	181	1269
Future Volume (veh/h)	1025	6	54	1626	181	1269
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	1114	0	59	1767	197	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1731		83	2054	1162	
Arrive On Green	0.96	0.00	0.05	0.57	0.33	0.00
Sat Flow, veh/h	3705	1610	1810	3705	3510	1610
Grp Volume(v), veh/h	1114	0	59	1767	197	0
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1755	1610
Q Serve(g_s), s	2.6	0.0	2.6	33.1	3.2	0.0
Cycle Q Clear(g_c), s	2.6	0.0	2.6	33.1	3.2	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1731		83	2054	1162	
V/C Ratio(X)	0.64		0.71	0.86	0.17	
Avail Cap(c_a), veh/h	1731		351	2301	1162	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.9	0.0	37.7	14.6	19.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	8.2	3.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.2	10.6	1.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	1.0	0.0	45.9	17.8	19.3	0.0
LnGrp LOS	A		D	B	B	
Approach Vol, veh/h	1114	A		1826	197	A
Approach Delay, s/veh	1.0			18.7	19.3	
Approach LOS	A			B	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	7.2	42.9				50.0	30.0
Change Period (Y+Rc), s	3.5	4.5				4.5	3.5
Max Green Setting (Gmax), s	15.5	31.5				51.0	21.0
Max Q Clear Time (g_c+I1), s	4.6	4.6				35.1	5.2
Green Ext Time (p_c), s	0.0	6.7				10.4	0.3

Intersection Summary		
HCM 6th Ctrl Delay		12.5
HCM 6th LOS		B

Notes

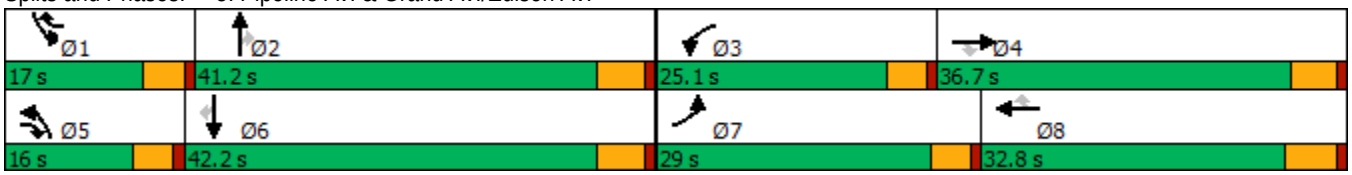
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

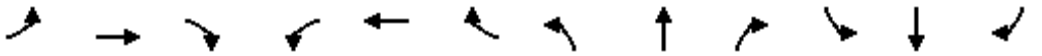
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	389	1232	271	265	1215	103	353	538	194	178	693	282
Future Volume (vph)	389	1232	271	265	1215	103	353	538	194	178	693	282
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.1	9.6	9.6	32.8	9.6	9.6	38.4	38.4	9.6	41.4	41.4
Total Split (s)	29.0	36.7	16.0	25.1	32.8	17.0	16.0	41.2	41.2	17.0	42.2	42.2
Total Split (%)	24.2%	30.6%	13.3%	20.9%	27.3%	14.2%	13.3%	34.3%	34.3%	14.2%	35.2%	35.2%
Yellow Time (s)	3.6	4.1	3.6	3.6	4.8	3.6	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.1	-0.6	-0.6	-1.8	-0.6	-0.6	-1.4	-1.4	-0.6	-1.4	-1.4
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 107.2
Natural Cycle: 105
Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Pipeline Av. & Grand Av./Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	389	1232	271	265	1215	103	353	538	194	178	693	282
Future Volume (veh/h)	389	1232	271	265	1215	103	353	538	194	178	693	282
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1700	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	423	1339	230	288	1321	74	384	585	125	193	753	232
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	515	1670	700	377	1490	649	371	984	439	219	1019	444
Arrive On Green	0.15	0.32	0.32	0.11	0.29	0.28	0.12	0.27	0.27	0.13	0.28	0.28
Sat Flow, veh/h	3326	5187	1607	3326	5187	1608	3141	3610	1610	1714	3610	1572
Grp Volume(v), veh/h	423	1339	230	288	1321	74	384	585	125	193	753	232
Grp Sat Flow(s),veh/h/ln	1663	1729	1607	1663	1729	1608	1570	1805	1610	1714	1805	1572
Q Serve(g_s), s	12.5	24.0	9.6	8.5	24.7	2.9	12.0	14.3	6.2	11.2	19.2	12.6
Cycle Q Clear(g_c), s	12.5	24.0	9.6	8.5	24.7	2.9	12.0	14.3	6.2	11.2	19.2	12.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	515	1670	700	377	1490	649	371	984	439	219	1019	444
V/C Ratio(X)	0.82	0.80	0.33	0.76	0.89	0.11	1.03	0.59	0.28	0.88	0.74	0.52
Avail Cap(c_a), veh/h	818	1670	700	691	1490	649	371	1322	590	219	1358	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	31.5	18.9	43.7	34.6	19.0	44.8	32.1	29.1	43.5	33.1	30.7
Incr Delay (d2), s/veh	1.7	4.2	1.3	1.2	8.2	0.4	56.0	0.6	0.4	30.1	1.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	10.3	3.6	3.4	10.9	1.1	7.4	6.1	2.3	6.5	8.3	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.3	35.7	20.2	45.0	42.8	19.3	100.8	32.7	29.5	73.6	34.5	31.7
LnGrp LOS	D	D	C	D	D	B	F	C	C	E	C	C
Approach Vol, veh/h		1992			1683			1094			1178	
Approach Delay, s/veh		35.5			42.1			56.2			40.4	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	31.7	15.5	37.4	16.0	32.7	19.7	33.2
Change Period (Y+Rc), s	4.6	5.4	4.6	* 5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	12.4	35.8	20.5	* 32	11.4	36.8	24.4	27.0
Max Q Clear Time (g_c+I1), s	13.2	16.3	10.5	26.0	14.0	21.2	14.5	26.7
Green Ext Time (p_c), s	0.0	4.0	0.4	4.1	0.0	5.1	0.6	0.2

Intersection Summary	
HCM 6th Ctrl Delay	42.2
HCM 6th LOS	D

Notes

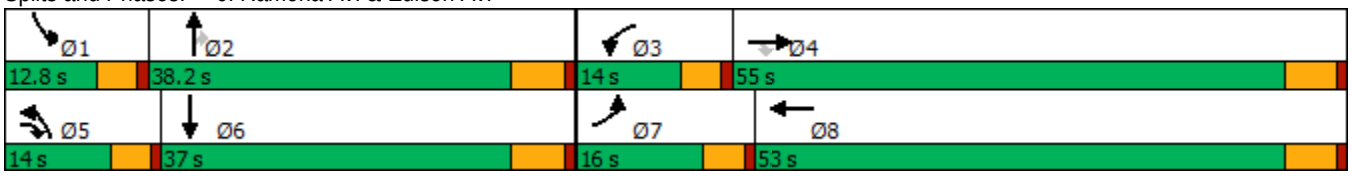
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

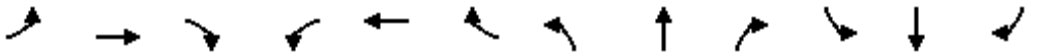
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	128	1426	128	188	1271	104	491	162	71	454
Future Volume (vph)	128	1426	128	188	1271	104	491	162	71	454
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	35.8	9.6	9.6	31.8	9.6	29.8	29.8	9.6	35.8
Total Split (s)	16.0	55.0	14.0	14.0	53.0	14.0	38.2	38.2	12.8	37.0
Total Split (%)	13.3%	45.8%	11.7%	11.7%	44.2%	11.7%	31.8%	31.8%	10.7%	30.8%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 113.2
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Ramona Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	1426	128	188	1271	75	104	491	162	71	454	115
Future Volume (veh/h)	128	1426	128	188	1271	75	104	491	162	71	454	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1800	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	139	1550	116	204	1382	80	113	534	154	77	493	104
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	174	1671	1443	156	1568	91	147	863	385	106	640	134
Arrive On Green	0.10	0.46	0.45	0.09	0.45	0.44	0.09	0.24	0.24	0.06	0.22	0.20
Sat Flow, veh/h	1714	3610	2685	1714	3469	200	1714	3610	1610	1714	2970	623
Grp Volume(v), veh/h	139	1550	116	204	718	744	113	534	154	77	299	298
Grp Sat Flow(s),veh/h/ln	1714	1805	1342	1714	1805	1864	1714	1805	1610	1714	1805	1788
Q Serve(g_s), s	8.7	44.5	2.3	10.0	39.8	40.2	7.1	14.6	8.9	4.9	17.1	17.3
Cycle Q Clear(g_c), s	8.7	44.5	2.3	10.0	39.8	40.2	7.1	14.6	8.9	4.9	17.1	17.3
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	174	1671	1443	156	816	843	147	863	385	106	389	385
V/C Ratio(X)	0.80	0.93	0.08	1.31	0.88	0.88	0.77	0.62	0.40	0.73	0.77	0.77
Avail Cap(c_a), veh/h	187	1671	1443	156	816	843	156	1121	500	137	541	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.4	27.8	12.3	50.1	27.4	27.6	49.3	37.4	35.3	50.8	40.6	41.0
Incr Delay (d2), s/veh	18.1	10.4	0.1	178.2	13.0	13.0	17.5	0.7	0.7	8.2	4.4	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	19.9	0.7	11.9	18.7	19.4	3.7	6.3	3.4	2.3	7.8	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.4	38.3	12.4	228.2	40.4	40.6	66.8	38.2	35.9	59.0	45.0	45.7
LnGrp LOS	E	D	B	F	D	D	E	D	D	E	D	D
Approach Vol, veh/h		1805			1666			801			674	
Approach Delay, s/veh		38.8			63.5			41.8			46.9	
Approach LOS		D			E			D			D	

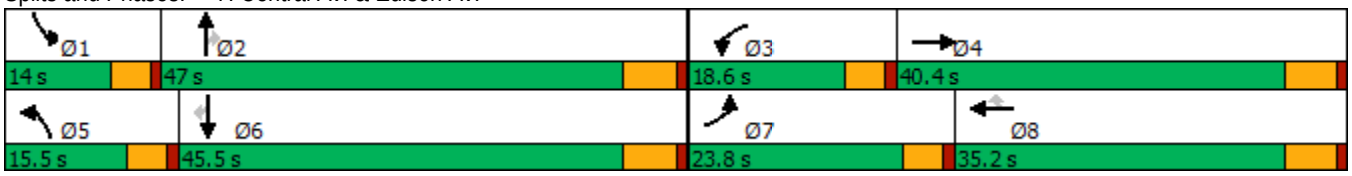
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	30.3	14.0	55.0	13.4	27.7	15.2	53.8
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	8.2	32.4	9.4	49.2	9.4	31.2	11.4	47.2
Max Q Clear Time (g_c+I1), s	6.9	16.6	12.0	46.5	9.1	19.3	10.7	42.2
Green Ext Time (p_c), s	0.0	3.4	0.0	2.2	0.0	2.6	0.0	3.5

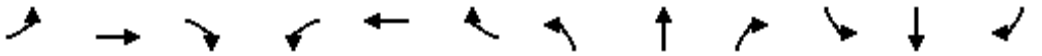
Intersection Summary	
HCM 6th Ctrl Delay	48.7
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	250	1239	378	1038	122	128	1149	598	134	921	156
Future Volume (vph)	250	1239	378	1038	122	128	1149	598	134	921	156
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	9.6	33.8	33.8	9.6	33.8	33.8	9.6	30.8	30.8
Total Split (s)	23.8	40.4	18.6	35.2	35.2	15.5	47.0	47.0	14.0	45.5	45.5
Total Split (%)	19.8%	33.7%	15.5%	29.3%	29.3%	12.9%	39.2%	39.2%	11.7%	37.9%	37.9%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	1239	117	378	1038	122	128	1149	598	134	921	156
Future Volume (veh/h)	250	1239	117	378	1038	122	128	1149	598	134	921	156
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	258	1277	117	390	1070	115	132	1185	535	138	949	127
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	283	1013	93	405	939	419	164	1294	567	143	1248	556
Arrive On Green	0.17	0.30	0.29	0.12	0.26	0.26	0.10	0.36	0.36	0.08	0.35	0.35
Sat Flow, veh/h	1714	3340	305	3326	3610	1610	1714	3610	1582	1714	3610	1609
Grp Volume(v), veh/h	258	688	706	390	1070	115	132	1185	535	138	949	127
Grp Sat Flow(s),veh/h/ln	1714	1805	1840	1663	1805	1610	1714	1805	1582	1714	1805	1609
Q Serve(g_s), s	17.8	36.4	36.4	14.0	31.2	6.8	9.1	37.6	39.3	9.6	28.0	6.7
Cycle Q Clear(g_c), s	17.8	36.4	36.4	14.0	31.2	6.8	9.1	37.6	39.3	9.6	28.0	6.7
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	283	548	558	405	939	419	164	1294	567	143	1248	556
V/C Ratio(X)	0.91	1.26	1.26	0.96	1.14	0.27	0.80	0.92	0.94	0.97	0.76	0.23
Avail Cap(c_a), veh/h	283	548	558	405	939	419	164	1294	567	143	1248	556
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	41.8	41.9	52.4	44.4	35.4	53.1	36.8	37.3	54.8	34.8	27.9
Incr Delay (d2), s/veh	31.0	130.0	132.8	35.1	76.0	1.6	22.7	10.4	24.6	64.4	2.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	35.2	36.4	7.7	23.3	2.8	4.8	17.6	18.3	6.6	12.2	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.3	171.8	174.8	87.5	120.4	37.0	75.9	47.1	61.9	119.2	37.6	28.1
LnGrp LOS	F	F	F	F	F	D	E	D	E	F	D	C
Approach Vol, veh/h		1652			1575			1852			1214	
Approach Delay, s/veh		158.8			106.1			53.5			45.9	
Approach LOS		F			F			D			D	

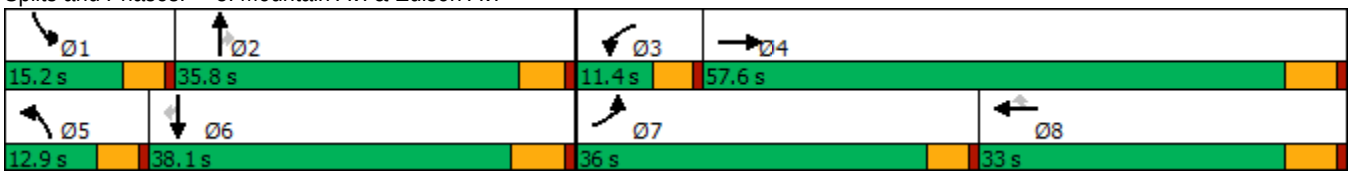
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	47.0	18.6	40.4	15.5	45.5	23.8	35.2
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	9.4	41.2	14.0	34.6	10.9	39.7	19.2	29.4
Max Q Clear Time (g_c+I1), s	11.6	41.3	16.0	38.4	11.1	30.0	19.8	33.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0

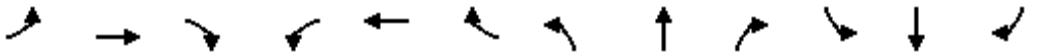
Intersection Summary	
HCM 6th Ctrl Delay	92.8
HCM 6th LOS	F

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	236	1687	49	1270	115	43	106	36	131	195	246
Future Volume (vph)	236	1687	49	1270	115	43	106	36	131	195	246
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	30.8	30.8	9.6	34.1	34.1	9.6	34.8	34.8
Total Split (s)	36.0	57.6	11.4	33.0	33.0	12.9	35.8	35.8	15.2	38.1	38.1
Total Split (%)	30.0%	48.0%	9.5%	27.5%	27.5%	10.8%	29.8%	29.8%	12.7%	31.8%	31.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.1	4.1	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-1.1	-1.1	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 102.2
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 8: Mountain Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	236	1687	93	49	1270	115	43	106	36	131	195	246
Future Volume (veh/h)	236	1687	93	49	1270	115	43	106	36	131	195	246
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	241	1721	93	50	1296	105	44	108	22	134	199	186
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	285	2804	151	76	1574	702	72	234	194	173	360	305
Arrive On Green	0.17	0.56	0.54	0.04	0.44	0.44	0.04	0.12	0.12	0.10	0.19	0.19
Sat Flow, veh/h	1714	5029	271	1714	3610	1610	1714	1900	1574	1714	1900	1610
Grp Volume(v), veh/h	241	1183	631	50	1296	105	44	108	22	134	199	186
Grp Sat Flow(s),veh/h/ln	1714	1729	1842	1714	1805	1610	1714	1900	1574	1714	1900	1610
Q Serve(g_s), s	13.1	22.1	22.3	2.8	30.4	3.8	2.4	5.1	1.2	7.3	9.1	10.2
Cycle Q Clear(g_c), s	13.1	22.1	22.3	2.8	30.4	3.8	2.4	5.1	1.2	7.3	9.1	10.2
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	285	1928	1027	76	1574	702	72	234	194	173	360	305
V/C Ratio(X)	0.85	0.61	0.61	0.65	0.82	0.15	0.61	0.46	0.11	0.78	0.55	0.61
Avail Cap(c_a), veh/h	571	1928	1027	132	1574	702	159	629	521	200	674	571
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.9	14.3	14.4	45.2	23.8	16.4	45.3	39.2	37.5	42.2	35.3	35.7
Incr Delay (d2), s/veh	2.7	1.5	2.8	3.5	5.0	0.5	3.0	1.4	0.3	12.6	1.3	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	7.8	8.8	1.2	12.7	1.4	1.1	2.4	0.5	3.6	4.2	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	15.8	17.2	48.7	28.9	16.8	48.3	40.6	37.7	54.8	36.6	37.7
LnGrp LOS	D	B	B	D	C	B	D	D	D	D	D	D
Approach Vol, veh/h		2055			1451			174			519	
Approach Delay, s/veh		19.2			28.7			42.2			41.7	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	16.6	8.3	57.6	8.1	22.2	20.0	45.9
Change Period (Y+Rc), s	4.6	* 5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.6	* 31	6.8	51.8	8.3	32.3	31.4	27.2
Max Q Clear Time (g_c+I1), s	9.3	7.1	4.8	24.3	4.4	12.2	15.1	32.4
Green Ext Time (p_c), s	0.0	0.6	0.0	14.5	0.0	1.5	0.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

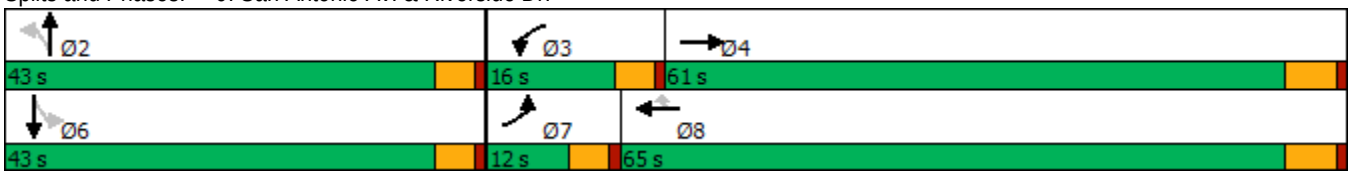
Notes

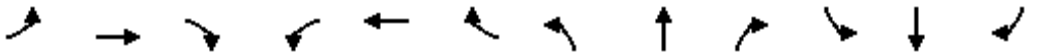
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	35	1123	68	1131	49	103	18	21	8
Future Volume (vph)	35	1123	68	1131	49	103	18	21	8
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4	3	8			2		6
Permitted Phases					8	2		6	
Detector Phase	7	4	3	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	23.8	9.6	23.8	23.8	32.6	32.6	32.6	32.6
Total Split (s)	12.0	61.0	16.0	65.0	65.0	43.0	43.0	43.0	43.0
Total Split (%)	10.0%	50.8%	13.3%	54.2%	54.2%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-0.6	-1.8	-1.8	-0.6	-0.6	-0.6	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 96.4
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: San Antonio Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	1123	131	68	1131	49	103	18	47	21	8	35
Future Volume (veh/h)	35	1123	131	68	1131	49	103	18	47	21	8	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	36	1170	130	71	1178	51	107	19	25	22	8	13
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	69	2217	246	102	2518	1122	244	93	122	223	82	133
Arrive On Green	0.04	0.68	0.66	0.06	0.70	0.70	0.13	0.13	0.12	0.13	0.13	0.12
Sat Flow, veh/h	1714	3268	362	1714	3610	1609	1413	742	976	1378	651	1058
Grp Volume(v), veh/h	36	645	655	71	1178	51	107	0	44	22	0	21
Grp Sat Flow(s),veh/h/ln	1714	1805	1825	1714	1805	1609	1413	0	1718	1378	0	1710
Q Serve(g_s), s	1.8	15.6	15.9	3.6	12.8	0.9	6.3	0.0	2.0	1.3	0.0	1.0
Cycle Q Clear(g_c), s	1.8	15.6	15.9	3.6	12.8	0.9	7.3	0.0	2.0	3.3	0.0	1.0
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.57	1.00		0.62
Lane Grp Cap(c), veh/h	69	1224	1238	102	2518	1122	244	0	215	223	0	214
V/C Ratio(X)	0.52	0.53	0.53	0.70	0.47	0.05	0.44	0.00	0.20	0.10	0.00	0.10
Avail Cap(c_a), veh/h	157	1224	1238	235	2518	1122	697	0	766	665	0	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.2	7.0	7.2	40.4	5.9	4.1	37.1	0.0	34.5	35.8	0.0	34.0
Incr Delay (d2), s/veh	2.3	1.6	1.6	3.2	0.6	0.1	1.2	0.0	0.5	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.8	5.0	1.5	3.5	0.2	2.3	0.0	0.9	0.4	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.4	8.7	8.8	43.6	6.6	4.2	38.4	0.0	35.0	36.0	0.0	34.2
LnGrp LOS	D	A	A	D	A	A	D	A	C	D	A	C
Approach Vol, veh/h		1336			1300			151			43	
Approach Delay, s/veh		9.7			8.5			37.4			35.2	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.0	9.2	63.3		15.0	7.5	65.0				
Change Period (Y+Rc), s		4.6	4.6	5.8		4.6	4.6	5.8				
Max Green Setting (Gmax), s		38.4	11.4	55.2		38.4	7.4	59.2				
Max Q Clear Time (g_c+I1), s		9.3	5.6	17.9		5.3	3.8	14.8				
Green Ext Time (p_c), s		0.5	0.0	10.3		0.1	0.0	10.4				

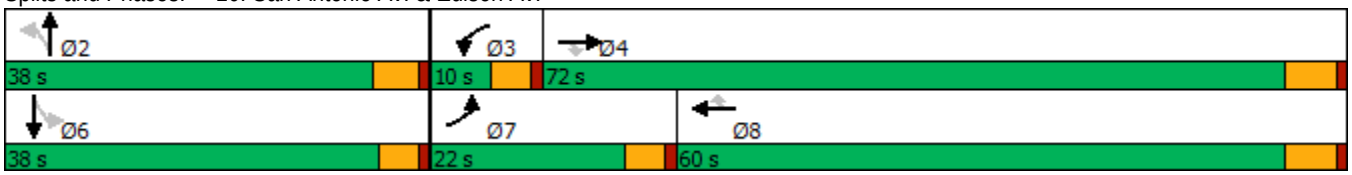
Intersection Summary												
HCM 6th Ctrl Delay			11.0									
HCM 6th LOS			B									

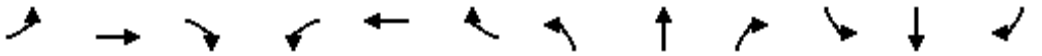
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	97	1658	64	15	1395	20	31	35	14	52
Future Volume (vph)	97	1658	64	15	1395	20	31	35	14	52
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases			4			8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	33.1	33.1	32.6	32.6
Total Split (s)	22.0	72.0	72.0	10.0	60.0	60.0	38.0	38.0	38.0	38.0
Total Split (%)	18.3%	60.0%	60.0%	8.3%	50.0%	50.0%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	4.1	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8		-1.1		-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 96.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 10: San Antonio Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	1658	64	15	1395	20	31	35	15	14	52	57
Future Volume (veh/h)	97	1658	64	15	1395	20	31	35	15	14	52	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	103	1764	67	16	1484	18	33	37	12	15	55	31
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	140	2631	1173	42	2425	1081	116	112	30	62	120	61
Arrive On Green	0.08	0.73	0.73	0.02	0.67	0.67	0.12	0.12	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1714	3610	1610	1714	3610	1610	524	953	253	155	1062	539
Grp Volume(v), veh/h	103	1764	67	16	1484	18	82	0	0	101	0	0
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1714	1805	1610	1731	0	0	1756	0	0
Q Serve(g_s), s	5.5	24.2	1.1	0.9	21.4	0.3	0.0	0.0	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	5.5	24.2	1.1	0.9	21.4	0.3	3.8	0.0	0.0	5.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.40		0.15	0.15		0.31
Lane Grp Cap(c), veh/h	140	2631	1173	42	2425	1081	258	0	0	242	0	0
V/C Ratio(X)	0.74	0.67	0.06	0.38	0.61	0.02	0.32	0.00	0.00	0.42	0.00	0.00
Avail Cap(c_a), veh/h	331	2631	1173	110	2425	1081	659	0	0	677	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	41.9	6.7	3.6	44.8	8.5	5.1	38.0	0.0	0.0	39.0	0.0	0.0
Incr Delay (d2), s/veh	2.8	1.4	0.1	2.1	1.2	0.0	0.7	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	6.5	0.3	0.4	6.6	0.1	1.7	0.0	0.0	2.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.7	8.1	3.7	46.9	9.7	5.1	38.7	0.0	0.0	40.2	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1934			1518			82			101	
Approach Delay, s/veh		9.9			10.0			38.7			40.2	
Approach LOS		A			B			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.0	6.3	72.0		15.0	11.6	66.7				
Change Period (Y+Rc), s		5.1	4.6	5.8		* 5.1	4.6	5.8				
Max Green Setting (Gmax), s		32.9	5.4	66.2		* 33	17.4	54.2				
Max Q Clear Time (g_c+I1), s		5.8	2.9	26.2		7.0	7.5	23.4				
Green Ext Time (p_c), s		0.4	0.0	19.4		0.5	0.1	13.1				

Intersection Summary	
HCM 6th Ctrl Delay	11.4
HCM 6th LOS	B

Notes

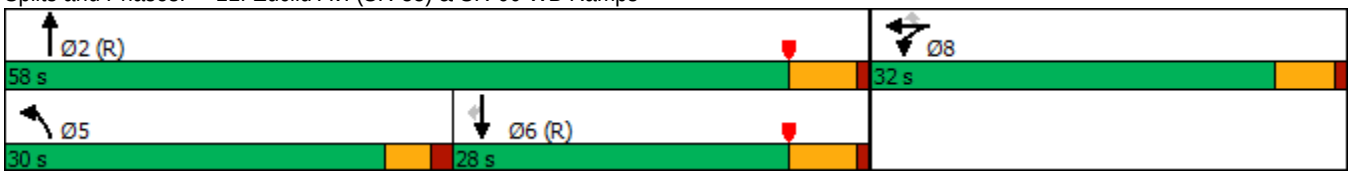
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

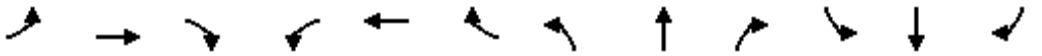
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	779	8	495	608	1335	1246	598
Future Volume (vph)	779	8	495	608	1335	1246	598
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	32.0	32.0	32.0	30.0	58.0	28.0	28.0
Total Split (%)	35.6%	35.6%	35.6%	33.3%	64.4%	31.1%	31.1%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	779	8	495	608	1335	0	0	1246	598
Future Volume (veh/h)	0	0	0	779	8	495	608	1335	0	0	1246	598
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				918	0	226	633	1391	0	0	1298	418
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				1006	0	447	513	2185	0	0	982	438
Arrive On Green				0.28	0.00	0.28	0.57	1.00	0.00	0.00	0.27	0.27
Sat Flow, veh/h				3619	0	1608	1810	3705	0	0	3705	1610
Grp Volume(v), veh/h				918	0	226	633	1391	0	0	1298	418
Grp Sat Flow(s),veh/h/ln				1810	0	1608	1810	1805	0	0	1805	1610
Q Serve(g_s), s				22.1	0.0	10.6	25.5	0.0	0.0	0.0	24.5	23.0
Cycle Q Clear(g_c), s				22.1	0.0	10.6	25.5	0.0	0.0	0.0	24.5	23.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1006	0	447	513	2185	0	0	982	438
V/C Ratio(X)				0.91	0.00	0.51	1.23	0.64	0.00	0.00	1.32	0.95
Avail Cap(c_a), veh/h				1086	0	483	513	2185	0	0	982	438
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.4	0.0	27.3	19.5	0.0	0.0	0.0	32.8	32.2
Incr Delay (d2), s/veh				10.5	0.0	0.3	107.2	0.1	0.0	0.0	151.9	33.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				10.4	0.0	3.8	20.7	0.0	0.0	0.0	30.8	12.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				42.0	0.0	27.6	126.7	0.1	0.0	0.0	184.7	65.2
LnGrp LOS				D	A	C	F	A	A	A	F	E
Approach Vol, veh/h					1144			2024			1716	
Approach Delay, s/veh					39.1			39.7			155.6	
Approach LOS					D			D			F	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	60.0		30.0	30.0		30.0						
Change Period (Y+Rc), s	5.5		4.5	5.5		5.0						
Max Green Setting (Gmax), s	52.5		25.5	22.5		27.0						
Max Q Clear Time (g_c+I1), s	2.0		27.5	26.5		24.1						
Green Ext Time (p_c), s	21.3		0.0	0.0		0.9						

Intersection Summary		
HCM 6th Ctrl Delay	80.3	
HCM 6th LOS	F	

Notes

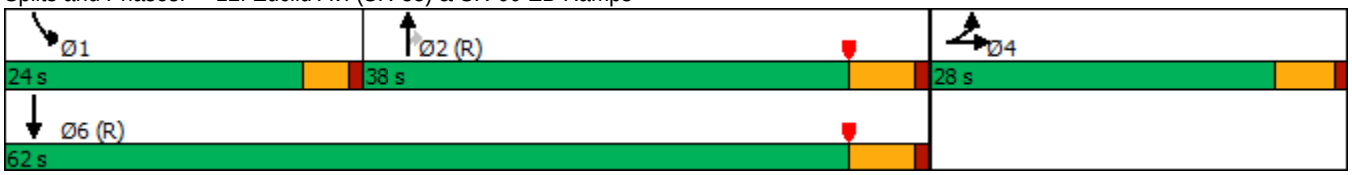
User approved volume balancing among the lanes for turning movement.

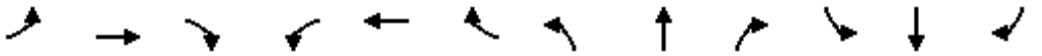
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	505	4	1438	793	458	1568
Future Volume (vph)	505	4	1438	793	458	1568
Turn Type	Split	NA	NA	Perm	Prot	NA
Protected Phases	4	4	2		1	6
Permitted Phases				2		
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	28.0	28.0	38.0	38.0	24.0	62.0
Total Split (%)	31.1%	31.1%	42.2%	42.2%	26.7%	68.9%
Yellow Time (s)	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	505	4	537	0	0	0	0	1438	793	458	1568	0
Future Volume (veh/h)	505	4	537	0	0	0	0	1438	793	458	1568	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	500	25	481				0	1467	615	467	1600	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	462	20	394				0	1304	568	402	2266	0
Arrive On Green	0.26	0.26	0.26				0.00	0.36	0.36	0.44	1.00	0.00
Sat Flow, veh/h	1810	80	1542				0	3705	1572	1810	3705	0
Grp Volume(v), veh/h	500	0	506				0	1467	615	467	1600	0
Grp Sat Flow(s),veh/h/ln	1810	0	1622				0	1805	1572	1810	1805	0
Q Serve(g_s), s	23.0	0.0	23.0				0.0	32.5	32.5	20.0	0.0	0.0
Cycle Q Clear(g_c), s	23.0	0.0	23.0				0.0	32.5	32.5	20.0	0.0	0.0
Prop In Lane	1.00		0.95				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	462	0	415				0	1304	568	402	2266	0
V/C Ratio(X)	1.08	0.00	1.22				0.00	1.13	1.08	1.16	0.71	0.00
Avail Cap(c_a), veh/h	462	0	415				0	1304	568	402	2266	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.14	0.14	0.09	0.09	0.00
Uniform Delay (d), s/veh	33.5	0.0	33.5				0.0	28.7	28.8	25.0	0.0	0.0
Incr Delay (d2), s/veh	65.5	0.0	119.2				0.0	58.1	42.6	75.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.7	0.0	22.1				0.0	23.4	17.9	13.9	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	99.0	0.0	152.7				0.0	86.8	71.4	100.4	0.2	0.0
LnGrp LOS	F	A	F				A	F	F	F	A	A
Approach Vol, veh/h		1006						2082			2067	
Approach Delay, s/veh		126.0						82.3			22.8	
Approach LOS		F						F			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	24.0	38.0		28.0		62.0
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	20.0	32.5		23.0		56.5
Max Q Clear Time (g_c+I1), s	22.0	34.5		25.0		2.0
Green Ext Time (p_c), s	0.0	0.0		0.0		27.6

Intersection Summary	
HCM 6th Ctrl Delay	67.0
HCM 6th LOS	E

Notes

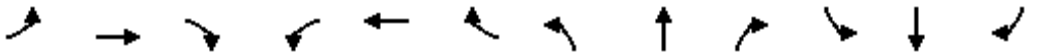
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	179	449	85	449	240	1902	90	320	1551	265
Future Volume (vph)	179	449	85	449	240	1902	90	320	1551	265
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	9.6	27.4	27.4	9.6	29.4	29.4
Total Split (s)	15.0	33.6	12.0	30.6	20.0	53.5	53.5	20.9	54.4	54.4
Total Split (%)	12.5%	28.0%	10.0%	25.5%	16.7%	44.6%	44.6%	17.4%	45.3%	45.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.4	4.4	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.4	5.4	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 119.3
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 13: Euclid Av. (SR-83) & Walnut Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	449	178	85	449	170	240	1902	90	320	1551	265
Future Volume (veh/h)	179	449	178	85	449	170	240	1902	90	320	1551	265
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	190	478	166	90	478	155	255	2023	69	340	1650	228
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	150	589	203	107	532	171	222	2165	671	390	2138	663
Arrive On Green	0.09	0.22	0.22	0.06	0.20	0.20	0.13	0.42	0.42	0.12	0.41	0.41
Sat Flow, veh/h	1714	2623	904	1714	2669	859	1714	5187	1608	3141	5187	1609
Grp Volume(v), veh/h	190	328	316	90	322	311	255	2023	69	340	1650	228
Grp Sat Flow(s),veh/h/ln	1714	1805	1722	1714	1805	1723	1714	1729	1608	1570	1729	1609
Q Serve(g_s), s	10.4	20.5	20.7	6.2	20.7	21.0	15.4	44.3	3.1	12.6	32.6	11.5
Cycle Q Clear(g_c), s	10.4	20.5	20.7	6.2	20.7	21.0	15.4	44.3	3.1	12.6	32.6	11.5
Prop In Lane	1.00		0.53	1.00		0.50	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	150	405	387	107	360	343	222	2165	671	390	2138	663
V/C Ratio(X)	1.27	0.81	0.82	0.84	0.90	0.91	1.15	0.93	0.10	0.87	0.77	0.34
Avail Cap(c_a), veh/h	150	422	403	107	377	359	222	2165	671	431	2138	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.2	43.7	43.8	55.2	46.4	46.5	51.7	33.1	21.1	51.1	30.1	23.9
Incr Delay (d2), s/veh	162.3	10.9	12.1	40.9	22.4	25.0	106.2	9.0	0.3	15.2	2.8	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.1	10.1	9.8	3.8	11.2	11.1	13.0	19.4	1.2	5.7	13.5	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	216.6	54.6	55.9	96.1	68.8	71.5	157.9	42.1	21.4	66.3	32.9	25.3
LnGrp LOS	F	D	E	F	E	E	F	D	C	E	C	C
Approach Vol, veh/h		834			723			2347			2218	
Approach Delay, s/veh		92.0			73.4			54.1			37.2	
Approach LOS		F			E			D			D	

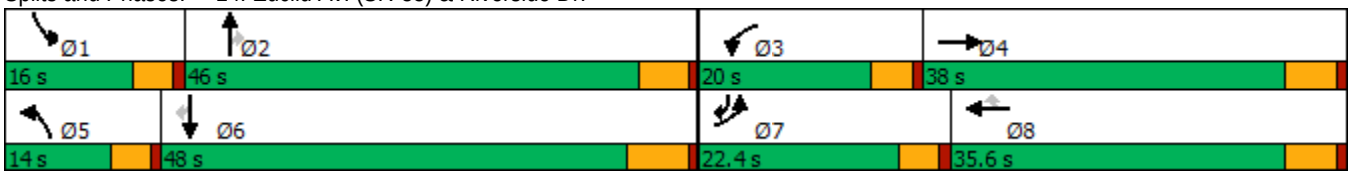
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.4	55.0	12.0	32.5	20.0	54.4	15.0	29.5
Change Period (Y+Rc), s	4.6	5.4	4.6	5.8	4.6	5.4	4.6	5.8
Max Green Setting (Gmax), s	16.3	48.1	7.4	27.8	15.4	49.0	10.4	24.8
Max Q Clear Time (g_c+I1), s	14.6	46.3	8.2	22.7	17.4	34.6	12.4	23.0
Green Ext Time (p_c), s	0.1	1.7	0.0	1.6	0.0	9.8	0.0	0.7

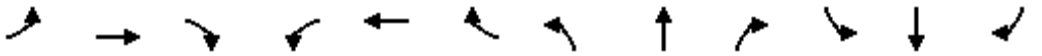
Intersection Summary	
HCM 6th Ctrl Delay	55.4
HCM 6th LOS	E

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	234	721	229	499	78	199	1687	295	169	1330	345
Future Volume (vph)	234	721	229	499	78	199	1687	295	169	1330	345
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8		5	2		1	6	7
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	22.4	38.0	20.0	35.6	35.6	14.0	46.0	46.0	16.0	48.0	22.4
Total Split (%)	18.7%	31.7%	16.7%	29.7%	29.7%	11.7%	38.3%	38.3%	13.3%	40.0%	18.7%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	721	198	229	499	78	199	1687	295	169	1330	345
Future Volume (veh/h)	234	721	198	229	499	78	199	1687	295	169	1330	345
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	244	751	181	239	520	65	207	1757	253	176	1385	268
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	252	393	95	218	888	396	133	1210	540	161	1270	796
Arrive On Green	0.15	0.27	0.27	0.13	0.25	0.25	0.08	0.34	0.34	0.09	0.35	0.35
Sat Flow, veh/h	1714	1479	357	1714	3610	1608	1714	3610	1610	1714	3610	1590
Grp Volume(v), veh/h	244	0	932	239	520	65	207	1757	253	176	1385	268
Grp Sat Flow(s),veh/h/ln	1714	0	1836	1714	1805	1608	1714	1805	1610	1714	1805	1590
Q Serve(g_s), s	17.1	0.0	32.2	15.4	15.4	3.8	9.4	40.6	15.0	11.4	42.6	12.3
Cycle Q Clear(g_c), s	17.1	0.0	32.2	15.4	15.4	3.8	9.4	40.6	15.0	11.4	42.6	12.3
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	252	0	488	218	888	396	133	1210	540	161	1270	796
V/C Ratio(X)	0.97	0.00	1.91	1.10	0.59	0.16	1.56	1.45	0.47	1.09	1.09	0.34
Avail Cap(c_a), veh/h	252	0	488	218	888	396	133	1210	540	161	1270	796
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	0.0	44.5	52.8	40.2	35.9	55.8	40.3	31.7	54.9	39.2	18.3
Incr Delay (d2), s/veh	47.5	0.0	416.8	89.1	1.0	0.2	283.4	207.9	2.9	97.1	53.7	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.5	0.0	70.5	11.8	6.7	1.5	14.4	51.6	6.1	9.2	27.5	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	98.9	0.0	461.2	141.9	41.2	36.1	339.3	248.2	34.6	152.0	93.0	19.4
LnGrp LOS	F	A	F	F	D	D	F	F	C	F	F	B
Approach Vol, veh/h		1176			824			2217			1829	
Approach Delay, s/veh		386.0			70.0			232.3			87.9	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	47.1	20.0	38.0	14.0	49.1	22.4	35.6
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	11.4	* 41	15.4	32.2	9.4	41.5	17.8	29.8
Max Q Clear Time (g_c+I1), s	13.4	42.6	17.4	34.2	11.4	44.6	19.1	17.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7

Intersection Summary		
HCM 6th Ctrl Delay		196.4
HCM 6th LOS		F

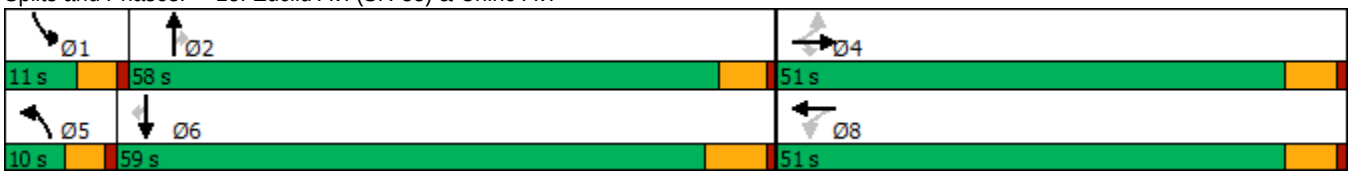
Notes

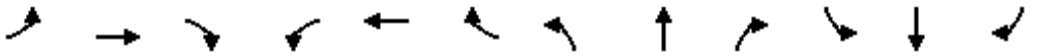
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	134	487	69	137	223	68	1984	278	35	1507	87
Future Volume (vph)	134	487	69	137	223	68	1984	278	35	1507	87
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	51.0	51.0	51.0	51.0	51.0	10.0	58.0	58.0	11.0	59.0	59.0
Total Split (%)	42.5%	42.5%	42.5%	42.5%	42.5%	8.3%	48.3%	48.3%	9.2%	49.2%	49.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8		5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	487	69	137	223	18	68	1984	278	35	1507	87
Future Volume (veh/h)	134	487	69	137	223	18	68	1984	278	35	1507	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	144	524	51	147	240	15	73	2133	228	38	1620	61
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	309	716	606	109	148	8	77	1634	714	51	1579	690
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.05	0.45	0.45	0.03	0.44	0.44
Sat Flow, veh/h	1142	1900	1610	182	392	22	1714	3610	1577	1714	3610	1577
Grp Volume(v), veh/h	144	524	51	402	0	0	73	2133	228	38	1620	61
Grp Sat Flow(s),veh/h/ln	1142	1900	1610	596	0	0	1714	1805	1577	1714	1805	1577
Q Serve(g_s), s	0.0	28.5	2.4	16.7	0.0	0.0	5.1	54.3	11.1	2.6	52.5	2.7
Cycle Q Clear(g_c), s	20.9	28.5	2.4	45.2	0.0	0.0	5.1	54.3	11.1	2.6	52.5	2.7
Prop In Lane	1.00		1.00	0.37		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	309	716	606	265	0	0	77	1634	714	51	1579	690
V/C Ratio(X)	0.47	0.73	0.08	1.52	0.00	0.00	0.95	1.31	0.32	0.74	1.03	0.09
Avail Cap(c_a), veh/h	309	716	606	265	0	0	77	1634	714	91	1579	690
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.8	32.2	24.1	47.9	0.0	0.0	57.2	32.8	21.0	57.7	33.8	19.7
Incr Delay (d2), s/veh	1.1	3.9	0.1	250.3	0.0	0.0	83.3	142.1	1.2	7.6	29.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	13.2	0.9	26.3	0.0	0.0	3.9	53.5	4.0	1.2	27.2	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.9	36.1	24.1	298.2	0.0	0.0	140.5	174.9	22.2	65.3	63.2	20.0
LnGrp LOS	C	D	C	F	A	A	F	F	C	E	F	C
Approach Vol, veh/h		719			402			2434			1719	
Approach Delay, s/veh		34.2			298.2			159.6			61.7	
Approach LOS		C			F			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	60.8		51.0	10.0	59.0		51.0				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	6.4	* 53		45.2	5.4	52.5		45.2				
Max Q Clear Time (g_c+I1), s	4.6	56.3		30.5	7.1	54.5		47.2				
Green Ext Time (p_c), s	0.0	0.0		3.3	0.0	0.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		121.1
HCM 6th LOS		F

Notes

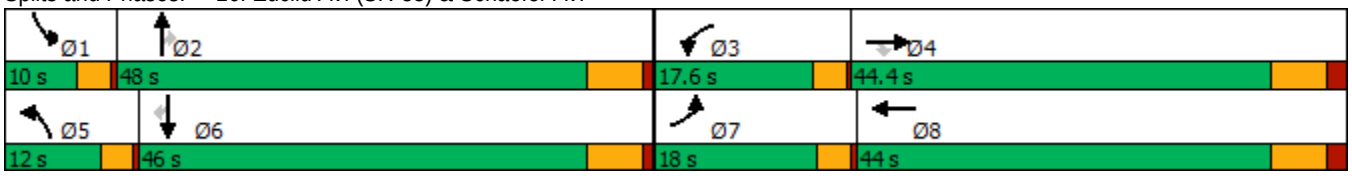
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

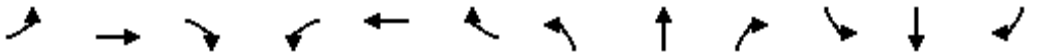
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	487	463	264	95	158	239	1913	100	199	1539	455
Future Volume (vph)	487	463	264	95	158	239	1913	100	199	1539	455
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	18.0	44.4	44.4	17.6	44.0	12.0	48.0	48.0	10.0	46.0	46.0
Total Split (%)	15.0%	37.0%	37.0%	14.7%	36.7%	10.0%	40.0%	40.0%	8.3%	38.3%	38.3%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 110.3
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	487	463	264	95	158	73	239	1913	100	199	1539	455
Future Volume (veh/h)	487	463	264	95	158	73	239	1913	100	199	1539	455
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	492	468	226	96	160	69	241	1932	83	201	1555	430
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	231	522	442	150	286	123	136	1412	630	104	1344	600
Arrive On Green	0.13	0.27	0.27	0.09	0.23	0.23	0.08	0.39	0.39	0.06	0.37	0.37
Sat Flow, veh/h	1714	1900	1610	1714	1259	543	1714	3610	1610	1714	3610	1610
Grp Volume(v), veh/h	492	468	226	96	0	229	241	1932	83	201	1555	430
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1714	0	1802	1714	1805	1610	1714	1805	1610
Q Serve(g_s), s	14.5	25.5	12.7	5.8	0.0	12.1	8.5	42.0	3.6	6.5	40.0	24.6
Cycle Q Clear(g_c), s	14.5	25.5	12.7	5.8	0.0	12.1	8.5	42.0	3.6	6.5	40.0	24.6
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	231	522	442	150	0	410	136	1412	630	104	1344	600
V/C Ratio(X)	2.13	0.90	0.51	0.64	0.00	0.56	1.78	1.37	0.13	1.94	1.16	0.72
Avail Cap(c_a), veh/h	231	662	561	225	0	621	136	1412	630	104	1344	600
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.5	37.5	32.9	47.3	0.0	36.7	49.5	32.7	21.0	50.5	33.7	28.9
Incr Delay (d2), s/veh	521.0	12.2	0.7	1.7	0.0	0.9	377.5	170.5	0.1	455.1	79.3	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	39.4	13.0	4.8	2.5	0.0	5.2	17.7	49.9	1.3	15.8	30.6	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	567.5	49.7	33.6	49.0	0.0	37.6	427.0	203.2	21.1	505.6	113.0	33.0
LnGrp LOS	F	D	C	D	A	D	F	F	C	F	F	C
Approach Vol, veh/h		1186			325			2256			2186	
Approach Delay, s/veh		261.4			41.0			220.4			133.4	
Approach LOS		F			D			F			F	

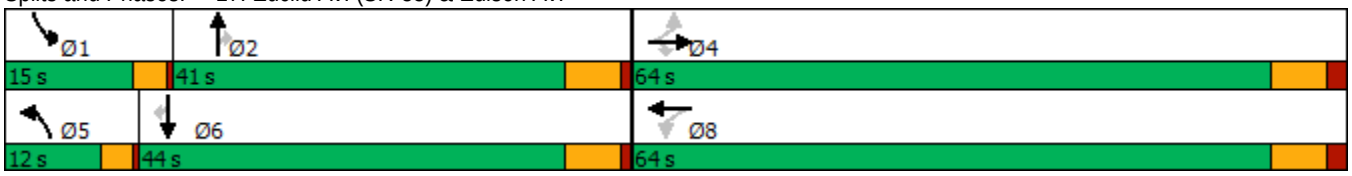
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	48.0	12.9	36.5	12.0	46.0	18.0	31.4
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	3.5	7.0
Max Green Setting (Gmax), s	6.5	42.0	14.1	37.4	8.5	40.0	14.5	37.0
Max Q Clear Time (g_c+I1), s	8.5	44.0	7.8	27.5	10.5	42.0	16.5	14.1
Green Ext Time (p_c), s	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.9

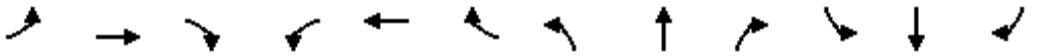
Intersection Summary	
HCM 6th Ctrl Delay	186.8
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	334	1192	377	428	717	223	1767	281	199	1608	220
Future Volume (vph)	334	1192	377	428	717	223	1767	281	199	1608	220
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.0	46.0	46.0	49.0	49.0	8.5	29.0	29.0	8.5	40.0	40.0
Total Split (s)	64.0	64.0	64.0	64.0	64.0	12.0	41.0	41.0	15.0	44.0	44.0
Total Split (%)	53.3%	53.3%	53.3%	53.3%	53.3%	10.0%	34.2%	34.2%	12.5%	36.7%	36.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	334	1192	377	428	717	336	223	1767	281	199	1608	220
Future Volume (veh/h)	334	1192	377	428	717	336	223	1767	281	199	1608	220
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	352	1255	315	451	755	348	235	1860	288	209	1693	200
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	60	902	765	60	582	268	121	1053	468	164	1143	510
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.47	0.07	0.29	0.29	0.10	0.32	0.32
Sat Flow, veh/h	519	1900	1610	332	1225	565	1714	3610	1605	1714	3610	1610
Grp Volume(v), veh/h	352	1255	315	451	0	1103	235	1860	288	209	1693	200
Grp Sat Flow(s),veh/h/ln	519	1900	1610	332	0	1790	1714	1805	1605	1714	1805	1610
Q Serve(g_s), s	0.0	57.0	15.3	0.0	0.0	57.0	8.5	35.0	18.6	11.5	38.0	11.6
Cycle Q Clear(g_c), s	57.0	57.0	15.3	57.0	0.0	57.0	8.5	35.0	18.6	11.5	38.0	11.6
Prop In Lane	1.00		1.00	1.00		0.32	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	60	903	765	60	0	850	121	1053	468	164	1143	510
V/C Ratio(X)	5.87	1.39	0.41	7.52	0.00	1.30	1.94	1.77	0.62	1.27	1.48	0.39
Avail Cap(c_a), veh/h	60	903	765	60	0	850	121	1053	468	164	1143	510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.0	31.5	20.6	60.0	0.0	31.5	55.7	42.5	36.7	54.2	41.0	32.0
Incr Delay (d2), s/veh	2225.6	182.6	0.4	2966.7	0.0	142.5	449.6	348.8	2.4	161.4	221.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	38.9	69.7	5.5	51.2	0.0	56.2	18.7	65.6	7.2	12.1	50.8	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2285.6	214.1	20.9	3026.7	0.0	174.0	505.3	391.3	39.1	215.6	262.2	32.5
LnGrp LOS	F	F	C	F	A	F	F	F	D	F	F	C
Approach Vol, veh/h		1922			1554			2383			2102	
Approach Delay, s/veh		561.8			1001.9			360.0			235.7	
Approach LOS		F			F			F			F	

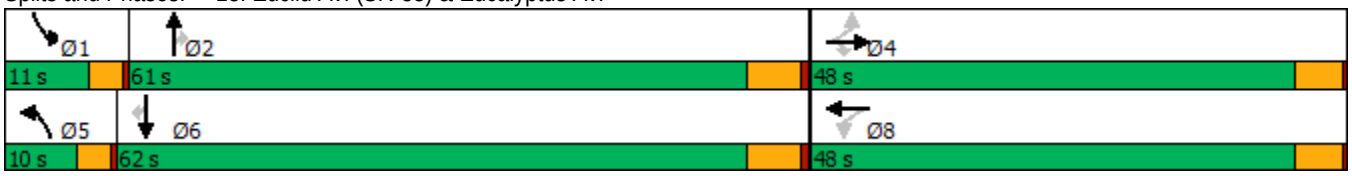
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.0	41.0		64.0	12.0	44.0		64.0				
Change Period (Y+Rc), s	3.5	6.0		7.0	3.5	6.0		7.0				
Max Green Setting (Gmax), s	11.5	35.0		57.0	8.5	38.0		57.0				
Max Q Clear Time (g_c+I1), s	13.5	37.0		59.0	10.5	40.0		59.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0				

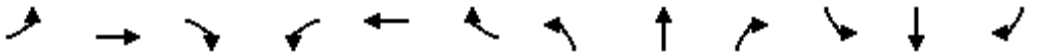
Intersection Summary		
HCM 6th Ctrl Delay		501.2
HCM 6th LOS		F

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	47	202	266	413	157	148	1769	383	260	1792	78
Future Volume (vph)	47	202	266	413	157	148	1769	383	260	1792	78
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	46.8	46.8	46.8	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	48.0	48.0	48.0	48.0	48.0	10.0	61.0	61.0	11.0	62.0	62.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%	8.3%	50.8%	50.8%	9.2%	51.7%	51.7%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.8	4.8	4.8	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	202	266	413	157	236	148	1769	383	260	1792	78
Future Volume (veh/h)	47	202	266	413	157	236	148	1769	383	260	1792	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	51	220	177	449	171	254	161	1923	415	283	1948	73
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	206	684	580	337	248	369	93	1664	742	107	1694	740
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.05	0.46	0.46	0.06	0.47	0.47
Sat Flow, veh/h	978	1900	1610	1003	690	1025	1714	3610	1610	1714	3610	1577
Grp Volume(v), veh/h	51	220	177	449	0	425	161	1923	415	283	1948	73
Grp Sat Flow(s),veh/h/ln	978	1900	1610	1003	0	1715	1714	1805	1610	1714	1805	1577
Q Serve(g_s), s	5.6	10.1	9.5	33.1	0.0	25.3	6.5	55.3	22.5	7.5	56.3	3.1
Cycle Q Clear(g_c), s	30.9	10.1	9.5	43.2	0.0	25.3	6.5	55.3	22.5	7.5	56.3	3.1
Prop In Lane	1.00		1.00	1.00		0.60	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	206	684	580	337	0	618	93	1664	742	107	1694	740
V/C Ratio(X)	0.25	0.32	0.31	1.33	0.00	0.69	1.73	1.16	0.56	2.64	1.15	0.10
Avail Cap(c_a), veh/h	206	684	580	337	0	618	93	1664	742	107	1694	740
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.8	27.8	27.6	46.4	0.0	32.7	56.8	32.4	23.5	56.3	31.9	17.7
Incr Delay (d2), s/veh	0.5	0.2	0.2	168.5	0.0	3.0	371.0	77.4	0.9	764.7	74.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.5	3.6	25.8	0.0	10.5	12.3	39.4	8.0	25.9	39.4	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.3	28.0	27.8	214.9	0.0	35.7	427.7	109.8	24.4	821.0	106.8	17.8
LnGrp LOS	D	C	C	F	A	D	F	F	C	F	F	B
Approach Vol, veh/h		448			874			2499			2304	
Approach Delay, s/veh		30.0			127.7			116.1			191.7	
Approach LOS		C			F			F			F	

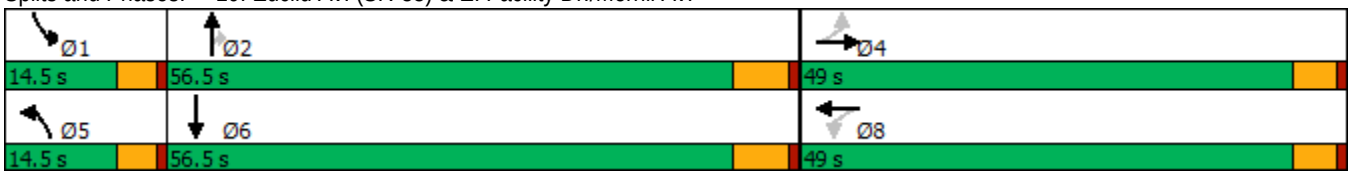
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	61.0		48.0	10.0	62.0		48.0				
Change Period (Y+Rc), s	3.5	5.7		4.8	3.5	5.7		4.8				
Max Green Setting (Gmax), s	7.5	55.3		43.2	6.5	56.3		43.2				
Max Q Clear Time (g_c+I1), s	9.5	57.3		32.9	8.5	58.3		45.2				
Green Ext Time (p_c), s	0.0	0.0		1.2	0.0	0.0		0.0				

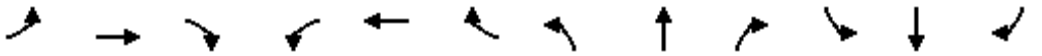
Intersection Summary												
HCM 6th Ctrl Delay			139.9									
HCM 6th LOS			F									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	14	37	627	3	5	1838	797	390	2080
Future Volume (vph)	14	37	627	3	5	1838	797	390	2080
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	15.0	15.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	10.0	10.0	46.0	46.0	14.5	28.0	28.0	14.5	28.0
Total Split (s)	49.0	49.0	49.0	49.0	14.5	56.5	56.5	14.5	56.5
Total Split (%)	40.8%	40.8%	40.8%	40.8%	12.1%	47.1%	47.1%	12.1%	47.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	4.5	6.0	6.0	4.5	6.0
Lead/Lag					Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	37	15	627	3	418	5	1838	797	390	2080	1
Future Volume (veh/h)	14	37	15	627	3	418	5	1838	797	390	2080	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	15	40	15	682	3	444	5	1998	802	424	2261	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	146	379	133	387	1	221	22	1519	678	143	1774	0
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.01	0.42	0.42	0.08	0.49	0.00
Sat Flow, veh/h	298	1033	363	925	4	602	1714	3610	1610	1714	3705	0
Grp Volume(v), veh/h	70	0	0	1129	0	0	5	1998	802	424	2261	0
Grp Sat Flow(s),veh/h/ln	1693	0	0	1531	0	0	1714	1805	1610	1714	1805	0
Q Serve(g_s), s	0.0	0.0	0.0	41.0	0.0	0.0	0.3	50.5	50.5	10.0	59.0	0.0
Cycle Q Clear(g_c), s	3.0	0.0	0.0	44.0	0.0	0.0	0.3	50.5	50.5	10.0	59.0	0.0
Prop In Lane	0.21		0.21	0.60		0.39	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	657	0	0	609	0	0	22	1519	678	143	1774	0
V/C Ratio(X)	0.11	0.00	0.00	1.85	0.00	0.00	0.23	1.32	1.18	2.97	1.27	0.00
Avail Cap(c_a), veh/h	657	0	0	609	0	0	143	1519	678	143	1774	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.0	0.0	0.0	39.5	0.0	0.0	58.6	34.8	34.8	55.0	30.5	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	390.0	0.0	0.0	1.9	146.6	97.2	904.2	128.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	83.5	0.0	0.0	0.2	51.0	36.2	40.0	54.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.1	0.0	0.0	429.5	0.0	0.0	60.6	181.4	131.9	959.2	158.6	0.0
LnGrp LOS	C	A	A	F	A	A	E	F	F	F	F	A
Approach Vol, veh/h		70			1129			2805			2685	
Approach Delay, s/veh		25.1			429.5			167.0			285.1	
Approach LOS		C			F			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.5	56.5		49.0	6.0	65.0		49.0				
Change Period (Y+Rc), s	4.5	6.0		5.0	4.5	6.0		5.0				
Max Green Setting (Gmax), s	10.0	50.5		44.0	10.0	50.5		44.0				
Max Q Clear Time (g_c+I1), s	12.0	52.5		5.0	2.3	61.0		46.0				
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	0.0		0.0				

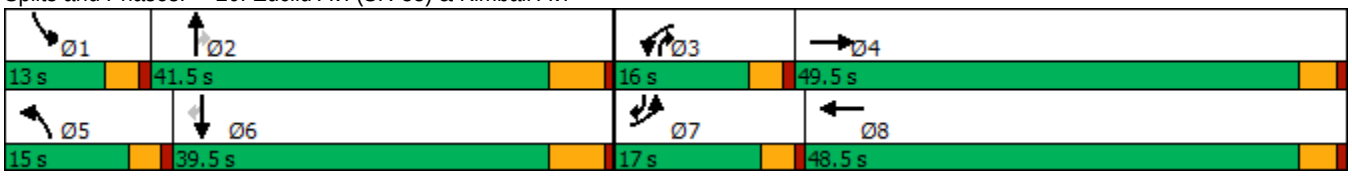
Intersection Summary												
HCM 6th Ctrl Delay			257.2									
HCM 6th LOS			F									

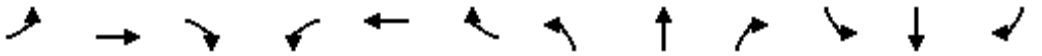
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	591	975	105	435	147	1329	159	541	1413	419
Future Volume (vph)	591	975	105	435	147	1329	159	541	1413	419
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	7
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	14.0	45.5	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	17.0	49.5	16.0	48.5	15.0	41.5	16.0	13.0	39.5	17.0
Total Split (%)	14.2%	41.3%	13.3%	40.4%	12.5%	34.6%	13.3%	10.8%	32.9%	14.2%
Yellow Time (s)	3.0	3.5	3.0	3.5	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.0	4.5	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	None	Min	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 117.9
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	591	975	206	105	435	293	147	1329	159	541	1413	419
Future Volume (veh/h)	591	975	206	105	435	293	147	1329	159	541	1413	419
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1800	1900	1900	1800	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	609	1005	209	108	448	264	152	1370	149	558	1457	334
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	354	1101	228	144	748	437	163	1111	631	245	1048	649
Arrive On Green	0.11	0.37	0.37	0.08	0.34	0.34	0.10	0.31	0.31	0.08	0.29	0.29
Sat Flow, veh/h	3141	2976	617	1714	2192	1282	1714	3610	1610	3141	3610	1609
Grp Volume(v), veh/h	609	609	605	108	368	344	152	1370	149	558	1457	334
Grp Sat Flow(s),veh/h/ln	1570	1805	1788	1714	1805	1669	1714	1805	1610	1570	1805	1609
Q Serve(g_s), s	13.0	37.0	37.2	7.1	19.5	19.7	10.2	35.5	7.2	9.0	33.5	18.0
Cycle Q Clear(g_c), s	13.0	37.0	37.2	7.1	19.5	19.7	10.2	35.5	7.2	9.0	33.5	18.0
Prop In Lane	1.00		0.35	1.00		0.77	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	354	668	661	144	616	569	163	1111	631	245	1048	649
V/C Ratio(X)	1.72	0.91	0.92	0.75	0.60	0.60	0.93	1.23	0.24	2.28	1.39	0.51
Avail Cap(c_a), veh/h	354	704	698	178	689	637	163	1111	631	245	1048	649
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.2	34.6	34.6	51.6	31.5	31.5	51.8	39.9	23.5	53.2	40.9	25.9
Incr Delay (d2), s/veh	335.9	15.7	16.3	9.5	0.6	0.7	49.5	112.8	0.2	587.4	181.3	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.5	18.2	18.2	3.4	8.2	7.7	6.4	32.0	2.6	23.4	40.2	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	387.0	50.3	50.9	61.2	32.1	32.3	101.3	152.8	23.7	640.6	222.2	26.6
LnGrp LOS	F	D	D	E	C	C	F	F	C	F	F	C
Approach Vol, veh/h		1823			820			1671			2349	
Approach Delay, s/veh		163.0			36.0			136.6			293.8	
Approach LOS		F			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	41.5	13.7	47.2	15.0	39.5	17.0	43.8
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	9.0	35.5	12.0	45.0	11.0	33.5	13.0	44.0
Max Q Clear Time (g_c+I1), s	11.0	37.5	9.1	39.2	12.2	35.5	15.0	21.7
Green Ext Time (p_c), s	0.0	0.0	0.0	3.4	0.0	0.0	0.0	2.6

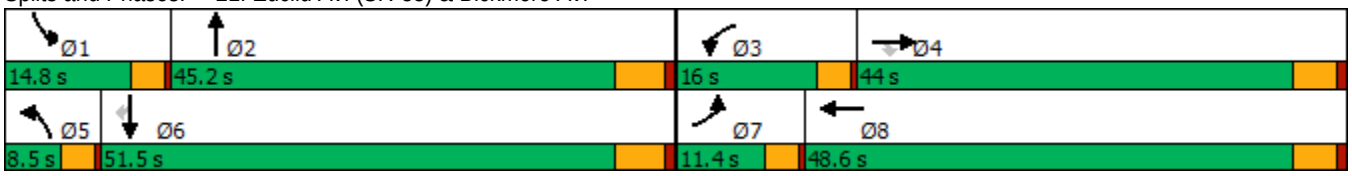
Intersection Summary	
HCM 6th Ctrl Delay	186.8
HCM 6th LOS	F

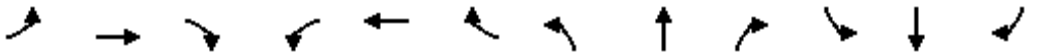
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	219	143	138	70	37	55	1382	187	1462	199
Future Volume (vph)	219	143	138	70	37	55	1382	187	1462	199
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	44.0	44.0	8.5	44.0	8.5	26.5	8.5	30.5	30.5
Total Split (s)	11.4	44.0	44.0	16.0	48.6	8.5	45.2	14.8	51.5	51.5
Total Split (%)	9.5%	36.7%	36.7%	13.3%	40.5%	7.1%	37.7%	12.3%	42.9%	42.9%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.5	3.0	4.5	4.5
All-Red Time (s)	0.5	1.0	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0	5.0	3.5	5.0	3.5	5.5	3.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 93.4
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 21: Euclid Av. (SR-83) & Bickmore Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	219	143	138	70	37	166	55	1382	126	187	1462	199
Future Volume (veh/h)	219	143	138	70	37	166	55	1382	126	187	1462	199
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	238	155	135	76	40	152	60	1502	114	203	1589	184
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	152	332	281	97	49	188	76	1516	114	217	1907	851
Arrive On Green	0.09	0.17	0.17	0.06	0.14	0.14	0.04	0.45	0.45	0.13	0.53	0.53
Sat Flow, veh/h	1714	1900	1610	1714	346	1317	1714	3402	257	1714	3610	1610
Grp Volume(v), veh/h	238	155	135	76	0	192	60	793	823	203	1589	184
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1714	0	1663	1714	1805	1854	1714	1805	1610
Q Serve(g_s), s	7.9	6.5	6.7	3.9	0.0	10.0	3.1	38.7	39.4	10.4	33.0	5.4
Cycle Q Clear(g_c), s	7.9	6.5	6.7	3.9	0.0	10.0	3.1	38.7	39.4	10.4	33.0	5.4
Prop In Lane	1.00		1.00	1.00		0.79	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	152	332	281	97	0	237	76	804	826	217	1907	851
V/C Ratio(X)	1.57	0.47	0.48	0.79	0.00	0.81	0.79	0.99	1.00	0.93	0.83	0.22
Avail Cap(c_a), veh/h	152	832	705	241	0	814	96	804	826	217	1907	851
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.6	33.0	33.1	41.5	0.0	37.0	42.2	24.4	24.6	38.5	17.7	11.2
Incr Delay (d2), s/veh	284.0	0.4	0.5	5.2	0.0	2.5	22.5	28.1	30.4	42.3	3.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.2	2.9	2.6	1.7	0.0	4.0	1.7	20.0	21.3	6.6	11.7	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	324.6	33.4	33.6	46.7	0.0	39.6	64.7	52.5	55.0	80.8	20.8	11.2
LnGrp LOS	F	C	C	D	A	D	E	D	D	F	C	B
Approach Vol, veh/h		528			268			1676			1976	
Approach Delay, s/veh		164.7			41.6			54.2			26.1	
Approach LOS		F			D			D			C	

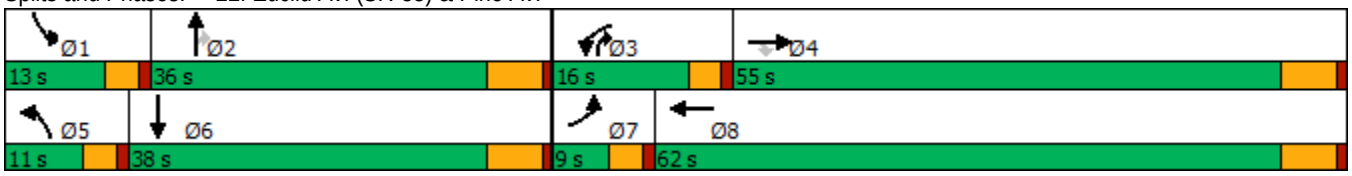
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	45.2	8.5	20.6	7.4	52.6	11.4	17.7
Change Period (Y+Rc), s	3.5	5.5	3.5	5.0	3.5	5.5	3.5	5.0
Max Green Setting (Gmax), s	11.3	39.7	12.5	39.0	5.0	46.0	7.9	43.6
Max Q Clear Time (g_c+I1), s	12.4	41.4	5.9	8.7	5.1	35.0	9.9	12.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.7	0.0	5.6	0.0	0.7

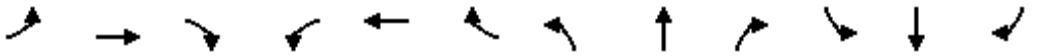
Intersection Summary	
HCM 6th Ctrl Delay	54.1
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	115	911	224	482	611	278	1070	891	391	1197
Future Volume (vph)	115	911	224	482	611	278	1070	891	391	1197
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4		3	8	5	2	3	1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	43.0	43.0	9.0	45.0	9.0	11.0	9.0	9.0	29.0
Total Split (s)	9.0	55.0	55.0	16.0	62.0	11.0	36.0	16.0	13.0	38.0
Total Split (%)	7.5%	45.8%	45.8%	13.3%	51.7%	9.2%	30.0%	13.3%	10.8%	31.7%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	911	224	482	611	247	278	1070	891	391	1197	122
Future Volume (veh/h)	115	911	224	482	611	247	278	1070	891	391	1197	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	117	930	0	492	623	250	284	1092	492	399	1221	124
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	71	776		314	602	241	100	902	564	129	883	89
Arrive On Green	0.04	0.41	0.00	0.10	0.47	0.47	0.06	0.25	0.25	0.08	0.27	0.27
Sat Flow, veh/h	1714	1900	1610	3141	1289	517	1714	3610	1610	1714	3309	335
Grp Volume(v), veh/h	117	930	0	492	0	873	284	1092	492	399	665	680
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1570	0	1807	1714	1805	1610	1714	1805	1840
Q Serve(g_s), s	5.0	49.0	0.0	12.0	0.0	56.0	7.0	30.0	30.0	9.0	32.0	32.0
Cycle Q Clear(g_c), s	5.0	49.0	0.0	12.0	0.0	56.0	7.0	30.0	30.0	9.0	32.0	32.0
Prop In Lane	1.00		1.00	1.00		0.29	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	71	776		314	0	843	100	903	564	129	481	491
V/C Ratio(X)	1.64	1.20		1.57	0.00	1.04	2.84	1.21	0.87	3.10	1.38	1.39
Avail Cap(c_a), veh/h	71	776		314	0	843	100	903	564	129	481	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.5	35.5	0.0	54.0	0.0	32.0	56.5	45.0	36.5	55.5	44.0	44.0
Incr Delay (d2), s/veh	341.5	101.7	0.0	269.9	0.0	40.5	854.9	104.8	13.6	966.7	183.9	186.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	43.1	0.0	16.3	0.0	31.6	26.7	25.8	14.8	38.3	38.0	39.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	399.0	137.2	0.0	323.9	0.0	72.5	911.4	149.8	50.1	1022.2	227.9	230.5
LnGrp LOS	F	F		F	A	F	F	F	D	F	F	F
Approach Vol, veh/h		1047	A		1365			1868			1744	
Approach Delay, s/veh		166.5			163.1			239.4			410.6	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	36.0	16.0	55.0	11.0	38.0	9.0	62.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	9.0	30.0	12.0	49.0	7.0	32.0	5.0	56.0
Max Q Clear Time (g_c+I1), s	11.0	32.0	14.0	51.0	9.0	34.0	7.0	58.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	259.0
HCM 6th LOS	F

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	1996.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	86	2383	279	95	2213	9	164	122	65	21	103	58
Future Vol, veh/h	86	2383	279	95	2213	9	164	122	65	21	103	58
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	91	2508	294	100	2329	9	173	128	68	22	108	61
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	2388.8	1972.1	85.9	66.5
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	47%	3%	4%	12%
Vol Thru, %	35%	87%	96%	57%
Vol Right, %	19%	10%	0%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	351	2748	2317	182
LT Vol	164	86	95	21
Through Vol	122	2383	2213	103
RT Vol	65	279	9	58
Lane Flow Rate	369	2893	2439	192
Geometry Grp	1	1	1	1
Degree of Util (X)	0.841	6.226	5.29	0.478
Departure Headway (Hd)	21.55	15.633	17.378	34.93
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	174	260	244	105
Service Time	19.55	13.633	15.378	32.93
HCM Lane V/C Ratio	2.121	11.127	9.996	1.829
HCM Control Delay	85.9	2388.8	1972.1	66.5
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	5.8	153.9	114.7	2.1

Intersection	
Intersection Delay, s/veh	156.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	110	622	5	3	417	114	6	111	9	110	82	65
Future Vol, veh/h	110	622	5	3	417	114	6	111	9	110	82	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	120	676	5	3	453	124	7	121	10	120	89	71
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	270.7	94.9	17.7	24.5
HCM LOS	F	F	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	15%	1%	43%
Vol Thru, %	88%	84%	78%	32%
Vol Right, %	7%	1%	21%	25%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	126	737	534	257
LT Vol	6	110	3	110
Through Vol	111	622	417	82
RT Vol	9	5	114	65
Lane Flow Rate	137	801	580	279
Geometry Grp	1	1	1	1
Degree of Util (X)	0.321	1.537	1.089	0.599
Departure Headway (Hd)	10	7.142	7.619	8.971
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	362	513	482	405
Service Time	8	5.142	5.619	6.971
HCM Lane V/C Ratio	0.378	1.561	1.203	0.689
HCM Control Delay	17.7	270.7	94.9	24.5
HCM Lane LOS	C	F	F	C
HCM 95th-tile Q	1.4	40.9	16.8	3.8

Intersection	
Int Delay, s/veh	39.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	113	1029	837	55	78	89
Future Vol, veh/h	113	1029	837	55	78	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	120	1095	890	59	83	95

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	949	0	-	0	2255	920
Stage 1	-	-	-	-	920	-
Stage 2	-	-	-	-	1335	-
Critical Hdwy	4.1	-	-	-	5.4	5.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	732	-	-	-	86	406
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	248	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	732	-	-	-	~ 50	406
Mov Cap-2 Maneuver	-	-	-	-	~ 50	-
Stage 1	-	-	-	-	228	-
Stage 2	-	-	-	-	248	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	$ 513.1
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	732	-	-	-	94
HCM Lane V/C Ratio	0.164	-	-	-	1.89
HCM Control Delay (s)	10.9	0	-	-	$ 513.1
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0.6	-	-	-	14.9

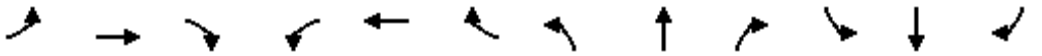
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	414	295	1097	1462	803
Future Volume (vph)	0	414	295	1097	1462	803
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	48.0	48.0	35.0	72.0	37.0	37.0
Total Split (%)	40.0%	40.0%	29.2%	60.0%	30.8%	30.8%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	370	0	414	295	1097	0	0	1462	803
Future Volume (veh/h)	0	0	0	370	0	414	295	1097	0	0	1462	803
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				385	0	251	307	1143	0	0	1523	661
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				441	0	393	330	2381	0	0	1585	691
Arrive On Green				0.24	0.00	0.24	0.36	1.00	0.00	0.00	0.44	0.44
Sat Flow, veh/h				1810	0	1610	1810	3705	0	0	3705	1575
Grp Volume(v), veh/h				385	0	251	307	1143	0	0	1523	661
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1805	0	0	1805	1575
Q Serve(g_s), s				24.5	0.0	16.8	19.6	0.0	0.0	0.0	49.1	48.7
Cycle Q Clear(g_c), s				24.5	0.0	16.8	19.6	0.0	0.0	0.0	49.1	48.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				441	0	393	330	2381	0	0	1585	691
V/C Ratio(X)				0.87	0.00	0.64	0.93	0.48	0.00	0.00	0.96	0.96
Avail Cap(c_a), veh/h				636	0	566	458	2381	0	0	1585	691
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				43.6	0.0	40.7	37.4	0.0	0.0	0.0	32.7	32.6
Incr Delay (d2), s/veh				9.2	0.0	1.7	2.4	0.1	0.0	0.0	15.1	25.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				11.7	0.0	6.6	6.8	0.0	0.0	0.0	23.3	22.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				52.8	0.0	42.4	39.8	0.1	0.0	0.0	47.8	57.6
LnGrp LOS				D	A	D	D	A	A	A	D	E
Approach Vol, veh/h					636			1450			2184	
Approach Delay, s/veh					48.7			8.5			50.7	
Approach LOS					D			A			D	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		84.9			26.5	58.5		35.1				
Change Period (Y+Rc), s		5.8			4.6	5.8		5.8				
Max Green Setting (Gmax), s		66.2			30.4	31.2		42.2				
Max Q Clear Time (g_c+I1), s		2.0			21.6	51.1		26.5				
Green Ext Time (p_c), s		10.0			0.3	0.0		2.7				

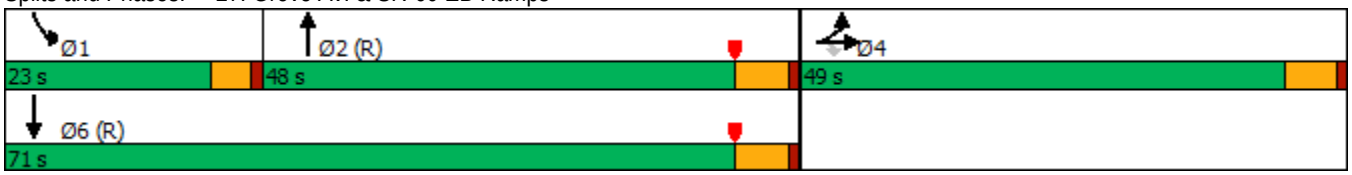
Intersection Summary												
HCM 6th Ctrl Delay			36.1									
HCM 6th LOS			D									

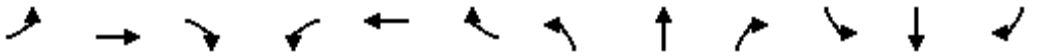
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	421	879	594	1238
Future Volume (vph)	0	421	879	594	1238
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	4		2	1	6
Permitted Phases		4			
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	26.8	9.6	22.8
Total Split (s)	49.0	49.0	48.0	23.0	71.0
Total Split (%)	40.8%	40.8%	40.0%	19.2%	59.2%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	513	0	421	0	0	0	0	879	426	594	1238	0
Future Volume (veh/h)	513	0	421	0	0	0	0	879	426	594	1238	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	552	0	366				0	945	375	639	1331	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	598	0	532				0	956	376	277	2067	0
Arrive On Green	0.33	0.00	0.33				0.00	0.38	0.38	0.31	1.00	0.00
Sat Flow, veh/h	1810	0	1610				0	2605	986	1810	3705	0
Grp Volume(v), veh/h	552	0	366				0	677	643	639	1331	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1691	1810	1805	0
Q Serve(g_s), s	35.3	0.0	23.6				0.0	44.6	45.6	18.4	0.0	0.0
Cycle Q Clear(g_c), s	35.3	0.0	23.6				0.0	44.6	45.6	18.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.58	1.00		0.00
Lane Grp Cap(c), veh/h	598	0	532				0	688	644	277	2067	0
V/C Ratio(X)	0.92	0.00	0.69				0.00	0.98	1.00	2.30	0.64	0.00
Avail Cap(c_a), veh/h	651	0	580				0	688	644	277	2067	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.69	0.69	0.09	0.09	0.00
Uniform Delay (d), s/veh	38.7	0.0	34.8				0.0	36.8	37.1	41.6	0.0	0.0
Incr Delay (d2), s/veh	18.0	0.0	3.1				0.0	25.0	29.0	587.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.9	0.0	9.3				0.0	23.3	22.9	51.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.7	0.0	37.9				0.0	61.7	66.1	629.0	0.1	0.0
LnGrp LOS	E	A	D				A	E	E	F	A	A
Approach Vol, veh/h		918						1320			1970	
Approach Delay, s/veh		49.2						63.9			204.1	
Approach LOS		D						E			F	

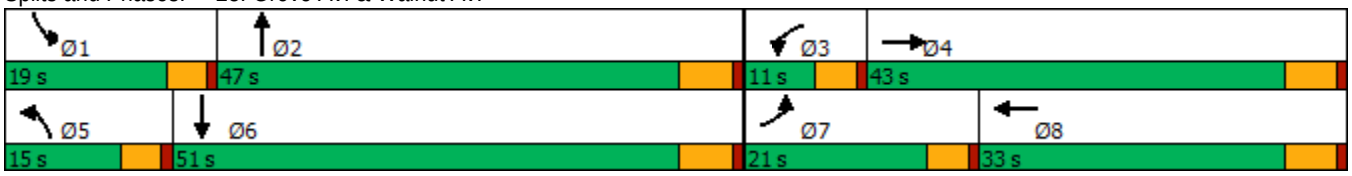
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.0	51.5		45.5		74.5
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	18.4	42.2		43.2		65.2
Max Q Clear Time (g_c+I1), s	20.4	47.6		37.3		2.0
Green Ext Time (p_c), s	0.0	0.0		2.4		12.9

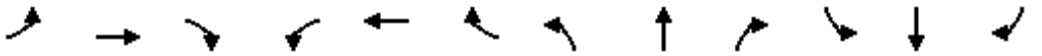
Intersection Summary		
HCM 6th Ctrl Delay		126.3
HCM 6th LOS		F

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	184	358	22	194	101	840	212	998
Future Volume (vph)	184	358	22	194	101	840	212	998
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	28.8	9.6	28.8
Total Split (s)	21.0	43.0	11.0	33.0	15.0	47.0	19.0	51.0
Total Split (%)	17.5%	35.8%	9.2%	27.5%	12.5%	39.2%	15.8%	42.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 106
Natural Cycle: 105
Control Type: Actuated-Uncoordinated

Splits and Phases: 28: Grove Av. & Walnut Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	358	97	22	194	152	101	840	31	212	998	208
Future Volume (veh/h)	184	358	97	22	194	152	101	840	31	212	998	208
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	192	373	86	23	202	123	105	875	22	221	1040	149
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	222	688	157	40	283	164	130	1438	36	239	1469	210
Arrive On Green	0.13	0.24	0.24	0.02	0.13	0.13	0.08	0.40	0.40	0.14	0.46	0.46
Sat Flow, veh/h	1714	2919	666	1714	2185	1265	1714	3598	90	1714	3170	454
Grp Volume(v), veh/h	192	229	230	23	165	160	105	439	458	221	592	597
Grp Sat Flow(s),veh/h/ln	1714	1805	1780	1714	1805	1645	1714	1805	1884	1714	1805	1818
Q Serve(g_s), s	11.3	11.5	11.7	1.4	9.0	9.7	6.2	19.9	19.9	13.1	27.0	27.1
Cycle Q Clear(g_c), s	11.3	11.5	11.7	1.4	9.0	9.7	6.2	19.9	19.9	13.1	27.0	27.1
Prop In Lane	1.00		0.37	1.00		0.77	1.00		0.05	1.00		0.25
Lane Grp Cap(c), veh/h	222	425	419	40	234	213	130	721	753	239	836	843
V/C Ratio(X)	0.87	0.54	0.55	0.57	0.71	0.75	0.81	0.61	0.61	0.92	0.71	0.71
Avail Cap(c_a), veh/h	273	651	642	106	476	434	173	721	753	239	836	843
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.0	34.5	34.6	49.8	43.0	43.3	46.9	24.5	24.5	43.8	22.1	22.1
Incr Delay (d2), s/veh	18.3	1.1	1.1	4.7	3.9	5.3	13.8	3.8	3.6	37.2	5.0	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	4.9	5.0	0.6	4.1	4.1	3.1	8.7	9.0	7.8	11.6	11.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.3	35.6	35.7	54.6	46.9	48.5	60.7	28.3	28.2	81.0	27.1	27.1
LnGrp LOS	E	D	D	D	D	D	E	C	C	F	C	C
Approach Vol, veh/h		651			348			1002			1410	
Approach Delay, s/veh		43.5			48.1			31.7			35.6	
Approach LOS		D			D			C			D	

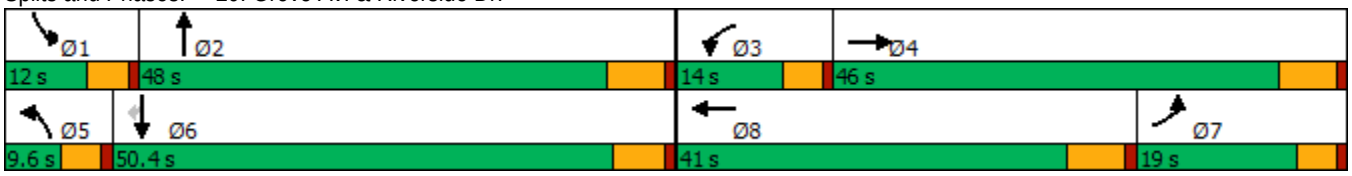
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	47.0	7.0	30.1	12.4	53.6	17.9	19.2
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	14.4	41.2	6.4	37.2	10.4	45.2	16.4	27.2
Max Q Clear Time (g_c+I1), s	15.1	21.9	3.4	13.7	8.2	29.1	13.3	11.7
Green Ext Time (p_c), s	0.0	5.0	0.0	2.4	0.0	6.7	0.1	1.5

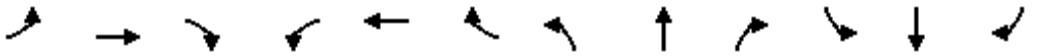
Intersection Summary	
HCM 6th Ctrl Delay	37.2
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	202	786	120	670	27	607	190	712	212
Future Volume (vph)	202	786	120	670	27	607	190	712	212
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6	
Permitted Phases									6
Detector Phase	7	4	3	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8	15.8
Total Split (s)	19.0	46.0	14.0	41.0	9.6	48.0	12.0	50.4	50.4
Total Split (%)	15.8%	38.3%	11.7%	34.2%	8.0%	40.0%	10.0%	42.0%	42.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	202	786	41	120	670	158	27	607	112	190	712	212
Future Volume (veh/h)	202	786	41	120	670	158	27	607	112	190	712	212
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	210	819	42	125	698	119	28	632	100	198	742	164
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	242	593	30	134	788	134	43	558	88	106	731	619
Arrive On Green	0.14	0.33	0.33	0.08	0.26	0.26	0.03	0.35	0.35	0.06	0.38	0.38
Sat Flow, veh/h	1714	1789	92	1714	3084	525	1714	1601	253	1714	1900	1610
Grp Volume(v), veh/h	210	0	861	125	408	409	28	0	732	198	742	164
Grp Sat Flow(s),veh/h/ln	1714	0	1881	1714	1805	1805	1714	0	1854	1714	1900	1610
Q Serve(g_s), s	14.4	0.0	39.8	8.7	26.1	26.2	1.9	0.0	41.8	7.4	46.2	5.0
Cycle Q Clear(g_c), s	14.4	0.0	39.8	8.7	26.1	26.2	1.9	0.0	41.8	7.4	46.2	5.0
Prop In Lane	1.00		0.05	1.00		0.29	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	242	0	624	134	461	461	43	0	646	106	731	619
V/C Ratio(X)	0.87	0.00	1.38	0.93	0.89	0.89	0.65	0.00	1.13	1.87	1.02	0.26
Avail Cap(c_a), veh/h	242	0	624	134	523	523	71	0	646	106	731	619
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.4	0.0	40.1	55.0	43.0	43.0	58.0	0.0	39.1	56.3	36.9	9.2
Incr Delay (d2), s/veh	25.7	0.0	180.9	56.2	15.3	15.4	5.9	0.0	78.1	426.5	37.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	0.0	48.6	5.7	13.1	13.1	0.9	0.0	31.8	15.6	27.7	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.1	0.0	221.0	111.1	58.2	58.4	63.8	0.0	117.2	482.8	74.0	10.2
LnGrp LOS	E	A	F	F	E	E	E	A	F	F	F	B
Approach Vol, veh/h		1071			942			760			1104	
Approach Delay, s/veh		192.6			65.3			115.3			137.9	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	48.0	14.0	46.0	7.6	52.4	23.1	36.9
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	7.4	41.8	9.4	39.8	5.0	* 45	14.4	* 35
Max Q Clear Time (g_c+I1), s	9.4	43.8	10.7	41.8	3.9	48.2	16.4	28.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	130.9
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	344.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	93	284	50	25	79	55	71	638	42	63	776	34
Future Vol, veh/h	93	284	50	25	79	55	71	638	42	63	776	34
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	97	296	52	26	82	57	74	665	44	66	808	35
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	84.4	28.1	377.4	502
HCM LOS	F	D	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	22%	16%	7%
Vol Thru, %	85%	67%	50%	89%
Vol Right, %	6%	12%	35%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	751	427	159	873
LT Vol	71	93	25	63
Through Vol	638	284	79	776
RT Vol	42	50	55	34
Lane Flow Rate	782	445	166	909
Geometry Grp	1	1	1	1
Degree of Util (X)	1.76	0.994	0.429	2.047
Departure Headway (Hd)	10.191	11.394	14.587	9.662
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	368	325	250	382
Service Time	8.191	9.394	12.587	7.662
HCM Lane V/C Ratio	2.125	1.369	0.664	2.38
HCM Control Delay	377.4	84.4	28.1	502
HCM Lane LOS	F	F	D	F
HCM 95th-tile Q	39.5	10.7	2	54.1

Intersection	
Intersection Delay, s/veh	307
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	121	174	147	6	59	55	28	635	63	90	660	66
Future Vol, veh/h	121	174	147	6	59	55	28	635	63	90	660	66
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	130	187	158	6	63	59	30	683	68	97	710	71
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	85.7	23.8	343.7	435.9
HCM LOS	F	C	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	27%	5%	11%
Vol Thru, %	87%	39%	49%	81%
Vol Right, %	9%	33%	46%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	726	442	120	816
LT Vol	28	121	6	90
Through Vol	635	174	59	660
RT Vol	63	147	55	66
Lane Flow Rate	781	475	129	877
Geometry Grp	1	1	1	1
Degree of Util (X)	1.687	1.015	0.334	1.9
Departure Headway (Hd)	9.581	10.389	13.978	9.228
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	390	352	259	404
Service Time	7.581	8.389	11.978	7.228
HCM Lane V/C Ratio	2.003	1.349	0.498	2.171
HCM Control Delay	343.7	85.7	23.8	435.9
HCM Lane LOS	F	F	C	F
HCM 95th-tile Q	38.4	11.8	1.4	49.5

Intersection	
Intersection Delay, s/veh	1465.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	82	1503	69	179	1274	96	184	553	383	322	442	69
Future Vol, veh/h	82	1503	69	179	1274	96	184	553	383	322	442	69
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	88	1616	74	192	1370	103	198	595	412	346	475	74
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	1807.4	1680.2	1128.1	839.6
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	5%	12%	39%
Vol Thru, %	49%	91%	82%	53%
Vol Right, %	34%	4%	6%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1120	1654	1549	833
LT Vol	184	82	179	322
Through Vol	553	1503	1274	442
RT Vol	383	69	96	69
Lane Flow Rate	1204	1778	1666	896
Geometry Grp	1	1	1	1
Degree of Util (X)	3.153	4.734	4.434	2.395
Departure Headway (Hd)	66.763	55.923	59.061	85.767
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	72	89	83	54
Service Time	64.763	53.923	57.061	83.767
HCM Lane V/C Ratio	16.722	19.978	20.072	16.593
HCM Control Delay	1128.1	1807.4	1680.2	839.6
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	18	33.5	29.6	10.8

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	182	168	85	20	274	295	40	781	12	123	386	169
Future Vol, veh/h	182	168	85	20	274	295	40	781	12	123	386	169
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	198	183	92	22	298	321	43	849	13	134	420	184

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2031	1728	512	1860	1814	856	604	0	0	862	0	0
Stage 1	780	780	-	942	942	-	-	-	-	-	-	-
Stage 2	1251	948	-	918	872	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 43	~ 89	566	57	~ 79	360	984	-	-	789	-	-
Stage 1	391	409	-	318	344	-	-	-	-	-	-	-
Stage 2	213	342	-	328	371	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 60	566	-	~ 53	360	984	-	-	789	-	-
Mov Cap-2 Maneuver	-	~ 60	-	-	~ 53	-	-	-	-	-	-	-
Stage 1	358	301	-	291	315	-	-	-	-	-	-	-
Stage 2	~ 1	313	-	79	~ 273	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			0.4	1.9
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	984	-	-	-	-	789	-	-
HCM Lane V/C Ratio	0.044	-	-	-	-	0.169	-	-
HCM Control Delay (s)	8.8	0	-	-	-	10.5	0	-
HCM Lane LOS	A	A	-	-	-	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	-	-	0.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	172	756	26	465
Future Volume (vph)	172	756	26	465
Turn Type	Prot	NA	Prot	NA
Protected Phases	8	2	1	6
Permitted Phases				
Detector Phase	8	2	1	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	5.0	10.0
Minimum Split (s)	26.7	28.2	9.6	16.2
Total Split (s)	27.0	75.0	18.0	93.0
Total Split (%)	22.5%	62.5%	15.0%	77.5%
Yellow Time (s)	3.7	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	6.2	4.6	6.2
Lead/Lag		Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	
Recall Mode	None	Max	None	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 117.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 34: Grove Av. & Street A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	172	77	756	58	26	465
Future Volume (veh/h)	172	77	756	58	26	465
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1800	1900
Adj Flow Rate, veh/h	187	84	822	63	28	505
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	205	92	1171	90	44	1399
Arrive On Green	0.17	0.17	0.67	0.67	0.03	0.74
Sat Flow, veh/h	1198	538	1742	134	1714	1900
Grp Volume(v), veh/h	272	0	0	885	28	505
Grp Sat Flow(s),veh/h/ln	1743	0	0	1876	1714	1900
Q Serve(g_s), s	18.1	0.0	0.0	34.5	1.9	11.2
Cycle Q Clear(g_c), s	18.1	0.0	0.0	34.5	1.9	11.2
Prop In Lane	0.69	0.31		0.07	1.00	
Lane Grp Cap(c), veh/h	298	0	0	1260	44	1399
V/C Ratio(X)	0.91	0.00	0.00	0.70	0.64	0.36
Avail Cap(c_a), veh/h	330	0	0	1260	195	1399
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.0	0.0	0.0	12.0	56.9	5.6
Incr Delay (d2), s/veh	25.7	0.0	0.0	3.3	5.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.9	0.0	0.0	12.8	0.9	3.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	73.6	0.0	0.0	15.3	62.6	6.3
LnGrp LOS	E	A	A	B	E	A
Approach Vol, veh/h	272		885			533
Approach Delay, s/veh	73.6		15.3			9.3
Approach LOS	E		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	7.6	85.4			93.0	24.9
Change Period (Y+Rc), s	4.6	6.2			6.2	4.7
Max Green Setting (Gmax), s	13.4	68.8			86.8	22.3
Max Q Clear Time (g_c+I1), s	3.9	36.5			13.2	20.1
Green Ext Time (p_c), s	0.0	6.8			3.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	22.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	557.9
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	384	893	684	430	358	278
Future Vol, veh/h	384	893	684	430	358	278
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	400	930	713	448	373	290
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	751	561.5	163.7
HCM LOS	F	F	F

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	30%	0%	56%
Vol Thru, %	70%	61%	0%
Vol Right, %	0%	39%	44%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	1277	1114	636
LT Vol	384	0	358
Through Vol	893	684	0
RT Vol	0	430	278
Lane Flow Rate	1330	1160	662
Geometry Grp	1	1	1
Degree of Util (X)	2.608	2.181	1.26
Departure Headway (Hd)	9.438	9.713	9.203
Convergence, Y/N	Yes	Yes	Yes
Cap	399	383	404
Service Time	7.438	7.713	7.203
HCM Lane V/C Ratio	3.333	3.029	1.639
HCM Control Delay	751	561.5	163.7
HCM Lane LOS	F	F	F
HCM 95th-tile Q	81.3	59.8	21.4

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	95	1983	51	208	1338	65	91	67	208	173	296	69
Future Vol, veh/h	95	1983	51	208	1338	65	91	67	208	173	296	69
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	100	2087	54	219	1408	68	96	71	219	182	312	73

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1476	0	0	2141	0	0	4387	4228	2114	4339	4221	1442
Stage 1	-	-	-	-	-	-	2314	2314	-	1880	1880	-
Stage 2	-	-	-	-	-	-	2073	1914	-	2459	2341	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	462	-	-	256	-	-	~ 1	~ 2	~ 65	~ 1	~ 2	164
Stage 1	-	-	-	-	-	-	~ 51	73	-	~ 93	~ 121	-
Stage 2	-	-	-	-	-	-	~ 71	117	-	~ 42	~ 71	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	462	-	-	256	-	-	-	0	~ 65	-	0	164
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	~ 51	73	-	~ 93	0	-
Stage 2	-	-	-	-	-	-	-	0	-	-	~ 71	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	8.6		
HCM LOS			-	-

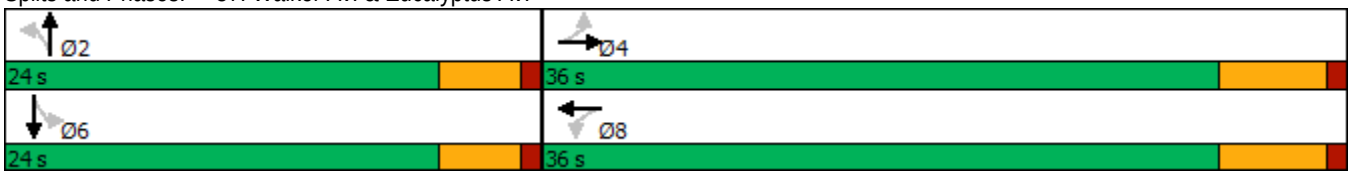
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	462	-	-	256	-	-	-
HCM Lane V/C Ratio	-	0.216	-	-	0.855	-	-	-
HCM Control Delay (s)	-	14.9	0	-	67	0	-	-
HCM Lane LOS	-	B	A	-	F	A	-	-
HCM 95th %tile Q(veh)	-	0.8	-	-	7	-	-	-

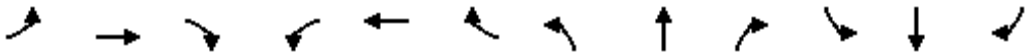
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	410	345	14	252	87	302	140	105
Future Volume (vph)	410	345	14	252	87	302	140	105
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.8	22.8	22.8	22.8	21.6	21.6	21.6	21.6
Total Split (s)	36.0	36.0	36.0	36.0	24.0	24.0	24.0	24.0
Total Split (%)	60.0%	60.0%	60.0%	60.0%	40.0%	40.0%	40.0%	40.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.8		5.8		4.6		4.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)		30.2		30.2		19.4		19.4
Actuated g/C Ratio		0.50		0.50		0.32		0.32
v/c Ratio		1.58		0.56		0.88		1.02
Control Delay		291.2		11.2		41.3		75.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		291.2		11.2		41.3		75.8
LOS		F		B		D		E
Approach Delay		291.2		11.2		41.3		75.8
Approach LOS		F		B		D		E

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.58	
Intersection Signal Delay: 137.6	Intersection LOS: F
Intersection Capacity Utilization 118.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 37: Walker Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	410	345	36	14	252	210	87	302	21	140	105	110
Future Volume (veh/h)	410	345	36	14	252	210	87	302	21	140	105	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	446	375	39	15	274	228	95	328	23	152	114	120
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	377	240	25	72	496	399	156	410	27	218	145	126
Arrive On Green	0.50	0.50	0.50	0.50	0.50	0.50	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	567	477	50	20	985	793	256	1267	83	417	450	391
Grp Volume(v), veh/h	860	0	0	517	0	0	446	0	0	386	0	0
Grp Sat Flow(s),veh/h/ln	1093	0	0	1797	0	0	1607	0	0	1257	0	0
Q Serve(g_s), s	17.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0
Cycle Q Clear(g_c), s	30.2	0.0	0.0	12.4	0.0	0.0	15.5	0.0	0.0	18.2	0.0	0.0
Prop In Lane	0.52		0.05	0.03		0.44	0.21		0.05	0.39		0.31
Lane Grp Cap(c), veh/h	641	0	0	966	0	0	592	0	0	490	0	0
V/C Ratio(X)	1.34	0.00	0.00	0.53	0.00	0.00	0.75	0.00	0.00	0.79	0.00	0.00
Avail Cap(c_a), veh/h	641	0	0	966	0	0	592	0	0	490	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.2	0.0	0.0	10.5	0.0	0.0	18.7	0.0	0.0	19.7	0.0	0.0
Incr Delay (d2), s/veh	163.7	0.0	0.0	0.6	0.0	0.0	5.4	0.0	0.0	8.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	36.8	0.0	0.0	3.6	0.0	0.0	6.1	0.0	0.0	5.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	181.8	0.0	0.0	11.1	0.0	0.0	24.1	0.0	0.0	28.0	0.0	0.0
LnGrp LOS	F	A	A	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		860			517			446			386	
Approach Delay, s/veh		181.8			11.1			24.1			28.0	
Approach LOS		F			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		24.0		36.0		24.0		36.0				
Change Period (Y+Rc), s		4.6		5.8		4.6		5.8				
Max Green Setting (Gmax), s		19.4		30.2		19.4		30.2				
Max Q Clear Time (g_c+I1), s		17.5		32.2		20.2		14.4				
Green Ext Time (p_c), s		0.6		0.0		0.0		2.8				

Intersection Summary												
HCM 6th Ctrl Delay			83.1									
HCM 6th LOS			F									

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	52	1060	139	107	833	46	114	65	157	96	49	167
Future Vol, veh/h	52	1060	139	107	833	46	114	65	157	96	49	167
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	75	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	57	1152	151	116	905	50	124	71	171	104	53	182

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	955	0	0	1303	0	0	2546	2453	1152	2625	2579	930
Stage 1	-	-	-	-	-	-	1266	1266	-	1162	1162	-
Stage 2	-	-	-	-	-	-	1280	1187	-	1463	1417	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	728	-	-	538	-	-	~ 18	~ 31	243	~ 16	~ 26	327
Stage 1	-	-	-	-	-	-	209	242	-	240	272	-
Stage 2	-	-	-	-	-	-	206	264	-	162	205	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	728	-	-	538	-	-	~ 1	~ 22	243	~ 1	~ 19	327
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ -3	91	-	- ~ -130	56	-
Stage 1	-	-	-	-	-	-	193	223	-	221	213	-
Stage 2	-	-	-	-	-	-	~ 54	207	-	~ 30	189	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1.5		28.3
HCM LOS			-	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	+	728	-	-	538	-	-	482
HCM Lane V/C Ratio	-	0.078	-	-	0.216	-	-	0.704
HCM Control Delay (s)	-	10.4	-	-	13.5	-	-	28.3
HCM Lane LOS	-	B	-	-	B	-	-	D
HCM 95th %tile Q(veh)	-	0.3	-	-	0.8	-	-	5.5

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	150	26	23	150	77	66
Future Vol, veh/h	150	26	23	150	77	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	163	28	25	163	84	72

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	191	0	390	177
Stage 1	-	-	-	-	177	-
Stage 2	-	-	-	-	213	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1395	-	618	871
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	827	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1395	-	607	871
Mov Cap-2 Maneuver	-	-	-	-	607	-
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	812	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	706	-	-	1395	-
HCM Lane V/C Ratio	0.22	-	-	0.018	-
HCM Control Delay (s)	11.5	-	-	7.6	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.8	-	-	0.1	-

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	1237	54	14	884	26	38	0	25	75	0	64
Future Vol, veh/h	22	1237	54	14	884	26	38	0	25	75	0	64
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	24	1345	59	15	961	28	41	0	27	82	0	70

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	989	0	0	1405	0	0	2464	2443	703	1726	2458	975
Stage 1	-	-	-	-	-	-	1424	1424	-	1005	1005	-
Stage 2	-	-	-	-	-	-	1040	1019	-	721	1453	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	707	-	-	492	-	-	~ 18	32	385	~ 64	31	308
Stage 1	-	-	-	-	-	-	145	204	-	294	322	-
Stage 2	-	-	-	-	-	-	281	317	-	389	197	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	707	-	-	492	-	-	~ 12	26	385	~ 51	25	308
Mov Cap-2 Maneuver	-	-	-	-	-	-	73	108	-	145	102	-
Stage 1	-	-	-	-	-	-	122	171	-	247	312	-
Stage 2	-	-	-	-	-	-	211	307	-	304	165	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	83.6	70.3
HCM LOS			F	F

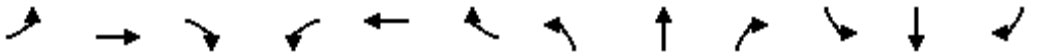
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	108	707	-	-	492	-	-	192
HCM Lane V/C Ratio	0.634	0.034	-	-	0.031	-	-	0.787
HCM Control Delay (s)	83.6	10.3	-	-	12.6	-	-	70.3
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	3.2	0.1	-	-	0.1	-	-	5.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	40	2710	192	1816	108	54	64	26
Future Volume (vph)	40	2710	192	1816	108	54	64	26
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	27.8	27.8	27.8	27.8
Total Split (s)	9.6	78.0	12.0	80.4	30.0	30.0	30.0	30.0
Total Split (%)	8.0%	65.0%	10.0%	67.0%	25.0%	25.0%	25.0%	25.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	5.8	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 41: Vineyard Av. & Edison Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	2710	74	192	1816	87	108	54	358	64	26	25
Future Volume (veh/h)	40	2710	74	192	1816	87	108	54	358	64	26	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	43	2946	80	209	1974	95	117	59	389	70	28	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	57	1102	30	112	1130	54	314	44	288	60	179	173
Arrive On Green	0.03	0.60	0.60	0.06	0.63	0.63	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1810	1841	50	1810	1798	87	1446	216	1427	1010	889	857
Grp Volume(v), veh/h	43	0	3026	209	0	2069	117	0	448	70	0	55
Grp Sat Flow(s),veh/h/ln	1810	0	1891	1810	0	1884	1446	0	1643	1010	0	1746
Q Serve(g_s), s	2.8	0.0	71.8	7.4	0.0	75.4	8.7	0.0	24.2	0.0	0.0	3.1
Cycle Q Clear(g_c), s	2.8	0.0	71.8	7.4	0.0	75.4	11.8	0.0	24.2	24.2	0.0	3.1
Prop In Lane	1.00		0.03	1.00		0.05	1.00		0.87	1.00		0.49
Lane Grp Cap(c), veh/h	57	0	1131	112	0	1184	314	0	331	60	0	352
V/C Ratio(X)	0.75	0.00	2.67	1.87	0.00	1.75	0.37	0.00	1.35	1.17	0.00	0.16
Avail Cap(c_a), veh/h	75	0	1131	112	0	1184	314	0	331	60	0	352
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.6	0.0	24.1	56.3	0.0	22.3	44.4	0.0	47.9	60.0	0.0	39.5
Incr Delay (d2), s/veh	17.0	0.0	756.0	424.8	0.0	339.9	0.7	0.0	177.0	168.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	264.7	16.4	0.0	139.3	3.1	0.0	25.9	4.6	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.7	0.0	780.1	481.1	0.0	362.2	45.1	0.0	224.9	228.5	0.0	39.7
LnGrp LOS	E	A	F	F	A	F	D	A	F	F	A	D
Approach Vol, veh/h		3069			2278			565			125	
Approach Delay, s/veh		770.2			373.1			187.7			145.4	
Approach LOS		F			F			F			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	12.0	78.0		30.0	8.4	81.6				
Change Period (Y+Rc), s		5.8	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		24.2	7.4	71.8		24.2	5.0	74.2				
Max Q Clear Time (g_c+I1), s		26.2	9.4	73.8		26.2	4.8	77.4				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	0.0				

Intersection Summary												
HCM 6th Ctrl Delay			552.9									
HCM 6th LOS			F									

Intersection	
Int Delay, s/veh	579.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	101	406	57	35	177	160	202	228	287	129	85	38
Future Vol, veh/h	101	406	57	35	177	160	202	228	287	129	85	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	110	441	62	38	192	174	220	248	312	140	92	41

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	366	0	0	503	0	0	1114	1134	472	1327	1078	279
Stage 1	-	-	-	-	-	-	692	692	-	355	355	-
Stage 2	-	-	-	-	-	-	422	442	-	972	723	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1204	-	-	1072	-	-	~ 187	~ 204	596	~ 134	220	765
Stage 1	-	-	-	-	-	-	437	448	-	666	633	-
Stage 2	-	-	-	-	-	-	613	580	-	306	434	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1204	-	-	1072	-	-	~ 94	~ 170	596	-	183	765
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 94	~ 170	-	-	183	-
Stage 1	-	-	-	-	-	-	381	391	-	581	604	-
Stage 2	-	-	-	-	-	-	469	553	-	~ 47	378	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0.8	$ 1538	
HCM LOS			F	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	181	1204	-	-	1072	-	-	-
HCM Lane V/C Ratio	4.306	0.091	-	-	0.035	-	-	-
HCM Control Delay (s)	$ 1538	8.3	0	-	8.5	0	-	-
HCM Lane LOS	F	A	A	-	A	A	-	-
HCM 95th %tile Q(veh)	78.5	0.3	-	-	0.1	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	242	1019	76	68	587	332	88	119	82	423	142	249
Future Vol, veh/h	242	1019	76	68	587	332	88	119	82	423	142	249
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	263	1108	83	74	638	361	96	129	89	460	154	271

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	999	0	0	1192	0	0	2856	2824	597	2112	2685	819
Stage 1	-	-	-	-	-	-	1677	1677	-	967	967	-
Stage 2	-	-	-	-	-	-	1179	1147	-	1145	1718	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.9	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	701	-	-	593	-	-	~ 9	~ 18	451	~ 33	~ 22	379
Stage 1	-	-	-	-	-	-	101	153	-	~ 308	335	-
Stage 2	-	-	-	-	-	-	234	276	-	~ 216	~ 146	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	701	-	-	592	-	-	-	0	451	-	0	379
Mov Cap-2 Maneuver	-	-	-	-	-	-	164	0	-	~ -90	~ -90	-
Stage 1	-	-	-	-	-	-	101	0	-	~ 308	293	-
Stage 2	-	-	-	-	-	-	~ 28	242	-	-	0	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.4	0.8		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	451	701	-	-	592	-	-	-	+
HCM Lane V/C Ratio	-	0.484	0.375	-	-	0.125	-	-	-	-
HCM Control Delay (s)	-	20.3	13.2	-	-	11.9	-	-	-	0.7
HCM Lane LOS	-	C	B	-	-	B	-	-	-	A
HCM 95th %tile Q(veh)	-	2.6	1.7	-	-	0.4	-	-	-	-

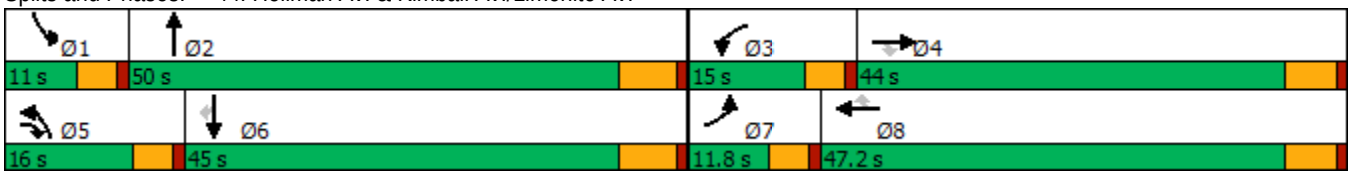
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

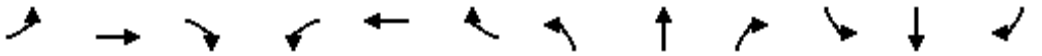
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	30	967	258	483	809	60	326	93	120	97	148
Future Volume (vph)	30	967	258	483	809	60	326	93	120	97	148
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	1	6	
Permitted Phases			4			8					6
Detector Phase	7	4	5	3	8	8	5	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	37.8	9.6	43.2	9.6	43.2	43.2
Total Split (s)	11.8	44.0	16.0	15.0	47.2	47.2	16.0	50.0	11.0	45.0	45.0
Total Split (%)	9.8%	36.7%	13.3%	12.5%	39.3%	39.3%	13.3%	41.7%	9.2%	37.5%	37.5%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	None	None	None	Max	Max	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	967	258	483	809	60	326	93	430	120	97	148
Future Volume (veh/h)	30	967	258	483	809	60	326	93	430	120	97	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	32	1018	272	508	852	63	343	98	453	126	102	156
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	47	605	666	272	1363	608	163	659	588	91	1167	521
Arrive On Green	0.03	0.32	0.32	0.09	0.38	0.38	0.09	0.37	0.37	0.05	0.32	0.32
Sat Flow, veh/h	1714	1900	1610	3141	3610	1610	1714	1805	1610	1714	3610	1610
Grp Volume(v), veh/h	32	1018	272	508	852	63	343	98	453	126	102	156
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1570	1805	1610	1714	1805	1610	1714	1805	1610
Q Serve(g_s), s	2.2	38.2	14.3	10.4	23.1	3.0	11.4	4.4	29.8	6.4	2.4	8.7
Cycle Q Clear(g_c), s	2.2	38.2	14.3	10.4	23.1	3.0	11.4	4.4	29.8	6.4	2.4	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	47	605	666	272	1363	608	163	659	588	91	1167	521
V/C Ratio(X)	0.68	1.68	0.41	1.87	0.62	0.10	2.11	0.15	0.77	1.38	0.09	0.30
Avail Cap(c_a), veh/h	103	605	666	272	1363	608	163	659	588	91	1167	521
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.8	40.9	24.8	54.8	30.4	24.2	54.3	25.6	33.7	56.8	28.3	30.4
Incr Delay (d2), s/veh	6.4	314.6	0.4	403.5	0.9	0.1	518.0	0.5	9.4	224.5	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	69.9	5.3	19.3	9.7	1.1	28.2	1.9	12.5	8.4	1.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.2	355.5	25.3	458.3	31.3	24.3	572.3	26.1	43.1	281.3	28.3	30.7
LnGrp LOS	E	F	C	F	C	C	F	C	D	F	C	C
Approach Vol, veh/h		1322			1423			894			384	
Approach Delay, s/veh		280.5			183.4			244.3			112.3	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	50.0	15.0	44.0	16.0	45.0	7.9	51.1
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	6.4	43.8	10.4	38.2	11.4	38.8	7.2	41.4
Max Q Clear Time (g_c+I1), s	8.4	31.8	12.4	40.2	13.4	10.7	4.2	25.1
Green Ext Time (p_c), s	0.0	2.6	0.0	0.0	0.0	1.0	0.0	5.1

Intersection Summary	
HCM 6th Ctrl Delay	222.1
HCM 6th LOS	F

Intersection	
Intersection Delay, s/veh	699.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	67	1377	80	36	822	32	79	6	143	140	7	85
Future Vol, veh/h	67	1377	80	36	822	32	79	6	143	140	7	85
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	73	1497	87	39	893	35	86	7	155	152	8	92
Number of Lanes	1	1	1	1	1	0	0	1	0	0	1	0

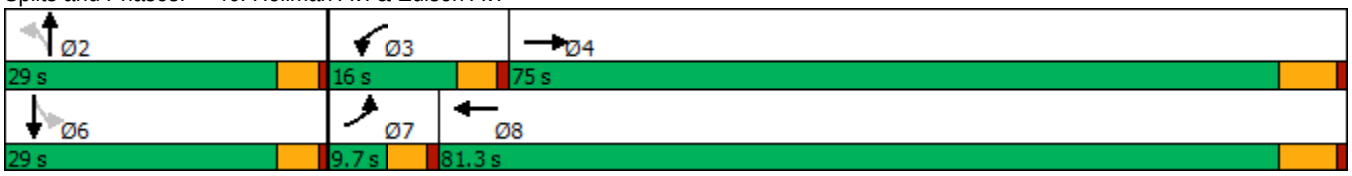
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	3
HCM Control Delay	970.5	578	33.2	35.6
HCM LOS	F	F	D	E

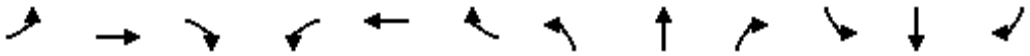
Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1
Vol Left, %	35%	100%	0%	0%	100%	0%	60%
Vol Thru, %	3%	0%	100%	0%	0%	96%	3%
Vol Right, %	63%	0%	0%	100%	0%	4%	37%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	228	67	1377	80	36	854	232
LT Vol	79	67	0	0	36	0	140
Through Vol	6	0	1377	0	0	822	7
RT Vol	143	0	0	80	0	32	85
Lane Flow Rate	248	73	1497	87	39	928	252
Geometry Grp	7	7	7	7	8	8	7
Degree of Util (X)	0.597	0.172	3.324	0.176	0.101	2.256	0.625
Departure Headway (Hd)	12.977	10.466	9.938	9.198	12.922	12.354	13.198
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	280	345	389	393	279	306	277
Service Time	10.677	8.166	7.638	6.898	10.622	10.054	10.898
HCM Lane V/C Ratio	0.886	0.212	3.848	0.221	0.14	3.033	0.91
HCM Control Delay	33.2	15.3	1072.5	13.9	17.1	601.6	35.6
HCM Lane LOS	D	C	F	B	C	F	E
HCM 95th-tile Q	3.5	0.6	109.4	0.6	0.3	50.6	3.8

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	75	2850	100	1848	205	89	58	24
Future Volume (vph)	75	2850	100	1848	205	89	58	24
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	26.7	26.7	26.7	26.7
Total Split (s)	9.7	75.0	16.0	81.3	29.0	29.0	29.0	29.0
Total Split (%)	8.1%	62.5%	13.3%	67.8%	24.2%	24.2%	24.2%	24.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 46: Hellman Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	2850	96	100	1848	67	205	89	256	58	24	42
Future Volume (veh/h)	75	2850	96	100	1848	67	205	89	256	58	24	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	82	3098	104	109	2009	73	223	97	278	63	26	46
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	73	1080	36	133	1140	41	286	88	252	60	125	220
Arrive On Green	0.04	0.59	0.59	0.08	0.63	0.63	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1714	1828	61	1714	1822	66	1349	434	1243	1024	615	1089
Grp Volume(v), veh/h	82	0	3202	109	0	2082	223	0	375	63	0	72
Grp Sat Flow(s),veh/h/ln	1714	0	1889	1714	0	1888	1349	0	1676	1024	0	1704
Q Serve(g_s), s	5.1	0.0	70.9	7.5	0.0	75.1	19.8	0.0	24.3	0.0	0.0	4.2
Cycle Q Clear(g_c), s	5.1	0.0	70.9	7.5	0.0	75.1	24.0	0.0	24.3	24.3	0.0	4.2
Prop In Lane	1.00		0.03	1.00		0.04	1.00		0.74	1.00		0.64
Lane Grp Cap(c), veh/h	73	0	1116	133	0	1182	286	0	339	60	0	345
V/C Ratio(X)	1.13	0.00	2.87	0.82	0.00	1.76	0.78	0.00	1.10	1.05	0.00	0.21
Avail Cap(c_a), veh/h	73	0	1116	163	0	1182	286	0	339	60	0	345
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.4	0.0	24.5	54.5	0.0	22.5	49.8	0.0	47.9	60.0	0.0	39.8
Incr Delay (d2), s/veh	143.6	0.0	843.3	19.7	0.0	346.4	13.0	0.0	80.1	130.8	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	288.3	3.9	0.0	141.1	7.7	0.0	17.6	4.0	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	201.1	0.0	867.8	74.2	0.0	368.8	62.8	0.0	127.9	190.8	0.0	40.1
LnGrp LOS	F	A	F	E	A	F	E	A	F	F	A	D
Approach Vol, veh/h		3284			2191			598			135	
Approach Delay, s/veh		851.2			354.2			103.6			110.5	
Approach LOS		F			F			F			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		29.0	13.9	77.1		29.0	9.7	81.3				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		* 4.7	4.6	6.2				
Max Green Setting (Gmax), s		* 24	11.4	68.8		* 24	5.1	75.1				
Max Q Clear Time (g_c+I1), s		26.3	9.5	72.9		26.3	7.1	77.1				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	0.0				

Intersection Summary												
HCM 6th Ctrl Delay			587.6									
HCM 6th LOS			F									

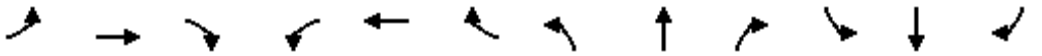
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	69	572	72	138	61	216	78	94
Future Volume (vph)	69	572	72	138	61	216	78	94
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	17.8	17.8	26.7	26.7	16.7	16.7
Total Split (s)	39.0	39.0	39.0	39.0	81.0	81.0	81.0	81.0
Total Split (%)	32.5%	32.5%	32.5%	32.5%	67.5%	67.5%	67.5%	67.5%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.7	4.7	4.7	4.7
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 47: Hellman Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	572	86	72	138	56	61	216	230	78	94	23
Future Volume (veh/h)	69	572	86	72	138	56	61	216	230	78	94	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	75	622	93	78	150	61	66	235	250	85	102	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	275	447	67	60	355	144	841	536	570	518	937	230
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.64	0.64	0.64	0.64	0.64	0.64
Sat Flow, veh/h	1189	1615	241	747	1284	522	1284	842	896	925	1474	361
Grp Volume(v), veh/h	75	0	715	78	0	211	66	0	485	85	0	127
Grp Sat Flow(s),veh/h/ln	1189	0	1857	747	0	1806	1284	0	1739	925	0	1835
Q Serve(g_s), s	6.6	0.0	33.2	0.0	0.0	11.5	2.5	0.0	16.9	6.1	0.0	3.2
Cycle Q Clear(g_c), s	18.1	0.0	33.2	33.2	0.0	11.5	5.8	0.0	16.9	23.0	0.0	3.2
Prop In Lane	1.00		0.13	1.00		0.29	1.00		0.52	1.00		0.20
Lane Grp Cap(c), veh/h	275	0	514	60	0	500	841	0	1106	518	0	1167
V/C Ratio(X)	0.27	0.00	1.39	1.30	0.00	0.42	0.08	0.00	0.44	0.16	0.00	0.11
Avail Cap(c_a), veh/h	275	0	514	60	0	500	841	0	1106	518	0	1167
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.0	0.0	43.4	60.0	0.0	35.5	9.7	0.0	11.0	16.9	0.0	8.5
Incr Delay (d2), s/veh	0.5	0.0	188.1	216.2	0.0	0.6	0.2	0.0	1.3	0.7	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	41.4	5.4	0.0	5.0	0.7	0.0	6.6	1.4	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.5	0.0	231.5	276.2	0.0	36.1	9.9	0.0	12.3	17.5	0.0	8.7
LnGrp LOS	D	A	F	F	A	D	A	A	B	B	A	A
Approach Vol, veh/h		790			289			551			212	
Approach Delay, s/veh		213.6			100.9			12.0			12.3	
Approach LOS		F			F			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		81.0		39.0		81.0		39.0				
Change Period (Y+Rc), s		* 4.7		5.8		* 4.7		5.8				
Max Green Setting (Gmax), s		* 76		33.2		* 76		33.2				
Max Q Clear Time (g_c+I1), s		18.9		35.2		25.0		35.2				
Green Ext Time (p_c), s		4.1		0.0		1.3		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		112.5
HCM 6th LOS		F

Notes

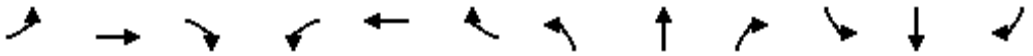
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	6	319	509	717	1751
Future Volume (vph)	6	319	509	717	1751
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (%)	32.2%	32.2%	31.1%	67.8%	36.7%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	574	6	319	509	717	0	0	1751	549
Future Volume (veh/h)	0	0	0	574	6	319	509	717	0	0	1751	549
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				598	6	187	530	747	0	0	1824	437
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				458	5	411	621	3682	0	0	1596	381
Arrive On Green				0.26	0.26	0.26	0.69	1.00	0.00	0.00	0.30	0.30
Sat Flow, veh/h				1792	18	1610	1810	5358	0	0	5548	1261
Grp Volume(v), veh/h				604	0	187	530	747	0	0	1692	569
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1810	1729	0	0	1634	1641
Q Serve(g_s), s				23.0	0.0	8.8	20.0	0.0	0.0	0.0	27.2	27.2
Cycle Q Clear(g_c), s				23.0	0.0	8.8	20.0	0.0	0.0	0.0	27.2	27.2
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.77
Lane Grp Cap(c), veh/h				463	0	411	621	3682	0	0	1481	496
V/C Ratio(X)				1.31	0.00	0.45	0.85	0.20	0.00	0.00	1.14	1.15
Avail Cap(c_a), veh/h				463	0	411	621	3682	0	0	1481	496
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.14	0.14	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.5	0.0	28.2	12.4	0.0	0.0	0.0	31.4	31.4
Incr Delay (d2), s/veh				152.5	0.0	1.7	1.7	0.0	0.0	0.0	72.7	87.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				29.0	0.0	8.3	4.1	0.0	0.0	0.0	19.8	21.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				186.0	0.0	29.9	14.1	0.0	0.0	0.0	104.1	118.8
LnGrp LOS				F	A	C	B	A	A	A	F	F
Approach Vol, veh/h					791			1277			2261	
Approach Delay, s/veh					149.1			5.9			107.8	
Approach LOS					F			A			F	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	69.7	29.0	36.7	33.0
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	55.2	23.0	24.0	* 27
Max Q Clear Time (g_c+I1), s	2.0	25.0	22.0	29.2
Green Ext Time (p_c), s	5.4	0.0	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	85.3
HCM 6th LOS	F

Notes

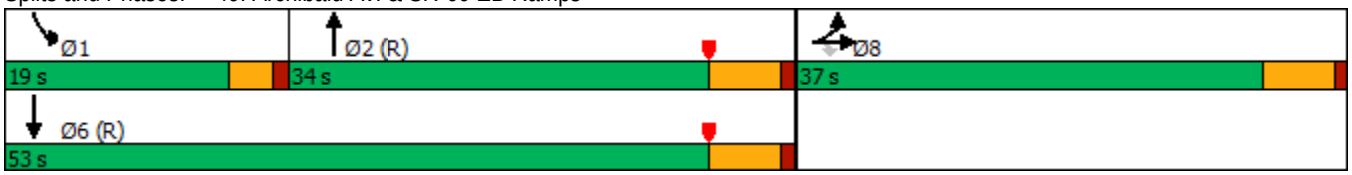
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

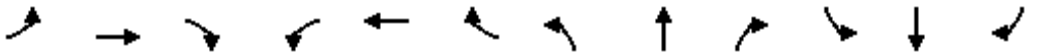
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	687	1092	466	1858
Future Volume (vph)	0	687	1092	466	1858
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	10.8	10.8	25.8	9.0	25.8
Total Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (%)	41.1%	41.1%	37.8%	21.1%	58.9%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	0	687	0	0	0	0	1092	835	466	1858	0
Future Volume (veh/h)	134	0	687	0	0	0	0	1092	835	466	1858	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	140	0	466				0	1138	695	485	1935	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	567	0	504				0	1700	557	302	2894	0
Arrive On Green	0.31	0.00	0.31				0.00	0.35	0.35	0.17	0.56	0.00
Sat Flow, veh/h	1810	0	1610				0	5168	1606	1810	5358	0
Grp Volume(v), veh/h	140	0	466				0	1138	695	485	1935	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1606	1810	1729	0
Q Serve(g_s), s	5.2	0.0	25.2				0.0	17.8	31.2	15.0	23.7	0.0
Cycle Q Clear(g_c), s	5.2	0.0	25.2				0.0	17.8	31.2	15.0	23.7	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	567	0	504				0	1700	557	302	2894	0
V/C Ratio(X)	0.25	0.00	0.92				0.00	0.67	1.25	1.61	0.67	0.00
Avail Cap(c_a), veh/h	627	0	558				0	1700	557	302	2894	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.19	0.19	0.09	0.09	0.00
Uniform Delay (d), s/veh	23.0	0.0	29.9				0.0	25.0	29.4	37.5	14.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	20.3				0.0	0.4	114.5	275.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	11.8				0.0	6.3	28.4	29.2	7.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	0.0	50.1				0.0	25.4	143.9	312.6	14.1	0.0
LnGrp LOS	C	A	D				A	C	F	F	B	A
Approach Vol, veh/h		606						1833			2420	
Approach Delay, s/veh		43.9						70.3			73.9	
Approach LOS		D						E			E	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	19.0	37.0				56.0		34.0				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	15.0	28.2				47.2		31.2				
Max Q Clear Time (g_c+I1), s	17.0	33.2				25.7		27.2				
Green Ext Time (p_c), s	0.0	0.0				13.7		1.0				

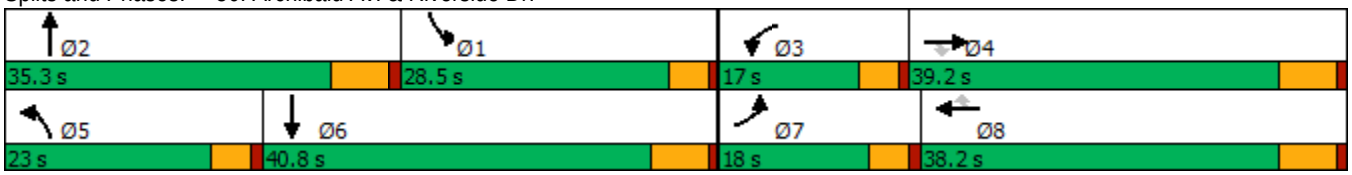
Intersection Summary			
HCM 6th Ctrl Delay			68.8
HCM 6th LOS			E

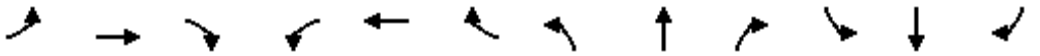
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	270	755	515	203	538	140	387	977	344	1462
Future Volume (vph)	270	755	515	203	538	140	387	977	344	1462
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	18.0	39.2	39.2	17.0	38.2	38.2	23.0	35.3	28.5	40.8
Total Split (%)	15.0%	32.7%	32.7%	14.2%	31.8%	31.8%	19.2%	29.4%	23.8%	34.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 118.5
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	755	515	203	538	140	387	977	92	344	1462	316
Future Volume (veh/h)	270	755	515	203	538	140	387	977	92	344	1462	316
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	287	803	391	216	572	90	412	1039	89	366	1555	272
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	191	969	423	177	939	418	263	1146	98	341	1309	228
Arrive On Green	0.11	0.27	0.27	0.10	0.26	0.26	0.15	0.24	0.24	0.20	0.29	0.29
Sat Flow, veh/h	1714	3610	1575	1714	3610	1605	1714	4859	416	1714	4438	773
Grp Volume(v), veh/h	287	803	391	216	572	90	412	739	389	366	1210	617
Grp Sat Flow(s),veh/h/ln	1714	1805	1575	1714	1805	1605	1714	1729	1817	1714	1729	1753
Q Serve(g_s), s	13.4	25.1	29.0	12.4	16.7	3.1	18.4	24.9	25.0	23.9	35.4	35.4
Cycle Q Clear(g_c), s	13.4	25.1	29.0	12.4	16.7	3.1	18.4	24.9	25.0	23.9	35.4	35.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		0.44
Lane Grp Cap(c), veh/h	191	969	423	177	939	418	263	815	428	341	1020	517
V/C Ratio(X)	1.50	0.83	0.92	1.22	0.61	0.22	1.57	0.91	0.91	1.07	1.19	1.19
Avail Cap(c_a), veh/h	191	992	433	177	962	428	263	838	440	341	1020	517
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.3	41.3	42.7	53.8	39.0	12.2	50.8	44.6	44.6	48.1	42.3	42.3
Incr Delay (d2), s/veh	250.3	5.8	25.4	139.0	1.1	0.3	273.3	13.2	22.1	69.3	94.0	104.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.9	11.4	13.7	12.0	7.2	2.0	27.5	11.7	13.4	16.3	27.6	29.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	303.6	47.1	68.1	192.9	40.1	12.4	324.1	57.8	66.7	117.4	136.3	146.8
LnGrp LOS	F	D	E	F	D	B	F	E	E	F	F	F
Approach Vol, veh/h		1481			878			1540			2193	
Approach Delay, s/veh		102.4			74.9			131.3			136.1	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.1	34.5	17.0	38.4	23.0	41.6	18.0	37.4
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	23.9	* 29	12.4	33.0	18.4	34.6	13.4	32.0
Max Q Clear Time (g_c+I1), s	25.9	27.0	14.4	31.0	20.4	37.4	15.4	18.7
Green Ext Time (p_c), s	0.0	1.3	0.0	1.2	0.0	0.0	0.0	3.0

Intersection Summary	
HCM 6th Ctrl Delay	117.9
HCM 6th LOS	F

Notes

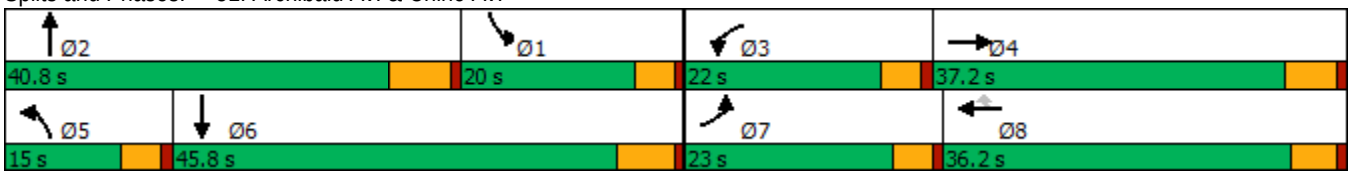
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

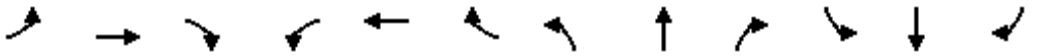
Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	25	2	84	164	57	1259	173	1989
Future Volume (vph)	25	2	84	164	57	1259	173	1989
Turn Type	Prot	NA	Prot	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3		5	2	1	6
Permitted Phases				8				
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	36.8	9.6	36.2	9.6	29.5	9.6	29.2
Total Split (s)	23.0	37.2	22.0	36.2	15.0	40.8	20.0	45.8
Total Split (%)	19.2%	31.0%	18.3%	30.2%	12.5%	34.0%	16.7%	38.2%
Yellow Time (s)	3.6	4.8	3.6	4.2	3.6	5.5	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.2	4.6	6.5	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 85.8
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 51: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	2	16	84	0	164	57	1259	110	173	1989	17
Future Volume (veh/h)	25	2	16	84	0	164	57	1259	110	173	1989	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	27	2	15	91	0	95	62	1368	111	188	2162	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	48	22	166	116	294	249	78	2007	163	224	1901	15
Arrive On Green	0.03	0.11	0.11	0.07	0.00	0.15	0.05	0.41	0.41	0.13	0.52	0.52
Sat Flow, veh/h	1714	193	1447	1714	1900	1610	1714	4889	397	1714	3671	29
Grp Volume(v), veh/h	27	0	17	91	0	95	62	968	511	188	1062	1117
Grp Sat Flow(s),veh/h/ln	1714	0	1640	1714	1900	1610	1714	1729	1827	1714	1805	1895
Q Serve(g_s), s	1.3	0.0	0.8	4.4	0.0	3.0	3.0	19.1	19.1	8.9	43.3	43.3
Cycle Q Clear(g_c), s	1.3	0.0	0.8	4.4	0.0	3.0	3.0	19.1	19.1	8.9	43.3	43.3
Prop In Lane	1.00		0.88	1.00		1.00	1.00		0.22	1.00		0.02
Lane Grp Cap(c), veh/h	48	0	188	116	294	249	78	1419	750	224	935	981
V/C Ratio(X)	0.57	0.00	0.09	0.78	0.00	0.38	0.79	0.68	0.68	0.84	1.14	1.14
Avail Cap(c_a), veh/h	377	0	616	357	705	597	213	1419	750	316	935	981
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.1	0.0	33.1	38.4	0.0	14.5	39.5	20.2	20.2	35.5	20.1	20.1
Incr Delay (d2), s/veh	3.9	0.0	0.2	4.3	0.0	1.0	6.5	2.7	5.0	9.5	74.2	74.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.3	1.9	0.0	1.7	1.3	7.0	7.9	4.1	33.6	35.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.0	0.0	33.3	42.7	0.0	15.4	46.0	22.8	25.1	45.0	94.4	95.1
LnGrp LOS	D	A	C	D	A	B	D	C	C	D	F	F
Approach Vol, veh/h		44			186			1541			2367	
Approach Delay, s/veh		39.8			28.8			24.5			90.8	
Approach LOS		D			C			C			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.1	40.8	10.3	15.4	8.4	49.5	6.9	18.7
Change Period (Y+Rc), s	6.2	* 6.5	4.6	5.8	4.6	6.2	4.6	* 5.8
Max Green Setting (Gmax), s	15.4	* 34	17.4	31.4	10.4	39.6	18.4	* 31
Max Q Clear Time (g_c+I1), s	10.9	21.1	6.4	2.8	5.0	45.3	3.3	5.0
Green Ext Time (p_c), s	0.1	7.1	0.1	0.0	0.0	0.0	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	62.8
HCM 6th LOS	E

Notes

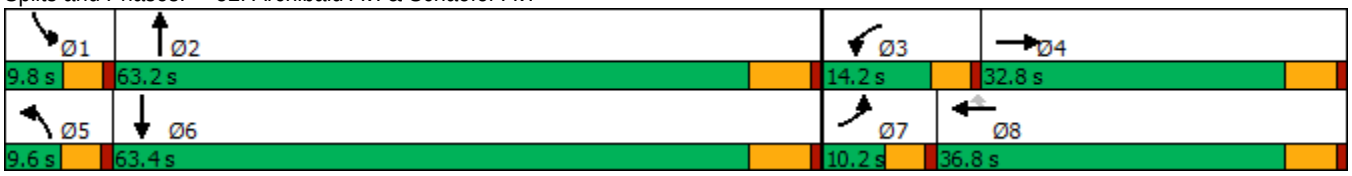
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

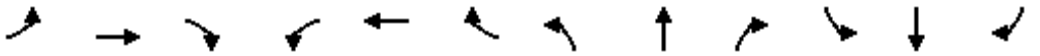
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	351	268	23	10	64	10	1168	322	1419
Future Volume (vph)	351	268	23	10	64	10	1168	322	1419
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	32.8	9.6	33.5	9.6	33.5
Total Split (s)	10.2	32.8	14.2	36.8	36.8	9.6	63.2	9.8	63.4
Total Split (%)	8.5%	27.3%	11.8%	30.7%	30.7%	8.0%	52.7%	8.2%	52.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6		5.8	4.6	6.5	4.6	6.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 108.1
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 52: Archibald Av. & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	351	268	126	23	10	64	10	1168	73	322	1419	29
Future Volume (veh/h)	351	268	126	23	10	64	10	1168	73	322	1419	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	382	291	137	25	11	70	11	1270	68	350	1542	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	96	314	148	43	0	363	23	1573	84	89	1772	37
Arrive On Green	0.06	0.26	0.26	0.03	0.23	0.23	0.01	0.45	0.45	0.05	0.49	0.49
Sat Flow, veh/h	1714	1221	575	1714	0	1606	1714	3485	186	1714	3615	75
Grp Volume(v), veh/h	382	0	428	25	0	70	11	657	681	350	769	805
Grp Sat Flow(s),veh/h/ln	1714	0	1796	1714	0	1606	1714	1805	1866	1714	1805	1885
Q Serve(g_s), s	5.6	0.0	23.3	1.4	0.0	3.5	0.6	31.4	31.6	5.2	37.9	38.1
Cycle Q Clear(g_c), s	5.6	0.0	23.3	1.4	0.0	3.5	0.6	31.4	31.6	5.2	37.9	38.1
Prop In Lane	1.00		0.32	1.00		1.00	1.00		0.10	1.00		0.04
Lane Grp Cap(c), veh/h	96	0	462	43	0	363	23	815	842	89	885	924
V/C Ratio(X)	3.99	0.00	0.93	0.58	0.00	0.19	0.49	0.81	0.81	3.93	0.87	0.87
Avail Cap(c_a), veh/h	96	0	484	164	0	497	86	1022	1057	89	1026	1071
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.3	0.0	36.3	48.3	0.0	31.4	49.1	23.7	23.7	47.5	22.7	22.7
Incr Delay (d2), s/veh	1367.9	0.0	23.5	4.6	0.0	0.3	5.9	3.9	3.8	1346.1	7.3	7.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	38.7	0.0	12.6	0.7	0.0	1.3	0.3	12.5	13.0	35.4	15.4	16.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1415.2	0.0	59.8	52.9	0.0	31.6	55.0	27.6	27.6	1393.5	30.0	29.9
LnGrp LOS	F	A	E	D	A	C	E	C	C	F	C	C
Approach Vol, veh/h		810			95			1349			1924	
Approach Delay, s/veh		699.0			37.2			27.8			278.0	
Approach LOS		F			D			C			F	

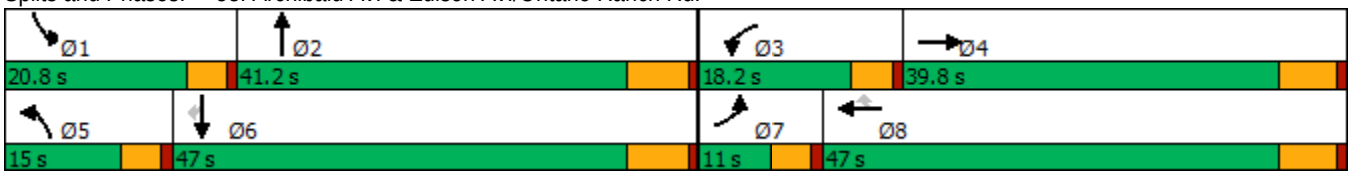
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	51.7	7.1	31.5	5.9	55.6	10.2	28.4
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	5.2	56.7	9.6	27.0	5.0	56.9	5.6	31.0
Max Q Clear Time (g_c+I1), s	7.2	33.6	3.4	25.3	2.6	40.1	7.6	5.5
Green Ext Time (p_c), s	0.0	8.5	0.0	0.4	0.0	9.0	0.0	0.2

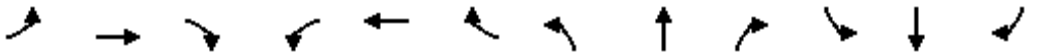
Intersection Summary	
HCM 6th Ctrl Delay	273.4
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	399	1996	591	419	1338	157	397	886	535	278	1060	429
Future Volume (vph)	399	1996	591	419	1338	157	397	886	535	278	1060	429
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	11.0	39.8		18.2	47.0	47.0	15.0	41.2		20.8	47.0	47.0
Total Split (%)	9.2%	33.2%		15.2%	39.2%	39.2%	12.5%	34.3%		17.3%	39.2%	39.2%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 119.2
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	399	1996	591	419	1338	157	397	886	535	278	1060	429
Future Volume (veh/h)	399	1996	591	419	1338	157	397	886	535	278	1060	429
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	411	2058	0	432	1379	128	409	913	0	287	1093	420
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	169	1021		360	653	553	150	1018		234	1194	520
Arrive On Green	0.05	0.28	0.00	0.11	0.34	0.34	0.09	0.28	0.00	0.14	0.33	0.33
Sat Flow, veh/h	3141	3610	1610	3141	1900	1610	1714	3610	1610	1714	3610	1574
Grp Volume(v), veh/h	411	2058	0	432	1379	128	409	913	0	287	1093	420
Grp Sat Flow(s),veh/h/ln	1570	1805	1610	1570	1900	1610	1714	1805	1610	1714	1805	1574
Q Serve(g_s), s	6.4	33.6	0.0	13.6	40.8	6.7	10.4	28.9	0.0	16.2	34.5	28.9
Cycle Q Clear(g_c), s	6.4	33.6	0.0	13.6	40.8	6.7	10.4	28.9	0.0	16.2	34.5	28.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	169	1021		360	653	553	150	1018		234	1194	520
V/C Ratio(X)	2.43	2.02		1.20	2.11	0.23	2.72	0.90		1.23	0.92	0.81
Avail Cap(c_a), veh/h	169	1021		360	653	553	150	1055		234	1231	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.2	42.6	0.0	52.6	39.0	27.8	54.2	41.0	0.0	51.3	38.2	36.3
Incr Delay (d2), s/veh	660.4	460.4	0.0	114.2	506.0	0.2	794.7	10.0	0.0	134.1	10.5	8.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.0	79.4	0.0	10.9	109.5	2.5	37.4	13.4	0.0	15.3	15.9	11.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	716.6	503.0	0.0	166.8	545.0	28.0	848.9	51.0	0.0	185.4	48.7	45.0
LnGrp LOS	F	F		F	F	C	F	D		F	D	D
Approach Vol, veh/h		2469	A		1939			1322	A		1800	
Approach Delay, s/veh		538.5			426.6			297.9			69.6	
Approach LOS		F			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.8	40.0	18.2	39.8	15.0	45.8	11.0	47.0
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	16.2	34.7	13.6	33.6	10.4	40.5	6.4	40.8
Max Q Clear Time (g_c+I1), s	18.2	30.9	15.6	35.6	12.4	36.5	8.4	42.8
Green Ext Time (p_c), s	0.0	1.9	0.0	0.0	0.0	2.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	355.4
HCM 6th LOS	F

Notes

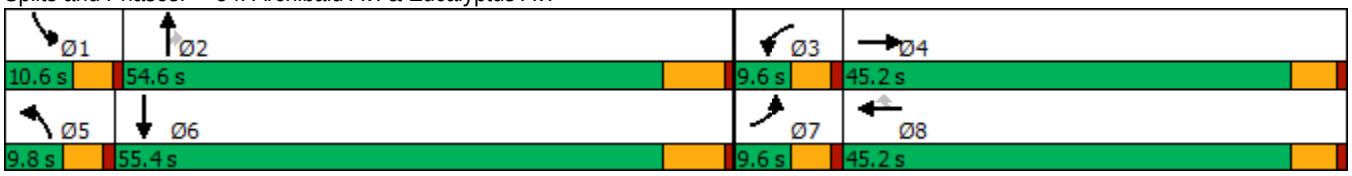
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

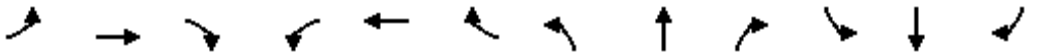
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	207	369	107	74	73	89	1493	160	184	1620
Future Volume (vph)	207	369	107	74	73	89	1493	160	184	1620
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	45.2	9.6	45.2	45.2	9.6	32.5	32.5	9.6	32.5
Total Split (s)	9.6	45.2	9.6	45.2	45.2	9.8	54.6	54.6	10.6	55.4
Total Split (%)	8.0%	37.7%	8.0%	37.7%	37.7%	8.2%	45.5%	45.5%	8.8%	46.2%
Yellow Time (s)	3.6	4.2	3.6	4.2	4.2	3.6	5.5	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.2	4.6	5.2	5.2	4.6	6.5	6.5	4.6	6.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	369	305	107	74	73	89	1493	160	184	1620	102
Future Volume (veh/h)	207	369	305	107	74	73	89	1493	160	184	1620	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	220	393	324	114	79	69	95	1588	170	196	1723	109
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	71	321	265	135	633	529	74	1447	645	86	1406	88
Arrive On Green	0.04	0.33	0.33	0.04	0.33	0.33	0.04	0.40	0.40	0.05	0.41	0.41
Sat Flow, veh/h	1714	963	794	3238	1900	1588	1714	3610	1608	1714	3450	216
Grp Volume(v), veh/h	220	0	717	114	79	69	95	1588	170	196	895	937
Grp Sat Flow(s),veh/h/ln	1714	0	1757	1619	1900	1588	1714	1805	1608	1714	1805	1861
Q Serve(g_s), s	5.0	0.0	40.0	4.2	3.5	3.6	5.2	48.1	8.5	6.0	48.9	48.9
Cycle Q Clear(g_c), s	5.0	0.0	40.0	4.2	3.5	3.6	5.2	48.1	8.5	6.0	48.9	48.9
Prop In Lane	1.00		0.45	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	71	0	586	135	633	529	74	1447	645	86	736	758
V/C Ratio(X)	3.08	0.00	1.22	0.84	0.12	0.13	1.28	1.10	0.26	2.29	1.22	1.24
Avail Cap(c_a), veh/h	71	0	586	135	633	529	74	1447	645	86	736	758
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.5	0.0	40.0	57.1	27.8	27.9	57.4	36.0	24.1	57.0	35.6	35.6
Incr Delay (d2), s/veh	971.9	0.0	115.5	34.7	0.1	0.1	196.5	55.0	1.0	614.2	109.6	117.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.4	0.0	35.6	2.4	1.6	1.4	6.2	30.3	3.4	17.1	41.9	44.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1029.4	0.0	155.5	91.8	27.9	28.0	253.9	91.0	25.1	671.2	145.1	153.0
LnGrp LOS	F	A	F	F	C	C	F	F	C	F	F	F
Approach Vol, veh/h		937			262			1853			2028	
Approach Delay, s/veh		360.7			55.7			93.3			199.6	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	54.6	9.6	45.2	9.8	55.4	9.6	45.2
Change Period (Y+Rc), s	4.6	6.5	4.6	5.2	4.6	6.5	4.6	5.2
Max Green Setting (Gmax), s	6.0	48.1	5.0	40.0	5.2	48.9	5.0	40.0
Max Q Clear Time (g_c+I1), s	8.0	50.1	6.2	42.0	7.2	50.9	7.0	5.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	183.1
HCM 6th LOS	F

Notes

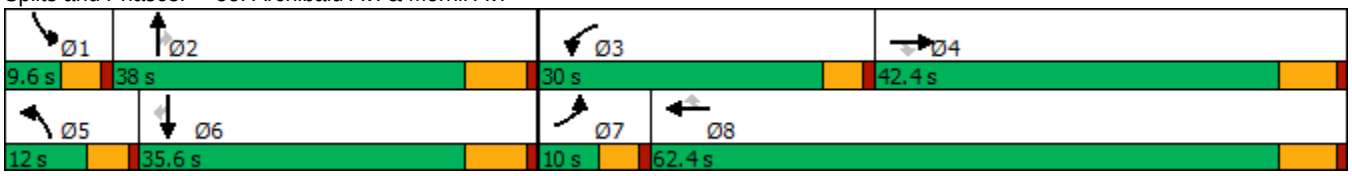
User approved volume balancing among the lanes for turning movement.

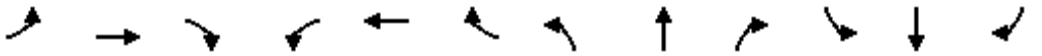
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	637	100	768	129	64	67	314	1021	193	88	1488	327
Future Volume (vph)	637	100	768	129	64	67	314	1021	193	88	1488	327
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	16.5
Total Split (s)	10.0	42.4	42.4	30.0	62.4	62.4	12.0	38.0	38.0	9.6	35.6	35.6
Total Split (%)	8.3%	35.3%	35.3%	25.0%	52.0%	52.0%	10.0%	31.7%	31.7%	8.0%	29.7%	29.7%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 107.4
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	637	100	768	129	64	67	314	1021	193	88	1488	327
Future Volume (veh/h)	637	100	768	129	64	67	314	1021	193	88	1488	327
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	657	103	607	133	66	30	324	1053	185	91	1534	279
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	89	658	558	162	740	627	121	1101	485	140	1005	448
Arrive On Green	0.05	0.35	0.35	0.09	0.39	0.39	0.07	0.30	0.30	0.04	0.28	0.28
Sat Flow, veh/h	1714	1900	1610	1714	1900	1610	1714	3610	1590	3141	3610	1610
Grp Volume(v), veh/h	657	103	607	133	66	30	324	1053	185	91	1534	279
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1714	1900	1610	1714	1805	1590	1570	1805	1610
Q Serve(g_s), s	5.4	3.9	36.2	8.0	2.3	1.2	7.4	29.9	9.6	3.0	29.1	15.8
Cycle Q Clear(g_c), s	5.4	3.9	36.2	8.0	2.3	1.2	7.4	29.9	9.6	3.0	29.1	15.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	89	658	558	162	740	627	121	1101	485	140	1005	448
V/C Ratio(X)	7.42	0.16	1.09	0.82	0.09	0.05	2.67	0.96	0.38	0.65	1.53	0.62
Avail Cap(c_a), veh/h	89	658	558	417	1022	866	121	1101	485	150	1005	448
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.5	23.6	34.1	46.4	20.2	19.8	48.5	35.6	28.6	49.1	37.7	32.9
Incr Delay (d2), s/veh	2910.1	0.1	64.2	3.9	0.1	0.0	773.8	17.7	0.5	6.4	241.6	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	73.8	1.7	23.5	3.5	1.0	0.5	29.1	14.7	3.6	1.2	45.5	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2959.7	23.7	98.4	50.3	20.2	19.9	822.4	53.3	29.1	55.5	279.3	35.5
LnGrp LOS	F	C	F	D	C	B	F	D	C	E	F	D
Approach Vol, veh/h		1367			229			1562			1904	
Approach Delay, s/veh		1467.9			37.7			209.9			232.9	
Approach LOS		F			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	38.4	14.5	42.4	12.0	35.6	10.0	46.9
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.0	31.5	25.4	36.2	7.4	29.1	5.4	56.2
Max Q Clear Time (g_c+I1), s	5.0	31.9	10.0	38.2	9.4	31.1	7.4	4.3
Green Ext Time (p_c), s	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.4

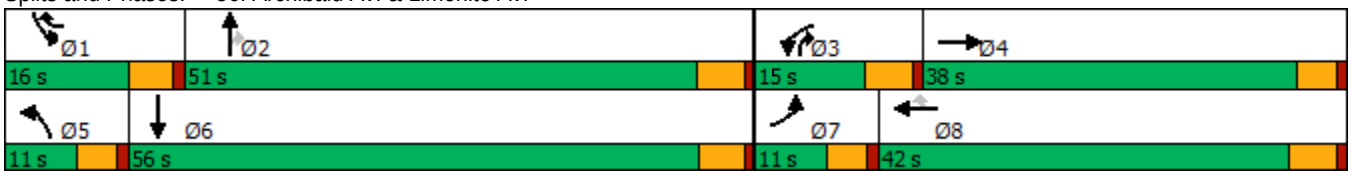
Intersection Summary	
HCM 6th Ctrl Delay	550.5
HCM 6th LOS	F

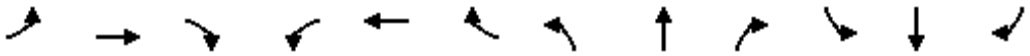
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	212	780	470	741	686	131	1155	484	655	1480
Future Volume (vph)	212	780	470	741	686	131	1155	484	655	1480
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4	3	8	1	5	2	3	1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	1	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.6	34.6	11.3	36.3	11.0	9.5	46.3	11.3	11.0	43.0
Total Split (s)	11.0	38.0	15.0	42.0	16.0	11.0	51.0	15.0	16.0	56.0
Total Split (%)	9.2%	31.7%	12.5%	35.0%	13.3%	9.2%	42.5%	12.5%	13.3%	46.7%
Yellow Time (s)	3.6	3.6	4.3	4.3	4.0	3.5	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	5.3	5.3	5.0	4.5	5.3	5.3	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	None	Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 56: Archibald Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	780	127	470	741	686	131	1155	484	655	1480	282
Future Volume (veh/h)	212	780	127	470	741	686	131	1155	484	655	1480	282
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	230	848	138	511	805	693	142	1255	503	712	1609	307
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	96	440	72	145	587	644	97	722	734	165	654	125
Arrive On Green	0.05	0.28	0.28	0.08	0.31	0.31	0.05	0.38	0.38	0.09	0.42	0.42
Sat Flow, veh/h	1810	1594	259	1810	1900	1610	1810	1900	1590	1810	1551	296
Grp Volume(v), veh/h	230	0	986	511	805	693	142	1255	503	712	0	1916
Grp Sat Flow(s),veh/h/ln	1810	0	1853	1810	1900	1610	1810	1900	1590	1810	0	1847
Q Serve(g_s), s	6.4	0.0	33.4	9.7	37.4	37.4	6.5	46.0	30.2	11.0	0.0	51.0
Cycle Q Clear(g_c), s	6.4	0.0	33.4	9.7	37.4	37.4	6.5	46.0	30.2	11.0	0.0	51.0
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	96	0	512	145	587	644	97	722	734	165	0	778
V/C Ratio(X)	2.40	0.00	1.93	3.52	1.37	1.08	1.46	1.74	0.69	4.33	0.00	2.46
Avail Cap(c_a), veh/h	96	0	512	145	587	644	97	722	734	165	0	778
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.3	0.0	43.8	55.7	41.8	36.3	57.3	37.5	25.8	55.0	0.0	35.0
Incr Delay (d2), s/veh	662.1	0.0	424.5	1152.3	177.5	57.7	255.1	337.6	5.2	1511.8	0.0	661.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.5	0.0	75.0	50.7	45.5	27.9	9.8	87.6	11.6	73.9	0.0	163.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	719.4	0.0	468.3	1207.9	219.3	94.0	312.3	375.1	30.9	1566.8	0.0	696.6
LnGrp LOS	F	A	F	F	F	F	F	F	C	F	A	F
Approach Vol, veh/h		1216			2009			1900			2628	
Approach Delay, s/veh		515.8			427.5			279.3			932.3	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	51.3	15.0	38.7	11.0	56.3	11.0	42.7
Change Period (Y+Rc), s	5.0	5.3	5.3	* 5.3	4.5	* 5.3	4.6	5.3
Max Green Setting (Gmax), s	11.0	45.7	9.7	* 33	6.5	* 51	6.4	36.7
Max Q Clear Time (g_c+I1), s	13.0	48.0	11.7	35.4	8.5	53.0	8.4	39.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	576.2
HCM 6th LOS	F

Notes

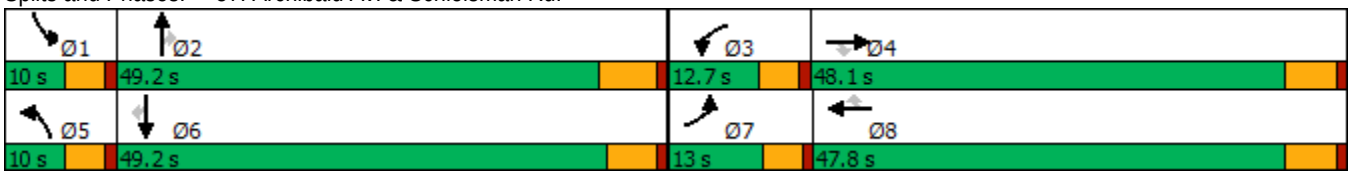
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

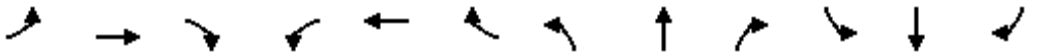
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	522	1577	234	329	870	290	238	1039	242	515	938	467
Future Volume (vph)	522	1577	234	329	870	290	238	1039	242	515	938	467
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	47.8	9.6	47.8	47.8	9.6	48.2	48.2	9.6	47.4	47.4
Total Split (s)	13.0	48.1	48.1	12.7	47.8	47.8	10.0	49.2	49.2	10.0	49.2	49.2
Total Split (%)	10.8%	40.1%	40.1%	10.6%	39.8%	39.8%	8.3%	41.0%	41.0%	8.3%	41.0%	41.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	5.2	5.2	3.6	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	6.2	6.2	4.6	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 110.1
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 57: Archibald Av. & Schleisman Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	522	1577	234	329	870	290	238	1039	242	515	938	467
Future Volume (veh/h)	522	1577	234	329	870	290	238	1039	242	515	938	467
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	533	1609	157	336	888	270	243	1060	210	526	957	363
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	270	2010	624	260	1996	619	174	1528	474	174	1528	473
Arrive On Green	0.08	0.39	0.39	0.07	0.38	0.38	0.05	0.29	0.29	0.05	0.29	0.29
Sat Flow, veh/h	3510	5187	1610	3510	5187	1608	3510	5187	1610	3510	5187	1605
Grp Volume(v), veh/h	533	1609	157	336	888	270	243	1060	210	526	957	363
Grp Sat Flow(s),veh/h/ln	1755	1729	1610	1755	1729	1608	1755	1729	1610	1755	1729	1605
Q Serve(g_s), s	8.4	30.1	7.2	8.1	13.9	13.6	5.4	19.8	11.5	5.4	17.4	22.5
Cycle Q Clear(g_c), s	8.4	30.1	7.2	8.1	13.9	13.6	5.4	19.8	11.5	5.4	17.4	22.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	270	2010	624	260	1996	619	174	1528	474	174	1528	473
V/C Ratio(X)	1.97	0.80	0.25	1.29	0.44	0.44	1.40	0.69	0.44	3.03	0.63	0.77
Avail Cap(c_a), veh/h	270	2010	624	260	1996	619	174	2043	634	174	2081	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.4	29.7	22.7	50.5	24.9	24.8	51.9	34.1	31.2	51.9	33.3	35.1
Incr Delay (d2), s/veh	451.0	3.5	1.0	156.1	0.7	2.2	210.7	0.7	0.6	928.3	0.4	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.5	12.3	2.8	9.1	5.5	5.3	7.4	7.9	4.4	24.7	6.9	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	501.4	33.1	23.7	206.7	25.6	27.1	262.6	34.8	31.9	980.1	33.7	38.9
LnGrp LOS	F	C	C	F	C	C	F	C	C	F	C	D
Approach Vol, veh/h		2299			1494			1513			1846	
Approach Delay, s/veh		141.1			66.6			71.0			304.4	
Approach LOS		F			E			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	38.4	12.7	48.1	10.0	38.4	13.0	47.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	5.4	43.0	8.1	42.3	5.4	* 44	8.4	42.0
Max Q Clear Time (g_c+I1), s	7.4	21.8	10.1	32.1	7.4	24.5	10.4	15.9
Green Ext Time (p_c), s	0.0	7.6	0.0	7.2	0.0	7.2	0.0	7.2

Intersection Summary		
HCM 6th Ctrl Delay		152.8
HCM 6th LOS		F

Notes

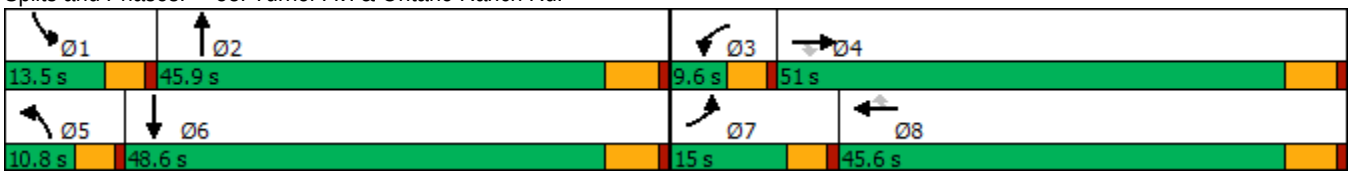
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

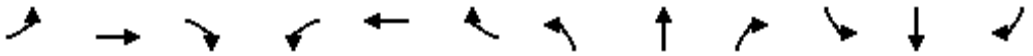
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	196	2411	48	39	1677	142	32	10	126	10
Future Volume (vph)	196	2411	48	39	1677	142	32	10	126	10
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	15.0	51.0	51.0	9.6	45.6	45.6	10.8	45.9	13.5	48.6
Total Split (%)	12.5%	42.5%	42.5%	8.0%	38.0%	38.0%	9.0%	38.3%	11.3%	40.5%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 93.2
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	2411	48	39	1677	142	32	10	48	126	10	126
Future Volume (veh/h)	196	2411	48	39	1677	142	32	10	48	126	10	126
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	213	2621	40	42	1823	151	35	11	34	137	11	123
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	207	1927	859	73	1645	734	67	59	182	177	28	314
Arrive On Green	0.12	0.53	0.53	0.04	0.46	0.46	0.04	0.15	0.13	0.10	0.21	0.19
Sat Flow, veh/h	1714	3610	1610	1714	3610	1610	1714	406	1254	1714	134	1497
Grp Volume(v), veh/h	213	2621	40	42	1823	151	35	0	45	137	0	134
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1714	1805	1610	1714	0	1660	1714	0	1631
Q Serve(g_s), s	11.0	48.7	1.1	2.2	41.6	5.1	1.8	0.0	2.2	7.1	0.0	6.6
Cycle Q Clear(g_c), s	11.0	48.7	1.1	2.2	41.6	5.1	1.8	0.0	2.2	7.1	0.0	6.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.76	1.00		0.92
Lane Grp Cap(c), veh/h	207	1927	859	73	1645	734	67	0	241	177	0	342
V/C Ratio(X)	1.03	1.36	0.05	0.58	1.11	0.21	0.53	0.00	0.19	0.77	0.00	0.39
Avail Cap(c_a), veh/h	207	1927	859	105	1645	734	128	0	762	178	0	797
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.1	21.3	10.2	42.9	24.8	14.9	43.1	0.0	34.9	39.9	0.0	31.8
Incr Delay (d2), s/veh	71.0	165.7	0.1	2.7	58.1	0.6	2.4	0.0	0.4	17.1	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	61.4	0.4	0.9	28.7	1.8	0.8	0.0	0.9	3.7	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	111.2	187.0	10.3	45.6	83.0	15.6	45.4	0.0	35.3	57.0	0.0	32.5
LnGrp LOS	F	F	B	D	F	B	D	A	D	E	A	C
Approach Vol, veh/h		2874			2016			80			271	
Approach Delay, s/veh		178.9			77.1			39.7			44.9	
Approach LOS		F			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	17.3	7.9	52.7	7.5	23.2	15.0	45.6
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	8.9	40.1	5.0	45.2	6.2	42.8	10.4	39.8
Max Q Clear Time (g_c+I1), s	9.1	4.2	4.2	50.7	3.8	8.6	13.0	43.6
Green Ext Time (p_c), s	0.0	0.2	0.0	0.0	0.0	0.7	0.0	0.0

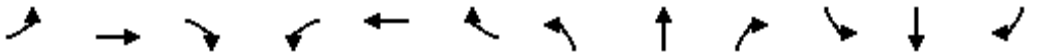
Intersection Summary	
HCM 6th Ctrl Delay	130.7
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	109	1954	173	241	1745	126	88	56	179	66	53
Future Volume (vph)	109	1954	173	241	1745	126	88	56	179	66	53
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0
Minimum Split (s)	10.0	29.0	29.0	10.0	29.0	29.0	10.0	39.3	39.3	10.0	39.3
Total Split (s)	15.0	53.7	53.7	16.0	54.7	54.7	11.0	40.3	40.3	10.0	39.3
Total Split (%)	12.5%	44.8%	44.8%	13.3%	45.6%	45.6%	9.2%	33.6%	33.6%	8.3%	32.8%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.3	4.3	4.0	4.3
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.3	5.3	5.0	5.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 99.4
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 59: Harrison Av. & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	1954	173	241	1745	126	88	56	179	66	53	51
Future Volume (veh/h)	109	1954	173	241	1745	126	88	56	179	66	53	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	111	1994	172	246	1781	127	90	57	98	67	54	43
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	140	2488	772	224	2729	847	115	184	154	87	79	63
Arrive On Green	0.08	0.48	0.48	0.12	0.53	0.53	0.06	0.10	0.10	0.05	0.08	0.08
Sat Flow, veh/h	1810	5187	1610	1810	5187	1610	1810	1900	1587	1810	980	780
Grp Volume(v), veh/h	111	1994	172	246	1781	127	90	57	98	67	0	97
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1610	1810	1900	1587	1810	0	1760
Q Serve(g_s), s	5.3	28.8	5.5	11.0	22.0	3.6	4.3	2.5	5.3	3.2	0.0	4.8
Cycle Q Clear(g_c), s	5.3	28.8	5.5	11.0	22.0	3.6	4.3	2.5	5.3	3.2	0.0	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	140	2488	772	224	2729	847	115	184	154	87	0	143
V/C Ratio(X)	0.79	0.80	0.22	1.10	0.65	0.15	0.78	0.31	0.64	0.77	0.00	0.68
Avail Cap(c_a), veh/h	204	2731	848	224	2789	866	122	750	626	102	0	674
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.2	19.5	13.4	38.8	15.2	10.8	40.9	37.3	38.5	41.8	0.0	39.6
Incr Delay (d2), s/veh	7.2	1.7	0.1	88.2	0.5	0.1	23.0	0.9	4.3	21.7	0.0	5.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	10.1	1.8	10.1	7.3	1.1	2.6	1.1	2.1	1.9	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.4	21.2	13.6	127.0	15.7	10.9	63.9	38.2	42.8	63.5	0.0	45.2
LnGrp LOS	D	C	B	F	B	B	E	D	D	E	A	D
Approach Vol, veh/h		2277			2154			245			164	
Approach Delay, s/veh		21.9			28.1			49.5			52.7	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	49.6	10.7	12.5	11.9	53.7	9.2	13.9
Change Period (Y+Rc), s	5.0	7.0	5.0	5.3	5.0	7.0	5.0	5.3
Max Green Setting (Gmax), s	11.0	46.7	6.0	34.0	10.0	47.7	5.0	35.0
Max Q Clear Time (g_c+I1), s	13.0	30.8	6.3	6.8	7.3	24.0	5.2	7.3
Green Ext Time (p_c), s	0.0	11.7	0.0	0.4	0.0	13.8	0.0	0.5

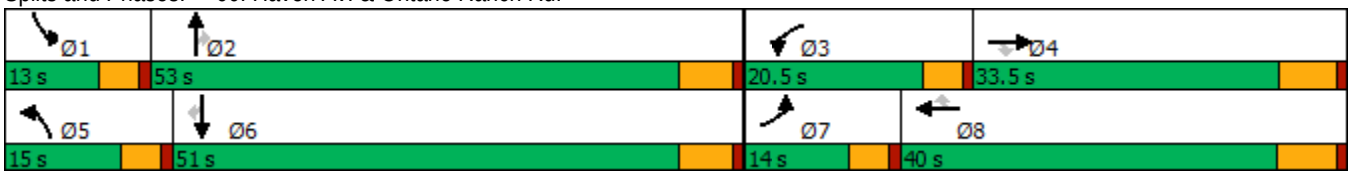
Intersection Summary	
HCM 6th Ctrl Delay	27.1
HCM 6th LOS	C

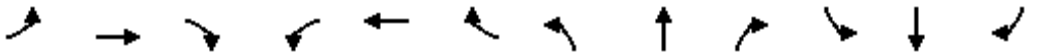
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	351	1990	81	75	1481	349	79	242	47	283	320	263
Future Volume (vph)	351	1990	81	75	1481	349	79	242	47	283	320	263
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	14.0	33.5	33.5	20.5	40.0	40.0	15.0	53.0	53.0	13.0	51.0	51.0
Total Split (%)	11.7%	27.9%	27.9%	17.1%	33.3%	33.3%	12.5%	44.2%	44.2%	10.8%	42.5%	42.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2	-2.2	-0.6	-2.5	-2.5	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 97.3
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	351	1990	81	75	1481	349	79	242	47	283	320	263
Future Volume (veh/h)	351	1990	81	75	1481	349	79	242	47	283	320	263
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	366	2073	53	78	1543	290	82	252	35	295	333	201
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	193	2338	726	111	1465	653	115	379	321	174	444	377
Arrive On Green	0.11	0.45	0.45	0.06	0.41	0.41	0.07	0.20	0.20	0.10	0.23	0.23
Sat Flow, veh/h	1714	5187	1610	1714	3610	1610	1714	1900	1610	1714	1900	1610
Grp Volume(v), veh/h	366	2073	53	78	1543	290	82	252	35	295	333	201
Grp Sat Flow(s),veh/h/ln	1714	1729	1610	1714	1805	1610	1714	1900	1610	1714	1900	1610
Q Serve(g_s), s	10.0	32.4	1.7	4.0	36.0	11.6	4.2	10.9	1.6	9.0	14.4	9.7
Cycle Q Clear(g_c), s	10.0	32.4	1.7	4.0	36.0	11.6	4.2	10.9	1.6	9.0	14.4	9.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	193	2338	726	111	1465	653	115	379	321	174	444	377
V/C Ratio(X)	1.89	0.89	0.07	0.71	1.05	0.44	0.71	0.66	0.11	1.70	0.75	0.53
Avail Cap(c_a), veh/h	193	2338	726	319	1465	653	213	1050	889	174	1007	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	22.3	13.8	40.7	26.4	19.1	40.5	32.8	29.0	39.9	31.6	29.7
Incr Delay (d2), s/veh	421.1	5.4	0.2	3.1	38.9	2.2	3.0	2.0	0.1	336.7	2.6	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.5	12.4	0.6	1.6	21.0	4.2	1.8	4.9	0.6	19.9	6.5	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	460.4	27.7	14.0	43.7	65.3	21.3	43.6	34.8	29.2	376.6	34.1	30.9
LnGrp LOS	F	C	B	D	F	C	D	C	C	F	C	C
Approach Vol, veh/h		2492			1911			369			829	
Approach Delay, s/veh		91.0			57.7			36.2			155.2	
Approach LOS		F			E			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	21.7	9.7	44.3	10.0	24.7	14.0	40.0
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	8.4	47.2	15.9	* 27	10.4	45.2	9.4	33.5
Max Q Clear Time (g_c+I1), s	11.0	12.9	6.0	34.4	6.2	16.4	12.0	38.0
Green Ext Time (p_c), s	0.0	1.5	0.0	0.0	0.0	2.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	85.5
HCM 6th LOS	F

Notes

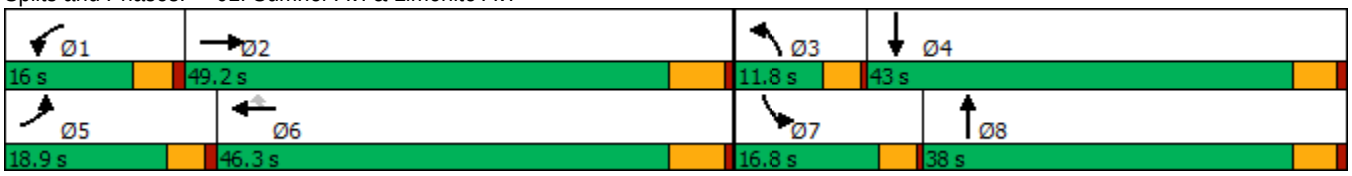
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

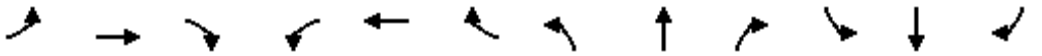
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	321	1552	246	1583	52	76	247	134	510
Future Volume (vph)	321	1552	246	1583	52	76	247	134	510
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		3	8	7	4
Permitted Phases					6				
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Minimum Split (s)	9.5	32.0	9.5	29.0	29.0	9.5	38.0	9.5	38.0
Total Split (s)	18.9	49.2	16.0	46.3	46.3	11.8	38.0	16.8	43.0
Total Split (%)	15.8%	41.0%	13.3%	38.6%	38.6%	9.8%	31.7%	14.0%	35.8%
Yellow Time (s)	3.5	5.0	3.5	5.0	5.0	3.5	4.0	3.5	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	4.5	6.0	6.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 110.1
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 61: Sumner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	321	1552	112	246	1583	52	76	247	161	134	510	416
Future Volume (veh/h)	321	1552	112	246	1583	52	76	247	161	134	510	416
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	331	1600	103	254	1632	46	78	255	95	138	526	331
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	395	1912	123	318	1878	583	100	642	232	167	608	382
Arrive On Green	0.11	0.38	0.38	0.09	0.36	0.36	0.06	0.25	0.25	0.09	0.29	0.29
Sat Flow, veh/h	3510	4980	320	3510	5187	1610	1810	2582	935	1810	2128	1337
Grp Volume(v), veh/h	331	1111	592	254	1632	46	78	176	174	138	446	411
Grp Sat Flow(s),veh/h/ln	1755	1729	1842	1755	1729	1610	1810	1805	1712	1810	1805	1659
Q Serve(g_s), s	9.8	30.8	30.8	7.5	31.0	2.0	4.5	8.6	9.0	7.9	24.8	24.8
Cycle Q Clear(g_c), s	9.8	30.8	30.8	7.5	31.0	2.0	4.5	8.6	9.0	7.9	24.8	24.8
Prop In Lane	1.00		0.17	1.00		1.00	1.00		0.55	1.00		0.81
Lane Grp Cap(c), veh/h	395	1328	707	318	1878	583	100	449	426	167	516	474
V/C Ratio(X)	0.84	0.84	0.84	0.80	0.87	0.08	0.78	0.39	0.41	0.82	0.87	0.87
Avail Cap(c_a), veh/h	478	1413	753	382	1978	614	134	564	535	219	649	597
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	29.5	29.6	47.1	31.4	22.1	49.3	33.1	33.2	47.1	35.8	35.8
Incr Delay (d2), s/veh	9.1	4.3	7.9	8.0	4.3	0.1	13.2	0.4	0.5	13.7	9.2	10.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	12.5	14.0	3.5	12.6	0.7	2.3	3.7	3.6	4.1	11.6	10.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.1	33.9	37.4	55.1	35.7	22.2	62.5	33.5	33.7	60.9	45.0	45.9
LnGrp LOS	E	C	D	E	D	C	E	C	C	E	D	D
Approach Vol, veh/h		2034			1932			428			995	
Approach Delay, s/veh		38.4			37.9			38.9			47.6	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.1	46.6	9.8	35.2	16.4	44.3	13.8	31.3
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	11.5	43.2	7.8	38.0	14.4	40.3	12.8	33.0
Max Q Clear Time (g_c+I1), s	9.5	32.8	6.5	26.8	11.8	33.0	9.9	11.0
Green Ext Time (p_c), s	0.1	6.9	0.0	3.2	0.1	5.3	0.0	1.4

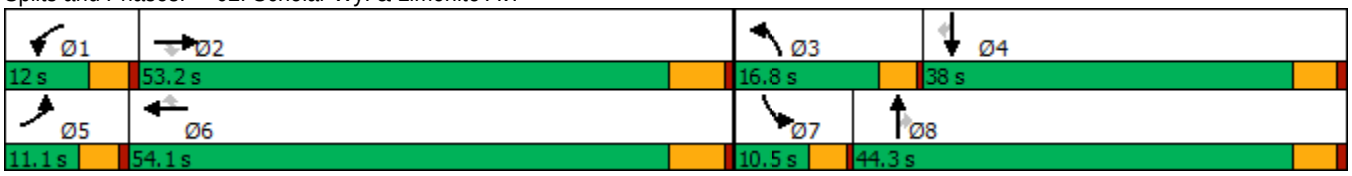
Intersection Summary	
HCM 6th Ctrl Delay	39.9
HCM 6th LOS	D

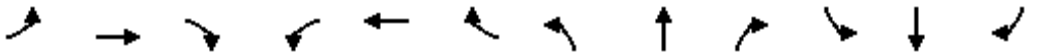
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	1371	209	142	1482	64	179	108	145	33	152	94
Future Volume (vph)	86	1371	209	142	1482	64	179	108	145	33	152	94
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	29.0	29.0	9.5	38.0	38.0	9.5	38.0	38.0
Total Split (s)	11.1	53.2	53.2	12.0	54.1	54.1	16.8	44.3	44.3	10.5	38.0	38.0
Total Split (%)	9.3%	44.3%	44.3%	10.0%	45.1%	45.1%	14.0%	36.9%	36.9%	8.8%	31.7%	31.7%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 100.5
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 62: Scholar Wy. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	1371	209	142	1482	64	179	108	145	33	152	94
Future Volume (veh/h)	86	1371	209	142	1482	64	179	108	145	33	152	94
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	91	1459	208	151	1577	44	190	115	74	35	162	93
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	116	1714	765	150	1780	794	225	383	325	47	373	162
Arrive On Green	0.06	0.47	0.47	0.08	0.49	0.49	0.12	0.20	0.20	0.03	0.10	0.10
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	1900	1610	1810	3610	1569
Grp Volume(v), veh/h	91	1459	208	151	1577	44	190	115	74	35	162	93
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1900	1610	1810	1805	1569
Q Serve(g_s), s	4.5	32.3	7.1	7.5	35.6	1.3	9.3	4.7	3.5	1.7	3.8	5.1
Cycle Q Clear(g_c), s	4.5	32.3	7.1	7.5	35.6	1.3	9.3	4.7	3.5	1.7	3.8	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	116	1714	765	150	1780	794	225	383	325	47	373	162
V/C Ratio(X)	0.78	0.85	0.27	1.01	0.89	0.06	0.85	0.30	0.23	0.75	0.43	0.57
Avail Cap(c_a), veh/h	132	1879	838	150	1915	854	255	824	698	130	1314	571
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.8	21.0	14.4	41.6	20.7	12.0	38.9	30.8	30.3	43.9	38.2	38.7
Incr Delay (d2), s/veh	19.8	3.7	0.2	75.9	5.2	0.0	18.4	0.3	0.3	8.5	0.6	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	12.5	2.5	6.3	13.8	0.4	5.2	2.1	1.3	0.9	1.7	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.6	24.7	14.5	117.5	25.8	12.0	57.3	31.1	30.6	52.4	38.8	41.1
LnGrp LOS	E	C	B	F	C	B	E	C	C	D	D	D
Approach Vol, veh/h		1758			1772			379			290	
Approach Delay, s/veh		25.4			33.3			44.1			41.2	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	49.1	15.2	14.4	10.3	50.7	6.3	23.3
Change Period (Y+Rc), s	4.5	6.0	4.0	5.0	4.5	6.0	4.0	5.0
Max Green Setting (Gmax), s	7.5	47.2	12.8	33.0	6.6	48.1	6.5	39.3
Max Q Clear Time (g_c+I1), s	9.5	34.3	11.3	7.1	6.5	37.6	3.7	6.7
Green Ext Time (p_c), s	0.0	8.1	0.0	1.0	0.0	7.1	0.0	0.7

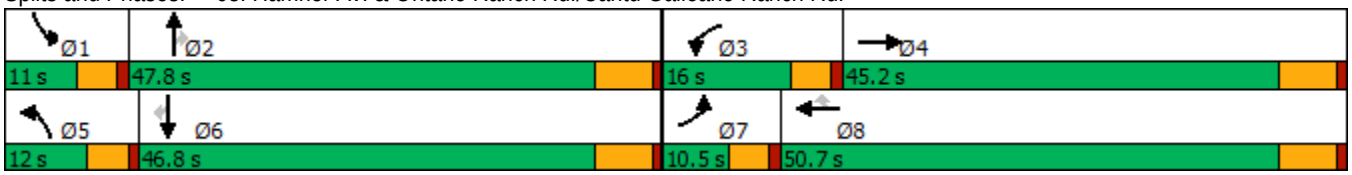
Intersection Summary	
HCM 6th Ctrl Delay	31.5
HCM 6th LOS	C

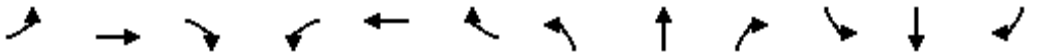
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	183	1569	940	1144	167	391	475	294	569	1050	225
Future Volume (vph)	183	1569	940	1144	167	391	475	294	569	1050	225
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	45.2	9.6	49.2	49.2	9.6	44.2	44.2	9.6	45.2	45.2
Total Split (s)	10.5	45.2	16.0	50.7	50.7	12.0	47.8	47.8	11.0	46.8	46.8
Total Split (%)	8.8%	37.7%	13.3%	42.3%	42.3%	10.0%	39.8%	39.8%	9.2%	39.0%	39.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2	-2.2
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 118.8
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	1569	537	940	1144	167	391	475	294	569	1050	225
Future Volume (veh/h)	183	1569	537	940	1144	167	391	475	294	569	1050	225
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1700	1900	1900	1700	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	191	1634	502	979	1192	140	407	495	227	593	1094	179
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	173	1743	535	319	1428	637	213	1839	570	186	1249	557
Arrive On Green	0.06	0.35	0.33	0.10	0.40	0.40	0.07	0.35	0.35	0.06	0.35	0.35
Sat Flow, veh/h	3141	4994	1532	3141	3610	1610	3141	5187	1609	3141	3610	1609
Grp Volume(v), veh/h	191	1604	532	979	1192	140	407	495	227	593	1094	179
Grp Sat Flow(s),veh/h/ln	1570	1634	1624	1570	1805	1610	1570	1729	1609	1570	1805	1609
Q Serve(g_s), s	6.5	37.4	37.5	12.0	35.2	6.8	8.0	8.0	12.5	7.0	33.6	9.7
Cycle Q Clear(g_c), s	6.5	37.4	37.5	12.0	35.2	6.8	8.0	8.0	12.5	7.0	33.6	9.7
Prop In Lane	1.00		0.94	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	173	1711	567	319	1428	637	213	1839	570	186	1249	557
V/C Ratio(X)	1.10	0.94	0.94	3.07	0.83	0.22	1.91	0.27	0.40	3.18	0.88	0.32
Avail Cap(c_a), veh/h	173	1711	567	319	1428	637	213	1924	597	186	1309	583
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.8	37.2	38.2	53.0	32.2	23.6	55.0	27.2	28.6	55.5	36.2	28.4
Incr Delay (d2), s/veh	99.2	10.4	23.7	938.2	4.5	0.2	427.5	0.1	0.4	996.7	6.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	15.4	17.7	46.2	15.1	2.5	15.7	3.2	4.7	28.5	15.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	154.9	47.6	61.9	991.2	36.6	23.8	482.5	27.3	29.1	1052.3	42.9	28.7
LnGrp LOS	F	D	E	F	D	C	F	C	C	F	D	C
Approach Vol, veh/h		2327			2311			1129			1866	
Approach Delay, s/veh		59.7			440.2			191.8			362.3	
Approach LOS		E			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	45.9	16.0	45.2	12.0	44.9	10.5	50.7
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	6.4	41.6	11.4	39.0	7.4	40.6	5.9	44.5
Max Q Clear Time (g_c+I1), s	9.0	14.5	14.0	39.5	10.0	35.6	8.5	37.2
Green Ext Time (p_c), s	0.0	3.8	0.0	0.0	0.0	3.1	0.0	4.4

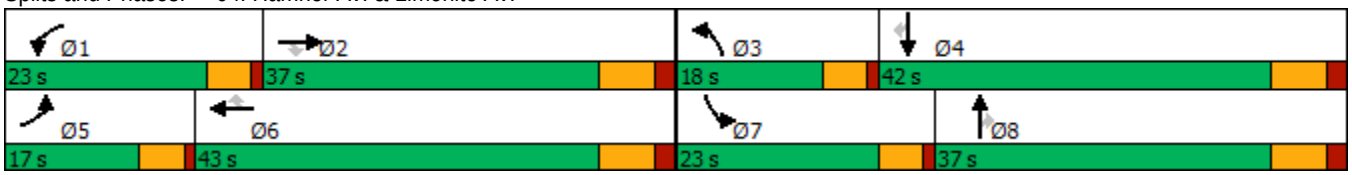
Intersection Summary	
HCM 6th Ctrl Delay	268.4
HCM 6th LOS	F

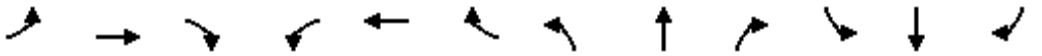
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	331	1076	148	424	1076	432	229	666	370	490	720	253
Future Volume (vph)	331	1076	148	424	1076	432	229	666	370	490	720	253
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	37.0	37.0
Total Split (s)	17.0	37.0	37.0	23.0	43.0	43.0	18.0	37.0	37.0	23.0	42.0	42.0
Total Split (%)	14.2%	30.8%	30.8%	19.2%	35.8%	35.8%	15.0%	30.8%	30.8%	19.2%	35.0%	35.0%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 117.4
Natural Cycle: 115
Control Type: Actuated-Uncoordinated

Splits and Phases: 64: Hamner Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	331	1076	148	424	1076	432	229	666	370	490	720	253
Future Volume (veh/h)	331	1076	148	424	1076	432	229	666	370	490	720	253
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	341	1109	132	437	1109	400	236	687	297	505	742	198
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	357	1385	429	492	1103	485	294	1225	372	536	1583	483
Arrive On Green	0.10	0.27	0.27	0.14	0.31	0.31	0.08	0.24	0.24	0.15	0.31	0.31
Sat Flow, veh/h	3510	5187	1607	3510	3610	1587	3510	5187	1576	3510	5187	1582
Grp Volume(v), veh/h	341	1109	132	437	1109	400	236	687	297	505	742	198
Grp Sat Flow(s),veh/h/ln	1755	1729	1607	1755	1805	1587	1755	1729	1576	1755	1729	1582
Q Serve(g_s), s	11.4	23.5	7.7	14.4	36.0	27.6	7.8	13.7	20.9	16.8	13.7	11.7
Cycle Q Clear(g_c), s	11.4	23.5	7.7	14.4	36.0	27.6	7.8	13.7	20.9	16.8	13.7	11.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	357	1385	429	492	1103	485	294	1225	372	536	1583	483
V/C Ratio(X)	0.95	0.80	0.31	0.89	1.01	0.83	0.80	0.56	0.80	0.94	0.47	0.41
Avail Cap(c_a), veh/h	357	1385	429	536	1103	485	387	1321	401	536	1583	483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.6	40.3	34.5	49.7	40.9	38.0	53.0	39.6	42.4	49.4	33.2	32.5
Incr Delay (d2), s/veh	35.3	3.9	0.9	14.7	28.5	12.3	6.5	0.9	12.1	24.9	0.5	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	10.1	3.0	7.1	19.6	11.9	3.6	5.8	9.1	9.0	5.6	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.9	44.2	35.3	64.5	69.4	50.3	59.6	40.5	54.5	74.3	33.6	33.7
LnGrp LOS	F	D	D	E	F	D	E	D	D	E	C	C
Approach Vol, veh/h		1582			1946			1220			1445	
Approach Delay, s/veh		52.9			64.4			47.6			47.9	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.5	38.5	14.9	43.0	17.0	43.0	23.0	34.8
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Max Green Setting (Gmax), s	18.0	30.0	13.0	35.0	12.0	36.0	18.0	30.0
Max Q Clear Time (g_c+I1), s	16.4	25.5	9.8	15.7	13.4	38.0	18.8	22.9
Green Ext Time (p_c), s	0.1	3.6	0.1	9.2	0.0	0.0	0.0	4.5

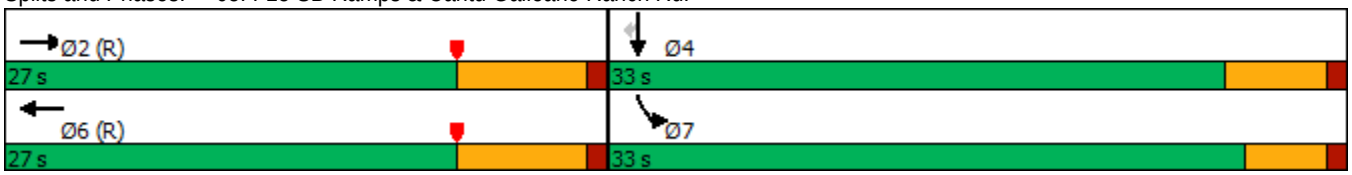
Intersection Summary	
HCM 6th Ctrl Delay	54.3
HCM 6th LOS	D

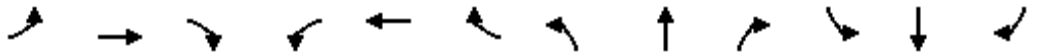
Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1864	620	883	528	522	0	1305
Future Volume (vph)	1864	620	883	528	522	0	1305
Turn Type	NA	Free	NA	Free	Prot	NA	Perm
Protected Phases	2		6		7	4	
Permitted Phases		Free		Free			4
Detector Phase	2		6		7	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	11.8		11.8		9.6	10.5	10.5
Total Split (s)	27.0		27.0		33.0	33.0	33.0
Total Split (%)	45.0%		45.0%		55.0%	55.0%	55.0%
Yellow Time (s)	5.8		5.8		3.6	4.5	4.5
All-Red Time (s)	1.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-2.8		-2.8		-0.6	-1.5	-1.5
Total Lost Time (s)	4.0		4.0		4.0	4.0	4.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Min		None	Min	Min

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 53 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 65: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	✣	↱
Traffic Volume (veh/h)	0	1864	620	0	883	528	0	0	0	522	0	1305
Future Volume (veh/h)	0	1864	620	0	883	528	0	0	0	522	0	1305
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1922	0	0	910	0				359	0	1205
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2245		0	1562					785	0	1446
Arrive On Green	0.00	0.43	0.00	0.00	0.43	0.00				0.43	0.00	0.45
Sat Flow, veh/h	0	5358	1610	0	3705	1610				1810	0	3220
Grp Volume(v), veh/h	0	1922	0	0	910	0				359	0	1205
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1805	1610				1810	0	1610
Q Serve(g_s), s	0.0	20.0	0.0	0.0	11.5	0.0				8.4	0.0	19.8
Cycle Q Clear(g_c), s	0.0	20.0	0.0	0.0	11.5	0.0				8.4	0.0	19.8
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2245		0	1562					785	0	1446
V/C Ratio(X)	0.00	0.86		0.00	0.58					0.46	0.00	0.83
Avail Cap(c_a), veh/h	0	2245		0	1562					875	0	1605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.09	0.00	0.00	0.89	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	15.3	0.0	0.0	12.9	0.0				12.0	0.0	14.6
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	1.4	0.0				0.4	0.0	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.9	0.0	0.0	3.8	0.0				2.7	0.0	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	15.8	0.0	0.0	14.3	0.0				12.4	0.0	18.2
LnGrp LOS	A	B		A	B					B	A	B
Approach Vol, veh/h		1922	A		910	A					1564	
Approach Delay, s/veh		15.8			14.3						16.9	
Approach LOS		B			B						B	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	30.0	30.0	30.0
Change Period (Y+Rc), s	6.8	4.6	6.8
Max Green Setting (Gmax), s	20.2	28.4	20.2
Max Q Clear Time (g_c+I1), s	22.0	21.8	13.5
Green Ext Time (p_c), s	0.0	3.7	3.0

Intersection Summary	
HCM 6th Ctrl Delay	15.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

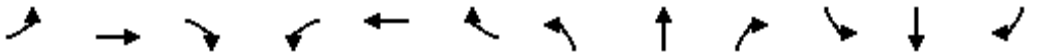
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1832	804	1801	837	511	1	507
Future Volume (vph)	1832	804	1801	837	511	1	507
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		4	4	
Permitted Phases		2		6			4
Detector Phase	2	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	36.5	36.5	23.5	23.5	23.5
Total Split (s)	73.0	73.0	73.0	73.0	37.0	37.0	37.0
Total Split (%)	66.4%	66.4%	66.4%	66.4%	33.6%	33.6%	33.6%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	Min	Min

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 50 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 66: I-15 SB Ramps & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	↰	↱↱
Traffic Volume (veh/h)	0	1832	804	0	1801	837	0	0	0	511	1	507
Future Volume (veh/h)	0	1832	804	0	1801	837	0	0	0	511	1	507
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900				1900	1900	1900
Adj Flow Rate, veh/h	0	1869	674	0	1838	854				522	0	283
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	3781	1174	0	3781	1174				619	0	551
Arrive On Green	0.00	0.73	0.73	0.00	0.73	0.73				0.17	0.00	0.17
Sat Flow, veh/h	0	5358	1610	0	5358	1610				3619	0	3220
Grp Volume(v), veh/h	0	1869	674	0	1838	854				522	0	283
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1610				1810	0	1610
Q Serve(g_s), s	0.0	16.8	21.5	0.0	16.4	33.7				15.4	0.0	8.8
Cycle Q Clear(g_c), s	0.0	16.8	21.5	0.0	16.4	33.7				15.4	0.0	8.8
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3781	1174	0	3781	1174				619	0	551
V/C Ratio(X)	0.00	0.49	0.57	0.00	0.49	0.73				0.84	0.00	0.51
Avail Cap(c_a), veh/h	0	3781	1174	0	3781	1174				1036	0	922
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.62	0.62				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.3	6.9	0.0	6.3	8.6				44.2	0.0	41.4
Incr Delay (d2), s/veh	0.0	0.5	2.0	0.0	0.3	2.5				1.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.8	6.2	0.0	4.6	9.4				6.7	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	6.8	9.0	0.0	6.5	11.1				45.5	0.0	41.7
LnGrp LOS	A	A	A	A	A	B				D	A	D
Approach Vol, veh/h		2543			2692						805	
Approach Delay, s/veh		7.4			8.0						44.2	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		85.7		24.3		85.7						
Change Period (Y+Rc), s		5.5		5.5		5.5						
Max Green Setting (Gmax), s		67.5		31.5		67.5						
Max Q Clear Time (g_c+I1), s		23.5		17.4		35.7						
Green Ext Time (p_c), s		15.2		1.4		14.5						

Intersection Summary												
HCM 6th Ctrl Delay			12.5									
HCM 6th LOS			B									

Notes

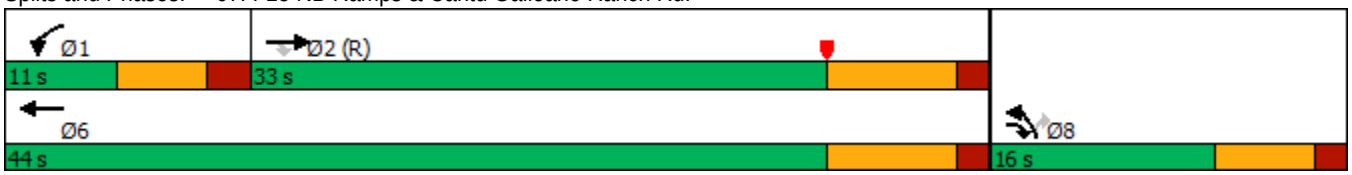
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	901	1485	368	1025	386	289
Future Volume (vph)	901	1485	368	1025	386	289
Turn Type	NA	pm+ov	Prot	NA	Prot	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Detector Phase	2	8	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.3	11.0	11.0	12.3	11.0	11.0
Total Split (s)	33.0	16.0	11.0	44.0	16.0	16.0
Total Split (%)	55.0%	26.7%	18.3%	73.3%	26.7%	26.7%
Yellow Time (s)	5.8	4.5	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	-3.3	-2.0	-2.0	-3.3	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	Max	Max	None	Max	Max

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 67: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	901	1485	368	1025	386	289
Future Volume (veh/h)	901	1485	368	1025	386	289
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	948	1347	387	1079	406	201
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2507	1065	410	3458	724	322
Arrive On Green	0.81	0.77	0.12	0.67	0.20	0.20
Sat Flow, veh/h	5358	1610	3510	5358	3619	1610
Grp Volume(v), veh/h	948	1347	387	1079	406	201
Grp Sat Flow(s),veh/h/ln	1729	1610	1755	1729	1810	1610
Q Serve(g_s), s	3.0	27.7	6.6	5.3	6.1	6.8
Cycle Q Clear(g_c), s	3.0	27.7	6.6	5.3	6.1	6.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2507	1065	410	3458	724	322
V/C Ratio(X)	0.38	1.26	0.94	0.31	0.56	0.62
Avail Cap(c_a), veh/h	2507	1065	410	3458	724	322
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.33	0.33	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.3	3.5	26.3	4.2	21.6	21.9
Incr Delay (d2), s/veh	0.1	121.6	32.6	0.1	3.1	8.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	39.2	4.2	0.8	2.5	3.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.4	125.0	58.9	4.3	24.8	30.8
LnGrp LOS	A	F	E	A	C	C
Approach Vol, veh/h	2295			1466	607	
Approach Delay, s/veh	74.8			18.7	26.7	
Approach LOS	E			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	11.0	33.0				44.0	16.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	5.0	25.7				36.7	10.0
Max Q Clear Time (g_c+I1), s	8.6	29.7				7.3	8.8
Green Ext Time (p_c), s	0.0	0.0				7.7	0.3

Intersection Summary		
HCM 6th Ctrl Delay		49.3
HCM 6th LOS		D

Notes

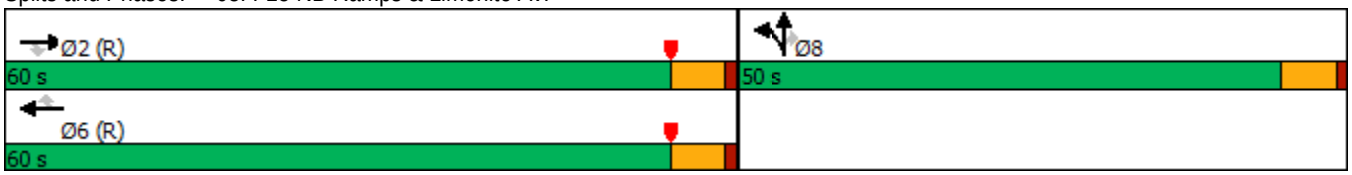
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	1783	560	2020	455	619	2	901
Future Volume (vph)	1783	560	2020	455	619	2	901
Turn Type	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	2		6		8	8	
Permitted Phases		2		6			8
Detector Phase	2	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	10.5	34.5	34.5	10.5	10.5	10.5
Total Split (s)	60.0	60.0	60.0	60.0	50.0	50.0	50.0
Total Split (%)	54.5%	54.5%	54.5%	54.5%	45.5%	45.5%	45.5%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 68: I-15 NB Ramps & Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱	↰	↕	↱↱			
Traffic Volume (veh/h)	0	1783	560	0	2020	455	619	2	901	0	0	0
Future Volume (veh/h)	0	1783	560	0	2020	455	619	2	901	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1900	1900	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	0	1801	566	0	2040	369	626	0	617			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	0	3391	1053	0	3391	1052	891	0	782			
Arrive On Green	0.00	0.65	0.65	0.00	0.65	0.65	0.25	0.00	0.25			
Sat Flow, veh/h	0	5358	1610	0	5358	1609	3619	0	3176			
Grp Volume(v), veh/h	0	1801	566	0	2040	369	626	0	617			
Grp Sat Flow(s),veh/h/ln	0	1729	1610	0	1729	1609	1810	0	1588			
Q Serve(g_s), s	0.0	20.3	20.6	0.0	24.7	11.3	17.3	0.0	20.0			
Cycle Q Clear(g_c), s	0.0	20.3	20.6	0.0	24.7	11.3	17.3	0.0	20.0			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3391	1053	0	3391	1052	891	0	782			
V/C Ratio(X)	0.00	0.53	0.54	0.00	0.60	0.35	0.70	0.00	0.79			
Avail Cap(c_a), veh/h	0	3391	1053	0	3391	1052	1464	0	1285			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.82	0.82	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	10.1	10.2	0.0	10.9	8.6	37.8	0.0	38.8			
Incr Delay (d2), s/veh	0.0	0.5	1.6	0.0	0.8	0.9	1.0	0.0	1.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	6.6	6.6	0.0	8.1	3.6	7.5	0.0	7.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	10.6	11.8	0.0	11.7	9.5	38.8	0.0	40.6			
LnGrp LOS	A	B	B	A	B	A	D	A	D			
Approach Vol, veh/h		2367			2409			1243				
Approach Delay, s/veh		10.9			11.3			39.7				
Approach LOS		B			B			D				

Timer - Assigned Phs	2				6		8					
Phs Duration (G+Y+Rc), s	77.4				77.4		32.6					
Change Period (Y+Rc), s	5.5				5.5		5.5					
Max Green Setting (Gmax), s	54.5				54.5		44.5					
Max Q Clear Time (g_c+I1), s	22.6				26.7		22.0					
Green Ext Time (p_c), s	12.5				13.3		5.1					

Intersection Summary												
HCM 6th Ctrl Delay			17.0									
HCM 6th LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.

APPENDIX 9.3:

HORIZON YEAR (2040) WITHOUT PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

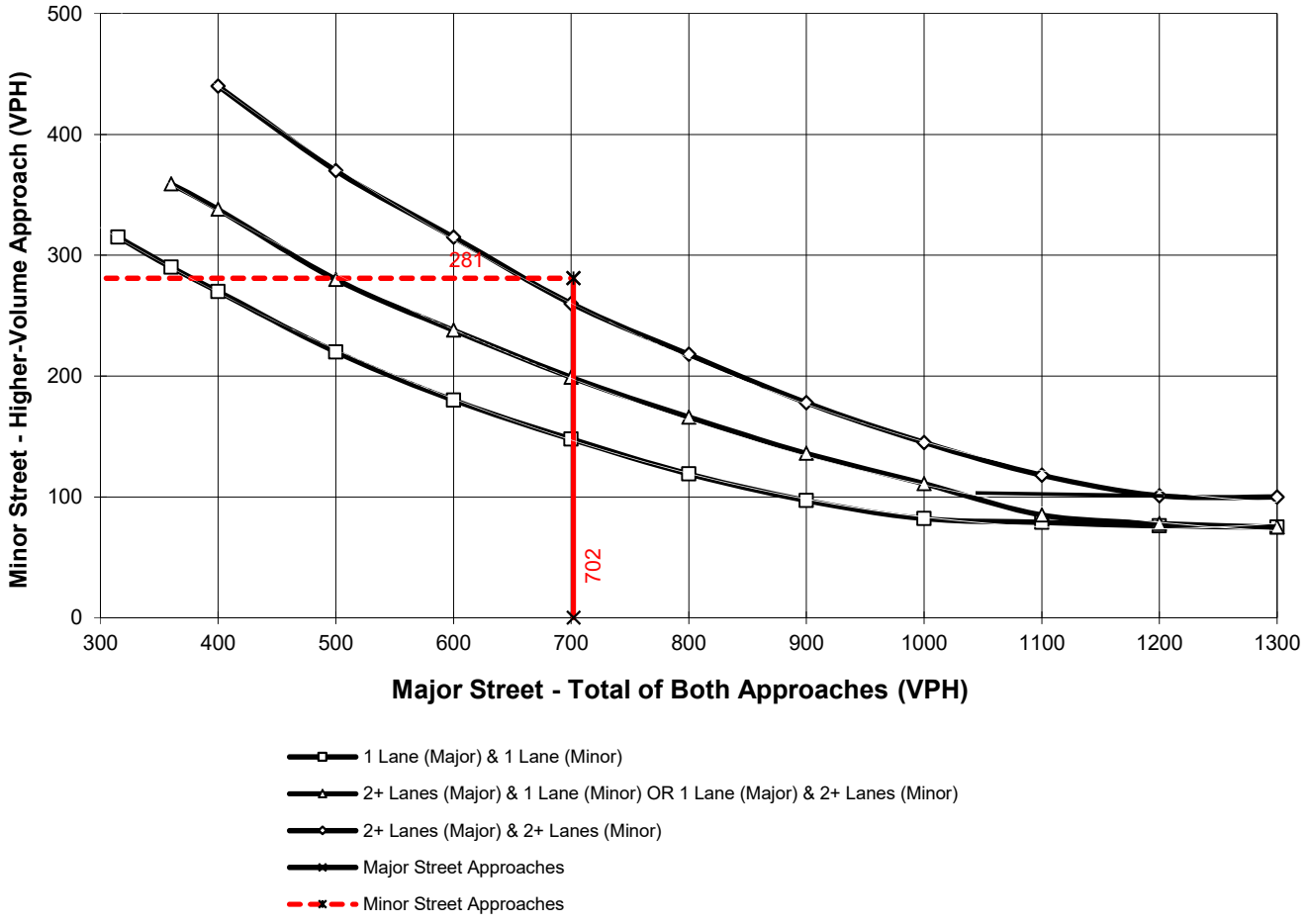
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Horizon Year (2040) Without Project Conditions - Weekday AM Peak Hour**

Major Street Name = **Eucalyptus Av.** Total of Both Approaches (VPH) = **702**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Bon View Av.** High Volume Approach (VPH) = **281**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM		TRAFFIC CONDITIONS		2040 NP
				CALC	CS	DATE	04/11/19
Jurisdiction:	City of Ontario			CHK	CS	DATE	04/11/19
Major Street:	Edison Av.				Critical Approach Speed (Major)		45 mph
Minor Street:	Vineyard Av.				Critical Approach Speed (Minor)		25 mph

Major Street Approach Lanes = **4** lane Minor Street Approach Lanes = **2** lane

Major Street Future ADT = **44,209** vpd Minor Street Future ADT = **2,568** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ..... √

or

In built up area of isolated community of < 10,000 population .....

RURAL (R)

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
	XX				
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied	Urban	Rural	Urban	Rural
XX					
Number of lanes for moving traffic on each approach					
Major Street	Minor Street				
1	1	8,000	5,600	2,400	1,680
2 +	1	9,600	6,720	2,400	1,680
2 + **44,209**	2 + **2,568**	9,600	6,720 *	3,200	2,240 *
1	2 +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied	Urban	Rural	Urban	Rural
XX					
Number of lanes for moving traffic on each approach					
Major Street	Minor Street				
1	1	12,000	8,400	1,200	850
2 +	1	14,400	10,080	1,200	850
2 + **44,209**	2 + **2,568**	14,400	10,080 *	1,600	1,120 *
1	2 +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
XX					
No one condition satisfied, but following conditions fulfilled 80% of more	A: 100% B: 100%	2 CONDITIONS 80%		2 CONDITIONS 80%	

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	2040 NP
				CALC CS	DATE 04/11/19
Jurisdiction: City of Ontario				CHK CS	DATE 04/11/19
Major Street: Edison Av.				Critical Approach Speed (Major)	45 mph
Minor Street: Hellman Av.				Critical Approach Speed (Minor)	25 mph

Major Street Approach Lanes = **4** lane Minor Street Approach Lanes **2** lane

Major Street Future ADT = **45,643** vpd Minor Street Future ADT = **4,045** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ..... √

or

In built up area of isolated community of < 10,000 population .....

RURAL (R)

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL	Number of lanes for moving traffic on each approach		Minimum Requirements EADT			
			Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	Major Street	Minor Street	Urban	Rural	Urban	Rural
CONDITION A - Minimum Vehicular Volume						
Satisfied XX	*1*	*1*	8,000	5,600	2,400	1,680
Not Satisfied XX	*2* +	*1*	9,600	6,720	2,400	1,680
	2 + **45,643**	*2* + **4,045**	9,600	6,720 *	3,200	2,240 *
	1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic			Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
			Urban	Rural	Urban	Rural
Satisfied XX	*1*	*1*	12,000	8,400	1,200	850
Not Satisfied	*2* +	*1*	14,400	10,080	1,200	850
	2 + **45,643**	*2* + **4,045**	14,400	10,080 *	1,600	1,120 *
	1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B						
Satisfied XX			2 CONDITIONS 80%		2 CONDITIONS 80%	
Not Satisfied						
No one condition satisfied, but following conditions fulfilled 80% of more	**A** 100%	**B** 100%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM		TRAFFIC CONDITIONS		2040 NP
				CALC	CS	DATE	04/11/19
Jurisdiction:	City of Ontario			CHK	CS	DATE	04/11/19
Major Street:	Eucalyptus Av.				Critical Approach Speed (Major)		45 mph
Minor Street:	Baker Av.				Critical Approach Speed (Minor)		25 mph

Major Street Approach Lanes = **2** lane Minor Street Approach Lanes = **2** lane

Major Street Future ADT = **9,049** vpd Minor Street Future ADT = **4,562** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ..... √

or

In built up area of isolated community of < 10,000 population .....

RURAL (R)

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
	XX				
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied	Urban	Rural	Urban	Rural
XX					
Number of lanes for moving traffic on each approach					
Major Street	Minor Street				
1	*1*	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 + **9,049**	*2* + **4,562**	9,600	6,720 *	3,200	2,240 *
1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied	Urban	Rural	Urban	Rural
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street				
1	*1*	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 + **9,049**	*2* + **4,562**	14,400	10,080	1,600	1,120 *
1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
XX					
No one condition satisfied, but following conditions fulfilled 80% of more	**A** 100% **B** 90%	2 CONDITIONS 80%		2 CONDITIONS 80%	

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

				TRAFFIC CONDITIONS			**2040 NP**
DIST	CO	RTE	PM	CALC	CS	DATE	04/11/19
Jurisdiction:	**City of Ontario**			CHK	CS	DATE	04/11/19
Major Street:	**Archibald Av.**			Critical Approach Speed (Major)			45 mph
Minor Street:	**Schaefer Av.**			Critical Approach Speed (Minor)			25 mph

Major Street Approach Lanes = **3** lane Minor Street Approach Lanes **2** lane

Major Street Future ADT = **32,902** vpd Minor Street Future ADT = **1,555** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……... √

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …… [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
	XX				
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	*1*	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 + **32,902**	*2 +* **1,555**	9,600	6,720 *	3,200	2,240
1	*2 +*	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied				
XX					
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	*1*	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 + **32,902**	*2 +* **1,555**	14,400	10,080 *	1,600	1,120 *
1	*2 +*	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
	XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 69% **B** 100%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

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APPENDIX 9.4:

HORIZON YEAR (2040) WITH PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

___ DIST	___ CO	___ RTE	___ PM		TRAFFIC CONDITIONS		2040 WP
				CALC	CS	DATE	12/16/19
Jurisdiction:	City of Ontario			CHK	CS	DATE	12/16/19
Major Street:	Eucalyptus Av.				Critical Approach Speed (Major)		45 mph
Minor Street:	Baker Av.				Critical Approach Speed (Minor)		25 mph

Major Street Approach Lanes = **2** lane Minor Street Approach Lanes = **1** lane

Major Street Future ADT = **2,608** vpd Minor Street Future ADT = **1,108** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. √

or

In built up area of isolated community of < 10,000 population ……

RURAL (R)

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
	XX				
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	*1*	8,000	5,600	2,400	1,680
2 + **2,608**	*1* **1,108**	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	*1*	12,000	8,400	1,200	850
2 + **2,608**	*1* **1,108**	14,400	10,080	1,200	850 *
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
	XX				
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 39% **B** 26%	2 CONDITIONS 80%		2 CONDITIONS 80%	

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS		2040 WP
				CALC CS	DATE	12/16/19
Jurisdiction: City of Ontario				CHK CS	DATE	12/16/19
Major Street: **Eucalyptus Av.**				Critical Approach Speed (Major)		45 mph
Minor Street: **Vineyard Av.**				Critical Approach Speed (Minor)		25 mph

Major Street Approach Lanes = **2** lane Minor Street Approach Lanes = **2** lane

Major Street Future ADT = **9,895** vpd Minor Street Future ADT = **4,170** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. √

or

In built up area of isolated community of < 10,000 population ……

RURAL (R)

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
	XX				
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied				
XX					
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	*1*	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 + **9,895**	*2* + **4,170**	9,600	6,720 *	3,200	2,240 *
1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	*1*	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 + **9,895**	*2* + **4,170**	14,400	10,080	1,600	1,120 *
1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
XX					
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 100% **B** 98%	2 CONDITIONS 80%		2 CONDITIONS 80%	

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

APPENDIX 9.5:

HORIZON YEAR (2040) WITHOUT PROJECT CONDITIONS OFF-RAMP QUEUING ANALYSIS WORKSHEETS

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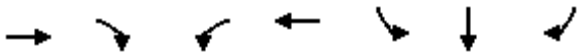


Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1237	262	224	1795	533	538	402
v/c Ratio	0.63	0.34	0.60	0.66	0.79	0.79	0.59
Control Delay	28.1	4.4	40.9	25.2	35.7	36.0	22.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.1	4.4	40.9	25.2	35.7	36.0	22.0
Queue Length 50th (ft)	247	0	76	321	291	294	148
Queue Length 95th (ft)	304	54	m73	m299	427	431	240
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	1968	775	420	2730	734	736	737
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.34	0.53	0.66	0.73	0.73	0.55

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	863	239	409	21	337	355	359	14
v/c Ratio	1.01	0.66	0.23	0.19	1.13	0.72	0.73	0.02
Control Delay	65.2	41.7	21.3	39.7	110.7	33.6	33.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.2	41.7	21.3	39.7	110.7	33.6	33.8	0.1
Queue Length 50th (ft)	~230	120	84	10	~90	167	169	0
Queue Length 95th (ft)	#357	m#295	140	32	#252	226	228	0
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	855	362	1785	112	297	664	668	713
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.66	0.23	0.19	1.13	0.53	0.54	0.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	687	1389	227	1789	349	355	85	127	879
v/c Ratio	2.25	0.58	0.14	1.10	0.64	0.64	0.14	0.71	1.18
Control Delay	592.4	19.9	0.1	90.0	35.3	35.3	1.9	65.5	110.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	592.4	19.9	0.1	90.0	35.3	35.3	1.9	65.5	110.5
Queue Length 50th (ft)	~741	190	0	~375	198	202	0	80	~201
Queue Length 95th (ft)	#969	257	m0	#453	302	306	12	#165	#337
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	306	2386	1615	1629	548	556	605	180	748
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.25	0.58	0.14	1.10	0.64	0.64	0.14	0.71	1.18

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	549	52	427	1717	166	430
v/c Ratio	0.35	0.07	1.31	0.73	0.19	0.60
Control Delay	15.3	5.0	188.6	10.8	26.5	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	5.0	188.6	10.8	26.5	7.1
Queue Length 50th (ft)	69	3	~278	230	35	0
Queue Length 95th (ft)	m71	m4	#450	274	62	77
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1737	804	327	2549	853	718
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.06	1.31	0.67	0.19	0.60

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	498	498	450	534	1256	1288	631
v/c Ratio	0.97	1.01	0.87	1.05	0.60	1.43	0.78
Control Delay	65.7	75.6	43.0	58.1	25.6	228.1	12.8
Queue Delay	0.0	0.0	0.0	0.0	27.1	0.0	0.0
Total Delay	65.7	75.6	43.0	58.1	52.7	228.1	12.8
Queue Length 50th (ft)	292	~307	210	~331	404	~526	38
Queue Length 95th (ft)	#503	#537	#395	m#338	m409	#656	174
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)	400		400	285			
Base Capacity (vph)	514	493	519	511	2105	902	813
Starvation Cap Reductn	0	0	0	0	902	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	1.01	0.87	1.05	1.04	1.43	0.78

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

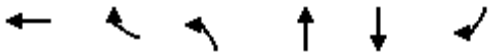
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	492	579	1223	913	483	1673
v/c Ratio	1.12	1.38	0.94	0.96	1.20	0.74
Control Delay	114.5	214.6	42.8	32.5	137.5	6.7
Queue Delay	4.2	4.1	0.0	0.0	0.0	4.0
Total Delay	118.7	218.7	42.8	32.5	137.5	10.7
Queue Length 50th (ft)	~343	~454	348	208	~322	111
Queue Length 95th (ft)	#543	#669	#488	#516	m218	m93
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	438	419	1303	949	401	2266
Starvation Cap Reductn	0	0	0	0	0	502
Spillback Cap Reductn	144	132	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.67	2.02	0.94	0.96	1.20	0.95

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	329	747	353	1550	927	761
v/c Ratio	0.52	1.22	0.88	0.78	0.88	0.80
Control Delay	34.4	146.5	59.9	21.9	52.2	12.4
Queue Delay	0.0	0.0	0.0	20.1	0.0	0.0
Total Delay	34.4	146.5	59.9	42.0	52.2	12.4
Queue Length 50th (ft)	201	~679	294	380	367	39
Queue Length 95th (ft)	293	#920	m232	m300	#518	225
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	634	611	457	1991	1051	948
Starvation Cap Reductn	0	0	0	485	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	1.22	0.77	1.03	0.88	0.80

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	849	253	1535	475	782
v/c Ratio	1.30	0.37	1.23	1.72	0.40
Control Delay	181.1	11.6	146.2	370.4	16.1
Queue Delay	0.1	0.0	0.0	0.0	0.3
Total Delay	181.3	11.6	146.2	370.4	16.4
Queue Length 50th (ft)	~844	46	~760	~561	130
Queue Length 95th (ft)	#1089	112	#901	m#694	m174
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	651	678	1243	276	1961
Starvation Cap Reductn	0	0	0	0	528
Spillback Cap Reductn	13	0	8	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.33	0.37	1.24	1.72	0.55

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	613	647	874	1743	968
v/c Ratio	1.33	1.32	1.42	0.55	0.65
Control Delay	191.8	184.3	222.8	25.2	29.7
Queue Delay	0.0	0.0	0.0	2.3	0.0
Total Delay	191.8	184.3	222.8	27.6	29.7
Queue Length 50th (ft)	~456	~436	~650	350	129
Queue Length 95th (ft)	#660	#649	m#531	m258	152
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	462	490	617	3181	1957
Starvation Cap Reductn	0	0	0	1256	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.33	1.32	1.42	0.91	0.49

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	509	664	2860	262	1029
v/c Ratio	0.81	1.08	1.39	0.90	0.38
Control Delay	38.9	88.0	205.5	51.9	25.4
Queue Delay	1.0	0.0	0.0	0.0	0.0
Total Delay	39.9	88.0	205.5	51.9	25.4
Queue Length 50th (ft)	260	~395	~634	163	202
Queue Length 95th (ft)	#426	#609	#709	m187	m201
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	627	613	2058	300	2720
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	24	0	2	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.84	1.08	1.39	0.87	0.38

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1499	554	772	240	383	643	650
v/c Ratio	0.86	0.34	0.64	0.15	0.47	0.90	0.88
Control Delay	25.1	0.6	15.9	0.2	13.2	32.5	29.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.1	0.6	15.9	0.2	13.2	32.5	29.6
Queue Length 50th (ft)	181	0	88	0	92	200	190
Queue Length 95th (ft)	#245	0	190	m0	160	#424	#404
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1746	1615	1215	1615	811	716	740
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.34	0.64	0.15	0.47	0.90	0.88

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1932	737	1552	1012	291	291	513
v/c Ratio	0.55	0.56	0.44	0.71	0.77	0.77	0.77
Control Delay	10.5	2.5	14.1	11.6	53.5	53.5	42.7
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Total Delay	10.5	2.5	14.1	11.9	53.5	53.5	42.7
Queue Length 50th (ft)	232	0	268	304	203	203	170
Queue Length 95th (ft)	330	44	353	588	283	283	218
Internal Link Dist (ft)	1166		735			976	
Turn Bay Length (ft)		250					250
Base Capacity (vph)	3524	1319	3524	1421	491	491	848
Starvation Cap Reductn	0	0	0	70	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.56	0.44	0.75	0.59	0.59	0.60

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	715	1210	484	672	503	234
v/c Ratio	0.35	1.10	1.19	0.21	0.76	0.53
Control Delay	8.4	66.2	134.5	5.4	26.8	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.4	66.2	134.5	5.4	26.8	8.8
Queue Length 50th (ft)	31	~516	~112	34	67	0
Queue Length 95th (ft)	m50	m#702	#194	48	#129	57
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2048	1104	408	3172	666	440
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	1.10	1.19	0.21	0.76	0.53

Intersection Summary

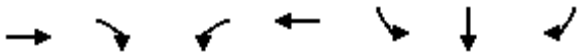
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	1583	878	1954	469	278	278	589
v/c Ratio	0.50	0.66	0.61	0.40	0.57	0.57	0.72
Control Delay	16.7	8.3	15.3	2.3	37.1	37.1	38.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.7	8.3	15.3	2.3	37.1	37.1	38.3
Queue Length 50th (ft)	209	82	289	1	176	176	203
Queue Length 95th (ft)	362	315	424	49	233	233	238
Internal Link Dist (ft)	735		1069			1143	
Turn Bay Length (ft)				250			250
Base Capacity (vph)	3184	1330	3184	1171	693	693	1149
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	1	1	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.66	0.61	0.40	0.40	0.40	0.51

Intersection Summary



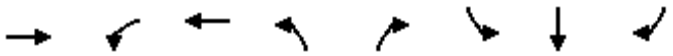
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1937	685	366	1716	542	544	577
v/c Ratio	1.05	0.73	0.84	0.64	0.79	0.79	0.83
Control Delay	69.6	10.4	46.9	25.7	35.3	35.4	34.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.6	10.4	46.9	25.7	35.3	35.4	34.2
Queue Length 50th (ft)	~525	51	128	287	296	297	269
Queue Length 95th (ft)	#621	197	m98	m213	437	438	419
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	1839	941	438	2696	734	735	737
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.05	0.73	0.84	0.64	0.74	0.74	0.78

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1094	177	309	21	176	574	587	39
v/c Ratio	1.27	0.88	0.21	0.19	0.69	0.90	0.91	0.06
Control Delay	160.2	69.5	27.7	39.7	23.7	42.3	44.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	160.2	69.5	27.7	39.7	23.7	42.3	44.0	0.2
Queue Length 50th (ft)	~372	98	79	10	6	271	278	0
Queue Length 95th (ft)	#497	m#172	m104	32	#87	#468	#482	0
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	860	201	1470	112	254	664	669	713
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.27	0.88	0.21	0.19	0.69	0.86	0.88	0.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	488	2035	499	2368	267	371	265	201	987
v/c Ratio	1.27	0.80	0.31	1.50	0.62	0.83	0.52	1.18	1.27
Control Delay	168.4	26.5	0.2	256.5	38.8	51.5	19.0	165.2	150.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	168.4	26.5	0.2	256.5	38.8	51.5	19.0	165.2	150.3
Queue Length 50th (ft)	~421	340	0	~613	156	232	70	~154	~256
Queue Length 95th (ft)	m#522	m341	m0	#690	231	330	141	#295	#396
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	385	2545	1615	1583	517	530	577	171	776
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.27	0.80	0.31	1.50	0.52	0.70	0.46	1.18	1.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1110	7	59	1579	197	1320
v/c Ratio	0.68	0.01	0.35	0.80	0.16	1.61
Control Delay	15.6	9.8	38.7	17.9	19.3	300.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	9.8	38.7	17.9	19.3	300.1
Queue Length 50th (ft)	172	0	28	314	34	~833
Queue Length 95th (ft)	m166	m1	62	340	62	#1111
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1643	737	349	2188	1232	819
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.01	0.17	0.72	0.16	1.61

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	462	455	418	455	1379	1294	623
v/c Ratio	0.92	0.94	0.83	0.93	0.65	1.34	0.71
Control Delay	56.8	60.9	39.3	32.9	27.1	188.8	8.4
Queue Delay	0.0	0.0	0.0	0.0	48.9	0.0	0.0
Total Delay	56.8	60.9	39.3	32.9	76.1	188.8	8.4
Queue Length 50th (ft)	263	265	187	241	451	~530	9
Queue Length 95th (ft)	#452	#471	#353	m241	m448	#660	113
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)				285			400
Base Capacity (vph)	514	493	513	511	2131	968	873
Starvation Cap Reductn	0	0	0	0	898	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.92	0.81	0.89	1.12	1.34	0.71

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

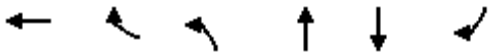
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	463	545	1282	809	467	1596
v/c Ratio	1.06	1.29	0.98	0.85	1.16	0.70
Control Delay	93.4	175.9	51.0	16.9	120.2	5.9
Queue Delay	28.1	11.3	0.0	0.0	0.0	2.4
Total Delay	121.6	187.1	51.0	16.9	120.2	8.3
Queue Length 50th (ft)	~306	~406	374	102	~302	91
Queue Length 95th (ft)	#502	#616	#527	#381	m#231	m90
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	438	423	1303	952	401	2266
Starvation Cap Reductn	0	0	0	0	0	513
Spillback Cap Reductn	271	247	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	2.77	3.10	0.98	0.85	1.16	0.91

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	370	431	261	1108	1511	836
v/c Ratio	0.74	0.86	0.80	0.49	1.03	0.91
Control Delay	47.5	49.5	58.3	14.6	68.9	31.5
Queue Delay	0.0	0.0	0.0	0.5	0.0	0.0
Total Delay	47.5	49.5	58.3	15.2	68.9	31.5
Queue Length 50th (ft)	256	263	217	248	~679	322
Queue Length 95th (ft)	335	361	m229	m260	#1004	#692
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	634	616	457	2253	1461	917
Starvation Cap Reductn	0	0	0	658	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.70	0.57	0.69	1.03	0.91

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	552	437	1273	639	1303
v/c Ratio	0.90	0.74	1.02	2.03	0.64
Control Delay	57.4	37.5	68.3	496.8	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.7
Total Delay	57.4	37.5	68.3	496.8	17.5
Queue Length 50th (ft)	391	246	~532	~834	190
Queue Length 95th (ft)	#585	370	#671	m#861	m238
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	649	624	1243	315	2040
Starvation Cap Reductn	0	0	0	0	371
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.85	0.70	1.02	2.03	0.78

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	559	332	530	735	2392
v/c Ratio	1.21	0.57	1.10	0.23	1.22
Control Delay	145.2	13.8	107.5	21.7	133.8
Queue Delay	0.0	0.0	0.0	0.0	0.1
Total Delay	145.2	13.8	107.5	21.7	133.9
Queue Length 50th (ft)	~392	47	~320	138	~483
Queue Length 95th (ft)	#590	131	m#399	m157	#561
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	462	582	481	3181	1957
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	84
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.21	0.57	1.10	0.23	1.28

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	140	716	1861	485	1886
v/c Ratio	0.22	1.17	1.15dr	1.62	0.69
Control Delay	22.1	118.9	34.9	301.4	25.1
Queue Delay	0.0	0.0	0.0	0.0	9.7
Total Delay	22.1	118.9	34.9	301.4	34.9
Queue Length 50th (ft)	56	~459	268	~418	402
Queue Length 95th (ft)	100	#677	#330	m#309	m330
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	625	613	2038	300	2720
Starvation Cap Reductn	0	0	0	0	824
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.22	1.17	0.91	1.62	0.99

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1676	639	906	544	484	674	646
v/c Ratio	0.84	0.40	0.66	0.34	0.58	0.90	0.83
Control Delay	22.1	0.7	15.0	0.7	14.7	30.9	24.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.1	0.7	15.0	0.7	14.7	30.9	24.0
Queue Length 50th (ft)	195	0	98	0	123	206	176
Queue Length 95th (ft)	252	0	214	m6	210	#440	#384
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1988	1615	1383	1615	828	752	777
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.40	0.66	0.34	0.58	0.90	0.83

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1835	694	1782	854	260	262	517
v/c Ratio	0.52	0.53	0.51	0.62	0.68	0.69	0.78
Control Delay	10.1	2.3	11.4	8.5	48.1	48.2	45.8
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Total Delay	10.1	2.3	11.4	8.7	48.1	48.2	45.8
Queue Length 50th (ft)	216	0	340	343	176	178	182
Queue Length 95th (ft)	305	43	424	455	250	252	230
Internal Link Dist (ft)	1166		735			975	
Turn Bay Length (ft)		250					250
Base Capacity (vph)	3517	1318	3517	1370	491	492	840
Starvation Cap Reductn	0	0	0	89	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.53	0.51	0.67	0.53	0.53	0.62

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	937	1324	387	1075	534	176
v/c Ratio	0.37	1.09	0.95	0.31	0.73	0.41
Control Delay	6.4	63.0	63.5	4.5	26.4	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.4	63.0	63.5	4.5	26.4	7.2
Queue Length 50th (ft)	37	~567	73	48	81	0
Queue Length 95th (ft)	m61	m#781	#148	64	#131	47
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2507	1214	408	3458	736	434
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	1.09	0.95	0.31	0.73	0.41

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	1767	566	2028	460	291	293	910
v/c Ratio	0.66	0.51	0.75	0.44	0.45	0.45	0.84
Control Delay	23.5	6.8	23.6	3.3	27.4	27.4	38.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.5	6.8	23.6	3.3	27.4	27.4	38.1
Queue Length 50th (ft)	295	15	419	6	152	153	306
Queue Length 95th (ft)	458	167	484	59	232	233	398
Internal Link Dist (ft)	735		1069			1151	
Turn Bay Length (ft)				250			250
Base Capacity (vph)	2697	1111	2697	1040	693	695	1149
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.51	0.75	0.44	0.42	0.42	0.79

Intersection Summary

APPENDIX 9.6:

HORIZON YEAR (2040) WITH PROJECT CONDITIONS OFF-RAMP QUEUING ANALYSIS WORKSHEETS

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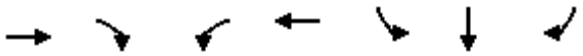
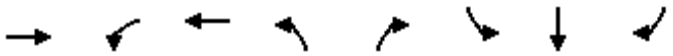


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1247	262	224	1798	579	585	402
v/c Ratio	0.65	0.35	0.60	0.67	0.83	0.84	0.57
Control Delay	29.2	4.5	41.9	26.2	38.1	38.6	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	4.5	41.9	26.2	38.1	38.6	21.2
Queue Length 50th (ft)	250	0	76	320	327	331	148
Queue Length 95th (ft)	306	54	m72	m290	480	#495	240
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	1904	758	420	2666	734	736	737
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.35	0.53	0.67	0.79	0.79	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	872	239	412	21	337	355	359	14
v/c Ratio	1.02	0.66	0.23	0.19	1.13	0.72	0.73	0.02
Control Delay	67.8	41.4	21.1	39.7	110.7	33.6	33.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.8	41.4	21.1	39.7	110.7	33.6	33.8	0.1
Queue Length 50th (ft)	~236	120	84	10	~90	167	169	0
Queue Length 95th (ft)	#363	m#286	141	32	#252	226	228	0
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	855	362	1785	112	297	664	668	713
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.66	0.23	0.19	1.13	0.53	0.54	0.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	687	1492	227	1818	349	355	85	127	879
v/c Ratio	2.25	0.63	0.14	1.12	0.60	0.60	0.13	0.88	1.25
Control Delay	591.8	20.5	0.1	96.6	32.5	32.5	1.8	96.2	141.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	591.8	20.5	0.1	96.6	32.5	32.5	1.8	96.2	141.8
Queue Length 50th (ft)	~741	214	0	~386	192	195	0	82	~214
Queue Length 95th (ft)	#969	280	m0	#464	292	296	12	#189	#351
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	306	2386	1615	1629	583	591	634	144	703
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.25	0.63	0.14	1.12	0.60	0.60	0.13	0.88	1.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	559	52	427	1764	166	594
v/c Ratio	0.35	0.07	1.31	0.73	0.20	0.81
Control Delay	15.0	4.9	188.6	10.5	27.0	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	4.9	188.6	10.5	27.0	17.4
Queue Length 50th (ft)	66	3	~278	230	36	53
Queue Length 95th (ft)	m72	m4	#450	288	62	#245
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1737	804	327	2549	811	737
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.06	1.31	0.69	0.20	0.81

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	498	498	450	583	1260	1298	631
v/c Ratio	0.97	1.01	0.87	1.14	0.60	1.44	0.78
Control Delay	65.7	75.6	43.0	91.1	25.6	232.9	13.1
Queue Delay	0.0	0.0	0.0	0.0	28.3	0.0	0.0
Total Delay	65.7	75.6	43.0	91.1	53.9	232.9	13.1
Queue Length 50th (ft)	292	~307	210	~391	406	~532	40
Queue Length 95th (ft)	#503	#537	#395	m#377	m390	#663	177
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)	400		400	285			
Base Capacity (vph)	514	493	519	511	2105	902	810
Starvation Cap Reductn	0	0	0	0	902	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	1.01	0.87	1.14	1.05	1.44	0.78

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	492	757	1275	913	483	1682
v/c Ratio	1.12	1.82	0.98	0.96	1.20	0.74
Control Delay	114.5	400.6	49.8	32.5	137.5	6.7
Queue Delay	4.5	4.4	0.0	0.0	0.0	4.3
Total Delay	119.0	405.0	49.8	32.5	137.5	11.1
Queue Length 50th (ft)	~343	~685	371	208	~322	111
Queue Length 95th (ft)	#543	#920	#521	#516	m217	m93
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	438	417	1303	949	401	2266
Starvation Cap Reductn	0	0	0	0	0	501
Spillback Cap Reductn	152	139	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.72	2.72	0.98	0.96	1.20	0.95

Intersection Summary

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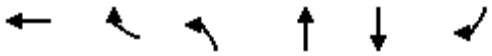
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	371	747	364	1559	958	761
v/c Ratio	0.59	1.22	0.89	0.78	0.92	0.82
Control Delay	36.3	146.5	60.3	22.0	57.3	14.2
Queue Delay	0.0	0.0	0.0	25.6	0.0	0.0
Total Delay	36.3	146.5	60.3	47.6	57.3	14.2
Queue Length 50th (ft)	233	~679	302	381	387	53
Queue Length 95th (ft)	336	#920	m233	m293	#546	#265
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	634	611	457	1991	1036	929
Starvation Cap Reductn	0	0	0	499	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.59	1.22	0.80	1.04	0.92	0.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	849	295	1565	475	853
v/c Ratio	1.30	0.45	1.29	1.63	0.43
Control Delay	181.1	17.4	168.8	331.5	17.0
Queue Delay	0.1	0.0	0.0	0.0	0.3
Total Delay	181.3	17.4	168.8	331.5	17.4
Queue Length 50th (ft)	~844	88	~797	~549	162
Queue Length 95th (ft)	#1089	168	#938	m#656	m188
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	651	661	1215	291	1961
Starvation Cap Reductn	0	0	0	0	526
Spillback Cap Reductn	14	0	5	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.33	0.45	1.29	1.63	0.59

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	749	647	874	1747	978
v/c Ratio	1.62	1.32	1.42	0.55	0.65
Control Delay	316.3	184.3	225.7	25.2	29.8
Queue Delay	0.0	0.0	0.0	2.4	0.0
Total Delay	316.3	184.3	225.7	27.6	29.8
Queue Length 50th (ft)	~619	~436	~651	351	131
Queue Length 95th (ft)	#836	#649	m#526	m256	153
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	462	490	614	3181	1957
Starvation Cap Reductn	0	0	0	1257	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.62	1.32	1.42	0.91	0.50

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	509	664	2900	262	1172
v/c Ratio	0.81	1.08	1.41	0.90	0.43
Control Delay	38.9	88.0	213.6	39.2	26.6
Queue Delay	1.0	0.0	0.0	0.0	0.0
Total Delay	39.9	88.0	213.6	39.2	26.6
Queue Length 50th (ft)	260	~395	~647	163	228
Queue Length 95th (ft)	#426	#609	#723	m170	m204
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	627	613	2059	300	2720
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	25	0	2	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.85	1.08	1.41	0.87	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1564	554	782	240	383	768	754
v/c Ratio	0.90	0.34	0.64	0.15	0.47	1.07	1.02
Control Delay	27.6	0.6	16.0	0.2	13.2	74.4	56.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.6	0.6	16.0	0.2	13.2	74.4	56.6
Queue Length 50th (ft)	192	0	88	0	92	~335	~267
Queue Length 95th (ft)	#281	0	193	m0	160	#549	#502
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1746	1615	1215	1615	811	715	740
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.34	0.64	0.15	0.47	1.07	1.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1940	770	1703	1012	291	291	513
v/c Ratio	0.56	0.58	0.49	0.72	0.74	0.74	0.76
Control Delay	11.1	2.7	14.3	10.5	50.1	50.1	44.0
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Total Delay	11.1	2.7	14.3	10.8	50.1	50.1	44.0
Queue Length 50th (ft)	238	0	289	270	202	202	180
Queue Length 95th (ft)	354	48	392	540	273	273	221
Internal Link Dist (ft)	1166		735			976	
Turn Bay Length (ft)		250					250
Base Capacity (vph)	3475	1322	3475	1415	553	553	929
Starvation Cap Reductn	0	0	0	68	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.58	0.49	0.75	0.53	0.53	0.55

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	718	1272	484	682	503	234
v/c Ratio	0.35	1.15	1.19	0.22	0.76	0.53
Control Delay	8.7	89.3	134.5	5.4	26.8	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.7	89.3	134.5	5.4	26.8	8.8
Queue Length 50th (ft)	33	~568	~112	34	67	0
Queue Length 95th (ft)	m48	m#717	#194	48	#129	57
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2048	1104	408	3172	666	440
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	1.15	1.19	0.22	0.76	0.53

Intersection Summary

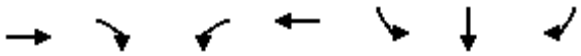
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	1592	878	1985	469	336	337	589
v/c Ratio	0.51	0.66	0.63	0.41	0.67	0.67	0.70
Control Delay	18.3	9.1	16.3	2.5	39.7	39.8	36.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.3	9.1	16.3	2.5	39.7	39.8	36.7
Queue Length 50th (ft)	220	90	302	2	220	221	202
Queue Length 95th (ft)	406	364	454	54	277	278	230
Internal Link Dist (ft)	735		1069			1143	
Turn Bay Length (ft)				250			250
Base Capacity (vph)	3137	1323	3137	1158	693	693	1149
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.66	0.63	0.41	0.48	0.49	0.51

Intersection Summary



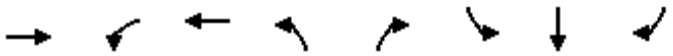
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1941	685	366	1728	561	562	577
v/c Ratio	1.06	0.73	0.84	0.64	0.81	0.81	0.83
Control Delay	73.4	10.6	47.1	25.7	36.7	36.7	33.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.4	10.6	47.1	25.7	36.7	36.7	33.7
Queue Length 50th (ft)	~527	52	128	288	312	312	269
Queue Length 95th (ft)	#624	198	m97	m209	460	460	419
Internal Link Dist (ft)	1176			824		1139	
Turn Bay Length (ft)			350				570
Base Capacity (vph)	1825	938	438	2681	734	735	737
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.73	0.84	0.64	0.76	0.76	0.78

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1098	177	321	21	176	574	587	39
v/c Ratio	1.28	0.88	0.22	0.19	0.69	0.90	0.91	0.06
Control Delay	162.2	66.1	26.1	39.7	23.7	42.3	44.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	162.2	66.1	26.1	39.7	23.7	42.3	44.0	0.2
Queue Length 50th (ft)	~374	91	76	10	6	271	278	0
Queue Length 95th (ft)	#500	m#155	m103	32	#87	#468	#482	0
Internal Link Dist (ft)	980		1139				1358	
Turn Bay Length (ft)		200				1000		255
Base Capacity (vph)	860	201	1470	112	254	664	669	713
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.28	0.88	0.22	0.19	0.69	0.86	0.88	0.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	488	2076	499	2486	267	371	265	201	987
v/c Ratio	1.28	0.82	0.31	1.55	0.62	0.83	0.52	1.18	1.28
Control Delay	174.8	26.8	0.2	280.5	38.8	51.5	19.0	165.2	155.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	174.8	26.8	0.2	280.5	38.8	51.5	19.0	165.2	155.5
Queue Length 50th (ft)	~426	349	0	~654	156	232	70	~154	~262
Queue Length 95th (ft)	m#524	m348	m0	#731	231	330	141	#295	#402
Internal Link Dist (ft)		824		2307		1013			
Turn Bay Length (ft)	345						815		100
Base Capacity (vph)	380	2545	1615	1602	517	530	577	171	769
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.28	0.82	0.31	1.55	0.52	0.70	0.46	1.18	1.28

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1114	7	59	1767	197	1379
v/c Ratio	0.59	0.01	0.35	0.80	0.20	1.89
Control Delay	14.7	9.8	38.7	14.9	23.0	425.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.7	9.8	38.7	14.9	23.0	425.5
Queue Length 50th (ft)	168	1	28	294	39	~951
Queue Length 95th (ft)	m163	m1	62	380	65	#1204
Internal Link Dist (ft)	1139			2865	1665	
Turn Bay Length (ft)		100	300			420
Base Capacity (vph)	1878	842	349	2301	1004	729
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.01	0.17	0.77	0.20	1.89

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	462	455	418	633	1391	1298	623
v/c Ratio	0.92	0.94	0.83	1.21	0.65	1.44	0.75
Control Delay	56.8	60.9	39.3	121.3	27.5	232.9	10.9
Queue Delay	0.0	0.0	0.0	0.0	48.9	0.0	0.0
Total Delay	56.8	60.9	39.3	121.3	76.4	232.9	10.9
Queue Length 50th (ft)	263	265	187	~454	455	~532	26
Queue Length 95th (ft)	#452	#471	#353	m#381	m403	#663	147
Internal Link Dist (ft)		1410			396	1540	
Turn Bay Length (ft)				285			400
Base Capacity (vph)	514	493	513	524	2131	902	827
Starvation Cap Reductn	0	0	0	0	898	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.92	0.81	1.21	1.13	1.44	0.75

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

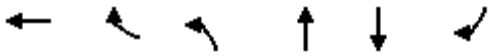
Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	463	604	1467	809	467	1600
v/c Ratio	1.06	1.43	1.13	0.85	1.16	0.71
Control Delay	93.4	235.0	96.0	16.9	121.6	5.9
Queue Delay	30.9	13.6	0.0	0.0	0.0	2.4
Total Delay	124.3	248.6	96.0	16.9	121.6	8.4
Queue Length 50th (ft)	~306	~482	~512	102	~302	91
Queue Length 95th (ft)	#502	#701	#646	#381	m215	m86
Internal Link Dist (ft)		1071	1048			396
Turn Bay Length (ft)	900					
Base Capacity (vph)	438	422	1303	952	401	2266
Starvation Cap Reductn	0	0	0	0	0	513
Spillback Cap Reductn	294	268	14	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	3.22	3.92	1.14	0.85	1.16	0.91

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	385	431	307	1143	1523	836
v/c Ratio	0.76	0.85	0.84	0.51	1.11	0.94
Control Delay	48.4	49.7	56.5	14.7	95.8	37.0
Queue Delay	0.0	0.0	0.0	0.7	0.0	0.0
Total Delay	48.4	49.7	56.5	15.4	95.8	37.0
Queue Length 50th (ft)	268	267	255	247	~731	344
Queue Length 95th (ft)	351	366	m253	m243	#1033	#703
Internal Link Dist (ft)	909			419	836	
Turn Bay Length (ft)		250	150			
Base Capacity (vph)	634	612	457	2241	1373	887
Starvation Cap Reductn	0	0	0	667	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.70	0.67	0.73	1.11	0.94

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	552	453	1403	639	1331
v/c Ratio	0.90	0.77	1.13	2.03	0.65
Control Delay	57.4	39.2	103.0	495.7	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.8
Total Delay	57.4	39.2	103.0	495.7	19.1
Queue Length 50th (ft)	391	260	~643	~834	202
Queue Length 95th (ft)	#585	391	#783	m#809	m240
Internal Link Dist (ft)	926		1043		419
Turn Bay Length (ft)		315		200	
Base Capacity (vph)	649	624	1244	315	2040
Starvation Cap Reductn	0	0	0	0	376
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.85	0.73	1.13	2.03	0.80

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	604	332	530	747	2396
v/c Ratio	1.31	0.58	1.10	0.23	1.22
Control Delay	183.9	14.4	105.1	21.4	134.7
Queue Delay	0.0	0.0	0.0	0.0	0.1
Total Delay	183.9	14.4	105.1	21.4	134.8
Queue Length 50th (ft)	~445	50	~322	141	~484
Queue Length 95th (ft)	#649	135	m#355	m148	#562
Internal Link Dist (ft)	1312			387	836
Turn Bay Length (ft)		250			
Base Capacity (vph)	462	577	481	3181	1957
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	98
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.31	0.58	1.10	0.23	1.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	140	716	2008	485	1935
v/c Ratio	0.22	1.17	1.31dr	1.62	0.71
Control Delay	22.1	118.9	43.9	301.5	25.7
Queue Delay	0.0	0.0	0.0	0.0	16.3
Total Delay	22.1	118.9	43.9	301.5	42.0
Queue Length 50th (ft)	56	~459	297	~418	411
Queue Length 95th (ft)	100	#677	#391	m#300	m330
Internal Link Dist (ft)	1366		3845		387
Turn Bay Length (ft)					
Base Capacity (vph)	625	613	2047	300	2720
Starvation Cap Reductn	0	0	0	0	823
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.22	1.17	0.98	1.62	1.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1922	639	910	544	484	713	686
v/c Ratio	0.97	0.40	0.66	0.34	0.58	0.95	0.88
Control Delay	33.6	0.7	15.1	0.7	14.7	39.0	28.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.6	0.7	15.1	0.7	14.7	39.0	28.9
Queue Length 50th (ft)	240	0	99	0	123	230	198
Queue Length 95th (ft)	#353	0	215	m6	210	#479	#422
Internal Link Dist (ft)	2023		797			1504	
Turn Bay Length (ft)					620		470
Base Capacity (vph)	1988	1615	1383	1615	828	752	777
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.40	0.66	0.34	0.58	0.95	0.88

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1869	820	1838	854	260	262	517
v/c Ratio	0.53	0.60	0.52	0.62	0.68	0.68	0.79
Control Delay	10.3	2.7	11.5	8.1	47.8	47.9	46.2
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Total Delay	10.3	2.7	11.5	8.3	47.8	47.9	46.2
Queue Length 50th (ft)	223	0	350	332	176	177	184
Queue Length 95th (ft)	314	45	435	446	250	252	232
Internal Link Dist (ft)	1166		735			975	
Turn Bay Length (ft)		250					250
Base Capacity (vph)	3510	1358	3510	1368	491	492	836
Starvation Cap Reductn	0	0	0	84	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.60	0.52	0.67	0.53	0.53	0.62

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	948	1563	387	1079	534	176
v/c Ratio	0.38	1.29	0.95	0.31	0.73	0.41
Control Delay	6.9	148.4	63.5	4.5	26.4	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.9	148.4	63.5	4.5	26.4	7.2
Queue Length 50th (ft)	45	~764	73	48	81	0
Queue Length 95th (ft)	m52	m#860	#148	64	#131	47
Internal Link Dist (ft)	797			1857	1852	
Turn Bay Length (ft)			260		590	450
Base Capacity (vph)	2507	1214	408	3458	736	434
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	1.29	0.95	0.31	0.73	0.41

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	1801	566	2040	460	312	315	910
v/c Ratio	0.67	0.51	0.76	0.44	0.48	0.48	0.84
Control Delay	24.2	7.0	23.7	3.3	28.1	28.2	38.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.2	7.0	23.7	3.3	28.1	28.2	38.1
Queue Length 50th (ft)	316	22	423	7	166	167	306
Queue Length 95th (ft)	471	171	488	60	249	252	398
Internal Link Dist (ft)	735		1069			1151	
Turn Bay Length (ft)				250			250
Base Capacity (vph)	2697	1111	2697	1038	693	695	1149
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.51	0.76	0.44	0.45	0.45	0.79

Intersection Summary

APPENDIX 9.7:

HORIZON YEAR (2040) WITHOUT PROJECT CONDITIONS FREEWAY FACILITY ANALYSIS WORKSHEETS

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3364	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	987
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.41
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3364	1356
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	8.00	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.926	0.901
Flow Rate (vi),pc/h	3949	1636
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.41	0.39

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	10.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.445
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	856
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	57.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	2237	Ramp Junction Speed (S), mi/h	64.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	15.3
Level of Service (LOS)	A		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1031	1135
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.943
Flow Rate (vi),pc/h	1154	1308
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.51	0.69

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	20.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.341
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	60.5
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	1154	Ramp Junction Speed (S), mi/h	60.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	2462	Average Density (D), pc/mi/ln	20.3
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3409	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1946
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.81
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.6
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5325	Heavy Vehicle Adjustment Factor (f_{HV})	0.787
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1839
Total Trucks, %	27.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	65.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4311	1014
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	30.00	14.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.769	0.877
Flow Rate (vi),pc/h	6093	1257
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	1.02	0.60

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	34.8
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2315
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	48.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	63.4
Flow in Lanes 1 and 2 (v12), pc/h	3778	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	5035	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1901	560
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	28.00	14.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.781	0.877
Flow Rate (vi),pc/h	2646	694
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.37	0.17

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	16.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.360
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1074
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.9
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	76.5
Flow in Lanes 1 and 2 (v12), pc/h	1572	Ramp Junction Speed (S), mi/h	65.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	13.4
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1901	Heavy Vehicle Adjustment Factor (f_{HV})	0.781
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	882
Total Trucks, %	28.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.37
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	12.6
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7532	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2108
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7532	1102
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	14.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.877
Flow Rate (vi),pc/h	8431	1366
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	1.02	0.65

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	35.2
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2530
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	51.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.047	Outer Lanes Freeway Speed (SO), mi/h	62.1
Flow in Lanes 1 and 2 (v12), pc/h	3372	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	4738	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Opening Year Cumulative (2026) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	8762	9548	0.92	58.0	37.8	E

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.855	8762	1259	9600	2100	0.91	0.60	64.5	58.5	34.0	38.9	E

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.980	7503	9548	0.79	64.0	29.3	D

Segment 4: Merge

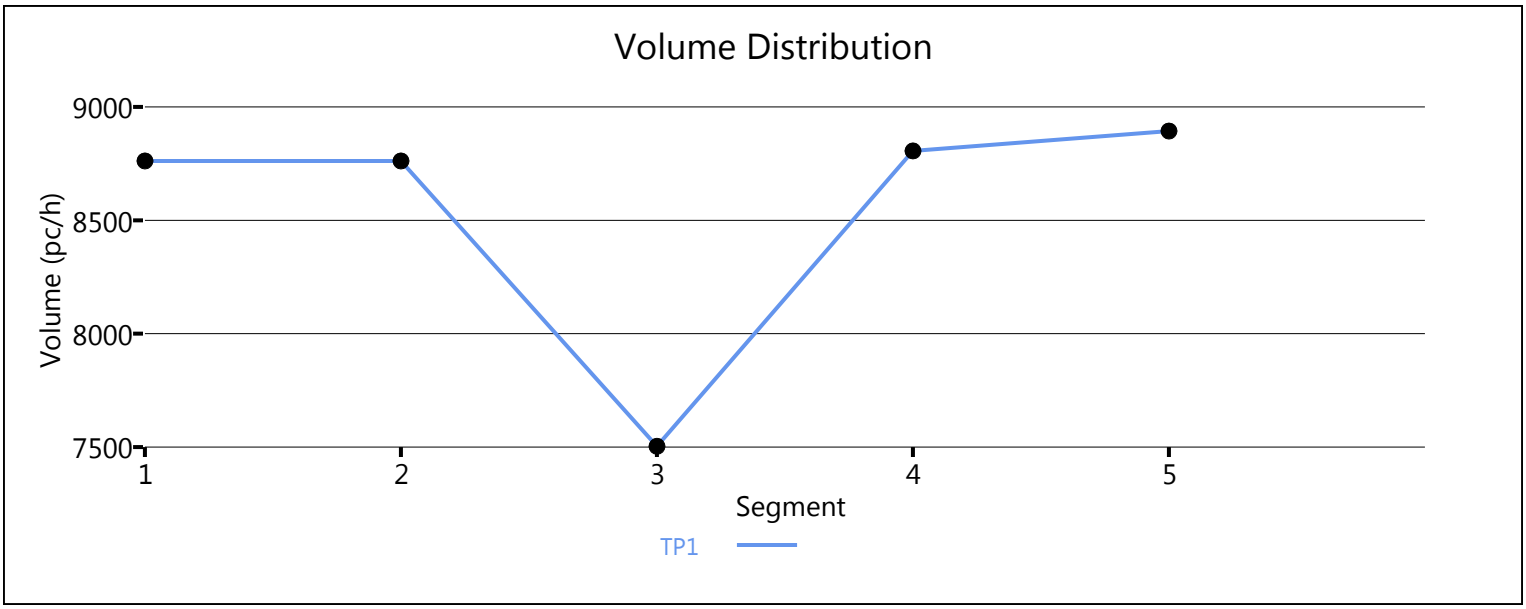
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.980	0.855	8806	1303	9600	2100	0.92	0.62	59.5	55.7	37.0	31.7	D

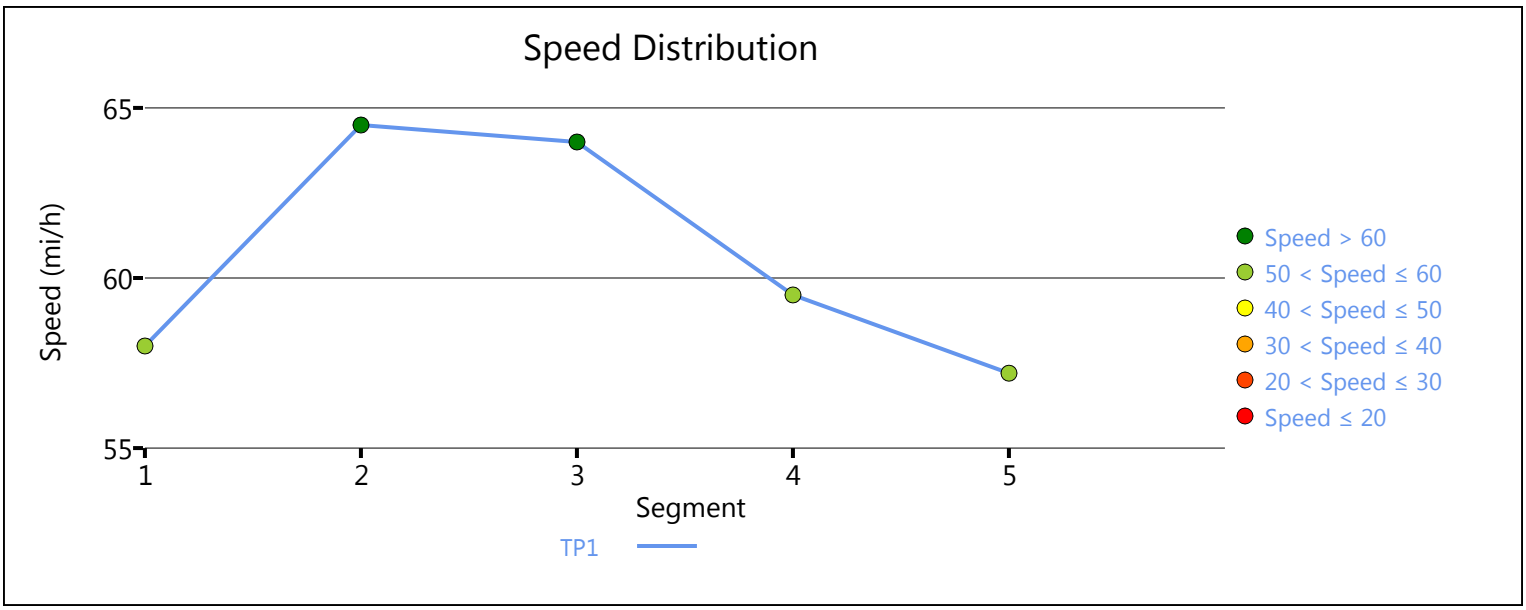
Segment 5: Basic

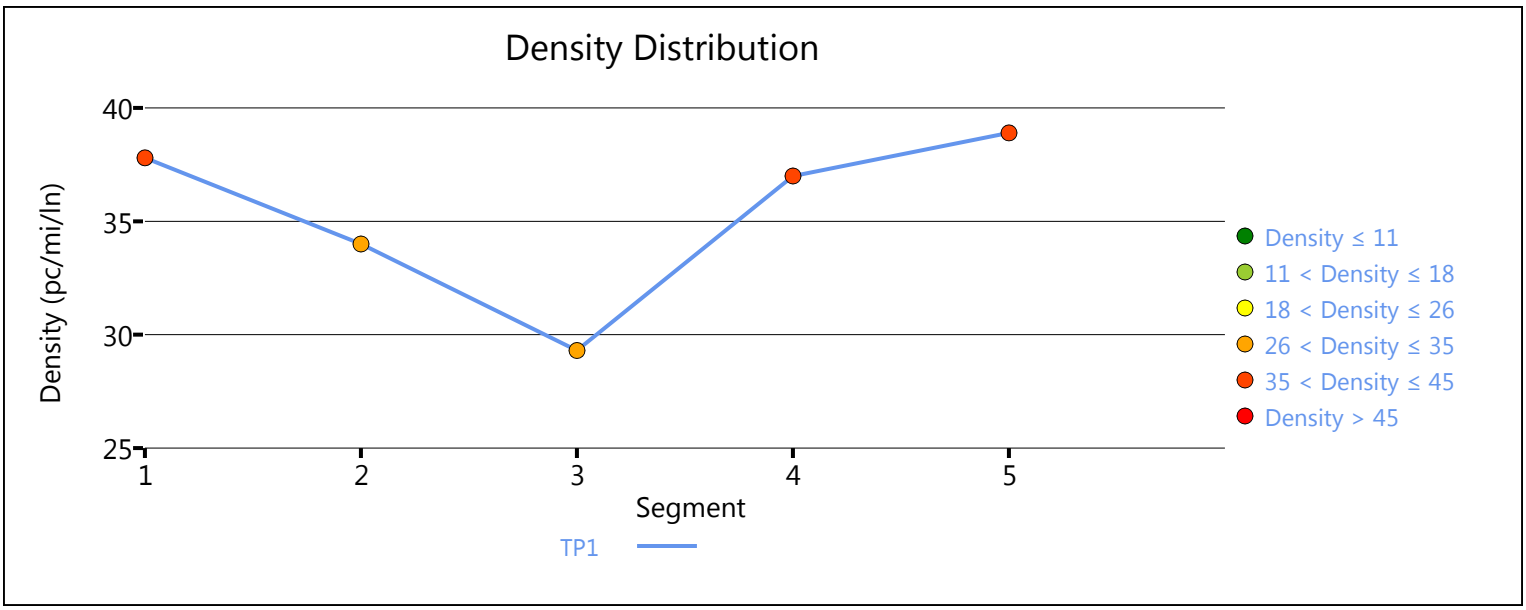
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.952	8894	9548	0.93	57.2	38.9	E

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	59.9	35.7	34.4	1.9	E

Facility Overall Results			
Space Mean Speed, mi/h	59.9	Density, veh/mi/ln	34.4
Average Travel Time, min	1.9	Density, pc/mi/ln	35.7







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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7934	1159
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	13.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.885
Flow Rate (vi),pc/h	8881	1423
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.74	0.68

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	37.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.426
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1602
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	74.4
Flow in Lanes 1 and 2 (v12), pc/h	3900	Ramp Junction Speed (S), mi/h	64.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	27.5
Level of Service (LOS)	E		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7934	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1776
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.74
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6708	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1968
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6708	1018
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	8.00	13.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.926	0.885
Flow Rate (vi),pc/h	7874	1250
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.66	0.60

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	29.4
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.411
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1424
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	75.1
Flow in Lanes 1 and 2 (v12), pc/h	3451	Ramp Junction Speed (S), mi/h	65.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	24.2
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.917	8320	9548	0.87	60.4	34.4	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.917	0.901	8320	1223	9600	2100	0.87	0.58	64.7	58.6	32.1	36.6	E

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.926	7049	9548	0.74	65.5	26.9	D

Segment 4: Merge

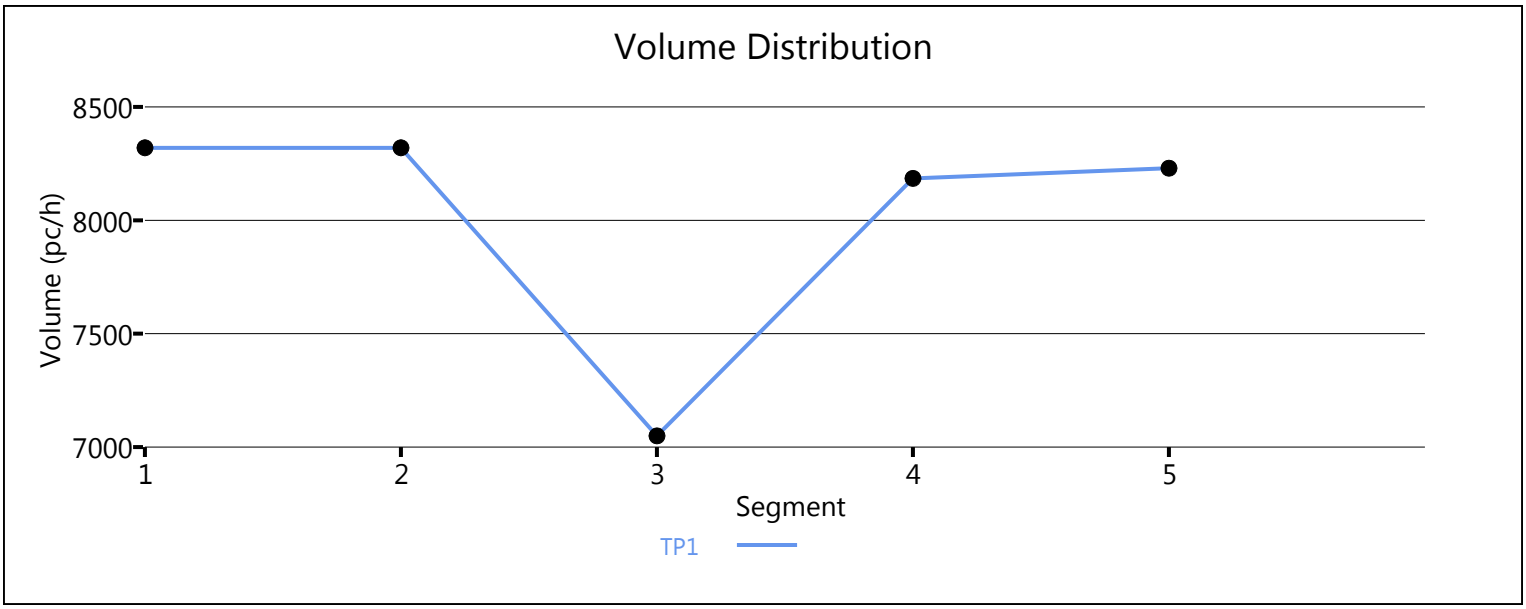
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.926	0.840	8185	1136	9600	2100	0.85	0.54	61.2	58.2	33.4	28.7	D

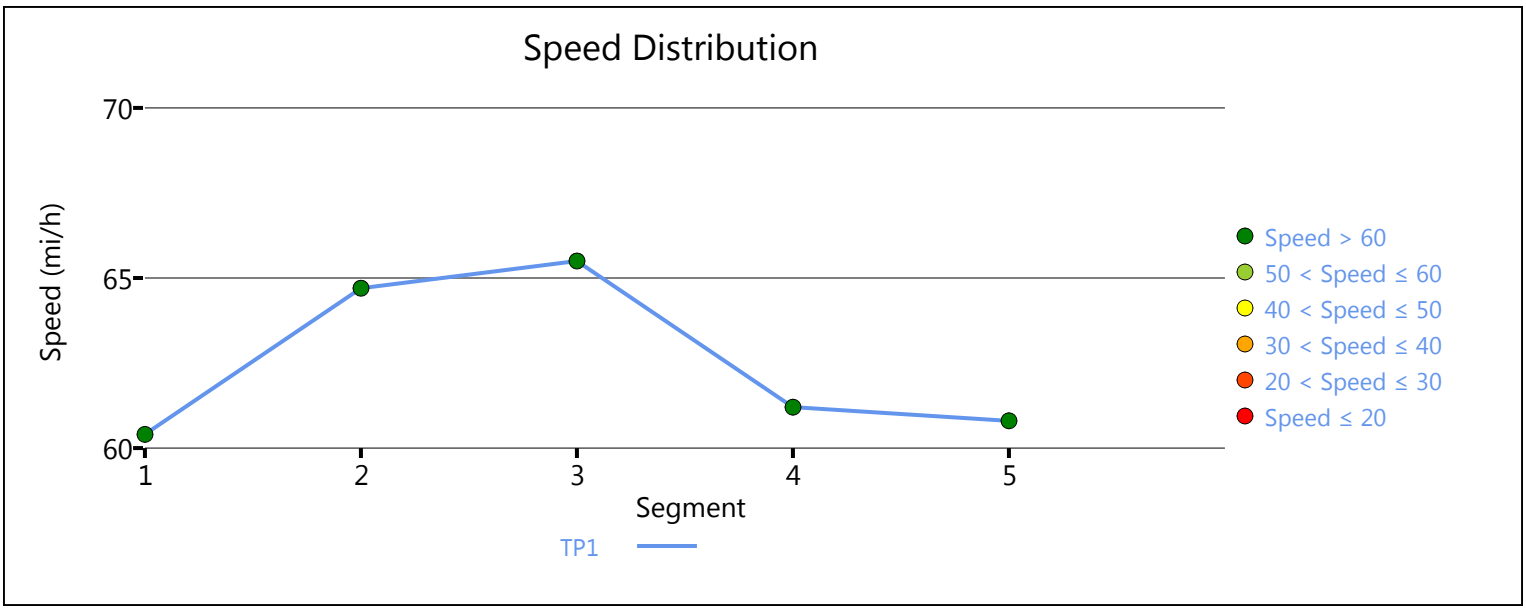
Segment 5: Basic

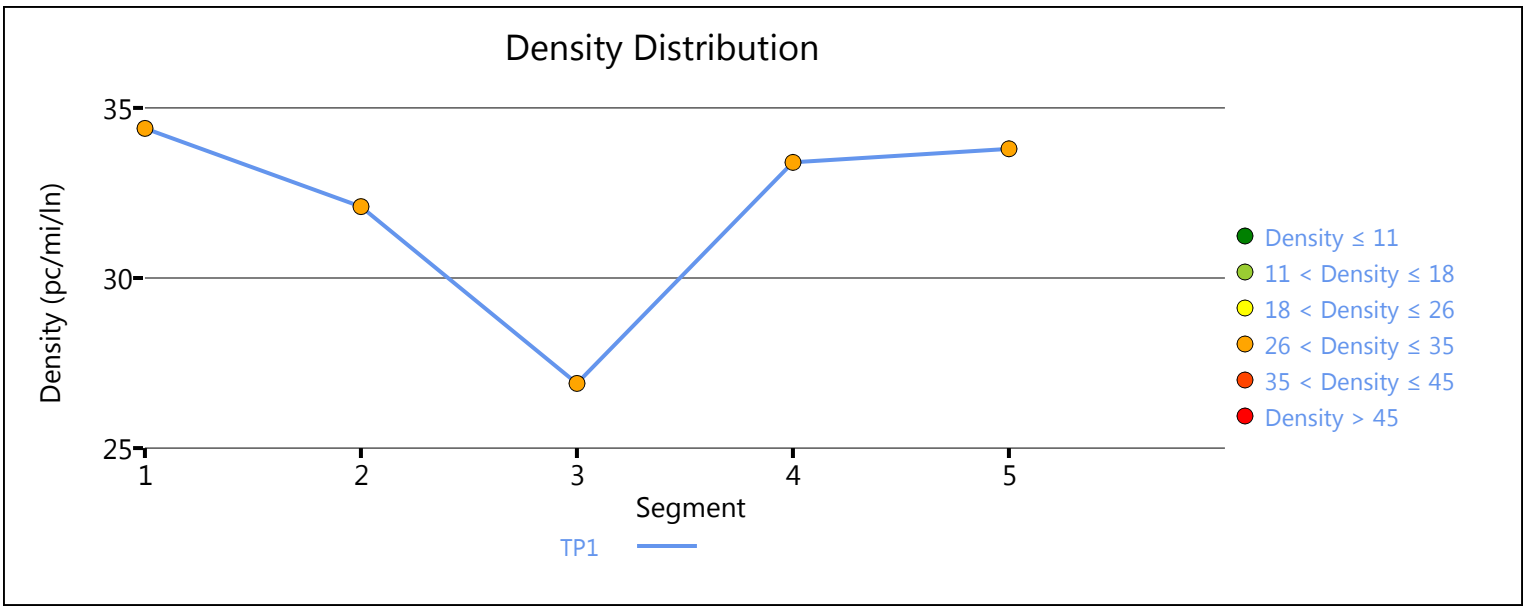
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.909	8230	9548	0.86	60.8	33.8	D

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	62.3	32.0	29.4	1.7	D

Facility Overall Results			
Space Mean Speed, mi/h	62.3	Density, veh/mi/ln	29.4
Average Travel Time, min	1.7	Density, pc/mi/ln	32.0







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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	5539	1005
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	10.00	13.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.909	0.885
Flow Rate (vi),pc/h	6623	1234
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.82	0.59

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	28.6
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.415
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1987
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	58.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.064	Outer Lanes Freeway Speed (SO), mi/h	64.6
Flow in Lanes 1 and 2 (v12), pc/h	2649	Ramp Junction Speed (S), mi/h	61.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	3883	Average Density (D), pc/mi/ln	32.0
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6544	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1956
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6518	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1948
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.81
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6518	1542
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	10.00	15.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.909	0.870
Flow Rate (vi),pc/h	7794	1927
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.81	0.92

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	39.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.471
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1655
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	56.8
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	74.2
Flow in Lanes 1 and 2 (v12), pc/h	4485	Ramp Junction Speed (S), mi/h	63.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	30.9
Level of Service (LOS)	E		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	5629	693
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	9.00	4.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.917	0.962
Flow Rate (vi),pc/h	6672	783
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	1.04	0.37

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	36.2
Distance to Upstream Ramp (LUP), ft	1000	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2622
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	50.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	61.5
Flow in Lanes 1 and 2 (v12), pc/h	4050	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	4833	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6322	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2474
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.03
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5976	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1338
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.56
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 NB, On-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4418	1558
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.926
Flow Rate (vi),pc/h	4851	1829
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.93	0.96

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	334.5	Density in Ramp Influence Area (DR), pc/mi/ln	40.8
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.722
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2047
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	49.8
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	64.4
Flow in Lanes 1 and 2 (v12), pc/h	2804	Ramp Junction Speed (S), mi/h	53.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	4633	Average Density (D), pc/mi/ln	41.6
Level of Service (LOS)	E		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4902	1099
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.980
Flow Rate (vi),pc/h	5437	1219
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.76	0.58

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	31.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.408
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1822
Distance to Downstream Ramp (LDOWN), ft	1000	Off-Ramp Influenece Area Speed (SR), mi/h	58.6
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.568	Outer Lanes Freeway Speed (SO), mi/h	73.6
Flow in Lanes 1 and 2 (v12), pc/h	3615	Ramp Junction Speed (S), mi/h	62.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	28.8
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4902	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1812
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	65.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.6
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5199	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1484
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.62
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	5199	1530
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.926
Flow Rate (vi),pc/h	5936	1796
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.62	0.43

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	15.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.460
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1532
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	57.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	74.7
Flow in Lanes 1 and 2 (v12), pc/h	2872	Ramp Junction Speed (S), mi/h	65.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	22.8
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	435	1167
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	9.00	4.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.917	0.962
Flow Rate (vi),pc/h	516	1319
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.38	0.69

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	16.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.320
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	516	Ramp Junction Speed (S), mi/h	61.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	1835	Average Density (D), pc/mi/ln	15.0
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2767	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1563
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.65
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4356	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1255
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.52
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2973	1383
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	7.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.943
Flow Rate (vi),pc/h	3456	1594
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.70	0.76

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	24.6
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.350
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1313
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	60.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	67.1
Flow in Lanes 1 and 2 (v12), pc/h	2143	Ramp Junction Speed (S), mi/h	61.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	3737	Average Density (D), pc/mi/ln	27.2
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4084	1395
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	12.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.893	0.952
Flow Rate (vi),pc/h	4971	1593
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.69	0.38

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	29.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.441
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1858
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	57.7
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	73.4
Flow in Lanes 1 and 2 (v12), pc/h	3113	Ramp Junction Speed (S), mi/h	62.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	26.4
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4084	Heavy Vehicle Adjustment Factor (f_{HV})	0.893
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1657
Total Trucks, %	12.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.69
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8362	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2340
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.98
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	42.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7319	1043
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	9.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.917
Flow Rate (vi),pc/h	8193	1236
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.98	0.59

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	33.5
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.581
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2458
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	53.7
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.063	Outer Lanes Freeway Speed (SO), mi/h	62.5
Flow in Lanes 1 and 2 (v12), pc/h	3277	Ramp Junction Speed (S), mi/h	58.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	4513	Average Density (D), pc/mi/ln	40.6
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	9396	9548	0.98	54.1	43.4	E

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.870	8931	961	9600	2100	0.98	0.46	45.5	59.2	49.1	39.8	F

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	7740	9548	0.88	29.8	64.9	F

Segment 4: Merge

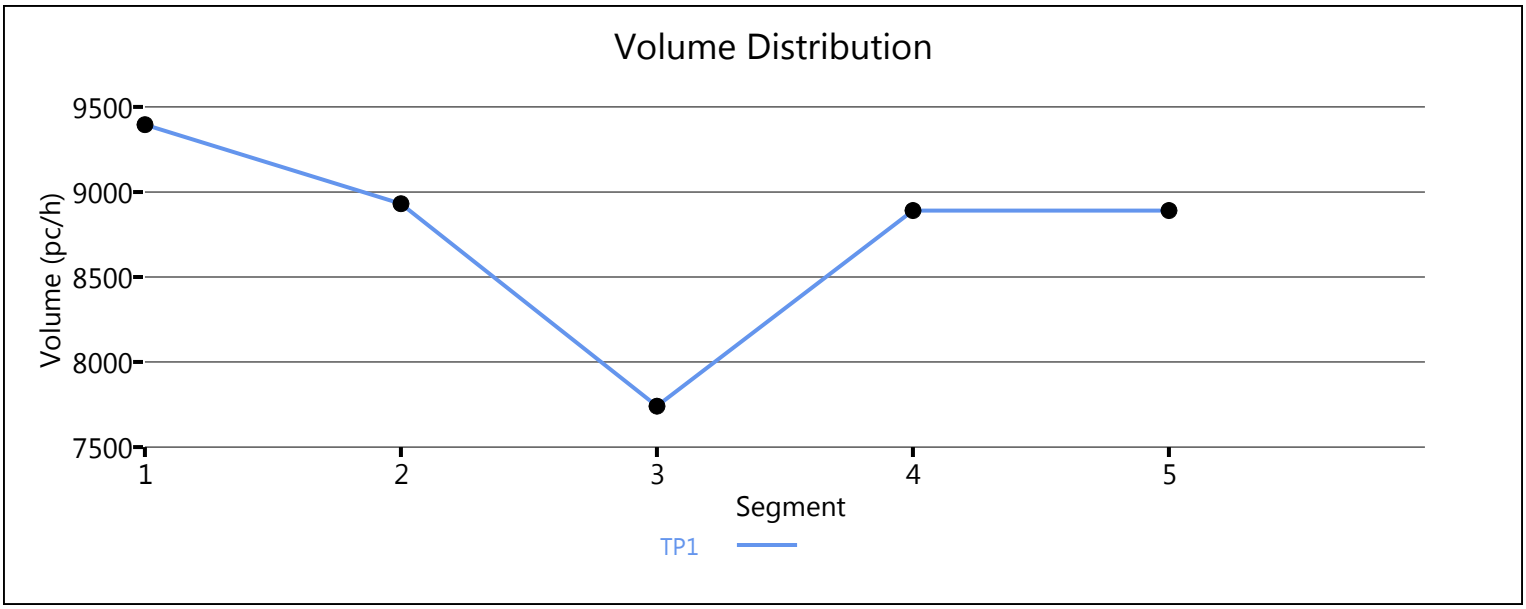
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.971	0.926	8891	1237	9600	2100	1.01	0.59	40.1	52.7	55.4	34.1	F

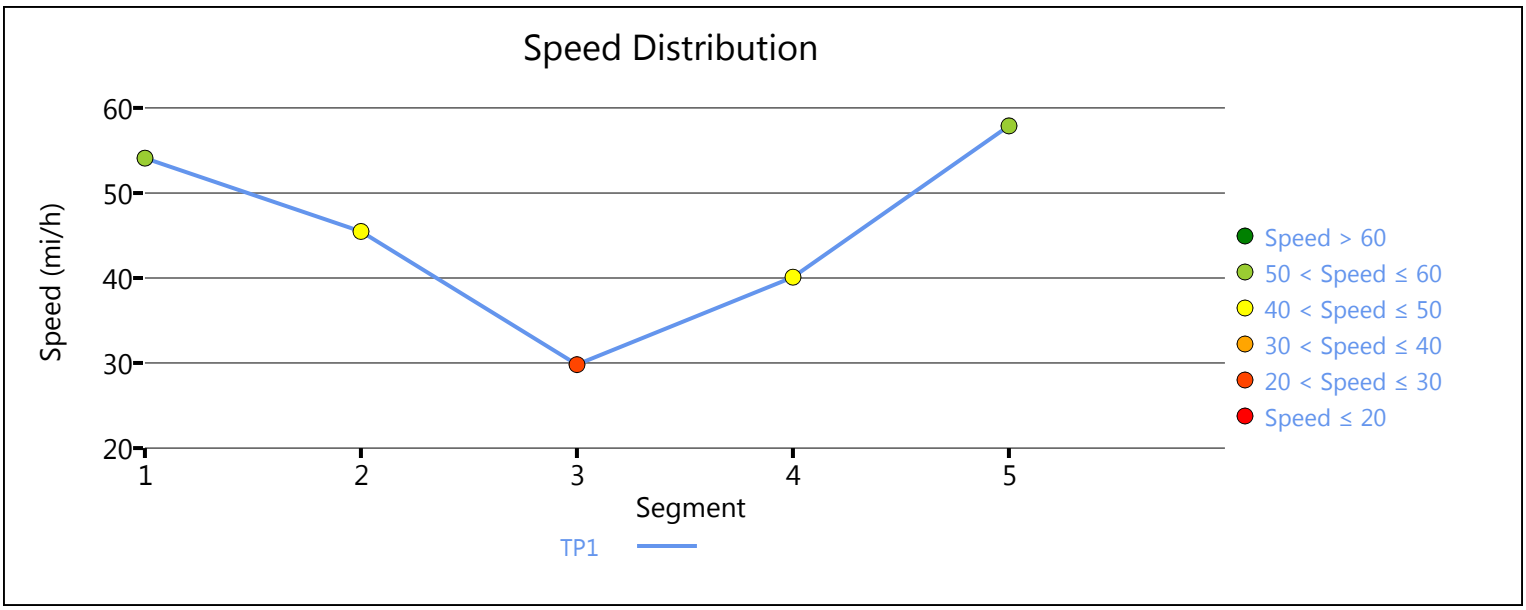
Segment 5: Basic

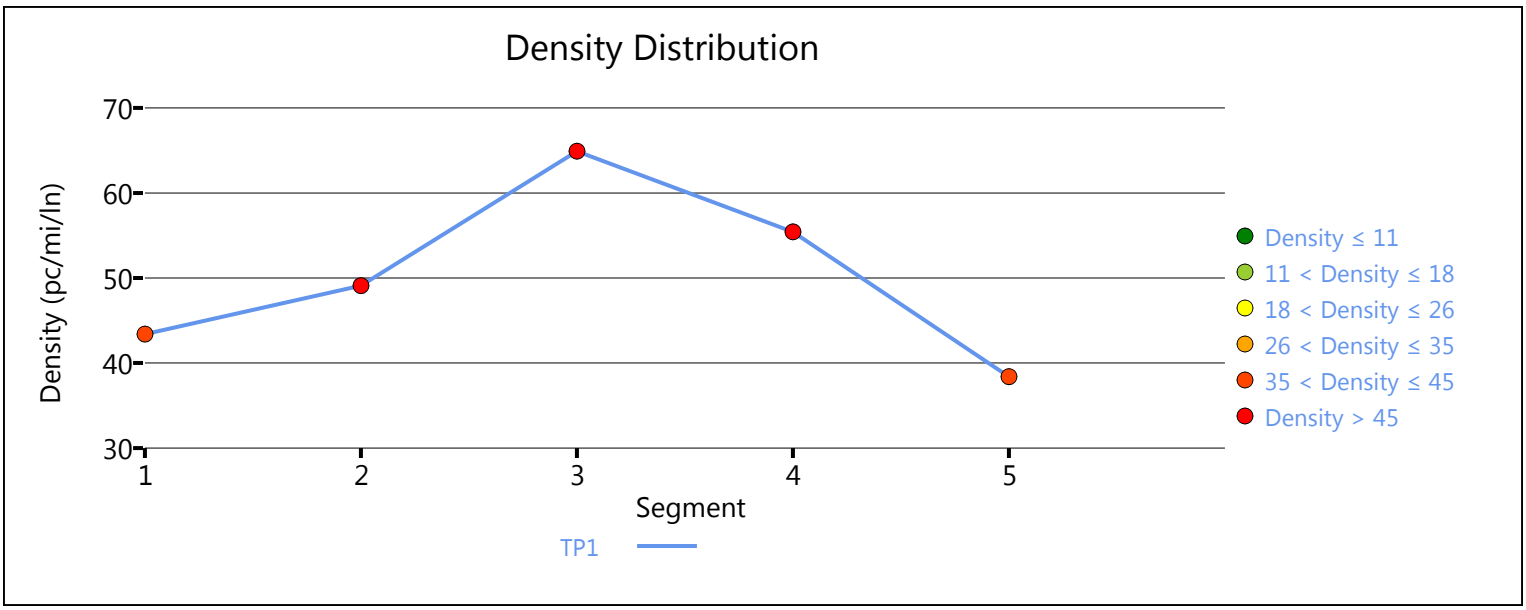
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	8891	9548	1.02	57.9	38.4	F

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	42.8	50.7	49.0	2.6	F

Facility Overall Results			
Space Mean Speed, mi/h	42.8	Density, veh/mi/ln	49.0
Average Travel Time, min	2.6	Density, pc/mi/ln	50.7







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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7565	856
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.909
Flow Rate (vi),pc/h	8391	1024
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.70	0.49

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	34.4
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.390
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1604
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	74.4
Flow in Lanes 1 and 2 (v12), pc/h	3504	Ramp Junction Speed (S), mi/h	65.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	25.6
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8421	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1868
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	64.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8993	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2517
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.05
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8993	988
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	13.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.885
Flow Rate (vi),pc/h	10067	1213
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.84	0.58

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	35.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.407
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1929
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.6
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	73.2
Flow in Lanes 1 and 2 (v12), pc/h	4196	Ramp Junction Speed (S), mi/h	64.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	31.1
Level of Service (LOS)	E		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	10366	9548	1.09	53.0	45.0	F

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.971	0.862	9130	1159	9600	2100	1.08	0.55	44.3	58.7	51.5	44.0	F

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.980	7773	9548	0.97	29.5	65.9	F

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.980	0.909	8891	1167	9600	2100	1.09	0.56	40.1	47.4	55.4	36.9	F

Segment 5: Basic

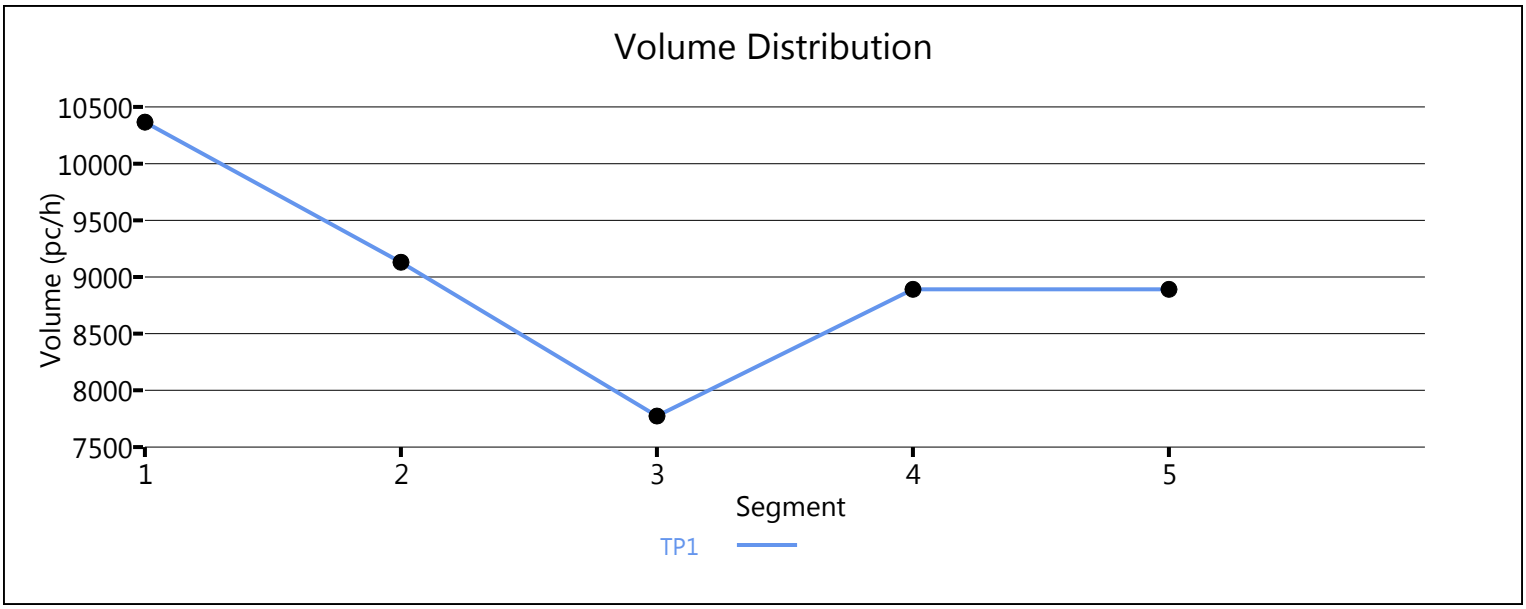
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	8891	9548	1.09	57.9	38.4	F

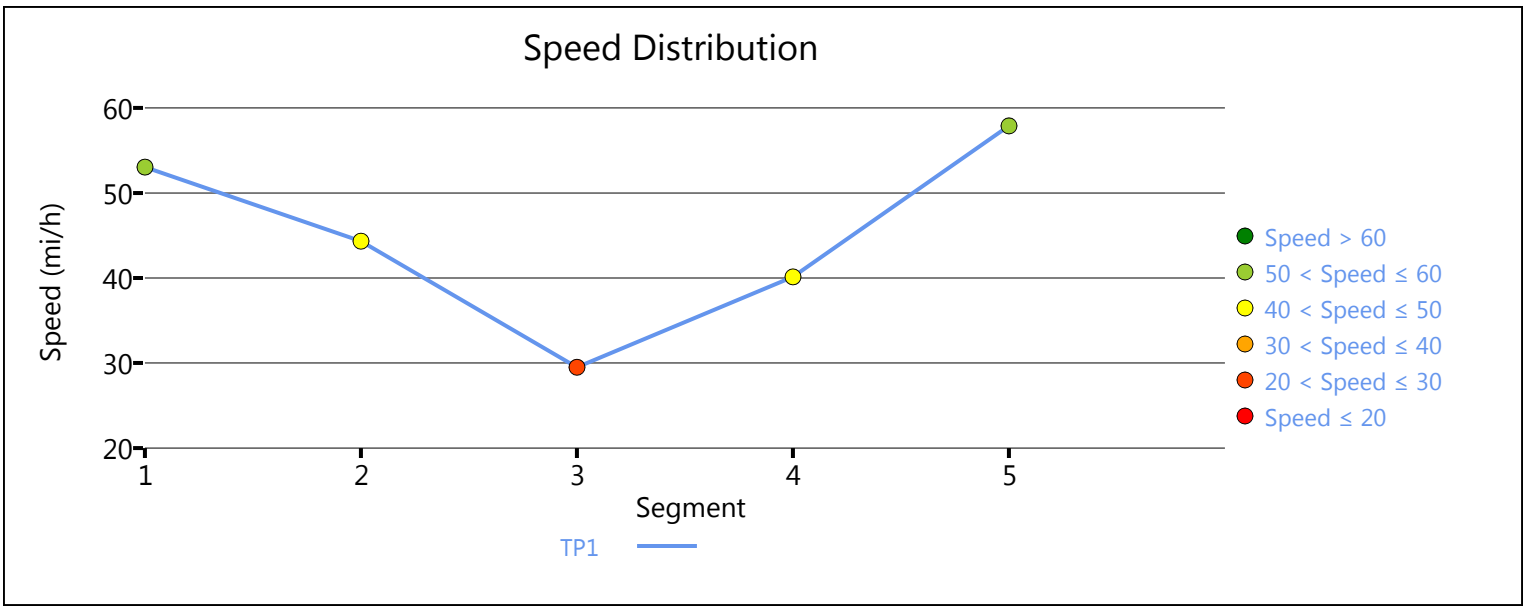
Facility Time Period Results

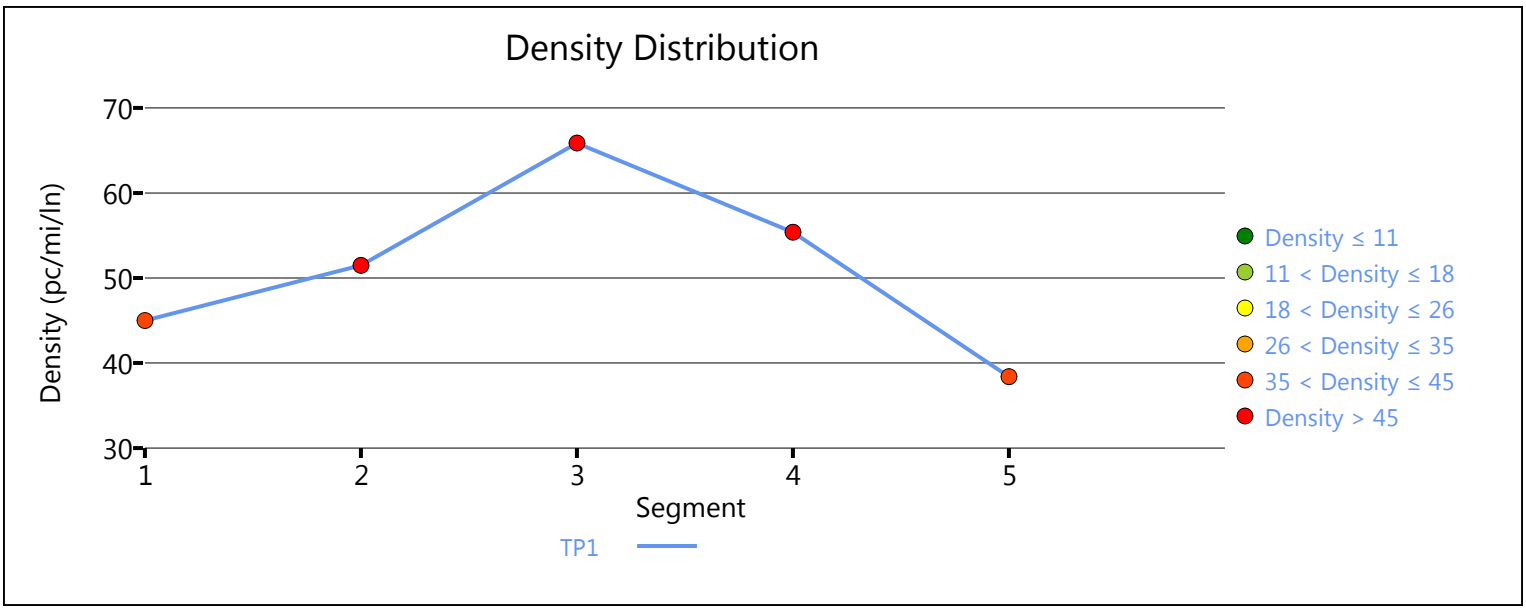
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	42.7	51.1	49.8	2.5	F

Facility Overall Results

Space Mean Speed, mi/h	42.7	Density, veh/mi/ln	49.8
Average Travel Time, min	2.5	Density, pc/mi/ln	51.1







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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7558	1172
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	4.00	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.962	0.935
Flow Rate (vi),pc/h	8540	1362
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	1.03	0.65

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	35.5
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2562
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	50.7
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.048	Outer Lanes Freeway Speed (SO), mi/h	61.9
Flow in Lanes 1 and 2 (v12), pc/h	3416	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	4778	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8730	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2492
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.04
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4558	Heavy Vehicle Adjustment Factor (f_{HV})	0.901
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1375
Total Trucks, %	11.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.57
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4588	1750
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	11.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.901	0.926
Flow Rate (vi),pc/h	5535	2054
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.58	0.98

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	31.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.483
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	982
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	56.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	3572	Ramp Junction Speed (S), mi/h	62.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	22.2
Level of Service (LOS)	D		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4173	681
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	11.00	0.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.901	1.000
Flow Rate (vi),pc/h	5034	740
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.80	0.35

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	28.2
Distance to Upstream Ramp (LUP), ft	1000	Speed Index (M)	0.399
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1978
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	58.8
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	3056	Ramp Junction Speed (S), mi/h	60.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	3796	Average Density (D), pc/mi/ln	31.7
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4854	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1918
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.80
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	64.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5285	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1183
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.49
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 NB, On-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3659	1626
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.935
Flow Rate (vi),pc/h	4017	1890
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.82	0.99

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	169.1	Density in Ramp Influence Area (DR), pc/mi/ln	37.5
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.584
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1695
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	53.6
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	65.7
Flow in Lanes 1 and 2 (v12), pc/h	2322	Ramp Junction Speed (S), mi/h	56.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	4212	Average Density (D), pc/mi/ln	34.8
Level of Service (LOS)	E		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3287	1479
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.971
Flow Rate (vi),pc/h	3680	1656
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.51	0.79

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	25.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.447
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	826
Distance to Downstream Ramp (LDOWN), ft	1000	Off-Ramp Influenece Area Speed (SR), mi/h	57.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.592	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	2854	Ramp Junction Speed (S), mi/h	60.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	20.1
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	3/14/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4766	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1778
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.74
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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APPENDIX 9.8:

HORIZON YEAR (2040) WITH PROJECT CONDITIONS FREEWAY FACILITY ANALYSIS WORKSHEETS

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3449	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1002
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.42
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3449	1441
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	7.00	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.901
Flow Rate (vi),pc/h	4010	1738
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.42	0.41

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	10.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.454
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	841
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	57.3
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	2329	Ramp Junction Speed (S), mi/h	64.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	15.6
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1031	1162
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.935
Flow Rate (vi),pc/h	1154	1351
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.52	0.71

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	21.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.343
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	60.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	1154	Ramp Junction Speed (S), mi/h	60.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	2505	Average Density (D), pc/mi/ln	20.7
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3436	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1962
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5348	Heavy Vehicle Adjustment Factor (f_{HV})	0.787
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1846
Total Trucks, %	27.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	65.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4311	1037
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	30.00	14.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.769	0.877
Flow Rate (vi),pc/h	6093	1285
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	1.02	0.61

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	35.0
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2315
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	47.5
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	63.4
Flow in Lanes 1 and 2 (v12), pc/h	3778	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	5063	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2002	661
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	28.00	17.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.781	0.855
Flow Rate (vi),pc/h	2786	840
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.39	0.20

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	17.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.374
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1070
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	76.5
Flow in Lanes 1 and 2 (v12), pc/h	1716	Ramp Junction Speed (S), mi/h	65.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	14.3
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2002	Heavy Vehicle Adjustment Factor (f_{HV})	0.781
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	929
Total Trucks, %	28.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.39
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7566	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2118
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7566	1126
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	15.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.870
Flow Rate (vi),pc/h	8470	1407
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	1.03	0.67

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	35.7
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2541
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	50.5
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.042	Outer Lanes Freeway Speed (SO), mi/h	62.0
Flow in Lanes 1 and 2 (v12), pc/h	3388	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	4795	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	8805	9548	0.92	57.8	38.1	E

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.862	8805	1296	9600	2100	0.92	0.62	64.4	58.4	34.2	39.2	E

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.980	7503	9548	0.79	64.0	29.3	D

Segment 4: Merge

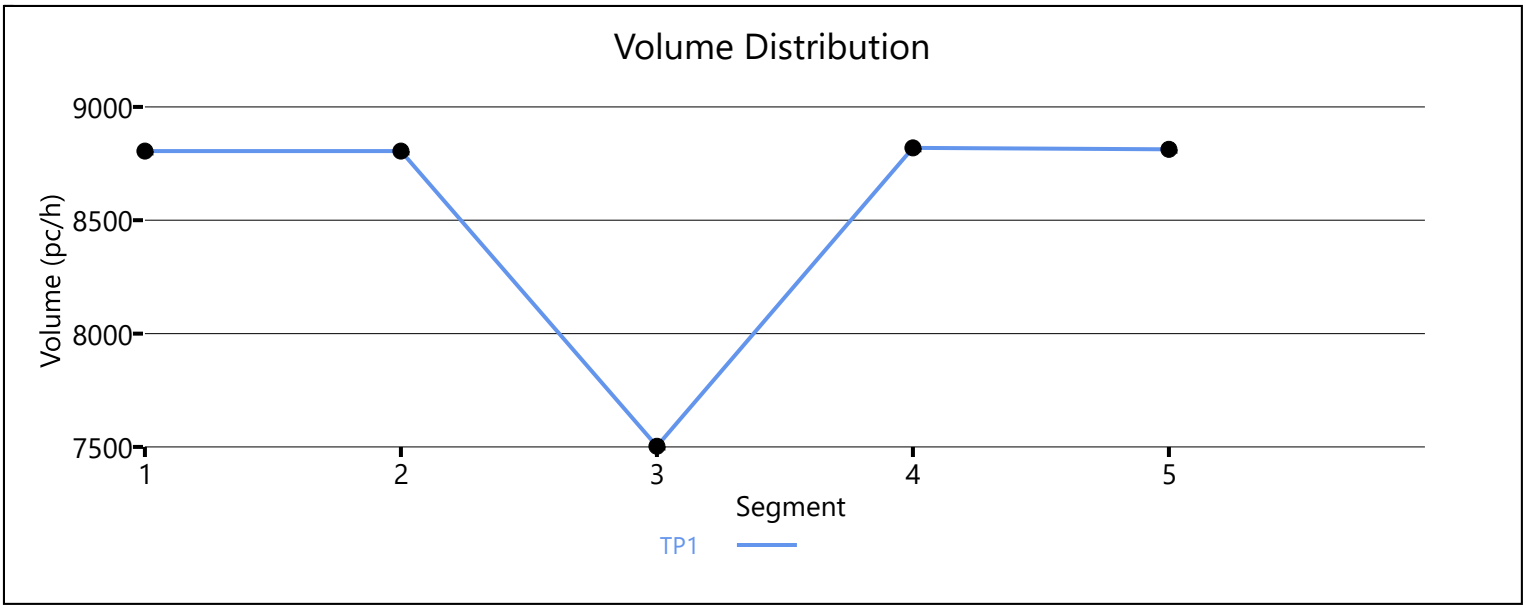
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.980	0.855	8819	1316	9600	2100	0.92	0.63	59.5	55.6	37.1	31.8	D

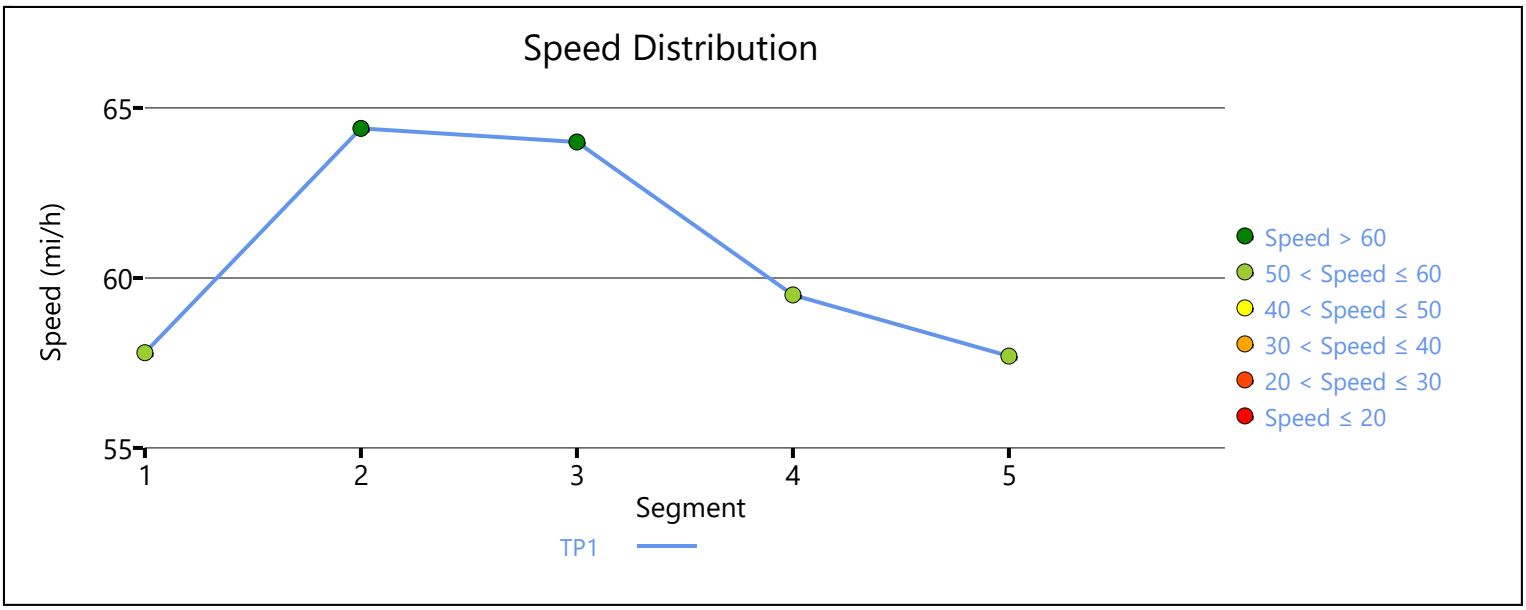
Segment 5: Basic

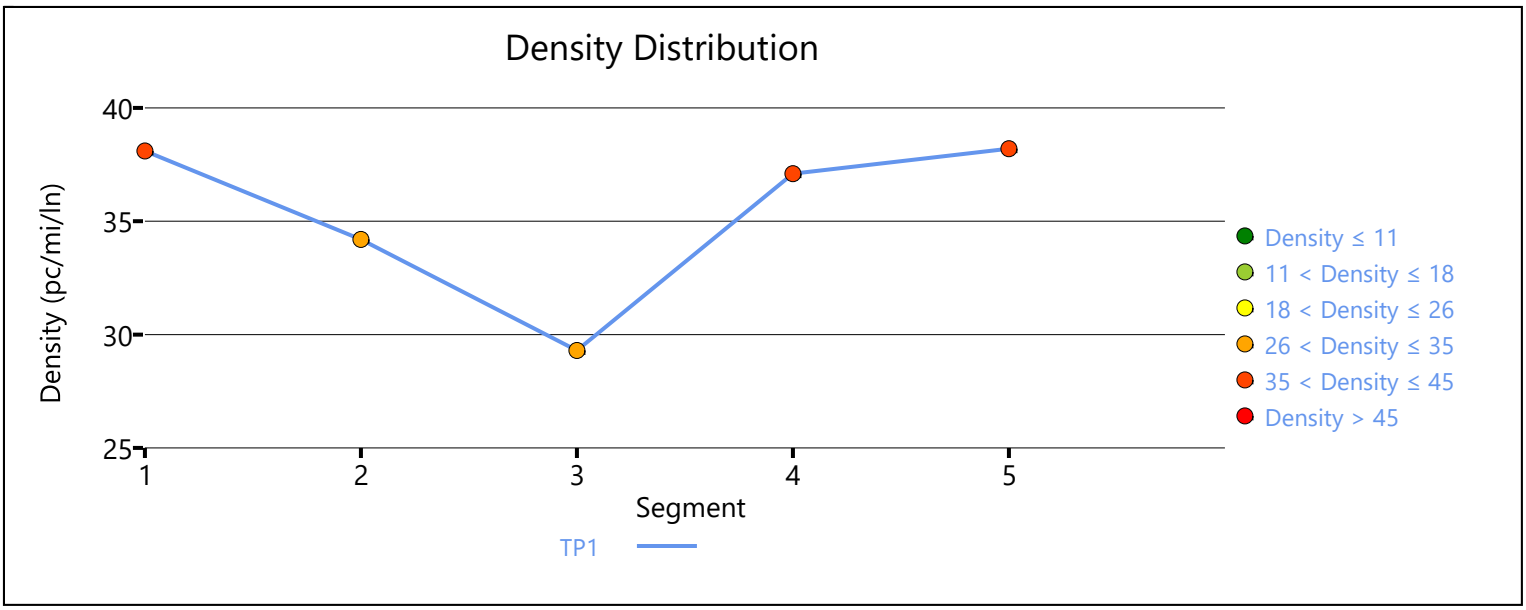
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	8813	9548	0.92	57.7	38.2	E

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	60.1	35.6	34.5	1.9	E

Facility Overall Results			
Space Mean Speed, mi/h	60.1	Density, veh/mi/ln	34.5
Average Travel Time, min	1.9	Density, pc/mi/ln	35.6







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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8044	1231
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	4.00	15.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.962	0.870
Flow Rate (vi),pc/h	9089	1538
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.76	0.73

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	39.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.436
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1617
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	57.8
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	74.4
Flow in Lanes 1 and 2 (v12), pc/h	4038	Ramp Junction Speed (S), mi/h	64.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	28.3
Level of Service (LOS)	E		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8044	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1818
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	65.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6835	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2026
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.84
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.6
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6835	1107
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	9.00	16.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.917	0.862
Flow Rate (vi),pc/h	8102	1396
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.68	0.66

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	30.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.424
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1434
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	75.1
Flow in Lanes 1 and 2 (v12), pc/h	3613	Ramp Junction Speed (S), mi/h	64.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	25.1
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.917	8365	9548	0.88	60.1	34.8	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.917	0.901	8365	1269	9600	2100	0.87	0.60	64.6	58.5	32.4	37.0	E

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.926	7049	9548	0.74	65.5	26.9	D

Segment 4: Merge

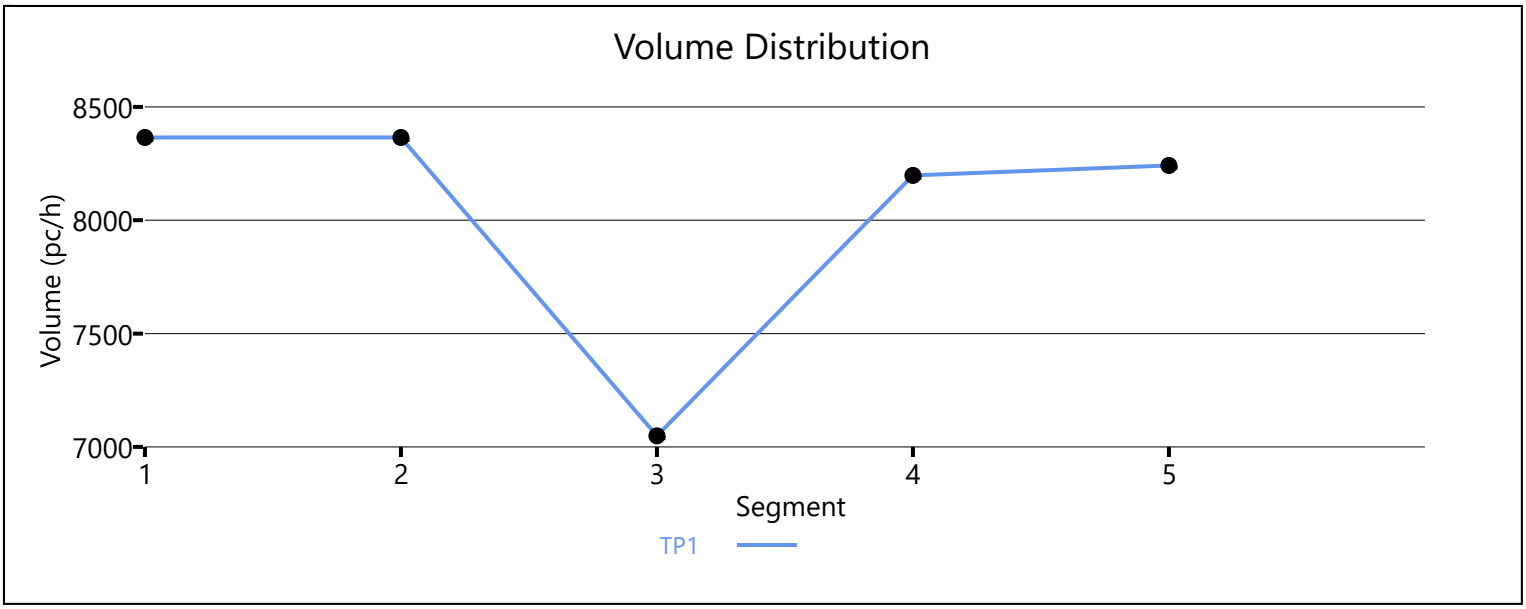
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.926	0.840	8198	1149	9600	2100	0.85	0.55	61.1	58.1	33.5	28.8	D

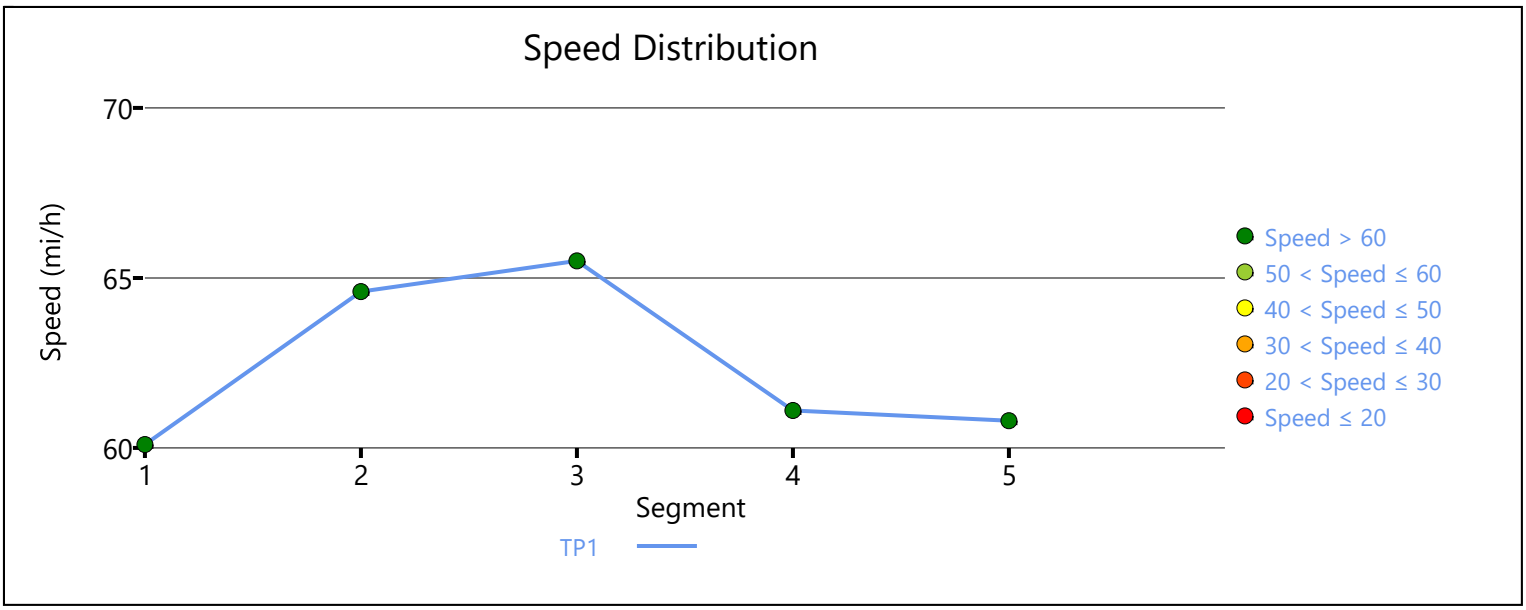
Segment 5: Basic

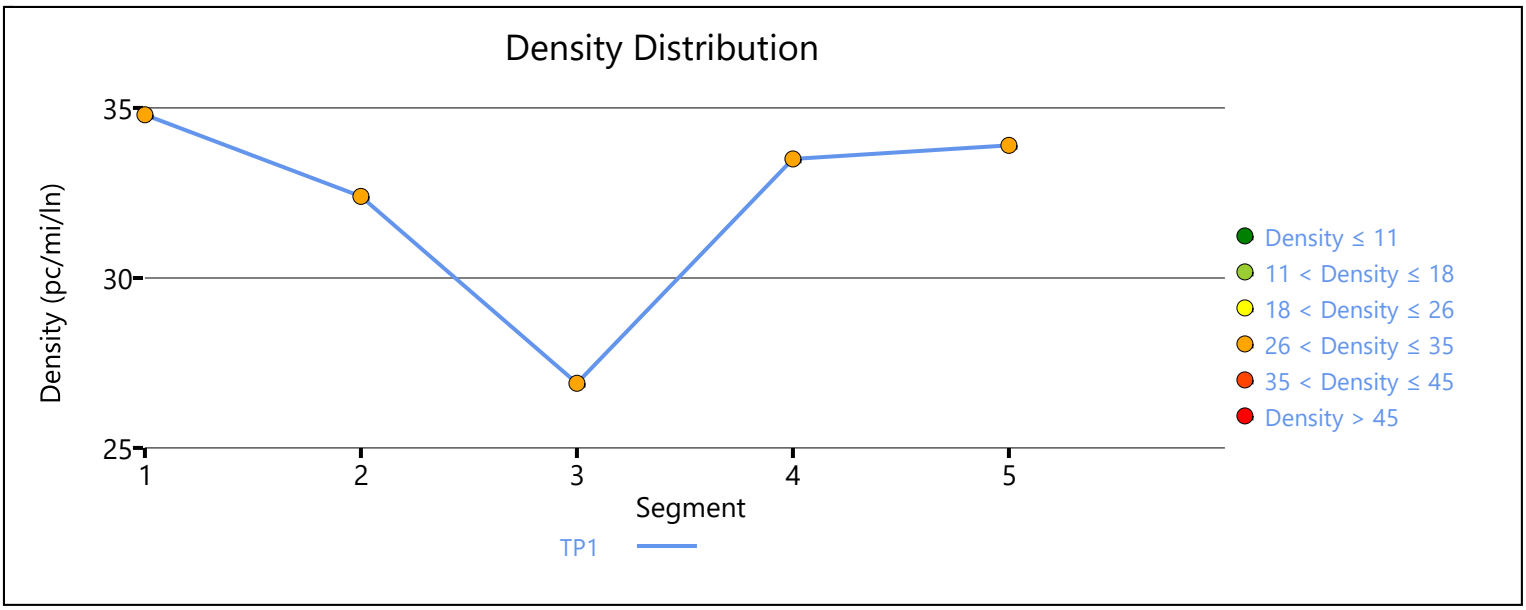
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.909	8242	9548	0.86	60.8	33.9	D

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	62.2	32.2	29.5	1.7	D

Facility Overall Results			
Space Mean Speed, mi/h	62.2	Density, veh/mi/ln	29.5
Average Travel Time, min	1.7	Density, pc/mi/ln	32.2







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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	5549	1024
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	10.00	14.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.909	0.877
Flow Rate (vi),pc/h	6635	1269
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.82	0.60

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	28.9
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.423
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1991
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	58.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.059	Outer Lanes Freeway Speed (SO), mi/h	64.6
Flow in Lanes 1 and 2 (v12), pc/h	2654	Ramp Junction Speed (S), mi/h	61.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	3923	Average Density (D), pc/mi/ln	32.2
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6573	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1965
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6676	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1996
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6676	1700
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	10.00	15.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.909	0.870
Flow Rate (vi),pc/h	7983	2124
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.83	1.01

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	41.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1652
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	56.3
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	74.2
Flow in Lanes 1 and 2 (v12), pc/h	4679	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	5629	715
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	9.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.917	0.952
Flow Rate (vi),pc/h	6672	816
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	1.04	0.39

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	36.5
Distance to Upstream Ramp (LUP), ft	1000	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2622
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	49.5
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	61.5
Flow in Lanes 1 and 2 (v12), pc/h	4050	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	4866	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6344	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2507
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.04
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6018	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1347
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.56
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 NB, On-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4418	1600
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.926
Flow Rate (vi),pc/h	4851	1878
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.93	0.99

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	345.0	Density in Ramp Influence Area (DR), pc/mi/ln	41.2
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.742
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2047
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	49.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	64.4
Flow in Lanes 1 and 2 (v12), pc/h	2804	Ramp Junction Speed (S), mi/h	53.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	4682	Average Density (D), pc/mi/ln	42.3
Level of Service (LOS)	E		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4986	1183
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.971
Flow Rate (vi),pc/h	5530	1324
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.77	0.63

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	32.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.417
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1846
Distance to Downstream Ramp (LDOWN), ft	1000	Off-Ramp Influenece Area Speed (SR), mi/h	58.3
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.561	Outer Lanes Freeway Speed (SO), mi/h	73.5
Flow in Lanes 1 and 2 (v12), pc/h	3684	Ramp Junction Speed (S), mi/h	62.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	29.4
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4986	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1843
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	65.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5233	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1494
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.62
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, Off-Ramp at Grand		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	5233	1564
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	5.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.952	0.926
Flow Rate (vi),pc/h	5975	1836
Capacity (c), pc/h	9600	4200
Volume-to-Capacity Ratio (v/c)	0.62	0.44

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	15.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.463
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1532
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	57.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	74.7
Flow in Lanes 1 and 2 (v12), pc/h	2912	Ramp Junction Speed (S), mi/h	64.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	23.0
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 SB, Loop On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	435	1282
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	9.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.917	0.952
Flow Rate (vi),pc/h	516	1464
Capacity (c), pc/h	4800	1900
Volume-to-Capacity Ratio (v/c)	0.41	0.77

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	17.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.323
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	61.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	516	Ramp Junction Speed (S), mi/h	61.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	1980	Average Density (D), pc/mi/ln	16.2
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 SB, South of Euclid		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2878	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1643
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.68
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, North of Grand		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4455	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1284
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.53
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-71 NB, On-Ramp at Edison		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2973	1482
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	7.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.952
Flow Rate (vi),pc/h	3456	1692
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.72	0.81

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	25.3
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.367
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1313
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	59.7
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.620	Outer Lanes Freeway Speed (SO), mi/h	67.1
Flow in Lanes 1 and 2 (v12), pc/h	2143	Ramp Junction Speed (S), mi/h	61.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	3835	Average Density (D), pc/mi/ln	27.9
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	130
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4122	1433
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	12.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.893	0.943
Flow Rate (vi),pc/h	5017	1652
Capacity (c), pc/h	7200	4200
Volume-to-Capacity Ratio (v/c)	0.70	0.39

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	30.3
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.447
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1851
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	57.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.450	Outer Lanes Freeway Speed (SO), mi/h	73.5
Flow in Lanes 1 and 2 (v12), pc/h	3166	Ramp Junction Speed (S), mi/h	62.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	26.8
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-71 NB, South of Euclid		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4122	Heavy Vehicle Adjustment Factor (f_{HV})	0.893
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1672
Total Trucks, %	12.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.70
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8501	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2379
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.99
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	44.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 WB, On-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7363	1138
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	13.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.885
Flow Rate (vi),pc/h	8167	1398
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	1.00	0.67

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	34.6
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	0.640
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2450
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	52.1
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.043	Outer Lanes Freeway Speed (SO), mi/h	62.6
Flow in Lanes 1 and 2 (v12), pc/h	3267	Ramp Junction Speed (S), mi/h	57.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	4665	Average Density (D), pc/mi/ln	42.0
Level of Service (LOS)	D		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	East of Grove	1840	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2000	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	Euclid to Grove	3000	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	9413	9548	0.99	54.0	43.6	E

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.962	0.870	8949	980	9600	2100	0.98	0.47	45.6	59.2	49.0	40.0	F

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	7739	9548	0.88	29.8	64.9	F

Segment 4: Merge

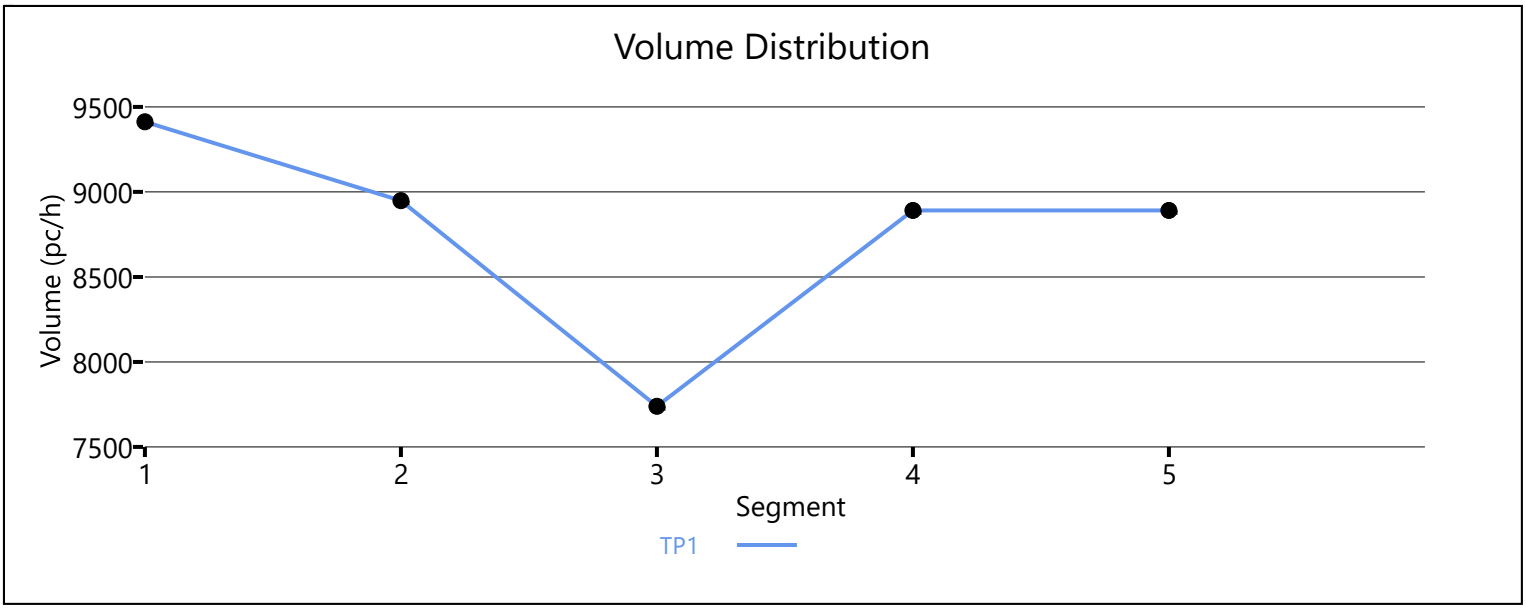
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.971	0.926	8891	1289	9600	2100	1.01	0.61	40.1	52.1	55.4	34.5	F

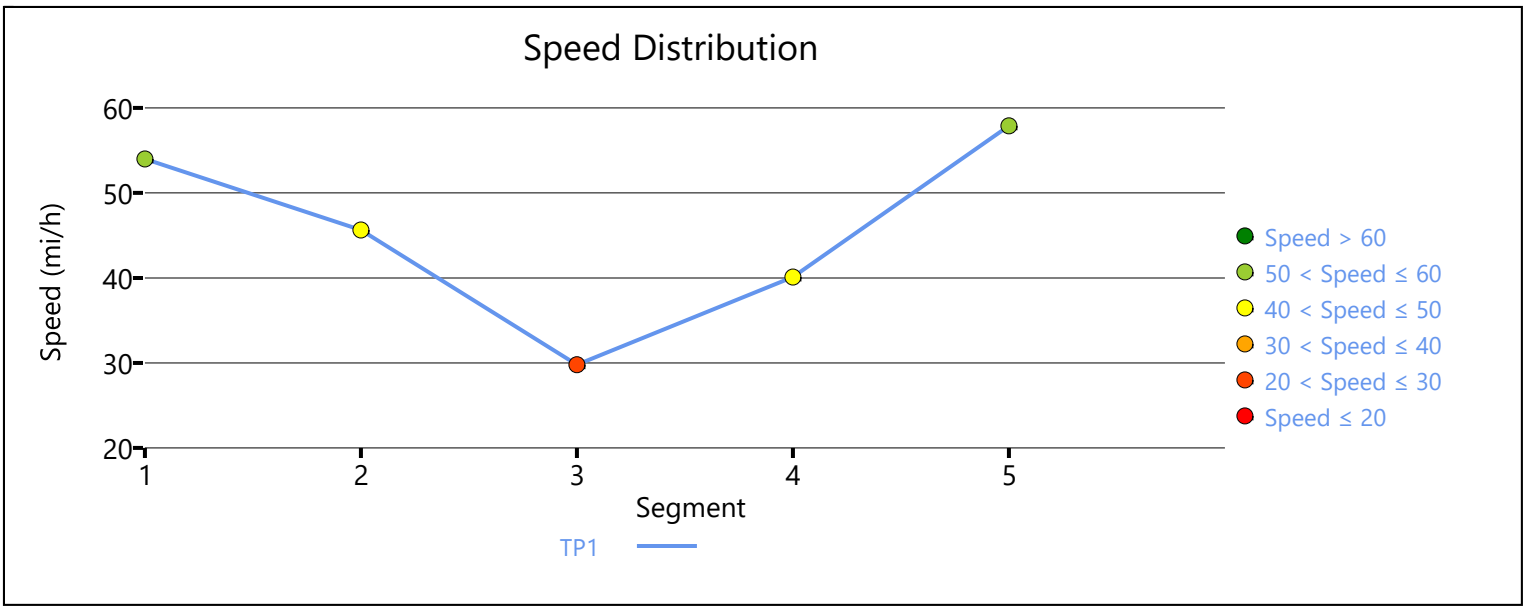
Segment 5: Basic

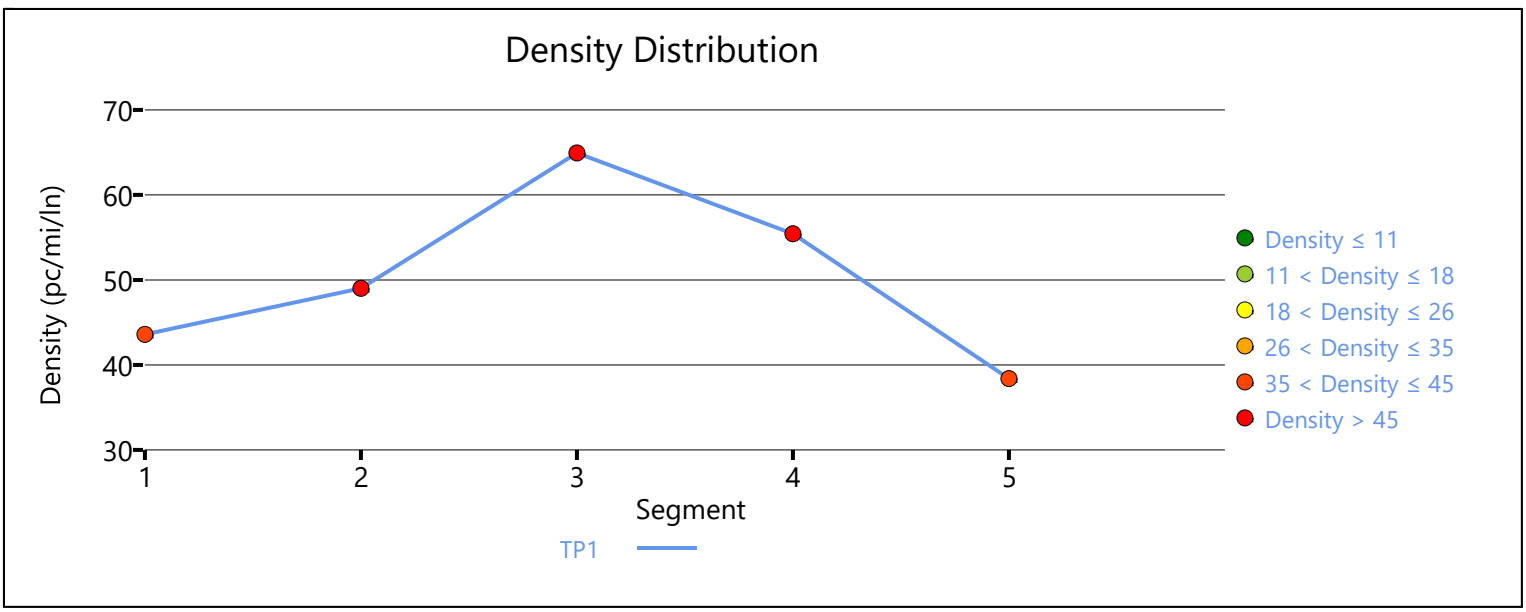
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.962	8891	9548	1.02	57.9	38.4	F

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	42.9	50.7	48.9	2.6	F

Facility Overall Results			
Space Mean Speed, mi/h	42.9	Density, veh/mi/ln	48.9
Average Travel Time, min	2.6	Density, pc/mi/ln	50.7







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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) Without Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, Off-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7580	882
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.901
Flow Rate (vi),pc/h	8407	1064
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.70	0.51

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	34.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.394
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1597
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	59.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	74.5
Flow in Lanes 1 and 2 (v12), pc/h	3532	Ramp Junction Speed (S), mi/h	65.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	25.7
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 WB, East of Archibald		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8462	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1895
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.79
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	64.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, West of Euclid		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9040	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2530
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.05
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Off-Ramp at Euclid		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	500
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	9040	1020
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	14.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.877
Flow Rate (vi),pc/h	10120	1264
Capacity (c), pc/h	12000	2100
Volume-to-Capacity Ratio (v/c)	0.84	0.60

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	36.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.412
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1927
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	58.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	73.2
Flow in Lanes 1 and 2 (v12), pc/h	4243	Ramp Junction Speed (S), mi/h	64.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	31.3
Level of Service (LOS)	E		

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HCS7 Freeway Facilities Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, Euclid to Grove		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Euclid to Grove	1420	4
2	Diverge	Diverge	Off-Ramp at Grove	1500	4
3	Basic	Basic	Between	2120	4
4	Merge	Merge	On-Ramp at Grove	1500	4
5	Basic	Basic	East of Grove	2990	4

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	10383	9548	1.09	53.0	45.0	F

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.971	0.862	9118	1178	9600	2100	1.08	0.56	44.1	58.7	51.7	44.1	F

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.980	7739	9548	0.97	29.1	66.4	F

Segment 4: Merge

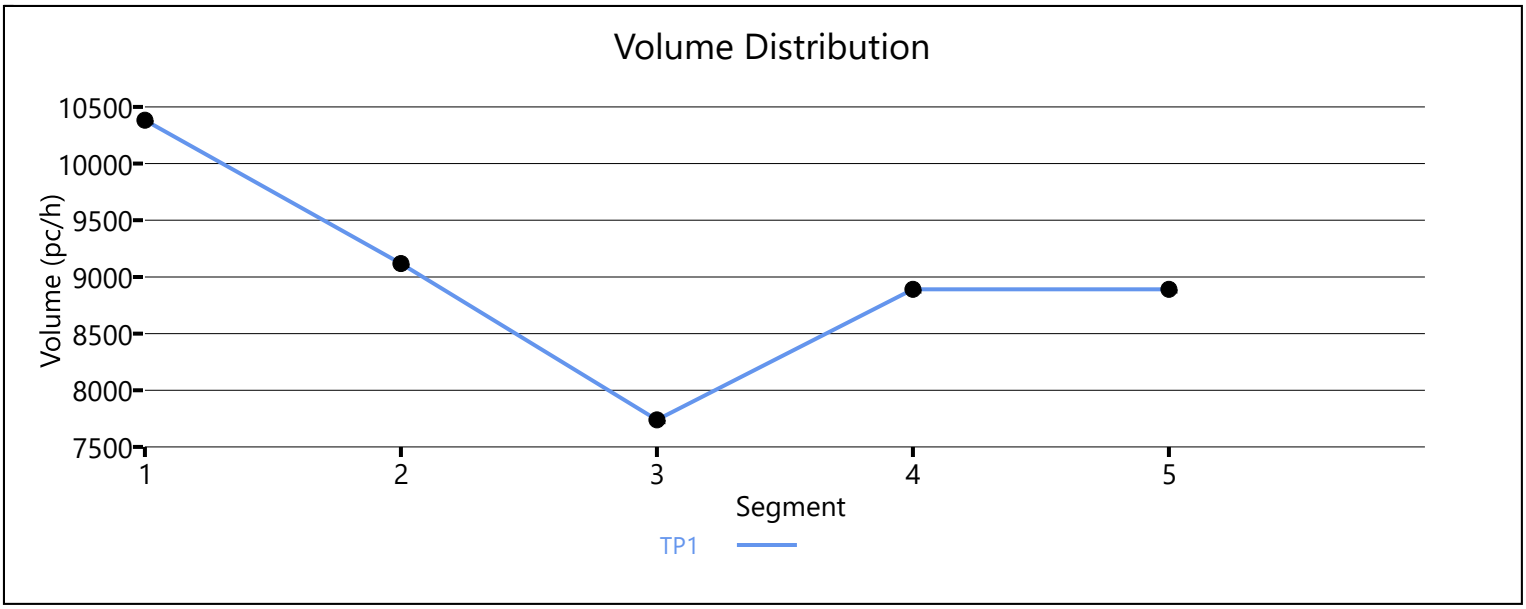
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.92	0.92	0.980	0.917	8891	1209	9600	2100	1.09	0.58	40.1	46.7	55.4	37.2	F

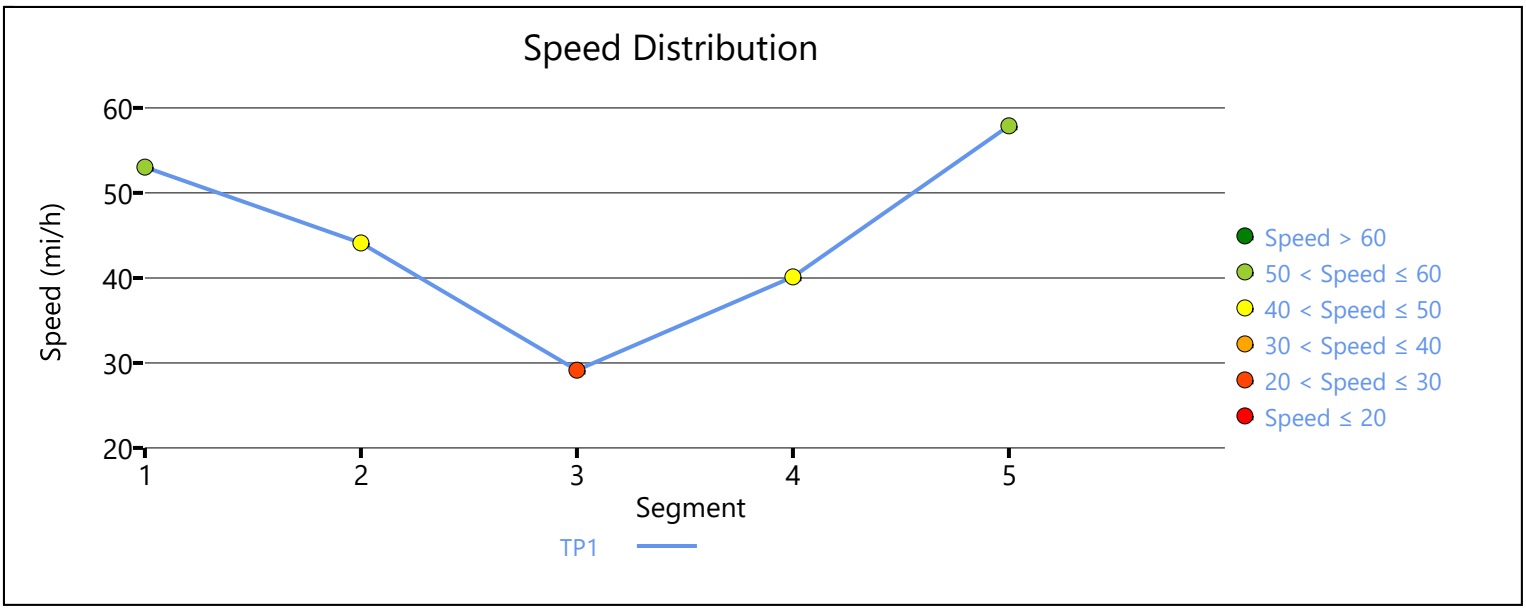
Segment 5: Basic

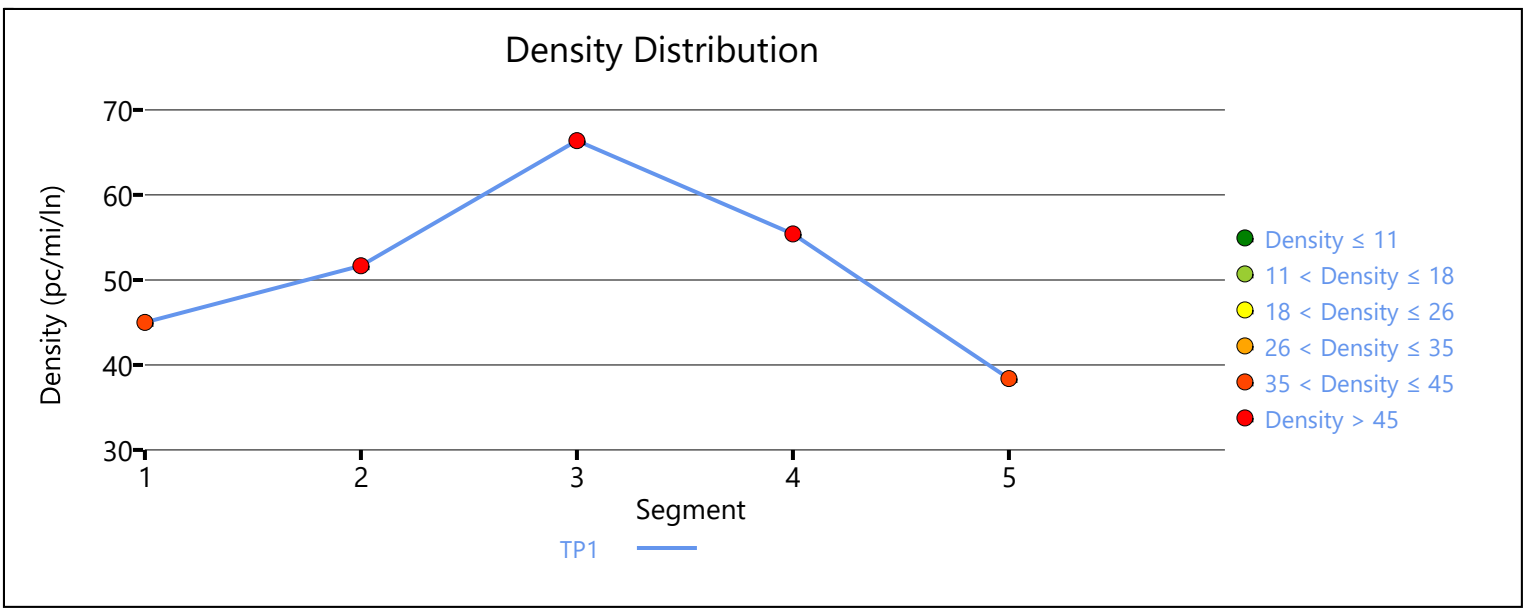
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.971	8891	9548	1.10	57.9	38.4	F

Facility Time Period Results					
T	**Speed, mi/h**	**Density, pc/mi/ln**	**Density, veh/mi/ln**	**Travel Time, min**	**LOS**
1	42.5	51.2	50.0	2.5	F

Facility Overall Results			
Space Mean Speed, mi/h	42.5	Density, veh/mi/ln	50.0
Average Travel Time, min	2.5	Density, pc/mi/ln	51.2







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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - SR-60 EB, On-Ramp at Archibald		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7602	1250
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	4.00	9.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.962	0.917
Flow Rate (vi),pc/h	8589	1482
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	1.05	0.71

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	36.6
Distance to Upstream Ramp (LUP), ft	1190	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2577
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	48.7
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.033	Outer Lanes Freeway Speed (SO), mi/h	61.8
Flow in Lanes 1 and 2 (v12), pc/h	3436	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	4918	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - SR-60 EB, East of Archibald		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8852	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	2527
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.05
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4648	Heavy Vehicle Adjustment Factor (f_{HV})	0.901
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1402
Total Trucks, %	11.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, Off-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	370
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4648	1810
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	11.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.901	0.926
Flow Rate (vi),pc/h	5607	2125
Capacity (c), pc/h	9600	2100
Volume-to-Capacity Ratio (v/c)	0.58	1.01

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	32.3
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	982
Distance to Downstream Ramp (LDOWN), ft	1500	Off-Ramp Influenece Area Speed (SR), mi/h	56.3
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	3643	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 SB, On-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1060
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4173	775
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	11.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.901	0.971
Flow Rate (vi),pc/h	5034	868
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.82	0.41

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	29.1
Distance to Upstream Ramp (LUP), ft	1000	Speed Index (M)	0.423
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1978
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	58.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.607	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	3056	Ramp Junction Speed (S), mi/h	60.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	3924	Average Density (D), pc/mi/ln	32.7
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 SB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4948	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1972
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, North of Cantu Galleano		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5462	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1234
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.51
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.6
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merill Commerce Center - I-15 NB, On-Ramp at Cantu Galleano		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3659	1803
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.926
Flow Rate (vi),pc/h	4017	2116
Capacity (c), pc/h	7200	1900
Volume-to-Capacity Ratio (v/c)	0.85	1.11

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	217.5	Density in Ramp Influence Area (DR), pc/mi/ln	39.2
Distance to Upstream Ramp (LUP), ft	1300	Speed Index (M)	0.651
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1695
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	51.8
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.578	Outer Lanes Freeway Speed (SO), mi/h	65.7
Flow in Lanes 1 and 2 (v12), pc/h	2322	Ramp Junction Speed (S), mi/h	55.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	4438	Average Density (D), pc/mi/ln	37.2
Level of Service (LOS)	E		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, Off-Ramp at Limonite		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	420
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3287	1511
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	3.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.971	0.971
Flow Rate (vi),pc/h	3680	1691
Capacity (c), pc/h	7200	2100
Volume-to-Capacity Ratio (v/c)	0.51	0.81

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	25.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.450
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	815
Distance to Downstream Ramp (LDOWN), ft	1000	Off-Ramp Influenece Area Speed (SR), mi/h	57.4
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.590	Outer Lanes Freeway Speed (SO), mi/h	76.8
Flow in Lanes 1 and 2 (v12), pc/h	2865	Ramp Junction Speed (S), mi/h	60.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	20.2
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CP	Date	12/12/2019
Agency	Urban Crossroads, Inc.	Analysis Year	Horizon Year (2040) With Project
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	JN:12003 - Merrill Commerce Center - I-15 NB, South of Limonite		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4798	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1790
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	70.0		

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APPENDIX 9.9:

HORIZON YEAR (2040) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

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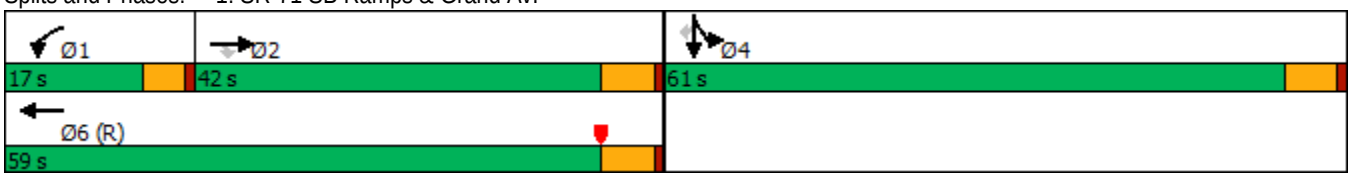
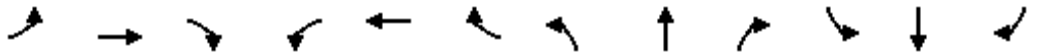
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1138	241	206	1651	981	5	370
Future Volume (vph)	1138	241	206	1651	981	5	370
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	42.0	42.0	17.0	59.0	61.0	61.0	61.0
Total Split (%)	35.0%	35.0%	14.2%	49.2%	50.8%	50.8%	50.8%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None
Act Effct Green (s)	47.1	47.1	12.0	63.1	48.9	48.9	48.9
Actuated g/C Ratio	0.39	0.39	0.10	0.53	0.41	0.41	0.41
v/c Ratio	0.61	0.33	0.64	0.66	0.76	0.77	0.58
Control Delay	32.3	4.8	53.3	27.6	37.6	37.8	25.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.3	4.8	53.3	27.6	37.6	37.8	25.1
LOS	C	A	D	C	D	D	C
Approach Delay	27.5			30.5		34.3	
Approach LOS	C			C		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 30.7	Intersection LOS: C
Intersection Capacity Utilization 65.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1138	241	206	1651	0	0	0	0	981	5	370
Future Volume (veh/h)	0	1138	241	206	1651	0	0	0	0	981	5	370
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1237	179	224	1795	0				1070	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1764	548	298	2377	0				1239	0	
Arrive On Green	0.00	0.34	0.34	0.08	0.46	0.00				0.34	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	1237	179	224	1795	0				1070	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	24.8	9.9	7.5	34.4	0.0				33.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	24.8	9.9	7.5	34.4	0.0				33.1	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1764	548	298	2377	0				1239	0	
V/C Ratio(X)	0.00	0.70	0.33	0.75	0.76	0.00				0.86	0.00	
Avail Cap(c_a), veh/h	0	1764	548	380	2377	0				1719	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	34.3	29.4	53.7	26.9	0.0				36.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.4	1.6	0.4	0.2	0.0				3.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.3	4.0	3.2	13.3	0.0				14.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	36.7	31.0	54.1	27.1	0.0				40.4	0.0	0.0
LnGrp LOS	A	D	C	D	C	A				D	A	
Approach Vol, veh/h		1416			2019						1070	A
Approach Delay, s/veh		36.0			30.1						40.4	
Approach LOS		D			C						D	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	14.2	44.8		45.1		59.0						
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8						
Max Green Setting (Gmax), s	12.4	36.2		55.2		53.2						
Max Q Clear Time (g_c+I1), s	9.5	26.8		35.1		36.4						
Green Ext Time (p_c), s	0.1	5.5		4.2		11.0						

Intersection Summary												
HCM 6th Ctrl Delay			34.4									
HCM 6th LOS			C									

Notes

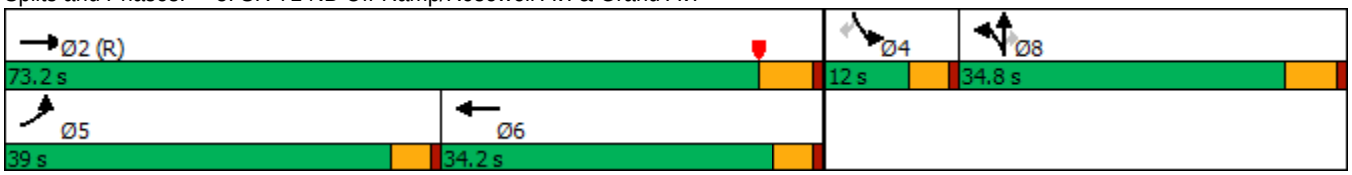
User approved volume balancing among the lanes for turning movement.

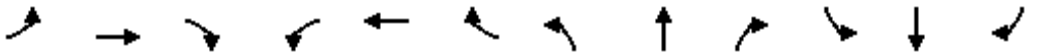
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	632	1278	209	1498	564	84	78	117	809
Future Volume (vph)	632	1278	209	1498	564	84	78	117	809
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.6	34.8		14.7	34.8	34.8	34.8	9.5	9.5
Total Split (s)	39.0	73.2		34.2	34.8	34.8	34.8	12.0	12.0
Total Split (%)	32.5%	61.0%		28.5%	29.0%	29.0%	29.0%	10.0%	10.0%
Yellow Time (s)	3.6	4.8		3.7	4.8	4.8	4.8	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8		-0.7	-1.8	-1.8	-1.8	-0.5	-0.5
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	Max	Max	Max	None	None
Act Effct Green (s)	35.0	69.2	120.0	30.2	30.8	30.8	30.8	8.0	8.0
Actuated g/C Ratio	0.29	0.58	1.00	0.25	0.26	0.26	0.26	0.07	0.07
v/c Ratio	1.31	0.46	0.14	1.09	0.79	0.80	0.17	1.06	1.00
Control Delay	188.5	15.9	0.1	94.2	56.1	56.2	4.4	152.0	39.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	188.5	15.9	0.1	94.2	56.1	56.2	4.4	152.0	39.0
LOS	F	B	A	F	E	E	A	F	D
Approach Delay		65.8		94.2		50.6			
Approach LOS		E		F		D			

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.31	
Intersection Signal Delay: 70.3	Intersection LOS: E
Intersection Capacity Utilization 93.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	632	1278	209	0	1498	148	564	84	78	117	0	809
Future Volume (veh/h)	632	1278	209	0	1498	148	564	84	78	117	0	809
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	687	1389	0	0	1628	161	678	0	45	127	0	603
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	528	3510		0	2086	206	929	0	413	0	0	0
Arrive On Green	0.29	0.68	0.00	0.00	0.34	0.34	0.26	0.00	0.26	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6357	602	3619	0	1610		0	
Grp Volume(v), veh/h	687	1389	0	0	1310	479	678	0	45		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1792	1810	0	1610			
Q Serve(g_s), s	35.0	14.2	0.0	0.0	28.8	28.8	20.6	0.0	2.6			
Cycle Q Clear(g_c), s	35.0	14.2	0.0	0.0	28.8	28.8	20.6	0.0	2.6			
Prop In Lane	1.00		1.00	0.00		0.34	1.00		1.00			
Lane Grp Cap(c), veh/h	528	3510		0	1679	614	929	0	413			
V/C Ratio(X)	1.30	0.40		0.00	0.78	0.78	0.73	0.00	0.11			
Avail Cap(c_a), veh/h	528	3510		0	1679	614	929	0	413			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.71	0.71	0.00	0.00	0.87	0.87	1.00	0.00	1.00			
Uniform Delay (d), s/veh	42.5	8.6	0.0	0.0	35.4	35.5	40.8	0.0	34.1			
Incr Delay (d2), s/veh	145.5	0.2	0.0	0.0	2.1	5.6	5.0	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	36.3	4.7	0.0	0.0	11.5	13.3	9.5	0.0	1.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	188.0	8.8	0.0	0.0	37.5	41.2	45.8	0.0	34.6			
LnGrp LOS	F	A		A	D	D	D	A	C			
Approach Vol, veh/h		2076	A		1789			723				
Approach Delay, s/veh		68.1			38.5			45.1				
Approach LOS		E			D			D				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		85.2			39.0	46.2		34.8				
Change Period (Y+Rc), s		5.8			4.6	* 5.8		5.8				
Max Green Setting (Gmax), s		67.4			34.4	* 30		29.0				
Max Q Clear Time (g_c+I1), s		16.2			37.0	30.8		22.6				
Green Ext Time (p_c), s		12.8			0.0	0.0		1.6				

Intersection Summary												
HCM 6th Ctrl Delay			52.9									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

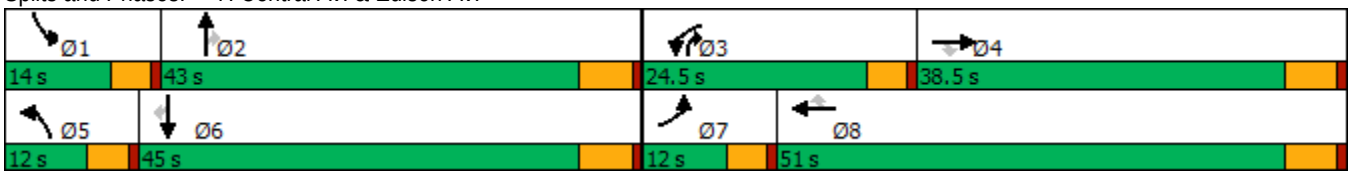
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

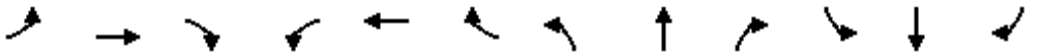
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	769	65	425	1267	135	87	901	465	107	1060	286
Future Volume (vph)	169	769	65	425	1267	135	87	901	465	107	1060	286
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	33.8	9.6	33.8	33.8	9.6	33.8	9.6	9.6	30.8	30.8
Total Split (s)	12.0	38.5	38.5	24.5	51.0	51.0	12.0	43.0	24.5	14.0	45.0	45.0
Total Split (%)	10.0%	32.1%	32.1%	20.4%	42.5%	42.5%	10.0%	35.8%	20.4%	11.7%	37.5%	37.5%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	0.0	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	5.8	4.0	4.0	4.0	4.0	4.0	2.8	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	8.0	35.4	33.6	19.6	47.0	47.0	8.0	38.6	60.6	9.7	40.3	40.3
Actuated g/C Ratio	0.07	0.30	0.28	0.16	0.39	0.39	0.07	0.32	0.51	0.08	0.34	0.34
v/c Ratio	0.79	0.75	0.12	0.86	0.93	0.20	0.80	0.80	0.57	0.80	0.90	0.47
Control Delay	79.8	43.4	0.4	66.0	47.1	6.4	98.3	43.2	18.7	91.7	49.1	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.8	43.4	0.4	66.0	47.1	6.4	98.3	43.2	18.7	91.7	49.1	17.3
LOS	E	D	A	E	D	A	F	D	B	F	D	B
Approach Delay		46.8			48.5			38.7			46.0	
Approach LOS		D			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 45.1	Intersection LOS: D
Intersection Capacity Utilization 87.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	769	65	425	1267	135	87	901	465	107	1060	286
Future Volume (veh/h)	169	769	65	425	1267	135	87	901	465	107	1060	286
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	176	801	62	443	1320	113	91	939	302	111	1104	240
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	223	1083	459	506	1422	626	115	1161	786	143	1219	536
Arrive On Green	0.07	0.30	0.29	0.16	0.39	0.39	0.07	0.32	0.32	0.08	0.34	0.34
Sat Flow, veh/h	3326	3610	1610	3141	3610	1589	1714	3610	1587	1714	3610	1588
Grp Volume(v), veh/h	176	801	62	443	1320	113	91	939	302	111	1104	240
Grp Sat Flow(s),veh/h/ln	1663	1805	1610	1570	1805	1589	1714	1805	1587	1714	1805	1588
Q Serve(g_s), s	6.2	23.8	3.4	16.4	41.7	5.5	6.2	28.5	14.2	7.6	34.8	14.1
Cycle Q Clear(g_c), s	6.2	23.8	3.4	16.4	41.7	5.5	6.2	28.5	14.2	7.6	34.8	14.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	223	1083	459	506	1422	626	115	1161	786	143	1219	536
V/C Ratio(X)	0.79	0.74	0.14	0.88	0.93	0.18	0.79	0.81	0.38	0.78	0.91	0.45
Avail Cap(c_a), veh/h	223	1083	459	540	1422	626	115	1180	794	144	1241	546
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.8	37.5	31.7	48.9	34.5	23.6	54.8	37.1	19.0	53.6	37.7	30.8
Incr Delay (d2), s/veh	15.8	4.5	0.6	13.6	11.9	0.6	28.2	4.3	0.3	21.2	9.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	10.8	1.4	7.2	19.5	2.1	3.5	12.7	5.0	4.0	16.2	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.6	42.1	32.3	62.5	46.4	24.2	83.0	41.4	19.3	74.8	47.3	31.4
LnGrp LOS	E	D	C	E	D	C	F	D	B	E	D	C
Approach Vol, veh/h		1039			1876			1332			1455	
Approach Delay, s/veh		46.3			48.9			39.2			46.7	
Approach LOS		D			D			D			D	

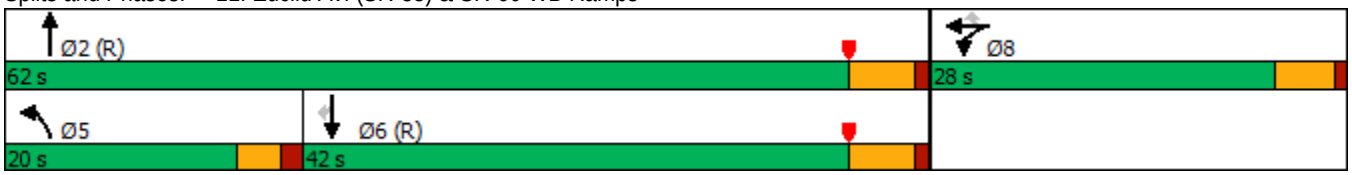
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	42.4	23.2	39.8	12.0	44.3	12.0	51.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	9.4	37.2	19.9	32.7	7.4	39.2	7.4	45.2
Max Q Clear Time (g_c+I1), s	9.6	30.5	18.4	25.8	8.2	36.8	8.2	43.7
Green Ext Time (p_c), s	0.0	3.7	0.2	2.9	0.0	1.7	0.0	1.2

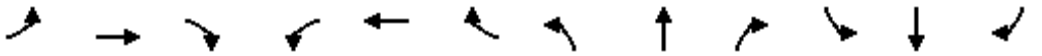
Intersection Summary	
HCM 6th Ctrl Delay	45.6
HCM 6th LOS	D

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	837	7	516	502	1181	1211	593
Future Volume (vph)	837	7	516	502	1181	1211	593
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	28.0	28.0	28.0	20.0	62.0	42.0	42.0
Total Split (%)	31.1%	31.1%	31.1%	22.2%	68.9%	46.7%	46.7%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	23.0	23.0	23.0	15.3	56.5	36.7	36.7
Actuated g/C Ratio	0.26	0.26	0.26	0.17	0.63	0.41	0.41
v/c Ratio	1.14	1.18	0.99	0.90	0.55	0.87	0.61
Control Delay	119.2	135.8	68.7	47.5	17.3	32.8	4.5
Queue Delay	0.0	0.0	0.0	0.0	2.6	0.0	0.0
Total Delay	119.2	135.8	68.7	47.5	19.8	32.8	4.5
LOS	F	F	E	D	B	C	A
Approach Delay		109.2			28.1	23.5	
Approach LOS		F			C	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 49.1	Intersection LOS: D
Intersection Capacity Utilization 143.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	837	7	516	502	1181	0	0	1211	593
Future Volume (veh/h)	0	0	0	837	7	516	502	1181	0	0	1211	593
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				995	0	222	534	1256	0	0	1288	403
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				925	0	411	590	2266	0	0	1479	660
Arrive On Green				0.26	0.00	0.26	0.34	1.00	0.00	0.00	0.41	0.41
Sat Flow, veh/h				3619	0	1610	3510	3705	0	0	3705	1610
Grp Volume(v), veh/h				995	0	222	534	1256	0	0	1288	403
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1805	0	0	1805	1610
Q Serve(g_s), s				23.0	0.0	10.7	13.1	0.0	0.0	0.0	29.5	17.7
Cycle Q Clear(g_c), s				23.0	0.0	10.7	13.1	0.0	0.0	0.0	29.5	17.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				925	0	411	590	2266	0	0	1479	660
V/C Ratio(X)				1.08	0.00	0.54	0.90	0.55	0.00	0.00	0.87	0.61
Avail Cap(c_a), veh/h				925	0	411	605	2266	0	0	1479	660
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.55	0.55	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.5	0.0	28.9	29.2	0.0	0.0	0.0	24.4	20.9
Incr Delay (d2), s/veh				52.2	0.0	0.8	10.1	0.5	0.0	0.0	7.3	4.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				16.0	0.0	4.0	5.1	0.2	0.0	0.0	12.9	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				85.7	0.0	29.7	39.3	0.5	0.0	0.0	31.7	25.1
LnGrp LOS				F	A	C	D	A	A	A	C	C
Approach Vol, veh/h					1217			1790			1691	
Approach Delay, s/veh					75.5			12.1			30.1	
Approach LOS					E			B			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		62.0			19.6	42.4		28.0				
Change Period (Y+Rc), s		5.5			4.5	5.5		5.0				
Max Green Setting (Gmax), s		56.5			15.5	36.5		23.0				
Max Q Clear Time (g_c+I1), s		2.0			15.1	31.5		25.0				
Green Ext Time (p_c), s		18.5			0.1	4.3		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			35.0									
HCM 6th LOS			D									

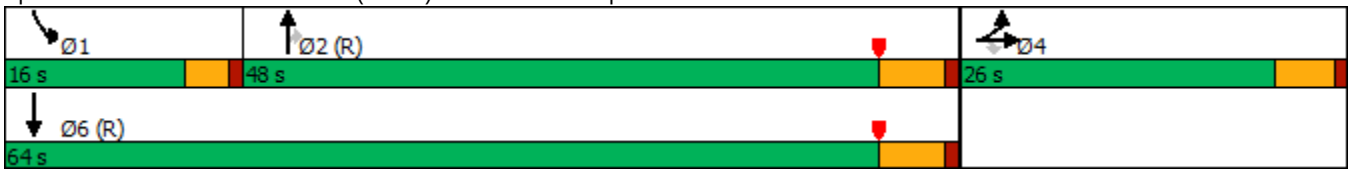
Notes

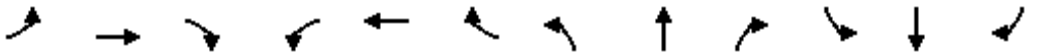
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	520	3	495	1162	867	459	1589
Future Volume (vph)	520	3	495	1162	867	459	1589
Turn Type	Split	NA	Perm	NA	Perm	Prot	NA
Protected Phases	4	4		2		1	6
Permitted Phases			4		2		
Detector Phase	4	4	4	2	2	1	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	26.0	26.0	26.0	48.0	48.0	16.0	64.0
Total Split (%)	28.9%	28.9%	28.9%	53.3%	53.3%	17.8%	71.1%
Yellow Time (s)	4.0	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	20.6	20.6	20.6	42.4	42.4	12.4	58.9
Actuated g/C Ratio	0.23	0.23	0.23	0.47	0.47	0.14	0.65
v/c Ratio	0.95	0.94	0.82	0.72	0.82	1.00	0.71
Control Delay	69.7	65.7	43.0	22.0	12.4	68.0	5.9
Queue Delay	18.8	16.4	0.0	0.0	0.0	0.0	2.2
Total Delay	88.4	82.1	43.0	22.0	12.4	68.0	8.1
LOS	F	F	D	C	B	E	A
Approach Delay		71.9		17.9			21.5
Approach LOS		E		B			C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 30.1	Intersection LOS: C
Intersection Capacity Utilization 143.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	520	3	495	0	0	0	0	1162	867	459	1589	0
Future Volume (veh/h)	520	3	495	0	0	0	0	1162	867	459	1589	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	693	0	312				0	1223	714	483	1673	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	786	0	350				0	1763	775	468	2405	0
Arrive On Green	0.22	0.00	0.22				0.00	0.49	0.49	0.27	1.00	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1586	3510	3705	0
Grp Volume(v), veh/h	693	0	312				0	1223	714	483	1673	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1586	1755	1805	0
Q Serve(g_s), s	16.7	0.0	16.9				0.0	23.6	37.7	12.0	0.0	0.0
Cycle Q Clear(g_c), s	16.7	0.0	16.9				0.0	23.6	37.7	12.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	786	0	350				0	1763	775	468	2405	0
V/C Ratio(X)	0.88	0.00	0.89				0.00	0.69	0.92	1.03	0.70	0.00
Avail Cap(c_a), veh/h	844	0	376				0	1763	775	468	2405	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.47	0.47	0.21	0.21	0.00
Uniform Delay (d), s/veh	34.1	0.0	34.2				0.0	17.8	21.4	33.0	0.0	0.0
Incr Delay (d2), s/veh	9.7	0.0	20.6				0.0	1.1	10.0	27.8	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	8.2				0.0	9.0	14.4	5.9	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.8	0.0	54.8				0.0	18.9	31.4	60.8	0.4	0.0
LnGrp LOS	D	A	D				A	B	C	F	A	A
Approach Vol, veh/h		1005						1937			2156	
Approach Delay, s/veh		47.2						23.5			13.9	
Approach LOS		D						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.0	49.5		24.5		65.5
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	12.0	42.5		21.0		58.5
Max Q Clear Time (g_c+I1), s	14.0	39.7		18.9		2.0
Green Ext Time (p_c), s	0.0	2.6		0.6		30.2

Intersection Summary	
HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

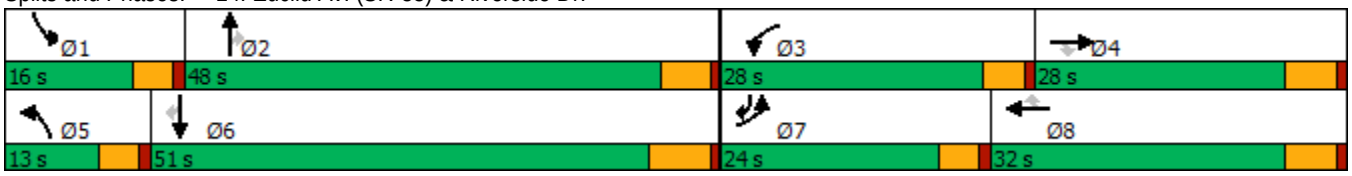
Notes

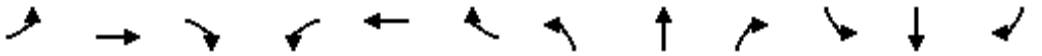
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	453	99	241	616	145	148	1278	201	219	1430	192
Future Volume (vph)	193	453	99	241	616	145	148	1278	201	219	1430	192
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	24.0	28.0	28.0	28.0	32.0	32.0	13.0	48.0	48.0	16.0	51.0	24.0
Total Split (%)	20.0%	23.3%	23.3%	23.3%	26.7%	26.7%	10.8%	40.0%	40.0%	13.3%	42.5%	20.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.4	-1.4	-0.6	-2.5	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	None
Act Effct Green (s)	17.2	22.5	22.5	20.6	25.9	25.9	8.6	44.6	44.6	11.2	47.2	64.4
Actuated g/C Ratio	0.15	0.20	0.20	0.18	0.23	0.23	0.07	0.39	0.39	0.10	0.41	0.56
v/c Ratio	0.79	0.68	0.25	0.83	0.80	0.32	0.63	0.67	0.28	0.71	0.71	0.22
Control Delay	69.9	48.7	7.6	68.2	50.6	7.8	64.7	32.0	4.4	64.1	31.2	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.9	48.7	7.6	68.2	50.6	7.8	64.7	32.0	4.4	64.1	31.2	8.0
LOS	E	D	A	E	D	A	E	C	A	E	C	A
Approach Delay		48.7			48.6			31.6			32.7	
Approach LOS		D			D			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 37.7	Intersection LOS: D
Intersection Capacity Utilization 73.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	453	99	241	616	145	148	1278	201	219	1430	192
Future Volume (veh/h)	193	453	99	241	616	145	148	1278	201	219	1430	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	203	477	88	254	648	124	156	1345	172	231	1505	143
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	239	695	310	290	802	358	229	2042	634	305	2211	883
Arrive On Green	0.14	0.19	0.19	0.17	0.22	0.22	0.07	0.39	0.39	0.09	0.43	0.41
Sat Flow, veh/h	1714	3610	1610	1714	3610	1610	3326	5187	1610	3326	5187	1609
Grp Volume(v), veh/h	203	477	88	254	648	124	156	1345	172	231	1505	143
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1714	1805	1610	1663	1729	1610	1663	1729	1609
Q Serve(g_s), s	12.9	13.7	5.2	16.2	19.0	7.3	5.1	23.7	8.1	7.6	26.2	4.9
Cycle Q Clear(g_c), s	12.9	13.7	5.2	16.2	19.0	7.3	5.1	23.7	8.1	7.6	26.2	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	239	695	310	290	802	358	229	2042	634	305	2211	883
V/C Ratio(X)	0.85	0.69	0.28	0.88	0.81	0.35	0.68	0.66	0.27	0.76	0.68	0.16
Avail Cap(c_a), veh/h	307	775	346	368	904	403	268	2042	634	357	2211	883
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.9	42.0	38.6	45.3	41.2	36.6	50.8	27.7	23.0	49.6	25.9	12.5
Incr Delay (d2), s/veh	13.3	2.2	0.5	14.8	5.0	0.6	3.8	1.7	1.1	6.1	1.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	6.1	2.0	7.8	8.7	2.8	2.2	9.3	3.1	3.3	10.6	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.3	44.2	39.1	60.1	46.2	37.2	54.6	29.4	24.1	55.7	27.6	12.9
LnGrp LOS	E	D	D	E	D	D	D	C	C	E	C	B
Approach Vol, veh/h		768			1026			1673			1879	
Approach Delay, s/veh		47.9			48.6			31.2			30.0	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	49.1	22.9	25.5	11.7	51.7	19.6	28.8
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	11.4	* 43	23.4	22.2	8.4	44.5	19.4	26.2
Max Q Clear Time (g_c+I1), s	9.6	25.7	18.2	15.7	7.1	28.2	14.9	21.0
Green Ext Time (p_c), s	0.1	8.3	0.2	1.7	0.0	9.7	0.1	2.0

Intersection Summary	
HCM 6th Ctrl Delay	36.5
HCM 6th LOS	D

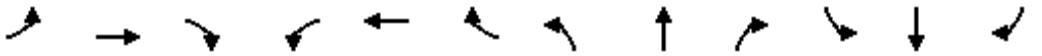
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	131	243	53	105	285	64	1370	180	70	1536	116
Future Volume (vph)	131	243	53	105	285	64	1370	180	70	1536	116
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	49.0	49.0	49.0	49.0	49.0	13.0	56.2	56.2	14.8	58.0	58.0
Total Split (%)	40.8%	40.8%	40.8%	40.8%	40.8%	10.8%	46.8%	46.8%	12.3%	48.3%	48.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-1.8	-1.8	-1.8	-0.6	-1.2	-1.2	-0.6	-2.5	-2.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	30.6	30.6	30.6	30.6	30.6	8.0	54.4	54.4	8.8	55.2	55.2
Actuated g/C Ratio	0.30	0.30	0.30	0.30	0.30	0.08	0.53	0.53	0.09	0.53	0.53
v/c Ratio	1.06	0.46	0.11	0.49	0.71	0.52	0.53	0.22	0.51	0.59	0.14
Control Delay	132.0	32.2	3.8	37.6	38.5	64.6	19.8	12.1	61.9	20.2	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	132.0	32.2	3.8	37.6	38.5	64.6	19.8	12.1	61.9	20.2	3.8
LOS	F	C	A	D	D	E	B	B	E	C	A
Approach Delay		59.3			38.3		20.7			20.7	
Approach LOS		E			D		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.5	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 26.6	Intersection LOS: C
Intersection Capacity Utilization 75.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	243	53	105	285	80	64	1370	180	70	1536	116
Future Volume (veh/h)	131	243	53	105	285	80	64	1370	180	70	1536	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	139	259	40	112	303	73	68	1457	167	74	1634	92
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	246	657	556	331	510	123	95	2457	763	103	2541	772
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.33	0.06	0.47	0.47	0.06	0.49	0.49
Sat Flow, veh/h	1023	1900	1609	1097	1475	355	1714	5187	1610	1714	5187	1577
Grp Volume(v), veh/h	139	259	40	112	0	376	68	1457	167	74	1634	92
Grp Sat Flow(s),veh/h/ln	1023	1900	1609	1097	0	1831	1714	1729	1610	1714	1729	1577
Q Serve(g_s), s	14.3	11.4	1.8	9.5	0.0	18.7	4.3	22.7	6.7	4.7	25.9	3.5
Cycle Q Clear(g_c), s	33.0	11.4	1.8	20.9	0.0	18.7	4.3	22.7	6.7	4.7	25.9	3.5
Prop In Lane	1.00		1.00	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	246	657	556	331	0	633	95	2457	763	103	2541	772
V/C Ratio(X)	0.57	0.39	0.07	0.34	0.00	0.59	0.71	0.59	0.22	0.72	0.64	0.12
Avail Cap(c_a), veh/h	309	776	657	400	0	747	140	2457	763	168	2541	772
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	27.3	24.2	35.2	0.0	29.9	51.2	21.2	17.0	50.9	20.9	15.2
Incr Delay (d2), s/veh	2.0	0.4	0.1	0.6	0.0	0.9	3.7	1.1	0.7	3.5	1.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	5.0	0.7	2.5	0.0	8.0	1.9	8.4	2.4	2.0	9.5	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	27.7	24.2	35.8	0.0	30.8	54.9	22.3	17.7	54.5	22.2	15.5
LnGrp LOS	D	C	C	D	A	C	D	C	B	D	C	B
Approach Vol, veh/h		438			488			1692			1800	
Approach Delay, s/veh		33.0			31.9			23.1			23.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.6	57.5		42.1	10.1	58.0		42.1				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	10.2	* 51		43.2	8.4	51.5		43.2				
Max Q Clear Time (g_c+I1), s	6.7	24.7		35.0	6.3	27.9		22.9				
Green Ext Time (p_c), s	0.0	11.4		1.3	0.0	12.0		2.5				

Intersection Summary			
HCM 6th Ctrl Delay		25.1	
HCM 6th LOS		C	

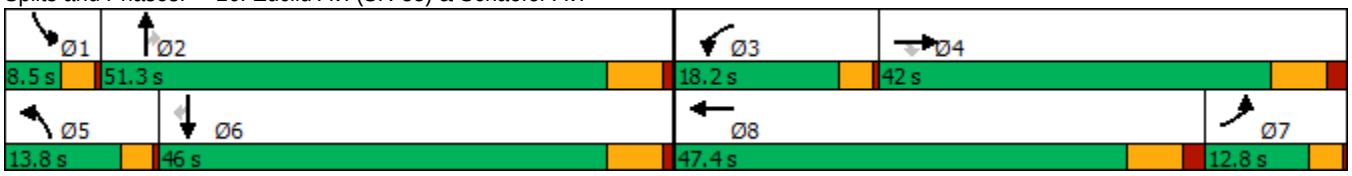
Notes

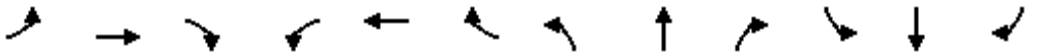
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	193	92	88	177	377	226	1329	44	39	1428	457
Future Volume (vph)	193	92	88	177	377	226	1329	44	39	1428	457
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	12.8	42.0	42.0	18.2	47.4	13.8	51.3	51.3	8.5	46.0	46.0
Total Split (%)	10.7%	35.0%	35.0%	15.2%	39.5%	11.5%	42.8%	42.8%	7.1%	38.3%	38.3%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.5	-3.0	-3.0	0.5	-3.0	0.5	-2.0	-2.0	0.5	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	8.7	36.5	36.5	14.0	41.8	9.8	48.5	48.5	4.5	41.3	41.3
Actuated g/C Ratio	0.07	0.31	0.31	0.12	0.36	0.08	0.41	0.41	0.04	0.35	0.35
v/c Ratio	0.85	0.17	0.16	0.93	0.93	0.88	0.67	0.06	0.33	0.84	0.65
Control Delay	83.7	30.6	3.0	100.0	57.0	85.3	30.8	0.2	63.6	40.6	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.7	30.6	3.0	100.0	57.0	85.3	30.8	0.2	63.6	40.6	16.1
LOS	F	C	A	F	E	F	C	A	E	D	B
Approach Delay		51.6			67.2		37.6			35.3	
Approach LOS		D			E		D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.7	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 42.5	Intersection LOS: D
Intersection Capacity Utilization 84.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	92	88	177	377	186	226	1329	44	39	1428	457
Future Volume (veh/h)	193	92	88	177	377	186	226	1329	44	39	1428	457
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	208	99	76	190	405	198	243	1429	37	42	1535	457
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	238	642	544	198	425	208	265	2019	627	90	1745	541
Arrive On Green	0.07	0.34	0.34	0.12	0.35	0.33	0.08	0.39	0.39	0.03	0.34	0.34
Sat Flow, veh/h	3326	1900	1610	1714	1204	588	3326	5187	1610	3326	5187	1607
Grp Volume(v), veh/h	208	99	76	190	0	603	243	1429	37	42	1535	457
Grp Sat Flow(s),veh/h/ln	1663	1900	1610	1714	0	1792	1663	1729	1610	1663	1729	1607
Q Serve(g_s), s	7.6	4.5	4.0	13.5	0.0	40.3	8.9	28.5	1.8	1.5	34.3	22.7
Cycle Q Clear(g_c), s	7.6	4.5	4.0	13.5	0.0	40.3	8.9	28.5	1.8	1.5	34.3	22.7
Prop In Lane	1.00		1.00	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	238	642	544	198	0	633	265	2019	627	90	1745	541
V/C Ratio(X)	0.87	0.15	0.14	0.96	0.00	0.95	0.92	0.71	0.06	0.47	0.88	0.85
Avail Cap(c_a), veh/h	238	642	544	198	0	633	265	2019	627	122	1774	550
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.4	28.4	28.2	54.0	0.0	39.2	56.1	31.6	23.4	58.9	38.4	18.6
Incr Delay (d2), s/veh	27.0	0.1	0.1	51.5	0.0	24.4	33.2	1.2	0.0	1.4	5.4	11.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	2.0	1.5	8.5	0.0	21.2	4.8	11.3	0.7	0.6	14.4	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.4	28.5	28.3	105.5	0.0	63.6	89.3	32.8	23.5	60.3	43.8	30.1
LnGrp LOS	F	C	C	F	A	E	F	C	C	E	D	C
Approach Vol, veh/h		383			793			1709			2034	
Approach Delay, s/veh		58.3			73.6			40.6			41.1	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	51.8	18.2	45.5	13.8	45.3	16.3	47.4
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	7.0	* 7
Max Green Setting (Gmax), s	5.0	45.3	14.7	35.0	10.3	40.0	9.3	* 40
Max Q Clear Time (g_c+I1), s	3.5	30.5	15.5	6.5	10.9	36.3	9.6	42.3
Green Ext Time (p_c), s	0.0	7.8	0.0	0.5	0.0	3.1	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	47.5
HCM 6th LOS	D

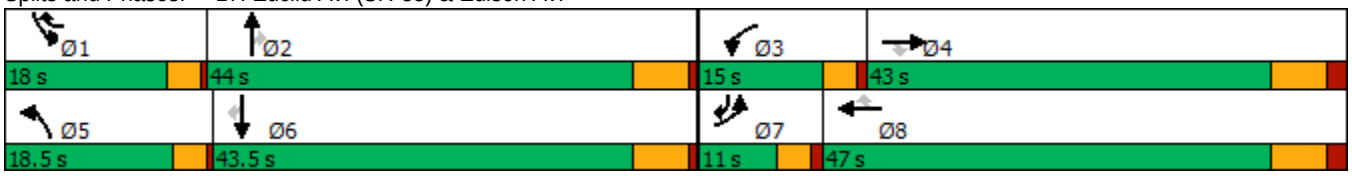
Notes

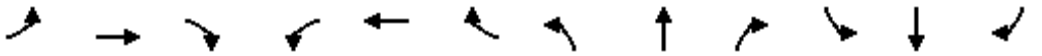
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	853	162	210	1089	312	282	1251	152	197	1283	211
Future Volume (vph)	196	853	162	210	1089	312	282	1251	152	197	1283	211
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	1	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	39.5	39.5	9.0	43.0	8.5	8.5	29.0	29.0	8.5	38.5	9.0
Total Split (s)	11.0	43.0	43.0	15.0	47.0	18.0	18.5	44.0	44.0	18.0	43.5	11.0
Total Split (%)	9.2%	35.8%	35.8%	12.5%	39.2%	15.0%	15.4%	36.7%	36.7%	15.0%	36.3%	9.2%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	3.0	5.0	5.0	3.0	5.0	3.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	-3.0	-3.0	0.0	-3.0	0.5	0.5	-2.0	-2.0	0.5	-2.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	None
Act Effct Green (s)	7.0	37.9	37.9	10.5	41.3	52.2	13.3	39.2	39.2	10.8	36.7	43.8
Actuated g/C Ratio	0.06	0.33	0.33	0.09	0.36	0.46	0.12	0.34	0.34	0.09	0.32	0.38
v/c Ratio	1.06	0.52	0.26	0.76	0.87	0.43	0.81	0.73	0.25	0.65	0.77	0.34
Control Delay	134.4	32.8	5.4	69.8	43.1	16.6	68.3	36.4	11.7	61.1	38.8	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	134.4	32.8	5.4	69.8	43.1	16.6	68.3	36.4	11.7	61.1	38.8	17.1
LOS	F	C	A	E	D	B	E	D	B	E	D	B
Approach Delay		45.5			41.5			39.5			38.7	
Approach LOS		D			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.5	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 41.0	Intersection LOS: D
Intersection Capacity Utilization 83.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	853	162	210	1089	312	282	1251	152	197	1283	211
Future Volume (veh/h)	196	853	162	210	1089	312	282	1251	152	197	1283	211
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1700	1900	1900	1700	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	204	889	114	219	1134	320	294	1303	150	205	1336	169
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	198	1792	556	273	1333	665	337	1803	560	251	1711	575
Arrive On Green	0.06	0.35	0.35	0.09	0.37	0.34	0.11	0.35	0.35	0.08	0.32	0.30
Sat Flow, veh/h	3141	5187	1609	3141	3610	1609	3141	5187	1610	3326	5415	1587
Grp Volume(v), veh/h	204	889	114	219	1134	320	294	1303	150	205	1336	169
Grp Sat Flow(s),veh/h/ln	1570	1729	1609	1570	1805	1609	1570	1729	1610	1663	1805	1587
Q Serve(g_s), s	7.0	15.0	5.5	7.6	32.0	16.1	10.2	24.3	7.4	6.7	24.8	8.4
Cycle Q Clear(g_c), s	7.0	15.0	5.5	7.6	32.0	16.1	10.2	24.3	7.4	6.7	24.8	8.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	198	1792	556	273	1333	665	337	1803	560	251	1711	575
V/C Ratio(X)	1.03	0.50	0.21	0.80	0.85	0.48	0.87	0.72	0.27	0.82	0.78	0.29
Avail Cap(c_a), veh/h	198	1826	566	312	1401	695	411	1873	581	420	1930	639
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.9	28.6	25.5	49.7	32.1	23.8	48.7	31.5	26.0	50.5	34.4	25.3
Incr Delay (d2), s/veh	71.4	0.2	0.2	10.8	5.0	0.5	14.1	1.3	0.3	2.5	1.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	6.0	2.1	3.3	14.0	5.9	4.5	9.5	2.8	2.8	10.4	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	123.3	28.9	25.7	60.4	37.2	24.4	62.8	32.8	26.3	52.9	36.3	25.6
LnGrp LOS	F	C	C	E	D	C	E	C	C	D	D	C
Approach Vol, veh/h		1207			1673			1747			1710	
Approach Delay, s/veh		44.5			37.8			37.3			37.2	
Approach LOS		D			D			D			D	

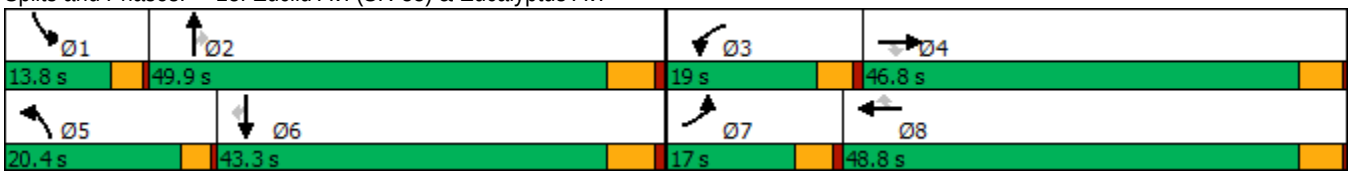
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	42.5	13.6	42.3	15.9	39.0	11.0	44.9
Change Period (Y+Rc), s	3.5	6.0	4.0	7.0	3.5	6.0	4.0	7.0
Max Green Setting (Gmax), s	14.5	38.0	11.0	36.0	15.0	37.5	7.0	40.0
Max Q Clear Time (g_c+I1), s	8.7	26.3	9.6	17.0	12.2	26.8	9.0	34.0
Green Ext Time (p_c), s	0.2	6.4	0.1	5.9	0.2	6.2	0.0	3.9

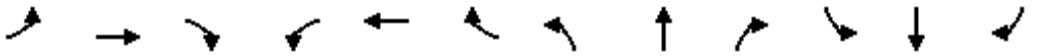
Intersection Summary	
HCM 6th Ctrl Delay	38.8
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	32	205	385	191	182	221	1497	133	94	1456	51
Future Volume (vph)	84	32	205	385	191	182	221	1497	133	94	1456	51
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	46.8	46.8	9.5	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	17.0	46.8	46.8	19.0	48.8	48.8	20.4	49.9	49.9	13.8	43.3	43.3
Total Split (%)	13.1%	36.1%	36.1%	14.7%	37.7%	37.7%	15.8%	38.5%	38.5%	10.7%	33.4%	33.4%
Yellow Time (s)	3.5	4.3	4.3	3.5	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	1.0	0.5	0.5	1.0	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	-0.5	-0.8	-0.8	-0.5	-0.8	-0.8	0.5	-1.7	-1.7	0.5	-1.7	-1.7
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	10.4	15.2	15.2	15.3	22.7	22.7	16.8	45.4	45.4	9.1	37.7	37.7
Actuated g/C Ratio	0.10	0.15	0.15	0.15	0.22	0.22	0.17	0.45	0.45	0.09	0.37	0.37
v/c Ratio	0.49	0.12	0.50	0.78	0.46	0.37	0.80	0.66	0.18	0.63	0.77	0.08
Control Delay	56.2	35.7	8.9	55.4	38.8	6.7	64.7	25.6	10.1	66.6	32.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.2	35.7	8.9	55.4	38.8	6.7	64.7	25.6	10.1	66.6	32.7	0.2
LOS	E	D	A	E	D	A	E	C	B	E	C	A
Approach Delay		24.0			39.5			29.1			33.7	
Approach LOS		C			D			C			C	

Intersection Summary	
Cycle Length: 129.5	
Actuated Cycle Length: 101.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 32.1	Intersection LOS: C
Intersection Capacity Utilization 70.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	32	205	385	191	182	221	1497	133	94	1456	51
Future Volume (veh/h)	84	32	205	385	191	182	221	1497	133	94	1456	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	86	33	123	393	195	178	226	1528	135	96	1486	41
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	120	214	181	499	366	310	255	2470	767	112	2036	631
Arrive On Green	0.07	0.11	0.11	0.15	0.19	0.19	0.15	0.48	0.48	0.07	0.39	0.39
Sat Flow, veh/h	1714	1900	1610	3326	1900	1610	1714	5187	1610	1714	5187	1608
Grp Volume(v), veh/h	86	33	123	393	195	178	226	1528	135	96	1486	41
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1663	1900	1610	1714	1729	1610	1714	1729	1608
Q Serve(g_s), s	4.0	1.3	6.0	9.3	7.5	8.2	10.6	17.9	3.9	4.5	19.9	1.3
Cycle Q Clear(g_c), s	4.0	1.3	6.0	9.3	7.5	8.2	10.6	17.9	3.9	4.5	19.9	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	120	214	181	499	366	310	255	2470	767	112	2036	631
V/C Ratio(X)	0.72	0.15	0.68	0.79	0.53	0.57	0.89	0.62	0.18	0.86	0.73	0.06
Avail Cap(c_a), veh/h	273	996	844	611	1042	883	344	2915	905	206	2496	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.2	32.7	34.8	33.5	29.7	29.9	34.1	15.9	12.2	37.8	21.1	15.5
Incr Delay (d2), s/veh	7.7	0.2	3.3	5.6	0.9	1.2	17.3	0.3	0.1	13.0	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.6	2.4	3.9	3.3	3.1	5.2	5.7	1.2	2.2	6.9	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.9	33.0	38.1	39.0	30.6	31.2	51.4	16.2	12.3	50.8	22.0	15.5
LnGrp LOS	D	C	D	D	C	C	D	B	B	D	C	B
Approach Vol, veh/h		242			766			1889			1623	
Approach Delay, s/veh		39.8			35.0			20.1			23.5	
Approach LOS		D			D			C			C	

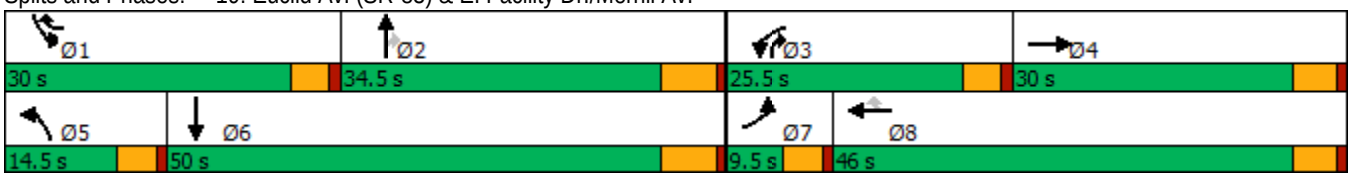
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	42.9	16.3	13.2	16.2	36.1	9.7	19.7
Change Period (Y+Rc), s	3.5	5.7	4.5	4.8	3.5	5.7	4.5	4.8
Max Green Setting (Gmax), s	10.3	44.2	14.5	42.0	16.9	37.6	12.5	44.0
Max Q Clear Time (g_c+I1), s	6.5	19.9	11.3	8.0	12.6	21.9	6.0	10.2
Green Ext Time (p_c), s	0.0	11.5	0.5	0.4	0.2	8.4	0.1	1.2

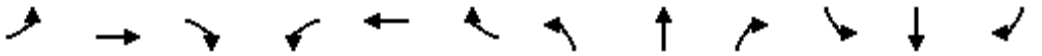
Intersection Summary	
HCM 6th Ctrl Delay	24.9
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	10	10	340	60	422	13	1428	267	233	1764
Future Volume (vph)	10	10	340	60	422	13	1428	267	233	1764
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4	3	8	1	5	2	3	1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	1	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	15.0	10.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	9.5	10.0	9.5	46.0	14.5	14.5	28.0	9.5	14.5	28.0
Total Split (s)	9.5	30.0	25.5	46.0	30.0	14.5	34.5	25.5	30.0	50.0
Total Split (%)	7.9%	25.0%	21.3%	38.3%	25.0%	12.1%	28.8%	21.3%	25.0%	41.7%
Yellow Time (s)	3.5	4.0	3.5	4.0	3.5	3.5	5.0	3.5	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.5	-1.0	-0.5	-1.0	-0.5	-0.5	-2.0	-0.5	-0.5	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.7	9.3	17.5	24.7	45.9	10.9	31.7	53.4	17.0	50.8
Actuated g/C Ratio	0.07	0.11	0.20	0.28	0.53	0.12	0.36	0.61	0.19	0.58
v/c Ratio	0.09	0.16	0.53	0.12	0.48	0.06	0.78	0.27	0.72	0.62
Control Delay	49.5	22.2	37.4	24.5	10.4	43.6	31.2	7.4	47.8	16.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	22.2	37.4	24.5	10.4	43.6	31.2	7.4	47.8	16.8
LOS	D	C	D	C	B	D	C	A	D	B
Approach Delay		28.7		22.6			27.6			20.3
Approach LOS		C		C			C			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 87.3	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 23.5	Intersection LOS: C
Intersection Capacity Utilization 70.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	21	340	60	422	13	1428	267	233	1764	49
Future Volume (veh/h)	10	10	21	340	60	422	13	1428	267	233	1764	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	10	10	21	351	62	408	13	1472	232	240	1819	37
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	32	67	142	478	472	662	65	1876	783	290	2578	52
Arrive On Green	0.02	0.12	0.11	0.14	0.25	0.24	0.04	0.36	0.34	0.17	0.49	0.47
Sat Flow, veh/h	1714	546	1147	3326	1900	1610	1714	5187	1610	1714	5230	106
Grp Volume(v), veh/h	10	0	31	351	62	408	13	1472	232	240	1202	654
Grp Sat Flow(s),veh/h/ln	1714	0	1694	1663	1900	1610	1714	1729	1610	1714	1729	1878
Q Serve(g_s), s	0.5	0.0	1.3	8.0	2.0	15.8	0.6	20.0	6.8	10.7	21.4	21.5
Cycle Q Clear(g_c), s	0.5	0.0	1.3	8.0	2.0	15.8	0.6	20.0	6.8	10.7	21.4	21.5
Prop In Lane	1.00		0.68	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	32	0	209	478	472	662	65	1876	783	290	1705	926
V/C Ratio(X)	0.31	0.00	0.15	0.73	0.13	0.62	0.20	0.78	0.30	0.83	0.71	0.71
Avail Cap(c_a), veh/h	119	0	556	903	1008	1116	227	1999	821	563	2009	1091
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.3	0.0	31.3	32.4	23.1	18.4	36.9	22.5	12.2	31.8	15.6	15.7
Incr Delay (d2), s/veh	5.3	0.0	0.1	2.2	0.0	0.3	0.6	2.0	0.2	2.3	0.9	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.5	3.1	0.8	5.1	0.2	7.2	2.1	4.2	6.8	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.7	0.0	31.4	34.6	23.2	18.7	37.5	24.5	12.4	34.1	16.5	17.4
LnGrp LOS	D	A	C	C	C	B	D	C	B	C	B	B
Approach Vol, veh/h		41			821			1717			2096	
Approach Delay, s/veh		34.4			25.9			23.0			18.8	
Approach LOS		C			C			C			B	

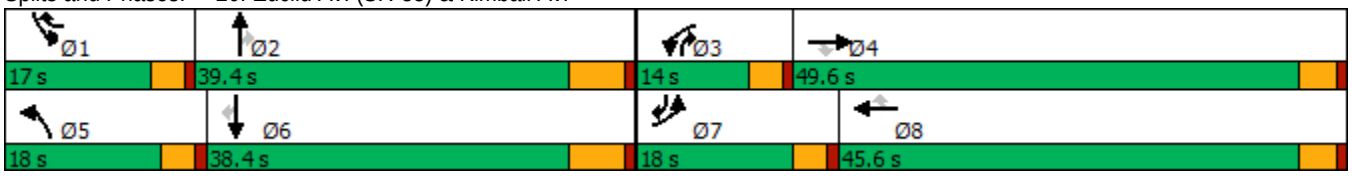
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	32.6	15.4	13.8	7.0	43.0	5.5	23.7
Change Period (Y+Rc), s	4.5	6.0	4.5	5.0	4.5	6.0	4.5	5.0
Max Green Setting (Gmax), s	25.5	28.5	21.0	25.0	10.0	44.0	5.0	41.0
Max Q Clear Time (g_c+I1), s	12.7	22.0	10.0	3.3	2.6	23.5	2.5	17.8
Green Ext Time (p_c), s	0.2	4.6	0.9	0.1	0.0	11.8	0.0	0.8

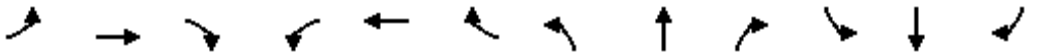
Intersection Summary	
HCM 6th Ctrl Delay	21.7
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	203	322	109	226	941	418	178	1069	68	280	1228	480
Future Volume (vph)	203	322	109	226	941	418	178	1069	68	280	1228	480
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	49.5	14.0	45.5	9.0	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	18.0	49.6	49.6	14.0	45.6	17.0	18.0	39.4	14.0	17.0	38.4	18.0
Total Split (%)	15.0%	41.3%	41.3%	11.7%	38.0%	14.2%	15.0%	32.8%	11.7%	14.2%	32.0%	15.0%
Yellow Time (s)	3.0	3.5	3.5	3.0	3.5	3.0	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-0.5	-0.5	0.0	-0.5	0.0	0.0	-2.0	0.0	0.0	-2.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	11.8	36.0	36.0	10.1	34.2	50.8	13.7	34.2	48.3	12.5	32.9	44.8
Actuated g/C Ratio	0.11	0.33	0.33	0.09	0.31	0.47	0.13	0.31	0.44	0.11	0.30	0.41
v/c Ratio	0.61	0.28	0.18	0.75	0.85	0.54	0.85	0.67	0.09	0.80	0.80	0.71
Control Delay	56.0	27.2	5.3	66.1	43.0	20.4	81.1	35.8	5.5	65.6	40.4	28.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.0	27.2	5.3	66.1	43.0	20.4	81.1	35.8	5.5	65.6	40.4	28.6
LOS	E	C	A	E	D	C	F	D	A	E	D	C
Approach Delay		32.7			40.4			40.4			41.1	
Approach LOS		C			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 39.8	Intersection LOS: D
Intersection Capacity Utilization 81.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	322	109	226	941	418	178	1069	68	280	1228	480
Future Volume (veh/h)	203	322	109	226	941	418	178	1069	68	280	1228	480
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1800	1900	1900	1800	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	207	329	102	231	960	391	182	1091	57	286	1253	361
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	306	1134	506	325	1135	675	211	1671	644	345	1601	616
Arrive On Green	0.10	0.31	0.31	0.10	0.31	0.31	0.12	0.32	0.30	0.11	0.31	0.29
Sat Flow, veh/h	3141	3610	1610	3326	3610	1610	1714	5187	1610	3141	5187	1590
Grp Volume(v), veh/h	207	329	102	231	960	391	182	1091	57	286	1253	361
Grp Sat Flow(s),veh/h/ln	1570	1805	1610	1663	1805	1610	1714	1729	1610	1570	1729	1590
Q Serve(g_s), s	6.5	7.0	4.7	6.9	25.4	19.1	10.7	18.5	2.3	9.1	22.5	18.4
Cycle Q Clear(g_c), s	6.5	7.0	4.7	6.9	25.4	19.1	10.7	18.5	2.3	9.1	22.5	18.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	306	1134	506	325	1135	675	211	1671	644	345	1601	616
V/C Ratio(X)	0.68	0.29	0.20	0.71	0.85	0.58	0.86	0.65	0.09	0.83	0.78	0.59
Avail Cap(c_a), veh/h	430	1609	718	325	1468	824	235	1795	683	399	1744	660
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	26.5	25.7	44.8	32.8	22.8	44.0	29.8	19.1	44.6	32.2	24.9
Incr Delay (d2), s/veh	1.0	0.1	0.2	6.1	3.0	0.3	22.8	0.8	0.1	10.7	2.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	2.9	1.8	3.0	10.9	6.7	5.6	7.1	0.8	3.9	8.9	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.6	26.6	25.9	50.9	35.8	23.1	66.7	30.5	19.1	55.3	34.5	26.1
LnGrp LOS	D	C	C	D	D	C	E	C	B	E	C	C
Approach Vol, veh/h		638			1582			1330			1900	
Approach Delay, s/veh		32.7			34.9			35.0			36.0	
Approach LOS		C			C			D			D	

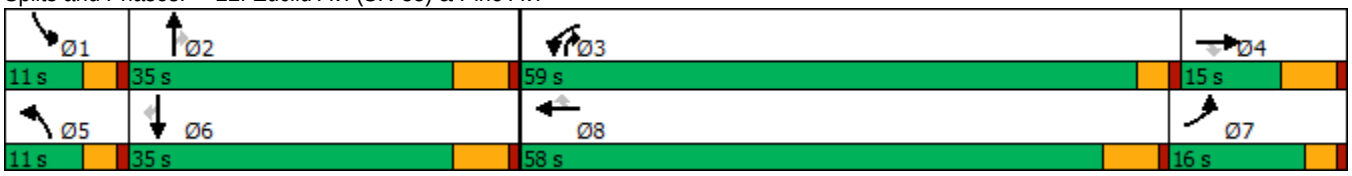
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.2	37.0	14.0	36.1	16.6	35.6	14.0	36.2
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	13.0	33.4	10.0	45.1	14.0	32.4	14.0	41.1
Max Q Clear Time (g_c+I1), s	11.1	20.5	8.9	9.0	12.7	24.5	8.5	27.4
Green Ext Time (p_c), s	0.1	5.5	0.1	2.4	0.0	5.0	0.2	4.2

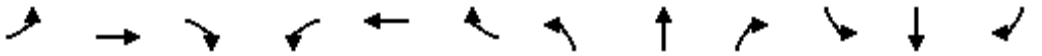
Intersection Summary	
HCM 6th Ctrl Delay	35.0
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	303	204	829	980	341	171	714	214	163	987	130
Future Volume (vph)	84	303	204	829	980	341	171	714	214	163	987	130
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	11.0	11.0	9.0	38.0	38.0	9.0	33.0	9.0	9.0	33.0	33.0
Total Split (s)	16.0	15.0	15.0	59.0	58.0	58.0	11.0	35.0	59.0	11.0	35.0	35.0
Total Split (%)	13.3%	12.5%	12.5%	49.2%	48.3%	48.3%	9.2%	29.2%	49.2%	9.2%	29.2%	29.2%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	3.0	3.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-2.0	-2.0	0.0	-2.0	-2.0	0.0	-2.0	0.0	0.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	9.6	24.5	24.5	37.2	54.4	54.4	7.1	28.2	65.3	7.1	28.2	28.2
Actuated g/C Ratio	0.08	0.22	0.22	0.33	0.48	0.48	0.06	0.25	0.58	0.06	0.25	0.25
v/c Ratio	0.60	0.40	0.46	0.83	0.58	0.39	0.85	0.57	0.13	0.81	0.79	0.27
Control Delay	69.1	42.2	19.1	42.5	24.2	7.3	88.0	39.4	6.0	82.9	45.1	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.1	42.2	19.1	42.5	24.2	7.3	88.0	39.4	6.0	82.9	45.1	7.3
LOS	E	D	B	D	C	A	F	D	A	F	D	A
Approach Delay		38.1			28.6			40.4			46.1	
Approach LOS		D			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 36.6	Intersection LOS: D
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	303	204	829	980	341	171	714	214	163	987	130
Future Volume (veh/h)	84	303	204	829	980	341	171	714	214	163	987	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	87	312	0	855	1010	350	176	736	-35	168	1018	130
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	109	943		927	1715	765	205	1252	1471	205	1252	389
Arrive On Green	0.06	0.26	0.00	0.30	0.48	0.48	0.06	0.24	0.00	0.06	0.24	0.24
Sat Flow, veh/h	1714	3610	1610	3141	3610	1610	3326	5187	2834	3326	5187	1610
Grp Volume(v), veh/h	87	312	0	855	1010	350	176	736	-35	168	1018	130
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1570	1805	1610	1663	1729	1417	1663	1729	1610
Q Serve(g_s), s	5.7	7.9	0.0	30.0	23.2	11.3	6.0	14.3	0.0	5.7	21.1	5.7
Cycle Q Clear(g_c), s	5.7	7.9	0.0	30.0	23.2	11.3	6.0	14.3	0.0	5.7	21.1	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	109	943		927	1715	765	205	1252	1471	205	1252	389
V/C Ratio(X)	0.80	0.33		0.92	0.59	0.46	0.86	0.59	-0.02	0.82	0.81	0.33
Avail Cap(c_a), veh/h	181	943		1520	1715	765	205	1415	1560	205	1415	439
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.5	34.0	0.0	38.8	21.7	9.3	52.8	38.1	0.0	52.7	40.7	20.2
Incr Delay (d2), s/veh	5.0	0.9	0.0	4.0	1.5	2.0	27.7	0.2	0.0	21.2	2.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	3.5	0.0	11.3	9.3	3.8	3.2	5.7	0.0	2.9	8.8	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.5	34.9	0.0	42.8	23.2	11.3	80.5	38.4	0.0	73.9	43.6	20.4
LnGrp LOS	E	C		D	C	B	F	D	A	E	D	C
Approach Vol, veh/h		399	A		2215			877			1316	
Approach Delay, s/veh		39.8			28.9			48.3			45.2	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	31.4	37.6	33.7	11.0	31.4	13.2	58.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	6.0	* 6
Max Green Setting (Gmax), s	7.0	29.0	55.0	9.0	7.0	29.0	12.0	* 52
Max Q Clear Time (g_c+I1), s	7.7	16.3	32.0	9.9	8.0	23.1	7.7	25.2
Green Ext Time (p_c), s	0.0	2.4	1.6	0.0	0.0	2.4	0.0	12.5

Intersection Summary	
HCM 6th Ctrl Delay	37.8
HCM 6th LOS	D

Notes

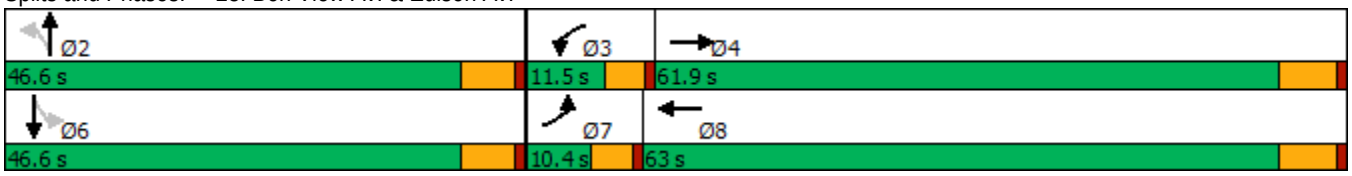
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

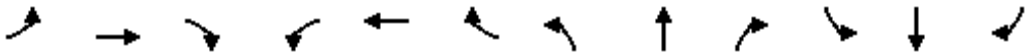
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	61	1559	51	2227	297	92	23	123
Future Volume (vph)	61	1559	51	2227	297	92	23	123
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	27.8	27.8	27.8	27.8
Total Split (s)	10.4	61.9	11.5	63.0	46.6	46.6	46.6	46.6
Total Split (%)	8.7%	51.6%	9.6%	52.5%	38.8%	38.8%	38.8%	38.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	5.8	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.8	58.2	6.5	56.8	39.3	39.3	39.3	39.3
Actuated g/C Ratio	0.05	0.49	0.05	0.48	0.33	0.33	0.33	0.33
v/c Ratio	0.80	0.72	0.59	0.98	0.95	0.33	0.07	0.32
Control Delay	110.4	26.6	80.2	45.5	76.3	24.1	27.7	27.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	110.4	26.6	80.2	45.5	76.3	24.1	27.7	27.9
LOS	F	C	F	D	E	C	C	C
Approach Delay		29.6		46.3		56.3		27.9
Approach LOS		C		D		E		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.6	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 40.4	Intersection LOS: D
Intersection Capacity Utilization 93.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 23: Bon View Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	1559	114	51	2227	20	297	92	93	23	123	55
Future Volume (veh/h)	61	1559	114	51	2227	20	297	92	93	23	123	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	66	1695	124	55	2421	22	323	100	101	25	134	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	83	2372	173	70	2509	23	374	295	298	365	423	189
Arrive On Green	0.05	0.48	0.48	0.04	0.47	0.47	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1714	4933	360	1714	5301	48	1208	867	876	1200	1243	557
Grp Volume(v), veh/h	66	1187	632	55	1578	865	323	0	201	25	0	194
Grp Sat Flow(s),veh/h/ln	1714	1729	1835	1714	1729	1891	1208	0	1742	1200	0	1800
Q Serve(g_s), s	4.6	32.6	32.7	3.8	53.1	53.3	31.2	0.0	10.3	1.9	0.0	9.6
Cycle Q Clear(g_c), s	4.6	32.6	32.7	3.8	53.1	53.3	40.8	0.0	10.3	12.2	0.0	9.6
Prop In Lane	1.00		0.20	1.00		0.03	1.00		0.50	1.00		0.31
Lane Grp Cap(c), veh/h	83	1663	883	70	1637	895	374	0	592	365	0	612
V/C Ratio(X)	0.80	0.71	0.72	0.79	0.96	0.97	0.86	0.00	0.34	0.07	0.00	0.32
Avail Cap(c_a), veh/h	83	1663	883	99	1637	895	374	0	592	365	0	612
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.5	24.6	24.6	57.0	30.6	30.7	44.8	0.0	29.5	34.1	0.0	29.3
Incr Delay (d2), s/veh	37.7	2.6	4.9	15.4	15.2	22.9	18.3	0.0	0.3	0.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	12.8	14.2	1.9	23.4	27.6	11.2	0.0	4.2	0.6	0.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	94.2	27.3	29.6	72.4	45.8	53.6	63.1	0.0	29.9	34.2	0.0	29.6
LnGrp LOS	F	C	C	E	D	D	E	A	C	C	A	C
Approach Vol, veh/h		1885			2498			524			219	
Approach Delay, s/veh		30.4			49.1			50.4			30.1	
Approach LOS		C			D			D			C	

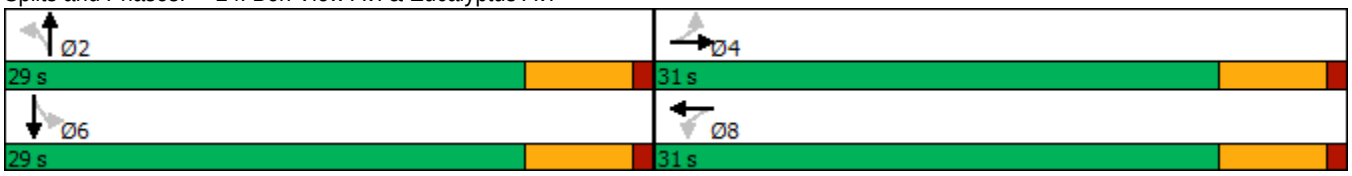
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		46.6	9.5	63.9		46.6	10.4	63.0				
Change Period (Y+Rc), s		5.8	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		40.8	6.9	55.7		40.8	5.8	56.8				
Max Q Clear Time (g_c+I1), s		42.8	5.8	34.7		14.2	6.6	55.3				
Green Ext Time (p_c), s		0.0	0.0	12.1		1.1	0.0	1.5				

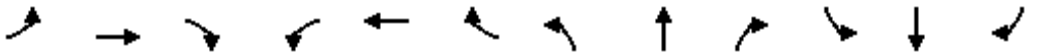
Intersection Summary												
HCM 6th Ctrl Delay			41.5									
HCM 6th LOS			D									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	38	69	20	484	21	69	46	69
Future Volume (vph)	38	69	20	484	21	69	46	69
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8
Total Split (s)	31.0	31.0	31.0	31.0	29.0	29.0	29.0	29.0
Total Split (%)	51.7%	51.7%	51.7%	51.7%	48.3%	48.3%	48.3%	48.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8		5.8		5.8
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	18.5	18.5	18.5	18.5		12.7		12.7
Actuated g/C Ratio	0.43	0.43	0.43	0.43		0.29		0.29
v/c Ratio	0.19	0.10	0.04	0.76		0.20		0.52
Control Delay	11.3	7.7	8.4	18.2		13.4		11.1
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	11.3	7.7	8.4	18.2		13.4		11.1
LOS	B	A	A	B		B		B
Approach Delay		8.9		17.8		13.4		11.1
Approach LOS		A		B		B		B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 43.3	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 14.7	Intersection LOS: B
Intersection Capacity Utilization 63.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 24: Bon View Av. & Eucalyptus Av.



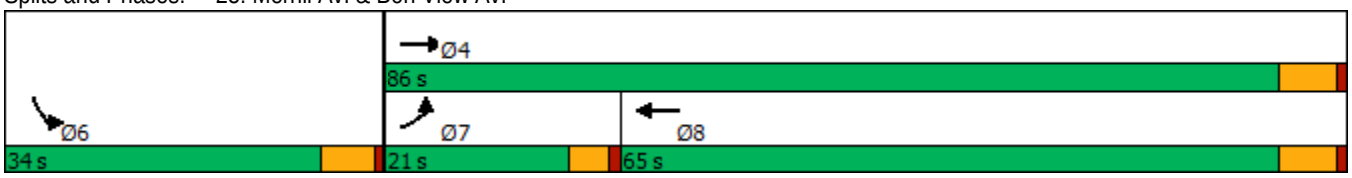


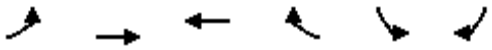
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	69	9	20	484	82	21	69	3	46	69	166
Future Volume (veh/h)	38	69	9	20	484	82	21	69	3	46	69	166
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	41	74	10	22	520	88	23	74	3	49	74	178
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	306	687	93	717	664	112	173	415	15	158	138	265
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	826	1639	221	1335	1584	268	202	1544	54	167	513	985
Grp Volume(v), veh/h	41	0	84	22	0	608	100	0	0	301	0	0
Grp Sat Flow(s),veh/h/ln	826	0	1860	1335	0	1852	1799	0	0	1666	0	0
Q Serve(g_s), s	1.7	0.0	1.0	0.4	0.0	10.6	0.0	0.0	0.0	2.2	0.0	0.0
Cycle Q Clear(g_c), s	12.2	0.0	1.0	1.4	0.0	10.6	1.5	0.0	0.0	5.9	0.0	0.0
Prop In Lane	1.00		0.12	1.00		0.14	0.23		0.03	0.16		0.59
Lane Grp Cap(c), veh/h	306	0	780	717	0	777	603	0	0	560	0	0
V/C Ratio(X)	0.13	0.00	0.11	0.03	0.00	0.78	0.17	0.00	0.00	0.54	0.00	0.00
Avail Cap(c_a), veh/h	518	0	1260	1061	0	1254	1195	0	0	1140	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.6	0.0	6.6	7.0	0.0	9.3	10.5	0.0	0.0	12.1	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.0	0.0	1.8	0.1	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.2	0.1	0.0	2.6	0.4	0.0	0.0	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.8	0.0	6.6	7.0	0.0	11.1	10.6	0.0	0.0	12.9	0.0	0.0
LnGrp LOS	B	A	A	A	A	B	B	A	A	B	A	A
Approach Vol, veh/h		125			630			100			301	
Approach Delay, s/veh		9.3			11.0			10.6			12.9	
Approach LOS		A			B			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.8		21.4		15.8		21.4				
Change Period (Y+Rc), s		5.8		5.8		5.8		5.8				
Max Green Setting (Gmax), s		23.2		25.2		23.2		25.2				
Max Q Clear Time (g_c+I1), s		3.5		14.2		7.9		12.6				
Green Ext Time (p_c), s		0.4		0.4		1.5		3.1				
Intersection Summary												
HCM 6th Ctrl Delay			11.3									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	76	390	852	54
Future Volume (vph)	76	390	852	54
Turn Type	Prot	NA	NA	Prot
Protected Phases	7	4	8	6
Permitted Phases				
Detector Phase	7	4	8	6
Switch Phase				
Minimum Initial (s)	5.0	10.0	10.0	10.0
Minimum Split (s)	9.6	16.2	28.2	27.8
Total Split (s)	21.0	86.0	65.0	34.0
Total Split (%)	17.5%	71.7%	54.2%	28.3%
Yellow Time (s)	3.6	5.2	5.2	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	5.8
Lead/Lag	Lead		Lag	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	Max	Max	None
Act Effct Green (s)	9.3	80.0	68.1	12.6
Actuated g/C Ratio	0.09	0.76	0.65	0.12
v/c Ratio	0.53	0.15	0.43	0.49
Control Delay	58.5	3.8	10.9	34.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	58.5	3.8	10.9	34.3
LOS	E	A	B	C
Approach Delay		12.7	10.9	34.3
Approach LOS		B	B	C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 104.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.53	
Intersection Signal Delay: 13.2	Intersection LOS: B
Intersection Capacity Utilization 53.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 25: Merrill Av. & Bon View Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	76	390	852	89	54	59
Future Volume (veh/h)	76	390	852	89	54	59
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	81	415	906	95	57	63
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	103	2839	2246	235	76	84
Arrive On Green	0.06	0.79	0.68	0.68	0.10	0.10
Sat Flow, veh/h	1714	3705	3392	346	801	885
Grp Volume(v), veh/h	81	415	496	505	121	0
Grp Sat Flow(s),veh/h/ln	1714	1805	1805	1838	1701	0
Q Serve(g_s), s	4.7	2.8	12.3	12.3	7.0	0.0
Cycle Q Clear(g_c), s	4.7	2.8	12.3	12.3	7.0	0.0
Prop In Lane	1.00			0.19	0.47	0.52
Lane Grp Cap(c), veh/h	103	2839	1229	1252	162	0
V/C Ratio(X)	0.79	0.15	0.40	0.40	0.75	0.00
Avail Cap(c_a), veh/h	277	2839	1229	1252	473	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.1	2.6	7.1	7.1	44.7	0.0
Incr Delay (d2), s/veh	5.0	0.1	1.0	1.0	6.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.6	3.9	4.0	3.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	52.0	2.7	8.1	8.1	51.4	0.0
LnGrp LOS	D	A	A	A	D	A
Approach Vol, veh/h		496	1001		121	
Approach Delay, s/veh		10.8	8.1		51.4	
Approach LOS		B	A		D	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			86.0		15.5	10.7	75.3
Change Period (Y+Rc), s			6.2		5.8	4.6	6.2
Max Green Setting (Gmax), s			79.8		28.2	16.4	58.8
Max Q Clear Time (g_c+I1), s			4.8		9.0	6.7	14.3
Green Ext Time (p_c), s			2.6		0.3	0.0	6.7

Intersection Summary	
HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B

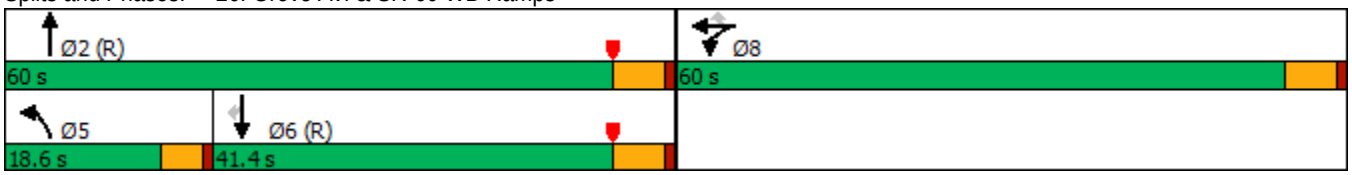
Notes

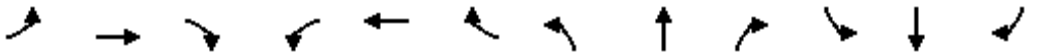
User approved volume balancing among the lanes for turning movement.

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	687	325	1426	853	700
Future Volume (vph)	0	687	325	1426	853	700
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	60.0	60.0	18.6	60.0	41.4	41.4
Total Split (%)	50.0%	50.0%	15.5%	50.0%	34.5%	34.5%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	54.0	54.0	13.8	54.4	36.1	36.1
Actuated g/C Ratio	0.45	0.45	0.12	0.45	0.30	0.30
v/c Ratio	0.41	0.98	0.88	0.90	0.81	0.75
Control Delay	24.1	58.1	72.5	34.7	45.7	7.9
Queue Delay	0.0	0.0	0.0	46.3	0.0	0.0
Total Delay	24.1	58.1	72.5	81.1	45.7	7.9
LOS	C	E	E	F	D	A
Approach Delay	47.7			79.5	28.6	
Approach LOS	D			E	C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 53.8	Intersection LOS: D
Intersection Capacity Utilization 91.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	303	0	687	325	1426	0	0	853	700
Future Volume (veh/h)	0	0	0	303	0	687	325	1426	0	0	853	700
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				329	0	618	353	1550	0	0	927	650
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				739	0	658	400	1881	0	0	1302	550
Arrive On Green				0.41	0.00	0.41	0.23	0.99	0.00	0.00	0.34	0.34
Sat Flow, veh/h				1810	0	1610	3510	3800	0	0	3800	1606
Grp Volume(v), veh/h				329	0	618	353	1550	0	0	927	650
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1900	0	0	1900	1606
Q Serve(g_s), s				15.8	0.0	44.2	11.7	2.7	0.0	0.0	25.5	41.1
Cycle Q Clear(g_c), s				15.8	0.0	44.2	11.7	2.7	0.0	0.0	25.5	41.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				739	0	658	400	1881	0	0	1302	550
V/C Ratio(X)				0.45	0.00	0.94	0.88	0.82	0.00	0.00	0.71	1.18
Avail Cap(c_a), veh/h				817	0	727	410	1881	0	0	1302	550
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.29	0.29	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				25.7	0.0	34.1	45.5	0.3	0.0	0.0	34.3	39.4
Incr Delay (d2), s/veh				0.4	0.0	19.1	6.5	1.3	0.0	0.0	3.3	99.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.6	0.0	19.7	4.7	0.5	0.0	0.0	11.8	30.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				26.1	0.0	53.2	52.0	1.6	0.0	0.0	37.6	138.7
LnGrp LOS				C	A	D	D	A	A	A	D	F
Approach Vol, veh/h					947			1903			1577	
Approach Delay, s/veh					43.8			10.9			79.3	
Approach LOS					D			B			E	

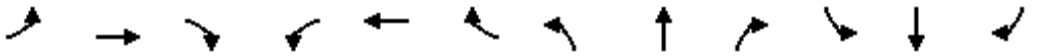
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		65.2			18.3	46.9		54.8				
Change Period (Y+Rc), s		5.8			4.6	5.8		5.8				
Max Green Setting (Gmax), s		54.2			14.0	35.6		54.2				
Max Q Clear Time (g_c+I1), s		4.7			13.7	43.1		46.2				
Green Ext Time (p_c), s		16.4			0.0	0.0		2.8				

Intersection Summary												
HCM 6th Ctrl Delay			42.3									
HCM 6th LOS			D									

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	780	1	233	972	437	719
Future Volume (vph)	780	1	233	972	437	719
Turn Type	Split	NA	Perm	NA	Prot	NA
Protected Phases	4	4		2	1	6
Permitted Phases			4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	30.8	26.8	9.6	22.8
Total Split (s)	38.0	38.0	38.0	60.0	22.0	82.0
Total Split (%)	31.7%	31.7%	31.7%	50.0%	18.3%	68.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.6	5.8
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	31.5	31.5	31.5	55.1	17.2	76.9
Actuated g/C Ratio	0.26	0.26	0.26	0.46	0.14	0.64
v/c Ratio	0.94	0.94	0.44	0.90	0.92	0.32
Control Delay	73.7	74.1	9.7	37.0	73.4	9.0
Queue Delay	0.2	0.2	0.0	46.6	0.0	0.3
Total Delay	73.9	74.3	9.7	83.6	73.4	9.3
LOS	E	E	A	F	E	A
Approach Delay		59.3		83.6		33.5
Approach LOS		E		F		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 60.6	Intersection LOS: E
Intersection Capacity Utilization 91.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	780	1	233	0	0	0	0	972	440	437	719	0
Future Volume (veh/h)	780	1	233	0	0	0	0	972	440	437	719	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	849	0	178				0	1057	369	475	782	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	923	0	410				0	1259	434	520	2463	0
Arrive On Green	0.26	0.00	0.26				0.00	0.47	0.47	0.29	1.00	0.00
Sat Flow, veh/h	3619	0	1606				0	2701	930	3619	3800	0
Grp Volume(v), veh/h	849	0	178				0	739	687	475	782	0
Grp Sat Flow(s),veh/h/ln	1810	0	1606				0	1900	1731	1810	1900	0
Q Serve(g_s), s	27.4	0.0	11.1				0.0	40.8	42.1	15.2	0.0	0.0
Cycle Q Clear(g_c), s	27.4	0.0	11.1				0.0	40.8	42.1	15.2	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.54	1.00		0.00
Lane Grp Cap(c), veh/h	923	0	410				0	886	807	520	2463	0
V/C Ratio(X)	0.92	0.00	0.43				0.00	0.83	0.85	0.91	0.32	0.00
Avail Cap(c_a), veh/h	971	0	431				0	886	807	525	2463	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.66	0.66	0.48	0.48	0.00
Uniform Delay (d), s/veh	43.5	0.0	37.4				0.0	28.0	28.3	42.0	0.0	0.0
Incr Delay (d2), s/veh	13.1	0.0	0.7				0.0	6.2	7.6	11.2	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.5	0.0	4.3				0.0	18.8	17.9	6.4	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.6	0.0	38.2				0.0	34.2	35.9	53.3	0.2	0.0
LnGrp LOS	E	A	D				A	C	D	D	A	A
Approach Vol, veh/h		1027						1426			1257	
Approach Delay, s/veh		53.4						35.0			20.2	
Approach LOS		D						D			C	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	21.8	61.7		36.4		83.6						
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8						
Max Green Setting (Gmax), s	17.4	54.2		32.2		76.2						
Max Q Clear Time (g_c+I1), s	17.2	44.1		29.4		2.0						
Green Ext Time (p_c), s	0.0	6.1		1.2		5.8						

Intersection Summary			
HCM 6th Ctrl Delay		35.1	
HCM 6th LOS		D	

Notes

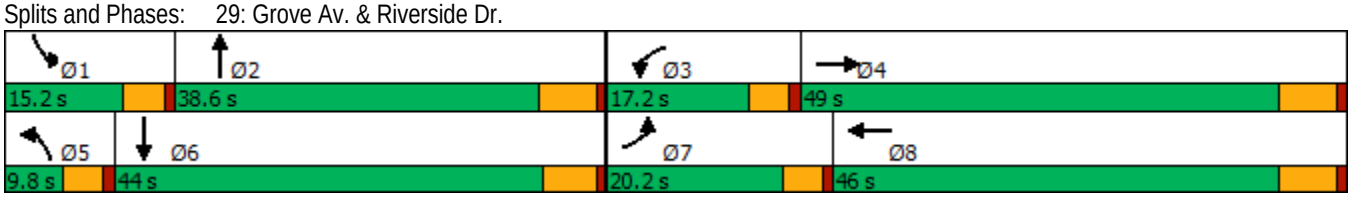
User approved volume balancing among the lanes for turning movement.

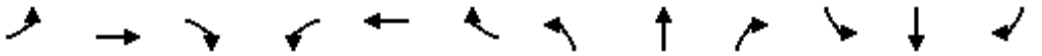
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	182	469	77	931	32	693	119	404
Future Volume (vph)	182	469	77	931	32	693	119	404
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8
Total Split (s)	20.2	49.0	17.2	46.0	9.8	38.6	15.2	44.0
Total Split (%)	16.8%	40.8%	14.3%	38.3%	8.2%	32.2%	12.7%	36.7%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	15.1	47.3	9.8	39.8	5.2	32.4	10.4	41.9
Actuated g/C Ratio	0.13	0.40	0.08	0.33	0.04	0.27	0.09	0.35
v/c Ratio	0.91	0.39	0.60	0.99	0.47	0.87	0.87	0.53
Control Delay	94.1	27.5	70.0	62.3	77.0	51.9	100.2	29.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.1	27.5	70.0	62.3	77.0	51.9	100.2	29.6
LOS	F	C	E	E	E	D	F	C
Approach Delay		45.1		62.8		52.9		41.1
Approach LOS		D		E		D		D

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 119.3
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 52.2 — Intersection LOS: D
Intersection Capacity Utilization 87.8% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	469	37	77	931	145	32	693	84	119	404	206
Future Volume (veh/h)	182	469	37	77	931	145	32	693	84	119	404	206
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	198	510	33	84	1012	133	35	753	69	129	439	140
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	223	1374	89	105	1058	139	49	904	83	152	892	282
Arrive On Green	0.13	0.40	0.40	0.06	0.33	0.33	0.03	0.27	0.27	0.09	0.33	0.33
Sat Flow, veh/h	1714	3443	222	1714	3201	420	1714	3339	306	1714	2699	853
Grp Volume(v), veh/h	198	267	276	84	570	575	35	407	415	129	292	287
Grp Sat Flow(s),veh/h/ln	1714	1805	1860	1714	1805	1817	1714	1805	1840	1714	1805	1746
Q Serve(g_s), s	13.6	12.5	12.5	5.8	37.0	37.1	2.4	25.4	25.4	8.9	15.5	15.7
Cycle Q Clear(g_c), s	13.6	12.5	12.5	5.8	37.0	37.1	2.4	25.4	25.4	8.9	15.5	15.7
Prop In Lane	1.00		0.12	1.00		0.23	1.00		0.17	1.00		0.49
Lane Grp Cap(c), veh/h	223	721	743	105	596	600	49	488	498	152	596	577
V/C Ratio(X)	0.89	0.37	0.37	0.80	0.96	0.96	0.71	0.83	0.83	0.85	0.49	0.50
Avail Cap(c_a), veh/h	223	721	743	180	600	604	74	488	498	152	596	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.2	25.4	25.4	55.5	39.2	39.3	57.7	41.1	41.1	53.8	32.0	32.1
Incr Delay (d2), s/veh	31.2	0.3	0.3	5.2	26.1	26.3	6.9	15.3	15.1	32.8	2.9	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	5.1	5.3	2.6	19.7	19.9	1.1	12.8	13.1	5.1	7.0	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.4	25.7	25.7	60.6	65.4	65.6	64.5	56.4	56.2	86.6	34.9	35.2
LnGrp LOS	F	C	C	E	E	E	E	E	E	F	C	D
Approach Vol, veh/h		741			1229			857			708	
Approach Delay, s/veh		40.8			65.1			56.7			44.4	
Approach LOS		D			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.2	38.6	11.9	54.0	8.0	45.8	20.2	45.8
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	4.6	6.2
Max Green Setting (Gmax), s	10.6	32.4	12.6	42.8	5.2	* 38	15.6	39.8
Max Q Clear Time (g_c+I1), s	10.9	27.4	7.8	14.5	4.4	17.7	15.6	39.1
Green Ext Time (p_c), s	0.0	2.0	0.0	2.9	0.0	3.1	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	53.8
HCM 6th LOS	D

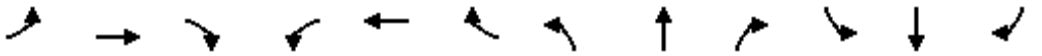
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	89	173	26	119	67	661	58	437
Future Volume (vph)	89	173	26	119	67	661	58	437
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	9.6	28.2	9.6	28.2
Total Split (s)	43.0	43.0	43.0	43.0	20.0	58.0	19.0	57.0
Total Split (%)	35.8%	35.8%	35.8%	35.8%	16.7%	48.3%	15.8%	47.5%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	17.3	17.3	17.3	17.3	8.4	52.5	7.9	52.1
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.09	0.57	0.09	0.56
v/c Ratio	0.52	0.71	0.21	0.52	0.47	0.37	0.43	0.26
Control Delay	45.7	45.5	37.0	36.5	52.5	13.3	51.9	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.7	45.5	37.0	36.5	52.5	13.3	51.9	12.4
LOS	D	D	D	D	D	B	D	B
Approach Delay		45.5		36.6		16.7		16.7
Approach LOS		D		D		B		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 92.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 23.9	Intersection LOS: C
Intersection Capacity Utilization 63.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 30: Grove Av. & Chino Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	173	57	26	119	50	67	661	39	58	437	38
Future Volume (veh/h)	89	173	57	26	119	50	67	661	39	58	437	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	97	188	62	28	129	54	73	718	42	63	475	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	218	279	92	167	260	109	93	1954	114	80	1871	161
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.05	0.56	0.56	0.05	0.56	0.56
Sat Flow, veh/h	1220	1368	451	1148	1272	532	1714	3466	203	1714	3364	289
Grp Volume(v), veh/h	97	0	250	28	0	183	73	374	386	63	254	262
Grp Sat Flow(s),veh/h/ln	1220	0	1819	1148	0	1804	1714	1805	1864	1714	1805	1848
Q Serve(g_s), s	7.0	0.0	11.6	2.1	0.0	8.3	3.9	10.5	10.5	3.3	6.7	6.7
Cycle Q Clear(g_c), s	15.3	0.0	11.6	13.8	0.0	8.3	3.9	10.5	10.5	3.3	6.7	6.7
Prop In Lane	1.00		0.25	1.00		0.30	1.00		0.11	1.00		0.16
Lane Grp Cap(c), veh/h	218	0	372	167	0	369	93	1018	1051	80	1004	1028
V/C Ratio(X)	0.44	0.00	0.67	0.17	0.00	0.50	0.78	0.37	0.37	0.79	0.25	0.25
Avail Cap(c_a), veh/h	457	0	729	393	0	723	287	1018	1051	269	1004	1028
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.1	0.0	33.7	40.1	0.0	32.4	42.9	11.0	11.0	43.3	10.5	10.5
Incr Delay (d2), s/veh	1.4	0.0	2.1	0.5	0.0	1.0	5.3	1.0	1.0	6.2	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	5.0	0.6	0.0	3.5	1.7	3.7	3.9	1.5	2.4	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.5	0.0	35.8	40.5	0.0	33.4	48.3	12.0	12.0	49.5	11.1	11.1
LnGrp LOS	D	A	D	D	A	C	D	B	B	D	B	B
Approach Vol, veh/h		347			211			833			579	
Approach Delay, s/veh		37.2			34.3			15.2			15.3	
Approach LOS		D			C			B			B	

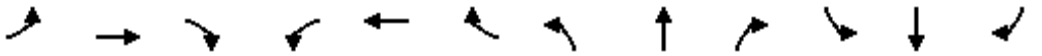
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.9	58.0		25.0	9.6	57.3		25.0				
Change Period (Y+Rc), s	4.6	6.2		6.2	4.6	6.2		6.2				
Max Green Setting (Gmax), s	14.4	51.8		36.8	15.4	50.8		36.8				
Max Q Clear Time (g_c+I1), s	5.3	12.5		17.3	5.9	8.7		15.8				
Green Ext Time (p_c), s	0.0	4.5		1.5	0.0	2.8		0.9				

Intersection Summary			
HCM 6th Ctrl Delay		21.2	
HCM 6th LOS		C	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	262	1096	203	532	126	407	78	341
Future Volume (vph)	262	1096	203	532	126	407	78	341
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	9.6	28.2	9.6	28.2
Total Split (s)	79.0	79.0	79.0	79.0	12.0	30.0	11.0	29.0
Total Split (%)	65.8%	65.8%	65.8%	65.8%	10.0%	25.0%	9.2%	24.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.6	6.2	4.6	6.2
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	73.2	73.2	73.2	73.2	7.4	23.8	6.4	22.8
Actuated g/C Ratio	0.61	0.61	0.61	0.61	0.06	0.20	0.05	0.19
v/c Ratio	0.72	0.72	2.19	0.31	1.30	0.72	0.93	0.62
Control Delay	28.9	17.9	585.4	11.2	234.0	50.3	134.6	48.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	17.9	585.4	11.2	234.0	50.3	134.6	48.0
LOS	C	B	F	B	F	D	F	D
Approach Delay		19.6		152.0		89.0		62.4
Approach LOS		B		F		F		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.19	
Intersection Signal Delay: 67.5	Intersection LOS: E
Intersection Capacity Utilization 89.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 31: Grove Av. & Schaefer Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	262	1096	324	203	532	94	126	407	66	78	341	51
Future Volume (veh/h)	262	1096	324	203	532	94	126	407	66	78	341	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	285	1191	352	221	578	102	137	442	72	85	371	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	461	1683	489	164	1871	329	106	617	100	91	600	88
Arrive On Green	0.61	0.61	0.61	0.61	0.61	0.61	0.06	0.20	0.20	0.05	0.19	0.19
Sat Flow, veh/h	772	2759	802	341	3068	540	1714	3111	504	1714	3157	464
Grp Volume(v), veh/h	285	772	771	221	339	341	137	255	259	85	211	215
Grp Sat Flow(s),veh/h/ln	772	1805	1756	341	1805	1803	1714	1805	1809	1714	1805	1816
Q Serve(g_s), s	33.8	35.0	36.6	36.6	10.8	10.9	7.4	15.8	16.0	5.9	12.9	13.1
Cycle Q Clear(g_c), s	44.7	35.0	36.6	73.2	10.8	10.9	7.4	15.8	16.0	5.9	12.9	13.1
Prop In Lane	1.00		0.46	1.00		0.30	1.00		0.28	1.00		0.26
Lane Grp Cap(c), veh/h	461	1101	1071	164	1101	1100	106	358	359	91	343	345
V/C Ratio(X)	0.62	0.70	0.72	1.35	0.31	0.31	1.30	0.71	0.72	0.93	0.61	0.62
Avail Cap(c_a), veh/h	461	1101	1071	164	1101	1100	106	358	359	91	343	345
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.0	15.9	16.3	48.4	11.2	11.3	56.3	44.9	45.0	56.6	44.6	44.7
Incr Delay (d2), s/veh	2.5	2.0	2.4	191.6	0.2	0.2	186.4	11.5	11.8	70.3	8.0	8.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	13.4	13.7	13.6	4.0	4.0	8.6	8.0	8.1	4.3	6.3	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.5	18.0	18.6	240.0	11.4	11.4	242.7	56.4	56.8	126.9	52.6	52.9
LnGrp LOS	C	B	B	F	B	B	F	E	E	F	D	D
Approach Vol, veh/h		1828			901			651			511	
Approach Delay, s/veh		19.3			67.5			95.8			65.1	
Approach LOS		B			E			F			E	

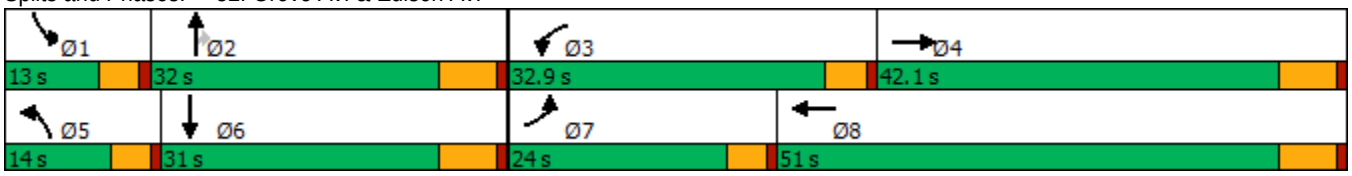
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	30.0		79.0	12.0	29.0		79.0				
Change Period (Y+Rc), s	4.6	6.2		5.8	4.6	6.2		5.8				
Max Green Setting (Gmax), s	6.4	23.8		73.2	7.4	22.8		73.2				
Max Q Clear Time (g_c+I1), s	7.9	18.0		46.7	9.4	15.1		75.2				
Green Ext Time (p_c), s	0.0	1.3		14.9	0.0	1.3		0.0				

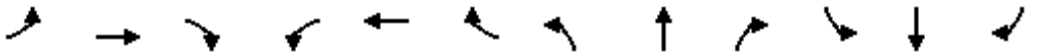
Intersection Summary												
HCM 6th Ctrl Delay			49.2									
HCM 6th LOS			D									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	207	966	302	1570	63	404	42	73	365
Future Volume (vph)	207	966	302	1570	63	404	42	73	365
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8	5	2		1	6
Permitted Phases							2		
Detector Phase	7	4	3	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	9.6	28.2	28.2	9.6	28.2
Total Split (s)	24.0	42.1	32.9	51.0	14.0	32.0	32.0	13.0	31.0
Total Split (%)	20.0%	35.1%	27.4%	42.5%	11.7%	26.7%	26.7%	10.8%	25.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	None	None	None	None	None
Act Effct Green (s)	17.4	38.5	24.3	45.4	7.9	19.2	19.2	7.8	18.9
Actuated g/C Ratio	0.16	0.35	0.22	0.42	0.07	0.18	0.18	0.07	0.17
v/c Ratio	0.83	0.63	0.86	0.82	0.55	0.69	0.11	0.65	0.70
Control Delay	70.6	33.1	64.1	34.0	69.0	48.9	0.5	76.5	48.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.6	33.1	64.1	34.0	69.0	48.9	0.5	76.5	48.9
LOS	E	C	E	C	E	D	A	E	D
Approach Delay		39.3		38.7		47.4			53.1
Approach LOS		D		D		D			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 41.6	Intersection LOS: D
Intersection Capacity Utilization 77.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	966	93	302	1570	59	63	404	42	73	365	37
Future Volume (veh/h)	207	966	93	302	1570	59	63	404	42	73	365	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	225	1050	101	328	1707	64	68	439	46	79	397	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	255	1779	171	358	2207	83	86	562	251	100	542	54
Arrive On Green	0.15	0.37	0.37	0.21	0.43	0.43	0.05	0.16	0.16	0.06	0.16	0.16
Sat Flow, veh/h	1714	4813	462	1714	5131	192	1714	3610	1610	1714	3313	332
Grp Volume(v), veh/h	225	754	397	328	1150	621	68	439	46	79	215	222
Grp Sat Flow(s),veh/h/ln	1714	1729	1817	1714	1729	1865	1714	1805	1610	1714	1805	1840
Q Serve(g_s), s	13.4	18.3	18.4	19.5	29.6	29.6	4.1	12.2	2.6	4.7	11.8	11.9
Cycle Q Clear(g_c), s	13.4	18.3	18.4	19.5	29.6	29.6	4.1	12.2	2.6	4.7	11.8	11.9
Prop In Lane	1.00		0.25	1.00		0.10	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	255	1279	672	358	1487	802	86	562	251	100	295	301
V/C Ratio(X)	0.88	0.59	0.59	0.92	0.77	0.77	0.79	0.78	0.18	0.79	0.73	0.74
Avail Cap(c_a), veh/h	319	1279	672	466	1487	802	155	894	399	138	430	438
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.5	26.5	26.5	40.3	25.4	25.4	48.9	42.3	38.2	48.4	41.4	41.4
Incr Delay (d2), s/veh	18.1	2.0	3.8	17.1	4.0	7.2	5.8	2.4	0.3	12.8	3.5	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	7.3	8.0	9.5	11.8	13.4	1.8	5.3	1.0	2.3	5.3	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.5	28.5	30.3	57.4	29.3	32.5	54.7	44.7	38.6	61.2	44.9	45.1
LnGrp LOS	E	C	C	E	C	C	D	D	D	E	D	D
Approach Vol, veh/h		1376			2099			553			516	
Approach Delay, s/veh		34.4			34.7			45.4			47.5	
Approach LOS		C			C			D			D	

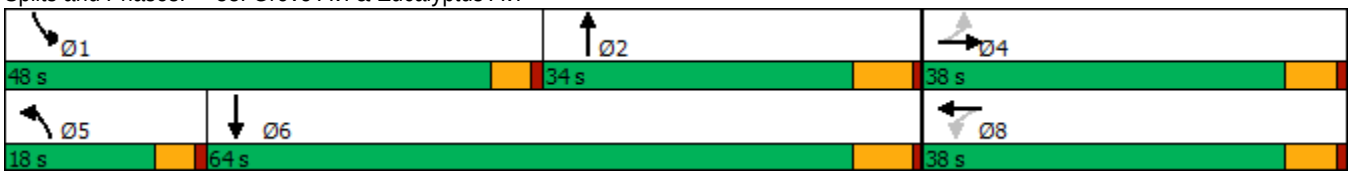
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	22.4	26.4	44.7	9.8	23.2	20.1	51.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	8.4	25.8	28.3	35.9	9.4	24.8	19.4	44.8
Max Q Clear Time (g_c+I1), s	6.7	14.2	21.5	20.4	6.1	13.9	15.4	31.6
Green Ext Time (p_c), s	0.0	2.0	0.3	6.1	0.0	1.6	0.1	8.6

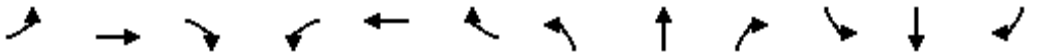
Intersection Summary	
HCM 6th Ctrl Delay	37.3
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	49	84	23	113	76	379	213	522
Future Volume (vph)	49	84	23	113	76	379	213	522
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	9.6	28.2	9.6	28.2
Total Split (s)	38.0	38.0	38.0	38.0	18.0	34.0	48.0	64.0
Total Split (%)	31.7%	31.7%	31.7%	31.7%	15.0%	28.3%	40.0%	53.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.6	6.2	4.6	6.2
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	17.1	17.1	17.1	17.1	9.0	47.8	17.3	58.6
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.09	0.48	0.17	0.59
v/c Ratio	0.46	0.33	0.11	0.73	0.51	0.25	0.74	0.34
Control Delay	51.9	36.7	36.4	45.7	56.4	17.2	53.8	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.9	36.7	36.4	45.7	56.4	17.2	53.8	12.0
LOS	D	D	D	D	E	B	D	B
Approach Delay		41.7		44.9		23.5		22.4
Approach LOS		D		D		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 27.6	Intersection LOS: C
Intersection Capacity Utilization 62.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	84	16	23	113	112	76	379	23	213	522	123
Future Volume (veh/h)	49	84	16	23	113	112	76	379	23	213	522	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	53	91	17	25	123	122	83	412	25	232	567	134
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	154	309	58	277	174	172	107	1688	102	268	1673	394
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.06	0.49	0.49	0.15	0.58	0.58
Sat Flow, veh/h	1217	1557	291	1378	875	868	1810	3458	209	1810	2899	683
Grp Volume(v), veh/h	53	0	108	25	0	245	83	214	223	232	352	349
Grp Sat Flow(s),veh/h/ln	1217	0	1848	1378	0	1744	1810	1805	1862	1810	1805	1777
Q Serve(g_s), s	4.3	0.0	5.0	1.6	0.0	13.1	4.5	6.9	7.0	12.6	10.3	10.3
Cycle Q Clear(g_c), s	17.4	0.0	5.0	6.6	0.0	13.1	4.5	6.9	7.0	12.6	10.3	10.3
Prop In Lane	1.00		0.16	1.00		0.50	1.00		0.11	1.00		0.38
Lane Grp Cap(c), veh/h	154	0	366	277	0	346	107	881	909	268	1041	1025
V/C Ratio(X)	0.34	0.00	0.29	0.09	0.00	0.71	0.78	0.24	0.24	0.87	0.34	0.34
Avail Cap(c_a), veh/h	303	0	594	446	0	560	242	881	909	784	1041	1025
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	0.0	34.2	37.0	0.0	37.5	46.5	14.9	14.9	41.7	11.1	11.2
Incr Delay (d2), s/veh	1.3	0.0	0.4	0.1	0.0	2.7	4.5	0.7	0.6	3.3	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	2.2	0.5	0.0	5.6	2.1	2.7	2.8	5.6	3.7	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.9	0.0	34.6	37.1	0.0	40.1	51.0	15.6	15.5	45.1	12.0	12.1
LnGrp LOS	D	A	C	D	A	D	D	B	B	D	B	B
Approach Vol, veh/h		161			270			520			933	
Approach Delay, s/veh		38.7			39.9			21.2			20.2	
Approach LOS		D			D			C			C	

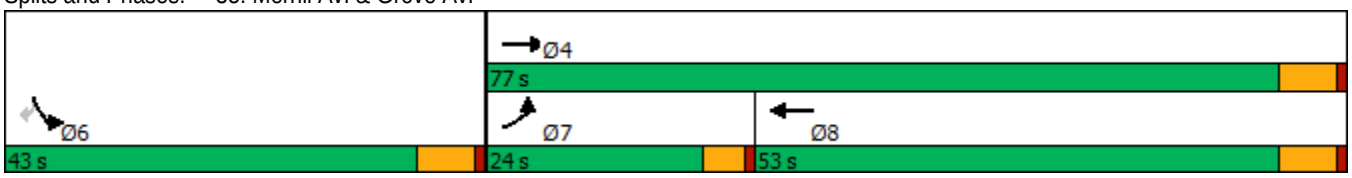
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.4	55.1		25.7	10.5	64.0		25.7				
Change Period (Y+Rc), s	4.6	6.2		5.8	4.6	6.2		5.8				
Max Green Setting (Gmax), s	43.4	27.8		32.2	13.4	57.8		32.2				
Max Q Clear Time (g_c+I1), s	14.6	9.0		19.4	6.5	12.3		15.1				
Green Ext Time (p_c), s	0.3	2.1		0.5	0.0	4.2		1.2				

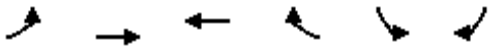
Intersection Summary			
HCM 6th Ctrl Delay		24.9	
HCM 6th LOS		C	

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	139	428	798	406	155
Future Volume (vph)	139	428	798	406	155
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	16.2	28.2	28.2	28.2
Total Split (s)	24.0	77.0	53.0	43.0	43.0
Total Split (%)	20.0%	64.2%	44.2%	35.8%	35.8%
Yellow Time (s)	3.6	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	6.2	6.2
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	Max	Max	None	None
Act Effct Green (s)	13.7	71.0	52.7	30.3	30.3
Actuated g/C Ratio	0.12	0.62	0.46	0.27	0.27
v/c Ratio	0.70	0.20	0.72	0.87	0.29
Control Delay	66.1	10.1	28.1	59.0	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	66.1	10.1	28.1	59.0	6.1
LOS	E	B	C	E	A
Approach Delay		23.8	28.1	44.4	
Approach LOS		C	C	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113.8	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 31.1	Intersection LOS: C
Intersection Capacity Utilization 77.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	139	428	798	339	406	155
Future Volume (veh/h)	139	428	798	339	406	155
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	143	441	823	349	419	160
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	171	2290	1220	516	461	410
Arrive On Green	0.10	0.63	0.49	0.49	0.25	0.25
Sat Flow, veh/h	1714	3705	2567	1045	1810	1610
Grp Volume(v), veh/h	143	441	600	572	419	160
Grp Sat Flow(s),veh/h/ln	1714	1805	1805	1712	1810	1610
Q Serve(g_s), s	9.1	5.7	28.2	28.3	25.1	9.2
Cycle Q Clear(g_c), s	9.1	5.7	28.2	28.3	25.1	9.2
Prop In Lane	1.00			0.61	1.00	1.00
Lane Grp Cap(c), veh/h	171	2290	891	845	461	410
V/C Ratio(X)	0.84	0.19	0.67	0.68	0.91	0.39
Avail Cap(c_a), veh/h	298	2290	891	845	597	531
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.4	8.5	21.4	21.5	40.4	34.4
Incr Delay (d2), s/veh	4.1	0.2	4.1	4.3	15.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	2.0	11.7	11.2	12.5	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	53.5	8.7	25.5	25.8	55.6	35.0
LnGrp LOS	D	A	C	C	E	D
Approach Vol, veh/h		584	1172		579	
Approach Delay, s/veh		19.7	25.7		49.9	
Approach LOS		B	C		D	

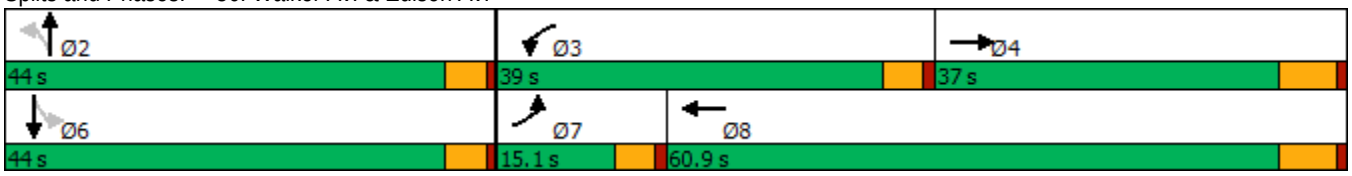
Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	77.0	34.6	15.7	61.3
Change Period (Y+Rc), s	6.2	6.2	4.6	6.2
Max Green Setting (Gmax), s	70.8	36.8	19.4	46.8
Max Q Clear Time (g_c+I1), s	7.7	27.1	11.1	30.3
Green Ext Time (p_c), s	2.8	1.3	0.1	6.6

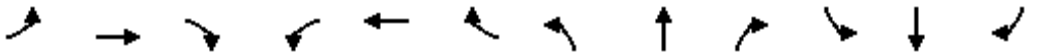
Intersection Summary	
HCM 6th Ctrl Delay	30.2
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	63	846	194	1282	87	245	59	36
Future Volume (vph)	63	846	194	1282	87	245	59	36
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	26.7	26.7	26.7	26.7
Total Split (s)	15.1	37.0	39.0	60.9	44.0	44.0	44.0	44.0
Total Split (%)	12.6%	30.8%	32.5%	50.8%	36.7%	36.7%	36.7%	36.7%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	7.9	45.0	16.1	55.6	24.1	24.1	24.1	24.1
Actuated g/C Ratio	0.08	0.45	0.16	0.55	0.24	0.24	0.24	0.24
v/c Ratio	0.48	0.39	0.73	0.57	0.30	0.78	0.61	0.18
Control Delay	60.0	21.4	57.0	17.4	34.4	47.2	62.1	16.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.0	21.4	57.0	17.4	34.4	47.2	62.1	16.8
LOS	E	C	E	B	C	D	E	B
Approach Delay		24.0		21.7		44.6		35.8
Approach LOS		C		C		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 101	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 26.0	Intersection LOS: C
Intersection Capacity Utilization 79.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	846	29	194	1282	285	87	245	98	59	36	45
Future Volume (veh/h)	63	846	29	194	1282	285	87	245	98	59	36	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	64	863	30	198	1308	291	89	250	100	60	37	46
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	81	2334	81	231	2294	510	367	334	134	156	199	248
Arrive On Green	0.05	0.45	0.45	0.13	0.54	0.54	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1714	5147	179	1714	4244	944	1336	1291	516	1047	770	957
Grp Volume(v), veh/h	64	579	314	198	1065	534	89	0	350	60	0	83
Grp Sat Flow(s),veh/h/ln	1714	1729	1868	1714	1729	1730	1336	0	1807	1047	0	1728
Q Serve(g_s), s	3.7	11.1	11.2	11.4	20.7	20.7	5.6	0.0	18.0	5.7	0.0	3.8
Cycle Q Clear(g_c), s	3.7	11.1	11.2	11.4	20.7	20.7	9.4	0.0	18.0	23.7	0.0	3.8
Prop In Lane	1.00		0.10	1.00		0.55	1.00		0.29	1.00		0.55
Lane Grp Cap(c), veh/h	81	1568	847	231	1869	935	367	0	468	156	0	447
V/C Ratio(X)	0.79	0.37	0.37	0.86	0.57	0.57	0.24	0.00	0.75	0.39	0.00	0.19
Avail Cap(c_a), veh/h	178	1568	847	583	1869	935	540	0	702	291	0	671
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.7	18.1	18.2	42.8	15.4	15.4	32.9	0.0	34.5	45.4	0.0	29.2
Incr Delay (d2), s/veh	6.1	0.7	1.2	3.6	1.3	2.5	0.3	0.0	2.4	1.6	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	4.2	4.7	4.8	7.4	7.7	1.8	0.0	8.1	1.5	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.8	18.8	19.4	46.4	16.7	18.0	33.2	0.0	36.9	46.9	0.0	29.4
LnGrp LOS	D	B	B	D	B	B	C	A	D	D	A	C
Approach Vol, veh/h		957			1797			439			143	
Approach Delay, s/veh		21.4			20.4			36.2			36.7	
Approach LOS		C			C			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.9	18.2	52.1		30.9	9.4	60.9				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		* 4.7	4.6	6.2				
Max Green Setting (Gmax), s		* 39	34.4	30.8		* 39	10.5	54.7				
Max Q Clear Time (g_c+I1), s		20.0	13.4	13.2		25.7	5.7	22.7				
Green Ext Time (p_c), s		2.4	0.2	4.8		0.5	0.0	12.8				

Intersection Summary		
HCM 6th Ctrl Delay		23.4
HCM 6th LOS		C

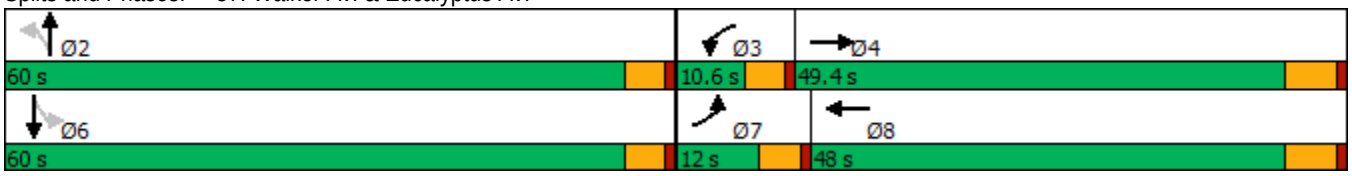
Notes

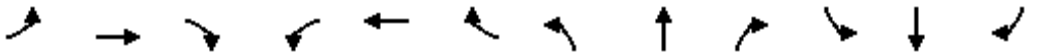
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	41	87	10	319	10	18	153	88
Future Volume (vph)	41	87	10	319	10	18	153	88
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	27.8	26.6	26.6	26.7	26.7
Total Split (s)	12.0	49.4	10.6	48.0	60.0	60.0	60.0	60.0
Total Split (%)	10.0%	41.2%	8.8%	40.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	3.6	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	4.6	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	6.4	48.4	5.4	43.9	19.6	19.6	19.5	19.5
Actuated g/C Ratio	0.08	0.60	0.07	0.55	0.24	0.24	0.24	0.24
v/c Ratio	0.31	0.09	0.09	0.47	0.12	0.07	0.49	0.78
Control Delay	45.2	9.6	42.6	15.8	26.9	17.6	31.5	25.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.2	9.6	42.6	15.8	26.9	17.6	31.5	25.8
LOS	D	A	D	B	C	B	C	C
Approach Delay		20.2		16.4		20.0		27.4
Approach LOS		C		B		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 80.4	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 22.1	Intersection LOS: C
Intersection Capacity Utilization 63.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 37: Walker Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	87	10	10	319	111	10	18	10	153	88	308
Future Volume (veh/h)	41	87	10	10	319	111	10	18	10	153	88	308
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	45	95	11	11	347	121	11	20	11	166	96	335
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	69	848	98	24	649	226	149	354	195	518	114	398
Arrive On Green	0.04	0.51	0.51	0.01	0.48	0.48	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1810	1672	194	1810	1346	469	1026	1152	634	1478	371	1296
Grp Volume(v), veh/h	45	0	106	11	0	468	11	0	31	166	0	431
Grp Sat Flow(s),veh/h/ln	1810	0	1865	1810	0	1816	1026	0	1786	1478	0	1667
Q Serve(g_s), s	2.1	0.0	2.6	0.5	0.0	15.7	0.9	0.0	1.1	7.8	0.0	21.1
Cycle Q Clear(g_c), s	2.1	0.0	2.6	0.5	0.0	15.7	22.0	0.0	1.1	8.9	0.0	21.1
Prop In Lane	1.00		0.10	1.00		0.26	1.00		0.35	1.00		0.78
Lane Grp Cap(c), veh/h	69	0	946	24	0	876	149	0	548	518	0	512
V/C Ratio(X)	0.65	0.00	0.11	0.45	0.00	0.53	0.07	0.00	0.06	0.32	0.00	0.84
Avail Cap(c_a), veh/h	153	0	946	124	0	876	484	0	1131	999	0	1054
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.5	0.0	11.3	42.8	0.0	15.8	38.6	0.0	21.4	24.5	0.0	28.3
Incr Delay (d2), s/veh	3.9	0.0	0.2	4.8	0.0	2.3	0.2	0.0	0.0	0.4	0.0	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	1.0	0.3	0.0	6.2	0.2	0.0	0.5	2.7	0.0	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	0.0	11.5	47.7	0.0	18.1	38.8	0.0	21.4	24.9	0.0	32.2
LnGrp LOS	D	A	B	D	A	B	D	A	C	C	A	C
Approach Vol, veh/h		151			479			42			597	
Approach Delay, s/veh		21.6			18.8			26.0			30.1	
Approach LOS		C			B			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		31.6	5.8	50.2		31.6	7.9	48.0				
Change Period (Y+Rc), s		* 4.7	4.6	5.8		* 4.7	4.6	5.8				
Max Green Setting (Gmax), s		* 55	6.0	43.6		* 55	7.4	42.2				
Max Q Clear Time (g_c+I1), s		24.0	2.5	4.6		23.1	4.1	17.7				
Green Ext Time (p_c), s		0.2	0.0	0.5		3.7	0.0	2.8				

Intersection Summary		
HCM 6th Ctrl Delay		24.7
HCM 6th LOS		C

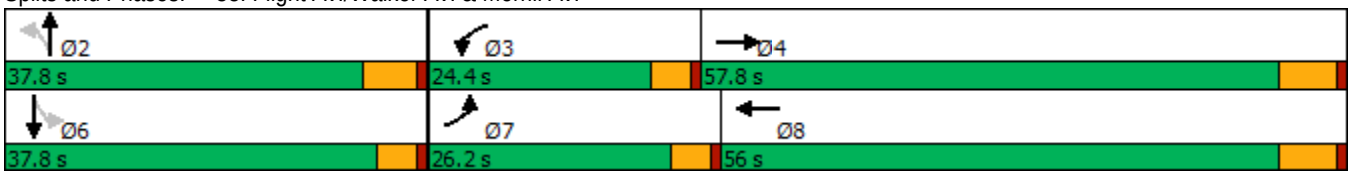
Notes

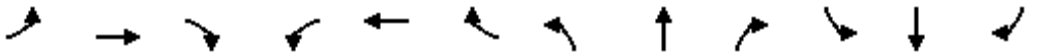
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	60	600	148	922	159	14	14	45
Future Volume (vph)	60	600	148	922	159	14	14	45
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	27.8	27.8	26.6	26.6
Total Split (s)	26.2	57.8	24.4	56.0	37.8	37.8	37.8	37.8
Total Split (%)	21.8%	48.2%	20.3%	46.7%	31.5%	31.5%	31.5%	31.5%
Yellow Time (s)	3.6	5.2	3.6	5.2	4.8	4.8	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	5.8	5.8	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	8.3	52.3	13.4	59.6	20.5	20.5	21.7	21.7
Actuated g/C Ratio	0.08	0.51	0.13	0.58	0.20	0.20	0.21	0.21
v/c Ratio	0.45	0.45	0.69	0.46	0.68	0.33	0.06	0.26
Control Delay	58.4	18.0	60.3	15.5	53.1	10.1	32.9	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.4	18.0	60.3	15.5	53.1	10.1	32.9	19.8
LOS	E	B	E	B	D	B	C	B
Approach Delay		20.9		21.7		33.4		21.4
Approach LOS		C		C		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.9	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 22.9	Intersection LOS: C
Intersection Capacity Utilization 60.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 38: Flight Av./Walker Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	600	174	148	922	10	159	14	121	14	45	56
Future Volume (veh/h)	60	600	174	148	922	10	159	14	121	14	45	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	62	619	179	153	951	10	164	14	125	14	46	58
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	79	1443	417	184	2134	22	272	33	298	236	155	195
Arrive On Green	0.05	0.52	0.52	0.11	0.58	0.58	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1714	2764	798	1714	3660	38	1311	165	1471	1270	764	963
Grp Volume(v), veh/h	62	404	394	153	469	492	164	0	139	14	0	104
Grp Sat Flow(s),veh/h/ln	1714	1805	1756	1714	1805	1893	1311	0	1635	1270	0	1727
Q Serve(g_s), s	3.5	13.6	13.7	8.6	14.5	14.5	12.0	0.0	7.3	1.0	0.0	5.1
Cycle Q Clear(g_c), s	3.5	13.6	13.7	8.6	14.5	14.5	17.0	0.0	7.3	8.3	0.0	5.1
Prop In Lane	1.00		0.45	1.00		0.02	1.00		0.90	1.00		0.56
Lane Grp Cap(c), veh/h	79	942	917	184	1053	1104	272	0	332	236	0	350
V/C Ratio(X)	0.78	0.43	0.43	0.83	0.45	0.45	0.60	0.00	0.42	0.06	0.00	0.30
Avail Cap(c_a), veh/h	375	942	917	343	1053	1104	430	0	529	405	0	580
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.6	14.5	14.6	43.2	11.6	11.6	40.7	0.0	34.3	37.9	0.0	33.4
Incr Delay (d2), s/veh	6.2	1.4	1.5	3.7	1.4	1.3	2.2	0.0	0.8	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	5.2	5.1	3.7	5.3	5.5	3.9	0.0	2.9	0.3	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.8	16.0	16.0	47.0	13.0	12.9	42.8	0.0	35.2	38.0	0.0	33.9
LnGrp LOS	D	B	B	D	B	B	D	A	D	D	A	C
Approach Vol, veh/h		860			1114			303			118	
Approach Delay, s/veh		18.7			17.6			39.3			34.4	
Approach LOS		B			B			D			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.8	15.2	57.8		25.8	9.2	63.8				
Change Period (Y+Rc), s		5.8	4.6	6.2		* 5.8	4.6	6.2				
Max Green Setting (Gmax), s		32.0	19.8	51.6		* 33	21.6	49.8				
Max Q Clear Time (g_c+I1), s		19.0	10.6	15.7		10.3	5.5	16.5				
Green Ext Time (p_c), s		1.0	0.1	4.9		0.6	0.0	6.0				

Intersection Summary												
HCM 6th Ctrl Delay			21.6									
HCM 6th LOS			C									

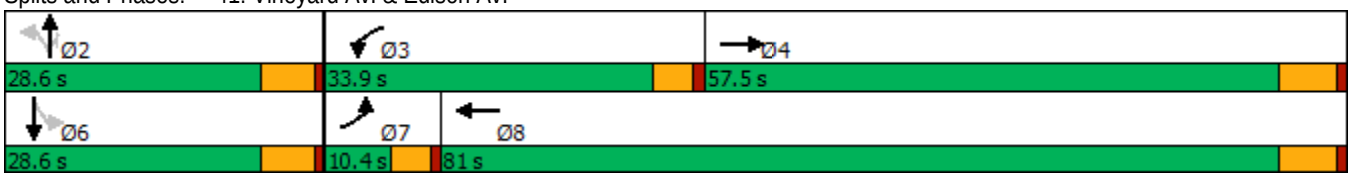
Notes

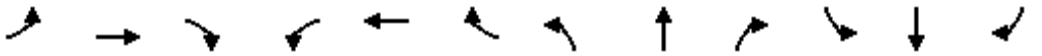
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	19	1322	101	2380	46	18	108	61	24
Future Volume (vph)	19	1322	101	2380	46	18	108	61	24
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA
Protected Phases	7	4	3	8		2			6
Permitted Phases					2		2	6	
Detector Phase	7	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	27.8	27.8	27.8	27.8	27.8
Total Split (s)	10.4	57.5	33.9	81.0	28.6	28.6	28.6	28.6	28.6
Total Split (%)	8.7%	47.9%	28.3%	67.5%	23.8%	23.8%	23.8%	23.8%	23.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	5.8	5.8	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	Max	None	Max	None	None	None	None	None
Act Effct Green (s)	5.5	65.2	10.8	76.8	12.6	12.6	12.6	12.6	12.6
Actuated g/C Ratio	0.05	0.62	0.10	0.73	0.12	0.12	0.12	0.12	0.12
v/c Ratio	0.23	0.46	0.59	0.70	0.31	0.09	0.40	0.39	0.25
Control Delay	56.6	12.2	59.0	10.7	47.5	42.1	11.9	49.9	25.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.6	12.2	59.0	10.7	47.5	42.1	11.9	49.9	25.2
LOS	E	B	E	B	D	D	B	D	C
Approach Delay		12.8		12.6		24.7			38.3
Approach LOS		B		B		C			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 105.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 13.9	Intersection LOS: B
Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 41: Vineyard Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	1322	45	101	2380	43	46	18	108	61	24	30
Future Volume (veh/h)	19	1322	45	101	2380	43	46	18	108	61	24	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	21	1437	49	110	2587	47	50	20	117	66	26	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	40	3434	117	139	3785	69	162	183	155	186	73	93
Arrive On Green	0.02	0.67	0.67	0.08	0.72	0.72	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1810	5151	176	1810	5246	95	1441	1900	1610	1343	761	966
Grp Volume(v), veh/h	21	965	521	110	1702	932	50	20	117	66	0	59
Grp Sat Flow(s),veh/h/ln	1810	1729	1868	1810	1729	1883	1441	1900	1610	1343	0	1726
Q Serve(g_s), s	1.2	13.4	13.4	6.2	28.0	28.3	3.5	1.0	7.3	4.9	0.0	3.3
Cycle Q Clear(g_c), s	1.2	13.4	13.4	6.2	28.0	28.3	6.8	1.0	7.3	5.9	0.0	3.3
Prop In Lane	1.00		0.09	1.00		0.05	1.00		1.00	1.00		0.56
Lane Grp Cap(c), veh/h	40	2305	1246	139	2495	1359	162	183	155	186	0	166
V/C Ratio(X)	0.53	0.42	0.42	0.79	0.68	0.69	0.31	0.11	0.75	0.35	0.00	0.35
Avail Cap(c_a), veh/h	101	2305	1246	511	2495	1359	340	418	354	352	0	380
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.2	8.0	8.0	47.0	7.9	8.0	47.0	42.8	45.6	45.5	0.0	43.8
Incr Delay (d2), s/veh	4.0	0.6	1.0	3.8	1.5	2.8	1.1	0.3	7.2	1.1	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	4.1	4.6	2.8	7.6	8.9	1.3	0.5	3.1	1.6	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.2	8.5	9.0	50.8	9.4	10.8	48.1	43.0	52.8	46.6	0.0	45.1
LnGrp LOS	D	A	A	D	A	B	D	D	D	D	A	D
Approach Vol, veh/h		1507			2744			187			125	
Approach Delay, s/veh		9.3			11.6			50.5			45.9	
Approach LOS		A			B			D			D	

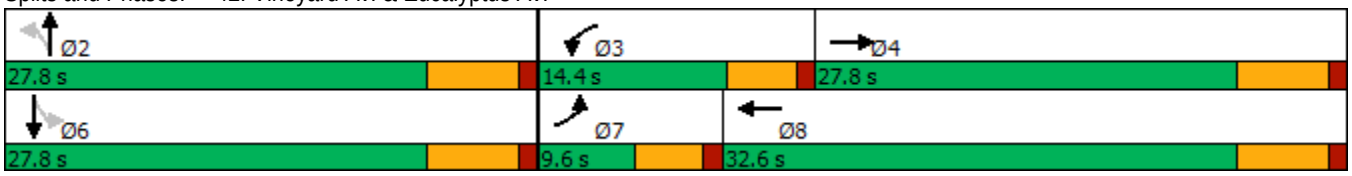
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.8	12.6	75.3		15.8	6.9	81.0				
Change Period (Y+Rc), s		5.8	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		22.8	29.3	51.3		22.8	5.8	74.8				
Max Q Clear Time (g_c+I1), s		9.3	8.2	15.4		7.9	3.2	30.3				
Green Ext Time (p_c), s		0.4	0.1	11.7		0.3	0.0	30.8				

Intersection Summary												
HCM 6th Ctrl Delay			13.4									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	9	239	141	398	21	31	74	80
Future Volume (vph)	9	239	141	398	21	31	74	80
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	27.8	27.8	27.8	27.8	27.8
Total Split (s)	9.6	27.8	14.4	32.6	27.8	27.8	27.8	27.8
Total Split (%)	13.7%	39.7%	20.6%	46.6%	39.7%	39.7%	39.7%	39.7%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8		5.8		5.8
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	5.4	14.7	8.5	23.5		13.3		13.3
Actuated g/C Ratio	0.11	0.29	0.17	0.46		0.26		0.26
v/c Ratio	0.06	0.60	0.53	0.59		0.16		0.44
Control Delay	27.7	21.5	31.4	14.1		15.8		21.0
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	27.7	21.5	31.4	14.1		15.8		21.0
LOS	C	C	C	B		B		C
Approach Delay		21.7		18.1		15.8		21.0
Approach LOS		C		B		B		C

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 50.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 19.4	Intersection LOS: B
Intersection Capacity Utilization 56.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 42: Vineyard Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	239	64	141	398	70	21	31	9	74	80	16
Future Volume (veh/h)	9	239	64	141	398	70	21	31	9	74	80	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	10	260	70	153	433	76	23	34	10	80	87	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	22	367	99	194	559	98	208	262	62	256	242	38
Arrive On Green	0.01	0.25	0.25	0.11	0.35	0.35	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1714	1442	388	1714	1574	276	377	1086	257	546	1004	158
Grp Volume(v), veh/h	10	0	330	153	0	509	67	0	0	184	0	0
Grp Sat Flow(s),veh/h/ln	1714	0	1830	1714	0	1850	1719	0	0	1707	0	0
Q Serve(g_s), s	0.2	0.0	6.8	3.6	0.0	10.1	0.0	0.0	0.0	1.2	0.0	0.0
Cycle Q Clear(g_c), s	0.2	0.0	6.8	3.6	0.0	10.1	1.2	0.0	0.0	3.6	0.0	0.0
Prop In Lane	1.00		0.21	1.00		0.15	0.34		0.15	0.43		0.09
Lane Grp Cap(c), veh/h	22	0	466	194	0	657	531	0	0	536	0	0
V/C Ratio(X)	0.44	0.00	0.71	0.79	0.00	0.78	0.13	0.00	0.00	0.34	0.00	0.00
Avail Cap(c_a), veh/h	207	0	971	405	0	1196	1007	0	0	1016	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.3	0.0	14.0	17.9	0.0	11.9	12.4	0.0	0.0	13.3	0.0	0.0
Incr Delay (d2), s/veh	5.0	0.0	2.0	2.7	0.0	2.0	0.1	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	2.3	1.3	0.0	3.1	0.4	0.0	0.0	1.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.3	0.0	16.0	20.6	0.0	13.9	12.5	0.0	0.0	13.6	0.0	0.0
LnGrp LOS	C	A	B	C	A	B	B	A	A	B	A	A
Approach Vol, veh/h		340			662			67			184	
Approach Delay, s/veh		16.3			15.4			12.5			13.6	
Approach LOS		B			B			B			B	

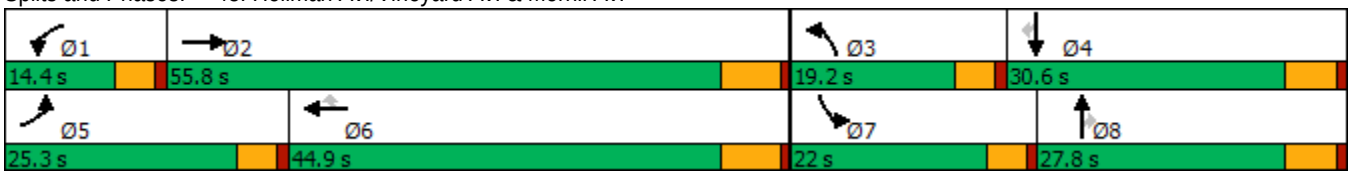
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.8	9.3	16.4		15.8	5.1	20.5				
Change Period (Y+Rc), s		5.8	4.6	5.8		5.8	4.6	5.8				
Max Green Setting (Gmax), s		22.0	9.8	22.0		22.0	5.0	26.8				
Max Q Clear Time (g_c+I1), s		3.2	5.6	8.8		5.6	2.2	12.1				
Green Ext Time (p_c), s		0.2	0.1	1.4		0.8	0.0	2.6				

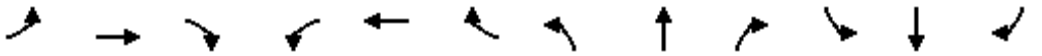
Intersection Summary												
HCM 6th Ctrl Delay			15.3									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	243	521	54	853	257	121	100	45	203	86	127
Future Volume (vph)	243	521	54	853	257	121	100	45	203	86	127
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases					6			8			4
Detector Phase	5	2	1	6	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	28.2	9.6	27.8	27.8	9.6	27.8	27.8
Total Split (s)	25.3	55.8	14.4	44.9	44.9	19.2	27.8	27.8	22.0	30.6	30.6
Total Split (%)	21.1%	46.5%	12.0%	37.4%	37.4%	16.0%	23.2%	23.2%	18.3%	25.5%	25.5%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	19.4	52.6	7.8	38.9	38.9	11.8	13.2	13.2	16.5	17.8	17.8
Actuated g/C Ratio	0.18	0.48	0.07	0.36	0.36	0.11	0.12	0.12	0.15	0.16	0.16
v/c Ratio	0.86	0.33	0.48	0.71	0.38	0.70	0.47	0.15	0.84	0.30	0.35
Control Delay	71.1	19.7	63.7	35.2	8.0	68.3	52.1	0.9	74.1	43.8	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.1	19.7	63.7	35.2	8.0	68.3	52.1	0.9	74.1	43.8	7.2
LOS	E	B	E	D	A	E	D	A	E	D	A
Approach Delay		35.7		30.5			50.9			47.4	
Approach LOS		D		C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.2	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 36.8	Intersection LOS: D
Intersection Capacity Utilization 70.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 43: Hellman Av./Vineyard Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	243	521	18	54	853	257	121	100	45	203	86	127
Future Volume (veh/h)	243	521	18	54	853	257	121	100	45	203	86	127
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	261	560	19	58	917	276	130	108	48	218	92	137
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	291	1804	61	74	1370	611	158	186	158	248	286	242
Arrive On Green	0.17	0.51	0.51	0.04	0.38	0.38	0.09	0.10	0.10	0.14	0.15	0.15
Sat Flow, veh/h	1714	3563	121	1714	3610	1610	1714	1900	1610	1714	1900	1610
Grp Volume(v), veh/h	261	283	296	58	917	276	130	108	48	218	92	137
Grp Sat Flow(s),veh/h/ln	1714	1805	1878	1714	1805	1610	1714	1900	1610	1714	1900	1610
Q Serve(g_s), s	15.2	9.4	9.4	3.4	21.5	13.1	7.6	5.5	2.8	12.7	4.4	8.1
Cycle Q Clear(g_c), s	15.2	9.4	9.4	3.4	21.5	13.1	7.6	5.5	2.8	12.7	4.4	8.1
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	291	914	951	74	1370	611	158	186	158	248	286	242
V/C Ratio(X)	0.90	0.31	0.31	0.79	0.67	0.45	0.82	0.58	0.30	0.88	0.32	0.57
Avail Cap(c_a), veh/h	348	914	951	165	1370	611	245	410	347	292	462	392
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.5	14.7	14.7	48.3	26.3	23.7	45.5	44.0	42.8	42.7	38.7	40.2
Incr Delay (d2), s/veh	20.2	0.9	0.9	6.8	2.6	2.4	6.5	2.8	1.1	20.4	0.6	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	3.7	3.8	1.5	9.0	5.1	3.4	2.7	1.1	6.6	2.0	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.6	15.6	15.6	55.1	28.9	26.1	52.0	46.8	43.8	63.1	39.3	42.3
LnGrp LOS	E	B	B	E	C	C	D	D	D	E	D	D
Approach Vol, veh/h		840			1251			286			447	
Approach Delay, s/veh		29.9			29.5			48.7			51.8	
Approach LOS		C			C			D			D	

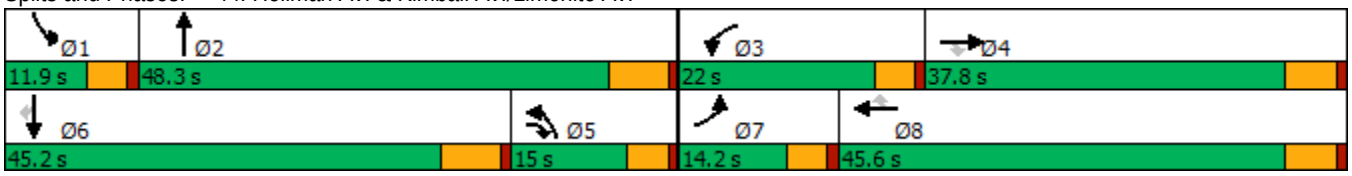
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	57.8	14.0	21.1	21.9	44.9	19.4	15.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	9.8	49.6	14.6	24.8	20.7	38.7	17.4	22.0
Max Q Clear Time (g_c+I1), s	5.4	11.4	9.6	10.1	17.2	23.5	14.7	7.5
Green Ext Time (p_c), s	0.0	3.2	0.1	0.7	0.1	5.9	0.1	0.5

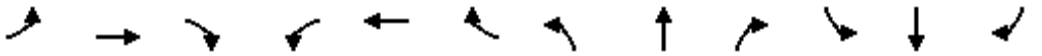
Intersection Summary	
HCM 6th Ctrl Delay	35.1
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	55	601	376	331	825	50	163	245	21	40	25
Future Volume (vph)	55	601	376	331	825	50	163	245	21	40	25
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	1	6	
Permitted Phases			4			8					6
Detector Phase	7	4	5	3	8	8	5	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	37.8	9.6	43.2	9.6	43.2	43.2
Total Split (s)	14.2	37.8	15.0	22.0	45.6	45.6	15.0	48.3	11.9	45.2	45.2
Total Split (%)	11.8%	31.5%	12.5%	18.3%	38.0%	38.0%	12.5%	40.3%	9.9%	37.7%	37.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	None	None	None	Max	Max	None	None	None
Act Effct Green (s)	7.7	24.5	58.2	15.1	34.2	34.2	31.3	42.9	6.0	14.8	14.8
Actuated g/C Ratio	0.07	0.24	0.56	0.15	0.33	0.33	0.30	0.41	0.06	0.14	0.14
v/c Ratio	0.46	0.74	0.37	0.76	0.73	0.08	0.18	0.37	0.22	0.08	0.07
Control Delay	61.5	42.7	2.1	55.7	35.7	0.2	34.4	12.3	57.0	38.8	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.5	42.7	2.1	55.7	35.7	0.2	34.4	12.3	57.0	38.8	0.4
LOS	E	D	A	E	D	A	C	B	E	D	A
Approach Delay		28.9			39.7			17.4		32.1	
Approach LOS		C			D			B		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.4	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 30.6	Intersection LOS: C
Intersection Capacity Utilization 59.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	601	376	331	825	50	163	245	298	21	40	25
Future Volume (veh/h)	55	601	376	331	825	50	163	245	298	21	40	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1700	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	58	633	396	348	868	53	172	258	314	22	42	26
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	74	821	883	411	1138	508	1008	743	663	39	353	157
Arrive On Green	0.04	0.23	0.23	0.13	0.32	0.32	0.32	0.41	0.41	0.02	0.10	0.10
Sat Flow, veh/h	1714	3610	1610	3141	3610	1610	3141	1805	1610	1714	3610	1610
Grp Volume(v), veh/h	58	633	396	348	868	53	172	258	314	22	42	26
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1570	1805	1610	1570	1805	1610	1714	1805	1610
Q Serve(g_s), s	3.4	16.8	5.9	11.1	22.2	2.4	4.0	10.0	14.6	1.3	1.1	1.3
Cycle Q Clear(g_c), s	3.4	16.8	5.9	11.1	22.2	2.4	4.0	10.0	14.6	1.3	1.1	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	74	821	883	411	1138	508	1008	743	663	39	353	157
V/C Ratio(X)	0.79	0.77	0.45	0.85	0.76	0.10	0.17	0.35	0.47	0.56	0.12	0.17
Avail Cap(c_a), veh/h	161	1130	1021	535	1405	627	1008	743	663	122	1377	614
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.5	37.0	3.8	43.4	31.6	24.8	24.9	20.6	22.0	49.5	42.1	29.5
Incr Delay (d2), s/veh	6.8	2.2	0.4	7.8	2.0	0.1	0.4	1.3	2.4	4.7	0.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	7.3	2.1	4.6	9.4	0.9	1.5	4.1	5.5	0.6	0.5	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.2	39.2	4.2	51.3	33.6	24.9	25.3	21.9	24.4	54.2	42.3	30.0
LnGrp LOS	E	D	A	D	C	C	C	C	C	D	D	C
Approach Vol, veh/h		1087			1269			744			90	
Approach Delay, s/veh		27.3			38.1			23.7			41.6	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	48.3	18.0	29.1	39.0	16.2	9.0	38.0
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	6.2	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	7.3	42.1	17.4	32.0	10.4	* 39	9.6	39.8
Max Q Clear Time (g_c+I1), s	3.3	16.6	13.1	18.8	6.0	3.3	5.4	24.2
Green Ext Time (p_c), s	0.0	3.3	0.3	4.5	0.1	0.3	0.0	5.1

Intersection Summary	
HCM 6th Ctrl Delay	31.2
HCM 6th LOS	C

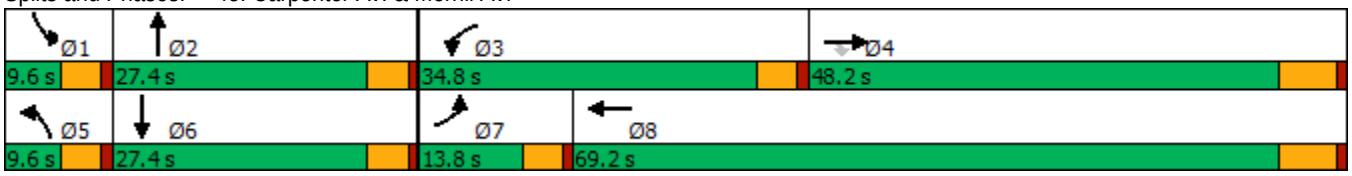
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	SBT	Ø1	Ø5
Lane Configurations									
Traffic Volume (vph)	14	718	37	253	1022	0	0		
Future Volume (vph)	14	718	37	253	1022	0	0		
Turn Type	Prot	NA	Perm	Prot	NA	NA	NA		
Protected Phases	7	4		3	8	2	6	1	5
Permitted Phases			4						
Detector Phase	7	4	4	3	8	2	6		
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	9.6	9.6
Total Split (s)	13.8	48.2	48.2	34.8	69.2	27.4	27.4	9.6	9.6
Total Split (%)	11.5%	40.2%	40.2%	29.0%	57.7%	22.8%	22.8%	8%	8%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	4.6	4.6		
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.7	43.5	43.5	20.1	64.0	0.0	0.0		
Actuated g/C Ratio	0.06	0.43	0.43	0.20	0.63	0.00	0.00		
v/c Ratio	0.16	0.50	0.05	0.80	0.51	1.59	1.56		
Control Delay	51.4	23.4	0.1	56.4	11.9	307.3	296.3		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	51.4	23.4	0.1	56.4	11.9	307.3	296.3		
LOS	D	C	A	E	B	F	F		
Approach Delay		22.8			20.4	307.3	296.3		
Approach LOS		C			C	F	F		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 101.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.59	
Intersection Signal Delay: 71.5	Intersection LOS: E
Intersection Capacity Utilization 72.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 45: Carpenter Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	718	37	253	1022	58	78	0	153	164	0	64
Future Volume (veh/h)	14	718	37	253	1022	58	78	0	153	164	0	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	15	764	39	269	1087	62	83	0	163	174	0	68
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	30	1901	848	305	2385	136	0	0	206	0	0	206
Arrive On Green	0.02	0.53	0.53	0.18	0.69	0.69	0.00	0.00	0.13	0.00	0.00	0.13
Sat Flow, veh/h	1714	3610	1610	1714	3471	198	0	0	1610	0	0	1610
Grp Volume(v), veh/h	15	764	39	269	565	584	0	0	163	0	0	68
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1714	1805	1864	0	0	1610	0	0	1610
Q Serve(g_s), s	0.8	11.7	1.1	14.0	13.1	13.1	0.0	0.0	9.0	0.0	0.0	3.5
Cycle Q Clear(g_c), s	0.8	11.7	1.1	14.0	13.1	13.1	0.0	0.0	9.0	0.0	0.0	3.5
Prop In Lane	1.00		1.00	1.00		0.11	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	30	1901	848	305	1240	1281	0	0	206	0	0	206
V/C Ratio(X)	0.51	0.40	0.05	0.88	0.46	0.46	0.00	0.00	0.79	0.00	0.00	0.33
Avail Cap(c_a), veh/h	172	1901	848	565	1240	1281	0	0	400	0	0	400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	44.7	13.0	10.5	36.8	6.5	6.5	0.0	0.0	38.8	0.0	0.0	36.4
Incr Delay (d2), s/veh	4.9	0.6	0.1	3.3	1.2	1.2	0.0	0.0	6.7	0.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	4.2	0.4	5.8	3.9	4.0	0.0	0.0	3.9	0.0	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.5	13.7	10.6	40.1	7.7	7.7	0.0	0.0	45.5	0.0	0.0	37.4
LnGrp LOS	D	B	B	D	A	A	A	A	D	A	A	D
Approach Vol, veh/h		818			1418			163			68	
Approach Delay, s/veh		14.2			13.9			45.5			37.4	
Approach LOS		B			B			D			D	

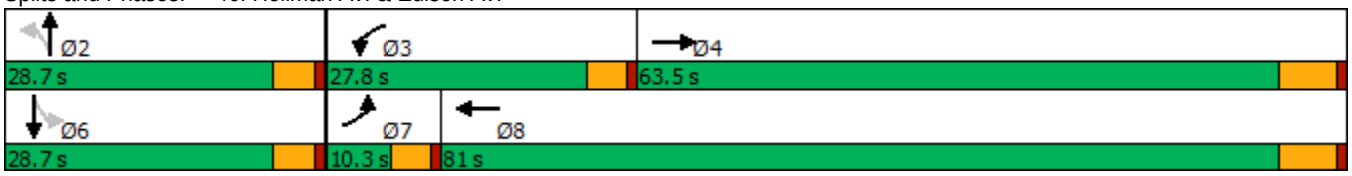
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	16.3	20.9	54.5	0.0	16.3	6.2	69.2
Change Period (Y+Rc), s	4.6	4.6	4.6	6.2	4.6	4.6	4.6	6.2
Max Green Setting (Gmax), s	5.0	22.8	30.2	42.0	5.0	22.8	9.2	63.0
Max Q Clear Time (g_c+I1), s	0.0	11.0	16.0	13.7	0.0	5.5	2.8	15.1
Green Ext Time (p_c), s	0.0	0.7	0.3	5.1	0.0	0.3	0.0	8.2

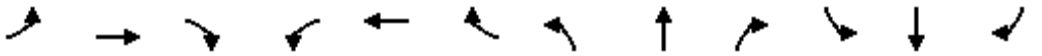
Intersection Summary	
HCM 6th Ctrl Delay	16.7
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	32	1275	175	2352	61	10	43	84
Future Volume (vph)	32	1275	175	2352	61	10	43	84
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	26.7	26.7	26.7	26.7
Total Split (s)	10.3	63.5	27.8	81.0	28.7	28.7	28.7	28.7
Total Split (%)	8.6%	52.9%	23.2%	67.5%	23.9%	23.9%	23.9%	23.9%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.5	60.6	15.9	75.3	13.9	13.9	13.9	13.9
Actuated g/C Ratio	0.05	0.57	0.15	0.71	0.13	0.13	0.13	0.13
v/c Ratio	0.39	0.55	0.74	0.71	0.58	0.24	0.28	0.58
Control Delay	64.9	16.0	61.4	11.8	65.0	17.3	46.7	46.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.9	16.0	61.4	11.8	65.0	17.3	46.7	46.2
LOS	E	B	E	B	E	B	D	D
Approach Delay		17.1		15.2		41.5		46.3
Approach LOS		B		B		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 106	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 17.8	Intersection LOS: B
Intersection Capacity Utilization 84.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 46: Hellman Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1275	211	175	2352	48	61	10	49	43	84	53
Future Volume (veh/h)	32	1275	211	175	2352	48	61	10	49	43	84	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	35	1386	229	190	2557	52	66	11	53	47	91	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	51	2607	431	219	3556	72	156	43	205	223	163	104
Arrive On Green	0.03	0.58	0.58	0.13	0.68	0.68	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1714	4484	740	1714	5233	106	1258	284	1369	1359	1084	691
Grp Volume(v), veh/h	35	1069	546	190	1686	923	66	0	64	47	0	149
Grp Sat Flow(s),veh/h/ln	1714	1729	1767	1714	1729	1881	1258	0	1654	1359	0	1776
Q Serve(g_s), s	2.2	20.6	20.6	12.0	33.6	34.0	5.7	0.0	3.8	3.5	0.0	8.6
Cycle Q Clear(g_c), s	2.2	20.6	20.6	12.0	33.6	34.0	14.2	0.0	3.8	7.3	0.0	8.6
Prop In Lane	1.00		0.42	1.00		0.06	1.00		0.83	1.00		0.39
Lane Grp Cap(c), veh/h	51	2010	1027	219	2350	1278	156	0	248	223	0	266
V/C Ratio(X)	0.68	0.53	0.53	0.87	0.72	0.72	0.42	0.00	0.26	0.21	0.00	0.56
Avail Cap(c_a), veh/h	89	2010	1027	361	2350	1278	242	0	360	315	0	387
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.9	14.0	14.0	47.1	11.0	11.1	50.0	0.0	41.4	44.6	0.0	43.4
Incr Delay (d2), s/veh	5.9	1.0	2.0	6.2	1.9	3.6	1.8	0.0	0.5	0.5	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	7.3	7.7	5.3	10.5	12.2	1.9	0.0	1.6	1.2	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.8	15.0	15.9	53.3	13.0	14.7	51.8	0.0	41.9	45.1	0.0	45.3
LnGrp LOS	E	B	B	D	B	B	D	A	D	D	A	D
Approach Vol, veh/h		1650			2799			130			196	
Approach Delay, s/veh		16.2			16.3			47.0			45.2	
Approach LOS		B			B			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		21.2	18.7	70.2		21.2	7.9	81.0				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		* 4.7	4.6	6.2				
Max Green Setting (Gmax), s		* 24	23.2	57.3		* 24	5.7	74.8				
Max Q Clear Time (g_c+I1), s		16.2	14.0	22.6		10.6	4.2	36.0				
Green Ext Time (p_c), s		0.3	0.2	13.3		0.7	0.0	27.7				

Intersection Summary												
HCM 6th Ctrl Delay			18.3									
HCM 6th LOS			B									

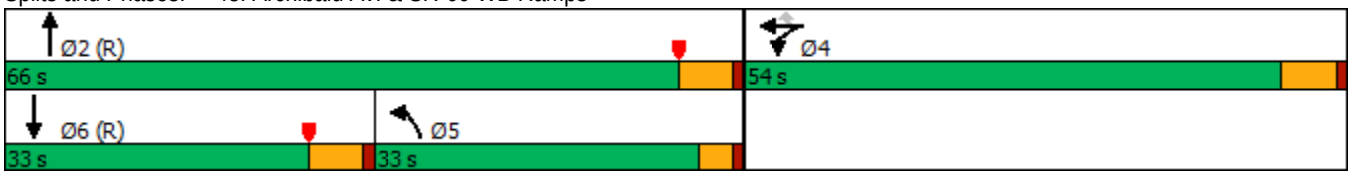
Notes

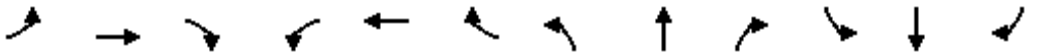
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	4	595	804	1604	653
Future Volume (vph)	4	595	804	1604	653
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	54.0	54.0	33.0	66.0	33.0
Total Split (%)	45.0%	45.0%	27.5%	55.0%	27.5%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	47.6	47.6	32.1	60.6	24.5
Actuated g/C Ratio	0.40	0.40	0.27	0.50	0.20
v/c Ratio	0.85	0.94	0.93	0.67	0.73
Control Delay	46.1	54.0	43.7	14.6	44.6
Queue Delay	0.0	0.0	0.3	28.6	0.0
Total Delay	46.1	54.0	44.1	43.2	44.6
LOS	D	D	D	D	D
Approach Delay	50.1			43.5	44.6
Approach LOS	D			D	D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 45.4	Intersection LOS: D
Intersection Capacity Utilization 87.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	560	4	595	804	1604	0	0	653	237
Future Volume (veh/h)	0	0	0	560	4	595	804	1604	0	0	653	237
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				609	4	464	874	1743	0	0	710	248
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				681	4	610	989	2712	0	0	945	309
Arrive On Green				0.38	0.38	0.38	0.09	0.17	0.00	0.00	0.19	0.19
Sat Flow, veh/h				1798	12	1610	3510	5358	0	0	5168	1606
Grp Volume(v), veh/h				613	0	464	874	1743	0	0	710	248
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1729	0	0	1634	1606
Q Serve(g_s), s				38.2	0.0	30.2	29.5	37.5	0.0	0.0	16.4	17.7
Cycle Q Clear(g_c), s				38.2	0.0	30.2	29.5	37.5	0.0	0.0	16.4	17.7
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				686	0	610	989	2712	0	0	945	309
V/C Ratio(X)				0.89	0.00	0.76	0.88	0.64	0.00	0.00	0.75	0.80
Avail Cap(c_a), veh/h				724	0	644	989	2712	0	0	1111	364
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				35.0	0.0	32.5	52.5	39.2	0.0	0.0	45.7	46.2
Incr Delay (d2), s/veh				14.2	0.0	6.2	1.0	0.1	0.0	0.0	5.5	19.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				18.6	0.0	26.1	14.0	17.3	0.0	0.0	6.9	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				49.3	0.0	38.7	53.4	39.3	0.0	0.0	51.2	65.5
LnGrp LOS				D	A	D	D	D	A	A	D	E
Approach Vol, veh/h					1077			2617			958	
Approach Delay, s/veh					44.7			44.0			54.9	
Approach LOS					D			D			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	68.5	51.5	39.6	28.9
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	60.2	48.0	29.0	* 27
Max Q Clear Time (g_c+I1), s	39.5	40.2	31.5	19.7
Green Ext Time (p_c), s	12.3	5.3	0.0	3.4

Intersection Summary	
HCM 6th Ctrl Delay	46.4
HCM 6th LOS	D

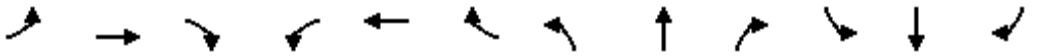
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	4	624	1934	246	967
Future Volume (vph)	4	624	1934	246	967
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (s)	44.0	44.0	52.0	24.0	76.0
Total Split (%)	36.7%	36.7%	43.3%	20.0%	63.3%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	38.2	38.2	52.9	13.3	70.2
Actuated g/C Ratio	0.32	0.32	0.44	0.11	0.58
v/c Ratio	0.88	1.13	1.02	0.68	0.34
Control Delay	57.3	112.0	55.1	66.3	1.6
Queue Delay	8.1	0.0	30.3	0.0	0.0
Total Delay	65.4	112.0	85.4	66.3	1.6
LOS	E	F	F	E	A
Approach Delay	91.8		85.4		14.8
Approach LOS	F		F		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 69.7	Intersection LOS: E
Intersection Capacity Utilization 87.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	475	4	624	0	0	0	0	1934	755	246	967	0
Future Volume (veh/h)	475	4	624	0	0	0	0	1934	755	246	967	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	505	4	447				0	2057	572	262	1029	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	544	4	488				0	2437	665	320	3115	0
Arrive On Green	0.30	0.30	0.30				0.00	0.48	0.48	0.18	1.00	0.00
Sat Flow, veh/h	1796	14	1610				0	5382	1397	3510	5358	0
Grp Volume(v), veh/h	509	0	447				0	1969	660	262	1029	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1612	1755	1729	0
Q Serve(g_s), s	32.7	0.0	32.2				0.0	42.2	43.6	8.6	0.0	0.0
Cycle Q Clear(g_c), s	32.7	0.0	32.2				0.0	42.2	43.6	8.6	0.0	0.0
Prop In Lane	0.99		1.00				0.00		0.87	1.00		0.00
Lane Grp Cap(c), veh/h	548	0	488				0	2334	768	320	3115	0
V/C Ratio(X)	0.93	0.00	0.92				0.00	0.84	0.86	0.82	0.33	0.00
Avail Cap(c_a), veh/h	576	0	513				0	2334	768	585	3115	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.14	0.14	0.61	0.61	0.00
Uniform Delay (d), s/veh	40.6	0.0	40.4				0.0	27.5	27.9	48.1	0.0	0.0
Incr Delay (d2), s/veh	21.1	0.0	20.9				0.0	0.6	2.0	1.2	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.2	0.0	15.0				0.0	15.1	15.7	3.4	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.7	0.0	61.3				0.0	28.1	29.8	49.4	0.2	0.0
LnGrp LOS	E	A	E				A	C	C	D	A	A
Approach Vol, veh/h		956						2629			1291	
Approach Delay, s/veh		61.5						28.5			10.2	
Approach LOS		E						C			B	

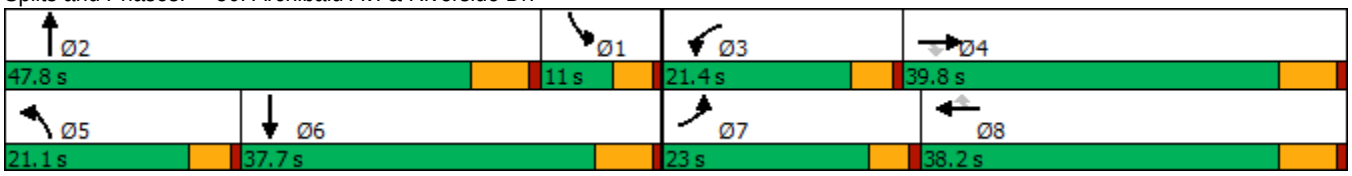
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	14.9	62.9				77.9		42.1				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	20.0	46.2				70.2		38.2				
Max Q Clear Time (g_c+I1), s	10.6	45.6				2.0		34.7				
Green Ext Time (p_c), s	0.3	0.6				8.0		1.6				

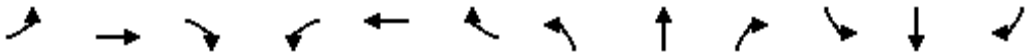
Intersection Summary			
HCM 6th Ctrl Delay			30.1
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	287	407	371	162	571	209	404	1710	162	719
Future Volume (vph)	287	407	371	162	571	209	404	1710	162	719
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	23.0	39.8	39.8	21.4	38.2	38.2	21.1	47.8	11.0	37.7
Total Split (%)	19.2%	33.2%	33.2%	17.8%	31.8%	31.8%	17.6%	39.8%	9.2%	31.4%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	18.4	29.0	29.0	14.5	25.0	25.0	16.3	41.7	6.4	31.7
Actuated g/C Ratio	0.16	0.26	0.26	0.13	0.22	0.22	0.14	0.37	0.06	0.28
v/c Ratio	1.10	0.47	0.57	0.79	0.76	0.46	0.90	1.02	0.92	0.75
Control Delay	127.5	37.7	7.9	73.3	47.8	13.4	71.0	62.4	101.8	38.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	127.5	37.7	7.9	73.3	47.8	13.4	71.0	62.4	101.8	38.5
LOS	F	D	A	E	D	B	E	E	F	D
Approach Delay		51.4			44.6			63.9		47.2
Approach LOS		D			D			E		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113.2	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 54.5	Intersection LOS: D
Intersection Capacity Utilization 92.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	287	407	371	162	571	209	404	1710	112	162	719	294
Future Volume (veh/h)	287	407	371	162	571	209	404	1710	112	162	719	294
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	305	433	261	172	607	140	430	1819	116	172	765	235
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	276	940	412	199	778	340	480	1815	115	186	1142	347
Arrive On Green	0.16	0.26	0.26	0.12	0.22	0.22	0.14	0.36	0.36	0.06	0.29	0.29
Sat Flow, veh/h	1714	3610	1580	1714	3610	1578	3326	4983	317	3326	3942	1199
Grp Volume(v), veh/h	305	433	261	172	607	140	430	1261	674	172	670	330
Grp Sat Flow(s),veh/h/ln	1714	1805	1580	1714	1805	1578	1663	1729	1842	1663	1729	1683
Q Serve(g_s), s	18.4	11.5	16.7	11.3	18.1	6.9	14.5	41.6	41.6	5.9	19.5	19.8
Cycle Q Clear(g_c), s	18.4	11.5	16.7	11.3	18.1	6.9	14.5	41.6	41.6	5.9	19.5	19.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		0.71
Lane Grp Cap(c), veh/h	276	940	412	199	778	340	480	1260	671	186	1002	488
V/C Ratio(X)	1.10	0.46	0.63	0.86	0.78	0.41	0.89	1.00	1.00	0.92	0.67	0.68
Avail Cap(c_a), veh/h	276	1062	465	252	1011	442	480	1260	671	186	1002	488
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.9	35.5	37.4	49.6	42.2	24.1	48.0	36.3	36.3	53.7	35.7	35.8
Incr Delay (d2), s/veh	85.1	0.4	2.3	18.3	3.0	0.8	18.5	25.6	35.8	43.9	1.7	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.0	4.9	6.4	5.6	8.0	3.2	7.0	20.7	24.0	3.5	8.0	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	133.0	35.8	39.7	67.9	45.2	24.9	66.5	62.0	72.1	97.5	37.4	39.5
LnGrp LOS	F	D	D	E	D	C	E	F	F	F	D	D
Approach Vol, veh/h		999			919			2365			1172	
Approach Delay, s/veh		66.5			46.4			65.7			46.9	
Approach LOS		E			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	47.8	17.9	35.9	21.1	39.3	23.0	30.8
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	6.4	* 42	16.8	33.6	16.5	31.5	18.4	32.0
Max Q Clear Time (g_c+I1), s	7.9	43.6	13.3	18.7	16.5	21.8	20.4	20.1
Green Ext Time (p_c), s	0.0	0.0	0.1	3.0	0.0	4.1	0.0	3.2

Intersection Summary	
HCM 6th Ctrl Delay	58.5
HCM 6th LOS	E

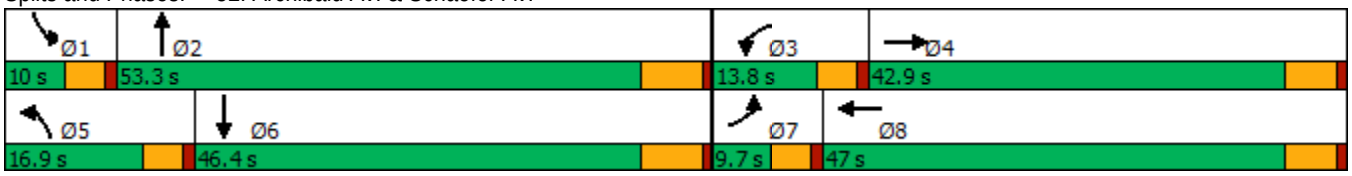
Notes

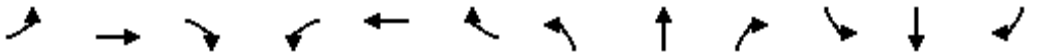
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	10	10	42	140	69	1502	22	776
Future Volume (vph)	10	10	42	140	69	1502	22	776
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	33.5	9.6	33.5
Total Split (s)	9.7	42.9	13.8	47.0	16.9	53.3	10.0	46.4
Total Split (%)	8.1%	35.8%	11.5%	39.2%	14.1%	44.4%	8.3%	38.7%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	6.5	4.6	6.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	5.5	24.7	7.0	29.6	8.8	38.5	5.7	30.9
Actuated g/C Ratio	0.06	0.29	0.08	0.34	0.10	0.45	0.07	0.36
v/c Ratio	0.10	0.04	0.33	0.80	0.43	0.71	0.21	0.57
Control Delay	52.7	20.4	52.7	32.2	51.8	23.3	54.0	24.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.7	20.4	52.7	32.2	51.8	23.3	54.0	24.6
LOS	D	C	D	C	D	C	D	C
Approach Delay		31.1		33.9		24.6		25.3
Approach LOS		C		C		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 86.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 26.4	Intersection LOS: C
Intersection Capacity Utilization 75.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 52: Archibald Av. & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	10	42	140	339	69	1502	10	22	776	191
Future Volume (veh/h)	10	10	10	42	140	339	69	1502	10	22	776	191
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	11	11	11	46	152	368	75	1633	0	24	843	208
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	23	276	276	63	167	405	95	2074	0	42	1525	374
Arrive On Green	0.01	0.32	0.32	0.04	0.34	0.34	0.06	0.40	0.00	0.02	0.37	0.37
Sat Flow, veh/h	1714	872	872	1714	492	1191	1714	5358	0	1714	4137	1013
Grp Volume(v), veh/h	11	0	22	46	0	520	75	1633	0	24	704	347
Grp Sat Flow(s),veh/h/ln	1714	0	1743	1714	0	1683	1714	1729	0	1714	1729	1692
Q Serve(g_s), s	0.6	0.0	0.8	2.6	0.0	28.6	4.2	26.7	0.0	1.3	15.6	15.8
Cycle Q Clear(g_c), s	0.6	0.0	0.8	2.6	0.0	28.6	4.2	26.7	0.0	1.3	15.6	15.8
Prop In Lane	1.00		0.50	1.00		0.71	1.00		0.00	1.00		0.60
Lane Grp Cap(c), veh/h	23	0	552	63	0	573	95	2074	0	42	1275	624
V/C Ratio(X)	0.49	0.00	0.04	0.73	0.00	0.91	0.79	0.79	0.00	0.57	0.55	0.56
Avail Cap(c_a), veh/h	90	0	668	163	0	716	218	2507	0	96	1425	697
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.5	0.0	22.9	46.2	0.0	30.5	45.2	25.5	0.0	46.7	24.2	24.3
Incr Delay (d2), s/veh	5.9	0.0	0.0	6.0	0.0	13.4	5.3	1.4	0.0	4.4	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.3	1.2	0.0	12.8	1.8	9.9	0.0	0.6	5.8	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.3	0.0	22.9	52.2	0.0	43.8	50.4	26.9	0.0	51.2	24.6	25.1
LnGrp LOS	D	A	C	D	A	D	D	C	A	D	C	C
Approach Vol, veh/h		33			566			1708			1075	
Approach Delay, s/veh		33.0			44.5			27.9			25.3	
Approach LOS		C			D			C			C	

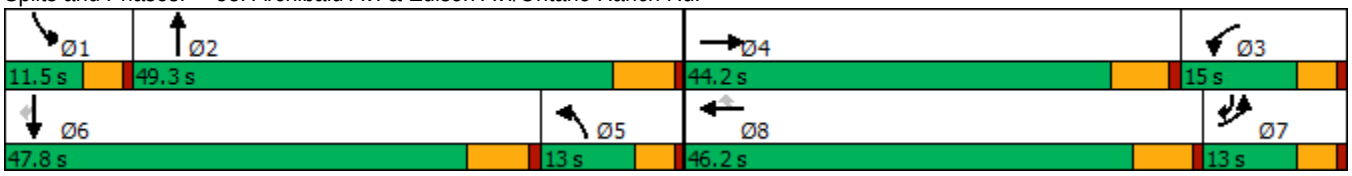
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	45.2	8.1	36.5	10.0	42.2	5.9	38.8
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	5.4	46.8	9.2	37.1	12.3	39.9	5.1	41.2
Max Q Clear Time (g_c+I1), s	3.3	28.7	4.6	2.8	6.2	17.8	2.6	30.6
Green Ext Time (p_c), s	0.0	10.0	0.0	0.1	0.0	6.3	0.0	2.4

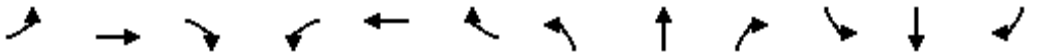
Intersection Summary	
HCM 6th Ctrl Delay	29.9
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	436	818	375	524	1635	299	502	1249	496	79	574	203
Future Volume (vph)	436	818	375	524	1635	299	502	1249	496	79	574	203
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	9.6
Total Split (s)	13.0	44.2		15.0	46.2	46.2	13.0	49.3		11.5	47.8	13.0
Total Split (%)	10.8%	36.8%		12.5%	38.5%	38.5%	10.8%	41.1%		9.6%	39.8%	10.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	3.6
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2		-0.6	-2.2	-2.2	-0.6	-2.5		-0.6	-2.5	-0.6
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lag	Lag		Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	Max	Max		None	None	None
Act Effct Green (s)	9.1	23.6	115.3	25.2	39.8	39.8	26.5	45.6	115.3	7.0	23.9	37.0
Actuated g/C Ratio	0.08	0.20	1.00	0.22	0.35	0.35	0.23	0.40	1.00	0.06	0.21	0.32
v/c Ratio	1.77	0.54	0.24	0.77	0.64	0.46	0.66	0.57	0.32	0.40	0.50	0.36
Control Delay	394.5	42.1	0.4	51.7	33.2	14.7	46.5	29.4	0.5	60.1	41.5	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	394.5	42.1	0.4	51.7	33.2	14.7	46.5	29.4	0.5	60.1	41.5	18.0
LOS	F	D	A	D	C	B	D	C	A	E	D	B
Approach Delay		126.7			34.9			26.8			37.6	
Approach LOS		F			C			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.77	
Intersection Signal Delay: 53.5	Intersection LOS: D
Intersection Capacity Utilization 82.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	436	818	375	524	1635	299	502	1249	496	79	574	203
Future Volume (veh/h)	436	818	375	524	1635	299	502	1249	496	79	574	203
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	449	843	0	540	1686	254	518	1288	0	81	592	176
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	260	1426		706	2472	524	883	2308		154	1007	387
Arrive On Green	0.08	0.19	0.00	0.22	0.33	0.33	0.26	0.40	0.00	0.05	0.18	0.16
Sat Flow, veh/h	3238	7600	1610	3238	7600	1610	3429	5700	1610	3326	5700	1610
Grp Volume(v), veh/h	449	843	0	540	1686	254	518	1288	0	81	592	176
Grp Sat Flow(s),veh/h/ln	1619	1900	1610	1619	1900	1610	1714	1900	1610	1663	1900	1610
Q Serve(g_s), s	9.0	11.3	0.0	17.5	21.5	10.8	14.8	19.4	0.0	2.7	10.7	1.4
Cycle Q Clear(g_c), s	9.0	11.3	0.0	17.5	21.5	10.8	14.8	19.4	0.0	2.7	10.7	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	260	1426		706	2472	524	883	2308		154	1007	387
V/C Ratio(X)	1.72	0.59		0.76	0.68	0.48	0.59	0.56		0.52	0.59	0.46
Avail Cap(c_a), veh/h	260	2730		706	2866	607	883	2308		223	2231	732
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	41.5	0.0	41.0	32.7	17.8	36.3	25.6	0.0	52.1	42.3	36.3
Incr Delay (d2), s/veh	341.5	0.4	0.0	4.5	0.6	0.7	2.8	1.0	0.0	1.0	0.5	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.9	5.1	0.0	7.1	9.4	3.8	6.2	8.2	0.0	1.1	4.8	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	392.9	41.9	0.0	45.5	33.3	18.5	39.2	26.6	0.0	53.2	42.9	37.1
LnGrp LOS	F	D		D	C	B	D	C		D	D	D
Approach Vol, veh/h		1292	A		2480			1806	A		849	
Approach Delay, s/veh		163.9			34.4			30.2			42.7	
Approach LOS		F			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	49.3	28.4	25.0	34.7	23.8	13.0	40.4
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	6.5	* 6.5	4.6	6.2
Max Green Setting (Gmax), s	6.9	42.8	10.4	38.0	8.4	* 41	8.4	40.0
Max Q Clear Time (g_c+I1), s	4.7	21.4	19.5	13.3	16.8	12.7	11.0	23.5
Green Ext Time (p_c), s	0.0	8.3	0.0	5.5	0.0	4.2	0.0	10.7

Intersection Summary	
HCM 6th Ctrl Delay	60.4
HCM 6th LOS	E

Notes

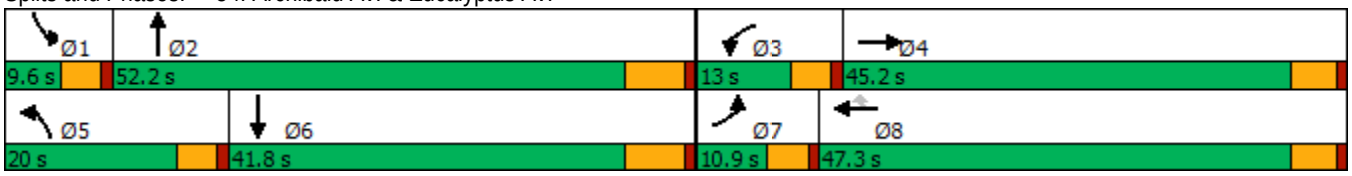
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

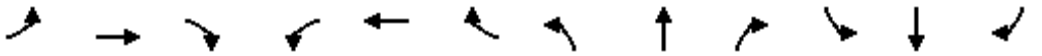
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	47	27	122	266	162	237	1924	60	1121
Future Volume (vph)	47	27	122	266	162	237	1924	60	1121
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	45.2	9.6	45.2	45.2	9.6	32.5	9.6	32.5
Total Split (s)	10.9	45.2	13.0	47.3	47.3	20.0	52.2	9.6	41.8
Total Split (%)	9.1%	37.7%	10.8%	39.4%	39.4%	16.7%	43.5%	8.0%	34.8%
Yellow Time (s)	3.6	4.2	3.6	4.2	4.2	3.6	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.2	-0.6	-1.2	-1.2	-0.6	-2.5	-0.6	-2.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	6.7	16.7	9.7	18.4	18.4	16.3	49.2	5.7	38.6
Actuated g/C Ratio	0.07	0.18	0.10	0.20	0.20	0.17	0.52	0.06	0.41
v/c Ratio	0.42	0.11	0.79	0.40	0.39	0.86	0.80	0.62	0.66
Control Delay	57.4	16.4	76.2	34.0	9.1	67.4	23.7	73.6	26.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.4	16.4	76.2	34.0	9.1	67.4	23.7	73.6	26.1
LOS	E	B	E	C	A	E	C	E	C
Approach Delay		34.0		36.0			28.3		28.2
Approach LOS		C		D			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 94	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 29.4	Intersection LOS: C
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	27	36	122	266	162	237	1924	84	60	1121	169
Future Volume (veh/h)	47	27	36	122	266	162	237	1924	84	60	1121	169
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	51	29	39	131	286	163	255	2069	87	65	1205	182
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	80	226	201	163	645	288	297	2763	116	93	1920	290
Arrive On Green	0.05	0.13	0.11	0.10	0.18	0.18	0.17	0.54	0.51	0.05	0.42	0.39
Sat Flow, veh/h	1714	1805	1610	1619	3610	1610	1714	5105	214	1714	4548	687
Grp Volume(v), veh/h	51	29	39	131	286	163	255	1399	757	65	916	471
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1619	1805	1610	1714	1729	1861	1714	1729	1776
Q Serve(g_s), s	2.6	1.3	2.0	7.1	6.3	8.3	12.9	27.9	28.2	3.3	18.6	18.8
Cycle Q Clear(g_c), s	2.6	1.3	2.0	7.1	6.3	8.3	12.9	27.9	28.2	3.3	18.6	18.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.11	1.00		0.39
Lane Grp Cap(c), veh/h	80	226	201	163	645	288	297	1871	1007	93	1460	750
V/C Ratio(X)	0.64	0.13	0.19	0.80	0.44	0.57	0.86	0.75	0.75	0.70	0.63	0.63
Avail Cap(c_a), veh/h	132	831	741	163	1746	779	306	1871	1007	107	1460	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.9	34.8	35.7	39.4	32.8	33.6	35.9	15.8	16.0	41.6	20.3	20.8
Incr Delay (d2), s/veh	3.1	0.3	0.5	23.1	0.5	1.7	19.4	2.8	5.2	11.2	2.1	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.6	0.8	3.8	2.7	3.3	6.6	9.4	11.0	1.6	6.9	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.0	35.1	36.1	62.5	33.3	35.3	55.3	18.6	21.2	52.8	22.4	24.7
LnGrp LOS	D	D	D	E	C	D	E	B	C	D	C	C
Approach Vol, veh/h		119			580			2411			1452	
Approach Delay, s/veh		39.7			40.5			23.3			24.5	
Approach LOS		D			D			C			C	

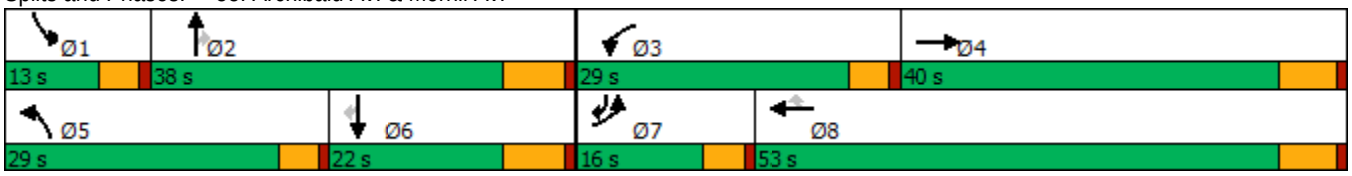
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	52.4	13.0	15.2	19.5	41.8	8.2	20.0
Change Period (Y+Rc), s	4.6	6.5	4.6	5.2	4.6	6.5	4.6	5.2
Max Green Setting (Gmax), s	5.0	45.7	8.4	40.0	15.4	35.3	6.3	42.1
Max Q Clear Time (g_c+I1), s	5.3	30.2	9.1	4.0	14.9	20.8	4.6	10.3
Green Ext Time (p_c), s	0.0	11.3	0.0	0.3	0.0	7.1	0.0	2.4

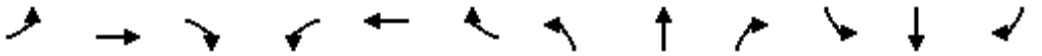
Intersection Summary	
HCM 6th Ctrl Delay	26.3
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	297	25	201	139	87	158	610	1479	88	48	889	419
Future Volume (vph)	297	25	201	139	87	158	610	1479	88	48	889	419
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			Free			8			2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	16.2		9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	9.6
Total Split (s)	16.0	40.0		29.0	53.0	53.0	29.0	38.0	38.0	13.0	22.0	16.0
Total Split (%)	13.3%	33.3%		24.2%	44.2%	44.2%	24.2%	31.7%	31.7%	10.8%	18.3%	13.3%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2		-0.6	-2.2	-2.2	-0.6	-2.5	-2.5	-0.6	-2.5	-0.6
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min	Min	None	Min	None
Act Effct Green (s)	12.1	16.3	90.0	24.2	17.9	17.9	25.5	41.4	41.4	6.6	18.3	34.5
Actuated g/C Ratio	0.13	0.18	1.00	0.27	0.20	0.20	0.28	0.46	0.46	0.07	0.20	0.38
v/c Ratio	0.69	0.08	0.13	0.31	0.24	0.36	1.30	0.64	0.11	0.21	0.87	0.55
Control Delay	47.9	30.2	0.2	33.5	30.2	6.6	180.3	23.5	0.5	44.5	45.9	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.9	30.2	0.2	33.5	30.2	6.6	180.3	23.5	0.5	44.5	45.9	12.2
LOS	D	C	A	C	C	A	F	C	A	D	D	B
Approach Delay		28.7			21.7			66.5			35.4	
Approach LOS		C			C			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 90	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.30	
Intersection Signal Delay: 48.7	Intersection LOS: D
Intersection Capacity Utilization 80.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	297	25	201	139	87	158	610	1479	88	48	889	419
Future Volume (veh/h)	297	25	201	139	87	158	610	1479	88	48	889	419
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	306	26	0	143	90	68	629	1525	72	49	916	366
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	408	308		190	286	242	528	2497	775	153	1151	517
Arrive On Green	0.12	0.16	0.00	0.11	0.15	0.15	0.31	0.48	0.48	0.05	0.22	0.20
Sat Flow, veh/h	3326	1900	1610	1714	1900	1610	1714	5187	1610	3141	5187	1610
Grp Volume(v), veh/h	306	26	0	143	90	68	629	1525	72	49	916	366
Grp Sat Flow(s),veh/h/ln	1663	1900	1610	1714	1900	1610	1714	1729	1610	1570	1729	1610
Q Serve(g_s), s	7.2	0.9	0.0	6.6	3.4	3.0	25.0	17.5	2.0	1.2	13.5	16.1
Cycle Q Clear(g_c), s	7.2	0.9	0.0	6.6	3.4	3.0	25.0	17.5	2.0	1.2	13.5	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	408	308		190	286	242	528	2497	775	153	1151	517
V/C Ratio(X)	0.75	0.08		0.75	0.32	0.28	1.19	0.61	0.09	0.32	0.80	0.71
Avail Cap(c_a), veh/h	492	843		528	1147	972	528	2497	775	348	1151	517
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.4	28.9	0.0	35.0	30.7	30.6	28.1	15.5	11.4	37.3	29.8	24.2
Incr Delay (d2), s/veh	3.9	0.1	0.0	2.3	0.6	0.6	103.5	0.4	0.1	0.4	4.0	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.4	0.0	2.8	1.6	1.2	24.0	5.6	0.7	0.4	5.4	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.3	29.0	0.0	37.3	31.4	31.2	131.6	15.9	11.5	37.7	33.8	28.6
LnGrp LOS	D	C		D	C	C	F	B	B	D	C	C
Approach Vol, veh/h		332	A		301			2226			1331	
Approach Delay, s/veh		37.6			34.2			48.4			32.5	
Approach LOS		D			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	43.1	13.0	17.2	29.0	22.0	13.9	16.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	8.4	31.5	24.4	33.8	24.4	15.5	11.4	46.8
Max Q Clear Time (g_c+I1), s	3.2	19.5	8.6	2.9	27.0	18.1	9.2	5.4
Green Ext Time (p_c), s	0.0	7.3	0.2	0.1	0.0	0.0	0.1	0.7

Intersection Summary	
HCM 6th Ctrl Delay	41.5
HCM 6th LOS	D

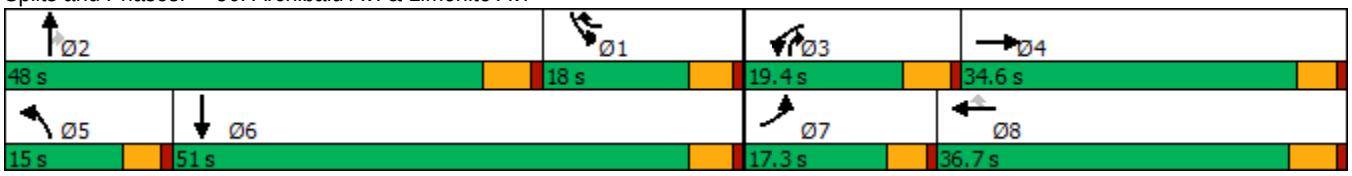
Notes

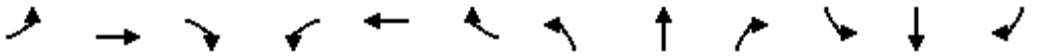
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	215	551	366	749	563	149	1078	372	381	758
Future Volume (vph)	215	551	366	749	563	149	1078	372	381	758
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4	3	8	1	5	2	3	1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	1	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.6	34.6	11.3	36.3	11.0	9.5	46.3	11.3	11.0	43.0
Total Split (s)	17.3	34.6	19.4	36.7	18.0	15.0	48.0	19.4	18.0	51.0
Total Split (%)	14.4%	28.8%	16.2%	30.6%	15.0%	12.5%	40.0%	16.2%	15.0%	42.5%
Yellow Time (s)	3.6	3.6	4.3	4.3	4.0	3.5	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-0.6	-1.3	-1.3	-1.0	-0.5	-1.3	-1.3	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Max	None	None	None	Max	Max
Act Effct Green (s)	12.3	27.2	15.1	30.0	53.1	11.0	34.9	50.0	23.2	47.1
Actuated g/C Ratio	0.11	0.23	0.13	0.26	0.46	0.09	0.30	0.43	0.20	0.40
v/c Ratio	0.61	0.82	0.85	0.83	0.78	0.95	0.69	0.55	0.58	0.45
Control Delay	57.6	49.4	68.0	49.3	24.0	111.0	37.9	13.3	48.0	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.6	49.4	68.0	49.3	24.0	111.0	37.9	13.3	48.0	24.8
LOS	E	D	E	D	C	F	D	B	D	C
Approach Delay		51.4		44.9			39.0			31.4
Approach LOS		D		D			D			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 41.0	Intersection LOS: D
Intersection Capacity Utilization 74.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	551	113	366	749	563	149	1078	372	381	758	193
Future Volume (veh/h)	215	551	113	366	749	563	149	1078	372	381	758	193
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	234	599	123	398	814	553	162	1172	355	414	824	210
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	316	699	143	477	1060	760	170	1697	692	720	1767	447
Arrive On Green	0.09	0.23	0.22	0.13	0.28	0.28	0.09	0.30	0.30	0.20	0.40	0.39
Sat Flow, veh/h	3619	3060	627	3619	3800	1590	1810	5700	1610	3619	4390	1110
Grp Volume(v), veh/h	234	371	351	398	814	553	162	1172	355	414	712	322
Grp Sat Flow(s),veh/h/ln	1810	1900	1787	1810	1900	1590	1810	1900	1610	1810	1900	1700
Q Serve(g_s), s	7.4	21.9	22.0	12.5	23.0	7.0	10.4	21.2	8.5	12.1	16.1	16.4
Cycle Q Clear(g_c), s	7.4	21.9	22.0	12.5	23.0	7.0	10.4	21.2	8.5	12.1	16.1	16.4
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		0.65
Lane Grp Cap(c), veh/h	316	434	408	477	1060	760	170	1697	692	720	1529	684
V/C Ratio(X)	0.74	0.86	0.86	0.83	0.77	0.73	0.95	0.69	0.51	0.57	0.47	0.47
Avail Cap(c_a), veh/h	412	498	468	477	1064	761	170	2147	819	720	1529	684
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	43.2	43.3	49.4	38.6	10.4	52.6	36.3	8.7	42.3	25.7	26.0
Incr Delay (d2), s/veh	5.0	12.4	13.4	11.4	3.1	3.1	53.9	0.8	0.7	3.3	1.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	11.4	10.9	6.2	10.6	6.3	7.1	9.5	3.3	5.5	7.0	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.0	55.6	56.7	60.9	41.7	13.5	106.5	37.0	9.4	45.6	26.7	28.3
LnGrp LOS	E	E	E	E	D	B	F	D	A	D	C	C
Approach Vol, veh/h		956			1765			1689			1448	
Approach Delay, s/veh		56.4			37.2			37.9			32.5	
Approach LOS		E			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.2	38.8	19.4	31.4	15.0	51.0	14.2	36.6
Change Period (Y+Rc), s	5.0	5.3	5.3	* 5.3	4.5	5.0	4.6	5.3
Max Green Setting (Gmax), s	13.0	42.7	14.1	* 30	10.5	46.0	12.7	31.4
Max Q Clear Time (g_c+I1), s	14.1	23.2	14.5	24.0	12.4	18.4	9.4	25.0
Green Ext Time (p_c), s	0.0	10.2	0.0	2.1	0.0	4.0	0.2	2.0

Intersection Summary	
HCM 6th Ctrl Delay	39.4
HCM 6th LOS	D

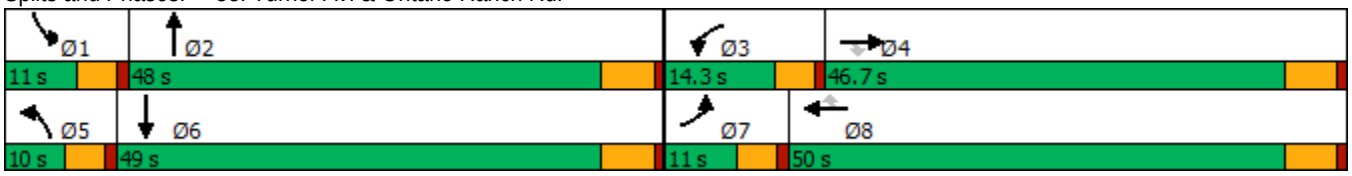
Notes

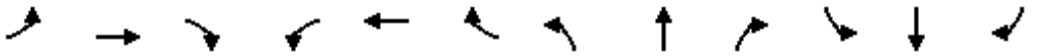
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	95	962	41	52	1984	93	70	30	96	19
Future Volume (vph)	95	962	41	52	1984	93	70	30	96	19
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	11.0	46.7	46.7	14.3	50.0	50.0	10.0	48.0	11.0	49.0
Total Split (%)	9.2%	38.9%	38.9%	11.9%	41.7%	41.7%	8.3%	40.0%	9.2%	40.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	6.5	46.1	46.1	7.3	44.8	44.8	5.5	15.6	9.7	16.4
Actuated g/C Ratio	0.07	0.49	0.49	0.08	0.48	0.48	0.06	0.17	0.10	0.17
v/c Ratio	0.88	0.41	0.05	0.43	0.87	0.12	0.77	0.25	0.59	0.59
Control Delay	102.2	18.7	0.1	54.5	28.7	4.0	90.3	17.1	60.6	19.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	102.2	18.7	0.1	54.5	28.7	4.0	90.3	17.1	60.6	19.9
LOS	F	B	A	D	C	A	F	B	E	B
Approach Delay		25.2			28.3			52.3		32.2
Approach LOS		C			C			D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 94.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 28.7	Intersection LOS: C
Intersection Capacity Utilization 78.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	962	41	52	1984	93	70	30	45	96	19	201
Future Volume (veh/h)	95	962	41	52	1984	93	70	30	45	96	19	201
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	103	1046	34	57	2157	92	76	33	36	104	21	195
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	120	2652	823	72	2507	778	96	124	135	120	26	241
Arrive On Green	0.07	0.51	0.51	0.04	0.48	0.48	0.06	0.15	0.15	0.07	0.16	0.16
Sat Flow, veh/h	1714	5187	1610	1714	5187	1610	1714	831	906	1714	159	1476
Grp Volume(v), veh/h	103	1046	34	57	2157	92	76	0	69	104	0	216
Grp Sat Flow(s),veh/h/ln	1714	1729	1610	1714	1729	1610	1714	0	1737	1714	0	1634
Q Serve(g_s), s	5.4	11.3	1.0	3.0	33.6	2.9	4.0	0.0	3.2	5.5	0.0	11.7
Cycle Q Clear(g_c), s	5.4	11.3	1.0	3.0	33.6	2.9	4.0	0.0	3.2	5.5	0.0	11.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.52	1.00		0.90
Lane Grp Cap(c), veh/h	120	2652	823	72	2507	778	96	0	259	120	0	266
V/C Ratio(X)	0.86	0.39	0.04	0.79	0.86	0.12	0.79	0.00	0.27	0.87	0.00	0.81
Avail Cap(c_a), veh/h	120	2652	823	182	2507	778	101	0	802	120	0	772
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.1	13.7	11.2	43.4	20.9	12.9	42.6	0.0	34.5	42.1	0.0	36.9
Incr Delay (d2), s/veh	40.9	0.4	0.1	7.0	4.1	0.3	29.1	0.0	0.5	42.9	0.0	5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	4.0	0.3	1.4	12.7	1.0	2.4	0.0	1.3	3.6	0.0	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.0	14.1	11.2	50.4	25.0	13.3	71.7	0.0	35.0	85.0	0.0	42.8
LnGrp LOS	F	B	B	D	C	B	E	A	D	F	A	D
Approach Vol, veh/h		1183			2306			145			320	
Approach Delay, s/veh		20.0			25.2			54.3			56.5	
Approach LOS		C			C			D			E	

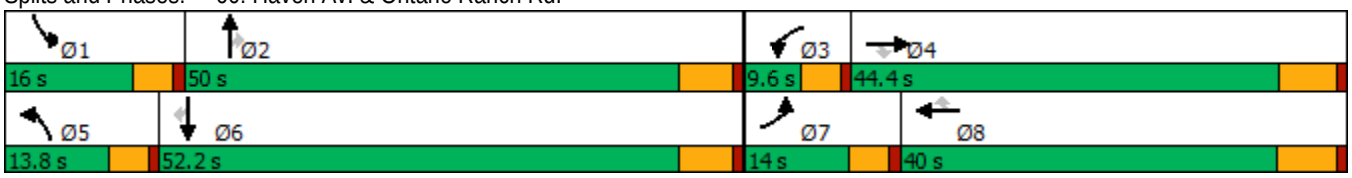
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	19.4	8.4	52.6	9.7	20.7	11.0	50.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	6.4	42.2	9.7	40.9	5.4	43.2	6.4	44.2
Max Q Clear Time (g_c+I1), s	7.5	5.2	5.0	13.3	6.0	13.7	7.4	35.6
Green Ext Time (p_c), s	0.0	0.3	0.0	7.7	0.0	1.3	0.0	7.3

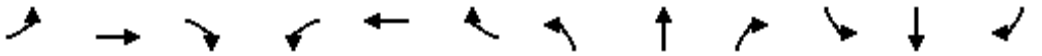
Intersection Summary	
HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	232	1116	44	26	1659	114	76	232	96	319	124	236
Future Volume (vph)	232	1116	44	26	1659	114	76	232	96	319	124	236
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	14.0	44.4	44.4	9.6	40.0	40.0	13.8	50.0	50.0	16.0	52.2	52.2
Total Split (%)	11.7%	37.0%	37.0%	8.0%	33.3%	33.3%	11.5%	41.7%	41.7%	13.3%	43.5%	43.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	9.5	45.0	45.0	5.1	34.0	34.0	8.0	16.0	16.0	11.6	21.7	21.7
Actuated g/C Ratio	0.10	0.48	0.48	0.05	0.37	0.37	0.09	0.17	0.17	0.12	0.23	0.23
v/c Ratio	1.41	0.47	0.06	0.30	0.93	0.18	0.55	0.40	0.27	1.59	0.16	0.50
Control Delay	248.4	19.6	0.1	55.1	39.4	5.9	57.6	34.8	6.2	318.5	29.1	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	248.4	19.6	0.1	55.1	39.4	5.9	57.6	34.8	6.2	318.5	29.1	14.3
LOS	F	B	A	E	D	A	E	C	A	F	C	B
Approach Delay		57.2			37.5			32.3			159.9	
Approach LOS		E			D			C			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 92.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.59	
Intersection Signal Delay: 62.8	Intersection LOS: E
Intersection Capacity Utilization 90.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	232	1116	44	26	1659	114	76	232	96	319	124	236
Future Volume (veh/h)	232	1116	44	26	1659	114	76	232	96	319	124	236
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	247	1187	34	28	1765	76	81	247	52	339	132	218
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	188	2446	759	49	2025	629	103	421	188	228	684	305
Arrive On Green	0.11	0.47	0.47	0.03	0.39	0.39	0.06	0.12	0.12	0.13	0.19	0.19
Sat Flow, veh/h	1714	5187	1610	1714	5187	1610	1714	3610	1610	1714	3610	1610
Grp Volume(v), veh/h	247	1187	34	28	1765	76	81	247	52	339	132	218
Grp Sat Flow(s),veh/h/ln	1714	1729	1610	1714	1729	1610	1714	1805	1610	1714	1805	1610
Q Serve(g_s), s	9.4	13.5	1.0	1.4	27.0	2.6	4.0	5.6	2.5	11.4	2.6	10.9
Cycle Q Clear(g_c), s	9.4	13.5	1.0	1.4	27.0	2.6	4.0	5.6	2.5	11.4	2.6	10.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	2446	759	49	2025	629	103	421	188	228	684	305
V/C Ratio(X)	1.32	0.49	0.04	0.58	0.87	0.12	0.79	0.59	0.28	1.49	0.19	0.71
Avail Cap(c_a), veh/h	188	2446	759	100	2025	629	184	1860	829	228	1952	871
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.2	15.5	12.2	41.2	24.2	16.7	39.8	35.9	34.6	37.2	29.3	32.6
Incr Delay (d2), s/veh	174.3	0.7	0.1	3.9	5.5	0.4	5.0	1.3	0.8	241.7	0.1	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.8	4.7	0.3	0.6	10.4	0.9	1.7	2.4	1.0	19.8	1.1	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	212.5	16.2	12.3	45.1	29.7	17.1	44.7	37.2	35.4	278.9	29.4	35.7
LnGrp LOS	F	B	B	D	C	B	D	D	D	F	C	D
Approach Vol, veh/h		1468			1869			380			689	
Approach Delay, s/veh		49.2			29.4			38.6			154.1	
Approach LOS		D			C			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	15.8	7.0	47.0	9.7	22.1	14.0	40.0
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	11.4	44.2	5.0	* 38	9.2	46.4	9.4	33.5
Max Q Clear Time (g_c+I1), s	13.4	7.6	3.4	15.5	6.0	12.9	11.4	29.0
Green Ext Time (p_c), s	0.0	1.6	0.0	8.1	0.0	1.5	0.0	3.6

Intersection Summary	
HCM 6th Ctrl Delay	56.3
HCM 6th LOS	E

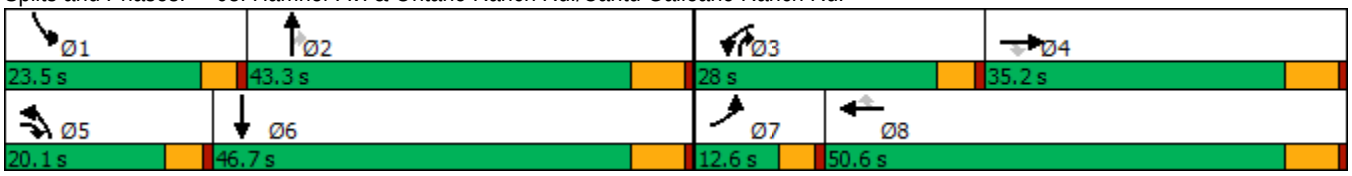
Notes

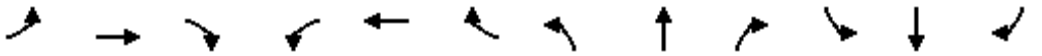
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	122	1023	195	388	1258	246	334	856	692	275	467
Future Volume (vph)	122	1023	195	388	1258	246	334	856	692	275	467
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4	5	3	8		5	2	3	1	6
Permitted Phases			4			8			2		
Detector Phase	7	4	5	3	8	8	5	2	3	1	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	9.6	35.2	9.6	9.6	49.2	49.2	9.6	35.2	9.6	9.6	45.2
Total Split (s)	12.6	35.2	20.1	28.0	50.6	50.6	20.1	43.3	28.0	23.5	46.7
Total Split (%)	9.7%	27.1%	15.5%	21.5%	38.9%	38.9%	15.5%	33.3%	21.5%	18.1%	35.9%
Yellow Time (s)	3.6	5.2	3.6	3.6	5.2	5.2	3.6	5.2	3.6	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	4.6	6.2	6.2	4.6	6.2	4.6	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	Max	Max	Max	None	None	Max	None	None
Act Effct Green (s)	7.7	28.8	50.3	23.5	44.7	44.7	15.3	26.2	55.9	14.7	25.5
Actuated g/C Ratio	0.07	0.25	0.44	0.20	0.39	0.39	0.13	0.23	0.49	0.13	0.22
v/c Ratio	0.62	0.58	0.28	0.64	0.62	0.34	0.85	0.72	0.92	0.73	0.58
Control Delay	67.0	40.2	12.5	48.3	30.9	4.6	68.4	44.4	42.9	59.7	36.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.0	40.2	12.5	48.3	30.9	4.6	68.4	44.4	42.9	59.7	36.0
LOS	E	D	B	D	C	A	E	D	D	E	D
Approach Delay		38.6			31.0			48.1			42.9
Approach LOS		D			C			D			D

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 114.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 39.9	Intersection LOS: D
Intersection Capacity Utilization 79.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	1023	195	388	1258	246	334	856	692	275	467	208
Future Volume (veh/h)	122	1023	195	388	1258	246	334	856	692	275	467	208
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1700	1900	1900	1700	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	133	1112	212	422	1367	267	363	930	745	299	508	226
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	182	1719	566	613	2049	579	406	1712	789	353	1079	457
Arrive On Green	0.06	0.34	0.23	0.19	0.54	0.36	0.13	0.45	0.30	0.11	0.43	0.28
Sat Flow, veh/h	3238	7600	1610	3238	5700	1610	3238	5700	1610	3238	3800	1608
Grp Volume(v), veh/h	133	1112	212	422	1367	267	363	930	745	299	508	226
Grp Sat Flow(s),veh/h/ln	1619	1900	1610	1619	1900	1610	1619	1900	1610	1619	1900	1608
Q Serve(g_s), s	5.0	15.3	12.1	15.0	21.3	15.7	13.6	14.7	37.1	11.2	11.9	14.5
Cycle Q Clear(g_c), s	5.0	15.3	12.1	15.0	21.3	15.7	13.6	14.7	37.1	11.2	11.9	14.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	182	1719	566	613	2049	579	406	1712	789	353	1079	457
V/C Ratio(X)	0.73	0.65	0.37	0.69	0.67	0.46	0.89	0.54	0.94	0.85	0.47	0.49
Avail Cap(c_a), veh/h	210	1784	580	613	2049	579	406	1712	789	496	1246	527
HCM Platoon Ratio	1.00	1.50	1.00	1.00	1.50	1.00	1.00	1.50	1.00	1.00	1.50	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.4	36.6	29.9	46.7	23.1	30.4	53.2	27.8	29.9	54.0	28.8	36.8
Incr Delay (d2), s/veh	8.2	0.8	0.4	6.2	1.7	2.6	20.8	0.4	19.8	6.9	0.3	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	6.2	4.6	6.4	7.6	6.2	6.5	5.7	23.4	4.7	4.8	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.6	37.4	30.3	52.8	24.9	33.0	74.0	28.1	49.7	60.9	29.1	37.7
LnGrp LOS	E	D	C	D	C	C	E	C	D	E	C	D
Approach Vol, veh/h		1457			2056			2038			1033	
Approach Delay, s/veh		38.9			31.7			44.2			40.2	
Approach LOS		D			C			D			D	

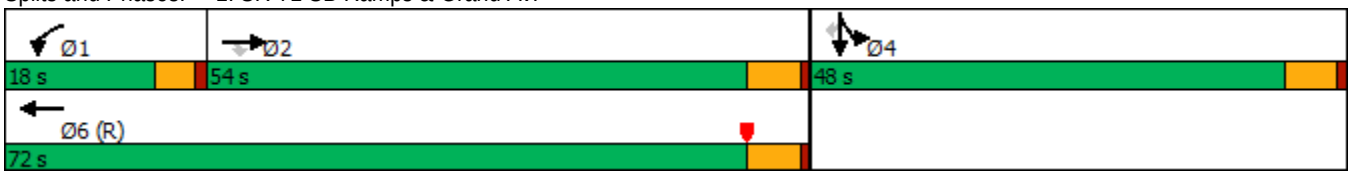
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.1	43.3	28.0	34.1	20.1	41.3	11.5	50.6
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	18.9	37.1	23.4	29.0	15.5	40.5	8.0	44.4
Max Q Clear Time (g_c+I1), s	13.2	39.1	17.0	17.3	15.6	16.5	7.0	23.3
Green Ext Time (p_c), s	0.3	0.0	0.5	5.7	0.0	4.4	0.0	10.2

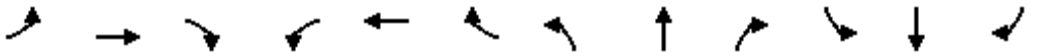
Intersection Summary	
HCM 6th Ctrl Delay	38.5
HCM 6th LOS	D

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1782	630	337	1579	998	1	531
Future Volume (vph)	1782	630	337	1579	998	1	531
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	54.0	54.0	18.0	72.0	48.0	48.0	48.0
Total Split (%)	45.0%	45.0%	15.0%	60.0%	40.0%	40.0%	40.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None
Act Effct Green (s)	50.8	50.8	14.0	68.9	43.1	43.1	43.1
Actuated g/C Ratio	0.42	0.42	0.12	0.57	0.36	0.36	0.36
v/c Ratio	0.88	0.69	0.89	0.58	0.88	0.88	0.93
Control Delay	37.9	9.5	54.3	21.3	53.0	53.2	54.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.9	9.5	54.3	21.3	53.0	53.2	54.9
LOS	D	A	D	C	D	D	D
Approach Delay	30.5			27.1		53.7	
Approach LOS	C			C		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 35.4	Intersection LOS: D
Intersection Capacity Utilization 86.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1782	630	337	1579	0	0	0	0	998	1	531
Future Volume (veh/h)	0	1782	630	337	1579	0	0	0	0	998	1	531
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1937	602	366	1716	0				1086	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2161	671	410	2939	0				1217	0	
Arrive On Green	0.00	0.42	0.42	0.12	0.57	0.00				0.34	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	1937	602	366	1716	0				1086	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	41.7	41.8	12.3	25.7	0.0				34.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	41.7	41.8	12.3	25.7	0.0				34.2	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2161	671	410	2939	0				1217	0	
V/C Ratio(X)	0.00	0.90	0.90	0.89	0.58	0.00				0.89	0.00	
Avail Cap(c_a), veh/h	0	2161	671	410	2939	0				1327	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	32.6	32.6	52.3	16.8	0.0				37.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	6.3	17.1	2.5	0.1	0.0				7.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	17.6	18.5	5.4	9.3	0.0				15.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	38.9	49.7	54.8	16.9	0.0				45.4	0.0	0.0
LnGrp LOS	A	D	D	D	B	A				D	A	
Approach Vol, veh/h		2539			2082						1086	A
Approach Delay, s/veh		41.5			23.6						45.4	
Approach LOS		D			C						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	18.0	54.0		44.3		72.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	13.4	48.2		42.2		66.2
Max Q Clear Time (g_c+I1), s	14.3	43.8		36.2		27.7
Green Ext Time (p_c), s	0.0	4.0		2.4		16.6

Intersection Summary		
HCM 6th Ctrl Delay		35.7
HCM 6th LOS		D

Notes

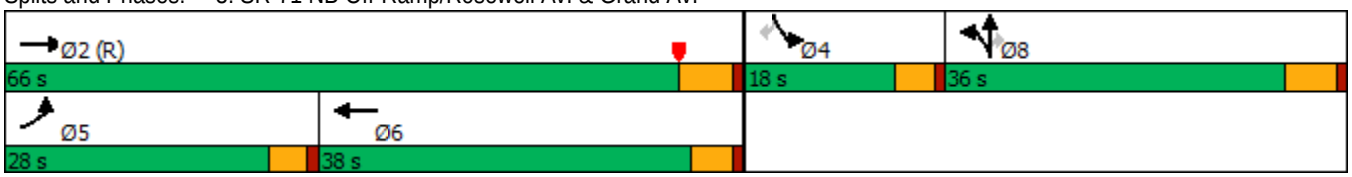
User approved volume balancing among the lanes for turning movement.

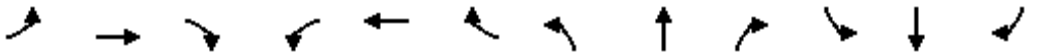
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	449	1872	459	1961	431	156	244	185	908
Future Volume (vph)	449	1872	459	1961	431	156	244	185	908
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.5	34.8		14.7	34.8	34.8	34.8	9.5	9.5
Total Split (s)	28.0	66.0		38.0	36.0	36.0	36.0	18.0	18.0
Total Split (%)	23.3%	55.0%		31.7%	30.0%	30.0%	30.0%	15.0%	15.0%
Yellow Time (s)	3.5	4.8		3.7	4.8	4.8	4.8	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.8		4.7	5.8	5.8	5.8	4.5	4.5
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	25.7	62.4	120.0	33.3	28.0	28.0	28.0	13.5	13.5
Actuated g/C Ratio	0.21	0.52	1.00	0.28	0.23	0.23	0.23	0.11	0.11
v/c Ratio	1.26	0.75	0.31	1.31	0.67	0.91	0.58	0.99	1.18
Control Delay	177.1	21.9	0.2	181.1	50.3	71.0	28.7	114.3	112.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	177.1	21.9	0.2	181.1	50.3	71.0	28.7	114.3	112.9
LOS	F	C	A	F	D	E	C	F	F
Approach Delay		43.4		181.1		52.5			
Approach LOS		D		F		D			

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.31	
Intersection Signal Delay: 99.2	Intersection LOS: F
Intersection Capacity Utilization 99.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	449	1872	459	0	1961	217	431	156	244	185	0	908
Future Volume (veh/h)	449	1872	459	0	1961	217	431	156	244	185	0	908
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	488	2035	0	0	2132	236	319	379	124	201	0	669
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	354	3545		0	2709	299	398	418	354	0	0	0
Arrive On Green	0.20	0.68	0.00	0.00	0.45	0.45	0.22	0.22	0.22	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6284	665	1810	1900	1610		0	
Grp Volume(v), veh/h	488	2035	0	0	1736	632	319	379	124		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1780	1810	1900	1610			
Q Serve(g_s), s	23.5	24.5	0.0	0.0	36.2	36.3	20.0	23.3	7.8			
Cycle Q Clear(g_c), s	23.5	24.5	0.0	0.0	36.2	36.3	20.0	23.3	7.8			
Prop In Lane	1.00		1.00	0.00		0.37	1.00		1.00			
Lane Grp Cap(c), veh/h	354	3545		0	2207	801	398	418	354			
V/C Ratio(X)	1.38	0.57		0.00	0.79	0.79	0.80	0.91	0.35			
Avail Cap(c_a), veh/h	354	3545		0	2207	801	455	478	405			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.35	0.35	0.00	0.00	0.54	0.54	1.00	1.00	1.00			
Uniform Delay (d), s/veh	48.3	9.9	0.0	0.0	28.1	28.1	44.3	45.6	39.6			
Incr Delay (d2), s/veh	176.0	0.2	0.0	0.0	1.1	2.9	7.6	18.2	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	27.6	7.9	0.0	0.0	13.8	15.6	9.5	12.7	3.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	224.2	10.1	0.0	0.0	29.2	31.1	51.9	63.8	39.8			
LnGrp LOS	F	B		A	C	C	D	E	D			
Approach Vol, veh/h		2523	A		2368			822				
Approach Delay, s/veh		51.5			29.7			55.6				
Approach LOS		D			C			E				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		87.8			28.0	59.8		32.2				
Change Period (Y+Rc), s		5.8			4.5	* 5.8		5.8				
Max Green Setting (Gmax), s		60.2			23.5	* 33		30.2				
Max Q Clear Time (g_c+I1), s		26.5			25.5	38.3		25.3				
Green Ext Time (p_c), s		19.8			0.0	0.0		1.1				

Intersection Summary	
HCM 6th Ctrl Delay	43.1
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

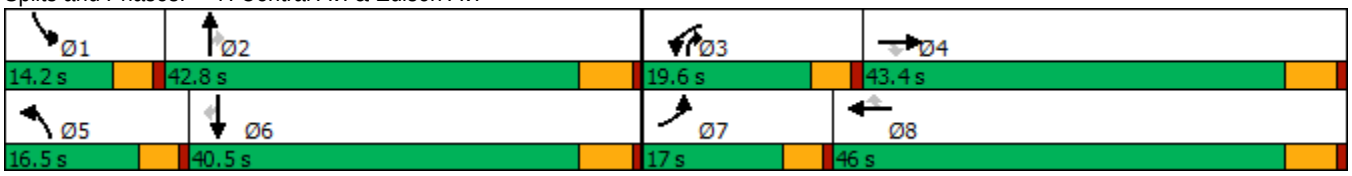
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

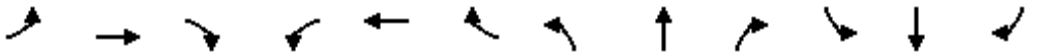
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	1201	117	378	928	111	128	1149	598	130	921	156
Future Volume (vph)	250	1201	117	378	928	111	128	1149	598	130	921	156
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	33.8	9.6	33.8	33.8	9.6	33.8	9.6	9.6	30.8	30.8
Total Split (s)	17.0	43.4	43.4	19.6	46.0	46.0	16.5	42.8	19.6	14.2	40.5	40.5
Total Split (%)	14.2%	36.2%	36.2%	16.3%	38.3%	38.3%	13.8%	35.7%	16.3%	11.8%	33.8%	33.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	0.0	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	5.8	4.0	4.0	4.0	4.0	4.0	2.8	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	12.6	39.4	37.6	15.6	42.4	42.4	11.8	38.8	56.8	10.2	37.2	37.2
Actuated g/C Ratio	0.10	0.33	0.31	0.13	0.35	0.35	0.10	0.32	0.47	0.08	0.31	0.31
v/c Ratio	0.79	0.99	0.21	0.96	0.71	0.18	0.78	0.96	0.78	0.92	0.81	0.28
Control Delay	69.9	64.2	7.9	87.4	37.2	5.5	82.7	58.8	29.8	111.8	44.7	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.9	64.2	7.9	87.4	37.2	5.5	82.7	58.8	29.8	111.8	44.7	12.8
LOS	E	E	A	F	D	A	F	E	C	F	D	B
Approach Delay		60.9			48.1			51.2			47.8	
Approach LOS		E			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 52.3	Intersection LOS: D
Intersection Capacity Utilization 97.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	1201	117	378	928	111	128	1149	598	130	921	156
Future Volume (veh/h)	250	1201	117	378	928	111	128	1149	598	130	921	156
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	258	1238	117	390	957	103	132	1185	535	134	949	127
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	321	1248	498	408	1353	573	165	1229	737	146	1187	502
Arrive On Green	0.10	0.33	0.31	0.13	0.36	0.36	0.10	0.32	0.32	0.09	0.31	0.31
Sat Flow, veh/h	3141	3800	1589	3141	3800	1610	1714	3800	1581	1714	3800	1609
Grp Volume(v), veh/h	258	1238	117	390	957	103	132	1185	535	134	949	127
Grp Sat Flow(s),veh/h/ln	1570	1900	1589	1570	1900	1610	1714	1900	1581	1714	1900	1609
Q Serve(g_s), s	9.6	38.9	6.6	14.8	26.0	5.3	9.0	36.8	32.9	9.3	27.5	7.1
Cycle Q Clear(g_c), s	9.6	38.9	6.6	14.8	26.0	5.3	9.0	36.8	32.9	9.3	27.5	7.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	321	1248	498	408	1353	573	165	1229	737	146	1187	502
V/C Ratio(X)	0.80	0.99	0.24	0.96	0.71	0.18	0.80	0.96	0.73	0.92	0.80	0.25
Avail Cap(c_a), veh/h	340	1248	498	408	1353	573	179	1229	737	146	1187	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	40.1	30.5	51.9	33.3	26.6	53.1	39.9	26.1	54.5	37.8	30.8
Incr Delay (d2), s/veh	11.2	23.7	1.1	32.8	3.1	0.7	19.0	17.8	3.6	50.3	4.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	21.4	2.6	7.5	12.0	2.1	4.7	19.4	12.3	5.9	12.9	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.9	63.8	31.6	84.7	36.4	27.3	72.1	57.7	29.7	104.8	41.8	31.1
LnGrp LOS	E	E	C	F	D	C	E	E	C	F	D	C
Approach Vol, veh/h		1613			1450			1852			1210	
Approach Delay, s/veh		61.5			48.7			50.6			47.7	
Approach LOS		E			D			D			D	

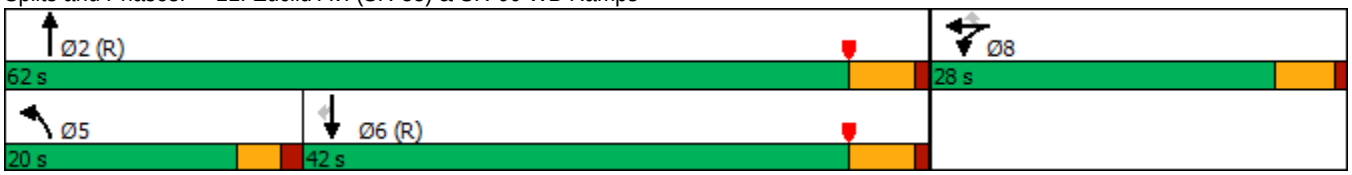
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	42.8	19.6	43.4	15.5	41.5	16.3	46.7
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	9.6	37.0	15.0	37.6	11.9	34.7	12.4	40.2
Max Q Clear Time (g_c+I1), s	11.3	38.8	16.8	40.9	11.0	29.5	11.6	28.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.8	0.0	5.1

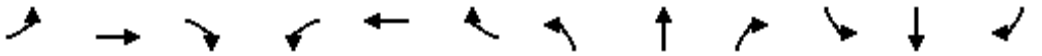
Intersection Summary	
HCM 6th Ctrl Delay	52.5
HCM 6th LOS	D

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	779	8	495	437	1324	1242	598
Future Volume (vph)	779	8	495	437	1324	1242	598
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	28.0	28.0	28.0	20.0	62.0	42.0	42.0
Total Split (%)	31.1%	31.1%	31.1%	22.2%	68.9%	46.7%	46.7%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	23.0	23.0	23.0	14.5	56.5	37.5	37.5
Actuated g/C Ratio	0.26	0.26	0.26	0.16	0.63	0.42	0.42
v/c Ratio	1.05	1.08	0.93	0.81	0.61	0.86	0.60
Control Delay	92.8	100.4	55.8	40.7	19.1	31.5	4.3
Queue Delay	0.0	0.0	0.0	0.0	6.3	0.0	0.0
Total Delay	92.8	100.4	55.8	40.7	25.5	31.5	4.3
LOS	F	F	E	D	C	C	A
Approach Delay		83.8			29.3	22.7	
Approach LOS		F			C	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 41.1	Intersection LOS: D
Intersection Capacity Utilization 137.0%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	779	8	495	437	1324	0	0	1242	598
Future Volume (veh/h)	0	0	0	779	8	495	437	1324	0	0	1242	598
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				918	0	226	455	1379	0	0	1294	418
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				925	0	411	521	2266	0	0	1550	692
Arrive On Green				0.26	0.00	0.26	0.30	1.00	0.00	0.00	0.43	0.43
Sat Flow, veh/h				3619	0	1608	3510	3705	0	0	3705	1610
Grp Volume(v), veh/h				918	0	226	455	1379	0	0	1294	418
Grp Sat Flow(s),veh/h/ln				1810	0	1608	1755	1805	0	0	1805	1610
Q Serve(g_s), s				22.8	0.0	11.0	11.1	0.0	0.0	0.0	28.7	18.0
Cycle Q Clear(g_c), s				22.8	0.0	11.0	11.1	0.0	0.0	0.0	28.7	18.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				925	0	411	521	2266	0	0	1550	692
V/C Ratio(X)				0.99	0.00	0.55	0.87	0.61	0.00	0.00	0.83	0.60
Avail Cap(c_a), veh/h				925	0	411	605	2266	0	0	1550	692
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.52	0.52	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.4	0.0	29.0	30.9	0.0	0.0	0.0	22.8	19.8
Incr Delay (d2), s/veh				27.7	0.0	0.9	6.1	0.6	0.0	0.0	5.5	3.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				12.8	0.0	4.1	4.2	0.2	0.0	0.0	12.2	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				61.1	0.0	29.9	37.0	0.6	0.0	0.0	28.3	23.7
LnGrp LOS				E	A	C	D	A	A	A	C	C
Approach Vol, veh/h					1144			1834			1712	
Approach Delay, s/veh					54.9			9.7			27.2	
Approach LOS					D			A			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		62.0			17.8	44.2		28.0				
Change Period (Y+Rc), s		5.5			4.5	5.5		5.0				
Max Green Setting (Gmax), s		56.5			15.5	36.5		23.0				
Max Q Clear Time (g_c+I1), s		2.0			13.1	30.7		24.8				
Green Ext Time (p_c), s		21.6			0.3	4.9		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			27.1									
HCM 6th LOS			C									

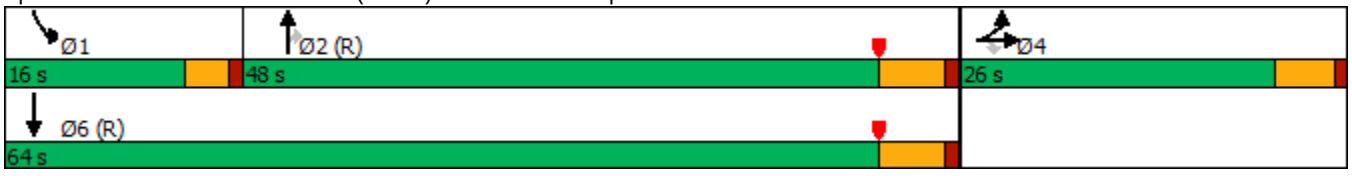
Notes

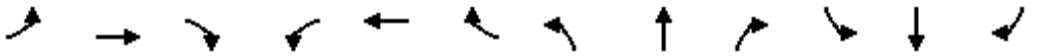
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	505	4	479	1256	793	458	1564
Future Volume (vph)	505	4	479	1256	793	458	1564
Turn Type	Split	NA	Perm	NA	Perm	Prot	NA
Protected Phases	4	4		2		1	6
Permitted Phases			4		2		
Detector Phase	4	4	4	2	2	1	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	26.0	26.0	26.0	48.0	48.0	16.0	64.0
Total Split (%)	28.9%	28.9%	28.9%	53.3%	53.3%	17.8%	71.1%
Yellow Time (s)	4.0	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	20.1	20.1	20.1	42.5	42.5	12.9	59.4
Actuated g/C Ratio	0.22	0.22	0.22	0.47	0.47	0.14	0.66
v/c Ratio	0.91	0.89	0.79	0.75	0.73	0.93	0.67
Control Delay	63.8	57.3	39.7	23.0	7.5	58.8	5.1
Queue Delay	35.4	26.6	0.0	0.0	0.0	0.0	1.4
Total Delay	99.1	83.9	39.7	23.0	7.5	58.8	6.5
LOS	F	F	D	C	A	E	A
Approach Delay		75.2		17.0			18.3
Approach LOS		E		B			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 28.9	Intersection LOS: C
Intersection Capacity Utilization 137.0%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	505	4	479	0	0	0	0	1256	793	458	1564	0
Future Volume (veh/h)	505	4	479	0	0	0	0	1256	793	458	1564	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	648	0	282				0	1282	615	467	1596	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	741	0	330				0	1808	796	468	2450	0
Arrive On Green	0.20	0.00	0.20				0.00	0.50	0.50	0.27	1.00	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1588	3510	3705	0
Grp Volume(v), veh/h	648	0	282				0	1282	615	467	1596	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1588	1755	1805	0
Q Serve(g_s), s	15.6	0.0	15.2				0.0	24.7	28.4	12.0	0.0	0.0
Cycle Q Clear(g_c), s	15.6	0.0	15.2				0.0	24.7	28.4	12.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	741	0	330				0	1808	796	468	2450	0
V/C Ratio(X)	0.87	0.00	0.86				0.00	0.71	0.77	1.00	0.65	0.00
Avail Cap(c_a), veh/h	844	0	376				0	1808	796	468	2450	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.31	0.31	0.29	0.29	0.00
Uniform Delay (d), s/veh	34.7	0.0	34.5				0.0	17.4	18.3	33.0	0.0	0.0
Incr Delay (d2), s/veh	8.4	0.0	14.3				0.0	0.7	2.3	21.8	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	0.0	6.9				0.0	9.3	9.7	5.5	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.1	0.0	48.9				0.0	18.1	20.6	54.8	0.4	0.0
LnGrp LOS	D	A	D				A	B	C	D	A	A
Approach Vol, veh/h		930						1897			2063	
Approach Delay, s/veh		44.9						18.9			12.7	
Approach LOS		D						B			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.0	50.6		23.4		66.6
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	12.0	42.5		21.0		58.5
Max Q Clear Time (g_c+I1), s	14.0	30.4		17.6		2.0
Green Ext Time (p_c), s	0.0	9.8		0.8		28.0

Intersection Summary		
HCM 6th Ctrl Delay		21.2
HCM 6th LOS		C

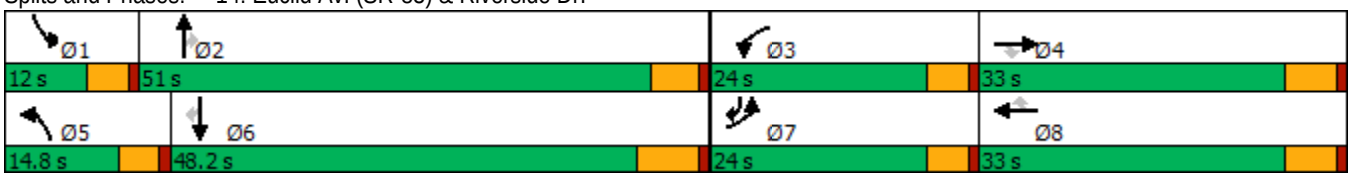
Notes

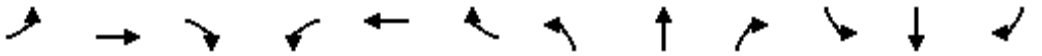
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	234	721	187	229	499	78	166	1494	295	169	1265	345
Future Volume (vph)	234	721	187	229	499	78	166	1494	295	169	1265	345
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	24.0	33.0	33.0	24.0	33.0	33.0	14.8	51.0	51.0	12.0	48.2	24.0
Total Split (%)	20.0%	27.5%	27.5%	20.0%	27.5%	27.5%	12.3%	42.5%	42.5%	10.0%	40.2%	20.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	None
Act Effct Green (s)	18.5	26.7	26.7	18.4	26.6	26.6	9.4	45.6	45.6	7.4	42.5	63.0
Actuated g/C Ratio	0.16	0.23	0.23	0.16	0.22	0.22	0.08	0.38	0.38	0.06	0.36	0.53
v/c Ratio	0.91	0.92	0.40	0.90	0.64	0.18	0.66	0.78	0.39	0.85	0.71	0.41
Control Delay	86.6	63.0	11.4	84.4	46.0	3.5	65.8	35.7	5.2	89.2	35.7	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.6	63.0	11.4	84.4	46.0	3.5	65.8	35.7	5.2	89.2	35.7	13.1
LOS	F	E	B	F	D	A	E	D	A	F	D	B
Approach Delay		59.4			52.8			33.7			36.4	
Approach LOS		E			D			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 42.4	Intersection LOS: D
Intersection Capacity Utilization 84.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	721	187	229	499	78	166	1494	295	169	1265	345
Future Volume (veh/h)	234	721	187	229	499	78	166	1494	295	169	1265	345
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	244	751	170	239	520	65	173	1556	253	176	1318	268
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	269	809	361	264	799	356	226	1974	613	205	1942	848
Arrive On Green	0.16	0.22	0.22	0.15	0.22	0.22	0.07	0.38	0.38	0.06	0.37	0.37
Sat Flow, veh/h	1714	3610	1610	1714	3610	1608	3326	5187	1610	3326	5187	1590
Grp Volume(v), veh/h	244	751	170	239	520	65	173	1556	253	176	1318	268
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1714	1805	1608	1663	1729	1610	1663	1729	1590
Q Serve(g_s), s	16.8	24.4	11.0	16.4	15.7	3.9	6.1	31.8	13.8	6.3	25.5	11.4
Cycle Q Clear(g_c), s	16.8	24.4	11.0	16.4	15.7	3.9	6.1	31.8	13.8	6.3	25.5	11.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	269	809	361	264	799	356	226	1974	613	205	1942	848
V/C Ratio(X)	0.91	0.93	0.47	0.91	0.65	0.18	0.76	0.79	0.41	0.86	0.68	0.32
Avail Cap(c_a), veh/h	278	820	366	278	820	365	283	1974	613	205	1942	848
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.7	45.5	40.3	49.8	42.4	37.8	54.9	32.8	27.3	55.7	31.4	15.8
Incr Delay (d2), s/veh	29.8	16.5	1.0	28.9	1.8	0.2	6.9	3.3	2.0	27.2	1.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.2	12.4	4.3	8.9	7.0	1.5	2.7	12.9	5.5	3.4	10.6	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.5	62.1	41.3	78.7	44.2	38.1	61.8	36.1	29.3	82.8	33.4	16.8
LnGrp LOS	E	E	D	E	D	D	E	D	C	F	C	B
Approach Vol, veh/h		1165			824			1982			1762	
Approach Delay, s/veh		62.7			53.7			37.5			35.8	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	52.1	23.1	32.7	12.8	51.3	23.4	32.3
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	7.4	* 46	19.4	27.2	10.2	41.7	19.4	27.2
Max Q Clear Time (g_c+I1), s	8.3	33.8	18.4	26.4	8.1	27.5	18.8	17.7
Green Ext Time (p_c), s	0.0	7.7	0.0	0.4	0.1	8.2	0.0	2.3

Intersection Summary	
HCM 6th Ctrl Delay	44.4
HCM 6th LOS	D

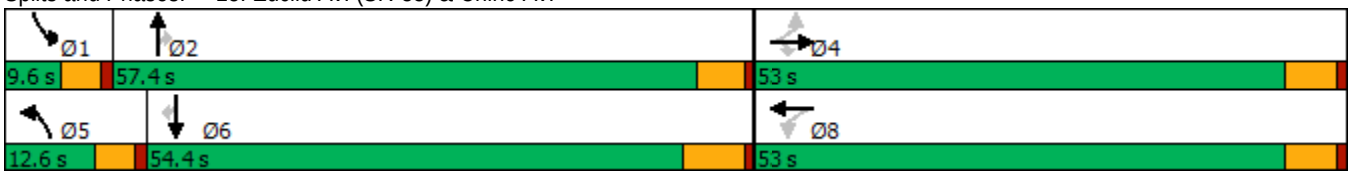
Notes

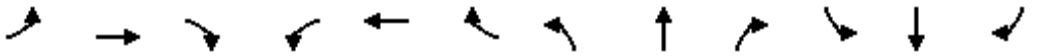
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	134	487	65	137	223	57	1758	278	35	1430	87
Future Volume (vph)	134	487	65	137	223	57	1758	278	35	1430	87
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	53.0	53.0	53.0	53.0	53.0	12.6	57.4	57.4	9.6	54.4	54.4
Total Split (%)	44.2%	44.2%	44.2%	44.2%	44.2%	10.5%	47.8%	47.8%	8.0%	45.3%	45.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	43.4	43.4	43.4	43.4	43.4	7.2	52.7	52.7	5.1	49.3	49.3
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.06	0.46	0.46	0.04	0.43	0.43
v/c Ratio	0.41	0.73	0.11	1.02	0.36	0.57	0.79	0.39	0.51	0.69	0.13
Control Delay	30.7	37.5	5.3	117.4	26.9	75.3	30.8	18.3	79.4	30.1	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	37.5	5.3	117.4	26.9	75.3	30.8	18.3	79.4	30.1	5.3
LOS	C	D	A	F	C	E	C	B	E	C	A
Approach Delay		33.1			59.7		30.4			29.9	
Approach LOS		C			E		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 32.9	Intersection LOS: C
Intersection Capacity Utilization 89.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	487	65	137	223	18	57	1758	278	35	1430	87
Future Volume (veh/h)	134	487	65	137	223	18	57	1758	278	35	1430	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	144	524	47	147	240	15	61	1890	228	38	1538	61
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	401	748	634	199	697	44	77	2258	686	51	2180	662
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.05	0.44	0.44	0.03	0.42	0.42
Sat Flow, veh/h	1142	1900	1610	854	1769	111	1714	5187	1577	1714	5187	1577
Grp Volume(v), veh/h	144	524	47	147	0	255	61	1890	228	38	1538	61
Grp Sat Flow(s),veh/h/ln	1142	1900	1610	854	0	1880	1714	1729	1577	1714	1729	1577
Q Serve(g_s), s	12.1	27.7	2.2	19.5	0.0	11.4	4.2	38.8	11.4	2.6	29.3	2.8
Cycle Q Clear(g_c), s	23.5	27.7	2.2	47.2	0.0	11.4	4.2	38.8	11.4	2.6	29.3	2.8
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	401	748	634	199	0	740	77	2258	686	51	2180	662
V/C Ratio(X)	0.36	0.70	0.07	0.74	0.00	0.34	0.79	0.84	0.33	0.74	0.71	0.09
Avail Cap(c_a), veh/h	401	748	634	199	0	740	114	2258	686	71	2180	662
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.7	30.4	22.7	50.7	0.0	25.5	56.7	30.1	22.3	57.7	28.6	21.0
Incr Delay (d2), s/veh	0.5	2.9	0.0	13.5	0.0	0.3	11.0	3.9	1.3	12.5	2.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	12.6	0.8	5.1	0.0	5.0	2.0	15.5	4.2	1.3	11.6	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.3	33.3	22.7	64.2	0.0	25.8	67.6	33.9	23.6	70.2	30.6	21.2
LnGrp LOS	C	C	C	E	A	C	E	C	C	E	C	C
Approach Vol, veh/h		715			402			2179			1637	
Approach Delay, s/veh		32.8			39.8			33.8			31.2	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	58.7		53.0	10.0	56.9		53.0				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	5.0	* 52		47.2	8.0	47.9		47.2				
Max Q Clear Time (g_c+I1), s	4.6	40.8		29.7	6.2	31.3		49.2				
Green Ext Time (p_c), s	0.0	8.6		3.5	0.0	9.1		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		33.3	
HCM 6th LOS		C	

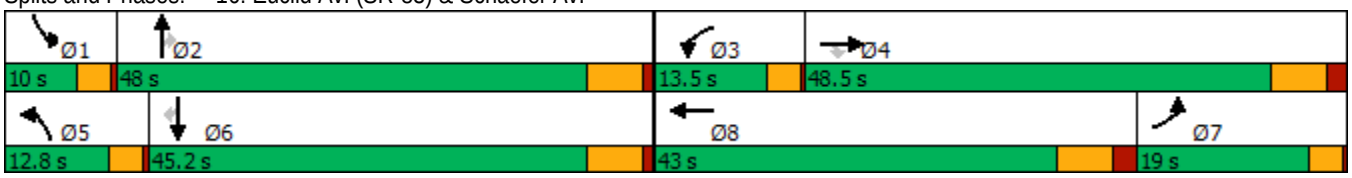
Notes

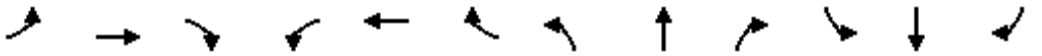
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	487	463	260	95	158	228	1676	100	199	1459	455
Future Volume (vph)	487	463	260	95	158	228	1676	100	199	1459	455
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	19.0	48.5	48.5	13.5	43.0	12.8	48.0	48.0	10.0	45.2	45.2
Total Split (%)	15.8%	40.4%	40.4%	11.3%	35.8%	10.7%	40.0%	40.0%	8.3%	37.7%	37.7%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	22.0	31.7	31.7	10.1	19.8	9.4	40.8	40.8	6.6	38.0	38.0
Actuated g/C Ratio	0.20	0.29	0.29	0.09	0.18	0.09	0.37	0.37	0.06	0.35	0.35
v/c Ratio	0.74	0.85	0.45	0.61	0.68	0.81	0.87	0.14	1.02	0.82	0.61
Control Delay	50.0	51.8	13.3	67.6	47.9	72.7	38.7	0.8	120.1	37.8	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.0	51.8	13.3	67.6	47.9	72.7	38.7	0.8	120.1	37.8	15.1
LOS	D	D	B	E	D	E	D	A	F	D	B
Approach Delay		42.8			53.6		40.7			40.6	
Approach LOS		D			D		D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 41.9	Intersection LOS: D
Intersection Capacity Utilization 88.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	487	463	260	95	158	73	228	1676	100	199	1459	455
Future Volume (veh/h)	487	463	260	95	158	73	228	1676	100	199	1459	455
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	492	468	222	96	160	69	230	1693	83	201	1474	430
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	608	528	447	154	191	82	289	1965	610	207	1837	570
Arrive On Green	0.18	0.28	0.28	0.09	0.15	0.15	0.09	0.38	0.38	0.06	0.35	0.35
Sat Flow, veh/h	3326	1900	1610	1714	1259	543	3326	5187	1610	3326	5187	1610
Grp Volume(v), veh/h	492	468	222	96	0	229	230	1693	83	201	1474	430
Grp Sat Flow(s),veh/h/ln	1663	1900	1610	1714	0	1802	1663	1729	1610	1663	1729	1610
Q Serve(g_s), s	14.8	24.7	12.1	5.6	0.0	12.9	7.1	31.5	3.5	6.3	26.8	12.9
Cycle Q Clear(g_c), s	14.8	24.7	12.1	5.6	0.0	12.9	7.1	31.5	3.5	6.3	26.8	12.9
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	608	528	447	154	0	273	289	1965	610	207	1837	570
V/C Ratio(X)	0.81	0.89	0.50	0.62	0.00	0.84	0.80	0.86	0.14	0.97	0.80	0.75
Avail Cap(c_a), veh/h	608	754	639	164	0	621	296	2085	647	207	1946	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	36.2	31.6	45.9	0.0	43.1	46.8	29.9	21.3	48.9	30.5	8.2
Incr Delay (d2), s/veh	7.5	8.3	0.6	4.5	0.0	5.2	12.6	3.8	0.1	54.0	2.4	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	12.0	4.6	2.5	0.0	5.9	3.3	12.4	1.3	4.0	10.5	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.4	44.5	32.2	50.3	0.0	48.3	59.4	33.7	21.4	103.0	32.9	13.3
LnGrp LOS	D	D	C	D	A	D	E	C	C	F	C	B
Approach Vol, veh/h		1182			325			2006			2105	
Approach Delay, s/veh		43.8			48.9			36.2			35.6	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	45.6	12.9	36.0	12.6	43.0	26.1	22.8
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	7.0	* 7
Max Green Setting (Gmax), s	6.5	42.0	10.0	41.5	9.3	39.2	15.5	* 36
Max Q Clear Time (g_c+I1), s	8.3	33.5	7.6	26.7	9.1	28.8	16.8	14.9
Green Ext Time (p_c), s	0.0	6.1	0.0	2.4	0.0	7.1	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	38.3
HCM 6th LOS	D

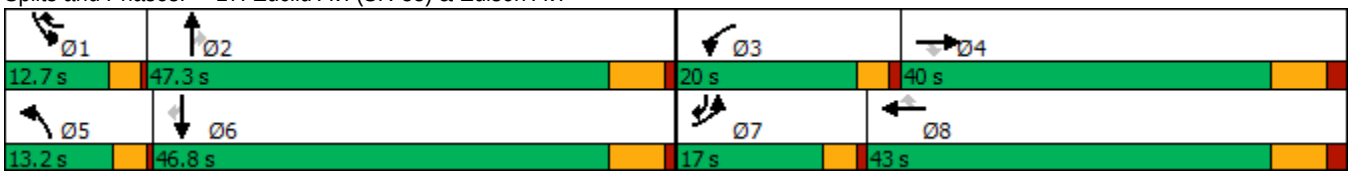
Notes

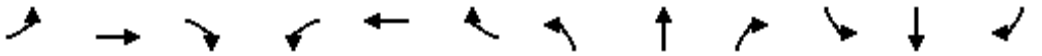
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	334	1147	377	428	585	237	223	1618	281	165	1558	220
Future Volume (vph)	334	1147	377	428	585	237	223	1618	281	165	1558	220
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	1	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	39.5	39.5	9.0	43.0	8.5	8.5	29.0	29.0	8.5	38.5	9.0
Total Split (s)	17.0	40.0	40.0	20.0	43.0	12.7	13.2	47.3	47.3	12.7	46.8	17.0
Total Split (%)	14.2%	33.3%	33.3%	16.7%	35.8%	10.6%	11.0%	39.4%	39.4%	10.6%	39.0%	14.2%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	3.0	5.0	5.0	3.0	5.0	3.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.0	7.0	4.0	7.0	3.5	3.5	6.0	6.0	3.5	6.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	None
Act Effct Green (s)	13.0	32.1	32.1	16.0	35.1	47.4	9.7	41.7	41.7	8.9	40.8	59.8
Actuated g/C Ratio	0.11	0.27	0.27	0.13	0.29	0.40	0.08	0.35	0.35	0.07	0.34	0.50
v/c Ratio	1.00	0.79	0.72	1.04	0.55	0.37	0.89	0.85	0.47	0.73	0.84	0.27
Control Delay	101.5	44.6	31.0	104.3	37.5	18.3	88.4	41.4	22.1	71.9	41.1	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.5	44.6	31.0	104.3	37.5	18.3	88.4	41.4	22.1	71.9	41.1	13.0
LOS	F	D	C	F	D	B	F	D	C	E	D	B
Approach Delay		52.1			56.8			43.8			40.5	
Approach LOS		D			E			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.1	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 47.3	Intersection LOS: D
Intersection Capacity Utilization 90.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	334	1147	377	428	585	237	223	1618	281	165	1558	220
Future Volume (veh/h)	334	1147	377	428	585	237	223	1618	281	165	1558	220
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1700	1900	1900	1700	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	352	1207	242	451	616	28	235	1703	145	174	1640	179
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	360	1457	412	443	1069	560	269	2064	582	226	1990	741
Arrive On Green	0.11	0.32	0.26	0.14	0.35	0.28	0.08	0.54	0.36	0.07	0.52	0.35
Sat Flow, veh/h	3238	5700	1610	3238	3800	1590	3238	5700	1608	3238	5700	1610
Grp Volume(v), veh/h	352	1207	242	451	616	28	235	1703	145	174	1640	179
Grp Sat Flow(s),veh/h/ln	1619	1900	1610	1619	1900	1590	1619	1900	1608	1619	1900	1610
Q Serve(g_s), s	12.7	22.9	15.4	16.0	15.4	1.4	8.4	28.9	7.4	6.2	28.2	7.9
Cycle Q Clear(g_c), s	12.7	22.9	15.4	16.0	15.4	1.4	8.4	28.9	7.4	6.2	28.2	7.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	360	1457	412	443	1069	560	269	2064	582	226	1990	741
V/C Ratio(X)	0.98	0.83	0.59	1.02	0.58	0.05	0.87	0.82	0.25	0.77	0.82	0.24
Avail Cap(c_a), veh/h	360	1609	455	443	1170	602	269	2064	582	255	1990	741
HCM Platoon Ratio	1.00	1.25	1.00	1.00	1.25	1.00	1.00	1.50	1.00	1.00	1.50	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.8	37.4	38.1	50.4	32.2	25.0	53.0	23.6	26.1	53.4	24.8	19.1
Incr Delay (d2), s/veh	41.1	3.5	1.6	47.2	0.6	0.0	24.9	3.9	1.0	10.0	4.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	10.1	6.1	9.2	6.5	0.5	4.2	9.8	2.9	2.7	9.8	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.9	40.9	39.8	97.6	32.8	25.1	77.9	27.5	27.2	63.4	28.9	19.9
LnGrp LOS	F	D	D	F	C	C	E	C	C	E	C	B
Approach Vol, veh/h		1801			1095			2083			1993	
Approach Delay, s/veh		50.9			59.3			33.2			31.1	
Approach LOS		D			E			C			C	

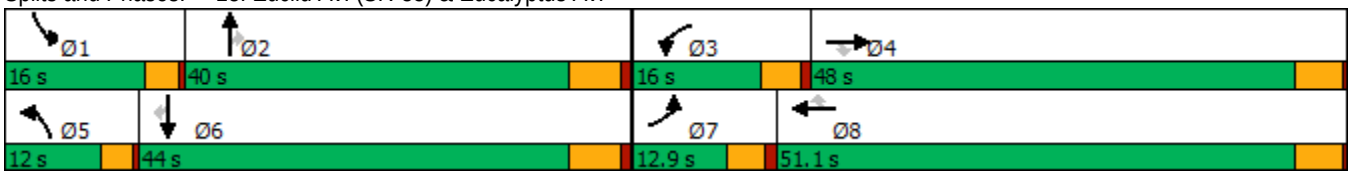
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	48.3	20.0	36.9	13.2	46.8	17.0	39.9
Change Period (Y+Rc), s	3.5	6.0	4.0	7.0	3.5	6.0	4.0	7.0
Max Green Setting (Gmax), s	9.2	41.3	16.0	33.0	9.7	40.8	13.0	36.0
Max Q Clear Time (g_c+I1), s	8.2	30.9	18.0	24.9	10.4	30.2	14.7	17.4
Green Ext Time (p_c), s	0.0	7.3	0.0	5.0	0.0	7.3	0.0	3.7

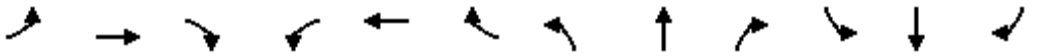
Intersection Summary	
HCM 6th Ctrl Delay	41.3
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	198	266	413	146	214	148	1642	383	252	1749	78
Future Volume (vph)	47	198	266	413	146	214	148	1642	383	252	1749	78
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	46.8	46.8	9.5	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	12.9	48.0	48.0	16.0	51.1	51.1	12.0	40.0	40.0	16.0	44.0	44.0
Total Split (%)	10.8%	40.0%	40.0%	13.3%	42.6%	42.6%	10.0%	33.3%	33.3%	13.3%	36.7%	36.7%
Yellow Time (s)	3.5	4.3	4.3	3.5	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	1.0	0.5	0.5	1.0	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.8	4.8	4.5	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	7.5	18.7	18.7	11.6	27.6	27.6	8.6	34.7	34.7	12.7	38.8	38.8
Actuated g/C Ratio	0.08	0.19	0.19	0.12	0.29	0.29	0.09	0.36	0.36	0.13	0.40	0.40
v/c Ratio	0.39	0.58	0.63	1.12	0.29	0.37	1.06	0.96	0.63	1.22	0.91	0.12
Control Delay	54.2	40.8	19.2	123.1	29.3	5.3	134.1	44.3	24.7	171.8	36.3	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.2	40.8	19.2	123.1	29.3	5.3	134.1	44.3	24.7	171.8	36.3	5.7
LOS	D	D	B	F	C	A	F	D	C	F	D	A
Approach Delay		30.8			72.7			47.0			51.6	
Approach LOS		C			E			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.22	
Intersection Signal Delay: 50.8	Intersection LOS: D
Intersection Capacity Utilization 85.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	198	266	413	146	214	148	1642	383	252	1749	78
Future Volume (veh/h)	47	198	266	413	146	214	148	1642	383	252	1749	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	51	215	177	449	159	230	161	1785	415	274	1901	73
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	69	278	236	427	446	378	163	1964	610	239	2196	668
Arrive On Green	0.04	0.15	0.15	0.13	0.23	0.23	0.09	0.38	0.38	0.14	0.42	0.42
Sat Flow, veh/h	1714	1900	1610	3326	1900	1610	1714	5187	1610	1714	5187	1577
Grp Volume(v), veh/h	51	215	177	449	159	230	161	1785	415	274	1901	73
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1663	1900	1610	1714	1729	1610	1714	1729	1577
Q Serve(g_s), s	2.6	9.7	9.4	11.5	6.3	11.4	8.4	29.2	19.3	12.5	29.9	2.5
Cycle Q Clear(g_c), s	2.6	9.7	9.4	11.5	6.3	11.4	8.4	29.2	19.3	12.5	29.9	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	69	278	236	427	446	378	163	1964	610	239	2196	668
V/C Ratio(X)	0.74	0.77	0.75	1.05	0.36	0.61	0.99	0.91	0.68	1.14	0.87	0.11
Avail Cap(c_a), veh/h	161	917	777	427	983	833	163	1988	617	239	2220	675
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.5	36.8	36.6	39.0	28.6	30.6	40.4	26.3	23.3	38.5	23.5	15.6
Incr Delay (d2), s/veh	14.4	3.4	3.6	57.4	0.4	1.2	67.0	6.6	3.0	102.6	3.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.6	3.7	7.8	2.7	4.3	6.3	11.6	7.1	11.7	11.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.9	40.2	40.2	96.4	29.0	31.7	107.4	32.9	26.3	141.1	27.3	15.7
LnGrp LOS	E	D	D	F	C	C	F	C	C	F	C	B
Approach Vol, veh/h		443			838			2361			2248	
Approach Delay, s/veh		42.1			65.9			36.8			40.8	
Approach LOS		D			E			D			D	

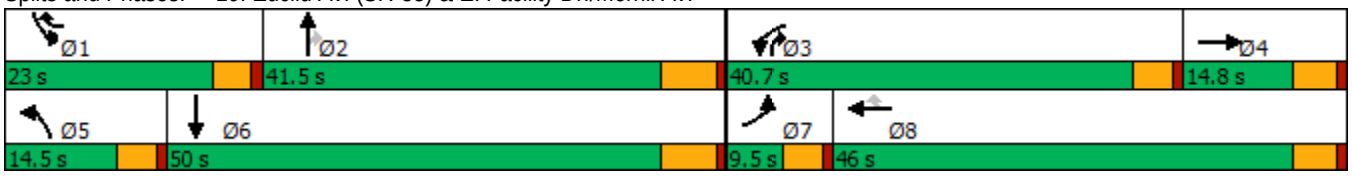
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	39.6	16.0	17.9	12.0	43.6	8.1	25.8
Change Period (Y+Rc), s	3.5	5.7	4.5	4.8	3.5	5.7	4.5	4.8
Max Green Setting (Gmax), s	12.5	34.3	11.5	43.2	8.5	38.3	8.4	46.3
Max Q Clear Time (g_c+I1), s	14.5	31.2	13.5	11.7	10.4	31.9	4.6	13.4
Green Ext Time (p_c), s	0.0	2.7	0.0	1.4	0.0	5.2	0.0	1.2

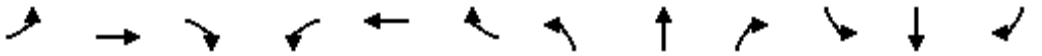
Intersection Summary	
HCM 6th Ctrl Delay	42.9
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	14	37	443	3	291	5	1838	735	347	2080
Future Volume (vph)	14	37	443	3	291	5	1838	735	347	2080
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4	3	8	1	5	2	3	1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	1	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	15.0	10.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	9.5	10.0	9.5	46.0	14.5	14.5	28.0	9.5	14.5	28.0
Total Split (s)	9.5	14.8	40.7	46.0	23.0	14.5	41.5	40.7	23.0	50.0
Total Split (%)	7.9%	12.3%	33.9%	38.3%	19.2%	12.1%	34.6%	33.9%	19.2%	41.7%
Yellow Time (s)	3.5	4.0	3.5	4.0	3.5	3.5	5.0	3.5	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	4.5	5.0	4.5	4.5	6.0	4.5	4.5	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.1	7.0	23.1	30.7	54.5	10.1	36.0	65.2	18.7	56.8
Actuated g/C Ratio	0.05	0.07	0.22	0.30	0.53	0.10	0.35	0.63	0.18	0.55
v/c Ratio	0.18	0.41	0.65	0.01	0.35	0.03	1.10	0.71	1.21	0.79
Control Delay	56.9	49.1	40.4	24.7	11.0	48.0	87.4	12.5	158.8	23.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.9	49.1	40.4	24.7	11.0	48.0	87.4	12.5	158.8	23.9
LOS	E	D	D	C	B	D	F	B	F	C
Approach Delay		50.7		28.8			66.0			43.2
Approach LOS		D		C			E			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.7	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.21	
Intersection Signal Delay: 51.6	Intersection LOS: D
Intersection Capacity Utilization 88.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	37	15	443	3	291	5	1838	735	347	2080	1
Future Volume (veh/h)	14	37	15	443	3	291	5	1838	735	347	2080	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	15	40	15	482	3	306	5	1998	735	377	2261	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	29	69	26	588	403	651	22	1918	880	330	2851	0
Arrive On Green	0.02	0.05	0.05	0.18	0.21	0.21	0.01	0.37	0.37	0.19	0.55	0.00
Sat Flow, veh/h	1714	1317	494	3326	1900	1610	1714	5187	1610	1714	5358	0
Grp Volume(v), veh/h	15	0	55	482	3	306	5	1998	735	377	2261	0
Grp Sat Flow(s),veh/h/ln	1714	0	1811	1663	1900	1610	1714	1729	1610	1714	1729	0
Q Serve(g_s), s	0.8	0.0	2.8	13.4	0.1	13.4	0.3	35.5	35.5	18.5	33.4	0.0
Cycle Q Clear(g_c), s	0.8	0.0	2.8	13.4	0.1	13.4	0.3	35.5	35.5	18.5	33.4	0.0
Prop In Lane	1.00		0.27	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	29	0	94	588	403	651	22	1918	880	330	2851	0
V/C Ratio(X)	0.51	0.00	0.58	0.82	0.01	0.47	0.22	1.04	0.83	1.14	0.79	0.00
Avail Cap(c_a), veh/h	89	0	185	1254	812	998	179	1918	880	330	2851	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	46.8	0.0	44.5	38.0	29.9	21.0	46.9	30.2	18.1	38.7	17.3	0.0
Incr Delay (d2), s/veh	13.0	0.0	2.1	2.9	0.0	0.2	1.9	32.3	7.0	93.4	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.3	5.3	0.1	4.6	0.1	18.7	12.9	15.7	11.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.7	0.0	46.6	40.9	29.9	21.2	48.8	62.5	25.1	132.1	18.9	0.0
LnGrp LOS	E	A	D	D	C	C	D	F	C	F	B	A
Approach Vol, veh/h		70			791			2738			2638	
Approach Delay, s/veh		49.4			33.2			52.5			35.1	
Approach LOS		D			C			D			D	

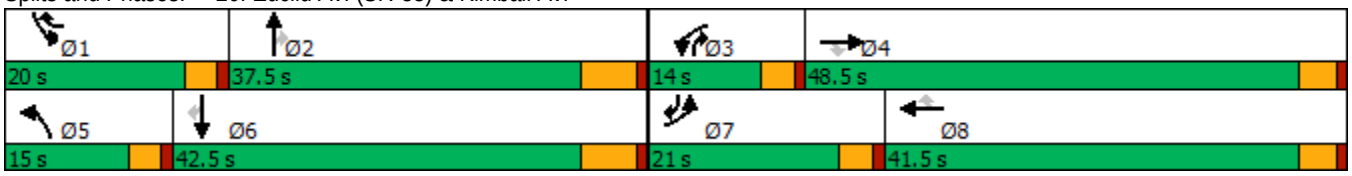
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	41.5	21.5	10.0	5.7	58.8	6.1	25.3
Change Period (Y+Rc), s	4.5	6.0	4.5	5.0	4.5	6.0	4.5	5.0
Max Green Setting (Gmax), s	18.5	35.5	36.2	9.8	10.0	44.0	5.0	41.0
Max Q Clear Time (g_c+I1), s	20.5	37.5	15.4	4.8	2.3	35.4	2.8	15.4
Green Ext Time (p_c), s	0.0	0.0	1.6	0.0	0.0	7.3	0.0	0.5

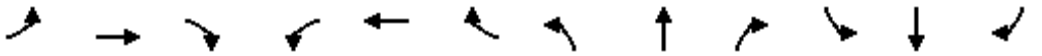
Intersection Summary	
HCM 6th Ctrl Delay	42.6
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	587	975	206	105	435	293	147	1270	159	541	1240	408
Future Volume (vph)	587	975	206	105	435	293	147	1270	159	541	1240	408
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	41.5	41.5	14.0	41.5	9.0	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	21.0	48.5	48.5	14.0	41.5	20.0	15.0	37.5	14.0	20.0	42.5	21.0
Total Split (%)	17.5%	40.4%	40.4%	11.7%	34.6%	16.7%	12.5%	31.3%	11.7%	16.7%	35.4%	17.5%
Yellow Time (s)	3.0	3.5	3.5	3.0	3.5	3.0	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.5	4.0	4.5	4.0	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	17.1	38.6	38.6	10.0	31.6	52.2	11.0	31.4	47.5	16.0	36.5	55.5
Actuated g/C Ratio	0.15	0.34	0.34	0.09	0.28	0.46	0.10	0.27	0.41	0.14	0.32	0.48
v/c Ratio	1.16	0.83	0.33	0.35	0.45	0.38	0.88	0.92	0.22	1.14	0.78	0.49
Control Delay	136.3	41.5	8.0	54.2	35.6	14.6	95.4	52.4	7.9	130.0	39.9	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	136.3	41.5	8.0	54.2	35.6	14.6	95.4	52.4	7.9	130.0	39.9	13.6
LOS	F	D	A	D	D	B	F	D	A	F	D	B
Approach Delay		69.1			30.6			52.0			57.3	
Approach LOS		E			C			D			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 55.7	Intersection LOS: E
Intersection Capacity Utilization 90.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	587	975	206	105	435	293	147	1270	159	541	1240	408
Future Volume (veh/h)	587	975	206	105	435	293	147	1270	159	541	1240	408
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	605	1005	209	108	448	264	152	1309	149	558	1278	323
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	534	1189	530	303	952	655	178	1430	583	502	1662	760
Arrive On Green	0.15	0.33	0.33	0.09	0.26	0.26	0.12	0.34	0.34	0.18	0.40	0.40
Sat Flow, veh/h	3510	3610	1609	3510	3610	1610	1810	5187	1610	3510	5187	1609
Grp Volume(v), veh/h	605	1005	209	108	448	264	152	1309	149	558	1278	323
Grp Sat Flow(s),veh/h/ln	1755	1805	1609	1755	1805	1610	1810	1729	1610	1755	1729	1609
Q Serve(g_s), s	17.0	28.9	11.2	3.2	11.7	13.0	9.2	27.0	6.8	16.0	23.9	13.9
Cycle Q Clear(g_c), s	17.0	28.9	11.2	3.2	11.7	13.0	9.2	27.0	6.8	16.0	23.9	13.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	534	1189	530	303	952	655	178	1430	583	502	1662	760
V/C Ratio(X)	1.13	0.85	0.39	0.36	0.47	0.40	0.85	0.92	0.26	1.11	0.77	0.42
Avail Cap(c_a), veh/h	534	1421	633	314	1195	763	178	1462	593	502	1694	770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.25	1.25	1.25	1.25	1.25	1.25
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	34.8	28.9	48.1	34.6	23.5	48.2	35.4	22.5	45.9	29.9	17.0
Incr Delay (d2), s/veh	81.2	4.2	0.5	0.3	0.1	0.1	29.7	9.2	0.2	74.0	2.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.2	12.7	4.2	1.4	5.0	4.7	5.3	11.0	2.4	11.5	8.7	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	128.6	39.0	29.4	48.4	34.7	23.7	77.9	44.6	22.8	119.9	32.1	17.3
LnGrp LOS	F	D	C	D	C	C	E	D	C	F	C	B
Approach Vol, veh/h		1819			820			1610			2159	
Approach Delay, s/veh		67.7			33.0			45.7			52.6	
Approach LOS		E			C			D			D	

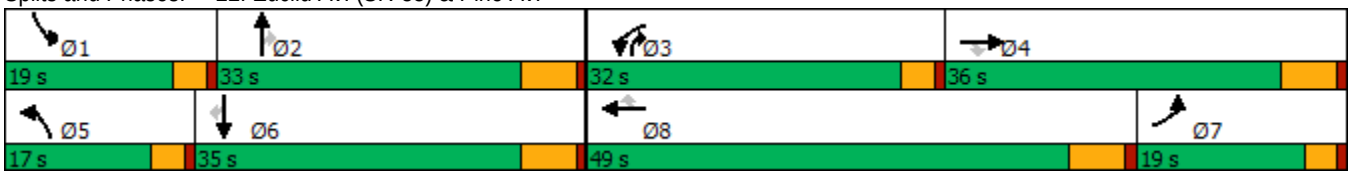
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	36.8	13.7	41.3	15.0	41.8	21.0	34.0
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	16.0	31.5	10.0	44.0	11.0	36.5	17.0	37.0
Max Q Clear Time (g_c+I1), s	18.0	29.0	5.2	30.9	11.2	25.9	19.0	15.0
Green Ext Time (p_c), s	0.0	1.8	0.1	5.9	0.0	6.3	0.0	2.1

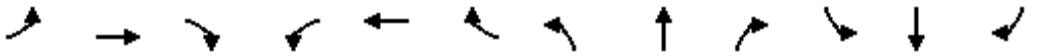
Intersection Summary	
HCM 6th Ctrl Delay	52.6
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	911	224	482	611	247	278	1011	891	391	1024	122
Future Volume (vph)	115	911	224	482	611	247	278	1011	891	391	1024	122
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	11.0	11.0	9.0	38.0	38.0	9.0	33.0	9.0	9.0	33.0	33.0
Total Split (s)	19.0	36.0	36.0	32.0	49.0	49.0	17.0	33.0	32.0	19.0	35.0	35.0
Total Split (%)	15.8%	30.0%	30.0%	26.7%	40.8%	40.8%	14.2%	27.5%	26.7%	15.8%	29.2%	29.2%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	3.0	3.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0	4.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	11.6	32.6	32.6	22.2	43.1	43.1	12.4	24.6	52.8	15.0	27.2	27.2
Actuated g/C Ratio	0.10	0.28	0.28	0.19	0.38	0.38	0.11	0.22	0.46	0.13	0.24	0.24
v/c Ratio	0.68	0.86	0.37	0.79	0.44	0.33	0.81	0.84	0.66	0.94	0.77	0.25
Control Delay	69.4	49.1	7.5	53.4	28.5	4.5	68.8	50.6	22.7	81.4	45.6	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.4	49.1	7.5	53.4	28.5	4.5	68.8	50.6	22.7	81.4	45.6	4.0
LOS	E	D	A	D	C	A	E	D	C	F	D	A
Approach Delay		43.5			33.0			41.5			51.4	
Approach LOS		D			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 42.5	Intersection LOS: D
Intersection Capacity Utilization 89.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	911	224	482	611	247	278	1011	891	391	1024	122
Future Volume (veh/h)	115	911	224	482	611	247	278	1011	891	391	1024	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1700	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	117	930	0	492	623	250	284	1032	909	399	1045	124
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	142	1136		549	1401	593	334	1319	1137	416	1465	414
Arrive On Green	0.08	0.45	0.00	0.25	0.55	0.37	0.15	0.35	0.23	0.19	0.39	0.26
Sat Flow, veh/h	1714	3800	1610	3238	3800	1610	3238	5700	2834	3238	5700	1610
Grp Volume(v), veh/h	117	930	0	492	623	250	284	1032	909	399	1045	124
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1619	1900	1610	1619	1900	1417	1619	1900	1610
Q Serve(g_s), s	7.8	24.9	0.0	17.1	11.3	8.9	10.0	18.9	27.0	14.2	18.1	5.4
Cycle Q Clear(g_c), s	7.8	24.9	0.0	17.1	11.3	8.9	10.0	18.9	27.0	14.2	18.1	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	142	1136		549	1401	593	334	1319	1137	416	1465	414
V/C Ratio(X)	0.82	0.82		0.90	0.44	0.42	0.85	0.78	0.80	0.96	0.71	0.30
Avail Cap(c_a), veh/h	220	1136		777	1401	593	361	1319	1137	416	1465	414
HCM Platoon Ratio	1.00	1.50	1.00	1.50	1.50	1.00	1.50	1.50	1.00	1.50	1.50	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	29.4	0.0	42.5	19.0	12.0	48.4	35.5	30.8	46.8	32.2	19.6
Incr Delay (d2), s/veh	7.4	6.6	0.0	7.8	1.0	2.2	15.3	2.9	3.8	33.2	1.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	10.2	0.0	6.5	4.4	5.0	4.4	7.6	11.1	7.0	7.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.1	36.0	0.0	50.3	20.0	14.2	63.7	38.3	34.6	80.0	33.6	19.8
LnGrp LOS	E	D		D	C	B	E	D	C	E	C	B
Approach Vol, veh/h		1047	A		1365			2225			1568	
Approach Delay, s/veh		38.7			29.9			40.1			44.3	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	33.0	23.8	40.9	16.0	36.0	15.7	49.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	6.0	* 6
Max Green Setting (Gmax), s	15.0	27.0	28.0	30.0	13.0	29.0	15.0	* 43
Max Q Clear Time (g_c+I1), s	16.2	29.0	19.1	26.9	12.0	20.1	9.8	13.3
Green Ext Time (p_c), s	0.0	0.0	0.7	2.0	0.1	3.1	0.1	7.4

Intersection Summary	
HCM 6th Ctrl Delay	38.7
HCM 6th LOS	D

Notes

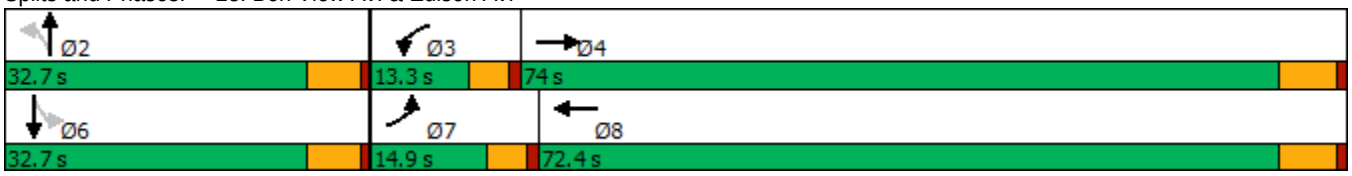
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

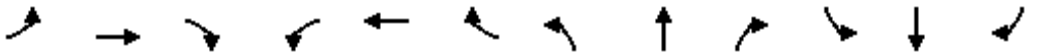
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	86	2304	95	1982	164	111	21	99
Future Volume (vph)	86	2304	95	1982	164	111	21	99
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	27.8	27.8	27.8	27.8
Total Split (s)	14.9	74.0	13.3	72.4	32.7	32.7	32.7	32.7
Total Split (%)	12.4%	61.7%	11.1%	60.3%	27.3%	27.3%	27.3%	27.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	5.8	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	9.1	68.0	8.5	67.3	23.3	23.3	23.3	23.3
Actuated g/C Ratio	0.08	0.58	0.07	0.58	0.20	0.20	0.20	0.20
v/c Ratio	0.68	0.91	0.81	0.70	0.87	0.49	0.12	0.44
Control Delay	78.1	27.7	96.7	19.8	82.9	40.6	39.2	38.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.1	27.7	96.7	19.8	82.9	40.6	39.2	38.4
LOS	E	C	F	B	F	D	D	D
Approach Delay		29.3		23.3		61.1		38.5
Approach LOS		C		C		E		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 29.3	Intersection LOS: C
Intersection Capacity Utilization 93.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 23: Bon View Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	2304	279	95	1982	9	164	111	65	21	99	58
Future Volume (veh/h)	86	2304	279	95	1982	9	164	111	65	21	99	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	91	2425	294	100	2086	9	173	117	68	22	104	61
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	113	2661	313	123	3045	13	240	253	147	224	252	148
Arrive On Green	0.07	0.57	0.57	0.07	0.57	0.57	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1714	4704	554	1714	5331	23	1240	1127	655	1218	1123	659
Grp Volume(v), veh/h	91	1764	955	100	1353	742	173	0	185	22	0	165
Grp Sat Flow(s),veh/h/ln	1714	1729	1800	1714	1729	1896	1240	0	1782	1218	0	1781
Q Serve(g_s), s	6.3	54.2	58.9	6.9	33.0	33.1	16.6	0.0	10.8	1.9	0.0	9.5
Cycle Q Clear(g_c), s	6.3	54.2	58.9	6.9	33.0	33.1	26.1	0.0	10.8	12.7	0.0	9.5
Prop In Lane	1.00		0.31	1.00		0.01	1.00		0.37	1.00		0.37
Lane Grp Cap(c), veh/h	113	1956	1018	123	1976	1083	240	0	400	224	0	400
V/C Ratio(X)	0.81	0.90	0.94	0.82	0.68	0.69	0.72	0.00	0.46	0.10	0.00	0.41
Avail Cap(c_a), veh/h	147	1956	1018	124	1976	1083	240	0	400	224	0	400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.2	23.1	24.1	54.9	18.1	18.1	50.9	0.0	40.2	45.7	0.0	39.7
Incr Delay (d2), s/veh	16.6	7.3	16.8	30.3	2.0	3.5	10.0	0.0	0.8	0.2	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	21.2	26.5	3.9	12.2	13.8	5.7	0.0	4.7	0.6	0.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.8	30.3	40.9	85.2	20.0	21.6	60.9	0.0	41.1	45.9	0.0	40.4
LnGrp LOS	E	C	D	F	C	C	E	A	D	D	A	D
Approach Vol, veh/h		2810			2195			358			187	
Approach Delay, s/veh		35.3			23.6			50.7			41.1	
Approach LOS		D			C			D			D	

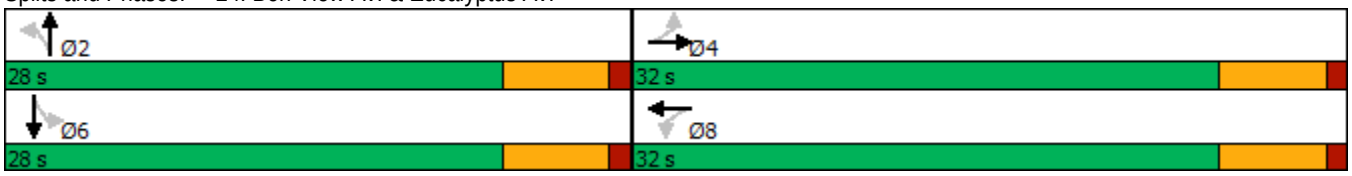
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		32.7	13.2	74.0		32.7	12.5	74.7				
Change Period (Y+Rc), s		5.8	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		26.9	8.7	67.8		26.9	10.3	66.2				
Max Q Clear Time (g_c+I1), s		28.1	8.9	60.9		14.7	8.3	35.1				
Green Ext Time (p_c), s		0.0	0.0	6.4		0.6	0.0	18.0				

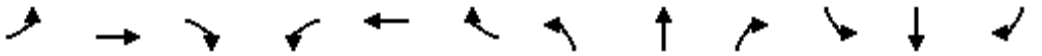
Intersection Summary												
HCM 6th Ctrl Delay			31.8									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	110	607	3	373	6	100	110	78
Future Volume (vph)	110	607	3	373	6	100	110	78
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8
Total Split (s)	32.0	32.0	32.0	32.0	28.0	28.0	28.0	28.0
Total Split (%)	53.3%	53.3%	53.3%	53.3%	46.7%	46.7%	46.7%	46.7%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8		5.8		5.8
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	21.1	21.1	21.1	21.1		14.3		14.3
Actuated g/C Ratio	0.44	0.44	0.44	0.44		0.30		0.30
v/c Ratio	0.42	0.79	0.02	0.63		0.23		0.59
Control Delay	15.5	20.5	9.0	14.1		13.8		19.1
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	15.5	20.5	9.0	14.1		13.8		19.1
LOS	B	C	A	B		B		B
Approach Delay		19.8		14.1		13.8		19.1
Approach LOS		B		B		B		B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 47.5	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 17.5	Intersection LOS: B
Intersection Capacity Utilization 75.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 24: Bon View Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	607	5	3	373	114	6	100	9	110	78	65
Future Volume (veh/h)	110	607	5	3	373	114	6	100	9	110	78	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	120	660	5	3	405	124	7	109	10	120	85	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	401	884	7	320	655	201	102	411	36	270	152	102
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.47	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	888	1883	14	783	1396	427	37	1673	147	584	620	417
Grp Volume(v), veh/h	120	0	665	3	0	529	126	0	0	276	0	0
Grp Sat Flow(s),veh/h/ln	888	0	1897	783	0	1823	1857	0	0	1621	0	0
Q Serve(g_s), s	4.8	0.0	11.7	0.1	0.0	8.8	0.0	0.0	0.0	3.9	0.0	0.0
Cycle Q Clear(g_c), s	13.6	0.0	11.7	11.8	0.0	8.8	2.2	0.0	0.0	6.1	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.23	0.06		0.08	0.43		0.26
Lane Grp Cap(c), veh/h	401	0	891	320	0	856	550	0	0	525	0	0
V/C Ratio(X)	0.30	0.00	0.75	0.01	0.00	0.62	0.23	0.00	0.00	0.53	0.00	0.00
Avail Cap(c_a), veh/h	556	0	1221	457	0	1173	1098	0	0	993	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.2	0.0	8.8	13.6	0.0	8.1	12.4	0.0	0.0	13.8	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	1.7	0.0	0.0	0.7	0.2	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	2.9	0.0	0.0	2.0	0.7	0.0	0.0	1.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.6	0.0	10.5	13.6	0.0	8.8	12.6	0.0	0.0	14.6	0.0	0.0
LnGrp LOS	B	A	B	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h		785			532			126			276	
Approach Delay, s/veh		11.0			8.8			12.6			14.6	
Approach LOS		B			A			B			B	

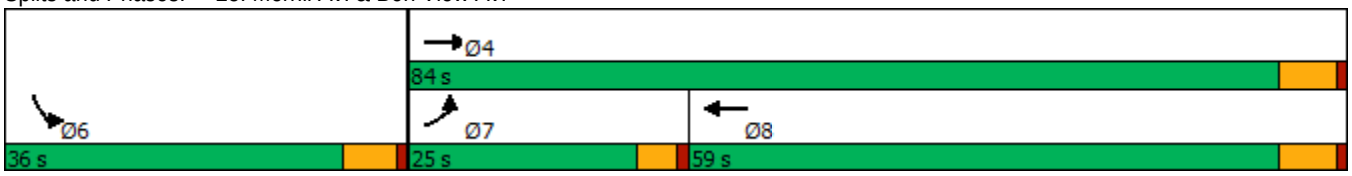
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.8		24.9		15.8		24.9				
Change Period (Y+Rc), s		5.8		5.8		5.8		5.8				
Max Green Setting (Gmax), s		22.2		26.2		22.2		26.2				
Max Q Clear Time (g_c+I1), s		4.2		15.6		8.1		13.8				
Green Ext Time (p_c), s		0.5		3.5		1.2		2.5				

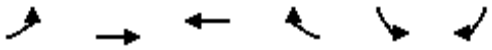
Intersection Summary												
HCM 6th Ctrl Delay			11.0									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	113	924	527	74
Future Volume (vph)	113	924	527	74
Turn Type	Prot	NA	NA	Prot
Protected Phases	7	4	8	6
Permitted Phases				
Detector Phase	7	4	8	6
Switch Phase				
Minimum Initial (s)	5.0	10.0	10.0	10.0
Minimum Split (s)	9.6	16.2	28.2	27.8
Total Split (s)	25.0	84.0	59.0	36.0
Total Split (%)	20.8%	70.0%	49.2%	30.0%
Yellow Time (s)	3.6	5.2	5.2	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	5.8
Lead/Lag	Lead		Lag	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	Max	Max	None
Act Effct Green (s)	11.6	77.9	61.7	14.1
Actuated g/C Ratio	0.11	0.75	0.59	0.14
v/c Ratio	0.63	0.36	0.29	0.64
Control Delay	59.3	5.3	11.8	41.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	59.3	5.3	11.8	41.1
LOS	E	A	B	D
Approach Delay		11.2	11.8	41.1
Approach LOS		B	B	D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 104	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 14.1	Intersection LOS: B
Intersection Capacity Utilization 46.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 25: Merrill Av. & Bon View Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	113	924	527	44	74	89
Future Volume (veh/h)	113	924	527	44	74	89
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1900	1900	1800
Adj Flow Rate, veh/h	120	983	561	47	79	95
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	148	2741	2118	177	95	114
Arrive On Green	0.09	0.76	0.63	0.63	0.12	0.12
Sat Flow, veh/h	1714	3705	3467	282	766	921
Grp Volume(v), veh/h	120	983	300	308	175	0
Grp Sat Flow(s),veh/h/ln	1714	1805	1805	1849	1696	0
Q Serve(g_s), s	7.0	9.2	7.6	7.6	10.3	0.0
Cycle Q Clear(g_c), s	7.0	9.2	7.6	7.6	10.3	0.0
Prop In Lane	1.00			0.15	0.45	0.54
Lane Grp Cap(c), veh/h	148	2741	1134	1161	210	0
V/C Ratio(X)	0.81	0.36	0.26	0.27	0.83	0.00
Avail Cap(c_a), veh/h	341	2741	1134	1161	500	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	46.0	4.1	8.5	8.5	43.9	0.0
Incr Delay (d2), s/veh	4.0	0.4	0.6	0.6	8.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	2.2	2.6	2.7	4.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	50.0	4.5	9.1	9.1	52.2	0.0
LnGrp LOS	D	A	A	A	D	A
Approach Vol, veh/h		1103	608		175	
Approach Delay, s/veh		9.4	9.1		52.2	
Approach LOS		A	A		D	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	84.0	18.5	13.4	70.6
Change Period (Y+Rc), s	6.2	5.8	4.6	6.2
Max Green Setting (Gmax), s	77.8	30.2	20.4	52.8
Max Q Clear Time (g_c+I1), s	11.2	12.3	9.0	9.6
Green Ext Time (p_c), s	7.6	0.4	0.1	3.5

Intersection Summary	
HCM 6th Ctrl Delay	13.3
HCM 6th LOS	B

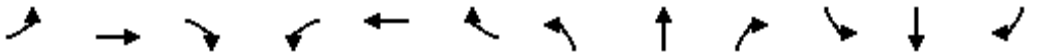
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	414	251	1064	1451	803
Future Volume (vph)	0	414	251	1064	1451	803
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	39.0	39.0	18.2	81.0	62.8	62.8
Total Split (%)	32.5%	32.5%	15.2%	67.5%	52.3%	52.3%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	29.8	29.8	12.3	78.6	61.7	61.7
Actuated g/C Ratio	0.25	0.25	0.10	0.66	0.51	0.51
v/c Ratio	0.83	0.90	0.73	0.47	0.81	0.73
Control Delay	58.3	55.2	58.0	13.6	30.1	9.3
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0
Total Delay	58.3	55.2	58.0	14.0	30.1	9.3
LOS	E	E	E	B	C	A
Approach Delay	56.6			22.4	22.7	
Approach LOS	E			C	C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 28.6	Intersection LOS: C
Intersection Capacity Utilization 90.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	355	0	414	251	1064	0	0	1451	803
Future Volume (veh/h)	0	0	0	355	0	414	251	1064	0	0	1451	803
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				370	0	251	261	1108	0	0	1511	661
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				416	0	370	314	2432	0	0	1970	867
Arrive On Green				0.23	0.00	0.23	0.18	1.00	0.00	0.00	0.55	0.55
Sat Flow, veh/h				1810	0	1610	3510	3705	0	0	3705	1589
Grp Volume(v), veh/h				370	0	251	261	1108	0	0	1511	661
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1805	0	0	1805	1589
Q Serve(g_s), s				23.8	0.0	17.1	8.6	0.0	0.0	0.0	39.2	38.8
Cycle Q Clear(g_c), s				23.8	0.0	17.1	8.6	0.0	0.0	0.0	39.2	38.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				416	0	370	314	2432	0	0	1970	867
V/C Ratio(X)				0.89	0.00	0.68	0.83	0.46	0.00	0.00	0.77	0.76
Avail Cap(c_a), veh/h				501	0	445	398	2432	0	0	1970	867
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.53	0.53	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				44.7	0.0	42.2	48.4	0.0	0.0	0.0	21.3	21.2
Incr Delay (d2), s/veh				15.7	0.0	3.2	5.1	0.3	0.0	0.0	2.9	6.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				12.1	0.0	6.9	3.6	0.1	0.0	0.0	15.9	14.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				60.5	0.0	45.3	53.5	0.3	0.0	0.0	24.2	27.5
LnGrp LOS				E	A	D	D	A	A	A	C	C
Approach Vol, veh/h					621			1369			2172	
Approach Delay, s/veh					54.3			10.5			25.2	
Approach LOS					D			B			C	

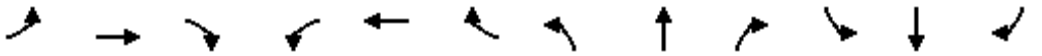
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		86.6			15.3	71.3		33.4				
Change Period (Y+Rc), s		5.8			4.6	5.8		5.8				
Max Green Setting (Gmax), s		75.2			13.6	57.0		33.2				
Max Q Clear Time (g_c+I1), s		2.0			10.6	41.2		25.8				
Green Ext Time (p_c), s		9.6			0.1	11.2		1.8				

Intersection Summary		
HCM 6th Ctrl Delay	24.7	
HCM 6th LOS	C	

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	513	0	406	802	594	1212
Future Volume (vph)	513	0	406	802	594	1212
Turn Type	Split	NA	Perm	NA	Prot	NA
Protected Phases	4	4		2	1	6
Permitted Phases			4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	30.8	26.8	9.6	22.8
Total Split (s)	38.0	38.0	38.0	54.6	27.4	82.0
Total Split (%)	31.7%	31.7%	31.7%	45.5%	22.8%	68.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.6	5.8
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	31.0	31.0	31.0	50.3	22.5	77.4
Actuated g/C Ratio	0.26	0.26	0.26	0.42	0.19	0.64
v/c Ratio	0.62	0.62	0.93	0.82	0.94	0.53
Control Delay	46.1	46.1	64.2	34.0	82.3	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.3
Total Delay	46.1	46.1	64.2	34.0	82.3	8.4
LOS	D	D	E	C	F	A
Approach Delay		54.1		34.0		32.7
Approach LOS		D		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 38.1	Intersection LOS: D
Intersection Capacity Utilization 90.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	513	0	406	0	0	0	0	802	382	594	1212	0
Future Volume (veh/h)	513	0	406	0	0	0	0	802	382	594	1212	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	552	0	350				0	862	328	639	1303	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	872	0	388				0	1140	432	679	2517	0
Arrive On Green	0.24	0.00	0.24				0.00	0.44	0.44	0.38	1.00	0.00
Sat Flow, veh/h	3619	0	1610				0	2613	990	3619	3800	0
Grp Volume(v), veh/h	552	0	350				0	626	564	639	1303	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1900	1703	1810	1900	0
Q Serve(g_s), s	16.4	0.0	25.3				0.0	33.2	33.5	20.5	0.0	0.0
Cycle Q Clear(g_c), s	16.4	0.0	25.3				0.0	33.2	33.5	20.5	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.58	1.00		0.00
Lane Grp Cap(c), veh/h	872	0	388				0	829	743	679	2517	0
V/C Ratio(X)	0.63	0.00	0.90				0.00	0.76	0.76	0.94	0.52	0.00
Avail Cap(c_a), veh/h	971	0	432				0	829	743	688	2517	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.73	0.73	0.48	0.48	0.00
Uniform Delay (d), s/veh	40.8	0.0	44.2				0.0	28.4	28.5	36.8	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	20.5				0.0	4.7	5.3	12.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	0.0	11.9				0.0	15.3	13.9	7.9	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.9	0.0	64.6				0.0	33.1	33.8	48.9	0.4	0.0
LnGrp LOS	D	A	E				A	C	C	D	A	A
Approach Vol, veh/h		902						1190			1942	
Approach Delay, s/veh		50.7						33.5			16.3	
Approach LOS		D						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	27.1	58.2		34.7		85.3
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	22.8	48.8		32.2		76.2
Max Q Clear Time (g_c+I1), s	22.5	35.5		27.3		2.0
Green Ext Time (p_c), s	0.1	6.1		1.6		12.6

Intersection Summary	
HCM 6th Ctrl Delay	29.1
HCM 6th LOS	C

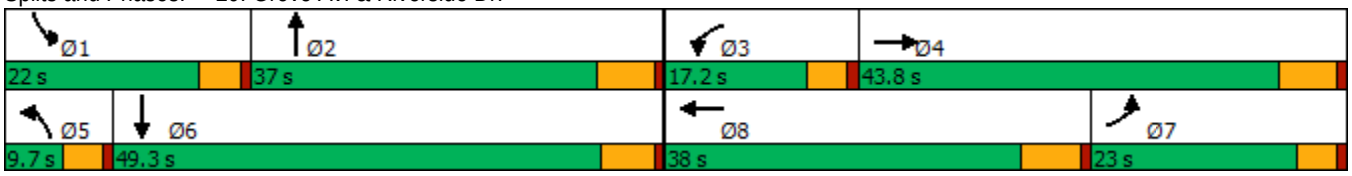
Notes

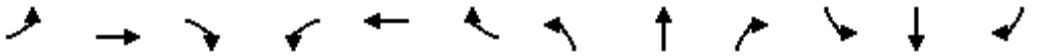
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	202	786	120	670	27	486	190	671
Future Volume (vph)	202	786	120	670	27	486	190	671
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8
Total Split (s)	23.0	43.8	17.2	38.0	9.7	37.0	22.0	49.3
Total Split (%)	19.2%	36.5%	14.3%	31.7%	8.1%	30.8%	18.3%	41.1%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	16.7	36.0	11.3	30.6	5.1	30.9	15.8	46.2
Actuated g/C Ratio	0.14	0.31	0.10	0.26	0.04	0.27	0.14	0.40
v/c Ratio	0.85	0.77	0.75	0.92	0.37	0.65	0.85	0.65
Control Delay	78.9	41.7	79.1	56.0	70.1	40.9	80.0	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.9	41.7	79.1	56.0	70.1	40.9	80.0	30.9
LOS	E	D	E	E	E	D	F	C
Approach Delay		49.0		58.9		42.2		39.6
Approach LOS		D		E		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 47.6	Intersection LOS: D
Intersection Capacity Utilization 82.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	202	786	41	120	670	158	27	486	112	190	671	212
Future Volume (veh/h)	202	786	41	120	670	158	27	486	112	190	671	212
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	210	819	42	125	698	119	28	506	100	198	699	164
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	237	1109	57	151	781	133	44	826	162	225	1103	259
Arrive On Green	0.14	0.32	0.32	0.09	0.25	0.25	0.03	0.27	0.27	0.13	0.38	0.38
Sat Flow, veh/h	1714	3491	179	1714	3084	525	1714	3007	591	1714	2902	681
Grp Volume(v), veh/h	210	423	438	125	408	409	28	303	303	198	435	428
Grp Sat Flow(s),veh/h/ln	1714	1805	1865	1714	1805	1805	1714	1805	1794	1714	1805	1778
Q Serve(g_s), s	13.8	23.9	23.9	8.2	25.0	25.0	1.9	16.7	16.9	13.0	22.5	22.5
Cycle Q Clear(g_c), s	13.8	23.9	23.9	8.2	25.0	25.0	1.9	16.7	16.9	13.0	22.5	22.5
Prop In Lane	1.00		0.10	1.00		0.29	1.00		0.33	1.00		0.38
Lane Grp Cap(c), veh/h	237	573	592	151	457	457	44	496	493	225	686	676
V/C Ratio(X)	0.89	0.74	0.74	0.83	0.89	0.89	0.63	0.61	0.62	0.88	0.63	0.63
Avail Cap(c_a), veh/h	276	593	613	189	502	501	76	496	493	261	686	676
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.4	34.8	34.8	51.4	41.2	41.3	55.2	36.2	36.2	48.8	29.0	29.0
Incr Delay (d2), s/veh	22.9	4.7	4.6	18.0	17.2	17.4	5.5	5.5	5.7	23.0	4.4	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	10.6	11.0	4.1	12.7	12.7	0.8	7.8	7.8	6.8	10.1	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.4	39.5	39.4	69.3	58.5	58.6	60.7	41.7	41.9	71.8	33.4	33.5
LnGrp LOS	E	D	D	E	E	E	E	D	D	E	C	C
Approach Vol, veh/h		1071			942			634			1061	
Approach Delay, s/veh		45.7			60.0			42.6			40.6	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.6	37.6	14.6	42.5	7.5	49.7	22.0	35.2
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	17.4	30.8	12.6	37.6	5.1	* 44	18.4	* 32
Max Q Clear Time (g_c+I1), s	15.0	18.9	10.2	25.9	3.9	24.5	15.8	27.0
Green Ext Time (p_c), s	0.1	2.5	0.0	3.7	0.0	4.9	0.1	1.9

Intersection Summary	
HCM 6th Ctrl Delay	47.3
HCM 6th LOS	D

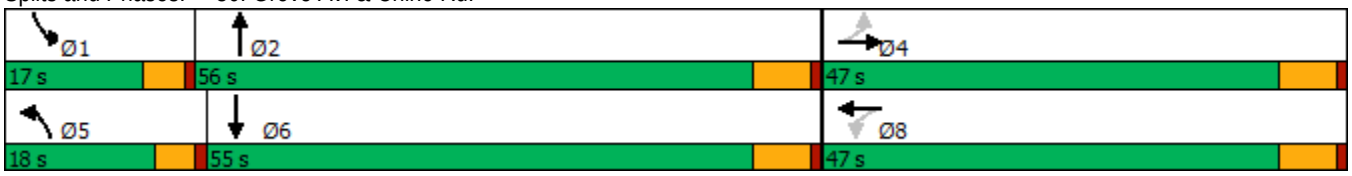
Notes

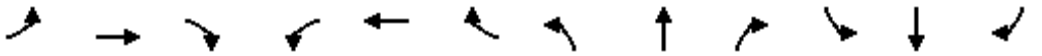
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	93	284	25	79	71	517	63	735
Future Volume (vph)	93	284	25	79	71	517	63	735
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	9.6	28.2	9.6	28.2
Total Split (s)	47.0	47.0	47.0	47.0	18.0	56.0	17.0	55.0
Total Split (%)	39.2%	39.2%	39.2%	39.2%	15.0%	46.7%	14.2%	45.8%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	23.0	23.0	23.0	23.0	8.7	50.7	8.3	50.3
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.09	0.52	0.09	0.52
v/c Ratio	0.34	0.78	0.22	0.31	0.49	0.31	0.46	0.43
Control Delay	34.7	46.7	35.5	25.3	55.7	15.7	55.4	17.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.7	46.7	35.5	25.3	55.7	15.7	55.4	17.5
LOS	C	D	D	C	E	B	E	B
Approach Delay		44.1		26.9		20.2		20.4
Approach LOS		D		C		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.9	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 25.8	Intersection LOS: C
Intersection Capacity Utilization 71.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 30: Grove Av. & Chino Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	284	50	25	79	55	71	517	42	63	735	34
Future Volume (veh/h)	93	284	50	25	79	55	71	517	42	63	735	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	97	296	52	26	82	57	74	539	44	66	766	35
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	288	364	64	133	241	168	94	1814	148	84	1865	85
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.05	0.54	0.54	0.05	0.53	0.53
Sat Flow, veh/h	1269	1574	276	1049	1043	725	1714	3380	275	1714	3516	161
Grp Volume(v), veh/h	97	0	348	26	0	139	74	287	296	66	393	408
Grp Sat Flow(s),veh/h/ln	1269	0	1850	1049	0	1768	1714	1805	1850	1714	1805	1871
Q Serve(g_s), s	6.4	0.0	16.5	2.2	0.0	6.1	4.0	8.1	8.2	3.5	12.1	12.1
Cycle Q Clear(g_c), s	12.5	0.0	16.5	18.8	0.0	6.1	4.0	8.1	8.2	3.5	12.1	12.1
Prop In Lane	1.00		0.15	1.00		0.41	1.00		0.15	1.00		0.09
Lane Grp Cap(c), veh/h	288	0	428	133	0	409	94	969	993	84	958	993
V/C Ratio(X)	0.34	0.00	0.81	0.19	0.00	0.34	0.79	0.30	0.30	0.79	0.41	0.41
Avail Cap(c_a), veh/h	552	0	813	352	0	777	248	969	993	229	958	993
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.0	0.0	33.8	42.7	0.0	29.8	43.3	11.9	11.9	43.6	13.1	13.1
Incr Delay (d2), s/veh	0.7	0.0	3.8	0.7	0.0	0.5	5.3	0.8	0.8	5.9	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	7.3	0.6	0.0	2.5	1.7	3.0	3.1	1.6	4.5	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.7	0.0	37.6	43.4	0.0	30.3	48.6	12.6	12.6	49.6	14.4	14.3
LnGrp LOS	D	A	D	D	A	C	D	B	B	D	B	B
Approach Vol, veh/h		445			165			657			867	
Approach Delay, s/veh		37.2			32.3			16.7			17.0	
Approach LOS		D			C			B			B	

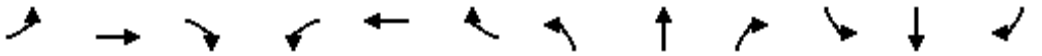
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.1	56.0		27.7	9.7	55.4		27.7				
Change Period (Y+Rc), s	4.6	6.2		6.2	4.6	6.2		6.2				
Max Green Setting (Gmax), s	12.4	49.8		40.8	13.4	48.8		40.8				
Max Q Clear Time (g_c+I1), s	5.5	10.2		18.5	6.0	14.1		20.8				
Green Ext Time (p_c), s	0.0	3.3		2.1	0.0	4.8		0.7				

Intersection Summary			
HCM 6th Ctrl Delay		22.3	
HCM 6th LOS		C	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	121	174	6	59	28	514	90	619
Future Volume (vph)	121	174	6	59	28	514	90	619
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	9.6	28.2	9.6	28.2
Total Split (s)	39.0	39.0	39.0	39.0	15.0	57.0	24.0	66.0
Total Split (%)	32.5%	32.5%	32.5%	32.5%	12.5%	47.5%	20.0%	55.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.6	6.2	4.6	6.2
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	16.2	16.2	16.2	16.2	6.4	55.8	9.9	61.3
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.07	0.58	0.10	0.64
v/c Ratio	0.64	0.50	0.05	0.20	0.27	0.30	0.55	0.32
Control Delay	52.8	21.8	35.0	20.0	51.8	12.4	55.1	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.8	21.8	35.0	20.0	51.8	12.4	55.1	10.0
LOS	D	C	C	B	D	B	E	A
Approach Delay		30.3		20.7		14.2		15.2
Approach LOS		C		C		B		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.2	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 18.7	Intersection LOS: B
Intersection Capacity Utilization 51.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 31: Grove Av. & Schaefer Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	174	147	6	59	55	28	514	63	90	619	66
Future Volume (veh/h)	121	174	147	6	59	55	28	514	63	90	619	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	130	187	158	6	63	59	30	553	68	97	666	71
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	255	329	262	156	322	268	49	1886	231	123	2058	219
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.03	0.58	0.58	0.07	0.63	0.63
Sat Flow, veh/h	1289	1909	1522	1052	1867	1558	1714	3237	397	1714	3291	351
Grp Volume(v), veh/h	130	176	169	6	61	61	30	308	313	97	365	372
Grp Sat Flow(s),veh/h/ln	1289	1805	1626	1052	1805	1620	1714	1805	1829	1714	1805	1837
Q Serve(g_s), s	9.2	8.6	9.2	0.5	2.8	3.1	1.7	8.2	8.3	5.3	9.1	9.1
Cycle Q Clear(g_c), s	12.3	8.6	9.2	9.7	2.8	3.1	1.7	8.2	8.3	5.3	9.1	9.1
Prop In Lane	1.00		0.94	1.00		0.96	1.00		0.22	1.00		0.19
Lane Grp Cap(c), veh/h	255	311	280	156	311	279	49	1052	1065	123	1129	1149
V/C Ratio(X)	0.51	0.57	0.60	0.04	0.20	0.22	0.61	0.29	0.29	0.79	0.32	0.32
Avail Cap(c_a), veh/h	481	627	565	340	627	562	186	1052	1065	348	1129	1149
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	36.3	36.5	41.0	33.9	34.0	45.9	10.0	10.1	43.7	8.4	8.4
Incr Delay (d2), s/veh	1.6	1.6	2.1	0.1	0.3	0.4	4.5	0.7	0.7	4.3	0.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	3.7	3.6	0.1	1.2	1.2	0.7	2.9	3.0	2.3	3.1	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.9	37.9	38.6	41.1	34.2	34.4	50.4	10.7	10.8	48.0	9.2	9.2
LnGrp LOS	D	D	D	D	C	C	D	B	B	D	A	A
Approach Vol, veh/h		475			128			651			834	
Approach Delay, s/veh		39.0			34.6			12.6			13.7	
Approach LOS		D			C			B			B	

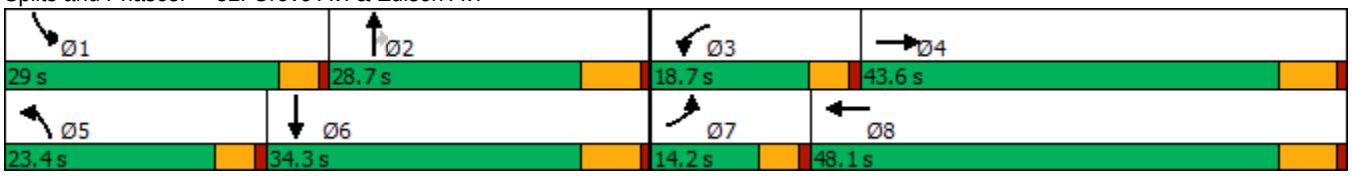
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.4	61.9		22.3	7.3	66.0		22.3				
Change Period (Y+Rc), s	4.6	6.2		5.8	4.6	6.2		5.8				
Max Green Setting (Gmax), s	19.4	50.8		33.2	10.4	59.8		33.2				
Max Q Clear Time (g_c+I1), s	7.3	10.3		14.3	3.7	11.1		11.7				
Green Ext Time (p_c), s	0.1	3.5		2.1	0.0	4.4		0.6				

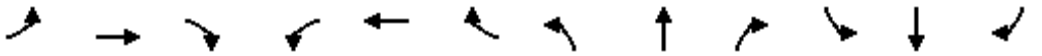
Intersection Summary			
HCM 6th Ctrl Delay		20.4	
HCM 6th LOS		C	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	82	1465	179	1164	63	432	383	322	401
Future Volume (vph)	82	1465	179	1164	63	432	383	322	401
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8	5	2		1	6
Permitted Phases							2		
Detector Phase	7	4	3	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	9.6	28.2	28.2	9.6	28.2
Total Split (s)	14.2	43.6	18.7	48.1	23.4	28.7	28.7	29.0	34.3
Total Split (%)	11.8%	36.3%	15.6%	40.1%	19.5%	23.9%	23.9%	24.2%	28.6%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	None	None	None	None	None
Act Effct Green (s)	8.8	37.4	14.1	42.8	9.1	21.2	21.2	24.4	38.5
Actuated g/C Ratio	0.07	0.32	0.12	0.36	0.08	0.18	0.18	0.21	0.32
v/c Ratio	0.70	0.98	0.95	0.73	0.52	0.72	0.93	0.99	0.44
Control Delay	82.0	59.4	103.9	35.9	66.4	53.1	53.8	92.4	33.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.0	59.4	103.9	35.9	66.4	53.1	53.8	92.4	33.2
LOS	F	E	F	D	E	D	D	F	C
Approach Delay		60.6		44.3		54.4			57.2
Approach LOS		E		D		D			E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.7	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 53.9	Intersection LOS: D
Intersection Capacity Utilization 88.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	1465	28	179	1164	96	63	432	383	322	401	69
Future Volume (veh/h)	82	1465	28	179	1164	96	63	432	383	322	401	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	88	1575	30	192	1252	103	68	465	412	346	431	74
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	109	1633	31	201	1784	147	86	677	302	349	1050	179
Arrive On Green	0.06	0.31	0.31	0.12	0.37	0.37	0.05	0.19	0.19	0.20	0.34	0.34
Sat Flow, veh/h	1714	5240	100	1714	4884	402	1714	3610	1610	1714	3084	526
Grp Volume(v), veh/h	88	1039	566	192	886	469	68	465	412	346	251	254
Grp Sat Flow(s),veh/h/ln	1714	1729	1882	1714	1729	1828	1714	1805	1610	1714	1805	1805
Q Serve(g_s), s	6.1	35.5	35.5	13.4	26.3	26.3	4.7	14.4	22.5	24.2	12.8	13.0
Cycle Q Clear(g_c), s	6.1	35.5	35.5	13.4	26.3	26.3	4.7	14.4	22.5	24.2	12.8	13.0
Prop In Lane	1.00		0.05	1.00		0.22	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	109	1078	587	201	1263	668	86	677	302	349	614	615
V/C Ratio(X)	0.80	0.96	0.96	0.95	0.70	0.70	0.79	0.69	1.36	0.99	0.41	0.41
Avail Cap(c_a), veh/h	137	1078	587	201	1263	668	269	677	302	349	614	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.4	40.6	40.6	52.6	32.5	32.5	56.3	45.5	48.8	47.7	30.3	30.4
Incr Delay (d2), s/veh	19.0	20.1	29.4	49.6	3.3	6.1	5.8	2.9	184.0	46.1	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	17.2	20.3	8.3	10.9	12.1	2.1	6.5	24.1	14.3	5.4	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.4	60.7	70.0	102.2	35.8	38.6	62.2	48.4	232.7	93.8	30.8	30.8
LnGrp LOS	E	E	E	F	D	D	E	D	F	F	C	C
Approach Vol, veh/h		1693			1547			945			851	
Approach Delay, s/veh		64.5			44.9			129.7			56.4	
Approach LOS		E			D			F			E	

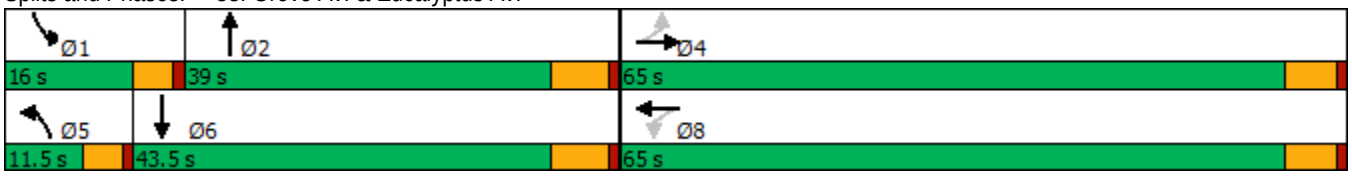
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.0	28.7	18.7	43.6	10.7	47.0	12.3	50.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	24.4	22.5	14.1	37.4	18.8	28.1	9.6	41.9
Max Q Clear Time (g_c+I1), s	26.2	24.5	15.4	37.5	6.7	15.0	8.1	28.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.2	0.0	6.8

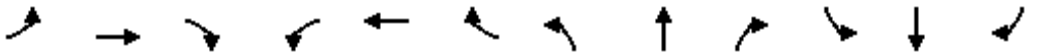
Intersection Summary	
HCM 6th Ctrl Delay	69.4
HCM 6th LOS	E

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	182	153	20	230	40	704	66	360
Future Volume (vph)	182	153	20	230	40	704	66	360
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	9.6	28.2	9.6	28.2
Total Split (s)	65.0	65.0	65.0	65.0	11.5	39.0	16.0	43.5
Total Split (%)	54.2%	54.2%	54.2%	54.2%	9.6%	32.5%	13.3%	36.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.6	6.2	4.6	6.2
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	52.9	52.9	52.9	52.9	6.4	35.8	8.6	38.1
Actuated g/C Ratio	0.47	0.47	0.47	0.47	0.06	0.32	0.08	0.34
v/c Ratio	0.52	0.30	0.04	0.45	0.42	0.67	0.52	0.47
Control Delay	26.5	16.5	16.2	19.7	67.4	39.2	66.0	29.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	16.5	16.2	19.7	67.4	39.2	66.0	29.0
LOS	C	B	B	B	E	D	E	C
Approach Delay		20.8		19.5		40.7		33.1
Approach LOS		C		B		D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.7	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 31.0	Intersection LOS: C
Intersection Capacity Utilization 72.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	153	85	20	230	130	40	704	12	66	360	169
Future Volume (veh/h)	182	153	85	20	230	130	40	704	12	66	360	169
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	198	166	92	22	250	141	43	765	13	72	391	184
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	314	452	250	426	448	253	65	1378	23	93	946	439
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.04	0.38	0.38	0.05	0.40	0.40
Sat Flow, veh/h	1065	1149	637	1203	1141	643	1810	3632	62	1810	2394	1111
Grp Volume(v), veh/h	198	0	258	22	0	391	43	380	398	72	294	281
Grp Sat Flow(s),veh/h/ln	1065	0	1785	1203	0	1784	1810	1805	1889	1810	1805	1700
Q Serve(g_s), s	16.8	0.0	9.7	1.2	0.0	16.1	2.2	15.6	15.6	3.7	11.1	11.3
Cycle Q Clear(g_c), s	32.8	0.0	9.7	10.9	0.0	16.1	2.2	15.6	15.6	3.7	11.1	11.3
Prop In Lane	1.00		0.36	1.00		0.36	1.00		0.03	1.00		0.65
Lane Grp Cap(c), veh/h	314	0	702	426	0	701	65	685	717	93	713	672
V/C Ratio(X)	0.63	0.00	0.37	0.05	0.00	0.56	0.66	0.56	0.56	0.77	0.41	0.42
Avail Cap(c_a), veh/h	563	0	1120	707	0	1119	132	685	717	219	713	672
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.0	0.0	20.3	24.2	0.0	22.3	44.9	23.0	23.0	44.2	20.6	20.7
Incr Delay (d2), s/veh	2.1	0.0	0.3	0.0	0.0	0.7	4.3	3.2	3.1	5.0	1.8	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	3.8	0.3	0.0	6.3	1.0	6.6	6.9	1.7	4.6	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.1	0.0	20.6	24.2	0.0	23.0	49.2	26.3	26.1	49.2	22.4	22.6
LnGrp LOS	D	A	C	C	A	C	D	C	C	D	C	C
Approach Vol, veh/h		456			413			821			647	
Approach Delay, s/veh		27.8			23.0			27.4			25.5	
Approach LOS		C			C			C			C	

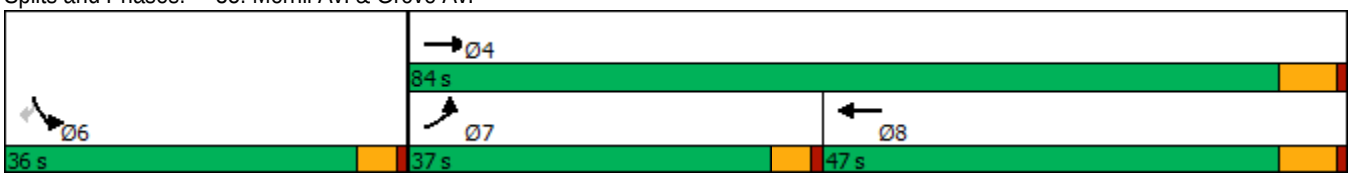
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	42.0		42.9	8.0	43.5		42.9				
Change Period (Y+Rc), s	4.6	6.2		5.8	4.6	6.2		5.8				
Max Green Setting (Gmax), s	11.4	32.8		59.2	6.9	37.3		59.2				
Max Q Clear Time (g_c+I1), s	5.7	17.6		34.8	4.2	13.3		18.1				
Green Ext Time (p_c), s	0.0	3.7		2.3	0.0	3.1		2.5				

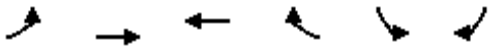
Intersection Summary			
HCM 6th Ctrl Delay		26.2	
HCM 6th LOS		C	

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	355	813	448	272	193
Future Volume (vph)	355	813	448	272	193
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	16.2	28.2	26.6	26.6
Total Split (s)	37.0	84.0	47.0	36.0	36.0
Total Split (%)	30.8%	70.0%	39.2%	30.0%	30.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	4.6
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	Max	Max	None	None
Act Effct Green (s)	27.2	78.0	46.2	22.4	22.4
Actuated g/C Ratio	0.24	0.70	0.42	0.20	0.20
v/c Ratio	0.89	0.33	0.59	0.78	0.41
Control Delay	64.3	7.5	22.5	57.0	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	64.3	7.5	22.5	57.0	7.6
LOS	E	A	C	E	A
Approach Delay		24.8	22.5	36.5	
Approach LOS		C	C	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.3	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 26.2	Intersection LOS: C
Intersection Capacity Utilization 73.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	355	813	448	401	272	193
Future Volume (veh/h)	355	813	448	401	272	193
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	370	847	467	418	283	201
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	399	2594	800	714	329	292
Arrive On Green	0.23	0.72	0.44	0.44	0.18	0.18
Sat Flow, veh/h	1714	3705	1900	1610	1810	1610
Grp Volume(v), veh/h	370	847	467	418	283	201
Grp Sat Flow(s),veh/h/ln	1714	1805	1805	1610	1810	1610
Q Serve(g_s), s	22.9	9.3	21.0	21.1	16.4	12.6
Cycle Q Clear(g_c), s	22.9	9.3	21.0	21.1	16.4	12.6
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	399	2594	800	714	329	292
V/C Ratio(X)	0.93	0.33	0.58	0.59	0.86	0.69
Avail Cap(c_a), veh/h	513	2594	800	714	525	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.6	5.6	22.6	22.7	43.0	41.4
Incr Delay (d2), s/veh	18.0	0.3	3.1	3.5	8.3	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.1	2.7	8.8	8.0	7.7	11.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	58.7	5.9	25.7	26.1	51.3	44.3
LnGrp LOS	E	A	C	C	D	D
Approach Vol, veh/h		1217	885		484	
Approach Delay, s/veh		22.0	25.9		48.4	
Approach LOS		C	C		D	

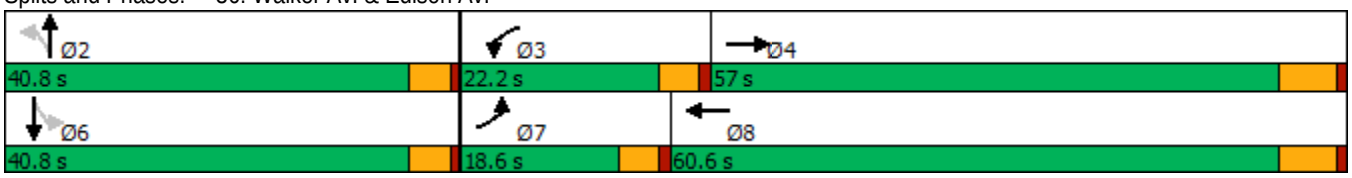
Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	84.0	24.3	29.8	54.2
Change Period (Y+Rc), s	6.2	4.6	4.6	6.2
Max Green Setting (Gmax), s	77.8	31.4	32.4	40.8
Max Q Clear Time (g_c+I1), s	11.3	18.4	24.9	23.1
Green Ext Time (p_c), s	6.1	1.2	0.3	4.9

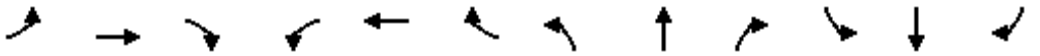
Intersection Summary	
HCM 6th Ctrl Delay	28.3
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	95	1972	167	1305	14	56	173	292
Future Volume (vph)	95	1972	167	1305	14	56	173	292
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	26.7	26.7	26.7	26.7
Total Split (s)	18.6	57.0	22.2	60.6	40.8	40.8	40.8	40.8
Total Split (%)	15.5%	47.5%	18.5%	50.5%	34.0%	34.0%	34.0%	34.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	10.4	51.4	14.5	55.5	27.0	27.0	27.0	27.0
Actuated g/C Ratio	0.10	0.47	0.13	0.51	0.25	0.25	0.25	0.25
v/c Ratio	0.61	0.86	0.77	0.55	0.17	0.31	0.68	0.82
Control Delay	65.2	31.4	69.2	20.2	36.9	20.1	50.9	52.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.2	31.4	69.2	20.2	36.9	20.1	50.9	52.0
LOS	E	C	E	C	D	C	D	D
Approach Delay		32.9		25.6		21.6		51.6
Approach LOS		C		C		C		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 32.2	Intersection LOS: C
Intersection Capacity Utilization 93.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	1972	25	167	1305	65	14	56	87	173	292	69
Future Volume (veh/h)	95	1972	25	167	1305	65	14	56	87	173	292	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	100	2076	26	176	1374	68	15	59	92	182	307	73
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	125	2538	32	205	2672	132	127	169	264	295	375	89
Arrive On Green	0.07	0.48	0.48	0.12	0.53	0.53	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1714	5280	66	1714	5062	251	1019	669	1043	1256	1484	353
Grp Volume(v), veh/h	100	1359	743	176	939	503	15	0	151	182	0	380
Grp Sat Flow(s),veh/h/ln	1714	1729	1888	1714	1729	1855	1019	0	1712	1256	0	1836
Q Serve(g_s), s	6.1	35.5	35.6	10.6	18.6	18.6	1.5	0.0	7.6	14.7	0.0	20.6
Cycle Q Clear(g_c), s	6.1	35.5	35.6	10.6	18.6	18.6	22.1	0.0	7.6	22.3	0.0	20.6
Prop In Lane	1.00		0.03	1.00		0.14	1.00		0.61	1.00		0.19
Lane Grp Cap(c), veh/h	125	1662	908	205	1825	979	127	0	433	295	0	464
V/C Ratio(X)	0.80	0.82	0.82	0.86	0.51	0.51	0.12	0.00	0.35	0.62	0.00	0.82
Avail Cap(c_a), veh/h	227	1662	908	286	1825	979	218	0	585	406	0	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.2	23.5	23.5	45.6	16.2	16.2	47.6	0.0	32.4	41.5	0.0	37.2
Incr Delay (d2), s/veh	4.5	4.6	8.1	12.9	1.0	1.9	0.4	0.0	0.5	2.1	0.0	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	13.9	16.1	5.1	6.7	7.5	0.4	0.0	3.2	4.7	0.0	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.7	28.1	31.6	58.5	17.2	18.1	48.0	0.0	32.8	43.6	0.0	43.4
LnGrp LOS	D	C	C	E	B	B	D	A	C	D	A	D
Approach Vol, veh/h		2202			1618			166			562	
Approach Delay, s/veh		30.4			22.0			34.2			43.5	
Approach LOS		C			C			C			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		31.4	17.3	57.0		31.4	12.3	62.0				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		* 4.7	4.6	6.2				
Max Green Setting (Gmax), s		* 36	17.6	50.8		* 36	14.0	54.4				
Max Q Clear Time (g_c+I1), s		24.1	12.6	37.6		24.3	8.1	20.6				
Green Ext Time (p_c), s		0.7	0.1	9.9		2.4	0.0	11.0				

Intersection Summary		
HCM 6th Ctrl Delay		29.1
HCM 6th LOS		C

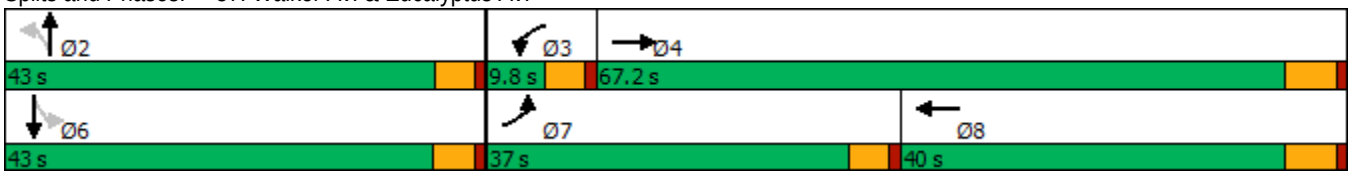
Notes

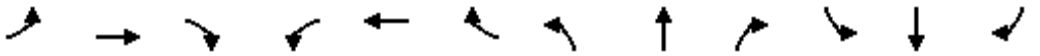
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	410	300	10	120	10	93	140	33
Future Volume (vph)	410	300	10	120	10	93	140	33
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	27.8	26.6	26.6	26.7	26.7
Total Split (s)	37.0	67.2	9.8	40.0	43.0	43.0	43.0	43.0
Total Split (%)	30.8%	56.0%	8.2%	33.3%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	3.6	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	4.6	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	28.1	66.1	5.1	35.1	17.1	17.1	17.0	17.0
Actuated g/C Ratio	0.29	0.69	0.05	0.37	0.18	0.18	0.18	0.18
v/c Ratio	0.84	0.26	0.11	0.53	0.06	0.33	0.69	0.39
Control Delay	47.5	7.5	50.0	23.8	33.3	35.5	53.9	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	7.5	50.0	23.8	33.3	35.5	53.9	13.6
LOS	D	A	D	C	C	D	D	B
Approach Delay		30.3		24.6		35.3		33.5
Approach LOS		C		C		D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 95.4	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 30.0	Intersection LOS: C
Intersection Capacity Utilization 68.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 37: Walker Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	410	300	10	10	120	210	10	93	10	140	33	110
Future Volume (veh/h)	410	300	10	10	120	210	10	93	10	140	33	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	446	326	11	11	130	228	11	101	11	152	36	120
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	481	1164	39	24	238	418	219	325	35	269	74	248
Arrive On Green	0.27	0.64	0.64	0.01	0.38	0.38	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1810	1827	62	1810	619	1086	1320	1684	183	1373	385	1284
Grp Volume(v), veh/h	446	0	337	11	0	358	11	0	112	152	0	156
Grp Sat Flow(s),veh/h/ln	1810	0	1889	1810	0	1705	1320	0	1867	1373	0	1669
Q Serve(g_s), s	23.1	0.0	7.6	0.6	0.0	15.8	0.7	0.0	5.0	10.3	0.0	8.0
Cycle Q Clear(g_c), s	23.1	0.0	7.6	0.6	0.0	15.8	8.7	0.0	5.0	15.3	0.0	8.0
Prop In Lane	1.00		0.03	1.00		0.64	1.00		0.10	1.00		0.77
Lane Grp Cap(c), veh/h	481	0	1204	24	0	656	219	0	360	269	0	322
V/C Ratio(X)	0.93	0.00	0.28	0.46	0.00	0.55	0.05	0.00	0.31	0.57	0.00	0.48
Avail Cap(c_a), veh/h	608	0	1204	98	0	656	491	0	744	550	0	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.5	0.0	7.7	47.2	0.0	23.1	38.5	0.0	33.4	39.9	0.0	34.6
Incr Delay (d2), s/veh	16.3	0.0	0.6	5.0	0.0	3.2	0.1	0.0	0.5	1.9	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	0.0	2.7	0.3	0.0	6.4	0.2	0.0	2.3	3.6	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.8	0.0	8.3	52.2	0.0	26.3	38.6	0.0	33.9	41.8	0.0	35.8
LnGrp LOS	D	A	A	D	A	C	D	A	C	D	A	D
Approach Vol, veh/h		783			369			123			308	
Approach Delay, s/veh		32.5			27.1			34.3			38.7	
Approach LOS		C			C			C			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.3	5.9	67.2		23.3	30.2	42.9				
Change Period (Y+Rc), s		* 4.7	4.6	5.8		* 4.7	4.6	5.8				
Max Green Setting (Gmax), s		* 38	5.2	61.4		* 38	32.4	34.2				
Max Q Clear Time (g_c+I1), s		10.7	2.6	9.6		17.3	25.1	17.8				
Green Ext Time (p_c), s		0.6	0.0	2.0		1.3	0.4	1.9				

Intersection Summary	
HCM 6th Ctrl Delay	32.6
HCM 6th LOS	C

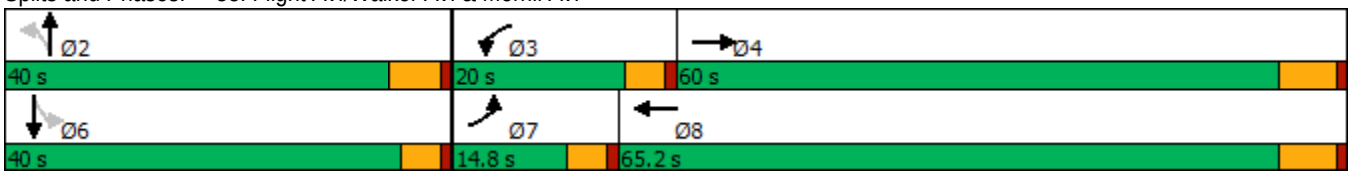
Notes

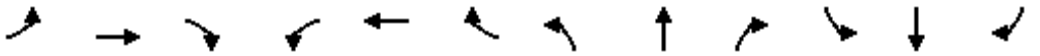
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	16	930	107	675	114	57	10	27
Future Volume (vph)	16	930	107	675	114	57	10	27
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	27.8	27.8	26.6	26.6
Total Split (s)	14.8	60.0	20.0	65.2	40.0	40.0	40.0	40.0
Total Split (%)	12.3%	50.0%	16.7%	54.3%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	4.8	4.8	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	5.8	5.8	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.9	54.5	11.0	66.0	20.6	20.6	21.8	21.8
Actuated g/C Ratio	0.06	0.53	0.11	0.64	0.20	0.20	0.21	0.21
v/c Ratio	0.18	0.62	0.64	0.33	0.50	0.54	0.07	0.23
Control Delay	54.7	20.4	61.8	11.0	43.3	22.6	32.5	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.7	20.4	61.8	11.0	43.3	22.6	32.5	14.2
LOS	D	C	E	B	D	C	C	B
Approach Delay		20.9		17.8		29.8		16.1
Approach LOS		C		B		C		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.8	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 20.9	Intersection LOS: C
Intersection Capacity Utilization 63.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 38: Flight Av./Walker Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	930	139	107	675	17	114	57	157	10	27	60
Future Volume (veh/h)	16	930	139	107	675	17	114	57	157	10	27	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	17	1011	151	116	734	18	124	62	171	11	29	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	33	1781	266	144	2270	56	244	79	217	126	92	206
Arrive On Green	0.02	0.57	0.57	0.08	0.63	0.63	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1714	3150	470	1714	3601	88	1323	447	1232	1166	521	1168
Grp Volume(v), veh/h	17	579	583	116	368	384	124	0	233	11	0	94
Grp Sat Flow(s),veh/h/ln	1714	1805	1815	1714	1805	1884	1323	0	1678	1166	0	1690
Q Serve(g_s), s	0.9	19.5	19.6	6.3	9.0	9.0	8.6	0.0	12.6	0.9	0.0	4.6
Cycle Q Clear(g_c), s	0.9	19.5	19.6	6.3	9.0	9.0	13.2	0.0	12.6	13.5	0.0	4.6
Prop In Lane	1.00		0.26	1.00		0.05	1.00		0.73	1.00		0.69
Lane Grp Cap(c), veh/h	33	1020	1026	144	1138	1188	244	0	296	126	0	298
V/C Ratio(X)	0.52	0.57	0.57	0.80	0.32	0.32	0.51	0.00	0.79	0.09	0.00	0.32
Avail Cap(c_a), veh/h	184	1020	1026	277	1138	1188	487	0	603	354	0	629
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.2	13.2	13.2	42.8	8.2	8.2	40.0	0.0	37.5	44.0	0.0	34.2
Incr Delay (d2), s/veh	4.7	2.3	2.3	4.0	0.8	0.7	1.6	0.0	4.7	0.3	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	7.2	7.3	2.7	3.0	3.1	2.8	0.0	5.3	0.3	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.0	15.5	15.5	46.8	8.9	8.9	41.6	0.0	42.2	44.3	0.0	34.8
LnGrp LOS	D	B	B	D	A	A	D	A	D	D	A	C
Approach Vol, veh/h		1179			868			357			105	
Approach Delay, s/veh		16.0			14.0			42.0			35.8	
Approach LOS		B			B			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.6	12.6	60.0		22.6	6.4	66.2				
Change Period (Y+Rc), s		5.8	4.6	6.2		* 5.8	4.6	6.2				
Max Green Setting (Gmax), s		34.2	15.4	53.8		* 35	10.2	59.0				
Max Q Clear Time (g_c+I1), s		15.2	8.3	21.6		15.5	2.9	11.0				
Green Ext Time (p_c), s		1.6	0.1	8.0		0.5	0.0	4.5				

Intersection Summary		
HCM 6th Ctrl Delay		19.8
HCM 6th LOS		B

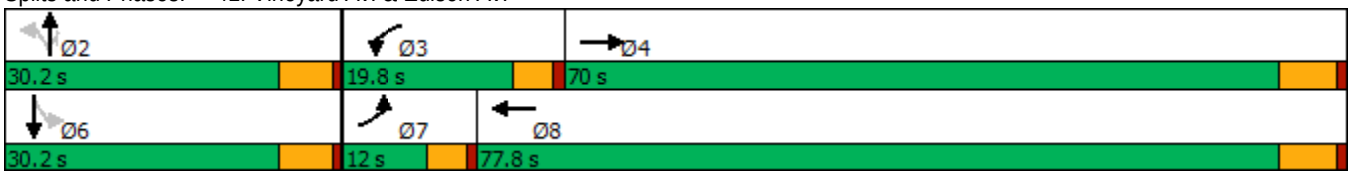
Notes

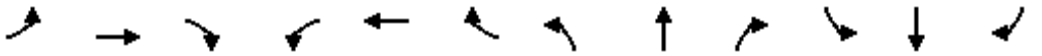
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	40	2589	135	1775	75	43	193	64	22
Future Volume (vph)	40	2589	135	1775	75	43	193	64	22
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA
Protected Phases	7	4	3	8		2			6
Permitted Phases					2		2	6	
Detector Phase	7	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	27.8	27.8	27.8	27.8	27.8
Total Split (s)	12.0	70.0	19.8	77.8	30.2	30.2	30.2	30.2	30.2
Total Split (%)	10.0%	58.3%	16.5%	64.8%	25.2%	25.2%	25.2%	25.2%	25.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	5.8	5.8	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	Max	None	Max	None	None	None	None	None
Act Effct Green (s)	6.5	64.3	12.6	74.7	13.5	13.5	13.5	13.5	13.5
Actuated g/C Ratio	0.06	0.60	0.12	0.70	0.13	0.13	0.13	0.13	0.13
v/c Ratio	0.41	0.93	0.73	0.56	0.50	0.20	0.62	0.43	0.21
Control Delay	62.6	27.1	67.3	10.1	54.8	44.0	21.6	51.7	25.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	27.1	67.3	10.1	54.8	44.0	21.6	51.7	25.9
LOS	E	C	E	B	D	D	C	D	C
Approach Delay		27.6		14.0		32.8			40.8
Approach LOS		C		B		C			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.1	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 22.9	Intersection LOS: C
Intersection Capacity Utilization 86.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 41: Vineyard Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	2589	63	135	1775	87	75	43	193	64	22	25
Future Volume (veh/h)	40	2589	63	135	1775	87	75	43	193	64	22	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	43	2814	68	147	1929	95	82	47	210	70	24	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	57	3086	74	175	3347	164	241	290	246	216	124	140
Arrive On Green	0.03	0.59	0.59	0.10	0.66	0.66	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1714	5211	125	1714	5064	249	1375	1900	1610	1140	816	918
Grp Volume(v), veh/h	43	1860	1022	147	1316	708	82	47	210	70	0	51
Grp Sat Flow(s),veh/h/ln	1714	1729	1878	1714	1729	1855	1375	1900	1610	1140	0	1735
Q Serve(g_s), s	2.7	51.4	52.7	9.1	22.6	22.7	6.0	2.3	13.8	6.2	0.0	2.8
Cycle Q Clear(g_c), s	2.7	51.4	52.7	9.1	22.6	22.7	8.8	2.3	13.8	8.5	0.0	2.8
Prop In Lane	1.00		0.07	1.00		0.13	1.00		1.00	1.00		0.53
Lane Grp Cap(c), veh/h	57	2048	1112	175	2285	1226	241	290	246	216	0	265
V/C Ratio(X)	0.75	0.91	0.92	0.84	0.58	0.58	0.34	0.16	0.86	0.32	0.00	0.19
Avail Cap(c_a), veh/h	117	2048	1112	240	2285	1226	341	428	363	299	0	391
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.9	19.5	19.8	47.8	10.1	10.1	43.9	39.9	44.7	43.6	0.0	40.1
Incr Delay (d2), s/veh	7.1	7.4	13.4	13.1	1.1	2.0	0.8	0.3	12.4	0.9	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	19.2	23.1	4.4	7.2	8.0	2.0	1.1	6.1	1.7	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.0	26.9	33.1	60.9	11.1	12.1	44.8	40.2	57.1	44.5	0.0	40.4
LnGrp LOS	E	C	C	E	B	B	D	D	E	D	A	D
Approach Vol, veh/h		2925			2171			339			121	
Approach Delay, s/veh		29.5			14.8			51.8			42.8	
Approach LOS		C			B			D			D	

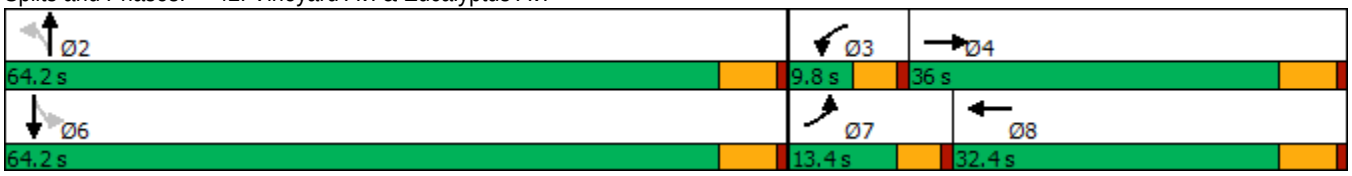
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.3	15.7	70.4		22.3	8.2	77.8				
Change Period (Y+Rc), s		5.8	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		24.4	15.2	63.8		24.4	7.4	71.6				
Max Q Clear Time (g_c+I1), s		15.8	11.1	54.7		10.5	4.7	24.7				
Green Ext Time (p_c), s		0.8	0.1	8.5		0.3	0.0	21.0				

Intersection Summary												
HCM 6th Ctrl Delay			25.4									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	35	395	31	173	147	129	114	51
Future Volume (vph)	35	395	31	173	147	129	114	51
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	27.8	27.8	27.8	27.8	27.8
Total Split (s)	13.4	36.0	9.8	32.4	64.2	64.2	64.2	64.2
Total Split (%)	12.2%	32.7%	8.9%	29.5%	58.4%	58.4%	58.4%	58.4%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8		5.8		5.8
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	6.9	26.2	5.7	25.0		37.7		37.7
Actuated g/C Ratio	0.08	0.32	0.07	0.31		0.46		0.46
v/c Ratio	0.26	0.78	0.29	0.55		0.82		0.45
Control Delay	48.6	39.3	52.8	30.5		27.5		19.2
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	48.6	39.3	52.8	30.5		27.5		19.2
LOS	D	D	D	C		C		B
Approach Delay		40.0		32.6		27.5		19.2
Approach LOS		D		C		C		B

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 81.6	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 31.4	Intersection LOS: C
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 42: Vineyard Av. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	395	38	31	173	116	147	129	276	114	51	15
Future Volume (veh/h)	35	395	38	31	173	116	147	129	276	114	51	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	38	429	41	34	188	126	160	140	300	124	55	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	65	510	49	60	314	210	233	185	349	323	133	33
Arrive On Green	0.04	0.30	0.30	0.04	0.30	0.30	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	1714	1707	163	1714	1061	711	390	439	829	555	317	78
Grp Volume(v), veh/h	38	0	470	34	0	314	600	0	0	195	0	0
Grp Sat Flow(s),veh/h/ln	1714	0	1871	1714	0	1772	1658	0	0	950	0	0
Q Serve(g_s), s	1.4	0.0	15.5	1.3	0.0	10.0	11.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.4	0.0	15.5	1.3	0.0	10.0	21.4	0.0	0.0	10.1	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.40	0.27		0.50	0.64		0.08
Lane Grp Cap(c), veh/h	65	0	558	60	0	524	767	0	0	489	0	0
V/C Ratio(X)	0.58	0.00	0.84	0.56	0.00	0.60	0.78	0.00	0.00	0.40	0.00	0.00
Avail Cap(c_a), veh/h	229	0	857	135	0	715	1517	0	0	1054	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	31.2	0.0	21.7	31.3	0.0	19.9	17.1	0.0	0.0	13.6	0.0	0.0
Incr Delay (d2), s/veh	3.0	0.0	4.7	3.1	0.0	1.1	1.8	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	6.6	0.5	0.0	3.7	6.9	0.0	0.0	1.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.2	0.0	26.4	34.3	0.0	21.0	18.9	0.0	0.0	14.1	0.0	0.0
LnGrp LOS	C	A	C	C	A	C	B	A	A	B	A	A
Approach Vol, veh/h		508			348			600			195	
Approach Delay, s/veh		26.9			22.3			18.9			14.1	
Approach LOS		C			C			B			B	

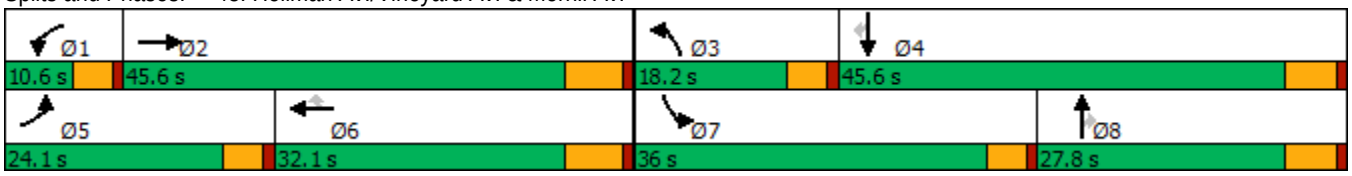
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		33.5	6.9	25.5		33.5	7.1	25.3				
Change Period (Y+Rc), s		5.8	4.6	5.8		5.8	4.6	5.8				
Max Green Setting (Gmax), s		58.4	5.2	30.2		58.4	8.8	26.6				
Max Q Clear Time (g_c+I1), s		23.4	3.3	17.5		12.1	3.4	12.0				
Green Ext Time (p_c), s		4.3	0.0	2.1		1.5	0.0	1.4				

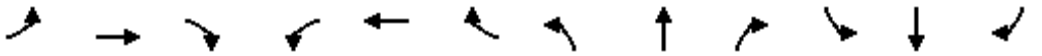
Intersection Summary	
HCM 6th Ctrl Delay	21.5
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	231	826	68	493	299	66	108	82	327	108	216
Future Volume (vph)	231	826	68	493	299	66	108	82	327	108	216
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases					6			8			4
Detector Phase	5	2	1	6	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	28.2	9.6	27.8	27.8	9.6	27.8	27.8
Total Split (s)	24.1	45.6	10.6	32.1	32.1	18.2	27.8	27.8	36.0	45.6	45.6
Total Split (%)	20.1%	38.0%	8.8%	26.8%	26.8%	15.2%	23.2%	23.2%	30.0%	38.0%	38.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	18.5	39.7	6.0	27.3	27.3	8.9	13.3	13.3	25.5	32.1	32.1
Actuated g/C Ratio	0.17	0.37	0.06	0.26	0.26	0.08	0.13	0.13	0.24	0.30	0.30
v/c Ratio	0.84	0.67	0.76	0.58	0.49	0.50	0.49	0.24	0.86	0.20	0.36
Control Delay	68.5	32.2	95.6	39.2	7.1	60.4	51.2	1.5	60.1	29.5	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.5	32.2	95.6	39.2	7.1	60.4	51.2	1.5	60.1	29.5	5.4
LOS	E	C	F	D	A	E	D	A	E	C	A
Approach Delay		40.0		32.5			37.7			36.8	
Approach LOS		D		C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 105.9	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 36.8	Intersection LOS: D
Intersection Capacity Utilization 67.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 43: Hellman Av./Vineyard Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	231	826	11	68	493	299	66	108	82	327	108	216
Future Volume (veh/h)	231	826	11	68	493	299	66	108	82	327	108	216
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	251	898	12	74	536	325	72	117	89	355	117	235
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	282	1464	20	94	1051	469	92	194	164	388	522	442
Arrive On Green	0.16	0.40	0.40	0.05	0.29	0.29	0.05	0.10	0.10	0.23	0.27	0.27
Sat Flow, veh/h	1714	3647	49	1714	3610	1610	1714	1900	1610	1714	1900	1610
Grp Volume(v), veh/h	251	444	466	74	536	325	72	117	89	355	117	235
Grp Sat Flow(s),veh/h/ln	1714	1805	1891	1714	1805	1610	1714	1900	1610	1714	1900	1610
Q Serve(g_s), s	14.1	19.2	19.2	4.2	12.1	17.6	4.1	5.8	5.2	19.8	4.7	12.2
Cycle Q Clear(g_c), s	14.1	19.2	19.2	4.2	12.1	17.6	4.1	5.8	5.2	19.8	4.7	12.2
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	282	724	759	94	1051	469	92	194	164	388	522	442
V/C Ratio(X)	0.89	0.61	0.61	0.79	0.51	0.69	0.79	0.60	0.54	0.92	0.22	0.53
Avail Cap(c_a), veh/h	340	724	759	105	1051	469	237	426	361	548	770	653
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.1	23.3	23.3	45.8	29.0	30.9	45.9	42.2	41.9	37.1	27.5	30.2
Incr Delay (d2), s/veh	19.1	3.9	3.7	26.0	1.8	8.2	5.5	3.0	2.8	13.1	0.2	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	8.2	8.5	2.4	5.1	7.5	1.8	2.8	2.1	9.3	2.1	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.2	27.2	27.0	71.9	30.7	39.1	51.4	45.2	44.7	50.2	27.7	31.2
LnGrp LOS	E	C	C	E	C	D	D	D	D	D	C	C
Approach Vol, veh/h		1161			935			278			707	
Approach Delay, s/veh		34.1			36.9			46.6			40.2	
Approach LOS		C			D			D			D	

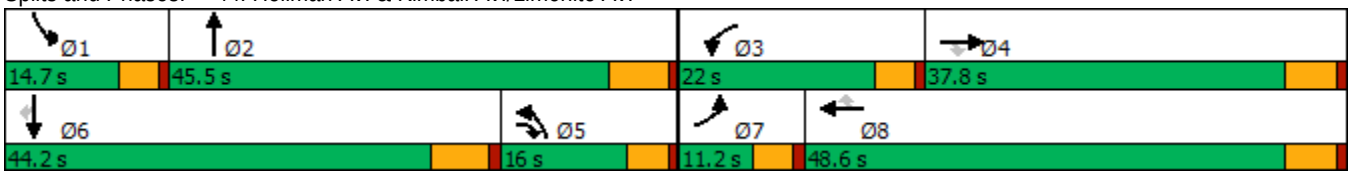
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	45.6	9.9	32.8	20.8	34.8	26.8	15.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	6.0	39.4	13.6	39.8	19.5	25.9	31.4	22.0
Max Q Clear Time (g_c+I1), s	6.2	21.2	6.1	14.2	16.1	19.6	21.8	7.8
Green Ext Time (p_c), s	0.0	4.8	0.0	1.3	0.1	2.3	0.4	0.7

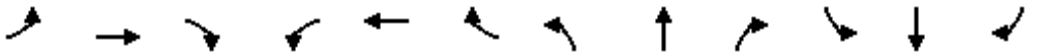
Intersection Summary	
HCM 6th Ctrl Delay	37.5
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	30	967	258	483	809	34	326	85	43	75	148
Future Volume (vph)	30	967	258	483	809	34	326	85	43	75	148
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	1	6	
Permitted Phases			4			8					6
Detector Phase	7	4	5	3	8	8	5	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	37.8	9.6	43.2	9.6	43.2	43.2
Total Split (s)	11.2	37.8	16.0	22.0	48.6	48.6	16.0	45.5	14.7	44.2	44.2
Total Split (%)	9.3%	31.5%	13.3%	18.3%	40.5%	40.5%	13.3%	37.9%	12.3%	36.8%	36.8%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	Max	None	None	None	None	None
Act Effct Green (s)	5.9	32.3	45.3	17.6	48.1	48.1	11.7	23.5	7.0	14.5	14.5
Actuated g/C Ratio	0.06	0.33	0.46	0.18	0.49	0.49	0.12	0.24	0.07	0.15	0.15
v/c Ratio	0.31	0.85	0.31	0.90	0.48	0.04	0.91	0.53	0.37	0.15	0.41
Control Delay	54.9	39.7	3.3	60.6	20.2	0.1	72.6	12.9	53.7	35.2	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.9	39.7	3.3	60.6	20.2	0.1	72.6	12.9	53.7	35.2	7.9
LOS	D	D	A	E	C	A	E	B	D	D	A
Approach Delay		32.6			34.4			36.0		23.0	
Approach LOS		C			C			D		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 33.3	Intersection LOS: C
Intersection Capacity Utilization 80.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	967	258	483	809	34	326	85	430	43	75	148
Future Volume (veh/h)	30	967	258	483	809	34	326	85	430	43	75	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1700	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	32	1018	272	508	852	36	343	89	348	45	79	156
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	51	1169	779	553	1697	757	502	451	402	62	396	177
Arrive On Green	0.03	0.32	0.32	0.18	0.47	0.47	0.16	0.25	0.25	0.04	0.11	0.11
Sat Flow, veh/h	1714	3610	1610	3141	3610	1610	3141	1805	1610	1714	3610	1610
Grp Volume(v), veh/h	32	1018	272	508	852	36	343	89	348	45	79	156
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1570	1805	1610	1570	1805	1610	1714	1805	1610
Q Serve(g_s), s	1.8	26.3	4.5	15.7	16.2	1.2	10.2	3.8	20.4	2.6	2.0	8.0
Cycle Q Clear(g_c), s	1.8	26.3	4.5	15.7	16.2	1.2	10.2	3.8	20.4	2.6	2.0	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	51	1169	779	553	1697	757	502	451	402	62	396	177
V/C Ratio(X)	0.63	0.87	0.35	0.92	0.50	0.05	0.68	0.20	0.86	0.73	0.20	0.88
Avail Cap(c_a), veh/h	114	1169	779	553	1697	757	502	718	640	175	1388	619
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	31.5	4.7	40.0	18.2	14.2	39.2	29.2	35.5	47.2	40.0	30.9
Incr Delay (d2), s/veh	4.7	9.0	1.2	20.2	1.1	0.1	3.2	0.2	7.3	6.1	0.2	13.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	12.1	2.0	7.3	6.4	0.4	3.9	1.6	8.3	1.2	0.8	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.2	40.5	6.0	60.2	19.2	14.3	42.3	29.5	42.7	53.3	40.3	44.1
LnGrp LOS	D	D	A	E	B	B	D	C	D	D	D	D
Approach Vol, veh/h		1322			1396			780			280	
Approach Delay, s/veh		33.7			34.0			41.0			44.5	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	30.9	22.0	37.8	22.0	17.1	7.5	52.3
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	6.2	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	10.1	39.3	17.4	32.0	11.4	* 38	6.6	42.8
Max Q Clear Time (g_c+I1), s	4.6	22.4	17.7	28.3	12.2	10.0	3.8	18.2
Green Ext Time (p_c), s	0.0	2.3	0.0	2.4	0.0	0.9	0.0	5.9

Intersection Summary	
HCM 6th Ctrl Delay	36.1
HCM 6th LOS	D

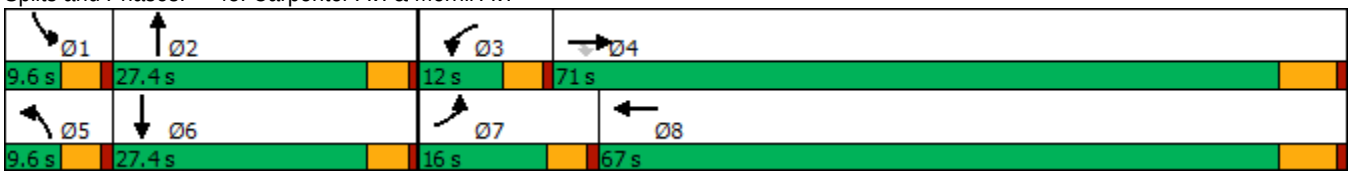
Notes

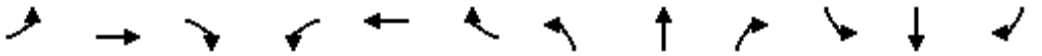
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	SBT	Ø1	Ø5
Lane Configurations									
Traffic Volume (vph)	56	1099	80	36	728	6	7		
Future Volume (vph)	56	1099	80	36	728	6	7		
Turn Type	Prot	NA	Perm	Prot	NA	NA	NA		
Protected Phases	7	4		3	8	2	6	1	5
Permitted Phases			4						
Detector Phase	7	4	4	3	8	2	6		
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	9.6	9.6
Total Split (s)	16.0	71.0	71.0	12.0	67.0	27.4	27.4	9.6	9.6
Total Split (%)	13.3%	59.2%	59.2%	10.0%	55.8%	22.8%	22.8%	8%	8%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	4.6	4.6		
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	8.2	66.4	66.4	6.5	62.6	0.0	0.0		
Actuated g/C Ratio	0.08	0.62	0.62	0.06	0.59	0.00	0.00		
v/c Ratio	0.47	0.53	0.08	0.38	0.38	4.77	7.40		
Control Delay	59.7	13.3	1.8	60.2	13.1	1748.8	2987.6		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	59.7	13.3	1.8	60.2	13.1	1748.8	2987.6		
LOS	E	B	A	E	B	F	F		
Approach Delay		14.7			15.3	1748.8	2987.6		
Approach LOS		B			B	F	F		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 7.40	
Intersection Signal Delay: 352.1	Intersection LOS: F
Intersection Capacity Utilization 62.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 45: Carpenter Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	1099	80	36	728	10	79	6	143	75	7	53
Future Volume (veh/h)	56	1099	80	36	728	10	79	6	143	75	7	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	61	1195	87	39	791	11	86	7	155	82	8	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	78	2453	1094	58	2435	34	0	9	194	0	25	181
Arrive On Green	0.05	0.68	0.68	0.03	0.67	0.67	0.00	0.13	0.13	0.00	0.13	0.13
Sat Flow, veh/h	1714	3610	1610	1714	3645	51	0	70	1551	0	199	1442
Grp Volume(v), veh/h	61	1195	87	39	392	410	0	0	162	0	0	66
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1714	1805	1891	0	0	1621	0	0	1641
Q Serve(g_s), s	3.4	15.1	1.7	2.1	8.8	8.8	0.0	0.0	9.3	0.0	0.0	3.5
Cycle Q Clear(g_c), s	3.4	15.1	1.7	2.1	8.8	8.8	0.0	0.0	9.3	0.0	0.0	3.5
Prop In Lane	1.00		1.00	1.00		0.03	0.00		0.96	0.00		0.88
Lane Grp Cap(c), veh/h	78	2453	1094	58	1206	1263	0	0	203	0	0	206
V/C Ratio(X)	0.79	0.49	0.08	0.67	0.32	0.32	0.00	0.00	0.80	0.00	0.00	0.32
Avail Cap(c_a), veh/h	205	2453	1094	133	1206	1263	0	0	387	0	0	392
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	45.1	7.3	5.2	45.6	6.7	6.7	0.0	0.0	40.5	0.0	0.0	38.0
Incr Delay (d2), s/veh	6.5	0.7	0.1	5.0	0.7	0.7	0.0	0.0	7.0	0.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	4.4	0.5	1.0	2.7	2.9	0.0	0.0	4.1	0.0	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.5	8.0	5.3	50.5	7.4	7.4	0.0	0.0	47.5	0.0	0.0	38.9
LnGrp LOS	D	A	A	D	A	A	A	A	D	A	A	D
Approach Vol, veh/h		1343			841			162			66	
Approach Delay, s/veh		9.8			9.4			47.5			38.9	
Approach LOS		A			A			D			D	

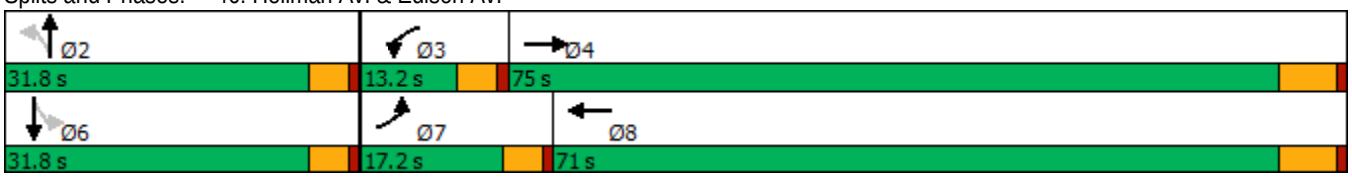
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	16.6	7.8	71.0	0.0	16.6	8.9	69.9
Change Period (Y+Rc), s	4.6	4.6	4.6	6.2	4.6	4.6	4.6	6.2
Max Green Setting (Gmax), s	5.0	22.8	7.4	64.8	5.0	22.8	11.4	60.8
Max Q Clear Time (g_c+I1), s	0.0	11.3	4.1	17.1	0.0	5.5	5.4	10.8
Green Ext Time (p_c), s	0.0	0.7	0.0	10.5	0.0	0.3	0.0	4.9

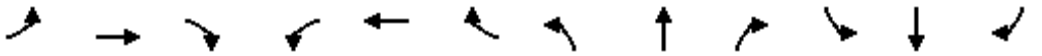
Intersection Summary	
HCM 6th Ctrl Delay	13.0
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	64	2575	100	1754	205	89	58	24
Future Volume (vph)	64	2575	100	1754	205	89	58	24
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	26.7	26.7	26.7	26.7
Total Split (s)	17.2	75.0	13.2	71.0	31.8	31.8	31.8	31.8
Total Split (%)	14.3%	62.5%	11.0%	59.2%	26.5%	26.5%	26.5%	26.5%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	9.1	68.8	8.6	70.2	27.1	27.1	27.1	27.1
Actuated g/C Ratio	0.08	0.57	0.07	0.58	0.23	0.23	0.23	0.23
v/c Ratio	0.54	0.98	0.89	0.66	0.77	0.80	1.05	0.16
Control Delay	67.9	37.7	112.5	18.8	62.5	44.9	178.0	18.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.9	37.7	112.5	18.8	62.5	44.9	178.0	18.8
LOS	E	D	F	B	E	D	F	B
Approach Delay		38.4		23.7		51.5		95.9
Approach LOS		D		C		D		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 35.7	Intersection LOS: D
Intersection Capacity Utilization 103.3%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 46: Hellman Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	2575	96	100	1754	67	205	89	256	58	24	38
Future Volume (veh/h)	64	2575	96	100	1754	67	205	89	256	58	24	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	70	2799	104	109	1907	73	223	97	278	63	26	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	89	2944	108	123	3042	116	323	98	281	63	150	237
Arrive On Green	0.05	0.57	0.57	0.07	0.59	0.59	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1714	5135	189	1714	5127	196	1355	434	1243	1024	664	1047
Grp Volume(v), veh/h	70	1874	1029	109	1285	695	223	0	375	63	0	67
Grp Sat Flow(s),veh/h/ln	1714	1729	1866	1714	1729	1865	1355	0	1676	1024	0	1711
Q Serve(g_s), s	4.8	60.6	63.0	7.6	28.9	29.0	19.0	0.0	26.8	0.3	0.0	3.8
Cycle Q Clear(g_c), s	4.8	60.6	63.0	7.6	28.9	29.0	22.8	0.0	26.8	27.1	0.0	3.8
Prop In Lane	1.00		0.10	1.00		0.11	1.00		0.74	1.00		0.61
Lane Grp Cap(c), veh/h	89	1983	1070	123	2052	1106	323	0	379	63	0	387
V/C Ratio(X)	0.79	0.95	0.96	0.89	0.63	0.63	0.69	0.00	0.99	1.00	0.00	0.17
Avail Cap(c_a), veh/h	180	1983	1070	123	2052	1106	323	0	379	63	0	387
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.3	23.8	24.4	55.2	15.8	15.8	46.6	0.0	46.3	60.0	0.0	37.4
Incr Delay (d2), s/veh	5.8	10.9	19.8	47.3	1.5	2.7	6.1	0.0	43.6	114.4	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	24.3	29.8	4.8	10.4	11.7	6.9	0.0	15.7	3.9	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.0	34.7	44.1	102.5	17.3	18.5	52.7	0.0	89.9	174.4	0.0	37.6
LnGrp LOS	E	C	D	F	B	B	D	A	F	F	A	D
Approach Vol, veh/h		2973			2089			598			130	
Approach Delay, s/veh		38.6			22.1			76.1			103.9	
Approach LOS		D			C			E			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		31.8	13.2	75.0		31.8	10.8	77.4				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		* 4.7	4.6	6.2				
Max Green Setting (Gmax), s		* 27	8.6	68.8		* 27	12.6	64.8				
Max Q Clear Time (g_c+I1), s		28.8	9.6	65.0		29.1	6.8	31.0				
Green Ext Time (p_c), s		0.0	0.0	3.7		0.0	0.0	17.5				

Intersection Summary		
HCM 6th Ctrl Delay		38.0
HCM 6th LOS		D

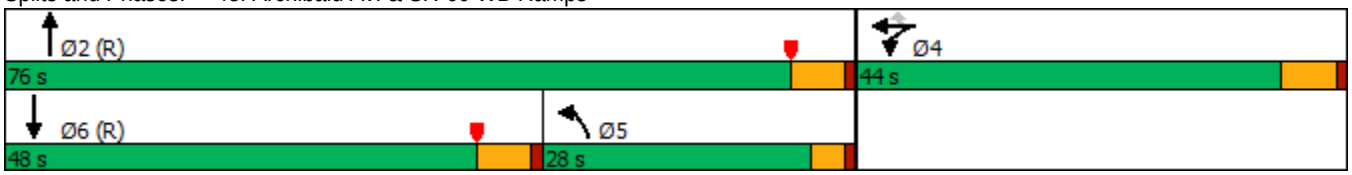
Notes

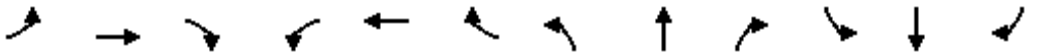
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	6	319	509	706	1747
Future Volume (vph)	6	319	509	706	1747
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	44.0	44.0	28.0	76.0	48.0
Total Split (%)	36.7%	36.7%	23.3%	63.3%	40.0%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	39.7	39.7	21.5	68.5	43.0
Actuated g/C Ratio	0.33	0.33	0.18	0.57	0.36
v/c Ratio	0.93	0.49	0.84	0.25	1.04
Control Delay	63.6	14.2	38.3	2.0	67.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.6	14.2	38.3	2.0	67.4
LOS	E	B	D	A	E
Approach Delay	45.2			17.2	67.4
Approach LOS	D			B	E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 49.1	Intersection LOS: D
Intersection Capacity Utilization 91.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	531	6	319	509	706	0	0	1747	549
Future Volume (veh/h)	0	0	0	531	6	319	509	706	0	0	1747	549
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				553	6	187	530	735	0	0	1820	437
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				567	6	510	649	3034	0	0	1856	444
Arrive On Green				0.32	0.32	0.32	0.37	1.00	0.00	0.00	0.35	0.35
Sat Flow, veh/h				1791	19	1610	3510	5358	0	0	5545	1263
Grp Volume(v), veh/h				559	0	187	530	735	0	0	1690	567
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1729	0	0	1634	1641
Q Serve(g_s), s				36.6	0.0	10.8	16.4	0.0	0.0	0.0	40.9	41.1
Cycle Q Clear(g_c), s				36.6	0.0	10.8	16.4	0.0	0.0	0.0	40.9	41.1
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.77
Lane Grp Cap(c), veh/h				573	0	510	649	3034	0	0	1724	577
V/C Ratio(X)				0.98	0.00	0.37	0.82	0.24	0.00	0.00	0.98	0.98
Avail Cap(c_a), veh/h				573	0	510	702	3034	0	0	1724	577
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.34	0.34	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				40.5	0.0	31.7	36.0	0.0	0.0	0.0	38.5	38.6
Incr Delay (d2), s/veh				31.4	0.0	0.9	2.2	0.1	0.0	0.0	17.4	33.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				20.5	0.0	10.6	5.7	0.0	0.0	0.0	18.3	21.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				72.0	0.0	32.6	38.2	0.1	0.0	0.0	55.9	72.2
LnGrp LOS				E	A	C	D	A	A	A	E	E
Approach Vol, veh/h					746			1265			2257	
Approach Delay, s/veh					62.1			16.0			60.0	
Approach LOS					E			B			E	

Timer - Assigned Phs	2		4	5	6							
Phs Duration (G+Y+Rc), s	76.0		44.0	28.0	48.0							
Change Period (Y+Rc), s	5.8		6.0	5.8	* 5.8							
Max Green Setting (Gmax), s	70.2		38.0	24.0	* 42							
Max Q Clear Time (g_c+I1), s	2.0		38.6	18.4	43.1							
Green Ext Time (p_c), s	5.3		0.0	0.6	0.0							

Intersection Summary		
HCM 6th Ctrl Delay	47.3	
HCM 6th LOS	D	

Notes

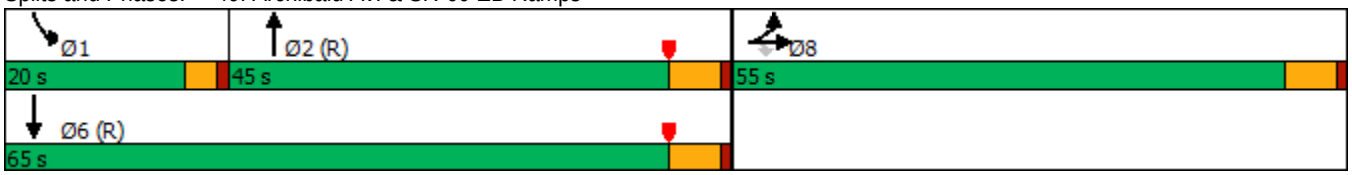
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

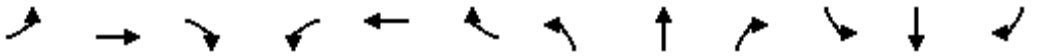
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	687	1081	466	1811
Future Volume (vph)	0	687	1081	466	1811
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	10.8	10.8	25.8	9.0	25.8
Total Split (s)	55.0	55.0	45.0	20.0	65.0
Total Split (%)	45.8%	45.8%	37.5%	16.7%	54.2%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	49.2	49.2	39.2	16.0	59.2
Actuated g/C Ratio	0.41	0.41	0.33	0.13	0.49
v/c Ratio	0.19	1.03	1.16dr	1.04	0.74
Control Delay	23.5	73.4	41.5	88.5	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.7
Total Delay	23.5	73.4	41.5	88.5	10.9
LOS	C	E	D	F	B
Approach Delay	65.2		41.5		26.8
Approach LOS	E		D		C

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 38.6 Intersection LOS: D
Intersection Capacity Utilization 91.9% ICU Level of Service F
Analysis Period (min) 15
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	0	687	0	0	0	0	1081	706	466	1811	0
Future Volume (veh/h)	134	0	687	0	0	0	0	1081	706	466	1811	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	140	0	466				0	1126	560	485	1886	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	567	0	505				0	2074	680	468	3060	0
Arrive On Green	0.31	0.00	0.31				0.00	0.42	0.42	0.27	1.00	0.00
Sat Flow, veh/h	1810	0	1610				0	5168	1606	3510	5358	0
Grp Volume(v), veh/h	140	0	466				0	1126	560	485	1886	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1606	1755	1729	0
Q Serve(g_s), s	6.9	0.0	33.6				0.0	20.6	37.0	16.0	0.0	0.0
Cycle Q Clear(g_c), s	6.9	0.0	33.6				0.0	20.6	37.0	16.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	567	0	505				0	2074	680	468	3060	0
V/C Ratio(X)	0.25	0.00	0.92				0.00	0.54	0.82	1.04	0.62	0.00
Avail Cap(c_a), veh/h	742	0	660				0	2074	680	468	3060	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.62	0.62	0.09	0.09	0.00
Uniform Delay (d), s/veh	30.6	0.0	39.8				0.0	25.9	30.6	44.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	15.8				0.0	0.6	7.0	23.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	14.9				0.0	7.6	14.6	7.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.9	0.0	55.6				0.0	26.6	37.7	67.2	0.1	0.0
LnGrp LOS	C	A	E				A	C	D	F	A	A
Approach Vol, veh/h		606						1686			2371	
Approach Delay, s/veh		49.9						30.3			13.8	
Approach LOS		D						C			B	

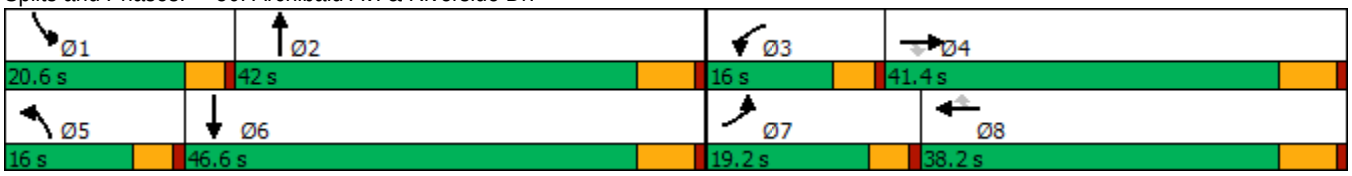
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	20.0	56.6				76.6		43.4				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	16.0	39.2				59.2		49.2				
Max Q Clear Time (g_c+I1), s	18.0	39.0				2.0		35.6				
Green Ext Time (p_c), s	0.0	0.1				21.4		2.1				

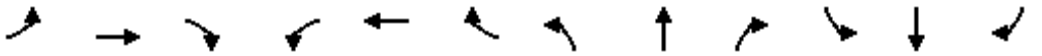
Intersection Summary												
HCM 6th Ctrl Delay			24.5									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	270	755	515	195	538	140	387	837	344	1415
Future Volume (vph)	270	755	515	195	538	140	387	837	344	1415
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	19.2	41.4	41.4	16.0	38.2	38.2	16.0	42.0	20.6	46.6
Total Split (%)	16.0%	34.5%	34.5%	13.3%	31.8%	31.8%	13.3%	35.0%	17.2%	38.8%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	14.6	32.8	32.8	11.4	29.6	29.6	11.4	36.6	15.3	40.4
Actuated g/C Ratio	0.12	0.28	0.28	0.10	0.25	0.25	0.10	0.31	0.13	0.34
v/c Ratio	1.35	0.80	0.91	1.25	0.63	0.29	1.28	0.60	0.85	1.05
Control Delay	226.2	46.1	44.5	197.6	42.5	7.0	191.3	36.4	69.4	72.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	226.2	46.1	44.5	197.6	42.5	7.0	191.3	36.4	69.4	72.6
LOS	F	D	D	F	D	A	F	D	E	E
Approach Delay		77.1			71.4			82.8		72.1
Approach LOS		E			E			F		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.35	
Intersection Signal Delay: 75.7	Intersection LOS: E
Intersection Capacity Utilization 97.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	755	515	195	538	140	387	837	70	344	1415	316
Future Volume (veh/h)	270	755	515	195	538	140	387	837	70	344	1415	316
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	287	803	391	207	572	90	412	890	65	366	1505	272
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	213	1007	439	166	909	404	322	1549	113	419	1516	273
Arrive On Green	0.12	0.28	0.28	0.10	0.25	0.25	0.10	0.31	0.31	0.13	0.34	0.34
Sat Flow, veh/h	1714	3610	1575	1714	3610	1604	3326	4928	359	3326	4413	795
Grp Volume(v), veh/h	287	803	391	207	572	90	412	624	331	366	1178	599
Grp Sat Flow(s),veh/h/ln	1714	1805	1575	1714	1805	1604	1663	1729	1829	1663	1729	1750
Q Serve(g_s), s	14.6	24.3	28.0	11.4	16.6	5.2	11.4	17.7	17.8	12.7	39.9	40.1
Cycle Q Clear(g_c), s	14.6	24.3	28.0	11.4	16.6	5.2	11.4	17.7	17.8	12.7	39.9	40.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		0.45
Lane Grp Cap(c), veh/h	213	1007	439	166	909	404	322	1087	575	419	1188	601
V/C Ratio(X)	1.35	0.80	0.89	1.25	0.63	0.22	1.28	0.57	0.58	0.87	0.99	1.00
Avail Cap(c_a), veh/h	213	1080	471	166	982	437	322	1087	575	452	1188	601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.5	39.3	40.7	53.1	39.1	34.9	53.1	33.7	33.8	50.5	38.4	38.5
Incr Delay (d2), s/veh	184.7	4.0	17.8	150.8	1.2	0.3	147.0	0.7	1.4	15.2	24.1	35.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.9	10.8	12.5	11.7	7.2	2.0	11.2	7.2	7.8	6.0	19.8	22.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	236.2	43.3	58.5	204.0	40.3	35.2	200.1	34.5	35.2	65.6	62.6	74.1
LnGrp LOS	F	D	E	F	D	D	F	C	D	E	E	E
Approach Vol, veh/h		1481			869			1367			2143	
Approach Delay, s/veh		84.7			78.7			84.6			66.3	
Approach LOS		F			E			F			E	

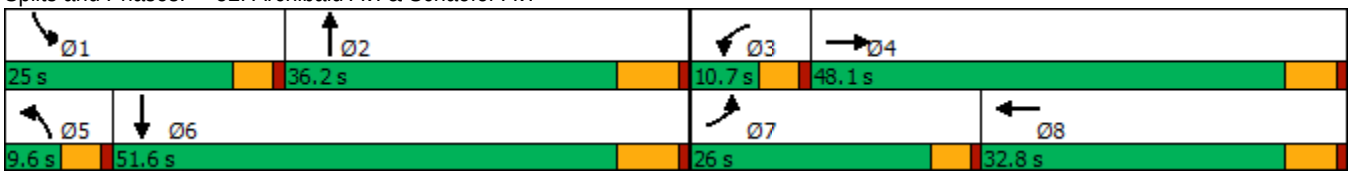
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.4	43.2	16.0	39.0	16.0	46.6	19.2	35.8
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	16.0	35.8	11.4	35.2	11.4	40.4	14.6	32.0
Max Q Clear Time (g_c+I1), s	14.7	19.8	13.4	30.0	13.4	42.1	16.6	18.6
Green Ext Time (p_c), s	0.1	5.0	0.0	2.8	0.0	0.0	0.0	3.0

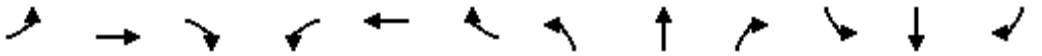
Intersection Summary	
HCM 6th Ctrl Delay	77.1
HCM 6th LOS	E

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	351	268	23	10	10	995	322	1360
Future Volume (vph)	351	268	23	10	10	995	322	1360
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	33.5	9.6	33.5
Total Split (s)	26.0	48.1	10.7	32.8	9.6	36.2	25.0	51.6
Total Split (%)	21.7%	40.1%	8.9%	27.3%	8.0%	30.2%	20.8%	43.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	6.5	4.6	6.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	21.8	31.9	5.7	15.4	5.1	28.0	20.8	51.9
Actuated g/C Ratio	0.21	0.31	0.05	0.15	0.05	0.27	0.20	0.50
v/c Ratio	1.06	0.75	0.27	0.27	0.13	0.83	1.02	0.58
Control Delay	107.6	40.6	59.3	14.4	56.6	42.9	98.5	21.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	107.6	40.6	59.3	14.4	56.6	42.9	98.5	21.8
LOS	F	D	E	B	E	D	F	C
Approach Delay		72.2		25.0		43.0		36.3
Approach LOS		E		C		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.9	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 45.3	Intersection LOS: D
Intersection Capacity Utilization 81.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 52: Archibald Av. & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	351	268	126	23	10	64	10	995	73	322	1360	29
Future Volume (veh/h)	351	268	126	23	10	64	10	995	73	322	1360	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	382	291	137	25	11	70	11	1082	68	350	1478	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	367	359	169	43	23	148	23	1305	82	350	2364	51
Arrive On Green	0.21	0.29	0.29	0.03	0.10	0.10	0.01	0.26	0.26	0.20	0.45	0.45
Sat Flow, veh/h	1714	1221	575	1714	222	1414	1714	4988	313	1714	5222	113
Grp Volume(v), veh/h	382	0	428	25	0	81	11	750	400	350	979	531
Grp Sat Flow(s),veh/h/ln	1714	0	1796	1714	0	1636	1714	1729	1844	1714	1729	1877
Q Serve(g_s), s	21.4	0.0	22.1	1.4	0.0	4.7	0.6	20.4	20.5	20.4	21.6	21.6
Cycle Q Clear(g_c), s	21.4	0.0	22.1	1.4	0.0	4.7	0.6	20.4	20.5	20.4	21.6	21.6
Prop In Lane	1.00		0.32	1.00		0.86	1.00		0.17	1.00		0.06
Lane Grp Cap(c), veh/h	367	0	528	43	0	171	23	905	482	350	1565	850
V/C Ratio(X)	1.04	0.00	0.81	0.58	0.00	0.47	0.49	0.83	0.83	1.00	0.63	0.63
Avail Cap(c_a), veh/h	367	0	760	105	0	442	86	1028	548	350	1565	850
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.3	0.0	32.7	48.2	0.0	42.1	49.0	34.8	34.8	39.8	20.9	20.9
Incr Delay (d2), s/veh	57.9	0.0	4.4	4.6	0.0	2.0	5.9	5.2	9.3	48.1	0.8	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.4	0.0	9.6	0.7	0.0	1.9	0.3	8.5	9.7	12.6	7.8	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	97.1	0.0	37.1	52.8	0.0	44.1	54.9	40.0	44.1	87.9	21.7	22.3
LnGrp LOS	F	A	D	D	A	D	D	D	D	F	C	C
Approach Vol, veh/h		810			106			1161			1860	
Approach Delay, s/veh		65.4			46.2			41.5			34.3	
Approach LOS		E			D			D			C	

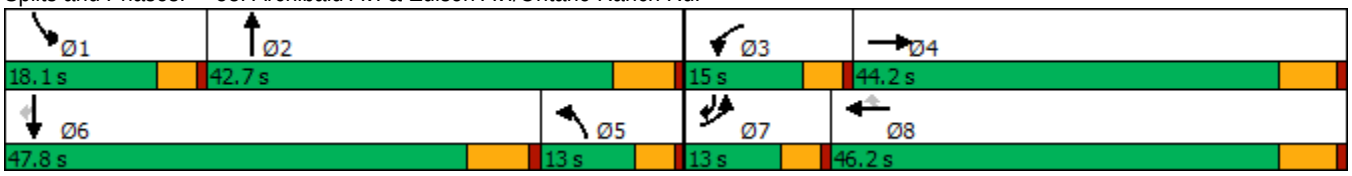
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	32.6	7.1	35.2	5.9	51.7	26.0	16.3
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	20.4	29.7	6.1	42.3	5.0	45.1	21.4	27.0
Max Q Clear Time (g_c+I1), s	22.4	22.5	3.4	24.1	2.6	23.6	23.4	6.7
Green Ext Time (p_c), s	0.0	3.7	0.0	2.3	0.0	9.5	0.0	0.3

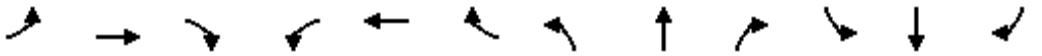
Intersection Summary	
HCM 6th Ctrl Delay	43.2
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	322	1798	591	391	1270	157	397	790	450	278	1028	403
Future Volume (vph)	322	1798	591	391	1270	157	397	790	450	278	1028	403
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	9.6
Total Split (s)	13.0	44.2		15.0	46.2	46.2	13.0	42.7		18.1	47.8	13.0
Total Split (%)	10.8%	36.8%		12.5%	38.5%	38.5%	10.8%	35.6%		15.1%	39.8%	10.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	3.6
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	4.6
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	Max	Max		None	None	None
Act Effct Green (s)	8.4	37.3	118.6	10.4	39.3	39.3	18.2	36.2	118.6	12.8	30.8	41.1
Actuated g/C Ratio	0.07	0.31	1.00	0.09	0.33	0.33	0.15	0.31	1.00	0.11	0.26	0.35
v/c Ratio	1.45	0.78	0.38	1.42	0.52	0.25	0.78	0.47	0.29	0.80	0.72	0.68
Control Delay	265.3	39.6	0.7	250.3	33.0	4.4	60.5	34.7	0.5	69.2	42.5	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	265.3	39.6	0.7	250.3	33.0	4.4	60.5	34.7	0.5	69.2	42.5	20.2
LOS	F	D	A	F	C	A	E	C	A	E	D	C
Approach Delay		57.9			77.2			31.5			41.6	
Approach LOS		E			E			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.45	
Intersection Signal Delay: 53.4	Intersection LOS: D
Intersection Capacity Utilization 92.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	322	1798	591	391	1270	157	397	790	450	278	1028	403
Future Volume (veh/h)	322	1798	591	391	1270	157	397	790	450	278	1028	403
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	332	1854	0	403	1309	80	409	814	0	287	1060	258
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	235	2323		291	2455	520	492	1782		342	1456	522
Arrive On Green	0.07	0.31	0.00	0.09	0.32	0.32	0.14	0.31	0.00	0.10	0.26	0.26
Sat Flow, veh/h	3238	7600	1610	3238	7600	1610	3429	5700	1610	3326	5700	1588
Grp Volume(v), veh/h	332	1854	0	403	1309	80	409	814	0	287	1060	258
Grp Sat Flow(s),veh/h/ln	1619	1900	1610	1619	1900	1610	1714	1900	1610	1663	1900	1588
Q Serve(g_s), s	8.4	25.9	0.0	10.4	16.3	4.1	13.4	13.3	0.0	9.8	19.7	8.5
Cycle Q Clear(g_c), s	8.4	25.9	0.0	10.4	16.3	4.1	13.4	13.3	0.0	9.8	19.7	8.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	235	2323		291	2455	520	492	1782		342	1456	522
V/C Ratio(X)	1.41	0.80		1.39	0.53	0.15	0.83	0.46		0.84	0.73	0.49
Avail Cap(c_a), veh/h	235	2494		291	2625	556	492	1782		388	2033	683
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.7	36.9	0.0	52.7	32.1	27.9	48.2	31.9	0.0	51.0	39.4	12.6
Incr Delay (d2), s/veh	209.4	1.8	0.0	193.6	0.2	0.1	15.0	0.8	0.0	12.3	0.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.1	11.7	0.0	11.9	7.1	1.5	6.5	5.9	0.0	4.5	8.8	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	263.2	38.7	0.0	246.4	32.2	28.1	63.2	32.8	0.0	63.3	40.3	13.3
LnGrp LOS	F	D		F	C	C	E	C		E	D	B
Approach Vol, veh/h		2186	A		1792			1223	A		1605	
Approach Delay, s/veh		72.8			80.2			43.0			40.0	
Approach LOS		E			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	42.7	15.0	41.6	23.1	36.1	13.0	43.6
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	6.5	* 6.5	4.6	6.2
Max Green Setting (Gmax), s	13.5	36.2	10.4	38.0	8.4	* 41	8.4	40.0
Max Q Clear Time (g_c+I1), s	11.8	15.3	12.4	27.9	15.4	21.7	10.4	18.3
Green Ext Time (p_c), s	0.1	4.8	0.0	7.5	0.0	7.3	0.0	9.1

Intersection Summary	
HCM 6th Ctrl Delay	61.7
HCM 6th LOS	E

Notes

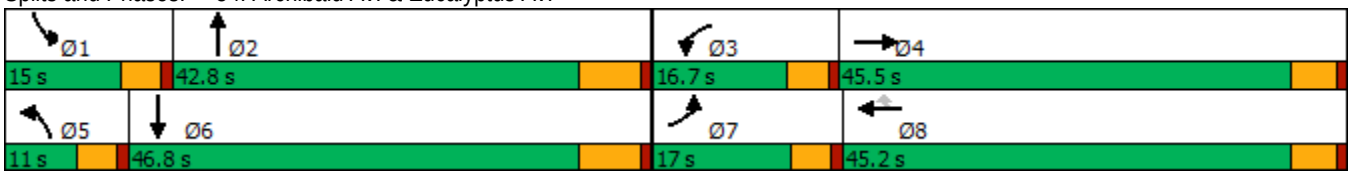
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

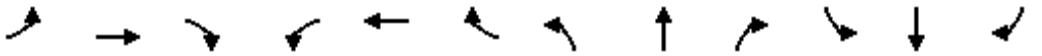
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	207	358	107	70	73	89	1313	184	1559
Future Volume (vph)	207	358	107	70	73	89	1313	184	1559
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	45.2	9.6	45.2	45.2	9.6	32.5	9.6	32.5
Total Split (s)	17.0	45.5	16.7	45.2	45.2	11.0	42.8	15.0	46.8
Total Split (%)	14.2%	37.9%	13.9%	37.7%	37.7%	9.2%	35.7%	12.5%	39.0%
Yellow Time (s)	3.6	4.2	3.6	4.2	4.2	3.6	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.2	4.6	5.2	5.2	4.6	6.5	4.6	6.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	12.5	24.6	10.6	22.7	22.7	6.5	36.6	10.5	40.7
Actuated g/C Ratio	0.12	0.24	0.10	0.22	0.22	0.06	0.35	0.10	0.39
v/c Ratio	1.07	0.75	0.69	0.09	0.18	0.90	0.87	1.13	0.87
Control Delay	126.7	31.8	68.5	30.5	2.7	113.5	38.7	152.7	36.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	126.7	31.8	68.5	30.5	2.7	113.5	38.7	152.7	36.0
LOS	F	C	E	C	A	F	D	F	D
Approach Delay		54.3		38.6			43.0		47.6
Approach LOS		D		D			D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.4	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 46.8	Intersection LOS: D
Intersection Capacity Utilization 83.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	358	305	107	70	73	89	1313	160	184	1559	102
Future Volume (veh/h)	207	358	305	107	70	73	89	1313	160	184	1559	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	220	381	324	114	74	69	95	1397	170	196	1659	109
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	207	478	402	139	801	352	107	1654	201	173	1949	128
Arrive On Green	0.12	0.26	0.26	0.09	0.22	0.22	0.06	0.35	0.35	0.10	0.39	0.39
Sat Flow, veh/h	1714	1859	1564	1619	3610	1587	1714	4685	570	1714	4973	326
Grp Volume(v), veh/h	220	370	335	114	74	69	95	1031	536	196	1153	615
Grp Sat Flow(s),veh/h/ln	1714	1805	1618	1619	1805	1587	1714	1729	1797	1714	1729	1841
Q Serve(g_s), s	12.4	19.7	20.0	7.1	1.7	3.6	5.7	28.3	28.3	10.4	31.3	31.3
Cycle Q Clear(g_c), s	12.4	19.7	20.0	7.1	1.7	3.6	5.7	28.3	28.3	10.4	31.3	31.3
Prop In Lane	1.00		0.97	1.00		1.00	1.00		0.32	1.00		0.18
Lane Grp Cap(c), veh/h	207	464	416	139	801	352	107	1221	634	173	1356	722
V/C Ratio(X)	1.06	0.80	0.81	0.82	0.09	0.20	0.89	0.84	0.84	1.13	0.85	0.85
Avail Cap(c_a), veh/h	207	708	634	191	1405	618	107	1221	634	173	1356	722
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.2	35.7	35.8	46.2	31.8	32.5	47.9	30.6	30.7	46.2	28.5	28.5
Incr Delay (d2), s/veh	80.5	3.7	4.5	13.4	0.0	0.3	52.7	7.2	13.0	107.6	6.9	12.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	8.9	8.2	3.3	0.7	1.4	3.9	11.9	13.4	9.4	12.9	14.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	125.7	39.4	40.3	59.7	31.8	32.8	100.6	37.9	43.7	153.8	35.4	40.7
LnGrp LOS	F	D	D	E	C	C	F	D	D	F	D	D
Approach Vol, veh/h		925			257			1662			1964	
Approach Delay, s/veh		60.3			44.4			43.3			48.8	
Approach LOS		E			D			D			D	

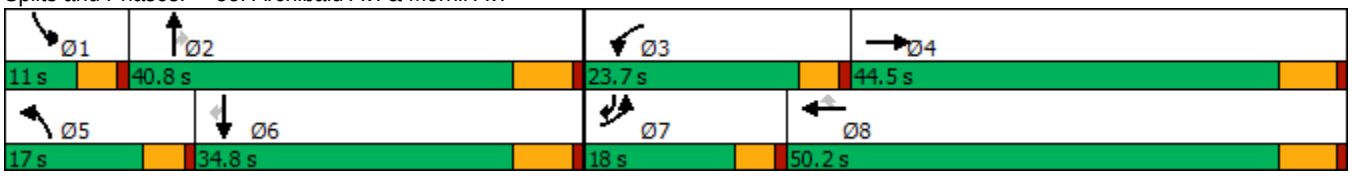
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	42.8	13.4	31.6	11.0	46.8	17.0	28.0
Change Period (Y+Rc), s	4.6	6.5	4.6	5.2	4.6	6.5	4.6	5.2
Max Green Setting (Gmax), s	10.4	36.3	12.1	40.3	6.4	40.3	12.4	40.0
Max Q Clear Time (g_c+I1), s	12.4	30.3	9.1	22.0	7.7	33.3	14.4	5.6
Green Ext Time (p_c), s	0.0	4.2	0.0	4.2	0.0	5.1	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	48.9
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	457	89	638	129	60	67	270	1021	193	88	1488	266
Future Volume (vph)	457	89	638	129	60	67	270	1021	193	88	1488	266
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			Free			8			2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	16.2		9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	9.6
Total Split (s)	18.0	44.5		23.7	50.2	50.2	17.0	40.8	40.8	11.0	34.8	18.0
Total Split (%)	15.0%	37.1%		19.8%	41.8%	41.8%	14.2%	34.0%	34.0%	9.2%	29.0%	15.0%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	4.6
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min	Min	None	Min	None
Act Effct Green (s)	13.8	16.0	89.4	13.1	15.3	15.3	12.8	38.2	38.2	6.2	29.1	49.6
Actuated g/C Ratio	0.15	0.18	1.00	0.15	0.17	0.17	0.14	0.43	0.43	0.07	0.33	0.55
v/c Ratio	0.92	0.27	0.41	0.53	0.19	0.17	1.14	0.48	0.25	0.42	0.91	0.28
Control Delay	64.5	34.3	0.8	47.0	32.7	0.9	139.0	23.2	4.9	50.5	39.8	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.5	34.3	0.8	47.0	32.7	0.9	139.0	23.2	4.9	50.5	39.8	7.6
LOS	E	C	A	D	C	A	F	C	A	D	D	A
Approach Delay		27.9			31.6			41.9			35.6	
Approach LOS		C			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 89.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.14	
Intersection Signal Delay: 35.4	Intersection LOS: D
Intersection Capacity Utilization 79.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	457	89	638	129	60	67	270	1021	193	88	1488	266
Future Volume (veh/h)	457	89	638	129	60	67	270	1021	193	88	1488	266
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	471	92	0	133	62	30	278	1053	185	91	1534	216
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	521	336		165	222	188	248	2174	666	162	1691	777
Arrive On Green	0.16	0.18	0.00	0.10	0.12	0.12	0.14	0.42	0.42	0.05	0.33	0.33
Sat Flow, veh/h	3326	1900	1610	1714	1900	1610	1714	5187	1590	3141	5187	1610
Grp Volume(v), veh/h	471	92	0	133	62	30	278	1053	185	91	1534	216
Grp Sat Flow(s),veh/h/ln	1663	1900	1610	1714	1900	1610	1714	1729	1590	1570	1729	1610
Q Serve(g_s), s	11.9	3.6	0.0	6.5	2.6	1.4	12.4	12.7	6.5	2.4	24.2	6.9
Cycle Q Clear(g_c), s	11.9	3.6	0.0	6.5	2.6	1.4	12.4	12.7	6.5	2.4	24.2	6.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	521	336		165	222	188	248	2174	666	162	1691	777
V/C Ratio(X)	0.90	0.27		0.80	0.28	0.16	1.12	0.48	0.28	0.56	0.91	0.28
Avail Cap(c_a), veh/h	521	850		383	977	828	248	2174	666	235	1715	784
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	30.5	0.0	37.9	34.5	34.0	36.6	18.1	16.3	39.6	27.6	13.2
Incr Delay (d2), s/veh	18.8	0.4	0.0	3.5	0.7	0.4	93.0	0.2	0.2	1.1	7.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	1.6	0.0	2.8	1.2	0.6	11.1	4.4	2.3	0.9	9.9	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.3	30.9	0.0	41.3	35.2	34.4	129.6	18.3	16.6	40.8	35.0	13.4
LnGrp LOS	D	C		D	D	C	F	B	B	D	C	B
Approach Vol, veh/h		563	A		225			1516			1841	
Approach Delay, s/veh		50.5			38.7			38.5			32.7	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	42.4	12.9	21.3	17.0	34.4	18.0	16.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	6.4	34.3	19.1	38.3	12.4	28.3	13.4	44.0
Max Q Clear Time (g_c+I1), s	4.4	14.7	8.5	5.6	14.4	26.2	13.9	4.6
Green Ext Time (p_c), s	0.0	7.0	0.1	0.4	0.0	1.7	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	37.6
HCM 6th LOS	D

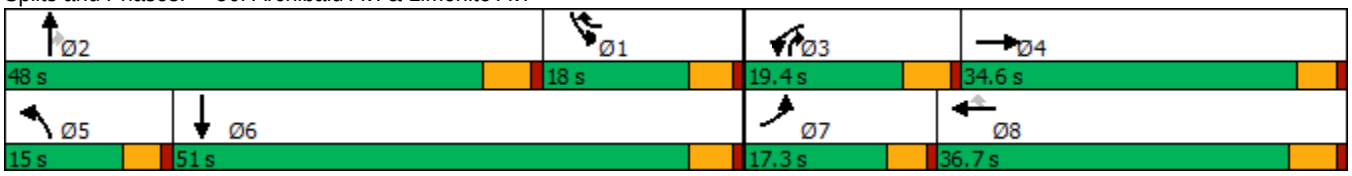
Notes

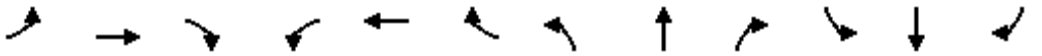
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	212	700	470	713	651	131	1143	484	554	1446
Future Volume (vph)	212	700	470	713	651	131	1143	484	554	1446
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4	3	8	1	5	2	3	1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	1	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.6	34.6	11.3	36.3	11.0	9.5	46.3	11.3	11.0	43.0
Total Split (s)	17.3	34.6	19.4	36.7	18.0	15.0	48.0	19.4	18.0	51.0
Total Split (%)	14.4%	28.8%	16.2%	30.6%	15.0%	12.5%	40.0%	16.2%	15.0%	42.5%
Yellow Time (s)	3.6	3.6	4.3	4.3	4.0	3.5	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	5.3	5.3	5.0	4.5	5.3	5.3	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Max	None	None	None	Max	Max
Act Effct Green (s)	11.6	29.2	14.1	31.7	53.3	10.3	34.2	48.3	21.3	46.0
Actuated g/C Ratio	0.10	0.25	0.12	0.27	0.45	0.09	0.29	0.41	0.18	0.39
v/c Ratio	0.62	0.91	1.12	0.72	0.85	0.86	0.71	0.72	0.88	0.81
Control Delay	59.6	57.8	128.9	44.5	30.7	98.2	40.3	19.4	64.1	35.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.6	57.8	128.9	44.5	30.7	98.2	40.3	19.4	64.1	35.4
LOS	E	E	F	D	C	F	D	B	E	D
Approach Delay		58.2		61.3			38.9			42.4
Approach LOS		E		E			D			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 48.9	Intersection LOS: D
Intersection Capacity Utilization 94.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	700	127	470	713	651	131	1143	484	554	1446	282
Future Volume (veh/h)	212	700	127	470	713	651	131	1143	484	554	1446	282
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	216	714	66	480	728	614	134	1166	473	565	1476	144
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	280	799	74	432	1067	744	160	1653	653	655	1988	194
Arrive On Green	0.08	0.23	0.23	0.12	0.28	0.28	0.09	0.29	0.29	0.18	0.39	0.39
Sat Flow, veh/h	3619	3426	317	3619	3800	1610	1810	5700	1590	3619	5112	498
Grp Volume(v), veh/h	216	396	384	480	728	614	134	1166	473	565	1097	523
Grp Sat Flow(s),veh/h/ln	1810	1900	1843	1810	1900	1610	1810	1900	1590	1810	1900	1810
Q Serve(g_s), s	6.9	23.9	23.9	14.1	20.2	11.5	8.6	21.6	13.9	17.9	29.3	29.4
Cycle Q Clear(g_c), s	6.9	23.9	23.9	14.1	20.2	11.5	8.6	21.6	13.9	17.9	29.3	29.4
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		0.28
Lane Grp Cap(c), veh/h	280	443	430	432	1067	744	160	1653	653	655	1478	704
V/C Ratio(X)	0.77	0.89	0.89	1.11	0.68	0.83	0.83	0.71	0.72	0.86	0.74	0.74
Avail Cap(c_a), veh/h	389	482	468	432	1067	744	161	2058	766	655	1478	704
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.5	43.9	43.9	52.1	37.8	12.9	53.0	37.5	10.7	47.0	31.0	31.0
Incr Delay (d2), s/veh	6.2	17.8	18.4	77.5	1.5	7.1	28.5	0.9	3.1	14.1	3.4	7.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	13.0	12.7	10.8	9.1	8.6	5.1	9.7	4.1	8.9	13.1	13.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.7	61.8	62.4	129.6	39.3	20.1	81.5	38.4	13.7	61.1	34.4	38.0
LnGrp LOS	E	E	E	F	D	C	F	D	B	E	C	D
Approach Vol, veh/h		996			1822			1773			2185	
Approach Delay, s/veh		61.6			56.6			35.1			42.2	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.4	39.6	19.4	32.9	15.0	51.0	13.7	38.5
Change Period (Y+Rc), s	5.0	5.3	5.3	* 5.3	4.5	5.0	4.6	5.3
Max Green Setting (Gmax), s	13.0	42.7	14.1	* 30	10.5	46.0	12.7	31.4
Max Q Clear Time (g_c+I1), s	19.9	23.6	16.1	25.9	10.6	31.4	8.9	22.2
Green Ext Time (p_c), s	0.0	10.7	0.0	1.7	0.0	5.7	0.2	2.3

Intersection Summary	
HCM 6th Ctrl Delay	47.1
HCM 6th LOS	D

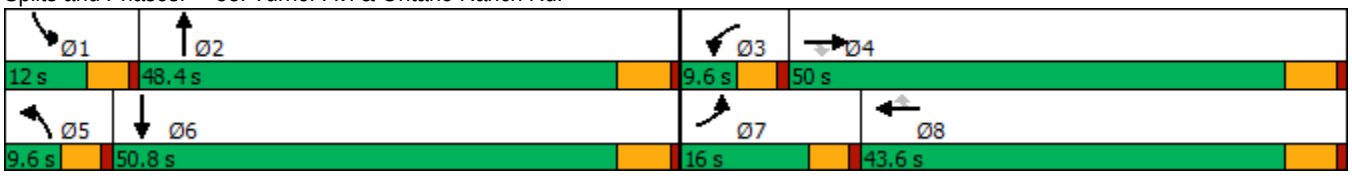
Notes

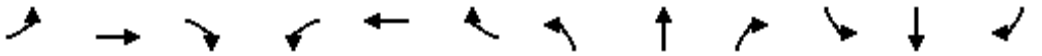
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	185	2140	48	39	1585	142	32	10	126	10
Future Volume (vph)	185	2140	48	39	1585	142	32	10	126	10
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	16.0	50.0	50.0	9.6	43.6	43.6	9.6	48.4	12.0	50.8
Total Split (%)	13.3%	41.7%	41.7%	8.0%	36.3%	36.3%	8.0%	40.3%	10.0%	42.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	12.3	51.3	51.3	5.7	40.4	40.4	5.7	16.7	9.1	20.6
Actuated g/C Ratio	0.14	0.56	0.56	0.06	0.44	0.44	0.06	0.18	0.10	0.23
v/c Ratio	0.87	0.80	0.05	0.39	0.75	0.19	0.33	0.18	0.81	0.31
Control Delay	76.6	22.1	0.1	56.8	25.8	4.5	54.2	12.0	77.1	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.6	22.1	0.1	56.8	25.8	4.5	54.2	12.0	77.1	7.8
LOS	E	C	A	E	C	A	D	B	E	A
Approach Delay		25.9			24.8			27.1		41.6
Approach LOS		C			C			C		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 91	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 26.4	Intersection LOS: C
Intersection Capacity Utilization 77.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	2140	48	39	1585	142	32	10	48	126	10	122
Future Volume (veh/h)	185	2140	48	39	1585	142	32	10	48	126	10	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	201	2326	40	42	1723	151	35	11	34	137	11	119
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	232	2790	866	74	2313	718	67	60	187	154	28	298
Arrive On Green	0.14	0.54	0.54	0.04	0.45	0.45	0.04	0.15	0.13	0.09	0.20	0.18
Sat Flow, veh/h	1714	5187	1610	1714	5187	1610	1714	406	1254	1714	138	1493
Grp Volume(v), veh/h	201	2326	40	42	1723	151	35	0	45	137	0	130
Grp Sat Flow(s),veh/h/ln	1714	1729	1610	1714	1729	1610	1714	0	1660	1714	0	1631
Q Serve(g_s), s	10.2	33.4	1.0	2.1	24.5	5.1	1.8	0.0	2.1	7.0	0.0	6.2
Cycle Q Clear(g_c), s	10.2	33.4	1.0	2.1	24.5	5.1	1.8	0.0	2.1	7.0	0.0	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.76	1.00		0.92
Lane Grp Cap(c), veh/h	232	2790	866	74	2313	718	67	0	247	154	0	326
V/C Ratio(X)	0.87	0.83	0.05	0.57	0.75	0.21	0.52	0.00	0.18	0.89	0.00	0.40
Avail Cap(c_a), veh/h	232	2790	866	108	2313	718	108	0	830	154	0	860
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.6	17.2	9.7	41.7	20.4	15.0	41.8	0.0	33.7	40.0	0.0	31.7
Incr Delay (d2), s/veh	26.7	3.1	0.1	2.5	2.2	0.7	2.3	0.0	0.4	40.5	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	11.8	0.3	0.9	9.2	1.8	0.8	0.0	0.8	4.5	0.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.3	20.3	9.8	44.2	22.7	15.7	44.1	0.0	34.0	80.4	0.0	32.5
LnGrp LOS	E	C	A	D	C	B	D	A	C	F	A	C
Approach Vol, veh/h		2567			1916			80			267	
Approach Delay, s/veh		23.6			22.6			38.4			57.1	
Approach LOS		C			C			D			E	

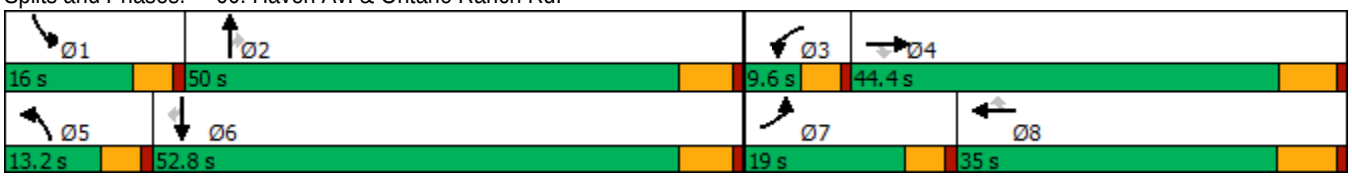
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	17.2	7.8	51.8	7.5	21.7	16.0	43.6
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	7.4	42.6	5.0	44.2	5.0	45.0	11.4	37.8
Max Q Clear Time (g_c+I1), s	9.0	4.1	4.1	35.4	3.8	8.2	12.2	26.5
Green Ext Time (p_c), s	0.0	0.2	0.0	7.8	0.0	0.7	0.0	8.1

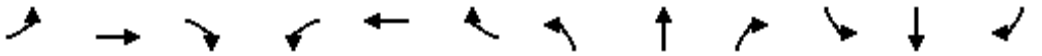
Intersection Summary	
HCM 6th Ctrl Delay	25.3
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	329	1741	81	75	1396	349	79	242	47	283	320	255
Future Volume (vph)	329	1741	81	75	1396	349	79	242	47	283	320	255
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	19.0	44.4	44.4	9.6	35.0	35.0	13.2	50.0	50.0	16.0	52.8	52.8
Total Split (%)	15.8%	37.0%	37.0%	8.0%	29.2%	29.2%	11.0%	41.7%	41.7%	13.3%	44.0%	44.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2	-2.2	-0.6	-2.5	-2.5	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	15.2	41.0	41.0	5.7	31.5	31.5	8.4	17.9	17.9	12.2	23.9	23.9
Actuated g/C Ratio	0.16	0.44	0.44	0.06	0.34	0.34	0.09	0.19	0.19	0.13	0.26	0.26
v/c Ratio	1.23	0.79	0.11	0.75	0.83	0.46	0.53	0.36	0.11	1.32	0.36	0.43
Control Delay	165.7	27.2	3.0	85.4	34.7	5.4	56.1	32.8	0.5	206.6	29.6	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	165.7	27.2	3.0	85.4	34.7	5.4	56.1	32.8	0.5	206.6	29.6	5.6
LOS	F	C	A	F	C	A	E	C	A	F	C	A
Approach Delay		47.5			31.1			33.7			80.9	
Approach LOS		D			C			C			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 93	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.32	
Intersection Signal Delay: 46.3	Intersection LOS: D
Intersection Capacity Utilization 84.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	329	1741	81	75	1396	349	79	242	47	283	320	255
Future Volume (veh/h)	329	1741	81	75	1396	349	79	242	47	283	320	255
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	343	1814	53	78	1454	290	82	252	35	295	333	193
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	299	2436	756	110	1883	585	115	495	221	239	755	337
Arrive On Green	0.17	0.47	0.47	0.06	0.36	0.36	0.07	0.14	0.14	0.14	0.21	0.21
Sat Flow, veh/h	1714	5187	1610	1714	5187	1610	1714	3610	1610	1714	3610	1610
Grp Volume(v), veh/h	343	1814	53	78	1454	290	82	252	35	295	333	193
Grp Sat Flow(s),veh/h/ln	1714	1729	1610	1714	1729	1610	1714	1805	1610	1714	1805	1610
Q Serve(g_s), s	15.0	24.5	1.6	3.8	21.3	12.0	4.0	5.6	1.6	12.0	6.9	9.3
Cycle Q Clear(g_c), s	15.0	24.5	1.6	3.8	21.3	12.0	4.0	5.6	1.6	12.0	6.9	9.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	299	2436	756	110	1883	585	115	495	221	239	755	337
V/C Ratio(X)	1.15	0.74	0.07	0.71	0.77	0.50	0.71	0.51	0.16	1.23	0.44	0.57
Avail Cap(c_a), veh/h	299	2436	756	112	1883	585	183	1930	861	239	2048	913
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	18.6	12.5	39.5	24.3	21.3	39.3	34.4	32.7	37.0	29.6	30.6
Incr Delay (d2), s/veh	98.1	2.1	0.2	15.7	3.1	3.0	3.0	0.8	0.3	135.9	0.4	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.9	8.7	0.5	2.0	8.1	4.4	1.7	2.4	0.6	13.8	2.9	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	133.6	20.7	12.7	55.2	27.4	24.3	42.3	35.2	33.1	172.9	30.0	32.1
LnGrp LOS	F	C	B	E	C	C	D	D	C	F	C	C
Approach Vol, veh/h		2210			1822			369			821	
Approach Delay, s/veh		38.1			28.1			36.6			81.9	
Approach LOS		D			C			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	15.8	9.5	44.7	9.8	22.0	19.0	35.2
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	11.4	44.2	5.0	* 38	8.6	47.0	14.4	28.5
Max Q Clear Time (g_c+I1), s	14.0	7.6	5.8	26.5	6.0	11.3	17.0	23.3
Green Ext Time (p_c), s	0.0	1.6	0.0	8.4	0.0	2.7	0.0	3.8

Intersection Summary	
HCM 6th Ctrl Delay	41.4
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

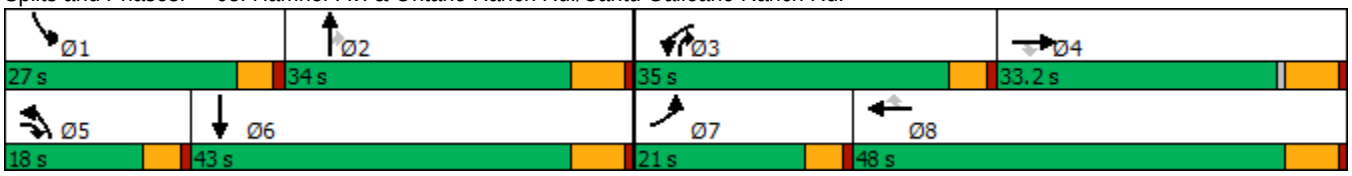
63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.

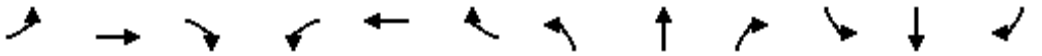
04/22/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	172	1331	537	940	1063	167	391	475	294	569	1050
Future Volume (vph)	172	1331	537	940	1063	167	391	475	294	569	1050
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4	5	3	8		5	2	3	1	6
Permitted Phases			4			8			2		
Detector Phase	7	4	5	3	8	8	5	2	3	1	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	9.6	33.2	9.6	9.6	47.2	47.2	9.6	33.2	9.6	9.6	42.2
Total Split (s)	21.0	33.2	18.0	35.0	48.0	48.0	18.0	34.0	35.0	27.0	43.0
Total Split (%)	16.2%	25.5%	13.8%	26.9%	36.9%	36.9%	13.8%	26.2%	26.9%	20.8%	33.1%
Yellow Time (s)	3.6	5.2	3.6	3.6	5.2	5.2	3.6	5.2	3.6	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2	0.0	-0.6	-2.2	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2
Total Lost Time (s)	4.0	4.0	4.6	4.0	4.0	4.0	4.0	4.0	2.4	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	Max	Max	Max	None	None	Max	None	None
Act Effct Green (s)	12.0	29.0	46.4	31.0	47.9	47.9	14.0	28.6	62.8	23.0	37.6
Actuated g/C Ratio	0.09	0.23	0.36	0.24	0.38	0.38	0.11	0.22	0.49	0.18	0.29
v/c Ratio	0.59	0.80	0.83	1.25	0.52	0.24	1.15	0.39	0.36	1.02	0.80
Control Delay	63.4	51.0	39.0	162.5	32.5	5.0	144.4	43.0	13.1	93.6	44.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.4	51.0	39.0	162.5	32.5	5.0	144.4	43.0	13.1	93.6	44.3
LOS	E	D	D	F	C	A	F	D	B	F	D
Approach Delay		48.9			86.7			69.6			59.6
Approach LOS		D			F			E			E

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 127.6	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.25	
Intersection Signal Delay: 66.3	Intersection LOS: E
Intersection Capacity Utilization 100.4%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	1331	537	940	1063	167	391	475	294	569	1050	221
Future Volume (veh/h)	172	1331	537	940	1063	167	391	475	294	569	1050	221
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1700	1900	1900	1700	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	179	1386	283	979	1107	88	407	495	227	593	1094	32
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	247	1758	523	840	2361	667	379	1045	734	623	1425	42
Arrive On Green	0.11	0.35	0.21	0.39	0.62	0.41	0.18	0.27	0.18	0.29	0.39	0.26
Sat Flow, veh/h	3238	7600	1610	3238	5700	1610	3238	5700	1608	3238	5510	161
Grp Volume(v), veh/h	179	1386	283	979	1107	88	407	495	227	593	754	372
Grp Sat Flow(s),veh/h/ln	1619	1900	1610	1619	1900	1610	1619	1900	1608	1619	1900	1871
Q Serve(g_s), s	6.4	19.6	17.2	31.0	12.4	4.0	14.0	8.7	10.7	21.5	20.7	20.8
Cycle Q Clear(g_c), s	6.4	19.6	17.2	31.0	12.4	4.0	14.0	8.7	10.7	21.5	20.7	20.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	247	1758	523	840	2361	667	379	1045	734	623	983	484
V/C Ratio(X)	0.72	0.79	0.54	1.17	0.47	0.13	1.07	0.47	0.31	0.95	0.77	0.77
Avail Cap(c_a), veh/h	460	1856	544	840	2361	667	379	1430	842	623	1239	610
HCM Platoon Ratio	1.50	1.50	1.00	1.50	1.50	1.00	1.50	1.50	1.00	1.50	1.50	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	36.4	33.1	36.5	15.6	21.7	49.3	38.5	20.6	42.0	33.5	34.1
Incr Delay (d2), s/veh	1.5	2.2	1.0	87.6	0.7	0.4	67.2	0.3	0.2	24.5	2.3	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	7.8	6.5	20.2	4.4	1.5	8.6	3.7	3.8	9.5	8.2	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.2	38.7	34.1	124.1	16.3	22.1	116.5	38.9	20.8	66.5	35.8	38.7
LnGrp LOS	D	D	C	F	B	C	F	D	C	E	D	D
Approach Vol, veh/h		1848			2174			1129			1719	
Approach Delay, s/veh		39.4			65.1			63.2			47.0	
Approach LOS		D			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	25.9	35.0	31.7	18.0	34.9	13.1	53.5
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	22.4	27.8	30.4	27.0	13.4	36.8	16.4	41.8
Max Q Clear Time (g_c+I1), s	23.5	12.7	33.0	21.6	16.0	22.8	8.4	14.4
Green Ext Time (p_c), s	0.0	3.3	0.0	3.8	0.0	5.6	0.2	8.2

Intersection Summary	
HCM 6th Ctrl Delay	53.3
HCM 6th LOS	D

APPENDIX 9.10:

HORIZON YEAR (2040) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

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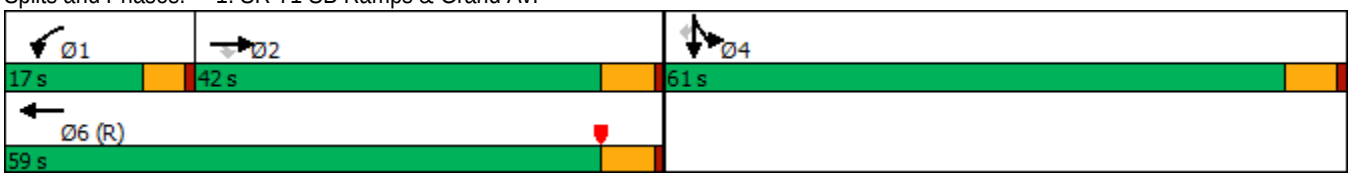
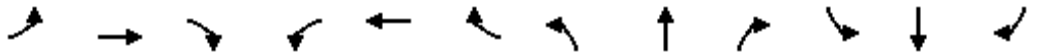
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1147	241	206	1654	1066	5	370
Future Volume (vph)	1147	241	206	1654	1066	5	370
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	42.0	42.0	17.0	59.0	61.0	61.0	61.0
Total Split (%)	35.0%	35.0%	14.2%	49.2%	50.8%	50.8%	50.8%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None
Act Effct Green (s)	44.8	44.8	11.8	60.6	51.4	51.4	51.4
Actuated g/C Ratio	0.37	0.37	0.10	0.50	0.43	0.43	0.43
v/c Ratio	0.64	0.34	0.65	0.69	0.79	0.79	0.55
Control Delay	34.2	4.9	55.3	29.3	37.7	38.0	23.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.2	4.9	55.3	29.3	37.7	38.0	23.3
LOS	C	A	E	C	D	D	C
Approach Delay	29.1			32.2		34.1	
Approach LOS	C			C		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 31.9	Intersection LOS: C
Intersection Capacity Utilization 68.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1147	241	206	1654	0	0	0	0	1066	5	370
Future Volume (veh/h)	0	1147	241	206	1654	0	0	0	0	1066	5	370
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1247	179	224	1798	0				1163	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1764	548	298	2377	0				1332	0	
Arrive On Green	0.00	0.34	0.34	0.08	0.46	0.00				0.37	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	1247	179	224	1798	0				1163	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	25.1	9.9	7.5	34.5	0.0				35.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	25.1	9.9	7.5	34.5	0.0				35.9	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1764	548	298	2377	0				1332	0	
V/C Ratio(X)	0.00	0.71	0.33	0.75	0.76	0.00				0.87	0.00	
Avail Cap(c_a), veh/h	0	1764	548	380	2377	0				1719	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	34.4	29.4	53.7	26.9	0.0				35.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.4	1.6	0.4	0.2	0.0				4.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.5	4.0	3.2	13.3	0.0				15.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	36.8	31.0	54.1	27.2	0.0				39.6	0.0	0.0
LnGrp LOS	A	D	C	D	C	A				D	A	
Approach Vol, veh/h		1426			2022						1163	A
Approach Delay, s/veh		36.1			30.1						39.6	
Approach LOS		D			C						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	14.2	44.8		48.2		59.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	12.4	36.2		55.2		53.2
Max Q Clear Time (g_c+I1), s	9.5	27.1		37.9		36.5
Green Ext Time (p_c), s	0.1	5.5		4.5		11.0

Intersection Summary		
HCM 6th Ctrl Delay		34.4
HCM 6th LOS		C

Notes

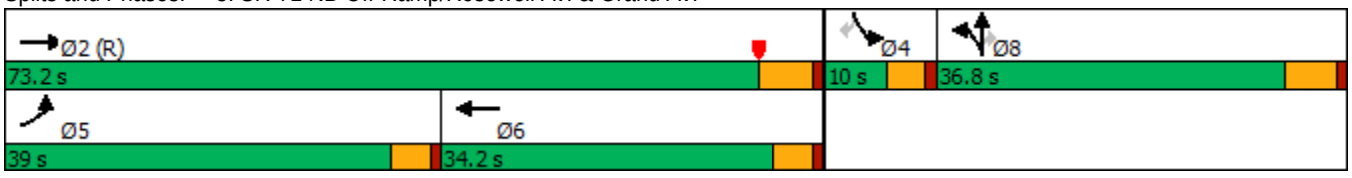
User approved volume balancing among the lanes for turning movement.

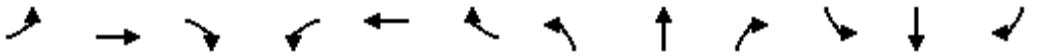
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	632	1373	209	1501	564	84	78	117	809
Future Volume (vph)	632	1373	209	1501	564	84	78	117	809
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.6	34.8		14.7	34.8	34.8	34.8	9.5	9.5
Total Split (s)	39.0	73.2		34.2	36.8	36.8	36.8	10.0	10.0
Total Split (%)	32.5%	61.0%		28.5%	30.7%	30.7%	30.7%	8.3%	8.3%
Yellow Time (s)	3.6	4.8		3.7	4.8	4.8	4.8	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8		-0.7	-1.8	-1.8	-1.8	-0.5	-0.5
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	Max	Max	Max	None	None
Act Effct Green (s)	35.0	69.2	120.0	30.2	32.8	32.8	32.8	6.0	6.0
Actuated g/C Ratio	0.29	0.58	1.00	0.25	0.27	0.27	0.27	0.05	0.05
v/c Ratio	1.31	0.50	0.14	1.11	0.75	0.75	0.16	1.41	1.05
Control Delay	188.5	16.1	0.1	100.6	50.9	50.9	4.2	279.4	53.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	188.5	16.1	0.1	100.6	50.9	50.9	4.2	279.4	53.8
LOS	F	B	A	F	D	D	A	F	D
Approach Delay		63.8		100.6		45.9			
Approach LOS		E		F		D			

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.41	
Intersection Signal Delay: 75.7	Intersection LOS: E
Intersection Capacity Utilization 94.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	632	1373	209	0	1501	171	564	84	78	117	0	809
Future Volume (veh/h)	632	1373	209	0	1501	171	564	84	78	117	0	809
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	687	1492	0	0	1632	186	678	0	45	127	0	603
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	528	3423		0	1954	223	989	0	440	0	0	0
Arrive On Green	0.29	0.66	0.00	0.00	0.33	0.32	0.27	0.00	0.27	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	6262	683	3619	0	1610		0	
Grp Volume(v), veh/h	687	1492	0	0	1334	484	678	0	45		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1777	1810	0	1610			
Q Serve(g_s), s	35.0	16.5	0.0	0.0	30.3	30.3	20.1	0.0	2.5			
Cycle Q Clear(g_c), s	35.0	16.5	0.0	0.0	30.3	30.3	20.1	0.0	2.5			
Prop In Lane	1.00		1.00	0.00		0.38	1.00		1.00			
Lane Grp Cap(c), veh/h	528	3423		0	1597	579	989	0	440			
V/C Ratio(X)	1.30	0.44		0.00	0.84	0.84	0.69	0.00	0.10			
Avail Cap(c_a), veh/h	528	3423		0	1597	579	989	0	440			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.66	0.66	0.00	0.00	0.87	0.87	1.00	0.00	1.00			
Uniform Delay (d), s/veh	42.5	9.7	0.0	0.0	37.5	37.6	39.0	0.0	32.6			
Incr Delay (d2), s/veh	144.9	0.3	0.0	0.0	3.5	9.1	3.9	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	36.2	5.5	0.0	0.0	12.3	14.4	9.1	0.0	1.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	187.4	10.0	0.0	0.0	41.0	46.7	42.8	0.0	33.1			
LnGrp LOS	F	B		A	D	D	D	A	C			
Approach Vol, veh/h		2179	A		1818			723				
Approach Delay, s/veh		65.9			42.5			42.2				
Approach LOS		E			D			D				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		83.2			39.0	44.2		36.8				
Change Period (Y+Rc), s		5.8			4.6	* 5.8		5.8				
Max Green Setting (Gmax), s		67.4			34.4	* 30		31.0				
Max Q Clear Time (g_c+I1), s		18.5			37.0	32.3		22.1				
Green Ext Time (p_c), s		14.3			0.0	0.0		1.9				

Intersection Summary		
HCM 6th Ctrl Delay	53.3	
HCM 6th LOS	D	

Notes

User approved volume balancing among the lanes for turning movement.

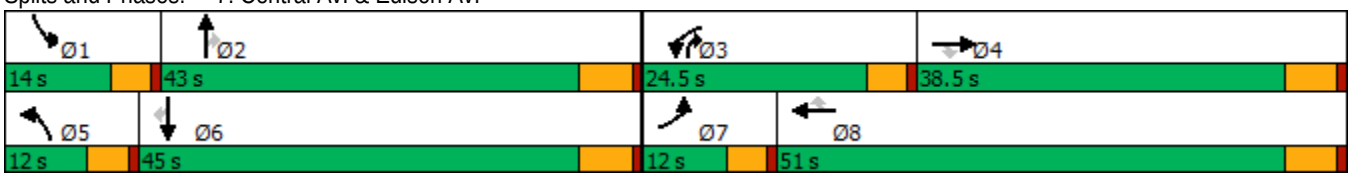
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

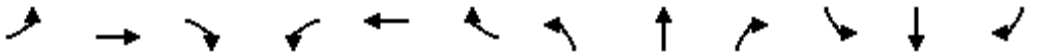
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	864	65	425	1293	138	87	901	465	116	1060	286
Future Volume (vph)	169	864	65	425	1293	138	87	901	465	116	1060	286
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	33.8	9.6	33.8	33.8	9.6	33.8	9.6	9.6	30.8	30.8
Total Split (s)	12.0	38.5	38.5	24.5	51.0	51.0	12.0	43.0	24.5	14.0	45.0	45.0
Total Split (%)	10.0%	32.1%	32.1%	20.4%	42.5%	42.5%	10.0%	35.8%	20.4%	11.7%	37.5%	37.5%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	0.0	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	5.8	4.0	4.0	4.0	4.0	4.0	2.8	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	8.0	35.4	33.6	19.6	47.0	47.0	8.0	38.4	60.3	9.9	40.3	40.3
Actuated g/C Ratio	0.07	0.30	0.28	0.16	0.39	0.39	0.07	0.32	0.51	0.08	0.34	0.34
v/c Ratio	0.79	0.84	0.12	0.86	0.95	0.21	0.80	0.81	0.57	0.85	0.90	0.47
Control Delay	79.8	48.0	0.4	66.0	49.8	6.7	98.3	43.6	18.8	99.2	49.1	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.8	48.0	0.4	66.0	49.8	6.7	98.3	43.6	18.8	99.2	49.1	17.3
LOS	E	D	A	E	D	A	F	D	B	F	D	B
Approach Delay		50.1			50.3			39.0			46.9	
Approach LOS		D			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 46.6	Intersection LOS: D
Intersection Capacity Utilization 88.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	864	65	425	1293	138	87	901	465	116	1060	286
Future Volume (veh/h)	169	864	65	425	1293	138	87	901	465	116	1060	286
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	176	900	62	443	1347	116	91	939	302	121	1104	240
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	223	1083	459	506	1422	626	115	1159	785	144	1219	536
Arrive On Green	0.07	0.30	0.29	0.16	0.39	0.39	0.07	0.32	0.32	0.08	0.34	0.34
Sat Flow, veh/h	3326	3610	1610	3141	3610	1589	1714	3610	1587	1714	3610	1588
Grp Volume(v), veh/h	176	900	62	443	1347	116	91	939	302	121	1104	240
Grp Sat Flow(s),veh/h/ln	1663	1805	1610	1570	1805	1589	1714	1805	1587	1714	1805	1588
Q Serve(g_s), s	6.2	27.7	3.4	16.4	43.0	5.7	6.2	28.5	14.2	8.3	34.8	14.1
Cycle Q Clear(g_c), s	6.2	27.7	3.4	16.4	43.0	5.7	6.2	28.5	14.2	8.3	34.8	14.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	223	1083	459	506	1422	626	115	1159	785	144	1219	536
V/C Ratio(X)	0.79	0.83	0.14	0.88	0.95	0.19	0.79	0.81	0.38	0.84	0.91	0.45
Avail Cap(c_a), veh/h	223	1083	459	540	1422	626	115	1180	794	144	1241	546
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.8	38.9	31.7	48.9	34.9	23.6	54.8	37.2	19.0	53.9	37.7	30.8
Incr Delay (d2), s/veh	15.8	7.4	0.6	13.6	14.2	0.7	28.2	4.3	0.3	32.5	9.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	12.9	1.4	7.2	20.6	2.2	3.5	12.7	5.0	4.8	16.2	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.6	46.3	32.3	62.5	49.1	24.3	83.0	41.5	19.3	86.3	47.3	31.4
LnGrp LOS	E	D	C	E	D	C	F	D	B	F	D	C
Approach Vol, veh/h		1138			1906			1332			1465	
Approach Delay, s/veh		49.3			50.7			39.3			47.9	
Approach LOS		D			D			D			D	

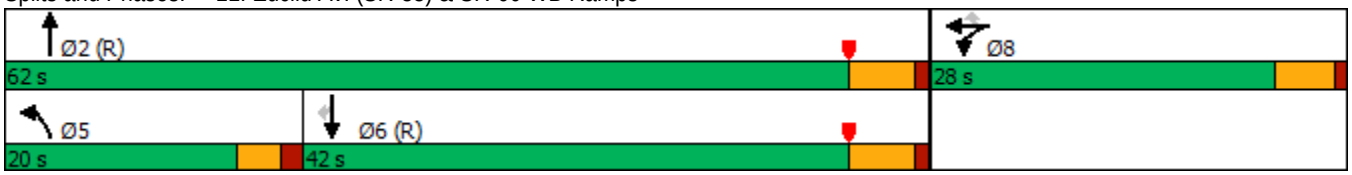
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	42.3	23.2	39.8	12.0	44.3	12.0	51.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	9.4	37.2	19.9	32.7	7.4	39.2	7.4	45.2
Max Q Clear Time (g_c+I1), s	10.3	30.5	18.4	29.7	8.2	36.8	8.2	45.0
Green Ext Time (p_c), s	0.0	3.7	0.2	1.6	0.0	1.7	0.0	0.1

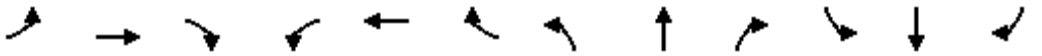
Intersection Summary	
HCM 6th Ctrl Delay	47.1
HCM 6th LOS	D

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	837	7	516	548	1184	1220	593
Future Volume (vph)	837	7	516	548	1184	1220	593
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	28.0	28.0	28.0	20.0	62.0	42.0	42.0
Total Split (%)	31.1%	31.1%	31.1%	22.2%	68.9%	46.7%	46.7%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	23.0	23.0	23.0	15.5	56.5	36.5	36.5
Actuated g/C Ratio	0.26	0.26	0.26	0.17	0.63	0.41	0.41
v/c Ratio	1.14	1.18	0.99	0.97	0.56	0.89	0.61
Control Delay	119.2	135.8	68.7	55.4	17.3	33.8	4.5
Queue Delay	0.0	0.0	0.0	0.0	2.7	0.1	0.0
Total Delay	119.2	135.8	68.7	55.4	20.1	33.9	4.5
LOS	F	F	E	E	C	C	A
Approach Delay		109.2			31.2	24.3	
Approach LOS		F			C	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 50.3	Intersection LOS: D
Intersection Capacity Utilization 150.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	837	7	516	548	1184	0	0	1220	593
Future Volume (veh/h)	0	0	0	837	7	516	548	1184	0	0	1220	593
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				995	0	222	583	1260	0	0	1298	403
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				925	0	411	605	2266	0	0	1464	653
Arrive On Green				0.26	0.00	0.26	0.34	1.00	0.00	0.00	0.41	0.41
Sat Flow, veh/h				3619	0	1610	3510	3705	0	0	3705	1610
Grp Volume(v), veh/h				995	0	222	583	1260	0	0	1298	403
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1805	0	0	1805	1610
Q Serve(g_s), s				23.0	0.0	10.7	14.7	0.0	0.0	0.0	30.0	17.9
Cycle Q Clear(g_c), s				23.0	0.0	10.7	14.7	0.0	0.0	0.0	30.0	17.9
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				925	0	411	605	2266	0	0	1464	653
V/C Ratio(X)				1.08	0.00	0.54	0.96	0.56	0.00	0.00	0.89	0.62
Avail Cap(c_a), veh/h				925	0	411	605	2266	0	0	1464	653
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.44	0.44	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.5	0.0	28.9	29.2	0.0	0.0	0.0	24.8	21.2
Incr Delay (d2), s/veh				52.2	0.0	0.8	16.4	0.4	0.0	0.0	8.3	4.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				16.0	0.0	4.0	6.0	0.1	0.0	0.0	13.3	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				85.7	0.0	29.7	45.6	0.4	0.0	0.0	33.1	25.5
LnGrp LOS				F	A	C	D	A	A	A	C	C
Approach Vol, veh/h					1217			1843			1701	
Approach Delay, s/veh					75.5			14.7			31.3	
Approach LOS					E			B			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		62.0			20.0	42.0		28.0				
Change Period (Y+Rc), s		5.5			4.5	5.5		5.0				
Max Green Setting (Gmax), s		56.5			15.5	36.5		23.0				
Max Q Clear Time (g_c+I1), s		2.0			16.7	32.0		25.0				
Green Ext Time (p_c), s		18.6			0.0	3.8		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			36.2									
HCM 6th LOS			D									

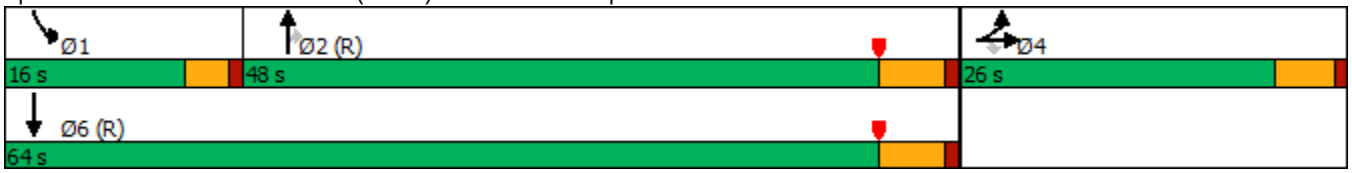
Notes

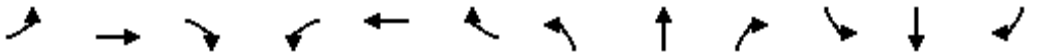
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	520	3	664	1211	867	459	1598
Future Volume (vph)	520	3	664	1211	867	459	1598
Turn Type	Split	NA	Perm	NA	Perm	Prot	NA
Protected Phases	4	4		2		1	6
Permitted Phases			4		2		
Detector Phase	4	4	4	2	2	1	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	26.0	26.0	26.0	48.0	48.0	16.0	64.0
Total Split (%)	28.9%	28.9%	28.9%	53.3%	53.3%	17.8%	71.1%
Yellow Time (s)	4.0	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	21.0	21.0	21.0	42.5	42.5	12.0	58.5
Actuated g/C Ratio	0.23	0.23	0.23	0.47	0.47	0.13	0.65
v/c Ratio	1.08	1.08	0.97	0.75	0.82	1.04	0.72
Control Delay	103.2	103.1	66.5	22.8	12.4	76.5	5.8
Queue Delay	8.5	6.9	0.0	0.0	0.0	0.0	2.6
Total Delay	111.7	110.1	66.5	22.8	12.4	76.5	8.5
LOS	F	F	E	C	B	E	A
Approach Delay		96.5		18.5			23.6
Approach LOS		F		B			C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 37.9	Intersection LOS: D
Intersection Capacity Utilization 150.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	520	3	664	0	0	0	0	1211	867	459	1598	0
Future Volume (veh/h)	520	3	664	0	0	0	0	1211	867	459	1598	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	764	0	414				0	1275	714	483	1682	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	844	0	376				0	1705	749	468	2346	0
Arrive On Green	0.23	0.00	0.23				0.00	0.47	0.47	0.27	1.00	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1586	3510	3705	0
Grp Volume(v), veh/h	764	0	414				0	1275	714	483	1682	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1586	1755	1805	0
Q Serve(g_s), s	18.5	0.0	21.0				0.0	25.9	38.9	12.0	0.0	0.0
Cycle Q Clear(g_c), s	18.5	0.0	21.0				0.0	25.9	38.9	12.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	844	0	376				0	1705	749	468	2347	0
V/C Ratio(X)	0.90	0.00	1.10				0.00	0.75	0.95	1.03	0.72	0.00
Avail Cap(c_a), veh/h	844	0	376				0	1705	749	468	2347	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.43	0.43	0.19	0.19	0.00
Uniform Delay (d), s/veh	33.5	0.0	34.5				0.0	19.4	22.8	33.0	0.0	0.0
Incr Delay (d2), s/veh	12.8	0.0	76.8				0.0	1.3	13.0	26.9	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	0.0	15.7				0.0	10.0	15.5	5.8	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.4	0.0	111.3				0.0	20.7	35.8	59.9	0.4	0.0
LnGrp LOS	D	A	F				A	C	D	F	A	A
Approach Vol, veh/h		1178						1989			2165	
Approach Delay, s/veh		69.2						26.1			13.7	
Approach LOS		E						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.0	48.0		26.0		64.0
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	12.0	42.5		21.0		58.5
Max Q Clear Time (g_c+I1), s	14.0	40.9		23.0		2.0
Green Ext Time (p_c), s	0.0	1.5		0.0		30.5

Intersection Summary		
HCM 6th Ctrl Delay		30.6
HCM 6th LOS		C

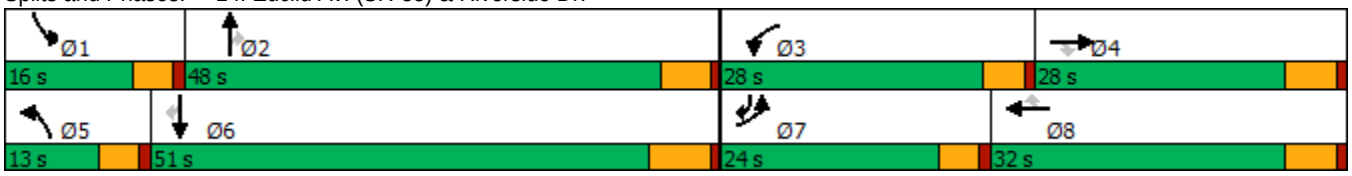
Notes

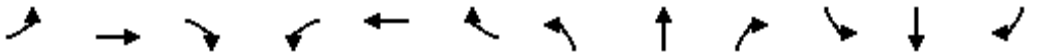
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	453	127	241	616	145	156	1329	201	219	1618	192
Future Volume (vph)	193	453	127	241	616	145	156	1329	201	219	1618	192
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	24.0	28.0	28.0	28.0	32.0	32.0	13.0	48.0	48.0	16.0	51.0	24.0
Total Split (%)	20.0%	23.3%	23.3%	23.3%	26.7%	26.7%	10.8%	40.0%	40.0%	13.3%	42.5%	20.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.4	-1.4	-0.6	-2.5	-0.6
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	None
Act Effct Green (s)	17.2	22.5	22.5	20.6	25.9	25.9	8.7	44.6	44.6	11.2	47.2	64.4
Actuated g/C Ratio	0.15	0.20	0.20	0.18	0.23	0.23	0.08	0.39	0.39	0.10	0.41	0.56
v/c Ratio	0.79	0.68	0.32	0.83	0.80	0.32	0.66	0.70	0.28	0.71	0.80	0.22
Control Delay	70.0	48.7	8.9	68.3	50.6	7.8	66.0	32.7	4.4	64.1	34.2	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.0	48.7	8.9	68.3	50.6	7.8	66.0	32.7	4.4	64.1	34.2	8.0
LOS	E	D	A	E	D	A	E	C	A	E	C	A
Approach Delay		47.5			48.7			32.4			35.0	
Approach LOS		D			D			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 38.4	Intersection LOS: D
Intersection Capacity Utilization 77.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	453	127	241	616	145	156	1329	201	219	1618	192
Future Volume (veh/h)	193	453	127	241	616	145	156	1329	201	219	1618	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	203	477	118	254	648	124	164	1399	172	231	1703	143
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	239	695	310	290	802	358	237	2042	634	305	2199	879
Arrive On Green	0.14	0.19	0.19	0.17	0.22	0.22	0.07	0.39	0.39	0.09	0.42	0.41
Sat Flow, veh/h	1714	3610	1610	1714	3610	1610	3326	5187	1610	3326	5187	1609
Grp Volume(v), veh/h	203	477	118	254	648	124	164	1399	172	231	1703	143
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1714	1805	1610	1663	1729	1610	1663	1729	1609
Q Serve(g_s), s	12.9	13.7	7.1	16.2	19.0	7.3	5.4	25.0	8.1	7.6	31.5	4.9
Cycle Q Clear(g_c), s	12.9	13.7	7.1	16.2	19.0	7.3	5.4	25.0	8.1	7.6	31.5	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	239	695	310	290	802	358	237	2042	634	305	2199	879
V/C Ratio(X)	0.85	0.69	0.38	0.88	0.81	0.35	0.69	0.69	0.27	0.76	0.77	0.16
Avail Cap(c_a), veh/h	307	775	346	368	904	403	268	2042	634	357	2199	879
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.9	42.0	39.3	45.3	41.2	36.6	50.7	28.1	23.0	49.6	27.6	12.6
Incr Delay (d2), s/veh	13.3	2.2	0.8	14.8	5.0	0.6	4.7	1.9	1.1	6.1	2.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	6.1	2.8	7.8	8.7	2.8	2.3	9.8	3.1	3.3	12.9	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.3	44.2	40.1	60.1	46.2	37.2	55.4	30.0	24.1	55.7	30.4	13.0
LnGrp LOS	E	D	D	E	D	D	E	C	C	E	C	B
Approach Vol, veh/h		798			1026			1735			2077	
Approach Delay, s/veh		47.7			48.6			31.8			32.0	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	49.1	22.9	25.5	12.0	51.4	19.6	28.8
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	11.4	* 43	23.4	22.2	8.4	44.5	19.4	26.2
Max Q Clear Time (g_c+I1), s	9.6	27.0	18.2	15.7	7.4	33.5	14.9	21.0
Green Ext Time (p_c), s	0.1	8.3	0.2	1.8	0.0	8.0	0.1	2.0

Intersection Summary	
HCM 6th Ctrl Delay	37.2
HCM 6th LOS	D

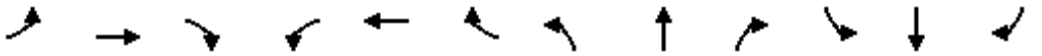
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	131	243	62	105	285	67	1429	180	70	1752	116
Future Volume (vph)	131	243	62	105	285	67	1429	180	70	1752	116
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	49.0	49.0	49.0	49.0	49.0	13.0	56.2	56.2	14.8	58.0	58.0
Total Split (%)	40.8%	40.8%	40.8%	40.8%	40.8%	10.8%	46.8%	46.8%	12.3%	48.3%	48.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-1.8	-1.8	-1.8	-0.6	-1.2	-1.2	-0.6	-2.5	-2.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	30.6	30.6	30.6	30.6	30.6	8.0	54.4	54.4	8.8	55.2	55.2
Actuated g/C Ratio	0.30	0.30	0.30	0.30	0.30	0.08	0.53	0.53	0.09	0.53	0.53
v/c Ratio	1.06	0.46	0.13	0.49	0.71	0.54	0.56	0.22	0.51	0.67	0.14
Control Delay	132.1	32.2	5.5	37.6	38.6	65.7	20.2	12.1	61.9	21.9	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	132.1	32.2	5.5	37.6	38.6	65.7	20.2	12.1	61.9	21.9	5.0
LOS	F	C	A	D	D	E	C	B	E	C	A
Approach Delay		58.3			38.3		21.2			22.4	
Approach LOS		E			D		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.5	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 27.1	Intersection LOS: C
Intersection Capacity Utilization 79.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	243	62	105	285	80	67	1429	180	70	1752	116
Future Volume (veh/h)	131	243	62	105	285	80	67	1429	180	70	1752	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	139	259	50	112	303	73	71	1520	167	74	1864	92
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	245	657	556	329	510	123	99	2460	764	103	2532	770
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.33	0.06	0.47	0.47	0.06	0.49	0.49
Sat Flow, veh/h	1023	1900	1609	1087	1475	355	1714	5187	1610	1714	5187	1577
Grp Volume(v), veh/h	139	259	50	112	0	376	71	1520	167	74	1864	92
Grp Sat Flow(s),veh/h/ln	1023	1900	1609	1087	0	1831	1714	1729	1610	1714	1729	1577
Q Serve(g_s), s	14.3	11.4	2.3	9.6	0.0	18.8	4.5	24.1	6.7	4.7	31.8	3.5
Cycle Q Clear(g_c), s	33.1	11.4	2.3	21.0	0.0	18.8	4.5	24.1	6.7	4.7	31.8	3.5
Prop In Lane	1.00		1.00	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	245	657	556	329	0	633	99	2460	764	103	2532	770
V/C Ratio(X)	0.57	0.39	0.09	0.34	0.00	0.59	0.72	0.62	0.22	0.72	0.74	0.12
Avail Cap(c_a), veh/h	308	773	654	395	0	745	139	2460	764	167	2532	770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.4	27.4	24.4	35.4	0.0	30.0	51.2	21.6	17.1	51.1	22.6	15.4
Incr Delay (d2), s/veh	2.1	0.4	0.1	0.6	0.0	0.9	4.4	1.2	0.7	3.5	2.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	5.0	0.9	2.5	0.0	8.0	2.0	9.0	2.4	2.0	11.8	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.5	27.8	24.5	36.0	0.0	30.9	55.6	22.8	17.7	54.6	24.6	15.7
LnGrp LOS	D	C	C	D	A	C	E	C	B	D	C	B
Approach Vol, veh/h		448			488			1758			2030	
Approach Delay, s/veh		32.9			32.1			23.6			25.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.6	57.8		42.2	10.4	58.0		42.2				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	10.2	* 51		43.2	8.4	51.5		43.2				
Max Q Clear Time (g_c+I1), s	6.7	26.1		35.1	6.5	33.8		23.0				
Green Ext Time (p_c), s	0.0	11.7		1.4	0.0	11.6		2.5				

Intersection Summary			
HCM 6th Ctrl Delay		26.1	
HCM 6th LOS		C	

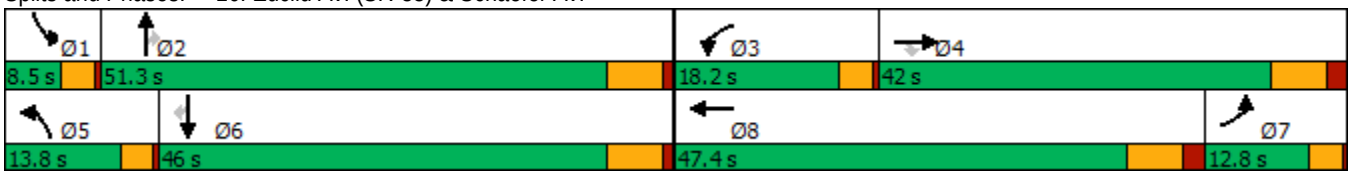
Notes

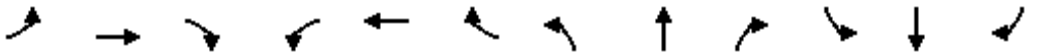
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	193	92	97	177	377	229	1391	44	39	1654	457
Future Volume (vph)	193	92	97	177	377	229	1391	44	39	1654	457
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	12.8	42.0	42.0	18.2	47.4	13.8	51.3	51.3	8.5	46.0	46.0
Total Split (%)	10.7%	35.0%	35.0%	15.2%	39.5%	11.5%	42.8%	42.8%	7.1%	38.3%	38.3%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.5	-3.0	-3.0	0.5	-3.0	0.5	-2.0	-2.0	0.5	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	8.7	36.6	36.6	14.1	41.9	9.8	49.1	49.1	4.5	42.0	42.0
Actuated g/C Ratio	0.07	0.31	0.31	0.12	0.35	0.08	0.41	0.41	0.04	0.35	0.35
v/c Ratio	0.85	0.17	0.18	0.94	0.93	0.90	0.70	0.06	0.33	0.97	0.67
Control Delay	84.6	30.7	4.2	101.5	57.9	88.1	31.4	0.2	63.7	52.4	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.6	30.7	4.2	101.5	57.9	88.1	31.4	0.2	63.7	52.4	19.5
LOS	F	C	A	F	E	F	C	A	E	D	B
Approach Delay		51.2			68.3		38.4			45.7	
Approach LOS		D			E		D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.5	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 47.0	Intersection LOS: D
Intersection Capacity Utilization 89.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	92	97	177	377	186	229	1391	44	39	1654	457
Future Volume (veh/h)	193	92	97	177	377	186	229	1391	44	39	1654	457
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	208	99	85	190	405	198	246	1496	37	42	1778	457
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	237	638	541	197	423	207	264	2036	632	89	1764	547
Arrive On Green	0.07	0.34	0.34	0.11	0.35	0.33	0.08	0.39	0.39	0.03	0.34	0.34
Sat Flow, veh/h	3326	1900	1610	1714	1204	588	3326	5187	1610	3326	5187	1607
Grp Volume(v), veh/h	208	99	85	190	0	603	246	1496	37	42	1778	457
Grp Sat Flow(s),veh/h/ln	1663	1900	1610	1714	0	1792	1663	1729	1610	1663	1729	1607
Q Serve(g_s), s	7.7	4.5	4.6	13.6	0.0	40.6	9.1	30.4	1.8	1.5	42.0	22.7
Cycle Q Clear(g_c), s	7.7	4.5	4.6	13.6	0.0	40.6	9.1	30.4	1.8	1.5	42.0	22.7
Prop In Lane	1.00		1.00	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	237	638	541	197	0	630	264	2036	632	89	1764	547
V/C Ratio(X)	0.88	0.16	0.16	0.96	0.00	0.96	0.93	0.73	0.06	0.47	1.01	0.84
Avail Cap(c_a), veh/h	237	638	541	197	0	630	264	2036	632	121	1764	547
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.8	28.7	28.7	54.4	0.0	39.6	56.5	32.0	23.3	59.2	40.8	18.5
Incr Delay (d2), s/veh	28.0	0.1	0.1	53.2	0.0	25.6	37.1	1.4	0.0	1.4	23.4	10.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	2.0	1.7	8.6	0.0	21.6	5.0	12.1	0.7	0.6	20.4	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	84.8	28.8	28.8	107.6	0.0	65.2	93.6	33.4	23.4	60.7	64.1	29.4
LnGrp LOS	F	C	C	F	A	E	F	C	C	E	F	C
Approach Vol, veh/h		392			793			1779			2277	
Approach Delay, s/veh		58.5			75.4			41.5			57.1	
Approach LOS		E			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	52.5	18.2	45.5	13.8	46.0	16.3	47.4
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	7.0	* 7
Max Green Setting (Gmax), s	5.0	45.3	14.7	35.0	10.3	40.0	9.3	* 40
Max Q Clear Time (g_c+I1), s	3.5	32.4	15.6	6.6	11.1	44.0	9.7	42.6
Green Ext Time (p_c), s	0.0	7.5	0.0	0.6	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	54.7
HCM 6th LOS	D

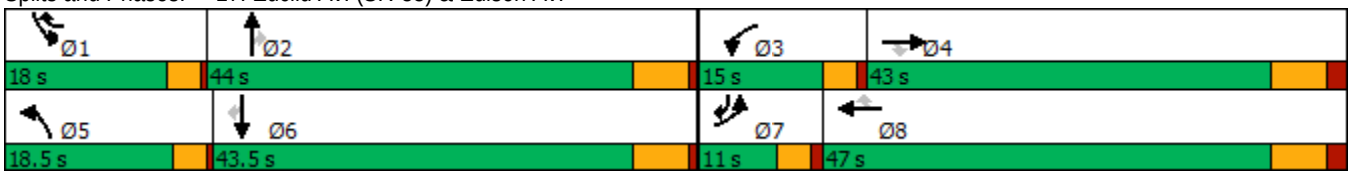
Notes

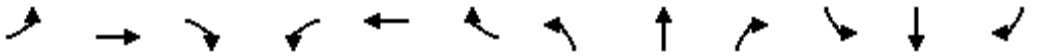
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	967	162	210	1120	335	282	1292	152	282	1433	211
Future Volume (vph)	196	967	162	210	1120	335	282	1292	152	282	1433	211
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	1	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	39.5	39.5	9.0	43.0	8.5	8.5	29.0	29.0	8.5	38.5	9.0
Total Split (s)	11.0	43.0	43.0	15.0	47.0	18.0	18.5	44.0	44.0	18.0	43.5	11.0
Total Split (%)	9.2%	35.8%	35.8%	12.5%	39.2%	15.0%	15.4%	36.7%	36.7%	15.0%	36.3%	9.2%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	3.0	5.0	5.0	3.0	5.0	3.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	-3.0	-3.0	0.0	-3.0	0.5	0.5	-2.0	-2.0	0.5	-2.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	None
Act Effct Green (s)	7.0	38.6	38.6	10.5	42.1	55.0	13.4	39.0	39.0	12.9	38.5	45.5
Actuated g/C Ratio	0.06	0.33	0.33	0.09	0.36	0.47	0.11	0.33	0.33	0.11	0.33	0.39
v/c Ratio	1.09	0.59	0.26	0.78	0.90	0.44	0.82	0.78	0.26	0.81	0.84	0.33
Control Delay	143.7	34.7	5.4	71.9	46.2	16.8	70.1	39.2	12.0	68.7	41.8	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	143.7	34.7	5.4	71.9	46.2	16.8	70.1	39.2	12.0	68.7	41.8	17.1
LOS	F	C	A	E	D	B	E	D	B	E	D	B
Approach Delay		47.2			43.5			41.8			43.0	
Approach LOS		D			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.1	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 43.7	Intersection LOS: D
Intersection Capacity Utilization 87.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	967	162	210	1120	335	282	1292	152	282	1433	211
Future Volume (veh/h)	196	967	162	210	1120	335	282	1292	152	282	1433	211
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1700	1900	1900	1700	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	204	1007	114	219	1167	344	294	1346	150	294	1493	169
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	191	1766	548	271	1321	703	334	1727	536	337	1776	591
Arrive On Green	0.06	0.34	0.34	0.09	0.37	0.34	0.11	0.33	0.33	0.10	0.33	0.31
Sat Flow, veh/h	3141	5187	1609	3141	3610	1609	3141	5187	1610	3326	5415	1587
Grp Volume(v), veh/h	204	1007	114	219	1167	344	294	1346	150	294	1493	169
Grp Sat Flow(s),veh/h/ln	1570	1729	1609	1570	1805	1609	1570	1729	1610	1663	1805	1587
Q Serve(g_s), s	7.0	18.3	5.8	7.9	34.9	17.6	10.6	26.9	7.9	10.0	29.5	8.6
Cycle Q Clear(g_c), s	7.0	18.3	5.8	7.9	34.9	17.6	10.6	26.9	7.9	10.0	29.5	8.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	191	1766	548	271	1321	703	334	1727	536	337	1776	591
V/C Ratio(X)	1.07	0.57	0.21	0.81	0.88	0.49	0.88	0.78	0.28	0.87	0.84	0.29
Avail Cap(c_a), veh/h	191	1766	548	300	1347	715	395	1801	559	404	1857	614
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.1	31.1	27.0	51.7	34.2	23.2	50.7	34.6	28.3	51.0	35.9	25.5
Incr Delay (d2), s/veh	84.6	0.4	0.2	12.4	7.2	0.5	16.0	2.2	0.3	14.5	3.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	7.4	2.2	3.5	15.7	6.4	4.7	10.9	3.0	4.7	12.6	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	138.7	31.5	27.1	64.1	41.4	23.8	66.7	36.8	28.5	65.5	39.5	25.7
LnGrp LOS	F	C	C	E	D	C	E	D	C	E	D	C
Approach Vol, veh/h		1325			1730			1790			1956	
Approach Delay, s/veh		47.7			40.8			41.0			42.2	
Approach LOS		D			D			D			D	

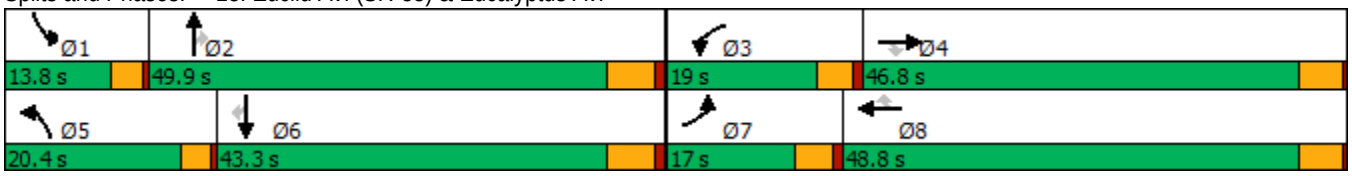
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	42.4	13.9	43.2	16.3	41.8	11.0	46.2
Change Period (Y+Rc), s	3.5	6.0	4.0	7.0	3.5	6.0	4.0	7.0
Max Green Setting (Gmax), s	14.5	38.0	11.0	36.0	15.0	37.5	7.0	40.0
Max Q Clear Time (g_c+I1), s	12.0	28.9	9.9	20.3	12.6	31.5	9.0	36.9
Green Ext Time (p_c), s	0.1	5.5	0.0	6.1	0.1	4.3	0.0	2.3

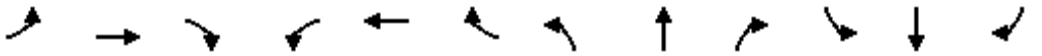
Intersection Summary	
HCM 6th Ctrl Delay	42.6
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	41	205	385	194	187	221	1533	133	113	1587	51
Future Volume (vph)	84	41	205	385	194	187	221	1533	133	113	1587	51
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	46.8	46.8	9.5	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	17.0	46.8	46.8	19.0	48.8	48.8	20.4	49.9	49.9	13.8	43.3	43.3
Total Split (%)	13.1%	36.1%	36.1%	14.7%	37.7%	37.7%	15.8%	38.5%	38.5%	10.7%	33.4%	33.4%
Yellow Time (s)	3.5	4.3	4.3	3.5	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	1.0	0.5	0.5	1.0	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	-0.5	-0.8	-0.8	-0.5	-0.8	-0.8	0.5	-1.7	-1.7	0.5	-1.7	-1.7
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	10.5	15.5	15.5	15.2	22.7	22.7	16.6	46.8	46.8	9.8	39.9	39.9
Actuated g/C Ratio	0.10	0.15	0.15	0.15	0.22	0.22	0.16	0.45	0.45	0.09	0.39	0.39
v/c Ratio	0.50	0.15	0.50	0.81	0.47	0.38	0.82	0.67	0.18	0.71	0.81	0.08
Control Delay	56.9	36.4	8.8	57.9	39.7	6.8	68.0	26.0	10.0	72.2	33.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.9	36.4	8.8	57.9	39.7	6.8	68.0	26.0	10.0	72.2	33.9	0.2
LOS	E	D	A	E	D	A	E	C	B	E	C	A
Approach Delay		24.5			40.8			29.8			35.4	
Approach LOS		C			D			C			D	

Intersection Summary	
Cycle Length: 129.5	
Actuated Cycle Length: 103.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 33.3	Intersection LOS: C
Intersection Capacity Utilization 72.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	41	205	385	194	187	221	1533	133	113	1587	51
Future Volume (veh/h)	84	41	205	385	194	187	221	1533	133	113	1587	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	86	42	123	393	198	183	226	1564	135	115	1619	41
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	120	212	179	492	361	306	254	2463	765	134	2102	652
Arrive On Green	0.07	0.11	0.11	0.15	0.19	0.19	0.15	0.47	0.47	0.08	0.41	0.41
Sat Flow, veh/h	1714	1900	1610	3326	1900	1610	1714	5187	1610	1714	5187	1608
Grp Volume(v), veh/h	86	42	123	393	198	183	226	1564	135	115	1619	41
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1663	1900	1610	1714	1729	1610	1714	1729	1608
Q Serve(g_s), s	4.2	1.7	6.3	9.8	8.1	8.9	11.1	19.4	4.1	5.7	23.1	1.3
Cycle Q Clear(g_c), s	4.2	1.7	6.3	9.8	8.1	8.9	11.1	19.4	4.1	5.7	23.1	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	120	212	179	492	361	306	254	2463	765	134	2102	652
V/C Ratio(X)	0.72	0.20	0.69	0.80	0.55	0.60	0.89	0.63	0.18	0.86	0.77	0.06
Avail Cap(c_a), veh/h	261	951	806	584	996	844	329	2785	865	197	2385	739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.9	34.5	36.5	35.2	31.3	31.7	35.7	16.9	12.9	38.9	22.0	15.5
Incr Delay (d2), s/veh	7.8	0.3	3.4	6.6	1.0	1.4	19.6	0.4	0.1	18.7	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.8	2.5	4.2	3.6	3.4	5.6	6.4	1.3	2.9	8.2	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.8	34.8	40.0	41.7	32.3	33.1	55.3	17.3	13.0	57.6	23.4	15.6
LnGrp LOS	D	C	D	D	C	C	E	B	B	E	C	B
Approach Vol, veh/h		251			774			1925			1775	
Approach Delay, s/veh		41.4			37.3			21.4			25.4	
Approach LOS		D			D			C			C	

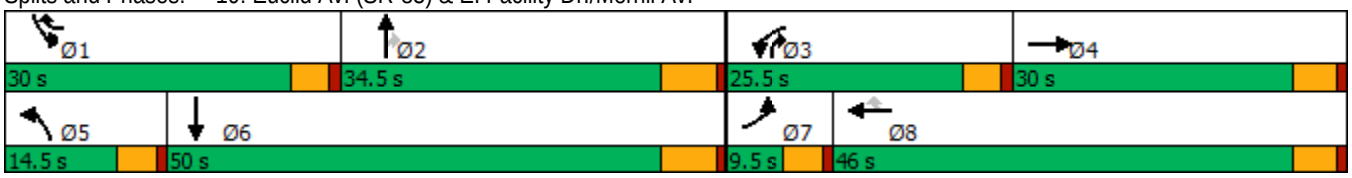
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	44.6	16.7	13.5	16.7	38.6	10.0	20.2
Change Period (Y+Rc), s	3.5	5.7	4.5	4.8	3.5	5.7	4.5	4.8
Max Green Setting (Gmax), s	10.3	44.2	14.5	42.0	16.9	37.6	12.5	44.0
Max Q Clear Time (g_c+I1), s	7.7	21.4	11.8	8.3	13.1	25.1	6.2	10.9
Green Ext Time (p_c), s	0.0	11.4	0.4	0.4	0.2	7.9	0.1	1.2

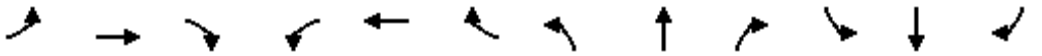
Intersection Summary	
HCM 6th Ctrl Delay	26.6
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	10	10	387	60	458	13	1428	440	364	1764
Future Volume (vph)	10	10	387	60	458	13	1428	440	364	1764
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4	3	8	1	5	2	3	1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	1	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	15.0	10.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	9.5	10.0	9.5	46.0	14.5	14.5	28.0	9.5	14.5	28.0
Total Split (s)	9.5	30.0	25.5	46.0	30.0	14.5	34.5	25.5	30.0	50.0
Total Split (%)	7.9%	25.0%	21.3%	38.3%	25.0%	12.1%	28.8%	21.3%	25.0%	41.7%
Yellow Time (s)	3.5	4.0	3.5	4.0	3.5	3.5	5.0	3.5	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.5	-1.0	-0.5	-1.0	-0.5	-0.5	-2.0	-0.5	-0.5	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.6	9.5	18.4	25.8	56.3	10.7	31.0	53.4	26.4	59.2
Actuated g/C Ratio	0.06	0.10	0.19	0.27	0.58	0.11	0.32	0.55	0.27	0.61
v/c Ratio	0.10	0.17	0.64	0.12	0.48	0.07	0.89	0.46	0.80	0.59
Control Delay	52.2	23.2	42.9	26.6	10.1	46.0	40.7	9.8	50.0	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.2	23.2	42.9	26.6	10.1	46.0	40.7	9.8	50.0	16.5
LOS	D	C	D	C	B	D	D	A	D	B
Approach Delay		30.1		25.2			33.5			22.1
Approach LOS		C		C			C			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 27.0	Intersection LOS: C
Intersection Capacity Utilization 77.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	21	387	60	458	13	1428	440	364	1764	49
Future Volume (veh/h)	10	10	21	387	60	458	13	1428	440	364	1764	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	10	10	21	399	62	445	13	1472	411	375	1819	37
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	30	58	123	506	459	770	62	1692	744	414	2781	57
Arrive On Green	0.02	0.11	0.10	0.15	0.24	0.24	0.04	0.33	0.31	0.24	0.53	0.51
Sat Flow, veh/h	1714	546	1147	3326	1900	1610	1714	5187	1610	1714	5230	106
Grp Volume(v), veh/h	10	0	31	399	62	445	13	1472	411	375	1202	654
Grp Sat Flow(s),veh/h/ln	1714	0	1694	1663	1900	1610	1714	1729	1610	1714	1729	1878
Q Serve(g_s), s	0.5	0.0	1.6	10.7	2.4	18.5	0.7	24.7	17.1	19.7	23.1	23.2
Cycle Q Clear(g_c), s	0.5	0.0	1.6	10.7	2.4	18.5	0.7	24.7	17.1	19.7	23.1	23.2
Prop In Lane	1.00		0.68	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	30	0	181	506	459	770	62	1692	744	414	1839	999
V/C Ratio(X)	0.33	0.00	0.17	0.79	0.14	0.58	0.21	0.87	0.55	0.90	0.65	0.65
Avail Cap(c_a), veh/h	102	0	476	772	862	1111	194	1709	750	481	1839	999
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.9	0.0	37.9	37.8	27.5	17.4	43.3	29.3	18.0	34.1	15.6	15.6
Incr Delay (d2), s/veh	6.2	0.0	0.2	3.1	0.0	0.3	0.6	5.1	0.9	17.4	0.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.7	4.3	1.0	6.0	0.3	9.9	5.7	9.4	7.6	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.2	0.0	38.1	40.9	27.6	17.7	44.0	34.5	18.8	51.5	16.4	17.2
LnGrp LOS	D	A	D	D	C	B	D	C	B	D	B	B
Approach Vol, veh/h		41			906			1896			2231	
Approach Delay, s/veh		41.3			28.6			31.1			22.5	
Approach LOS		D			C			C			C	

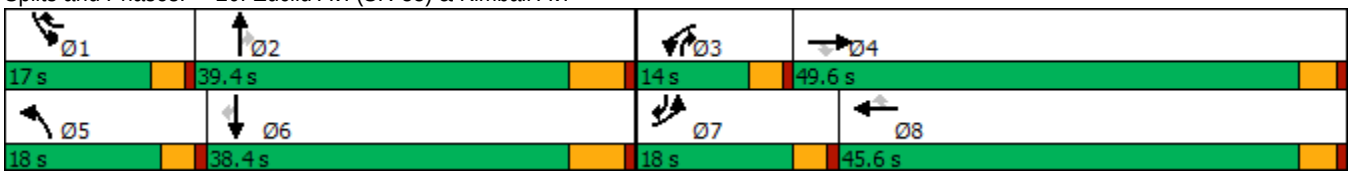
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.4	34.2	18.1	13.9	7.3	53.2	5.6	26.4
Change Period (Y+Rc), s	4.5	6.0	4.5	5.0	4.5	6.0	4.5	5.0
Max Green Setting (Gmax), s	25.5	28.5	21.0	25.0	10.0	44.0	5.0	41.0
Max Q Clear Time (g_c+I1), s	21.7	26.7	12.7	3.6	2.7	25.2	2.5	20.5
Green Ext Time (p_c), s	0.2	1.5	0.9	0.1	0.0	11.2	0.0	0.9

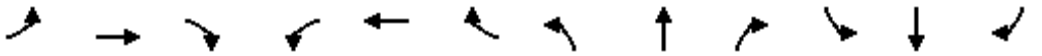
Intersection Summary	
HCM 6th Ctrl Delay	27.0
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	212	322	109	226	941	418	178	1232	68	280	1272	483
Future Volume (vph)	212	322	109	226	941	418	178	1232	68	280	1272	483
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	49.5	49.5	14.0	45.5	9.0	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	18.0	49.6	49.6	14.0	45.6	17.0	18.0	39.4	14.0	17.0	38.4	18.0
Total Split (%)	15.0%	41.3%	41.3%	11.7%	38.0%	14.2%	15.0%	32.8%	11.7%	14.2%	32.0%	15.0%
Yellow Time (s)	3.0	3.5	3.5	3.0	3.5	3.0	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-0.5	-0.5	0.0	-0.5	0.0	0.0	-2.0	0.0	0.0	-2.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	12.0	36.3	36.3	10.1	34.4	50.9	13.7	34.6	48.7	12.5	33.4	45.4
Actuated g/C Ratio	0.11	0.33	0.33	0.09	0.31	0.46	0.12	0.32	0.44	0.11	0.30	0.41
v/c Ratio	0.63	0.28	0.18	0.76	0.85	0.54	0.85	0.77	0.09	0.80	0.82	0.71
Control Delay	56.9	27.3	5.3	66.9	43.4	20.6	82.3	38.6	5.4	66.3	41.5	28.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.9	27.3	5.3	66.9	43.4	20.6	82.3	38.6	5.4	66.3	41.5	28.6
LOS	E	C	A	E	D	C	F	D	A	E	D	C
Approach Delay		33.3			40.8			42.4			41.8	
Approach LOS		C			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 40.7	Intersection LOS: D
Intersection Capacity Utilization 82.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	322	109	226	941	418	178	1232	68	280	1272	483
Future Volume (veh/h)	212	322	109	226	941	418	178	1232	68	280	1272	483
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1800	1900	1900	1800	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	216	329	102	231	960	391	182	1257	57	286	1298	364
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	303	1132	505	321	1132	673	211	1689	649	344	1619	621
Arrive On Green	0.10	0.31	0.31	0.10	0.31	0.31	0.12	0.33	0.31	0.11	0.31	0.29
Sat Flow, veh/h	3141	3610	1610	3326	3610	1610	1714	5187	1610	3141	5187	1590
Grp Volume(v), veh/h	216	329	102	231	960	391	182	1257	57	286	1298	364
Grp Sat Flow(s),veh/h/ln	1570	1805	1610	1663	1805	1610	1714	1729	1610	1570	1729	1590
Q Serve(g_s), s	6.9	7.1	4.8	7.0	25.7	19.3	10.8	22.3	2.3	9.2	23.7	18.8
Cycle Q Clear(g_c), s	6.9	7.1	4.8	7.0	25.7	19.3	10.8	22.3	2.3	9.2	23.7	18.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	303	1132	505	321	1132	673	211	1689	649	344	1619	621
V/C Ratio(X)	0.71	0.29	0.20	0.72	0.85	0.58	0.86	0.74	0.09	0.83	0.80	0.59
Avail Cap(c_a), veh/h	425	1592	710	322	1453	817	232	1776	676	395	1726	654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.3	26.8	26.0	45.3	33.2	23.1	44.5	31.0	19.1	45.1	32.6	25.0
Incr Delay (d2), s/veh	1.4	0.1	0.2	6.6	3.2	0.3	23.4	1.7	0.1	11.1	2.7	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	2.9	1.8	3.1	11.1	6.8	5.7	8.8	0.8	3.9	9.5	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.7	26.9	26.2	51.9	36.4	23.4	67.8	32.7	19.2	56.2	35.3	26.3
LnGrp LOS	D	C	C	D	D	C	E	C	B	E	D	C
Approach Vol, veh/h		647			1582			1496			1948	
Approach Delay, s/veh		33.4			35.4			36.4			36.7	
Approach LOS		C			D			D			D	

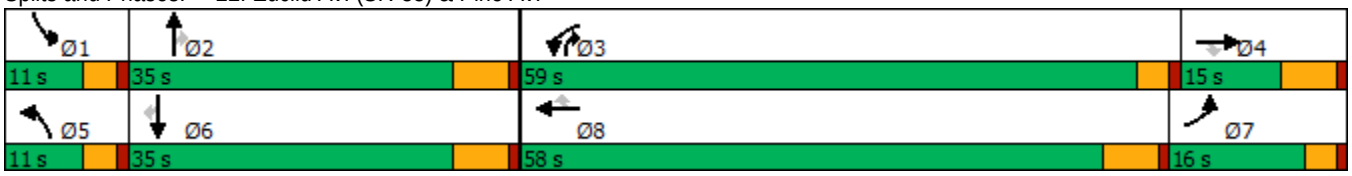
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	37.7	14.0	36.4	16.7	36.3	14.0	36.4
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	13.0	33.4	10.0	45.1	14.0	32.4	14.0	41.1
Max Q Clear Time (g_c+I1), s	11.2	24.3	9.0	9.1	12.8	25.7	8.9	27.7
Green Ext Time (p_c), s	0.1	5.0	0.0	2.4	0.0	4.5	0.2	4.2

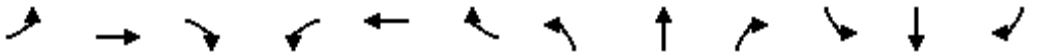
Intersection Summary	
HCM 6th Ctrl Delay	35.9
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	303	204	829	980	341	171	877	214	163	1031	130
Future Volume (vph)	84	303	204	829	980	341	171	877	214	163	1031	130
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	11.0	11.0	9.0	38.0	38.0	9.0	33.0	9.0	9.0	33.0	33.0
Total Split (s)	16.0	15.0	15.0	59.0	58.0	58.0	11.0	35.0	59.0	11.0	35.0	35.0
Total Split (%)	13.3%	12.5%	12.5%	49.2%	48.3%	48.3%	9.2%	29.2%	49.2%	9.2%	29.2%	29.2%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	3.0	3.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-2.0	-2.0	0.0	-2.0	-2.0	0.0	-2.0	0.0	0.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	9.6	24.3	24.3	37.3	54.4	54.4	7.1	28.6	65.9	7.1	28.6	28.6
Actuated g/C Ratio	0.08	0.21	0.21	0.33	0.48	0.48	0.06	0.25	0.58	0.06	0.25	0.25
v/c Ratio	0.60	0.40	0.46	0.83	0.58	0.39	0.85	0.69	0.13	0.82	0.81	0.26
Control Delay	69.3	42.5	19.2	42.6	24.4	7.8	88.7	42.0	5.9	83.5	46.1	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.3	42.5	19.2	42.6	24.4	7.8	88.7	42.0	5.9	83.5	46.1	7.3
LOS	E	D	B	D	C	A	F	D	A	F	D	A
Approach Delay		38.3			28.8			42.2			46.9	
Approach LOS		D			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 37.5	Intersection LOS: D
Intersection Capacity Utilization 73.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	303	204	829	980	341	171	877	214	163	1031	130
Future Volume (veh/h)	84	303	204	829	980	341	171	877	214	163	1031	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	87	312	0	855	1010	350	176	904	-35	168	1063	130
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	109	928		927	1701	759	203	1283	1487	203	1283	398
Arrive On Green	0.06	0.26	0.00	0.30	0.47	0.47	0.06	0.25	0.00	0.06	0.25	0.25
Sat Flow, veh/h	1714	3610	1610	3141	3610	1610	3326	5187	2834	3326	5187	1610
Grp Volume(v), veh/h	87	312	0	855	1010	350	176	904	-35	168	1063	130
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1570	1805	1610	1663	1729	1417	1663	1729	1610
Q Serve(g_s), s	5.7	8.1	0.0	30.2	23.5	11.6	6.0	18.2	0.0	5.7	22.2	5.7
Cycle Q Clear(g_c), s	5.7	8.1	0.0	30.2	23.5	11.6	6.0	18.2	0.0	5.7	22.2	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	109	928		927	1701	759	203	1283	1487	203	1283	398
V/C Ratio(X)	0.80	0.34		0.92	0.59	0.46	0.87	0.70	-0.02	0.83	0.83	0.33
Avail Cap(c_a), veh/h	179	928		1507	1701	759	203	1403	1553	203	1403	435
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.9	34.6	0.0	39.1	22.3	9.7	53.3	39.3	0.0	53.2	40.8	20.0
Incr Delay (d2), s/veh	5.0	1.0	0.0	4.2	1.5	2.0	29.2	1.1	0.0	22.5	3.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	3.6	0.0	11.5	9.5	3.9	3.2	7.4	0.0	2.9	9.3	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.9	35.6	0.0	43.3	23.8	11.7	82.6	40.5	0.0	75.7	44.4	20.2
LnGrp LOS	E	D		D	C	B	F	D	A	E	D	C
Approach Vol, veh/h		399	A		2215			1045			1361	
Approach Delay, s/veh		40.5			29.4			48.9			46.0	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	32.3	37.8	33.5	11.0	32.3	13.3	58.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	6.0	* 6
Max Green Setting (Gmax), s	7.0	29.0	55.0	9.0	7.0	29.0	12.0	* 52
Max Q Clear Time (g_c+I1), s	7.7	20.2	32.2	10.1	8.0	24.2	7.7	25.5
Green Ext Time (p_c), s	0.0	2.5	1.6	0.0	0.0	2.1	0.0	12.4

Intersection Summary	
HCM 6th Ctrl Delay	38.9
HCM 6th LOS	D

Notes

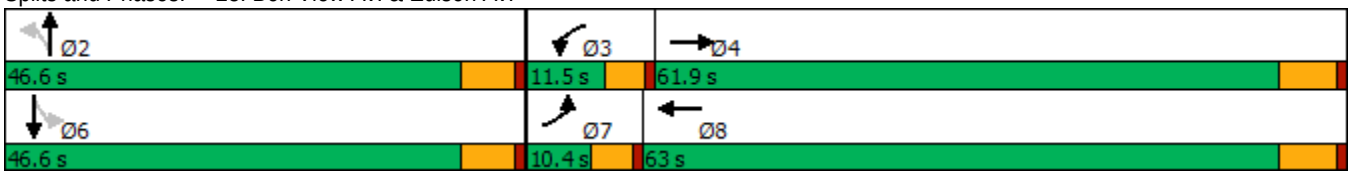
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

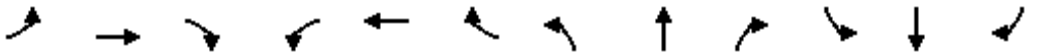
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	61	1758	51	2281	297	95	23	132
Future Volume (vph)	61	1758	51	2281	297	95	23	132
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	27.8	27.8	27.8	27.8
Total Split (s)	10.4	61.9	11.5	63.0	46.6	46.6	46.6	46.6
Total Split (%)	8.7%	51.6%	9.6%	52.5%	38.8%	38.8%	38.8%	38.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	5.8	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.8	58.2	6.5	56.8	39.3	39.3	39.3	39.3
Actuated g/C Ratio	0.05	0.49	0.05	0.48	0.33	0.33	0.33	0.33
v/c Ratio	0.80	0.81	0.59	1.01	0.97	0.33	0.07	0.33
Control Delay	110.4	29.5	80.2	51.0	81.7	24.4	27.7	28.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	110.4	29.5	80.2	51.0	81.7	24.4	27.7	28.4
LOS	F	C	F	D	F	C	C	C
Approach Delay		32.0		51.6		59.5		28.3
Approach LOS		C		D		E		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.6	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 43.8	Intersection LOS: D
Intersection Capacity Utilization 95.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 23: Bon View Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	1758	114	51	2281	20	297	95	93	23	132	55
Future Volume (veh/h)	61	1758	114	51	2281	20	297	95	93	23	132	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	66	1911	124	55	2479	22	323	103	101	25	143	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	83	2394	155	70	2510	22	367	299	294	362	432	181
Arrive On Green	0.05	0.48	0.48	0.04	0.47	0.47	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1714	4978	322	1714	5303	47	1198	881	864	1197	1271	533
Grp Volume(v), veh/h	66	1326	709	55	1615	886	323	0	204	25	0	203
Grp Sat Flow(s),veh/h/ln	1714	1729	1842	1714	1729	1892	1198	0	1745	1197	0	1804
Q Serve(g_s), s	4.6	38.7	39.0	3.8	55.4	55.6	30.8	0.0	10.5	1.9	0.0	10.0
Cycle Q Clear(g_c), s	4.6	38.7	39.0	3.8	55.4	55.6	40.8	0.0	10.5	12.4	0.0	10.0
Prop In Lane	1.00		0.17	1.00		0.02	1.00		0.50	1.00		0.30
Lane Grp Cap(c), veh/h	83	1663	886	70	1637	895	367	0	593	362	0	613
V/C Ratio(X)	0.80	0.80	0.80	0.79	0.99	0.99	0.88	0.00	0.34	0.07	0.00	0.33
Avail Cap(c_a), veh/h	83	1663	886	99	1637	895	367	0	593	362	0	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.5	26.2	26.3	57.0	31.2	31.3	45.4	0.0	29.6	34.2	0.0	29.4
Incr Delay (d2), s/veh	37.7	4.1	7.5	15.4	19.4	27.6	21.0	0.0	0.3	0.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	15.4	17.4	1.9	25.3	29.8	11.5	0.0	4.3	0.6	0.0	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	94.2	30.3	33.8	72.4	50.6	58.9	66.4	0.0	29.9	34.3	0.0	29.8
LnGrp LOS	F	C	C	E	D	E	E	A	C	C	A	C
Approach Vol, veh/h		2101			2556			527			228	
Approach Delay, s/veh		33.5			53.9			52.3			30.3	
Approach LOS		C			D			D			C	

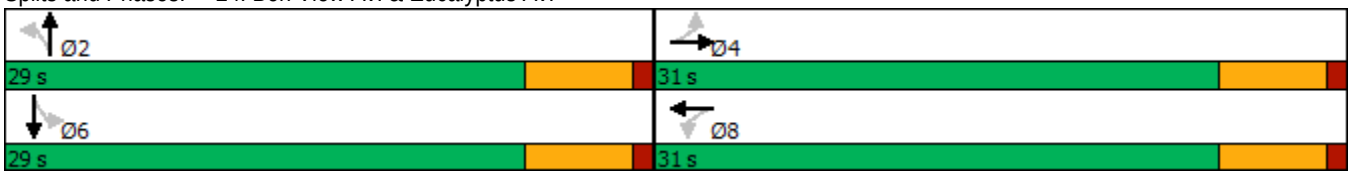
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		46.6	9.5	63.9		46.6	10.4	63.0				
Change Period (Y+Rc), s		5.8	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		40.8	6.9	55.7		40.8	5.8	56.8				
Max Q Clear Time (g_c+I1), s		42.8	5.8	41.0		14.4	6.6	57.6				
Green Ext Time (p_c), s		0.0	0.0	10.5		1.1	0.0	0.0				

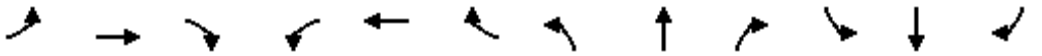
Intersection Summary												
HCM 6th Ctrl Delay			44.8									
HCM 6th LOS			D									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	38	107	20	494	21	72	46	78
Future Volume (vph)	38	107	20	494	21	72	46	78
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8
Total Split (s)	31.0	31.0	31.0	31.0	29.0	29.0	29.0	29.0
Total Split (%)	51.7%	51.7%	51.7%	51.7%	48.3%	48.3%	48.3%	48.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8		5.8		5.8
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	19.2	19.2	19.2	19.2		12.9		12.9
Actuated g/C Ratio	0.43	0.43	0.43	0.43		0.29		0.29
v/c Ratio	0.19	0.15	0.04	0.76		0.21		0.55
Control Delay	11.4	8.2	8.4	18.4		13.8		12.3
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	11.4	8.2	8.4	18.4		13.8		12.3
LOS	B	A	A	B		B		B
Approach Delay		9.0		18.1		13.8		12.3
Approach LOS		A		B		B		B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 44.2	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 15.0	Intersection LOS: B
Intersection Capacity Utilization 63.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 24: Bon View Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	107	9	20	494	82	21	72	3	46	78	166
Future Volume (veh/h)	38	107	9	20	494	82	21	72	3	46	78	166
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	41	115	10	22	531	88	23	77	3	49	84	178
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	303	731	64	685	675	112	169	416	14	155	147	255
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	817	1723	150	1286	1589	263	193	1561	53	163	552	957
Grp Volume(v), veh/h	41	0	125	22	0	619	103	0	0	311	0	0
Grp Sat Flow(s),veh/h/ln	817	0	1873	1286	0	1853	1806	0	0	1672	0	0
Q Serve(g_s), s	1.7	0.0	1.5	0.4	0.0	10.8	0.0	0.0	0.0	2.5	0.0	0.0
Cycle Q Clear(g_c), s	12.6	0.0	1.5	1.9	0.0	10.8	1.6	0.0	0.0	6.2	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.14	0.22		0.03	0.16		0.57
Lane Grp Cap(c), veh/h	303	0	795	685	0	786	599	0	0	556	0	0
V/C Ratio(X)	0.14	0.00	0.16	0.03	0.00	0.79	0.17	0.00	0.00	0.56	0.00	0.00
Avail Cap(c_a), veh/h	505	0	1258	1002	0	1244	1187	0	0	1134	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.8	0.0	6.7	7.3	0.0	9.3	10.7	0.0	0.0	12.3	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.0	0.0	1.8	0.1	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.3	0.1	0.0	2.7	0.5	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.0	0.0	6.8	7.3	0.0	11.1	10.8	0.0	0.0	13.2	0.0	0.0
LnGrp LOS	B	A	A	A	A	B	B	A	A	B	A	A
Approach Vol, veh/h		166			641			103			311	
Approach Delay, s/veh		8.8			11.0			10.8			13.2	
Approach LOS		A			B			B			B	

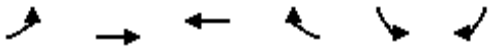
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.8		21.7		15.8		21.7				
Change Period (Y+Rc), s		5.8		5.8		5.8		5.8				
Max Green Setting (Gmax), s		23.2		25.2		23.2		25.2				
Max Q Clear Time (g_c+I1), s		3.6		14.6		8.2		12.8				
Green Ext Time (p_c), s		0.4		0.5		1.5		3.1				

Intersection Summary												
HCM 6th Ctrl Delay			11.2									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	76	693	935	63
Future Volume (vph)	76	693	935	63
Turn Type	Prot	NA	NA	Prot
Protected Phases	7	4	8	6
Permitted Phases				
Detector Phase	7	4	8	6
Switch Phase				
Minimum Initial (s)	5.0	10.0	10.0	10.0
Minimum Split (s)	9.6	16.2	28.2	27.8
Total Split (s)	10.0	86.0	76.0	34.0
Total Split (%)	8.3%	71.7%	63.3%	28.3%
Yellow Time (s)	3.6	5.2	5.2	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	5.8
Lead/Lag	Lead		Lag	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	Max	Max	None
Act Effct Green (s)	5.4	80.0	69.9	13.0
Actuated g/C Ratio	0.05	0.76	0.67	0.12
v/c Ratio	0.92	0.27	0.46	0.53
Control Delay	129.1	4.4	9.5	38.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	129.1	4.4	9.5	38.1
LOS	F	A	A	D
Approach Delay		16.7	9.5	38.1
Approach LOS		B	A	D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 105	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 14.2	Intersection LOS: B
Intersection Capacity Utilization 55.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 25: Merrill Av. & Bon View Av.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	76	693	935	92	63	59
Future Volume (veh/h)	76	693	935	92	63	59
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	81	737	995	98	67	63
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	91	2837	2281	225	84	79
Arrive On Green	0.05	0.79	0.69	0.69	0.10	0.10
Sat Flow, veh/h	1714	3705	3414	327	874	822
Grp Volume(v), veh/h	81	737	541	552	131	0
Grp Sat Flow(s),veh/h/ln	1714	1805	1805	1841	1708	0
Q Serve(g_s), s	4.8	5.6	13.6	13.6	7.6	0.0
Cycle Q Clear(g_c), s	4.8	5.6	13.6	13.6	7.6	0.0
Prop In Lane	1.00			0.18	0.51	0.48
Lane Grp Cap(c), veh/h	91	2837	1241	1265	164	0
V/C Ratio(X)	0.89	0.26	0.44	0.44	0.80	0.00
Avail Cap(c_a), veh/h	91	2837	1241	1265	474	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.8	2.9	7.1	7.1	44.9	0.0
Incr Delay (d2), s/veh	58.0	0.2	1.1	1.1	8.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	1.1	4.3	4.3	3.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	105.8	3.1	8.2	8.2	53.5	0.0
LnGrp LOS	F	A	A	A	D	A
Approach Vol, veh/h		818	1093		131	
Approach Delay, s/veh		13.3	8.2		53.5	
Approach LOS		B	A		D	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	86.0	15.6	10.0	76.0
Change Period (Y+Rc), s	6.2	5.8	4.6	6.2
Max Green Setting (Gmax), s	79.8	28.2	5.4	69.8
Max Q Clear Time (g_c+I1), s	7.6	9.6	6.8	15.6
Green Ext Time (p_c), s	5.1	0.3	0.0	7.7

Intersection Summary	
HCM 6th Ctrl Delay	13.2
HCM 6th LOS	B

Notes

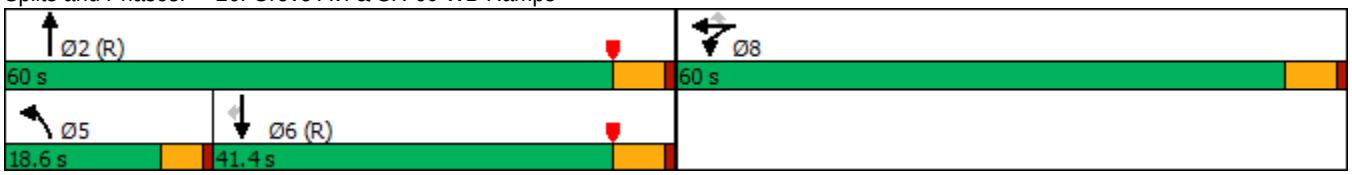
User approved volume balancing among the lanes for turning movement.

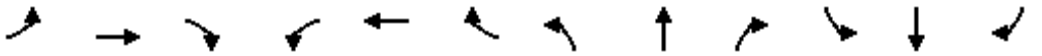
Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	687	335	1434	881	700
Future Volume (vph)	0	687	335	1434	881	700
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	60.0	60.0	18.6	60.0	41.4	41.4
Total Split (%)	50.0%	50.0%	15.5%	50.0%	34.5%	34.5%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	54.0	54.0	13.9	54.4	36.0	36.0
Actuated g/C Ratio	0.45	0.45	0.12	0.45	0.30	0.30
v/c Ratio	0.46	0.98	0.90	0.90	0.84	0.76
Control Delay	25.1	58.1	73.3	34.7	47.4	8.7
Queue Delay	0.0	0.0	0.0	46.2	0.0	0.0
Total Delay	25.1	58.1	73.3	80.9	47.4	8.7
LOS	C	E	E	F	D	A
Approach Delay	47.2			79.5	30.3	
Approach LOS	D			E	C	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 54.1 — Intersection LOS: D
Intersection Capacity Utilization 91.8% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	341	0	687	335	1434	0	0	881	700
Future Volume (veh/h)	0	0	0	341	0	687	335	1434	0	0	881	700
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				371	0	618	364	1559	0	0	958	650
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				741	0	659	410	1877	0	0	1288	544
Arrive On Green				0.41	0.00	0.41	0.23	0.99	0.00	0.00	0.34	0.34
Sat Flow, veh/h				1810	0	1610	3510	3800	0	0	3800	1606
Grp Volume(v), veh/h				371	0	618	364	1559	0	0	958	650
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1900	0	0	1900	1606
Q Serve(g_s), s				18.3	0.0	44.2	12.0	3.3	0.0	0.0	26.7	40.7
Cycle Q Clear(g_c), s				18.3	0.0	44.2	12.0	3.3	0.0	0.0	26.7	40.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				741	0	659	410	1877	0	0	1288	544
V/C Ratio(X)				0.50	0.00	0.94	0.89	0.83	0.00	0.00	0.74	1.19
Avail Cap(c_a), veh/h				817	0	727	410	1877	0	0	1288	544
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.28	0.28	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				26.3	0.0	34.0	45.2	0.4	0.0	0.0	35.0	39.7
Incr Delay (d2), s/veh				0.5	0.0	18.8	6.9	1.3	0.0	0.0	3.9	104.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.6	0.0	19.6	4.9	0.6	0.0	0.0	12.5	31.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				26.9	0.0	52.8	52.1	1.7	0.0	0.0	39.0	143.9
LnGrp LOS				C	A	D	D	A	A	A	D	F
Approach Vol, veh/h					989			1923			1608	
Approach Delay, s/veh					43.1			11.2			81.4	
Approach LOS					D			B			F	

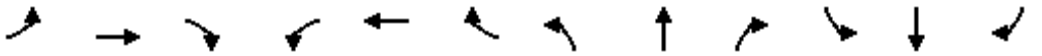
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		65.1			18.6	46.5		54.9				
Change Period (Y+Rc), s		5.8			4.6	5.8		5.8				
Max Green Setting (Gmax), s		54.2			14.0	35.6		54.2				
Max Q Clear Time (g_c+I1), s		5.3			14.0	42.7		46.2				
Green Ext Time (p_c), s		16.5			0.0	0.0		3.0				

Intersection Summary												
HCM 6th Ctrl Delay			43.1									
HCM 6th LOS			D									

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	780	1	271	990	437	785
Future Volume (vph)	780	1	271	990	437	785
Turn Type	Split	NA	Perm	NA	Prot	NA
Protected Phases	4	4		2	1	6
Permitted Phases			4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	30.8	26.8	9.6	22.8
Total Split (s)	38.0	38.0	38.0	61.0	21.0	82.0
Total Split (%)	31.7%	31.7%	31.7%	50.8%	17.5%	68.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.6	5.8
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	31.5	31.5	31.5	55.6	16.7	76.9
Actuated g/C Ratio	0.26	0.26	0.26	0.46	0.14	0.64
v/c Ratio	0.94	0.94	0.53	0.91	0.95	0.35
Control Delay	73.7	74.1	17.2	37.4	76.4	9.5
Queue Delay	0.0	0.0	0.0	46.4	0.0	0.3
Total Delay	73.7	74.1	17.2	83.8	76.4	9.8
LOS	E	E	B	F	E	A
Approach Delay		59.3		83.8		33.6
Approach LOS		E		F		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 60.4	Intersection LOS: E
Intersection Capacity Utilization 91.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	780	1	271	0	0	0	0	990	450	437	785	0
Future Volume (veh/h)	780	1	271	0	0	0	0	990	450	437	785	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	849	0	220				0	1076	380	475	853	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	924	0	410				0	1274	443	495	2462	0
Arrive On Green	0.26	0.00	0.26				0.00	0.47	0.47	0.27	1.00	0.00
Sat Flow, veh/h	3619	0	1606				0	2694	936	3619	3800	0
Grp Volume(v), veh/h	849	0	220				0	754	702	475	853	0
Grp Sat Flow(s),veh/h/ln	1810	0	1606				0	1900	1730	1810	1900	0
Q Serve(g_s), s	27.4	0.0	14.2				0.0	41.6	43.2	15.5	0.0	0.0
Cycle Q Clear(g_c), s	27.4	0.0	14.2				0.0	41.6	43.2	15.5	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.54	1.00		0.00
Lane Grp Cap(c), veh/h	924	0	410				0	899	818	495	2462	0
V/C Ratio(X)	0.92	0.00	0.54				0.00	0.84	0.86	0.96	0.35	0.00
Avail Cap(c_a), veh/h	971	0	431				0	899	818	495	2462	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.63	0.63	0.43	0.43	0.00
Uniform Delay (d), s/veh	43.5	0.0	38.5				0.0	27.6	28.1	43.3	0.0	0.0
Incr Delay (d2), s/veh	13.0	0.0	1.2				0.0	6.1	7.5	17.7	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.4	0.0	5.6				0.0	19.0	18.3	6.9	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.5	0.0	39.7				0.0	33.7	35.5	60.9	0.2	0.0
LnGrp LOS	E	A	D				A	C	D	E	A	A
Approach Vol, veh/h		1069						1456			1328	
Approach Delay, s/veh		53.0						34.6			21.9	
Approach LOS		D						C			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	21.0	62.6		36.4		83.6
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	16.4	55.2		32.2		76.2
Max Q Clear Time (g_c+I1), s	17.5	45.2		29.4		2.0
Green Ext Time (p_c), s	0.0	6.2		1.3		6.5

Intersection Summary	
HCM 6th Ctrl Delay	35.3
HCM 6th LOS	D

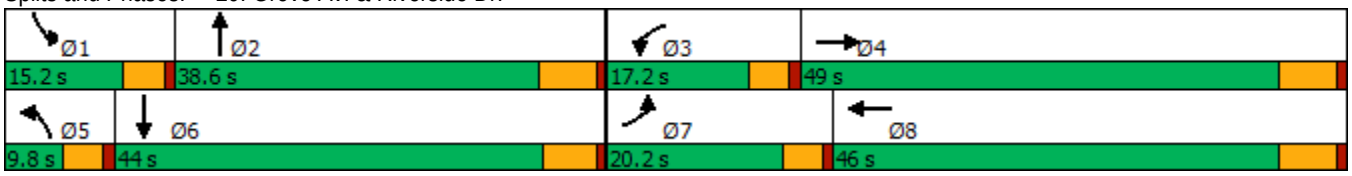
Notes

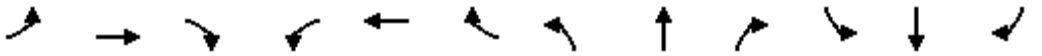
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	182	469	77	931	32	721	119	508
Future Volume (vph)	182	469	77	931	32	721	119	508
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8
Total Split (s)	20.2	49.0	17.2	46.0	9.8	38.6	15.2	44.0
Total Split (%)	16.8%	40.8%	14.3%	38.3%	8.2%	32.2%	12.7%	36.7%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	15.1	47.3	9.8	39.8	5.2	32.4	10.4	41.9
Actuated g/C Ratio	0.13	0.40	0.08	0.33	0.04	0.27	0.09	0.35
v/c Ratio	0.91	0.39	0.60	0.99	0.47	0.90	0.87	0.62
Control Delay	94.1	27.5	70.0	62.3	77.0	55.0	100.2	33.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.1	27.5	70.0	62.3	77.0	55.0	100.2	33.2
LOS	F	C	E	E	E	E	F	C
Approach Delay		45.1		62.8		55.9		42.8
Approach LOS		D		E		E		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.3	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 52.9	Intersection LOS: D
Intersection Capacity Utilization 88.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	469	37	77	931	145	32	721	84	119	508	206
Future Volume (veh/h)	182	469	37	77	931	145	32	721	84	119	508	206
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	198	510	33	84	1012	133	35	784	69	129	552	140
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	223	1374	89	105	1058	139	49	907	80	152	943	238
Arrive On Green	0.13	0.40	0.40	0.06	0.33	0.33	0.03	0.27	0.27	0.09	0.33	0.33
Sat Flow, veh/h	1714	3443	222	1714	3201	420	1714	3352	295	1714	2854	721
Grp Volume(v), veh/h	198	267	276	84	570	575	35	422	431	129	348	344
Grp Sat Flow(s),veh/h/ln	1714	1805	1860	1714	1805	1817	1714	1805	1842	1714	1805	1770
Q Serve(g_s), s	13.6	12.5	12.5	5.8	37.0	37.1	2.4	26.7	26.7	8.9	19.2	19.3
Cycle Q Clear(g_c), s	13.6	12.5	12.5	5.8	37.0	37.1	2.4	26.7	26.7	8.9	19.2	19.3
Prop In Lane	1.00		0.12	1.00		0.23	1.00		0.16	1.00		0.41
Lane Grp Cap(c), veh/h	223	721	743	105	596	600	49	488	498	152	596	585
V/C Ratio(X)	0.89	0.37	0.37	0.80	0.96	0.96	0.71	0.86	0.86	0.85	0.58	0.59
Avail Cap(c_a), veh/h	223	721	743	180	600	604	74	488	498	152	596	585
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.2	25.4	25.4	55.5	39.2	39.3	57.7	41.6	41.6	53.8	33.3	33.3
Incr Delay (d2), s/veh	31.2	0.3	0.3	5.2	26.1	26.3	6.9	18.1	17.8	32.8	4.1	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	5.1	5.3	2.6	19.7	19.9	1.1	13.7	14.0	5.1	8.8	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.4	25.7	25.7	60.6	65.4	65.6	64.5	59.7	59.4	86.6	37.4	37.6
LnGrp LOS	F	C	C	E	E	E	E	E	E	F	D	D
Approach Vol, veh/h		741			1229			888			821	
Approach Delay, s/veh		40.8			65.1			59.7			45.2	
Approach LOS		D			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.2	38.6	11.9	54.0	8.0	45.8	20.2	45.8
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	4.6	6.2
Max Green Setting (Gmax), s	10.6	32.4	12.6	42.8	5.2	* 38	15.6	39.8
Max Q Clear Time (g_c+I1), s	10.9	28.7	7.8	14.5	4.4	21.3	15.6	39.1
Green Ext Time (p_c), s	0.0	1.7	0.0	2.9	0.0	3.6	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	54.5
HCM 6th LOS	D

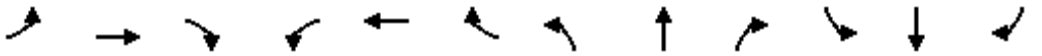
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	89	173	26	119	67	689	58	541
Future Volume (vph)	89	173	26	119	67	689	58	541
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	9.6	28.2	9.6	28.2
Total Split (s)	43.0	43.0	43.0	43.0	20.0	62.0	15.0	57.0
Total Split (%)	35.8%	35.8%	35.8%	35.8%	16.7%	51.7%	12.5%	47.5%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	17.8	17.8	17.8	17.8	8.6	56.5	7.8	55.7
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.09	0.58	0.08	0.57
v/c Ratio	0.55	0.72	0.23	0.53	0.48	0.38	0.46	0.31
Control Delay	48.9	48.0	39.2	38.3	55.2	13.0	56.1	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	48.0	39.2	38.3	55.2	13.0	56.1	12.8
LOS	D	D	D	D	E	B	E	B
Approach Delay		48.2		38.4		16.6		16.7
Approach LOS		D		D		B		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.9	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 24.0	Intersection LOS: C
Intersection Capacity Utilization 64.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 30: Grove Av. & Chino Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	173	57	26	119	50	67	689	39	58	541	38
Future Volume (veh/h)	89	173	57	26	119	50	67	689	39	58	541	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	97	188	62	28	129	54	73	749	42	63	588	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	211	277	91	161	258	108	93	2000	112	80	1944	135
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.05	0.58	0.58	0.05	0.57	0.57
Sat Flow, veh/h	1220	1368	451	1148	1272	532	1714	3475	195	1714	3424	238
Grp Volume(v), veh/h	97	0	250	28	0	183	73	389	402	63	310	319
Grp Sat Flow(s),veh/h/ln	1220	0	1819	1148	0	1804	1714	1805	1865	1714	1805	1857
Q Serve(g_s), s	7.4	0.0	12.3	2.2	0.0	8.7	4.1	11.3	11.3	3.5	8.7	8.7
Cycle Q Clear(g_c), s	16.2	0.0	12.3	14.6	0.0	8.7	4.1	11.3	11.3	3.5	8.7	8.7
Prop In Lane	1.00		0.25	1.00		0.30	1.00		0.10	1.00		0.13
Lane Grp Cap(c), veh/h	211	0	368	161	0	365	93	1039	1073	80	1025	1055
V/C Ratio(X)	0.46	0.00	0.68	0.17	0.00	0.50	0.78	0.37	0.37	0.79	0.30	0.30
Avail Cap(c_a), veh/h	427	0	690	364	0	685	272	1039	1073	184	1025	1055
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.5	0.0	35.7	42.5	0.0	34.3	45.3	11.1	11.1	45.7	10.9	10.9
Incr Delay (d2), s/veh	1.5	0.0	2.2	0.5	0.0	1.1	5.4	1.0	1.0	6.2	0.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	5.3	0.6	0.0	3.7	1.8	4.1	4.2	1.6	3.1	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.0	0.0	37.9	43.0	0.0	35.4	50.7	12.2	12.1	52.0	11.7	11.7
LnGrp LOS	D	A	D	D	A	D	D	B	B	D	B	B
Approach Vol, veh/h		347			211			864			692	
Approach Delay, s/veh		39.4			36.4			15.4			15.3	
Approach LOS		D			D			B			B	

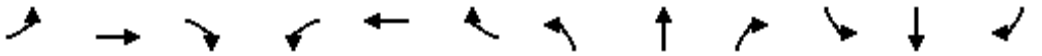
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.1	62.0		25.8	9.9	61.3		25.8				
Change Period (Y+Rc), s	4.6	6.2		6.2	4.6	6.2		6.2				
Max Green Setting (Gmax), s	10.4	55.8		36.8	15.4	50.8		36.8				
Max Q Clear Time (g_c+I1), s	5.5	13.3		18.2	6.1	10.7		16.6				
Green Ext Time (p_c), s	0.0	4.8		1.5	0.0	3.6		0.9				

Intersection Summary			
HCM 6th Ctrl Delay		21.4	
HCM 6th LOS		C	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	262	1096	203	532	126	435	78	445
Future Volume (vph)	262	1096	203	532	126	435	78	445
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	9.6	28.2	9.6	28.2
Total Split (s)	79.0	79.0	79.0	79.0	12.0	30.0	11.0	29.0
Total Split (%)	65.8%	65.8%	65.8%	65.8%	10.0%	25.0%	9.2%	24.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.6	6.2	4.6	6.2
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	73.2	73.2	73.2	73.2	7.4	23.8	6.4	22.8
Actuated g/C Ratio	0.61	0.61	0.61	0.61	0.06	0.20	0.05	0.19
v/c Ratio	0.72	0.72	2.19	0.31	1.30	0.77	0.93	0.79
Control Delay	28.9	17.9	585.4	11.2	234.0	52.4	134.6	55.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	17.9	585.4	11.2	234.0	52.4	134.6	55.0
LOS	C	B	F	B	F	D	F	D
Approach Delay		19.6		152.0		88.9		65.8
Approach LOS		B		F		F		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.19	
Intersection Signal Delay: 68.0	Intersection LOS: E
Intersection Capacity Utilization 92.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 31: Grove Av. & Schaefer Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	262	1096	324	203	532	94	126	435	66	78	445	51
Future Volume (veh/h)	262	1096	324	203	532	94	126	435	66	78	445	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	285	1191	352	221	578	102	137	473	72	85	484	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	461	1683	489	164	1871	329	106	623	94	91	621	70
Arrive On Green	0.61	0.61	0.61	0.61	0.61	0.61	0.06	0.20	0.20	0.05	0.19	0.19
Sat Flow, veh/h	772	2759	802	341	3068	540	1714	3143	476	1714	3268	370
Grp Volume(v), veh/h	285	772	771	221	339	341	137	271	274	85	266	273
Grp Sat Flow(s),veh/h/ln	772	1805	1756	341	1805	1803	1714	1805	1814	1714	1805	1833
Q Serve(g_s), s	33.8	35.0	36.6	36.6	10.8	10.9	7.4	17.0	17.1	5.9	16.8	17.0
Cycle Q Clear(g_c), s	44.7	35.0	36.6	73.2	10.8	10.9	7.4	17.0	17.1	5.9	16.8	17.0
Prop In Lane	1.00		0.46	1.00		0.30	1.00		0.26	1.00		0.20
Lane Grp Cap(c), veh/h	461	1101	1071	164	1101	1100	106	358	360	91	343	348
V/C Ratio(X)	0.62	0.70	0.72	1.35	0.31	0.31	1.30	0.76	0.76	0.93	0.78	0.78
Avail Cap(c_a), veh/h	461	1101	1071	164	1101	1100	106	358	360	91	343	348
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.0	15.9	16.3	48.4	11.2	11.3	56.3	45.4	45.4	56.6	46.2	46.2
Incr Delay (d2), s/veh	2.5	2.0	2.4	191.6	0.2	0.2	186.4	13.8	14.2	70.3	15.8	16.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	13.4	13.7	13.6	4.0	4.0	8.6	8.7	8.8	4.3	8.8	9.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.5	18.0	18.6	240.0	11.4	11.4	242.7	59.2	59.6	126.9	62.0	62.2
LnGrp LOS	C	B	B	F	B	B	F	E	E	F	E	E
Approach Vol, veh/h		1828			901			682			624	
Approach Delay, s/veh		19.3			67.5			96.2			70.9	
Approach LOS		B			E			F			E	

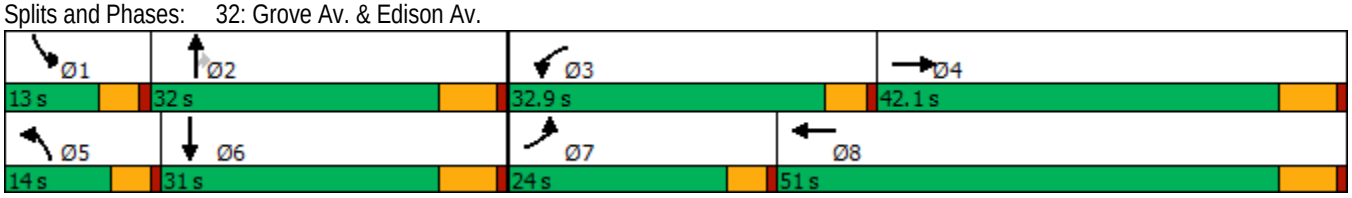
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	30.0		79.0	12.0	29.0		79.0				
Change Period (Y+Rc), s	4.6	6.2		5.8	4.6	6.2		5.8				
Max Green Setting (Gmax), s	6.4	23.8		73.2	7.4	22.8		73.2				
Max Q Clear Time (g_c+I1), s	7.9	19.1		46.7	9.4	19.0		75.2				
Green Ext Time (p_c), s	0.0	1.2		14.9	0.0	1.0		0.0				

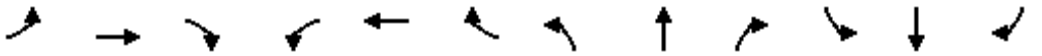
Intersection Summary			
HCM 6th Ctrl Delay		51.0	
HCM 6th LOS		D	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	207	1061	302	1596	91	432	42	73	469
Future Volume (vph)	207	1061	302	1596	91	432	42	73	469
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8	5	2		1	6
Permitted Phases							2		
Detector Phase	7	4	3	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	9.6	28.2	28.2	9.6	28.2
Total Split (s)	24.0	42.1	32.9	51.0	14.0	32.0	32.0	13.0	31.0
Total Split (%)	20.0%	35.1%	27.4%	42.5%	11.7%	26.7%	26.7%	10.8%	25.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	None	None	None	None	None
Act Effct Green (s)	17.5	37.7	24.8	45.0	8.9	25.1	25.1	7.8	21.7
Actuated g/C Ratio	0.15	0.33	0.22	0.39	0.08	0.22	0.22	0.07	0.19
v/c Ratio	0.86	0.81	0.89	0.89	0.76	0.60	0.10	0.68	0.81
Control Delay	77.8	40.2	69.8	39.9	86.2	45.0	0.4	82.0	54.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.8	40.2	69.8	39.9	86.2	45.0	0.4	82.0	54.6
LOS	E	D	E	D	F	D	A	F	D
Approach Delay		45.5		44.5		48.3			58.0
Approach LOS		D		D		D			E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.7	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 47.0	Intersection LOS: D
Intersection Capacity Utilization 81.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	1061	197	302	1596	59	91	432	42	73	469	37
Future Volume (veh/h)	207	1061	197	302	1596	59	91	432	42	73	469	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	225	1153	214	328	1735	64	99	470	46	79	510	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	253	1522	282	356	2087	77	123	693	309	100	605	47
Arrive On Green	0.15	0.35	0.35	0.21	0.41	0.41	0.07	0.19	0.19	0.06	0.18	0.18
Sat Flow, veh/h	1714	4396	816	1714	5135	189	1714	3610	1610	1714	3392	265
Grp Volume(v), veh/h	225	907	460	328	1168	631	99	470	46	79	271	279
Grp Sat Flow(s),veh/h/ln	1714	1729	1753	1714	1729	1866	1714	1805	1610	1714	1805	1852
Q Serve(g_s), s	14.2	25.6	25.6	20.7	33.4	33.4	6.3	13.3	2.6	5.0	16.0	16.1
Cycle Q Clear(g_c), s	14.2	25.6	25.6	20.7	33.4	33.4	6.3	13.3	2.6	5.0	16.0	16.1
Prop In Lane	1.00		0.47	1.00		0.10	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	253	1197	607	356	1405	758	123	693	309	100	322	331
V/C Ratio(X)	0.89	0.76	0.76	0.92	0.83	0.83	0.81	0.68	0.15	0.79	0.84	0.84
Avail Cap(c_a), veh/h	302	1197	607	440	1405	758	146	845	377	131	406	417
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.1	31.9	31.9	42.8	29.3	29.3	50.4	41.4	37.0	51.3	43.8	43.8
Incr Delay (d2), s/veh	21.3	4.5	8.6	20.0	5.9	10.3	20.3	1.6	0.2	16.2	12.0	12.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	10.7	11.6	10.3	13.8	15.9	3.3	5.8	1.0	2.5	7.9	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.4	36.4	40.5	62.8	35.2	39.7	70.7	43.0	37.3	67.5	55.8	56.0
LnGrp LOS	E	D	D	E	D	D	E	D	D	E	E	E
Approach Vol, veh/h		1592			2127			615			629	
Approach Delay, s/veh		42.0			40.8			47.0			57.3	
Approach LOS		D			D			D			E	

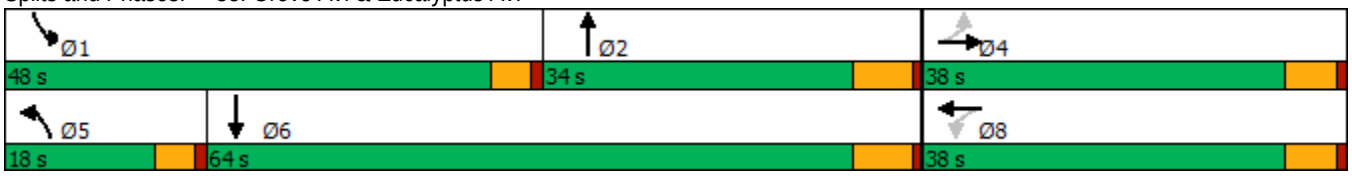
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	27.4	27.5	44.4	12.5	25.9	20.9	51.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	8.4	25.8	28.3	35.9	9.4	24.8	19.4	44.8
Max Q Clear Time (g_c+I1), s	7.0	15.3	22.7	27.6	8.3	18.1	16.2	35.4
Green Ext Time (p_c), s	0.0	2.1	0.2	4.9	0.0	1.6	0.1	6.7

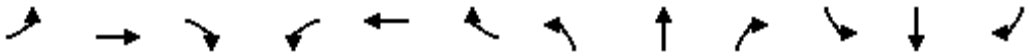
Intersection Summary	
HCM 6th Ctrl Delay	44.0
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	49	122	23	123	76	397	355	588
Future Volume (vph)	49	122	23	123	76	397	355	588
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	9.6	28.2	9.6	28.2
Total Split (s)	38.0	38.0	38.0	38.0	18.0	34.0	48.0	64.0
Total Split (%)	31.7%	31.7%	31.7%	31.7%	15.0%	28.3%	40.0%	53.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.6	6.2	4.6	6.2
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	20.1	20.1	20.1	20.1	9.1	39.0	26.3	58.8
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.09	0.38	0.26	0.57
v/c Ratio	0.52	0.41	0.11	0.78	0.52	0.33	0.83	0.38
Control Delay	57.0	38.4	35.4	47.2	59.0	26.0	52.1	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.0	38.4	35.4	47.2	59.0	26.0	52.1	14.1
LOS	E	D	D	D	E	C	D	B
Approach Delay		43.3		46.2		31.1		26.7
Approach LOS		D		D		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.3	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 32.1	Intersection LOS: C
Intersection Capacity Utilization 74.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	122	16	23	123	150	76	397	23	355	588	123
Future Volume (veh/h)	49	122	16	23	123	150	76	397	23	355	588	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	53	133	17	25	134	163	83	432	25	386	639	134
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	149	378	48	283	179	217	107	1319	76	420	1644	344
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.06	0.38	0.38	0.23	0.55	0.55
Sat Flow, veh/h	1160	1651	211	1327	780	949	1810	3469	200	1810	2971	622
Grp Volume(v), veh/h	53	0	150	25	0	297	83	224	233	386	388	385
Grp Sat Flow(s),veh/h/ln	1160	0	1862	1327	0	1729	1810	1805	1864	1810	1805	1788
Q Serve(g_s), s	4.7	0.0	7.1	1.7	0.0	16.7	4.7	9.2	9.2	21.8	12.8	12.8
Cycle Q Clear(g_c), s	21.4	0.0	7.1	8.7	0.0	16.7	4.7	9.2	9.2	21.8	12.8	12.8
Prop In Lane	1.00		0.11	1.00		0.55	1.00		0.11	1.00		0.35
Lane Grp Cap(c), veh/h	149	0	426	283	0	396	107	686	709	420	999	989
V/C Ratio(X)	0.36	0.00	0.35	0.09	0.00	0.75	0.78	0.33	0.33	0.92	0.39	0.39
Avail Cap(c_a), veh/h	241	0	574	388	0	533	232	686	709	752	999	989
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	0.0	33.8	37.4	0.0	37.5	48.5	22.9	22.9	39.2	13.3	13.3
Incr Delay (d2), s/veh	1.4	0.0	0.5	0.1	0.0	4.0	4.6	1.3	1.2	4.6	1.1	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	3.1	0.5	0.0	7.2	2.2	3.9	4.0	9.6	4.8	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.9	0.0	34.3	37.6	0.0	41.5	53.0	24.2	24.2	43.7	14.4	14.4
LnGrp LOS	D	A	C	D	A	D	D	C	C	D	B	B
Approach Vol, veh/h		203			322			540			1159	
Approach Delay, s/veh		38.1			41.2			28.6			24.2	
Approach LOS		D			D			C			C	

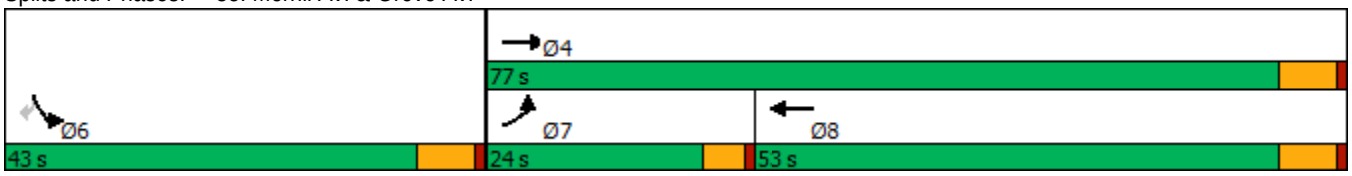
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	28.8	45.9		29.7	10.8	64.0		29.7				
Change Period (Y+Rc), s	4.6	6.2		5.8	4.6	6.2		5.8				
Max Green Setting (Gmax), s	43.4	27.8		32.2	13.4	57.8		32.2				
Max Q Clear Time (g_c+I1), s	23.8	11.2		23.4	6.7	14.8		18.7				
Green Ext Time (p_c), s	0.5	2.1		0.5	0.0	4.7		1.4				

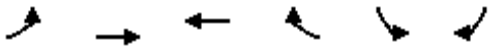
Intersection Summary			
HCM 6th Ctrl Delay		29.0	
HCM 6th LOS		C	

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	223	657	860	428	178
Future Volume (vph)	223	657	860	428	178
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	16.2	28.2	28.2	28.2
Total Split (s)	24.0	77.0	53.0	43.0	43.0
Total Split (%)	20.0%	64.2%	44.2%	35.8%	35.8%
Yellow Time (s)	3.6	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	6.2	6.2
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	Max	Max	None	None
Act Effct Green (s)	17.8	71.0	48.6	31.7	31.7
Actuated g/C Ratio	0.15	0.62	0.42	0.28	0.28
v/c Ratio	0.87	0.30	0.88	0.89	0.32
Control Delay	79.0	11.4	38.2	60.6	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	79.0	11.4	38.2	60.6	5.9
LOS	E	B	D	E	A
Approach Delay		28.6	38.2	44.5	
Approach LOS		C	D	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 36.5	Intersection LOS: D
Intersection Capacity Utilization 88.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	223	657	860	420	428	178
Future Volume (veh/h)	223	657	860	420	428	178
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	230	677	887	433	441	184
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	257	2255	1024	495	481	428
Arrive On Green	0.15	0.62	0.43	0.43	0.27	0.27
Sat Flow, veh/h	1714	3705	2455	1140	1810	1610
Grp Volume(v), veh/h	230	677	676	644	441	184
Grp Sat Flow(s),veh/h/ln	1714	1805	1805	1695	1810	1610
Q Serve(g_s), s	14.9	9.8	38.4	39.3	26.8	10.7
Cycle Q Clear(g_c), s	14.9	9.8	38.4	39.3	26.8	10.7
Prop In Lane	1.00			0.67	1.00	1.00
Lane Grp Cap(c), veh/h	257	2255	783	736	481	428
V/C Ratio(X)	0.89	0.30	0.86	0.88	0.92	0.43
Avail Cap(c_a), veh/h	293	2255	783	736	587	523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.3	9.8	29.0	29.3	40.4	34.5
Incr Delay (d2), s/veh	23.8	0.3	12.1	13.8	17.1	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	3.4	17.8	17.4	13.5	10.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	71.1	10.2	41.1	43.0	57.5	35.2
LnGrp LOS	E	B	D	D	E	D
Approach Vol, veh/h		907	1320		625	
Approach Delay, s/veh		25.6	42.1		50.9	
Approach LOS		C	D		D	

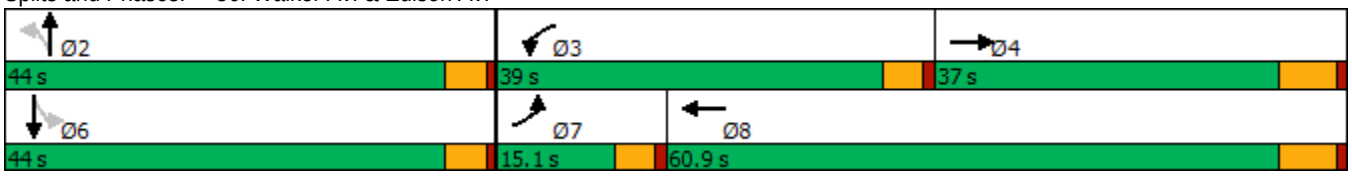
Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			77.0		36.4	21.6	55.4
Change Period (Y+Rc), s			6.2		6.2	4.6	6.2
Max Green Setting (Gmax), s			70.8		36.8	19.4	46.8
Max Q Clear Time (g_c+I1), s			11.8		28.8	16.9	41.3
Green Ext Time (p_c), s			4.6		1.3	0.1	3.5

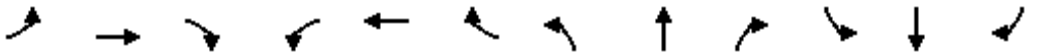
Intersection Summary	
HCM 6th Ctrl Delay	38.8
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	63	874	298	1290	105	248	59	45
Future Volume (vph)	63	874	298	1290	105	248	59	45
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	26.7	26.7	26.7	26.7
Total Split (s)	15.1	37.0	39.0	60.9	44.0	44.0	44.0	44.0
Total Split (%)	12.6%	30.8%	32.5%	50.8%	36.7%	36.7%	36.7%	36.7%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	8.0	38.6	22.6	55.7	26.4	26.4	26.4	26.4
Actuated g/C Ratio	0.08	0.37	0.22	0.54	0.26	0.26	0.26	0.26
v/c Ratio	0.49	0.52	0.81	0.59	0.33	0.80	0.64	0.19
Control Delay	62.0	28.7	56.4	18.8	34.6	47.3	66.1	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.0	28.7	56.4	18.8	34.6	47.3	66.1	17.8
LOS	E	C	E	B	C	D	E	B
Approach Delay		30.7		24.8		44.5		36.9
Approach LOS		C		C		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.4	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 29.7	Intersection LOS: C
Intersection Capacity Utilization 82.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	874	96	298	1290	285	105	248	126	59	45	45
Future Volume (veh/h)	63	874	96	298	1290	285	105	248	126	59	45	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	64	892	98	304	1316	291	107	253	129	60	46	46
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	81	1792	196	336	2236	494	384	329	168	152	242	242
Arrive On Green	0.05	0.38	0.38	0.20	0.53	0.53	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1714	4744	519	1714	4250	939	1325	1186	605	1017	872	872
Grp Volume(v), veh/h	64	649	341	304	1071	536	107	0	382	60	0	92
Grp Sat Flow(s),veh/h/ln	1714	1729	1806	1714	1729	1731	1325	0	1791	1017	0	1743
Q Serve(g_s), s	3.8	15.0	15.1	18.0	22.1	22.1	7.0	0.0	20.4	6.0	0.0	4.2
Cycle Q Clear(g_c), s	3.8	15.0	15.1	18.0	22.1	22.1	11.2	0.0	20.4	26.4	0.0	4.2
Prop In Lane	1.00		0.29	1.00		0.54	1.00		0.34	1.00		0.50
Lane Grp Cap(c), veh/h	81	1306	682	336	1819	911	384	0	497	152	0	484
V/C Ratio(X)	0.79	0.50	0.50	0.91	0.59	0.59	0.28	0.00	0.77	0.39	0.00	0.19
Avail Cap(c_a), veh/h	173	1306	682	567	1819	911	517	0	677	254	0	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.0	24.8	24.8	40.9	16.9	16.9	32.9	0.0	34.5	46.6	0.0	28.7
Incr Delay (d2), s/veh	6.1	1.4	2.6	6.5	1.4	2.8	0.4	0.0	3.7	1.7	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	5.9	6.5	7.8	8.0	8.4	2.3	0.0	9.2	1.6	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.1	26.1	27.4	47.4	18.3	19.7	33.3	0.0	38.2	48.3	0.0	28.8
LnGrp LOS	E	C	C	D	B	B	C	A	D	D	A	C
Approach Vol, veh/h		1054			1911			489			152	
Approach Delay, s/veh		28.3			23.3			37.1			36.5	
Approach LOS		C			C			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		33.6	25.0	45.5		33.6	9.5	60.9				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		* 4.7	4.6	6.2				
Max Green Setting (Gmax), s		* 39	34.4	30.8		* 39	10.5	54.7				
Max Q Clear Time (g_c+I1), s		22.4	20.0	17.1		28.4	5.8	24.1				
Green Ext Time (p_c), s		2.5	0.3	4.9		0.5	0.0	12.7				

Intersection Summary	
HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

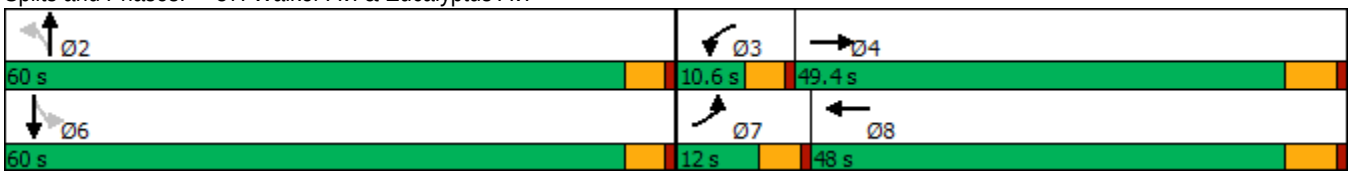
Notes

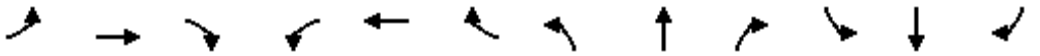
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	41	201	19	350	28	67	153	268
Future Volume (vph)	41	201	19	350	28	67	153	268
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	27.8	26.6	26.6	26.7	26.7
Total Split (s)	12.0	49.4	10.6	48.0	60.0	60.0	60.0	60.0
Total Split (%)	10.0%	41.2%	8.8%	40.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	3.6	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	4.6	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	6.5	46.7	5.6	44.0	40.3	40.3	40.2	40.2
Actuated g/C Ratio	0.06	0.46	0.06	0.43	0.40	0.40	0.40	0.40
v/c Ratio	0.39	0.35	0.21	0.62	0.35	0.12	0.31	0.86
Control Delay	60.8	21.6	57.3	30.0	34.2	17.1	22.6	37.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.8	21.6	57.3	30.0	34.2	17.1	22.6	37.4
LOS	E	C	E	C	C	B	C	D
Approach Delay		26.7		31.1		21.5		34.3
Approach LOS		C		C		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 101.4	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 31.0	Intersection LOS: C
Intersection Capacity Utilization 74.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 37: Walker Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	201	76	19	350	111	28	67	13	153	268	308
Future Volume (veh/h)	41	201	76	19	350	111	28	67	13	153	268	308
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	45	218	83	21	380	121	30	73	14	166	291	335
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	64	559	213	40	570	182	128	626	120	597	326	375
Arrive On Green	0.04	0.43	0.43	0.02	0.41	0.41	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1810	1311	499	1810	1381	440	857	1549	297	1405	806	927
Grp Volume(v), veh/h	45	0	301	21	0	501	30	0	87	166	0	626
Grp Sat Flow(s),veh/h/ln	1810	0	1810	1810	0	1821	857	0	1847	1405	0	1733
Q Serve(g_s), s	2.5	0.0	11.7	1.2	0.0	22.8	3.5	0.0	3.0	8.6	0.0	34.5
Cycle Q Clear(g_c), s	2.5	0.0	11.7	1.2	0.0	22.8	37.9	0.0	3.0	11.6	0.0	34.5
Prop In Lane	1.00		0.28	1.00		0.24	1.00		0.16	1.00		0.54
Lane Grp Cap(c), veh/h	64	0	771	40	0	752	128	0	747	597	0	701
V/C Ratio(X)	0.71	0.00	0.39	0.53	0.00	0.67	0.23	0.00	0.12	0.28	0.00	0.89
Avail Cap(c_a), veh/h	131	0	771	106	0	752	246	0	1000	788	0	937
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.8	0.0	20.2	49.5	0.0	24.3	46.1	0.0	19.0	22.7	0.0	28.4
Incr Delay (d2), s/veh	5.2	0.0	1.5	4.0	0.0	4.6	0.9	0.0	0.1	0.3	0.0	8.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	4.9	0.6	0.0	10.0	0.8	0.0	1.3	2.8	0.0	15.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.0	0.0	21.7	53.5	0.0	29.0	47.0	0.0	19.1	22.9	0.0	37.2
LnGrp LOS	D	A	C	D	A	C	D	A	B	C	A	D
Approach Vol, veh/h		346			522			117			792	
Approach Delay, s/veh		25.9			30.0			26.3			34.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		46.1	6.8	49.4		46.1	8.2	48.0				
Change Period (Y+Rc), s		* 4.7	4.6	5.8		* 4.7	4.6	5.8				
Max Green Setting (Gmax), s		* 55	6.0	43.6		* 55	7.4	42.2				
Max Q Clear Time (g_c+I1), s		39.9	3.2	13.7		36.5	4.5	24.8				
Green Ext Time (p_c), s		0.5	0.0	1.7		4.9	0.0	2.7				

Intersection Summary		
HCM 6th Ctrl Delay		30.8
HCM 6th LOS		C

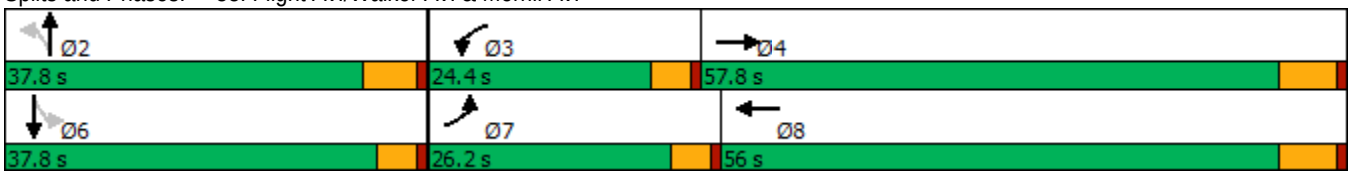
Notes

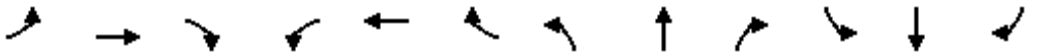
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	163	747	148	1038	159	33	36	50
Future Volume (vph)	163	747	148	1038	159	33	36	50
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	27.8	27.8	26.6	26.6
Total Split (s)	26.2	57.8	24.4	56.0	37.8	37.8	37.8	37.8
Total Split (%)	21.8%	48.2%	20.3%	46.7%	31.5%	31.5%	31.5%	31.5%
Yellow Time (s)	3.6	5.2	3.6	5.2	4.8	4.8	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	5.8	5.8	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	14.4	52.3	13.4	51.3	20.5	20.5	21.7	21.7
Actuated g/C Ratio	0.14	0.51	0.13	0.50	0.20	0.20	0.21	0.21
v/c Ratio	0.71	0.53	0.69	0.65	0.77	0.37	0.17	0.33
Control Delay	59.7	19.7	60.3	23.4	62.8	12.6	35.0	20.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.7	19.7	60.3	23.4	62.8	12.6	35.0	20.1
LOS	E	B	E	C	E	B	D	C
Approach Delay		25.7		27.7		38.1		23.3
Approach LOS		C		C		D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 27.8	Intersection LOS: C
Intersection Capacity Utilization 76.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 38: Flight Av./Walker Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	747	174	148	1038	91	159	33	121	36	50	84
Future Volume (veh/h)	163	747	174	148	1038	91	159	33	121	36	50	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	168	770	179	153	1070	94	164	34	125	37	52	87
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	199	1473	342	183	1670	147	267	80	292	247	143	239
Arrive On Green	0.12	0.51	0.51	0.11	0.50	0.50	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1714	2907	676	1714	3357	295	1270	356	1309	1247	639	1069
Grp Volume(v), veh/h	168	478	471	153	575	589	164	0	159	37	0	139
Grp Sat Flow(s),veh/h/ln	1714	1805	1778	1714	1805	1847	1270	0	1664	1247	0	1708
Q Serve(g_s), s	9.8	18.1	18.1	8.9	23.9	24.0	12.8	0.0	8.4	2.7	0.0	7.0
Cycle Q Clear(g_c), s	9.8	18.1	18.1	8.9	23.9	24.0	19.8	0.0	8.4	11.0	0.0	7.0
Prop In Lane	1.00		0.38	1.00		0.16	1.00		0.79	1.00		0.63
Lane Grp Cap(c), veh/h	199	915	901	183	898	919	267	0	372	247	0	382
V/C Ratio(X)	0.84	0.52	0.52	0.84	0.64	0.64	0.61	0.00	0.43	0.15	0.00	0.36
Avail Cap(c_a), veh/h	364	915	901	333	898	919	382	0	523	375	0	557
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.1	16.9	16.9	44.6	18.9	18.9	41.8	0.0	33.9	38.7	0.0	33.4
Incr Delay (d2), s/veh	3.7	2.1	2.2	3.8	3.5	3.4	2.3	0.0	0.8	0.3	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	7.2	7.1	3.8	9.7	9.9	4.0	0.0	3.3	0.8	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.9	19.0	19.0	48.4	22.4	22.3	44.1	0.0	34.7	39.0	0.0	34.0
LnGrp LOS	D	B	B	D	C	C	D	A	C	D	A	C
Approach Vol, veh/h		1117			1317			323			176	
Approach Delay, s/veh		23.3			25.4			39.5			35.0	
Approach LOS		C			C			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		28.6	15.5	57.8		28.6	16.4	56.9				
Change Period (Y+Rc), s		5.8	4.6	6.2		* 5.8	4.6	6.2				
Max Green Setting (Gmax), s		32.0	19.8	51.6		* 33	21.6	49.8				
Max Q Clear Time (g_c+I1), s		21.8	10.9	20.1		13.0	11.8	26.0				
Green Ext Time (p_c), s		1.0	0.1	6.0		0.9	0.1	7.4				

Intersection Summary		
HCM 6th Ctrl Delay		26.7
HCM 6th LOS		C

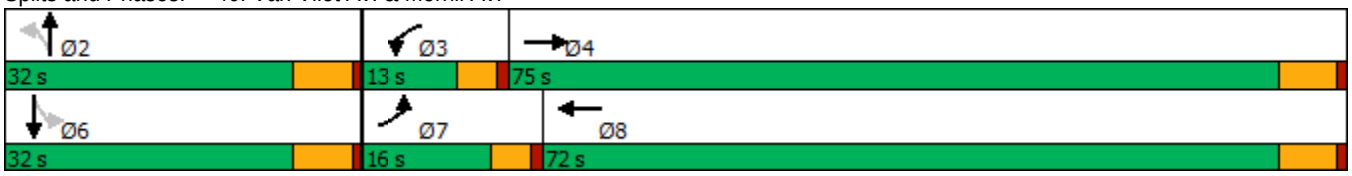
Notes

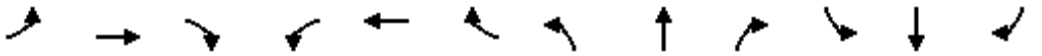
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	62	804	36	1245	14	0	20	0
Future Volume (vph)	62	804	36	1245	14	0	20	0
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	28.2	28.2	28.2	28.2
Total Split (s)	16.0	75.0	13.0	72.0	32.0	32.0	32.0	32.0
Total Split (%)	13.3%	62.5%	10.8%	60.0%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2		6.2	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	8.3	73.7	6.7	70.0		12.2	12.2	12.2
Actuated g/C Ratio	0.08	0.70	0.06	0.66		0.12	0.12	0.12
v/c Ratio	0.50	0.37	0.36	0.60		0.40	0.17	0.06
Control Delay	60.0	8.2	57.7	12.8		16.4	44.5	0.3
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	60.0	8.2	57.7	12.8		16.4	44.5	0.3
LOS	E	A	E	B		B	D	A
Approach Delay		11.7		14.0		16.4		24.6
Approach LOS		B		B		B		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 105.6	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 13.4	Intersection LOS: B
Intersection Capacity Utilization 67.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 40: Van Vliet Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	804	38	36	1245	72	14	0	85	20	0	17
Future Volume (veh/h)	62	804	38	36	1245	72	14	0	85	20	0	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	67	874	41	39	1353	78	15	0	92	22	0	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	85	2442	115	57	2356	136	55	9	138	190	0	160
Arrive On Green	0.05	0.70	0.70	0.03	0.68	0.68	0.10	0.00	0.10	0.10	0.00	0.10
Sat Flow, veh/h	1714	3511	165	1714	3469	200	132	94	1388	1325	0	1610
Grp Volume(v), veh/h	67	449	466	39	702	729	107	0	0	22	0	18
Grp Sat Flow(s),veh/h/ln	1714	1805	1870	1714	1805	1864	1614	0	0	1325	0	1610
Q Serve(g_s), s	3.8	10.0	10.0	2.2	20.2	20.4	2.3	0.0	0.0	0.0	0.0	1.0
Cycle Q Clear(g_c), s	3.8	10.0	10.0	2.2	20.2	20.4	6.3	0.0	0.0	1.8	0.0	1.0
Prop In Lane	1.00		0.09	1.00		0.11	0.14		0.86	1.00		1.00
Lane Grp Cap(c), veh/h	85	1256	1301	57	1226	1266	202	0	0	190	0	160
V/C Ratio(X)	0.79	0.36	0.36	0.68	0.57	0.58	0.53	0.00	0.00	0.12	0.00	0.11
Avail Cap(c_a), veh/h	198	1256	1301	146	1226	1266	459	0	0	404	0	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.5	6.1	6.1	47.3	8.3	8.4	42.9	0.0	0.0	40.9	0.0	40.6
Incr Delay (d2), s/veh	5.9	0.8	0.8	5.3	2.0	1.9	2.2	0.0	0.0	0.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	3.0	3.1	1.0	6.4	6.7	2.5	0.0	0.0	0.5	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.3	6.9	6.9	52.6	10.3	10.3	45.1	0.0	0.0	41.2	0.0	40.9
LnGrp LOS	D	A	A	D	B	B	D	A	A	D	A	D
Approach Vol, veh/h		982			1470			107			40	
Approach Delay, s/veh		10.0			11.4			45.1			41.1	
Approach LOS		A			B			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.0	7.9	75.0		16.0	9.5	73.4				
Change Period (Y+Rc), s		6.2	4.6	6.2		6.2	4.6	6.2				
Max Green Setting (Gmax), s		25.8	8.4	68.8		25.8	11.4	65.8				
Max Q Clear Time (g_c+I1), s		8.3	4.2	12.0		3.8	5.8	22.4				
Green Ext Time (p_c), s		0.4	0.0	5.9		0.1	0.0	11.9				

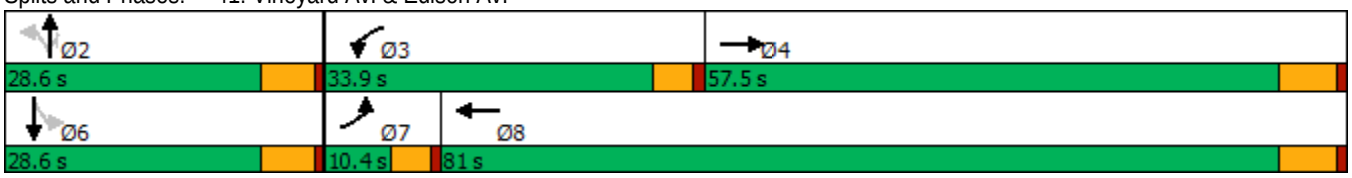
Intersection Summary												
HCM 6th Ctrl Delay			12.7									
HCM 6th LOS			B									

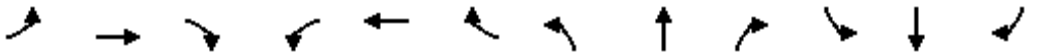
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	19	1350	243	2484	54	21	146	61	33
Future Volume (vph)	19	1350	243	2484	54	21	146	61	33
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA
Protected Phases	7	4	3	8		2			6
Permitted Phases					2		2	6	
Detector Phase	7	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	27.8	27.8	27.8	27.8	27.8
Total Split (s)	10.4	57.5	33.9	81.0	28.6	28.6	28.6	28.6	28.6
Total Split (%)	8.7%	47.9%	28.3%	67.5%	23.8%	23.8%	23.8%	23.8%	23.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	5.8	5.8	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	Max	None	Max	None	None	None	None	None
Act Effct Green (s)	5.5	55.2	19.3	75.3	12.6	12.6	12.6	12.6	12.6
Actuated g/C Ratio	0.05	0.53	0.19	0.73	0.12	0.12	0.12	0.12	0.12
v/c Ratio	0.22	0.56	0.79	0.73	0.36	0.10	0.47	0.39	0.29
Control Delay	56.4	18.6	57.3	11.4	49.2	42.3	11.7	49.7	28.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.4	18.6	57.3	11.4	49.2	42.3	11.7	49.7	28.1
LOS	E	B	E	B	D	D	B	D	C
Approach Delay		19.1		15.5		23.8			38.7
Approach LOS		B		B		C			D

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 103.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 17.7 — Intersection LOS: B
Intersection Capacity Utilization 77.0% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 41: Vineyard Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	1350	73	243	2484	43	54	21	146	61	33	30
Future Volume (veh/h)	19	1350	73	243	2484	43	54	21	146	61	33	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	21	1467	79	264	2700	47	59	23	159	66	36	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	39	2821	152	297	3687	64	188	228	193	209	110	101
Arrive On Green	0.02	0.56	0.56	0.16	0.70	0.70	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1810	5038	271	1810	5251	91	1428	1900	1610	1289	913	837
Grp Volume(v), veh/h	21	1007	539	264	1774	973	59	23	159	66	0	69
Grp Sat Flow(s),veh/h/ln	1810	1729	1851	1810	1729	1884	1428	1900	1610	1289	0	1749
Q Serve(g_s), s	1.2	19.3	19.3	15.2	33.4	33.9	4.2	1.1	10.3	5.1	0.0	3.8
Cycle Q Clear(g_c), s	1.2	19.3	19.3	15.2	33.4	33.9	8.1	1.1	10.3	6.3	0.0	3.8
Prop In Lane	1.00		0.15	1.00		0.05	1.00		1.00	1.00		0.48
Lane Grp Cap(c), veh/h	39	1936	1037	297	2428	1323	188	228	193	209	0	210
V/C Ratio(X)	0.53	0.52	0.52	0.89	0.73	0.74	0.31	0.10	0.82	0.32	0.00	0.33
Avail Cap(c_a), veh/h	99	1936	1037	498	2428	1323	322	407	345	330	0	374
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.6	14.6	14.6	43.6	9.7	9.8	46.6	41.7	45.7	44.5	0.0	42.9
Incr Delay (d2), s/veh	4.1	1.0	1.9	5.9	2.0	3.7	0.9	0.2	8.4	0.9	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	6.8	7.5	7.0	9.8	11.5	1.5	0.5	4.4	1.6	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.7	15.6	16.4	49.5	11.7	13.4	47.6	41.9	54.1	45.4	0.0	43.8
LnGrp LOS	E	B	B	D	B	B	D	D	D	D	A	D
Approach Vol, veh/h		1567			3011			241			135	
Approach Delay, s/veh		16.4			15.6			51.4			44.6	
Approach LOS		B			B			D			D	

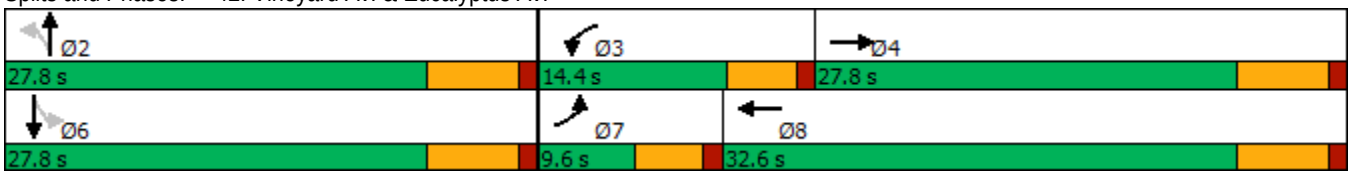
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.6	22.1	65.8		18.6	6.9	81.0				
Change Period (Y+Rc), s		5.8	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		22.8	29.3	51.3		22.8	5.8	74.8				
Max Q Clear Time (g_c+I1), s		12.3	17.2	21.3		8.3	3.2	35.9				
Green Ext Time (p_c), s		0.5	0.3	11.7		0.4	0.0	29.5				

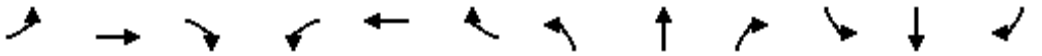
Intersection Summary												
HCM 6th Ctrl Delay			18.4									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	24	242	150	407	34	54	112	165
Future Volume (vph)	24	242	150	407	34	54	112	165
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	27.8	27.8	27.8	27.8	27.8
Total Split (s)	9.6	27.8	14.4	32.6	27.8	27.8	27.8	27.8
Total Split (%)	13.7%	39.7%	20.6%	46.6%	39.7%	39.7%	39.7%	39.7%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8		5.8		5.8
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	5.2	16.8	8.8	27.1		17.9		17.9
Actuated g/C Ratio	0.09	0.28	0.15	0.45		0.30		0.30
v/c Ratio	0.18	0.73	0.65	0.63		0.24		0.79
Control Delay	33.0	27.3	41.4	18.8		17.6		33.1
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	33.0	27.3	41.4	18.8		17.6		33.1
LOS	C	C	D	B		B		C
Approach Delay		27.7		24.1		17.6		33.1
Approach LOS		C		C		B		C

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 60.3	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 26.7	Intersection LOS: C
Intersection Capacity Utilization 68.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 42: Vineyard Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	242	111	150	407	80	34	54	12	112	165	73
Future Volume (veh/h)	24	242	111	150	407	80	34	54	12	112	165	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	26	263	121	163	442	87	37	59	13	122	179	79
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	52	333	153	206	555	109	208	297	55	222	248	98
Arrive On Green	0.03	0.27	0.27	0.12	0.36	0.36	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1714	1231	567	1714	1542	303	393	1065	197	448	889	351
Grp Volume(v), veh/h	26	0	384	163	0	529	109	0	0	380	0	0
Grp Sat Flow(s),veh/h/ln	1714	0	1798	1714	0	1845	1655	0	0	1687	0	0
Q Serve(g_s), s	0.7	0.0	9.7	4.5	0.0	12.6	0.0	0.0	0.0	8.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	0.0	9.7	4.5	0.0	12.6	2.2	0.0	0.0	10.2	0.0	0.0
Prop In Lane	1.00		0.32	1.00		0.16	0.34		0.12	0.32		0.21
Lane Grp Cap(c), veh/h	52	0	486	206	0	664	560	0	0	568	0	0
V/C Ratio(X)	0.50	0.00	0.79	0.79	0.00	0.80	0.19	0.00	0.00	0.67	0.00	0.00
Avail Cap(c_a), veh/h	175	0	807	343	0	1009	825	0	0	850	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.4	0.0	16.6	21.0	0.0	14.1	13.5	0.0	0.0	16.3	0.0	0.0
Incr Delay (d2), s/veh	2.7	0.0	2.9	2.6	0.0	2.6	0.2	0.0	0.0	1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	3.5	1.7	0.0	4.3	0.8	0.0	0.0	3.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.1	0.0	19.5	23.6	0.0	16.7	13.7	0.0	0.0	17.7	0.0	0.0
LnGrp LOS	C	A	B	C	A	B	B	A	A	B	A	A
Approach Vol, veh/h		410			692			109			380	
Approach Delay, s/veh		19.9			18.3			13.7			17.7	
Approach LOS		B			B			B			B	

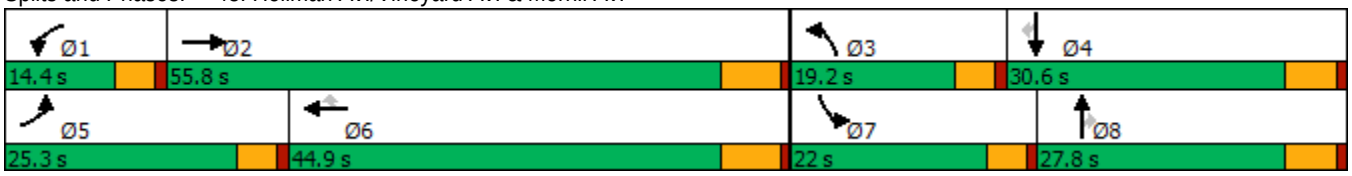
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		19.5	10.5	19.0		19.5	6.1	23.4				
Change Period (Y+Rc), s		5.8	4.6	5.8		5.8	4.6	5.8				
Max Green Setting (Gmax), s		22.0	9.8	22.0		22.0	5.0	26.8				
Max Q Clear Time (g_c+I1), s		4.2	6.5	11.7		12.2	2.7	14.6				
Green Ext Time (p_c), s		0.4	0.1	1.5		1.5	0.0	2.5				

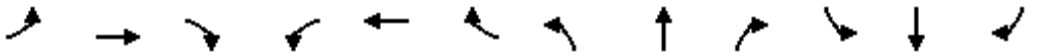
Intersection Summary												
HCM 6th Ctrl Delay			18.3									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	275	601	54	1040	351	177	129	45	229	94	136
Future Volume (vph)	275	601	54	1040	351	177	129	45	229	94	136
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases					6			8			4
Detector Phase	5	2	1	6	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	28.2	9.6	27.8	27.8	9.6	27.8	27.8
Total Split (s)	25.3	55.8	14.4	44.9	44.9	19.2	27.8	27.8	22.0	30.6	30.6
Total Split (%)	21.1%	46.5%	12.0%	37.4%	37.4%	16.0%	23.2%	23.2%	18.3%	25.5%	25.5%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	20.7	53.6	7.8	38.7	38.7	14.3	14.3	14.3	17.4	17.4	17.4
Actuated g/C Ratio	0.18	0.48	0.07	0.34	0.34	0.13	0.13	0.13	0.15	0.15	0.15
v/c Ratio	0.94	0.40	0.49	0.90	0.52	0.88	0.58	0.14	0.93	0.34	0.38
Control Delay	84.4	21.1	65.0	46.3	12.5	85.0	55.7	0.9	88.1	45.5	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.4	21.1	65.0	46.3	12.5	85.0	55.7	0.9	88.1	45.5	8.6
LOS	F	C	E	D	B	F	E	A	F	D	A
Approach Delay		40.3		38.8			63.5			55.8	
Approach LOS		D		D			E			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.4	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 44.4	Intersection LOS: D
Intersection Capacity Utilization 84.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 43: Hellman Av./Vineyard Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	275	601	33	54	1040	351	177	129	45	229	94	136
Future Volume (veh/h)	275	601	33	54	1040	351	177	129	45	229	94	136
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	296	646	35	58	1118	377	190	139	48	246	101	146
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	323	1759	95	74	1299	579	218	181	154	273	242	205
Arrive On Green	0.19	0.51	0.51	0.04	0.36	0.36	0.13	0.10	0.10	0.16	0.13	0.13
Sat Flow, veh/h	1714	3483	189	1714	3610	1610	1714	1900	1610	1714	1900	1610
Grp Volume(v), veh/h	296	335	346	58	1118	377	190	139	48	246	101	146
Grp Sat Flow(s),veh/h/ln	1714	1805	1866	1714	1805	1610	1714	1900	1610	1714	1900	1610
Q Serve(g_s), s	18.2	12.1	12.1	3.6	30.9	21.0	11.7	7.7	3.0	15.1	5.3	9.4
Cycle Q Clear(g_c), s	18.2	12.1	12.1	3.6	30.9	21.0	11.7	7.7	3.0	15.1	5.3	9.4
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	323	912	942	74	1299	579	218	181	154	273	242	205
V/C Ratio(X)	0.92	0.37	0.37	0.79	0.86	0.65	0.87	0.77	0.31	0.90	0.42	0.71
Avail Cap(c_a), veh/h	330	912	942	156	1299	579	233	389	329	277	438	371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	16.2	16.2	51.0	31.9	28.8	46.1	47.5	45.4	44.4	43.2	45.0
Incr Delay (d2), s/veh	28.4	1.1	1.1	6.8	7.6	5.6	25.7	6.6	1.1	28.7	1.1	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.9	4.8	5.0	1.6	13.8	8.6	6.4	3.8	1.2	8.4	2.5	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.3	17.3	17.3	57.7	39.6	34.4	71.7	54.1	46.5	73.1	44.4	49.5
LnGrp LOS	E	B	B	E	D	C	E	D	D	E	D	D
Approach Vol, veh/h		977			1553			377			493	
Approach Delay, s/veh		33.6			39.0			62.0			60.2	
Approach LOS		C			D			E			E	

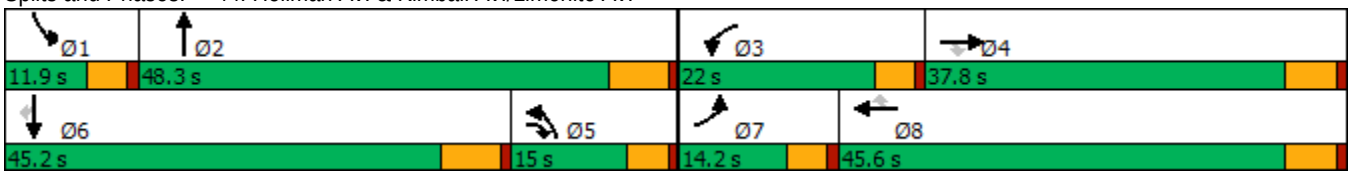
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	60.5	18.3	19.5	24.8	44.9	21.7	16.1
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	9.8	49.6	14.6	24.8	20.7	38.7	17.4	22.0
Max Q Clear Time (g_c+I1), s	5.6	14.1	13.7	11.4	20.2	32.9	17.1	9.7
Green Ext Time (p_c), s	0.0	3.9	0.0	0.7	0.0	3.8	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	43.1
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	55	601	376	331	825	116	163	264	39	45	25
Future Volume (vph)	55	601	376	331	825	116	163	264	39	45	25
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	1	6	
Permitted Phases			4			8					6
Detector Phase	7	4	5	3	8	8	5	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	37.8	9.6	43.2	9.6	43.2	43.2
Total Split (s)	14.2	37.8	15.0	22.0	45.6	45.6	15.0	48.3	11.9	45.2	45.2
Total Split (%)	11.8%	31.5%	12.5%	18.3%	38.0%	38.0%	12.5%	40.3%	9.9%	37.7%	37.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	None	None	None	Max	Max	None	None	None
Act Effct Green (s)	7.7	25.2	61.2	15.3	35.2	35.2	33.7	42.9	6.5	15.0	15.0
Actuated g/C Ratio	0.07	0.24	0.57	0.14	0.33	0.33	0.32	0.40	0.06	0.14	0.14
v/c Ratio	0.47	0.74	0.36	0.78	0.73	0.19	0.17	0.40	0.39	0.09	0.07
Control Delay	64.1	44.2	2.1	58.2	37.0	2.1	34.1	14.6	63.9	40.6	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.1	44.2	2.1	58.2	37.0	2.1	34.1	14.6	63.9	40.6	0.4
LOS	E	D	A	E	D	A	C	B	E	D	A
Approach Delay		29.9			39.3			19.0		39.8	
Approach LOS		C			D			B		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 106.7	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 31.5	Intersection LOS: C
Intersection Capacity Utilization 65.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	601	376	331	825	116	163	264	298	39	45	25
Future Volume (veh/h)	55	601	376	331	825	116	163	264	298	39	45	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1700	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	58	633	396	348	868	122	172	278	314	41	47	26
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	74	817	891	409	1132	505	1028	732	653	57	348	155
Arrive On Green	0.04	0.23	0.23	0.13	0.31	0.31	0.33	0.41	0.41	0.03	0.10	0.10
Sat Flow, veh/h	1714	3610	1610	3141	3610	1610	3141	1805	1610	1714	3610	1610
Grp Volume(v), veh/h	58	633	396	348	868	122	172	278	314	41	47	26
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1570	1805	1610	1570	1805	1610	1714	1805	1610
Q Serve(g_s), s	3.5	17.1	5.9	11.2	22.5	5.8	4.0	11.2	14.9	2.5	1.2	1.3
Cycle Q Clear(g_c), s	3.5	17.1	5.9	11.2	22.5	5.8	4.0	11.2	14.9	2.5	1.2	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	74	817	891	409	1132	505	1028	732	653	57	348	155
V/C Ratio(X)	0.79	0.77	0.44	0.85	0.77	0.24	0.17	0.38	0.48	0.72	0.14	0.17
Avail Cap(c_a), veh/h	159	1113	1023	527	1384	617	1028	732	653	121	1357	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	37.7	3.8	44.1	32.2	26.4	24.8	21.7	22.8	49.7	42.9	30.2
Incr Delay (d2), s/veh	6.8	2.4	0.3	8.3	2.1	0.2	0.4	1.5	2.5	6.1	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	7.5	2.2	4.7	9.6	2.2	1.5	4.7	5.7	1.1	0.5	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.0	40.1	4.1	52.5	34.3	26.7	25.2	23.2	25.3	55.7	43.1	30.7
LnGrp LOS	E	D	A	D	C	C	C	C	C	E	D	C
Approach Vol, veh/h		1087			1338			764			114	
Approach Delay, s/veh		27.8			38.3			24.5			44.8	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	48.3	18.1	29.3	40.2	16.2	9.1	38.4
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	6.2	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	7.3	42.1	17.4	32.0	10.4	* 39	9.6	39.8
Max Q Clear Time (g_c+I1), s	4.5	16.9	13.2	19.1	6.0	3.3	5.5	24.5
Green Ext Time (p_c), s	0.0	3.4	0.3	4.4	0.1	0.3	0.0	5.3

Intersection Summary	
HCM 6th Ctrl Delay	31.9
HCM 6th LOS	C

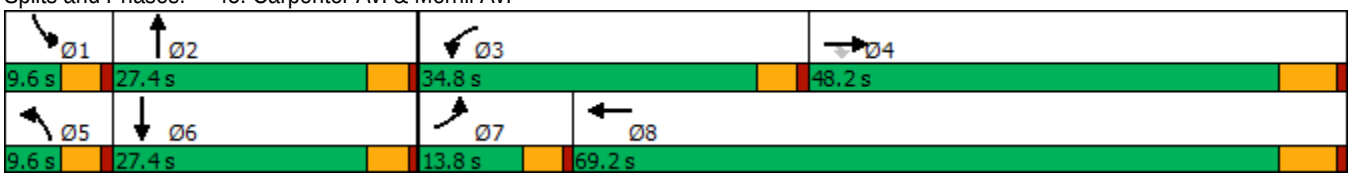
Notes

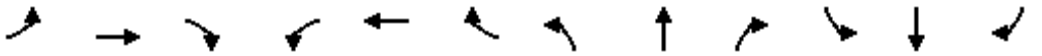
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	SBT	Ø1	Ø5
Lane Configurations									
Traffic Volume (vph)	45	792	37	253	1294	0	0		
Future Volume (vph)	45	792	37	253	1294	0	0		
Turn Type	Prot	NA	Perm	Prot	NA	NA	NA		
Protected Phases	7	4		3	8	2	6	1	5
Permitted Phases			4						
Detector Phase	7	4	4	3	8	2	6		
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	9.6	9.6
Total Split (s)	13.8	48.2	48.2	34.8	69.2	27.4	27.4	9.6	9.6
Total Split (%)	11.5%	40.2%	40.2%	29.0%	57.7%	22.8%	22.8%	8%	8%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	4.6	4.6		
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	7.3	47.5	47.5	20.8	63.2	0.0	0.0		
Actuated g/C Ratio	0.07	0.45	0.45	0.20	0.59	0.00	0.00		
v/c Ratio	0.41	0.52	0.05	0.81	0.71	1.59	1.74		
Control Delay	59.4	23.6	0.1	59.4	18.2	307.3	371.3		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	59.4	23.6	0.1	59.4	18.2	307.3	371.3		
LOS	E	C	A	E	B	F	F		
Approach Delay		24.5			24.5	307.3	371.3		
Approach LOS		C			C	F	F		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 106.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.74	
Intersection Signal Delay: 75.1	Intersection LOS: E
Intersection Capacity Utilization 84.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 45: Carpenter Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	792	37	253	1294	118	78	0	153	180	0	73
Future Volume (veh/h)	45	792	37	253	1294	118	78	0	153	180	0	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	48	843	39	269	1377	126	83	0	163	191	0	78
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	65	1919	856	304	2245	204	0	0	205	0	0	205
Arrive On Green	0.04	0.53	0.53	0.18	0.67	0.67	0.00	0.00	0.13	0.00	0.00	0.13
Sat Flow, veh/h	1714	3610	1610	1714	3345	305	0	0	1610	0	0	1610
Grp Volume(v), veh/h	48	843	39	269	740	763	0	0	163	0	0	78
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1714	1805	1845	0	0	1610	0	0	1610
Q Serve(g_s), s	2.6	13.4	1.1	14.4	21.5	21.8	0.0	0.0	9.2	0.0	0.0	4.2
Cycle Q Clear(g_c), s	2.6	13.4	1.1	14.4	21.5	21.8	0.0	0.0	9.2	0.0	0.0	4.2
Prop In Lane	1.00		1.00	1.00		0.17	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	65	1919	856	304	1211	1238	0	0	205	0	0	205
V/C Ratio(X)	0.74	0.44	0.05	0.88	0.61	0.62	0.00	0.00	0.80	0.00	0.00	0.38
Avail Cap(c_a), veh/h	168	1919	856	551	1211	1238	0	0	391	0	0	391
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	44.7	13.4	10.6	37.7	8.6	8.7	0.0	0.0	39.8	0.0	0.0	37.6
Incr Delay (d2), s/veh	5.9	0.7	0.1	3.4	2.3	2.3	0.0	0.0	6.9	0.0	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	4.8	0.4	5.9	6.8	7.0	0.0	0.0	4.0	0.0	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.6	14.2	10.7	41.1	10.9	11.0	0.0	0.0	46.7	0.0	0.0	38.8
LnGrp LOS	D	B	B	D	B	B	A	A	D	A	A	D
Approach Vol, veh/h		930			1772			163			78	
Approach Delay, s/veh		15.9			15.5			46.7			38.8	
Approach LOS		B			B			D			D	

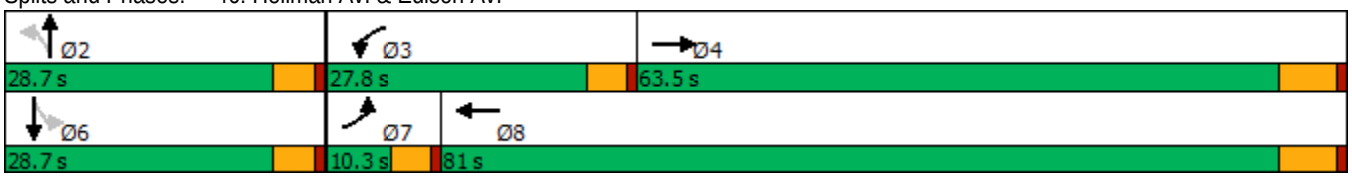
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	16.5	21.3	56.1	0.0	16.5	8.2	69.2
Change Period (Y+Rc), s	4.6	4.6	4.6	6.2	4.6	4.6	4.6	6.2
Max Green Setting (Gmax), s	5.0	22.8	30.2	42.0	5.0	22.8	9.2	63.0
Max Q Clear Time (g_c+I1), s	0.0	11.2	16.4	15.4	0.0	6.2	4.6	23.8
Green Ext Time (p_c), s	0.0	0.7	0.3	5.7	0.0	0.3	0.0	12.7

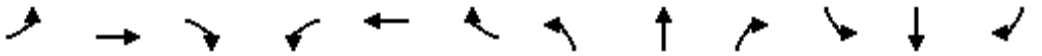
Intersection Summary	
HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	35	1339	175	2589	61	10	43	84
Future Volume (vph)	35	1339	175	2589	61	10	43	84
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	26.7	26.7	26.7	26.7
Total Split (s)	10.3	63.5	27.8	81.0	28.7	28.7	28.7	28.7
Total Split (%)	8.6%	52.9%	23.2%	67.5%	23.9%	23.9%	23.9%	23.9%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	5.6	60.6	15.9	75.3	14.1	14.1	14.1	14.1
Actuated g/C Ratio	0.05	0.57	0.15	0.71	0.13	0.13	0.13	0.13
v/c Ratio	0.43	0.58	0.75	0.78	0.61	0.24	0.28	0.61
Control Delay	66.8	16.5	61.6	13.8	68.3	17.2	46.5	46.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.8	16.5	61.6	13.8	68.3	17.2	46.5	46.3
LOS	E	B	E	B	E	B	D	D
Approach Delay		17.6		16.8		43.1		46.4
Approach LOS		B		B		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 106.2	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 18.9	Intersection LOS: B
Intersection Capacity Utilization 88.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 46: Hellman Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	1339	211	175	2589	48	61	10	49	43	84	62
Future Volume (veh/h)	35	1339	211	175	2589	48	61	10	49	43	84	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	38	1455	229	190	2814	52	66	11	53	47	91	67
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	53	2610	410	219	3535	65	155	44	212	230	158	116
Arrive On Green	0.03	0.58	0.58	0.13	0.67	0.67	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1714	4520	710	1714	5244	96	1248	284	1369	1359	1017	749
Grp Volume(v), veh/h	38	1113	571	190	1850	1016	66	0	64	47	0	158
Grp Sat Flow(s),veh/h/ln	1714	1729	1772	1714	1729	1883	1248	0	1654	1359	0	1765
Q Serve(g_s), s	2.4	22.3	22.3	12.1	41.6	42.4	5.7	0.0	3.8	3.5	0.0	9.2
Cycle Q Clear(g_c), s	2.4	22.3	22.3	12.1	41.6	42.4	15.0	0.0	3.8	7.3	0.0	9.2
Prop In Lane	1.00		0.40	1.00		0.05	1.00		0.83	1.00		0.42
Lane Grp Cap(c), veh/h	53	1997	1023	219	2331	1269	155	0	257	230	0	274
V/C Ratio(X)	0.71	0.56	0.56	0.87	0.79	0.80	0.43	0.00	0.25	0.20	0.00	0.58
Avail Cap(c_a), veh/h	88	1997	1023	358	2331	1269	231	0	358	313	0	382
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.3	14.6	14.6	47.5	12.7	12.8	50.4	0.0	41.2	44.4	0.0	43.5
Incr Delay (d2), s/veh	6.4	1.1	2.2	6.6	2.9	5.4	1.9	0.0	0.5	0.4	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	7.9	8.4	5.3	13.4	15.7	1.9	0.0	1.6	1.2	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.7	15.7	16.8	54.0	15.6	18.2	52.3	0.0	41.7	44.8	0.0	45.4
LnGrp LOS	E	B	B	D	B	B	D	A	D	D	A	D
Approach Vol, veh/h		1722			3056			130			205	
Approach Delay, s/veh		17.1			18.8			47.1			45.3	
Approach LOS		B			B			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		21.9	18.8	70.3		21.9	8.1	81.0				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		* 4.7	4.6	6.2				
Max Green Setting (Gmax), s		* 24	23.2	57.3		* 24	5.7	74.8				
Max Q Clear Time (g_c+I1), s		17.0	14.1	24.3		11.2	4.4	44.4				
Green Ext Time (p_c), s		0.3	0.2	13.9		0.8	0.0	25.2				

Intersection Summary	
HCM 6th Ctrl Delay	20.0
HCM 6th LOS	C

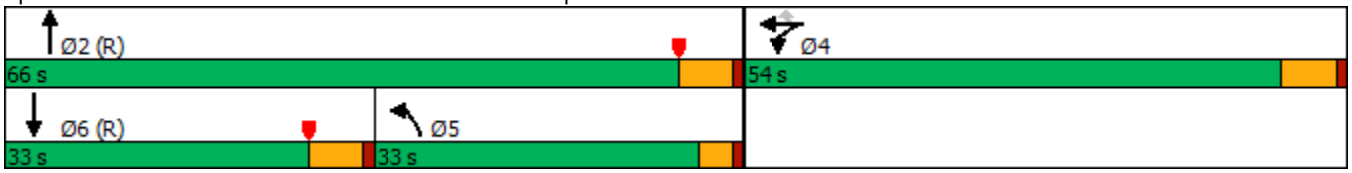
Notes

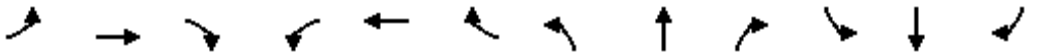
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	4	595	804	1607	662
Future Volume (vph)	4	595	804	1607	662
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	54.0	54.0	33.0	66.0	33.0
Total Split (%)	45.0%	45.0%	27.5%	55.0%	27.5%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	48.0	48.0	31.6	60.2	24.6
Actuated g/C Ratio	0.40	0.40	0.26	0.50	0.20
v/c Ratio	1.03	0.93	0.95	0.67	0.73
Control Delay	78.6	52.6	49.2	17.2	44.7
Queue Delay	0.0	0.0	0.1	33.3	0.0
Total Delay	78.6	52.6	49.3	50.5	44.7
LOS	E	D	D	D	D
Approach Delay	66.5			50.1	44.7
Approach LOS	E			D	D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 53.6	Intersection LOS: D
Intersection Capacity Utilization 87.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	685	4	595	804	1607	0	0	662	237
Future Volume (veh/h)	0	0	0	685	4	595	804	1607	0	0	662	237
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				745	4	464	874	1747	0	0	720	248
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				720	4	644	914	2602	0	0	946	310
Arrive On Green				0.40	0.40	0.40	0.09	0.17	0.00	0.00	0.19	0.19
Sat Flow, veh/h				1800	10	1610	3510	5358	0	0	5168	1606
Grp Volume(v), veh/h				749	0	464	874	1747	0	0	720	248
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1729	0	0	1634	1606
Q Serve(g_s), s				48.0	0.0	29.1	29.8	37.9	0.0	0.0	16.7	17.7
Cycle Q Clear(g_c), s				48.0	0.0	29.1	29.8	37.9	0.0	0.0	16.7	17.7
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				724	0	644	914	2602	0	0	946	310
V/C Ratio(X)				1.03	0.00	0.72	0.96	0.67	0.00	0.00	0.76	0.80
Avail Cap(c_a), veh/h				724	0	644	914	2602	0	0	1111	364
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.19	0.19	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				36.0	0.0	30.3	54.2	40.8	0.0	0.0	45.8	46.2
Incr Delay (d2), s/veh				42.7	0.0	4.9	5.8	0.3	0.0	0.0	5.8	19.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				28.4	0.0	25.6	14.7	17.5	0.0	0.0	7.1	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				78.7	0.0	35.2	60.0	41.0	0.0	0.0	51.6	65.4
LnGrp LOS				F	A	D	E	D	A	A	D	E
Approach Vol, veh/h					1213			2621			968	
Approach Delay, s/veh					62.0			47.4			55.1	
Approach LOS					E			D			E	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	66.0	54.0	37.0	29.0
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	60.2	48.0	29.0	* 27
Max Q Clear Time (g_c+I1), s	39.9	50.0	31.8	19.7
Green Ext Time (p_c), s	12.1	0.0	0.0	3.5

Intersection Summary	
HCM 6th Ctrl Delay	52.6
HCM 6th LOS	D

Notes

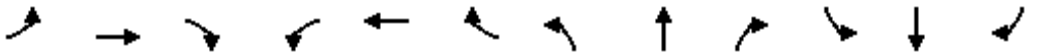
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	4	624	1937	246	1102
Future Volume (vph)	4	624	1937	246	1102
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	37.0	37.0	34.0	19.0	53.0
Total Split (s)	44.0	44.0	63.0	13.0	76.0
Total Split (%)	36.7%	36.7%	52.5%	10.8%	63.3%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	38.2	38.2	57.2	9.0	70.2
Actuated g/C Ratio	0.32	0.32	0.48	0.08	0.58
v/c Ratio	0.88	1.18	1.00dr	1.00	0.39
Control Delay	57.3	129.6	38.3	105.5	1.6
Queue Delay	8.1	0.0	23.6	0.0	0.2
Total Delay	65.4	129.6	61.8	105.5	1.8
LOS	E	F	E	F	A
Approach Delay	101.8		61.8		20.7
Approach LOS	F		E		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 59.6	Intersection LOS: E
Intersection Capacity Utilization 87.9%	ICU Level of Service E
Analysis Period (min) 15	

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	475	4	624	0	0	0	0	1937	789	246	1102	0
Future Volume (veh/h)	475	4	624	0	0	0	0	1937	789	246	1102	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	505	4	447				0	2061	608	262	1172	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	544	4	488				0	2483	717	263	3115	0
Arrive On Green	0.30	0.30	0.30				0.00	0.49	0.49	0.15	1.00	0.00
Sat Flow, veh/h	1796	14	1610				0	5311	1457	3510	5358	0
Grp Volume(v), veh/h	509	0	447				0	2001	668	262	1172	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1600	1755	1729	0
Q Serve(g_s), s	32.7	0.0	32.2				0.0	42.0	43.7	8.9	0.0	0.0
Cycle Q Clear(g_c), s	32.7	0.0	32.2				0.0	42.0	43.7	8.9	0.0	0.0
Prop In Lane	0.99		1.00				0.00		0.91	1.00		0.00
Lane Grp Cap(c), veh/h	548	0	488				0	2413	787	263	3115	0
V/C Ratio(X)	0.93	0.00	0.92				0.00	0.83	0.85	1.00	0.38	0.00
Avail Cap(c_a), veh/h	576	0	513				0	2413	787	263	3115	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.09	0.09	0.61	0.61	0.00
Uniform Delay (d), s/veh	40.6	0.0	40.4				0.0	26.1	26.6	51.0	0.0	0.0
Incr Delay (d2), s/veh	21.1	0.0	20.9				0.0	0.3	1.1	41.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.2	0.0	15.0				0.0	14.9	15.3	5.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.7	0.0	61.3				0.0	26.5	27.7	92.9	0.2	0.0
LnGrp LOS	E	A	E				A	C	C	F	A	A
Approach Vol, veh/h		956						2669			1434	
Approach Delay, s/veh		61.5						26.8			17.1	
Approach LOS		E						C			B	

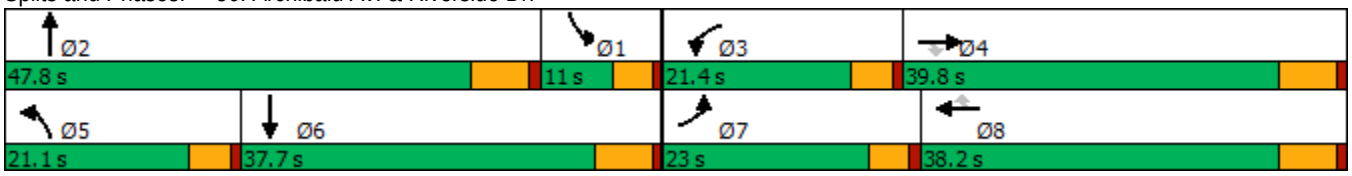
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	13.0	64.9				77.9		42.1				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	9.0	57.2				70.2		38.2				
Max Q Clear Time (g_c+I1), s	10.9	45.7				2.0		34.7				
Green Ext Time (p_c), s	0.0	10.2				9.6		1.6				

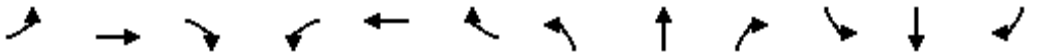
Intersection Summary			
HCM 6th Ctrl Delay			30.6
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	287	407	371	181	571	209	404	1747	162	854
Future Volume (vph)	287	407	371	181	571	209	404	1747	162	854
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	23.0	39.8	39.8	21.4	38.2	38.2	21.1	47.8	11.0	37.7
Total Split (%)	19.2%	33.2%	33.2%	17.8%	31.8%	31.8%	17.6%	39.8%	9.2%	31.4%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	18.4	28.2	28.2	15.3	25.0	25.0	16.3	41.7	6.4	31.7
Actuated g/C Ratio	0.16	0.25	0.25	0.14	0.22	0.22	0.14	0.37	0.06	0.28
v/c Ratio	1.10	0.48	0.59	0.84	0.76	0.46	0.90	1.05	0.92	0.85
Control Delay	127.5	38.4	9.2	77.5	47.8	13.4	71.0	69.3	101.8	43.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	127.5	38.4	9.2	77.5	47.8	13.4	71.0	69.3	101.8	43.3
LOS	F	D	A	E	D	B	E	E	F	D
Approach Delay		52.2			46.0			69.6		50.5
Approach LOS		D			D			E		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113.2	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 57.8	Intersection LOS: E
Intersection Capacity Utilization 93.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	287	407	371	181	571	209	404	1747	117	162	854	294
Future Volume (veh/h)	287	407	371	181	571	209	404	1747	117	162	854	294
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	305	433	261	193	607	140	430	1859	121	172	909	235
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	276	896	392	220	778	340	480	1812	118	186	1191	307
Arrive On Green	0.16	0.25	0.25	0.13	0.22	0.22	0.14	0.36	0.36	0.06	0.29	0.29
Sat Flow, veh/h	1714	3610	1580	1714	3610	1578	3326	4976	323	3326	4108	1058
Grp Volume(v), veh/h	305	433	261	193	607	140	430	1290	690	172	765	379
Grp Sat Flow(s),veh/h/ln	1714	1805	1580	1714	1805	1578	1663	1729	1841	1663	1729	1708
Q Serve(g_s), s	18.4	11.7	17.0	12.6	18.1	6.9	14.5	41.6	41.6	5.9	23.0	23.2
Cycle Q Clear(g_c), s	18.4	11.7	17.0	12.6	18.1	6.9	14.5	41.6	41.6	5.9	23.0	23.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.62
Lane Grp Cap(c), veh/h	276	896	392	220	778	340	480	1260	671	186	1002	495
V/C Ratio(X)	1.10	0.48	0.67	0.88	0.78	0.41	0.89	1.02	1.03	0.92	0.76	0.77
Avail Cap(c_a), veh/h	276	1062	465	252	1011	442	480	1260	671	186	1002	495
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.9	36.7	38.7	48.9	42.2	24.1	48.0	36.3	36.3	53.7	37.0	37.0
Incr Delay (d2), s/veh	85.1	0.4	2.8	23.4	3.0	0.8	18.5	31.7	42.2	43.9	3.5	7.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.0	5.0	6.6	6.6	8.0	3.2	7.0	21.8	25.2	3.5	9.7	10.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	133.0	37.1	41.5	72.3	45.2	24.9	66.5	68.1	78.5	97.5	40.5	44.1
LnGrp LOS	F	D	D	E	D	C	E	F	F	F	D	D
Approach Vol, veh/h		999			940			2410			1316	
Approach Delay, s/veh		67.5			47.8			70.8			49.0	
Approach LOS		E			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	47.8	19.3	34.6	21.1	39.3	23.0	30.8
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	6.4	* 42	16.8	33.6	16.5	31.5	18.4	32.0
Max Q Clear Time (g_c+I1), s	7.9	43.6	14.6	19.0	16.5	25.2	20.4	20.1
Green Ext Time (p_c), s	0.0	0.0	0.1	3.0	0.0	3.4	0.0	3.2

Intersection Summary	
HCM 6th Ctrl Delay	61.3
HCM 6th LOS	E

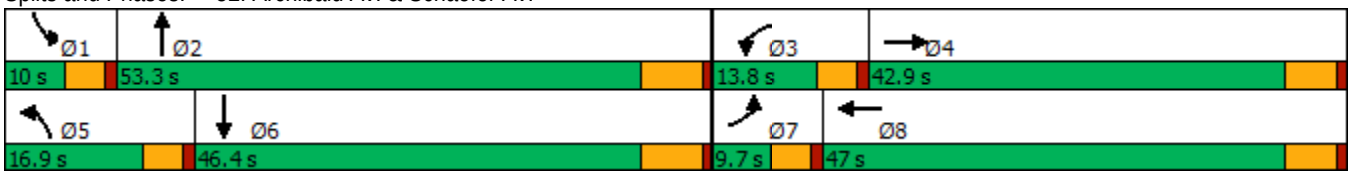
Notes

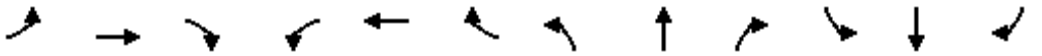
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	10	10	42	140	69	1546	22	939
Future Volume (vph)	10	10	42	140	69	1546	22	939
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	33.5	9.6	33.5
Total Split (s)	9.7	42.9	13.8	47.0	16.9	53.3	10.0	46.4
Total Split (%)	8.1%	35.8%	11.5%	39.2%	14.1%	44.4%	8.3%	38.7%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	6.5	4.6	6.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	5.5	24.7	7.0	29.7	8.7	40.0	5.7	32.5
Actuated g/C Ratio	0.06	0.28	0.08	0.34	0.10	0.46	0.07	0.37
v/c Ratio	0.10	0.04	0.34	0.81	0.44	0.72	0.22	0.65
Control Delay	53.0	20.4	53.3	33.4	52.7	23.5	54.4	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.0	20.4	53.3	33.4	52.7	23.5	54.4	26.2
LOS	D	C	D	C	D	C	D	C
Approach Delay		31.3		35.0		24.7		26.8
Approach LOS		C		D		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 87.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 27.1	Intersection LOS: C
Intersection Capacity Utilization 76.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 52: Archibald Av. & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	10	42	140	339	69	1546	10	22	939	191
Future Volume (veh/h)	10	10	10	42	140	339	69	1546	10	22	939	191
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	11	11	11	46	152	368	75	1680	0	24	1021	208
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	23	276	276	62	167	404	95	2100	0	42	1608	327
Arrive On Green	0.01	0.32	0.32	0.04	0.34	0.34	0.06	0.40	0.00	0.02	0.37	0.37
Sat Flow, veh/h	1714	872	872	1714	492	1191	1714	5358	0	1714	4303	875
Grp Volume(v), veh/h	11	0	22	46	0	520	75	1680	0	24	820	409
Grp Sat Flow(s),veh/h/ln	1714	0	1743	1714	0	1683	1714	1729	0	1714	1729	1720
Q Serve(g_s), s	0.6	0.0	0.9	2.6	0.0	29.1	4.3	28.1	0.0	1.4	19.2	19.2
Cycle Q Clear(g_c), s	0.6	0.0	0.9	2.6	0.0	29.1	4.3	28.1	0.0	1.4	19.2	19.2
Prop In Lane	1.00		0.50	1.00		0.71	1.00		0.00	1.00		0.51
Lane Grp Cap(c), veh/h	23	0	551	62	0	571	95	2100	0	42	1292	643
V/C Ratio(X)	0.49	0.00	0.04	0.74	0.00	0.91	0.79	0.80	0.00	0.57	0.63	0.64
Avail Cap(c_a), veh/h	89	0	656	160	0	704	214	2463	0	94	1400	697
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.3	0.0	23.3	47.0	0.0	31.1	46.0	25.8	0.0	47.6	25.3	25.4
Incr Delay (d2), s/veh	5.9	0.0	0.0	6.2	0.0	14.1	5.3	1.7	0.0	4.5	0.8	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.3	1.2	0.0	13.2	1.9	10.5	0.0	0.6	7.2	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.2	0.0	23.4	53.2	0.0	45.2	51.3	27.5	0.0	52.1	26.2	27.1
LnGrp LOS	D	A	C	D	A	D	D	C	A	D	C	C
Approach Vol, veh/h		33			566			1755			1253	
Approach Delay, s/veh		33.6			45.8			28.5			27.0	
Approach LOS		C			D			C			C	

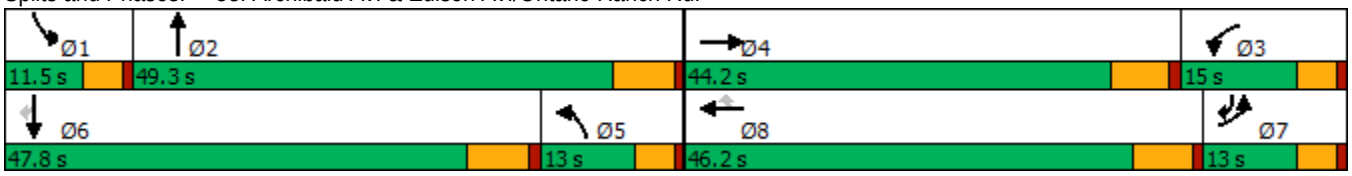
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	46.4	8.2	37.0	10.1	43.3	5.9	39.2
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	5.4	46.8	9.2	37.1	12.3	39.9	5.1	41.2
Max Q Clear Time (g_c+I1), s	3.4	30.1	4.6	2.9	6.3	21.2	2.6	31.1
Green Ext Time (p_c), s	0.0	9.8	0.0	0.1	0.0	7.1	0.0	2.3

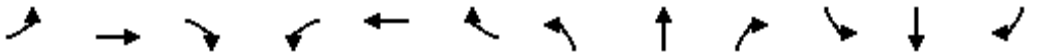
Intersection Summary	
HCM 6th Ctrl Delay	30.7
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	454	864	375	611	1806	299	502	1276	520	79	671	269
Future Volume (vph)	454	864	375	611	1806	299	502	1276	520	79	671	269
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	9.6
Total Split (s)	13.0	44.2		15.0	46.2	46.2	13.0	49.3		11.5	47.8	13.0
Total Split (%)	10.8%	36.8%		12.5%	38.5%	38.5%	10.8%	41.1%		9.6%	39.8%	10.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	3.6
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2		-0.6	-2.2	-2.2	-0.6	-2.5		-0.6	-2.5	-0.6
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lag	Lag		Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	Max	Max		None	None	None
Act Effct Green (s)	9.0	24.7	116.6	25.5	41.2	41.2	24.5	45.5	116.6	7.0	25.8	38.9
Actuated g/C Ratio	0.08	0.21	1.00	0.22	0.35	0.35	0.21	0.39	1.00	0.06	0.22	0.33
v/c Ratio	1.87	0.55	0.24	0.89	0.69	0.45	0.72	0.59	0.34	0.41	0.55	0.46
Control Delay	437.5	42.1	0.4	61.3	34.2	14.6	50.4	30.2	0.6	60.4	41.4	22.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	437.5	42.1	0.4	61.3	34.2	14.6	50.4	30.2	0.6	60.4	41.4	22.3
LOS	F	D	A	E	C	B	D	C	A	E	D	C
Approach Delay		138.8			38.1			27.9			37.8	
Approach LOS		F			D			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.87	
Intersection Signal Delay: 57.1	Intersection LOS: E
Intersection Capacity Utilization 85.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	454	864	375	611	1806	299	502	1276	520	79	671	269
Future Volume (veh/h)	454	864	375	611	1806	299	502	1276	520	79	671	269
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	468	891	0	630	1862	254	518	1315	0	81	692	244
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	255	1476		723	2574	545	780	2261		152	1130	419
Arrive On Green	0.08	0.19	0.00	0.22	0.34	0.34	0.23	0.40	0.00	0.05	0.20	0.18
Sat Flow, veh/h	3238	7600	1610	3238	7600	1610	3429	5700	1610	3326	5700	1610
Grp Volume(v), veh/h	468	891	0	630	1862	254	518	1315	0	81	692	244
Grp Sat Flow(s),veh/h/ln	1619	1900	1610	1619	1900	1610	1714	1900	1610	1663	1900	1610
Q Serve(g_s), s	9.0	12.2	0.0	21.4	24.5	10.8	15.7	20.7	0.0	2.7	12.6	6.1
Cycle Q Clear(g_c), s	9.0	12.2	0.0	21.4	24.5	10.8	15.7	20.7	0.0	2.7	12.6	6.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	255	1476		723	2574	545	780	2261		152	1130	419
V/C Ratio(X)	1.83	0.60		0.87	0.72	0.47	0.66	0.58		0.53	0.61	0.58
Avail Cap(c_a), veh/h	255	2676		723	2809	595	780	2261		218	2187	718
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.6	42.0	0.0	42.8	33.1	17.4	40.1	27.0	0.0	53.3	41.8	36.8
Incr Delay (d2), s/veh	390.1	0.4	0.0	10.9	0.9	0.6	4.4	1.1	0.0	1.1	0.5	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.3	5.5	0.0	9.2	10.8	3.8	6.7	8.8	0.0	1.1	5.7	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	442.6	42.4	0.0	53.6	33.9	18.1	44.6	28.1	0.0	54.4	42.3	38.1
LnGrp LOS	F	D		D	C	B	D	C		D	D	D
Approach Vol, veh/h		1359	A		2746			1833	A		1017	
Approach Delay, s/veh		180.2			37.0			32.8			42.3	
Approach LOS		F			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	49.3	29.5	26.2	31.9	26.6	13.0	42.7
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	6.5	* 6.5	4.6	6.2
Max Green Setting (Gmax), s	6.9	42.8	10.4	38.0	8.4	* 41	8.4	40.0
Max Q Clear Time (g_c+I1), s	4.7	22.7	23.4	14.2	17.7	14.6	11.0	26.5
Green Ext Time (p_c), s	0.0	8.3	0.0	5.8	0.0	5.2	0.0	10.0

Intersection Summary	
HCM 6th Ctrl Delay	64.6
HCM 6th LOS	E

Notes

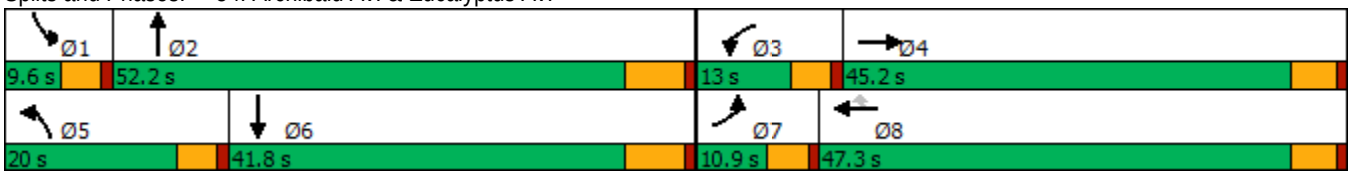
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

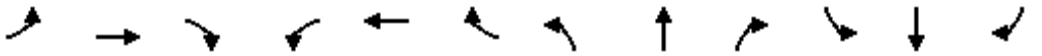
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	47	30	122	275	162	237	1975	60	1305
Future Volume (vph)	47	30	122	275	162	237	1975	60	1305
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	45.2	9.6	45.2	45.2	9.6	32.5	9.6	32.5
Total Split (s)	10.9	45.2	13.0	47.3	47.3	20.0	52.2	9.6	41.8
Total Split (%)	9.1%	37.7%	10.8%	39.4%	39.4%	16.7%	43.5%	8.0%	34.8%
Yellow Time (s)	3.6	4.2	3.6	4.2	4.2	3.6	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.2	-0.6	-1.2	-1.2	-0.6	-2.5	-0.6	-2.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	6.7	16.8	9.7	18.5	18.5	16.3	49.2	5.7	38.6
Actuated g/C Ratio	0.07	0.18	0.10	0.20	0.20	0.17	0.52	0.06	0.41
v/c Ratio	0.42	0.11	0.79	0.42	0.39	0.86	0.82	0.63	0.75
Control Delay	57.4	17.0	76.2	34.2	9.0	67.5	24.4	73.8	28.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.4	17.0	76.2	34.2	9.0	67.5	24.4	73.8	28.4
LOS	E	B	E	C	A	E	C	E	C
Approach Delay		33.9		36.1			28.9		30.2
Approach LOS		C		D			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 94.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 30.3	Intersection LOS: C
Intersection Capacity Utilization 73.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	30	36	122	275	162	237	1975	84	60	1305	169
Future Volume (veh/h)	47	30	36	122	275	162	237	1975	84	60	1305	169
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	51	32	39	131	296	163	255	2124	87	65	1403	182
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	80	226	201	163	645	288	297	2766	113	93	1962	254
Arrive On Green	0.05	0.13	0.11	0.10	0.18	0.18	0.17	0.54	0.51	0.05	0.42	0.39
Sat Flow, veh/h	1714	1805	1610	1619	3610	1610	1714	5112	209	1714	4647	603
Grp Volume(v), veh/h	51	32	39	131	296	163	255	1434	777	65	1044	541
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1619	1805	1610	1714	1729	1862	1714	1729	1792
Q Serve(g_s), s	2.6	1.4	2.0	7.1	6.6	8.3	12.9	29.1	29.5	3.3	22.4	22.5
Cycle Q Clear(g_c), s	2.6	1.4	2.0	7.1	6.6	8.3	12.9	29.1	29.5	3.3	22.4	22.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.11	1.00		0.34
Lane Grp Cap(c), veh/h	80	226	201	163	645	288	297	1871	1008	93	1460	756
V/C Ratio(X)	0.64	0.14	0.19	0.80	0.46	0.57	0.86	0.77	0.77	0.70	0.71	0.72
Avail Cap(c_a), veh/h	132	831	741	163	1746	779	306	1871	1008	107	1460	756
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.9	34.9	35.7	39.4	32.9	33.6	35.9	16.1	16.3	41.6	21.4	21.8
Incr Delay (d2), s/veh	3.1	0.3	0.5	23.1	0.5	1.7	19.4	3.1	5.7	11.2	3.0	5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.6	0.8	3.8	2.8	3.3	6.6	9.9	11.5	1.6	8.4	9.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.0	35.2	36.1	62.5	33.4	35.3	55.3	19.2	22.0	52.8	24.4	27.5
LnGrp LOS	D	D	D	E	C	D	E	B	C	D	C	C
Approach Vol, veh/h		122			590			2466			1650	
Approach Delay, s/veh		39.6			40.4			23.8			26.6	
Approach LOS		D			D			C			C	

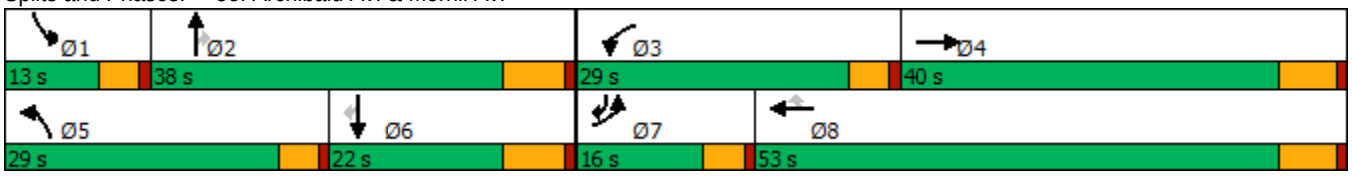
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	52.4	13.0	15.2	19.5	41.8	8.2	20.0
Change Period (Y+Rc), s	4.6	6.5	4.6	5.2	4.6	6.5	4.6	5.2
Max Green Setting (Gmax), s	5.0	45.7	8.4	40.0	15.4	35.3	6.3	42.1
Max Q Clear Time (g_c+I1), s	5.3	31.5	9.1	4.0	14.9	24.5	4.6	10.3
Green Ext Time (p_c), s	0.0	10.8	0.0	0.4	0.0	6.6	0.0	2.5

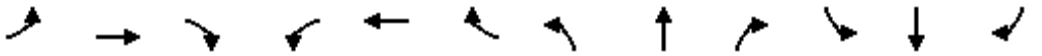
Intersection Summary	
HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	348	28	233	139	96	158	730	1479	88	48	889	603
Future Volume (vph)	348	28	233	139	96	158	730	1479	88	48	889	603
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			Free			8			2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	16.2		9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	9.6
Total Split (s)	16.0	40.0		29.0	53.0	53.0	29.0	38.0	38.0	13.0	22.0	16.0
Total Split (%)	13.3%	33.3%		24.2%	44.2%	44.2%	24.2%	31.7%	31.7%	10.8%	18.3%	13.3%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2		-0.6	-2.2	-2.2	-0.6	-2.5	-2.5	-0.6	-2.5	-0.6
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min	Min	None	Min	None
Act Effct Green (s)	12.2	16.3	90.1	24.3	17.9	17.9	25.4	41.3	41.3	6.6	18.3	34.6
Actuated g/C Ratio	0.14	0.18	1.00	0.27	0.20	0.20	0.28	0.46	0.46	0.07	0.20	0.38
v/c Ratio	0.80	0.08	0.15	0.31	0.26	0.36	1.56	0.64	0.11	0.21	0.87	0.72
Control Delay	53.8	30.3	0.2	33.5	30.6	6.6	289.7	23.5	0.5	44.5	46.0	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.8	30.3	0.2	33.5	30.6	6.6	289.7	23.5	0.5	44.5	46.0	15.6
LOS	D	C	A	C	C	A	F	C	A	D	D	B
Approach Delay		32.2			21.9			107.3			34.0	
Approach LOS		C			C			F			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 90.1	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.56	
Intersection Signal Delay: 67.6	Intersection LOS: E
Intersection Capacity Utilization 98.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	348	28	233	139	96	158	730	1479	88	48	889	603
Future Volume (veh/h)	348	28	233	139	96	158	730	1479	88	48	889	603
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	359	29	0	143	99	68	753	1525	72	49	916	556
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	455	331		189	281	238	520	2454	762	151	1132	535
Arrive On Green	0.14	0.17	0.00	0.11	0.15	0.15	0.30	0.47	0.47	0.05	0.22	0.20
Sat Flow, veh/h	3326	1900	1610	1714	1900	1610	1714	5187	1610	3141	5187	1610
Grp Volume(v), veh/h	359	29	0	143	99	68	753	1525	72	49	916	556
Grp Sat Flow(s),veh/h/ln	1663	1900	1610	1714	1900	1610	1714	1729	1610	1570	1729	1610
Q Serve(g_s), s	8.6	1.1	0.0	6.7	3.9	3.1	25.0	18.1	2.0	1.2	13.8	16.1
Cycle Q Clear(g_c), s	8.6	1.1	0.0	6.7	3.9	3.1	25.0	18.1	2.0	1.2	13.8	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	455	331		189	281	238	520	2454	762	151	1132	535
V/C Ratio(X)	0.79	0.09		0.76	0.35	0.29	1.45	0.62	0.09	0.32	0.81	1.04
Avail Cap(c_a), veh/h	484	829		520	1129	957	520	2454	762	343	1132	535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.4	28.5	0.0	35.6	31.6	31.3	28.7	16.2	12.0	38.0	30.6	27.5
Incr Delay (d2), s/veh	7.2	0.1	0.0	2.3	0.8	0.7	212.7	0.5	0.1	0.5	4.5	49.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.5	0.0	2.8	1.8	1.2	39.6	5.9	0.7	0.5	5.6	17.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.7	28.7	0.0	37.9	32.3	31.9	241.5	16.7	12.0	38.4	35.1	77.3
LnGrp LOS	D	C		D	C	C	F	B	B	D	D	F
Approach Vol, veh/h		388	A		310			2350			1521	
Approach Delay, s/veh		40.7			34.8			88.6			50.6	
Approach LOS		D			C			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	43.0	13.1	18.4	29.0	22.0	15.3	16.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	8.4	31.5	24.4	33.8	24.4	15.5	11.4	46.8
Max Q Clear Time (g_c+I1), s	3.2	20.1	8.7	3.1	27.0	18.1	10.6	5.9
Green Ext Time (p_c), s	0.0	7.0	0.2	0.1	0.0	0.0	0.1	0.8

Intersection Summary	
HCM 6th Ctrl Delay	68.2
HCM 6th LOS	E

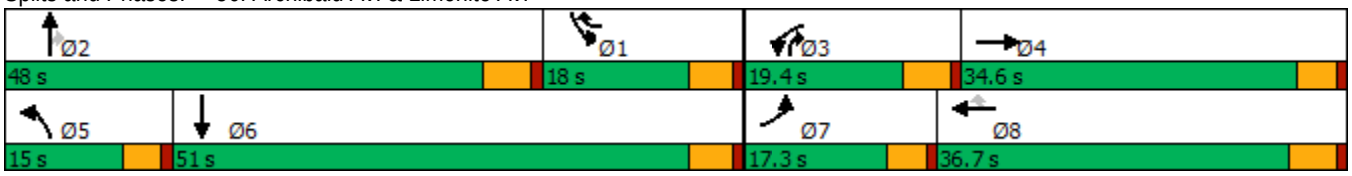
Notes

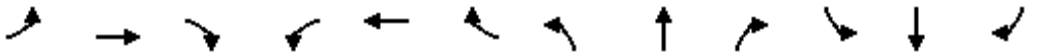
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	215	570	366	818	656	149	1108	372	406	766
Future Volume (vph)	215	570	366	818	656	149	1108	372	406	766
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4	3	8	1	5	2	3	1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	1	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.6	34.6	11.3	36.3	11.0	9.5	46.3	11.3	11.0	43.0
Total Split (s)	17.3	34.6	19.4	36.7	18.0	15.0	48.0	19.4	18.0	51.0
Total Split (%)	14.4%	28.8%	16.2%	30.6%	15.0%	12.5%	40.0%	16.2%	15.0%	42.5%
Yellow Time (s)	3.6	3.6	4.3	4.3	4.0	3.5	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-0.6	-1.3	-1.3	-1.0	-0.5	-1.3	-1.3	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Max	None	None	None	Max	Max
Act Effct Green (s)	12.3	28.1	15.1	30.9	52.6	11.0	36.3	51.4	21.7	47.1
Actuated g/C Ratio	0.10	0.24	0.13	0.26	0.45	0.09	0.31	0.44	0.18	0.40
v/c Ratio	0.62	0.82	0.86	0.89	0.92	0.96	0.68	0.54	0.66	0.46
Control Delay	58.1	49.6	69.0	53.5	38.7	112.9	37.3	13.0	51.6	25.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.1	49.6	69.0	53.5	38.7	112.9	37.3	13.0	51.6	25.3
LOS	E	D	E	D	D	F	D	B	D	C
Approach Delay		51.6		51.3			38.7			33.1
Approach LOS		D		D			D			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 43.4	Intersection LOS: D
Intersection Capacity Utilization 78.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	570	113	366	818	656	149	1108	372	406	766	193
Future Volume (veh/h)	215	570	113	366	818	656	149	1108	372	406	766	193
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	234	620	123	398	889	654	162	1204	355	441	833	210
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	315	717	142	475	1074	754	170	1723	698	694	1762	441
Arrive On Green	0.09	0.23	0.23	0.13	0.28	0.28	0.09	0.30	0.30	0.19	0.40	0.39
Sat Flow, veh/h	3619	3080	610	3619	3800	1590	1810	5700	1610	3619	4401	1101
Grp Volume(v), veh/h	234	382	361	398	889	654	162	1204	355	441	718	325
Grp Sat Flow(s),veh/h/ln	1810	1900	1790	1810	1900	1590	1810	1900	1610	1810	1900	1702
Q Serve(g_s), s	7.4	22.7	22.8	12.6	25.7	13.1	10.5	21.9	8.7	13.2	16.4	16.7
Cycle Q Clear(g_c), s	7.4	22.7	22.8	12.6	25.7	13.1	10.5	21.9	8.7	13.2	16.4	16.7
Prop In Lane	1.00		0.34	1.00		1.00	1.00		1.00	1.00		0.65
Lane Grp Cap(c), veh/h	315	442	416	475	1074	754	170	1723	698	694	1521	681
V/C Ratio(X)	0.74	0.86	0.87	0.84	0.83	0.87	0.96	0.70	0.51	0.64	0.47	0.48
Avail Cap(c_a), veh/h	410	495	467	475	1074	754	170	2136	815	694	1521	681
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.3	43.3	43.4	49.8	39.4	13.0	53.0	36.2	8.6	43.7	26.0	26.4
Incr Delay (d2), s/veh	5.1	13.6	14.6	11.9	5.2	10.1	55.5	0.9	0.7	4.4	1.1	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	11.9	11.4	6.3	12.1	9.7	7.2	9.8	3.3	6.0	7.1	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.4	56.9	58.0	61.7	44.6	23.1	108.5	37.1	9.3	48.1	27.1	28.7
LnGrp LOS	E	E	E	E	D	C	F	D	A	D	C	C
Approach Vol, veh/h		977			1941			1721			1484	
Approach Delay, s/veh		57.4			40.9			38.1			33.7	
Approach LOS		E			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.5	39.5	19.4	32.0	15.0	51.0	14.2	37.2
Change Period (Y+Rc), s	5.0	5.3	5.3	* 5.3	4.5	5.0	4.6	5.3
Max Green Setting (Gmax), s	13.0	42.7	14.1	* 30	10.5	46.0	12.7	31.4
Max Q Clear Time (g_c+I1), s	15.2	23.9	14.6	24.8	12.5	18.7	9.4	27.7
Green Ext Time (p_c), s	0.0	10.2	0.0	1.9	0.0	4.0	0.2	1.6

Intersection Summary	
HCM 6th Ctrl Delay	41.0
HCM 6th LOS	D

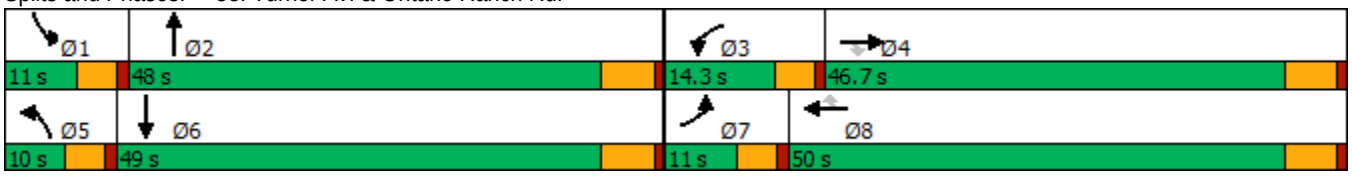
Notes

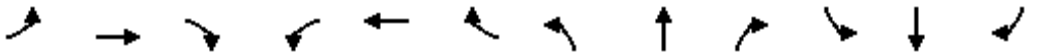
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	98	1029	41	52	2233	93	70	30	96	19
Future Volume (vph)	98	1029	41	52	2233	93	70	30	96	19
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	11.0	46.7	46.7	14.3	50.0	50.0	10.0	48.0	11.0	49.0
Total Split (%)	9.2%	38.9%	38.9%	11.9%	41.7%	41.7%	8.3%	40.0%	9.2%	40.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	6.5	46.1	46.1	7.3	44.8	44.8	5.5	15.8	9.7	16.6
Actuated g/C Ratio	0.07	0.49	0.49	0.08	0.47	0.47	0.06	0.17	0.10	0.18
v/c Ratio	0.91	0.44	0.05	0.44	0.99	0.12	0.77	0.25	0.59	0.61
Control Delay	109.7	19.2	0.1	54.7	41.3	4.1	91.1	17.0	60.8	21.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	109.7	19.2	0.1	54.7	41.3	4.1	91.1	17.0	60.8	21.0
LOS	F	B	A	D	D	A	F	B	E	C
Approach Delay		26.1			40.2			52.6		32.7
Approach LOS		C			D			D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 94.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 35.9	Intersection LOS: D
Intersection Capacity Utilization 84.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	1029	41	52	2233	93	70	30	45	96	19	210
Future Volume (veh/h)	98	1029	41	52	2233	93	70	30	45	96	19	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	107	1118	34	57	2427	92	76	33	36	104	21	205
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	119	2629	816	72	2487	772	96	130	141	119	26	251
Arrive On Green	0.07	0.51	0.51	0.04	0.48	0.48	0.06	0.16	0.16	0.07	0.17	0.17
Sat Flow, veh/h	1714	5187	1610	1714	5187	1610	1714	831	906	1714	152	1482
Grp Volume(v), veh/h	107	1118	34	57	2427	92	76	0	69	104	0	226
Grp Sat Flow(s),veh/h/ln	1714	1729	1610	1714	1729	1610	1714	0	1737	1714	0	1633
Q Serve(g_s), s	5.7	12.5	1.0	3.0	42.2	2.9	4.0	0.0	3.2	5.5	0.0	12.3
Cycle Q Clear(g_c), s	5.7	12.5	1.0	3.0	42.2	2.9	4.0	0.0	3.2	5.5	0.0	12.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.52	1.00		0.91
Lane Grp Cap(c), veh/h	119	2629	816	72	2487	772	96	0	271	119	0	277
V/C Ratio(X)	0.90	0.43	0.04	0.79	0.98	0.12	0.79	0.00	0.25	0.87	0.00	0.82
Avail Cap(c_a), veh/h	119	2629	816	180	2487	772	100	0	795	119	0	765
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.6	14.3	11.5	43.7	23.5	13.2	43.0	0.0	34.2	42.5	0.0	36.9
Incr Delay (d2), s/veh	51.4	0.5	0.1	7.0	13.2	0.3	29.6	0.0	0.5	44.9	0.0	5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	4.4	0.3	1.4	17.9	1.0	2.4	0.0	1.3	3.7	0.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	94.0	14.8	11.5	50.8	36.7	13.6	72.6	0.0	34.7	87.4	0.0	42.8
LnGrp LOS	F	B	B	D	D	B	E	A	C	F	A	D
Approach Vol, veh/h		1259			2576			145			330	
Approach Delay, s/veh		21.4			36.2			54.5			56.8	
Approach LOS		C			D			D			E	

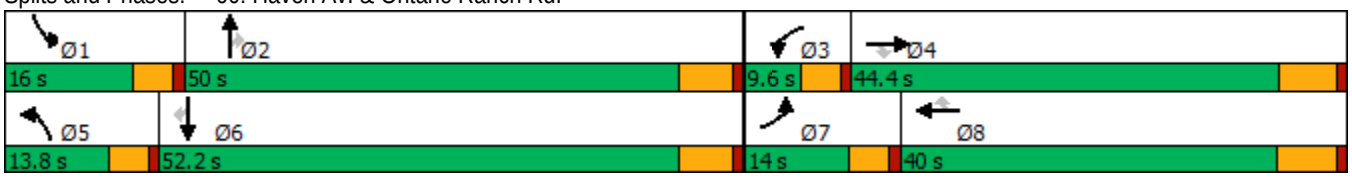
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	20.2	8.5	52.5	9.8	21.4	11.0	50.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	6.4	42.2	9.7	40.9	5.4	43.2	6.4	44.2
Max Q Clear Time (g_c+I1), s	7.5	5.2	5.0	14.5	6.0	14.3	7.7	44.2
Green Ext Time (p_c), s	0.0	0.3	0.0	8.2	0.0	1.3	0.0	0.0

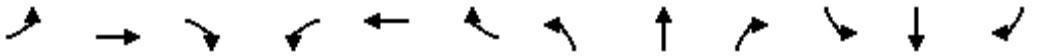
Intersection Summary	
HCM 6th Ctrl Delay	34.1
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	237	1178	44	26	1889	114	76	232	96	319	124	255
Future Volume (vph)	237	1178	44	26	1889	114	76	232	96	319	124	255
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	14.0	44.4	44.4	9.6	40.0	40.0	13.8	50.0	50.0	16.0	52.2	52.2
Total Split (%)	11.7%	37.0%	37.0%	8.0%	33.3%	33.3%	11.5%	41.7%	41.7%	13.3%	43.5%	43.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	9.5	45.0	45.0	5.1	34.0	34.0	8.0	16.0	16.0	11.6	21.7	21.7
Actuated g/C Ratio	0.10	0.48	0.48	0.05	0.37	0.37	0.09	0.17	0.17	0.12	0.23	0.23
v/c Ratio	1.44	0.50	0.06	0.30	1.06	0.18	0.55	0.40	0.27	1.59	0.16	0.54
Control Delay	259.7	20.0	0.1	55.1	68.2	7.0	57.6	34.8	6.2	318.5	29.1	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	259.7	20.0	0.1	55.1	68.2	7.0	57.6	34.8	6.2	318.5	29.1	16.2
LOS	F	C	A	E	E	A	E	C	A	F	C	B
Approach Delay		58.3			64.6			32.3			156.6	
Approach LOS		E			E			C			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 92.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.59	
Intersection Signal Delay: 73.8	Intersection LOS: E
Intersection Capacity Utilization 95.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	237	1178	44	26	1889	114	76	232	96	319	124	255
Future Volume (veh/h)	237	1178	44	26	1889	114	76	232	96	319	124	255
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	252	1253	34	28	2010	76	81	247	52	339	132	238
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	188	2446	759	49	2025	629	103	421	188	228	684	305
Arrive On Green	0.11	0.47	0.47	0.03	0.39	0.39	0.06	0.12	0.12	0.13	0.19	0.19
Sat Flow, veh/h	1714	5187	1610	1714	5187	1610	1714	3610	1610	1714	3610	1610
Grp Volume(v), veh/h	252	1253	34	28	2010	76	81	247	52	339	132	238
Grp Sat Flow(s),veh/h/ln	1714	1729	1610	1714	1729	1610	1714	1805	1610	1714	1805	1610
Q Serve(g_s), s	9.4	14.4	1.0	1.4	33.1	2.6	4.0	5.6	2.5	11.4	2.6	12.1
Cycle Q Clear(g_c), s	9.4	14.4	1.0	1.4	33.1	2.6	4.0	5.6	2.5	11.4	2.6	12.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	2446	759	49	2025	629	103	421	188	228	684	305
V/C Ratio(X)	1.34	0.51	0.04	0.58	0.99	0.12	0.79	0.59	0.28	1.49	0.19	0.78
Avail Cap(c_a), veh/h	188	2446	759	100	2025	629	184	1860	829	228	1952	871
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.2	15.8	12.2	41.2	26.0	16.7	39.8	35.9	34.6	37.2	29.3	33.1
Incr Delay (d2), s/veh	185.1	0.8	0.1	3.9	18.3	0.4	5.0	1.3	0.8	241.7	0.1	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.3	5.0	0.3	0.6	15.0	0.9	1.7	2.4	1.0	19.8	1.1	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	223.3	16.6	12.3	45.1	44.3	17.1	44.7	37.2	35.4	278.9	29.4	37.4
LnGrp LOS	F	B	B	D	D	B	D	D	D	F	C	D
Approach Vol, veh/h		1539			2114			380			709	
Approach Delay, s/veh		50.3			43.4			38.6			151.4	
Approach LOS		D			D			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	15.8	7.0	47.0	9.7	22.1	14.0	40.0
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	11.4	44.2	5.0	* 38	9.2	46.4	9.4	33.5
Max Q Clear Time (g_c+I1), s	13.4	7.6	3.4	16.4	6.0	14.1	11.4	35.1
Green Ext Time (p_c), s	0.0	1.6	0.0	8.5	0.0	1.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	61.4
HCM 6th LOS	E

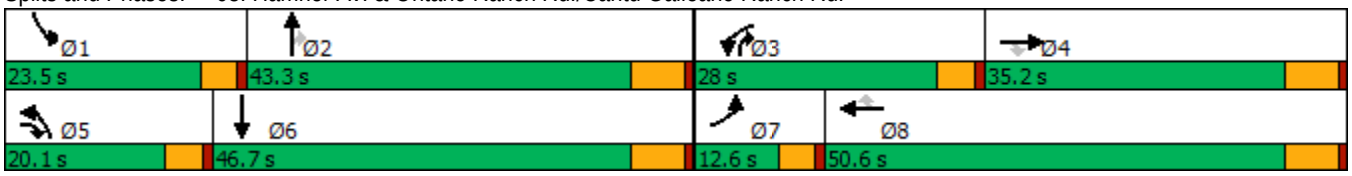
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	125	1083	195	388	1478	246	334	856	692	275	467
Future Volume (vph)	125	1083	195	388	1478	246	334	856	692	275	467
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4	5	3	8		5	2	3	1	6
Permitted Phases			4			8			2		
Detector Phase	7	4	5	3	8	8	5	2	3	1	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	9.6	35.2	9.6	9.6	49.2	49.2	9.6	35.2	9.6	9.6	45.2
Total Split (s)	12.6	35.2	20.1	28.0	50.6	50.6	20.1	43.3	28.0	23.5	46.7
Total Split (%)	9.7%	27.1%	15.5%	21.5%	38.9%	38.9%	15.5%	33.3%	21.5%	18.1%	35.9%
Yellow Time (s)	3.6	5.2	3.6	3.6	5.2	5.2	3.6	5.2	3.6	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	4.6	6.2	6.2	4.6	6.2	4.6	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	Max	Max	Max	None	None	Max	None	None
Act Effct Green (s)	7.7	28.8	50.4	23.6	44.7	44.7	15.3	26.2	56.0	14.7	25.6
Actuated g/C Ratio	0.07	0.25	0.44	0.21	0.39	0.39	0.13	0.23	0.49	0.13	0.22
v/c Ratio	0.63	0.62	0.28	0.64	0.73	0.35	0.85	0.72	0.92	0.73	0.58
Control Delay	67.6	40.7	12.5	48.3	33.4	6.9	68.5	44.4	42.9	59.7	36.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.6	40.7	12.5	48.3	33.4	6.9	68.5	44.4	42.9	59.7	36.0
LOS	E	D	B	D	C	A	E	D	D	E	D
Approach Delay		39.2			33.1			48.1			42.8
Approach LOS		D			C			D			D

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 115	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 40.4	Intersection LOS: D
Intersection Capacity Utilization 80.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	1083	195	388	1478	246	334	856	692	275	467	217
Future Volume (veh/h)	125	1083	195	388	1478	246	334	856	692	275	467	217
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1700	1900	1900	1700	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	136	1177	212	422	1607	267	363	930	745	299	508	236
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	185	1725	567	613	2047	578	406	1710	788	353	1078	456
Arrive On Green	0.06	0.34	0.23	0.19	0.54	0.36	0.13	0.45	0.30	0.11	0.43	0.28
Sat Flow, veh/h	3238	7600	1610	3238	5700	1610	3238	5700	1610	3238	3800	1608
Grp Volume(v), veh/h	136	1177	212	422	1607	267	363	930	745	299	508	236
Grp Sat Flow(s),veh/h/ln	1619	1900	1610	1619	1900	1610	1619	1900	1610	1619	1900	1608
Q Serve(g_s), s	5.1	16.5	12.1	15.0	27.9	15.8	13.7	14.7	37.1	11.2	11.9	15.2
Cycle Q Clear(g_c), s	5.1	16.5	12.1	15.0	27.9	15.8	13.7	14.7	37.1	11.2	11.9	15.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	185	1725	567	613	2047	578	406	1710	788	353	1078	456
V/C Ratio(X)	0.74	0.68	0.37	0.69	0.79	0.46	0.89	0.54	0.95	0.85	0.47	0.52
Avail Cap(c_a), veh/h	210	1783	579	613	2047	578	406	1710	788	495	1245	527
HCM Platoon Ratio	1.00	1.50	1.00	1.00	1.50	1.00	1.00	1.50	1.00	1.00	1.50	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.4	36.9	29.9	46.7	24.7	30.4	53.3	27.8	30.0	54.1	28.8	37.2
Incr Delay (d2), s/veh	8.9	1.0	0.4	6.2	3.1	2.6	21.0	0.4	20.0	6.9	0.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	6.6	4.6	6.4	10.0	6.3	6.5	5.7	23.4	4.8	4.8	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.3	38.0	30.3	52.9	27.8	33.1	74.2	28.2	50.0	61.0	29.2	38.1
LnGrp LOS	E	D	C	D	C	C	E	C	D	E	C	D
Approach Vol, veh/h		1525			2296			2038			1043	
Approach Delay, s/veh		39.4			33.1			44.4			40.3	
Approach LOS		D			C			D			D	

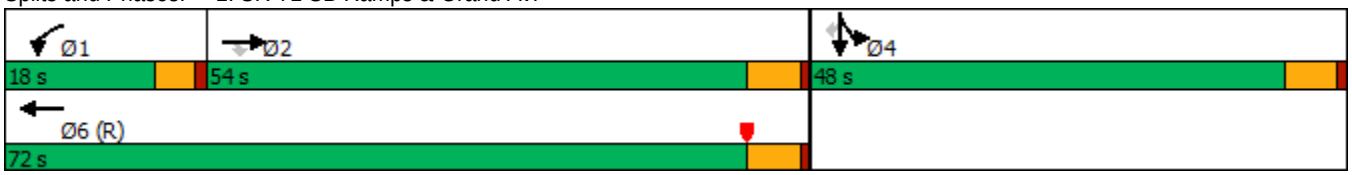
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.1	43.3	28.0	34.3	20.1	41.3	11.7	50.6
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	18.9	37.1	23.4	29.0	15.5	40.5	8.0	44.4
Max Q Clear Time (g_c+I1), s	13.2	39.1	17.0	18.5	15.7	17.2	7.1	29.9
Green Ext Time (p_c), s	0.3	0.0	0.5	5.6	0.0	4.5	0.0	9.4

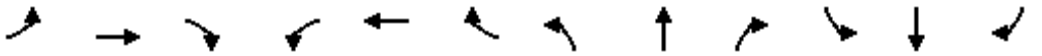
Intersection Summary	
HCM 6th Ctrl Delay	38.9
HCM 6th LOS	D

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1786	630	337	1590	1032	1	531
Future Volume (vph)	1786	630	337	1590	1032	1	531
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm
Protected Phases	2		1	6	4	4	
Permitted Phases		2					4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	46.8	46.8	46.8
Total Split (s)	54.0	54.0	18.0	72.0	48.0	48.0	48.0
Total Split (%)	45.0%	45.0%	15.0%	60.0%	40.0%	40.0%	40.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.8	-1.8	-0.6	-1.8	-1.8	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Max	Max	None	C-Max	None	None	None
Act Effct Green (s)	50.6	50.6	14.0	68.7	43.3	43.3	43.3
Actuated g/C Ratio	0.42	0.42	0.12	0.57	0.36	0.36	0.36
v/c Ratio	0.89	0.69	0.89	0.58	0.91	0.91	0.92
Control Delay	38.3	9.6	56.5	21.1	56.4	56.4	54.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.3	9.6	56.5	21.1	56.4	56.4	54.2
LOS	D	A	E	C	E	E	D
Approach Delay	30.8			27.3		55.6	
Approach LOS	C			C		E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 36.2	Intersection LOS: D
Intersection Capacity Utilization 87.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: SR-71 SB Ramps & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱	↰↰	↑↑↑					↰	↲	↱
Traffic Volume (veh/h)	0	1786	630	337	1590	0	0	0	0	1032	1	531
Future Volume (veh/h)	0	1786	630	337	1590	0	0	0	0	1032	1	531
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1941	602	366	1728	0				1123	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2161	671	410	2939	0				1246	0	
Arrive On Green	0.00	0.42	0.42	0.12	0.57	0.00				0.34	0.00	0.00
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	1941	602	366	1728	0				1123	0	0
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	41.9	41.8	12.3	26.0	0.0				35.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	41.9	41.8	12.3	26.0	0.0				35.4	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2161	671	410	2939	0				1246	0	
V/C Ratio(X)	0.00	0.90	0.90	0.89	0.59	0.00				0.90	0.00	
Avail Cap(c_a), veh/h	0	2161	671	410	2939	0				1327	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	32.6	32.6	52.3	16.9	0.0				37.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	6.4	17.1	2.5	0.1	0.0				8.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	17.7	18.5	5.4	9.4	0.0				16.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	39.1	49.7	54.8	17.0	0.0				45.8	0.0	0.0
LnGrp LOS	A	D	D	D	B	A				D	A	
Approach Vol, veh/h		2543			2094						1123	A
Approach Delay, s/veh		41.6			23.6						45.8	
Approach LOS		D			C						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	18.0	54.0		45.3		72.0
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	13.4	48.2		42.2		66.2
Max Q Clear Time (g_c+I1), s	14.3	43.9		37.4		28.0
Green Ext Time (p_c), s	0.0	3.9		2.1		16.7

Intersection Summary		
HCM 6th Ctrl Delay		35.9
HCM 6th LOS		D

Notes

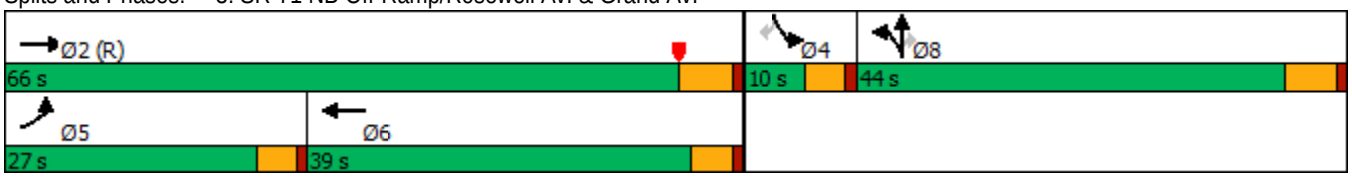
User approved volume balancing among the lanes for turning movement.

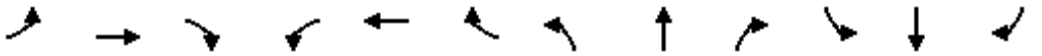
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBR
Lane Configurations									
Traffic Volume (vph)	449	1910	459	1972	431	156	244	185	908
Future Volume (vph)	449	1910	459	1972	431	156	244	185	908
Turn Type	Prot	NA	Free	NA	Split	NA	Perm	Prot	Perm
Protected Phases	5	2		6	8	8		4	
Permitted Phases			Free				8		4
Detector Phase	5	2		6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.5	34.8		14.7	34.8	34.8	34.8	9.5	9.5
Total Split (s)	27.0	66.0		39.0	44.0	44.0	44.0	10.0	10.0
Total Split (%)	22.5%	55.0%		32.5%	36.7%	36.7%	36.7%	8.3%	8.3%
Yellow Time (s)	3.5	4.8		3.7	4.8	4.8	4.8	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.8		4.7	5.8	5.8	5.8	4.5	4.5
Lead/Lag	Lead			Lag					
Lead-Lag Optimize?	Yes			Yes					
Recall Mode	None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	30.4	68.1	120.0	34.3	30.3	30.3	30.3	5.5	5.5
Actuated g/C Ratio	0.25	0.57	1.00	0.29	0.25	0.25	0.25	0.05	0.05
v/c Ratio	1.07	0.71	0.31	1.34	0.62	0.84	0.54	2.45	1.46
Control Delay	103.2	19.2	0.2	192.2	45.2	58.6	25.8	712.2	232.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.2	19.2	0.2	192.2	45.2	58.6	25.8	712.2	232.2
LOS	F	B	A	F	D	E	C	F	F
Approach Delay		29.5		192.2		45.0			
Approach LOS		C		F		D			

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 2.45	
Intersection Signal Delay: 128.4	Intersection LOS: F
Intersection Capacity Utilization 100.9%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 3: SR-71 NB Off-Ramp/Rosewell Av. & Grand Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	449	1910	459	0	1972	316	431	156	244	185	0	908
Future Volume (veh/h)	449	1910	459	0	1972	316	431	156	244	185	0	908
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	0	1900	1900	1900	1900	1900	1900	0	1900
Adj Flow Rate, veh/h	488	2076	0	0	2143	343	319	379	124	201	0	669
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	339	3524		0	2602	414	405	425	361	0	0	0
Arrive On Green	0.19	0.68	0.00	0.00	0.45	0.45	0.22	0.22	0.22	0.00	0.00	0.00
Sat Flow, veh/h	1810	5187	1610	0	5993	911	1810	1900	1610		0	
Grp Volume(v), veh/h	488	2076	0	0	1833	653	319	379	124		0.0	
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	0	1634	1736	1810	1900	1610			
Q Serve(g_s), s	22.5	25.7	0.0	0.0	39.1	39.5	19.9	23.2	7.8			
Cycle Q Clear(g_c), s	22.5	25.7	0.0	0.0	39.1	39.5	19.9	23.2	7.8			
Prop In Lane	1.00		1.00	0.00		0.52	1.00		1.00			
Lane Grp Cap(c), veh/h	339	3524		0	2227	789	405	425	361			
V/C Ratio(X)	1.44	0.59		0.00	0.82	0.83	0.79	0.89	0.34			
Avail Cap(c_a), veh/h	339	3524		0	2227	789	576	605	513			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.33	0.33	0.00	0.00	0.45	0.45	1.00	1.00	1.00			
Uniform Delay (d), s/veh	48.7	10.3	0.0	0.0	28.5	28.6	43.9	45.1	39.2			
Incr Delay (d2), s/veh	202.8	0.2	0.0	0.0	1.2	3.5	2.9	9.1	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	28.9	8.3	0.0	0.0	15.0	16.5	9.0	11.6	3.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	251.6	10.5	0.0	0.0	29.7	32.1	46.7	54.3	39.4			
LnGrp LOS	F	B		A	C	C	D	D	D			
Approach Vol, veh/h		2564	A		2486			822				
Approach Delay, s/veh		56.4			30.4			49.1				
Approach LOS		E			C			D				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		87.3			27.0	60.3		32.7				
Change Period (Y+Rc), s		5.8			4.5	* 5.8		5.8				
Max Green Setting (Gmax), s		60.2			22.5	* 34		38.2				
Max Q Clear Time (g_c+I1), s		27.7			24.5	41.5		25.2				
Green Ext Time (p_c), s		19.9			0.0	0.0		1.7				

Intersection Summary		
HCM 6th Ctrl Delay	44.3	
HCM 6th LOS	D	

Notes

User approved volume balancing among the lanes for turning movement.

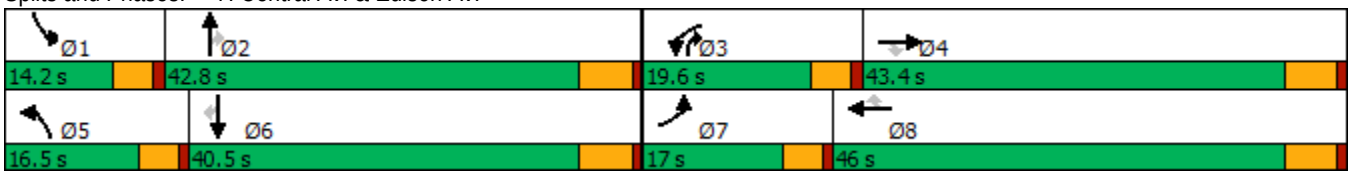
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

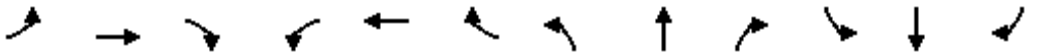
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	1239	117	378	1038	122	128	1149	598	134	921	156
Future Volume (vph)	250	1239	117	378	1038	122	128	1149	598	134	921	156
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	9.6	33.8	33.8	9.6	33.8	33.8	9.6	33.8	9.6	9.6	30.8	30.8
Total Split (s)	17.0	43.4	43.4	19.6	46.0	46.0	16.5	42.8	19.6	14.2	40.5	40.5
Total Split (%)	14.2%	36.2%	36.2%	16.3%	38.3%	38.3%	13.8%	35.7%	16.3%	11.8%	33.8%	33.8%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	0.0	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	5.8	4.0	4.0	4.0	4.0	4.0	2.8	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	12.6	39.4	37.6	15.6	42.4	42.4	11.8	38.8	56.8	10.2	37.2	37.2
Actuated g/C Ratio	0.10	0.33	0.31	0.13	0.35	0.35	0.10	0.32	0.47	0.08	0.31	0.31
v/c Ratio	0.79	1.02	0.21	0.96	0.80	0.19	0.78	0.96	0.78	0.95	0.81	0.28
Control Delay	69.9	71.7	7.9	87.4	40.4	5.3	82.7	58.8	29.8	118.0	44.7	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.9	71.7	7.9	87.4	40.4	5.3	82.7	58.8	29.8	118.0	44.7	12.8
LOS	E	E	A	F	D	A	F	E	C	F	D	B
Approach Delay		66.8			49.2			51.2			48.7	
Approach LOS		E			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 54.2	Intersection LOS: D
Intersection Capacity Utilization 99.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 7: Central Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	1239	117	378	1038	122	128	1149	598	134	921	156
Future Volume (veh/h)	250	1239	117	378	1038	122	128	1149	598	134	921	156
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	258	1277	117	390	1070	115	132	1185	535	138	949	127
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	321	1248	498	408	1353	573	165	1229	737	146	1187	502
Arrive On Green	0.10	0.33	0.31	0.13	0.36	0.36	0.10	0.32	0.32	0.09	0.31	0.31
Sat Flow, veh/h	3141	3800	1589	3141	3800	1610	1714	3800	1581	1714	3800	1609
Grp Volume(v), veh/h	258	1277	117	390	1070	115	132	1185	535	138	949	127
Grp Sat Flow(s),veh/h/ln	1570	1900	1589	1570	1900	1610	1714	1900	1581	1714	1900	1609
Q Serve(g_s), s	9.6	39.4	6.6	14.8	30.3	5.9	9.0	36.8	32.9	9.6	27.5	7.1
Cycle Q Clear(g_c), s	9.6	39.4	6.6	14.8	30.3	5.9	9.0	36.8	32.9	9.6	27.5	7.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	321	1248	498	408	1353	573	165	1229	737	146	1187	502
V/C Ratio(X)	0.80	1.02	0.24	0.96	0.79	0.20	0.80	0.96	0.73	0.95	0.80	0.25
Avail Cap(c_a), veh/h	340	1248	498	408	1353	573	179	1229	737	146	1187	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	40.3	30.5	51.9	34.6	26.8	53.1	39.9	26.1	54.6	37.8	30.8
Incr Delay (d2), s/veh	11.2	31.6	1.1	32.8	4.8	0.8	19.0	17.8	3.6	58.0	4.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	22.9	2.6	7.5	14.2	2.3	4.7	19.4	12.3	6.4	12.9	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.9	71.9	31.6	84.7	39.4	27.6	72.1	57.7	29.7	112.7	41.8	31.1
LnGrp LOS	E	F	C	F	D	C	E	E	C	F	D	C
Approach Vol, veh/h		1652			1575			1852			1214	
Approach Delay, s/veh		67.8			49.8			50.6			48.7	
Approach LOS		E			D			D			D	

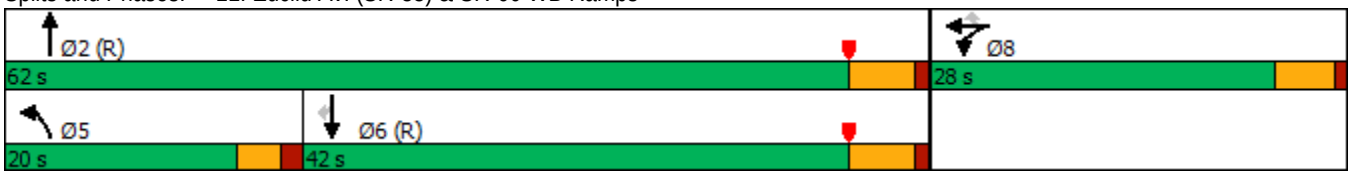
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	42.8	19.6	43.4	15.5	41.5	16.3	46.7
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	9.6	37.0	15.0	37.6	11.9	34.7	12.4	40.2
Max Q Clear Time (g_c+I1), s	11.6	38.8	16.8	41.4	11.0	29.5	11.6	32.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.8	0.0	4.3

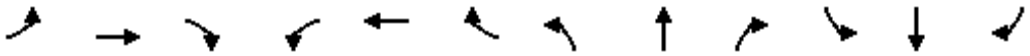
Intersection Summary	
HCM 6th Ctrl Delay	54.6
HCM 6th LOS	D

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	779	8	495	608	1335	1246	598
Future Volume (vph)	779	8	495	608	1335	1246	598
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8	8		5	2	6	
Permitted Phases			8				6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	11.0	9.5	22.5	22.5	22.5
Total Split (s)	28.0	28.0	28.0	20.0	62.0	42.0	42.0
Total Split (%)	31.1%	31.1%	31.1%	22.2%	68.9%	46.7%	46.7%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	23.0	23.0	23.0	15.5	56.5	36.5	36.5
Actuated g/C Ratio	0.26	0.26	0.26	0.17	0.63	0.41	0.41
v/c Ratio	1.05	1.08	0.93	1.05	0.61	0.89	0.61
Control Delay	92.8	100.4	55.8	72.9	19.8	33.8	4.4
Queue Delay	0.0	0.0	0.0	0.0	9.2	0.0	0.0
Total Delay	92.8	100.4	55.8	72.9	29.0	33.8	4.4
LOS	F	F	E	E	C	C	A
Approach Delay		83.8			42.7	24.3	
Approach LOS		F			D	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 46.4	Intersection LOS: D
Intersection Capacity Utilization 139.4%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 11: Euclid Av. (SR-83) & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	779	8	495	608	1335	0	0	1246	598
Future Volume (veh/h)	0	0	0	779	8	495	608	1335	0	0	1246	598
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				918	0	226	633	1391	0	0	1298	418
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				925	0	411	605	2266	0	0	1464	653
Arrive On Green				0.26	0.00	0.26	0.34	1.00	0.00	0.00	0.41	0.41
Sat Flow, veh/h				3619	0	1608	3510	3705	0	0	3705	1610
Grp Volume(v), veh/h				918	0	226	633	1391	0	0	1298	418
Grp Sat Flow(s),veh/h/ln				1810	0	1608	1755	1805	0	0	1805	1610
Q Serve(g_s), s				22.8	0.0	11.0	15.5	0.0	0.0	0.0	30.0	18.8
Cycle Q Clear(g_c), s				22.8	0.0	11.0	15.5	0.0	0.0	0.0	30.0	18.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				925	0	411	605	2266	0	0	1464	653
V/C Ratio(X)				0.99	0.00	0.55	1.05	0.61	0.00	0.00	0.89	0.64
Avail Cap(c_a), veh/h				925	0	411	605	2266	0	0	1464	653
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.36	0.36	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.4	0.0	29.0	29.5	0.0	0.0	0.0	24.8	21.5
Incr Delay (d2), s/veh				27.7	0.0	0.9	35.4	0.5	0.0	0.0	8.3	4.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				12.8	0.0	4.1	7.8	0.1	0.0	0.0	13.3	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				61.1	0.0	29.9	64.9	0.5	0.0	0.0	33.1	26.2
LnGrp LOS				E	A	C	F	A	A	A	C	C
Approach Vol, veh/h					1144			2024			1716	
Approach Delay, s/veh					54.9			20.6			31.4	
Approach LOS					D			C			C	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	62.0		20.0	42.0		28.0						
Change Period (Y+Rc), s	5.5		4.5	5.5		5.0						
Max Green Setting (Gmax), s	56.5		15.5	36.5		23.0						
Max Q Clear Time (g_c+I1), s	2.0		17.5	32.0		24.8						
Green Ext Time (p_c), s	21.9		0.0	3.8		0.0						

Intersection Summary		
HCM 6th Ctrl Delay	32.4	
HCM 6th LOS	C	

Notes

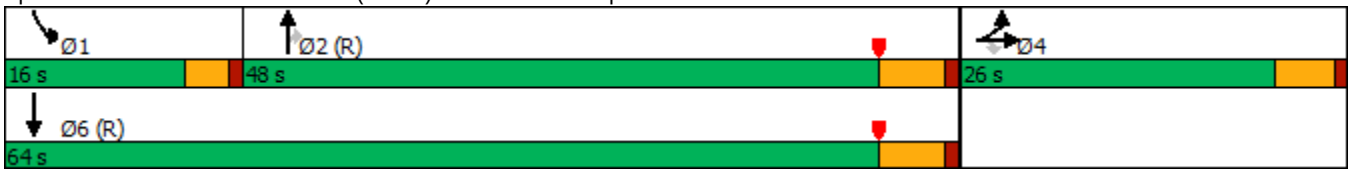
User approved volume balancing among the lanes for turning movement.

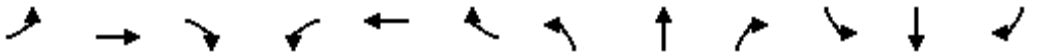
Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	505	4	537	1438	793	458	1568
Future Volume (vph)	505	4	537	1438	793	458	1568
Turn Type	Split	NA	Perm	NA	Perm	Prot	NA
Protected Phases	4	4		2		1	6
Permitted Phases			4		2		
Detector Phase	4	4	4	2	2	1	6
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0	5.0	10.0
Minimum Split (s)	11.0	11.0	11.0	22.5	22.5	9.0	22.5
Total Split (s)	26.0	26.0	26.0	48.0	48.0	16.0	64.0
Total Split (%)	28.9%	28.9%	28.9%	53.3%	53.3%	17.8%	71.1%
Yellow Time (s)	4.0	4.0	4.0	4.5	4.5	3.0	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.5	5.5	4.0	5.5
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	20.6	20.6	20.6	42.5	42.5	12.4	58.9
Actuated g/C Ratio	0.23	0.23	0.23	0.47	0.47	0.14	0.65
v/c Ratio	0.95	0.93	0.83	0.86	0.73	0.97	0.68
Control Delay	69.5	62.5	43.4	27.7	7.5	64.6	5.0
Queue Delay	46.7	48.2	0.0	0.0	0.0	0.0	1.5
Total Delay	116.2	110.7	43.4	27.7	7.5	64.6	6.6
LOS	F	F	D	C	A	E	A
Approach Delay		91.2		20.5			19.7
Approach LOS		F		C			B

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 34.1 — Intersection LOS: C
Intersection Capacity Utilization 139.4% — ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 12: Euclid Av. (SR-83) & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	505	4	537	0	0	0	0	1438	793	458	1568	0
Future Volume (veh/h)	505	4	537	0	0	0	0	1438	793	458	1568	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	666	0	322				0	1467	615	467	1600	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	803	0	357				0	1746	768	468	2388	0
Arrive On Green	0.22	0.00	0.22				0.00	0.48	0.48	0.27	1.00	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1588	3510	3705	0
Grp Volume(v), veh/h	666	0	322				0	1467	615	467	1600	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1588	1755	1805	0
Q Serve(g_s), s	15.8	0.0	17.5				0.0	31.8	29.4	12.0	0.0	0.0
Cycle Q Clear(g_c), s	15.8	0.0	17.5				0.0	31.8	29.4	12.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	803	0	357				0	1746	768	468	2388	0
V/C Ratio(X)	0.83	0.00	0.90				0.00	0.84	0.80	1.00	0.67	0.00
Avail Cap(c_a), veh/h	844	0	376				0	1746	768	468	2388	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.13	0.13	0.25	0.25	0.00
Uniform Delay (d), s/veh	33.4	0.0	34.1				0.0	20.2	19.6	33.0	0.0	0.0
Incr Delay (d2), s/veh	6.2	0.0	22.6				0.0	0.7	1.2	20.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	0.0	8.6				0.0	12.0	9.9	5.4	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.6	0.0	56.6				0.0	20.9	20.8	53.2	0.4	0.0
LnGrp LOS	D	A	E				A	C	C	D	A	A
Approach Vol, veh/h		988						2082			2067	
Approach Delay, s/veh		45.1						20.9			12.3	
Approach LOS		D						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.0	49.0		25.0		65.0
Change Period (Y+Rc), s	4.0	5.5		5.0		5.5
Max Green Setting (Gmax), s	12.0	42.5		21.0		58.5
Max Q Clear Time (g_c+I1), s	14.0	33.8		19.5		2.0
Green Ext Time (p_c), s	0.0	7.7		0.5		28.1

Intersection Summary	
HCM 6th Ctrl Delay	22.1
HCM 6th LOS	C

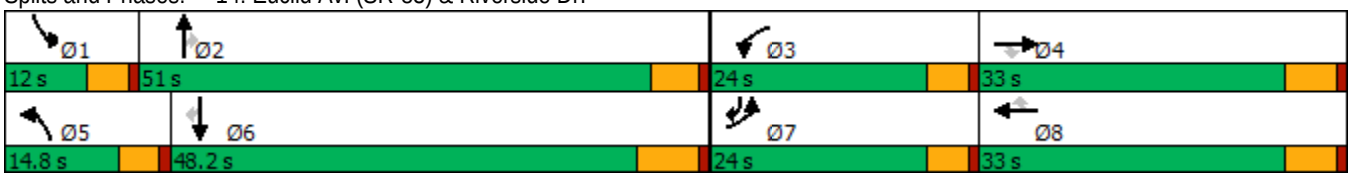
Notes

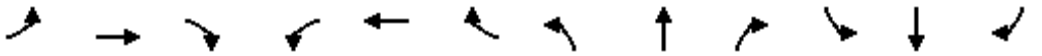
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	234	721	198	229	499	78	199	1687	295	169	1330	345
Future Volume (vph)	234	721	198	229	499	78	199	1687	295	169	1330	345
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	25.8	25.8	9.6	31.8	31.8	9.6	30.4	30.4	9.6	34.5	9.6
Total Split (s)	24.0	33.0	33.0	24.0	33.0	33.0	14.8	51.0	51.0	12.0	48.2	24.0
Total Split (%)	20.0%	27.5%	27.5%	20.0%	27.5%	27.5%	12.3%	42.5%	42.5%	10.0%	40.2%	20.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.4	4.4	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.4	5.4	4.6	6.5	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	None
Act Effct Green (s)	18.5	26.7	26.7	18.4	26.6	26.6	9.8	45.6	45.6	7.4	42.1	62.6
Actuated g/C Ratio	0.16	0.23	0.23	0.16	0.22	0.22	0.08	0.38	0.38	0.06	0.35	0.53
v/c Ratio	0.91	0.92	0.42	0.90	0.64	0.18	0.76	0.88	0.40	0.85	0.75	0.41
Control Delay	86.6	63.0	12.6	84.4	46.0	3.5	71.5	40.5	7.1	89.2	37.1	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.6	63.0	12.6	84.4	46.0	3.5	71.5	40.5	7.1	89.2	37.1	13.2
LOS	F	E	B	F	D	A	E	D	A	F	D	B
Approach Delay		59.2			52.8			38.8			37.4	
Approach LOS		E			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.6	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 44.2	Intersection LOS: D
Intersection Capacity Utilization 88.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Euclid Av. (SR-83) & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	721	198	229	499	78	199	1687	295	169	1330	345
Future Volume (veh/h)	234	721	198	229	499	78	199	1687	295	169	1330	345
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	244	751	181	239	520	65	207	1757	253	176	1385	268
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	269	809	361	264	799	356	260	1974	613	205	1890	832
Arrive On Green	0.16	0.22	0.22	0.15	0.22	0.22	0.08	0.38	0.38	0.06	0.36	0.36
Sat Flow, veh/h	1714	3610	1610	1714	3610	1608	3326	5187	1610	3326	5187	1590
Grp Volume(v), veh/h	244	751	181	239	520	65	207	1757	253	176	1385	268
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1714	1805	1608	1663	1729	1610	1663	1729	1590
Q Serve(g_s), s	16.8	24.4	11.8	16.4	15.7	3.9	7.3	38.0	13.8	6.3	27.7	11.6
Cycle Q Clear(g_c), s	16.8	24.4	11.8	16.4	15.7	3.9	7.3	38.0	13.8	6.3	27.7	11.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	269	809	361	264	799	356	260	1974	613	205	1890	832
V/C Ratio(X)	0.91	0.93	0.50	0.91	0.65	0.18	0.80	0.89	0.41	0.86	0.73	0.32
Avail Cap(c_a), veh/h	278	820	366	278	820	365	283	1974	613	205	1890	832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.7	45.5	40.6	49.8	42.4	37.8	54.3	34.8	27.3	55.7	33.0	16.5
Incr Delay (d2), s/veh	29.8	16.5	1.1	28.9	1.8	0.2	12.1	6.5	2.0	27.2	2.6	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.2	12.4	4.6	8.9	7.0	1.5	3.4	15.9	5.5	3.4	11.7	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.5	62.0	41.7	78.7	44.2	38.1	66.4	41.3	29.3	82.8	35.6	17.5
LnGrp LOS	E	E	D	E	D	D	E	D	C	F	D	B
Approach Vol, veh/h		1176			824			2217			1829	
Approach Delay, s/veh		62.5			53.7			42.3			37.5	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	52.1	23.1	32.7	14.0	50.1	23.4	32.3
Change Period (Y+Rc), s	4.6	* 6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	7.4	* 46	19.4	27.2	10.2	41.7	19.4	27.2
Max Q Clear Time (g_c+I1), s	8.3	40.0	18.4	26.4	9.3	29.7	18.8	17.7
Green Ext Time (p_c), s	0.0	4.5	0.0	0.4	0.0	7.6	0.0	2.3

Intersection Summary	
HCM 6th Ctrl Delay	46.3
HCM 6th LOS	D

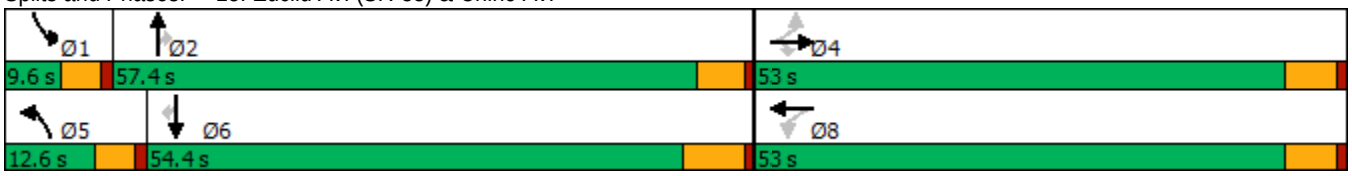
Notes

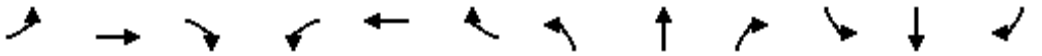
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	134	487	69	137	223	68	1984	278	35	1507	87
Future Volume (vph)	134	487	69	137	223	68	1984	278	35	1507	87
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		4	8				2			6
Detector Phase	4	4	4	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.8	28.8	28.8	33.8	33.8	9.6	24.2	24.2	9.6	31.5	31.5
Total Split (s)	53.0	53.0	53.0	53.0	53.0	12.6	57.4	57.4	9.6	54.4	54.4
Total Split (%)	44.2%	44.2%	44.2%	44.2%	44.2%	10.5%	47.8%	47.8%	8.0%	45.3%	45.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.6	4.2	4.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	5.8	4.6	5.2	5.2	4.6	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	43.4	43.4	43.4	43.4	43.4	7.5	52.7	52.7	5.1	49.1	49.1
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.07	0.46	0.46	0.04	0.43	0.43
v/c Ratio	0.41	0.73	0.11	1.02	0.36	0.66	0.89	0.39	0.51	0.73	0.13
Control Delay	30.7	37.5	5.7	117.4	26.9	81.5	35.9	18.8	79.4	31.3	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	37.5	5.7	117.4	26.9	81.5	35.9	18.8	79.4	31.3	6.1
LOS	C	D	A	F	C	F	D	B	E	C	A
Approach Delay		33.0			59.7		35.2			31.0	
Approach LOS		C			E		D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.6	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 35.4	Intersection LOS: D
Intersection Capacity Utilization 94.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 15: Euclid Av. (SR-83) & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	487	69	137	223	18	68	1984	278	35	1507	87
Future Volume (veh/h)	134	487	69	137	223	18	68	1984	278	35	1507	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	144	524	51	147	240	15	73	2133	228	38	1620	61
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	401	748	634	199	697	44	92	2258	686	51	2135	649
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.05	0.44	0.44	0.03	0.41	0.41
Sat Flow, veh/h	1142	1900	1610	851	1769	111	1714	5187	1577	1714	5187	1577
Grp Volume(v), veh/h	144	524	51	147	0	255	73	2133	228	38	1620	61
Grp Sat Flow(s),veh/h/ln	1142	1900	1610	851	0	1880	1714	1729	1577	1714	1729	1577
Q Serve(g_s), s	12.1	27.7	2.4	19.5	0.0	11.4	5.0	47.3	11.4	2.6	32.0	2.8
Cycle Q Clear(g_c), s	23.5	27.7	2.4	47.2	0.0	11.4	5.0	47.3	11.4	2.6	32.0	2.8
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	401	748	634	199	0	740	92	2258	686	51	2135	649
V/C Ratio(X)	0.36	0.70	0.08	0.74	0.00	0.34	0.79	0.94	0.33	0.74	0.76	0.09
Avail Cap(c_a), veh/h	401	748	634	199	0	740	114	2258	686	71	2135	649
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.7	30.4	22.8	50.7	0.0	25.5	56.1	32.5	22.3	57.7	30.2	21.6
Incr Delay (d2), s/veh	0.5	2.9	0.1	13.7	0.0	0.3	20.6	9.8	1.3	12.5	2.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	12.6	0.9	5.1	0.0	5.0	2.6	19.9	4.2	1.3	12.8	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.3	33.3	22.8	64.4	0.0	25.8	76.7	42.2	23.6	70.2	32.8	21.9
LnGrp LOS	C	C	C	E	A	C	E	D	C	E	C	C
Approach Vol, veh/h		719			402			2434			1719	
Approach Delay, s/veh		32.8			39.9			41.5			33.2	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	58.7		53.0	11.0	55.9		53.0				
Change Period (Y+Rc), s	4.6	* 6.5		5.8	4.6	6.5		5.8				
Max Green Setting (Gmax), s	5.0	* 52		47.2	8.0	47.9		47.2				
Max Q Clear Time (g_c+I1), s	4.6	49.3		29.7	7.0	34.0		49.2				
Green Ext Time (p_c), s	0.0	2.7		3.5	0.0	8.5		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		37.5	
HCM 6th LOS		D	

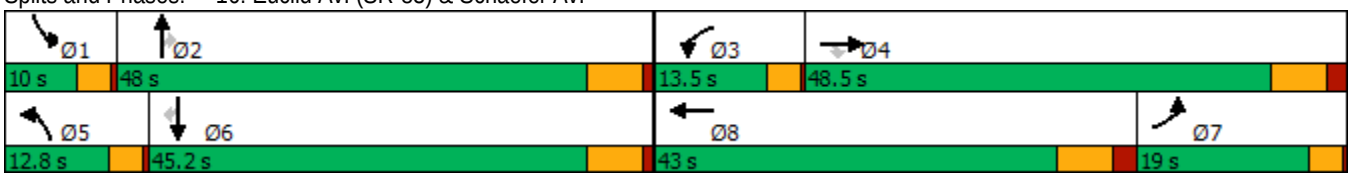
Notes

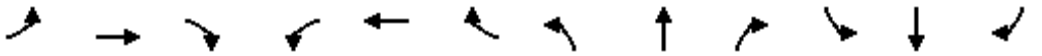
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	487	463	264	95	158	239	1913	100	199	1539	455
Future Volume (vph)	487	463	264	95	158	239	1913	100	199	1539	455
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.5	42.0	42.0	13.5	43.0	8.5	33.0	33.0	8.5	28.0	28.0
Total Split (s)	19.0	48.5	48.5	13.5	43.0	12.8	48.0	48.0	10.0	45.2	45.2
Total Split (%)	15.8%	40.4%	40.4%	11.3%	35.8%	10.7%	40.0%	40.0%	8.3%	37.7%	37.7%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	7.0	7.0	3.5	7.0	3.5	6.0	6.0	3.5	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	21.9	31.7	31.7	10.0	19.9	9.3	42.2	42.2	6.5	39.4	39.4
Actuated g/C Ratio	0.20	0.29	0.29	0.09	0.18	0.08	0.38	0.38	0.06	0.36	0.36
v/c Ratio	0.75	0.86	0.46	0.62	0.69	0.86	0.98	0.14	1.03	0.84	0.61
Control Delay	50.9	53.2	13.7	68.5	48.5	79.3	50.1	0.8	124.3	38.8	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.9	53.2	13.7	68.5	48.5	79.3	50.1	0.8	124.3	38.8	16.1
LOS	D	D	B	E	D	E	D	A	F	D	B
Approach Delay		43.7			54.3		51.0			41.9	
Approach LOS		D			D		D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.6	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 46.4	Intersection LOS: D
Intersection Capacity Utilization 93.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 16: Euclid Av. (SR-83) & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	487	463	264	95	158	73	239	1913	100	199	1539	455
Future Volume (veh/h)	487	463	264	95	158	73	239	1913	100	199	1539	455
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	492	468	226	96	160	69	241	1932	83	201	1555	430
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	603	526	446	150	190	82	287	2020	627	201	1885	585
Arrive On Green	0.18	0.28	0.28	0.09	0.15	0.15	0.09	0.39	0.39	0.06	0.36	0.36
Sat Flow, veh/h	3326	1900	1610	1714	1259	543	3326	5187	1610	3326	5187	1610
Grp Volume(v), veh/h	492	468	226	96	0	229	241	1932	83	201	1555	430
Grp Sat Flow(s),veh/h/ln	1663	1900	1610	1714	0	1802	1663	1729	1610	1663	1729	1610
Q Serve(g_s), s	15.3	25.4	12.7	5.8	0.0	13.3	7.7	39.0	3.6	6.5	29.3	13.1
Cycle Q Clear(g_c), s	15.3	25.4	12.7	5.8	0.0	13.3	7.7	39.0	3.6	6.5	29.3	13.1
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	603	526	446	150	0	271	287	2020	627	201	1885	585
V/C Ratio(X)	0.82	0.89	0.51	0.64	0.00	0.84	0.84	0.96	0.13	1.00	0.83	0.74
Avail Cap(c_a), veh/h	603	733	621	159	0	603	287	2025	629	201	1890	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	37.3	32.7	47.4	0.0	44.5	48.4	32.0	21.2	50.5	31.1	8.2
Incr Delay (d2), s/veh	8.0	9.2	0.7	5.5	0.0	5.3	18.2	11.5	0.1	63.6	3.1	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	12.6	4.8	2.6	0.0	6.1	3.8	16.8	1.3	4.3	11.7	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.3	46.5	33.4	52.9	0.0	49.8	66.7	43.5	21.2	114.2	34.3	13.0
LnGrp LOS	D	D	C	D	A	D	E	D	C	F	C	B
Approach Vol, veh/h		1186			325			2256			2186	
Approach Delay, s/veh		45.6			50.7			45.1			37.4	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	47.9	12.9	36.8	12.8	45.1	26.5	23.2
Change Period (Y+Rc), s	3.5	6.0	3.5	7.0	3.5	6.0	7.0	* 7
Max Green Setting (Gmax), s	6.5	42.0	10.0	41.5	9.3	39.2	15.5	* 36
Max Q Clear Time (g_c+I1), s	8.5	41.0	7.8	27.4	9.7	31.3	17.3	15.3
Green Ext Time (p_c), s	0.0	0.9	0.0	2.3	0.0	5.9	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	42.7
HCM 6th LOS	D

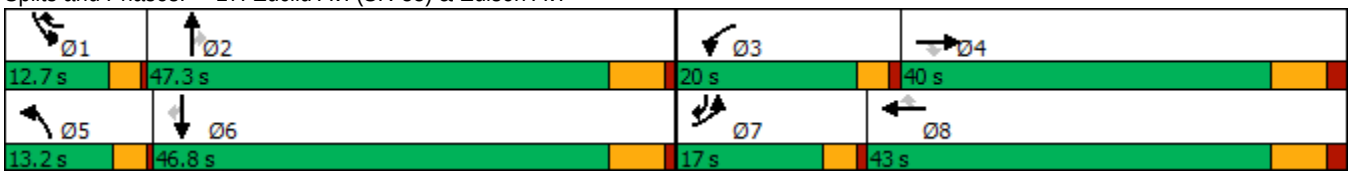
Notes

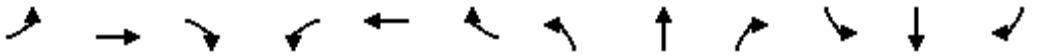
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	334	1192	377	428	717	336	223	1767	281	199	1608	220
Future Volume (vph)	334	1192	377	428	717	336	223	1767	281	199	1608	220
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	1	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	39.5	39.5	9.0	43.0	8.5	8.5	29.0	29.0	8.5	38.5	9.0
Total Split (s)	17.0	40.0	40.0	20.0	43.0	12.7	13.2	47.3	47.3	12.7	46.8	17.0
Total Split (%)	14.2%	33.3%	33.3%	16.7%	35.8%	10.6%	11.0%	39.4%	39.4%	10.6%	39.0%	14.2%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	3.0	3.0	5.0	5.0	3.0	5.0	3.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.0	7.0	4.0	7.0	3.5	3.5	6.0	6.0	3.5	6.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	None
Act Effct Green (s)	13.0	32.3	32.3	16.0	35.3	48.0	9.7	41.3	41.3	9.2	40.8	59.8
Actuated g/C Ratio	0.11	0.27	0.27	0.13	0.30	0.40	0.08	0.35	0.35	0.08	0.34	0.50
v/c Ratio	1.00	0.81	0.72	1.04	0.67	0.52	0.90	0.94	0.48	0.84	0.87	0.28
Control Delay	102.0	45.7	30.8	104.9	40.4	22.8	88.9	48.8	22.3	82.8	42.7	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	102.0	45.7	30.8	104.9	40.4	22.8	88.9	48.8	22.3	82.8	42.7	13.0
LOS	F	D	C	F	D	C	F	D	C	F	D	B
Approach Delay		52.6			55.0			49.5			43.4	
Approach LOS		D			E			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.3	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 49.7	Intersection LOS: D
Intersection Capacity Utilization 94.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 17: Euclid Av. (SR-83) & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	334	1192	377	428	717	336	223	1767	281	199	1608	220
Future Volume (veh/h)	334	1192	377	428	717	336	223	1767	281	199	1608	220
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1700	1900	1900	1700	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	352	1255	242	451	755	133	235	1860	145	209	1693	179
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	358	1483	419	441	1086	580	267	2002	564	253	1977	737
Arrive On Green	0.11	0.33	0.26	0.14	0.36	0.29	0.08	0.53	0.35	0.08	0.52	0.35
Sat Flow, veh/h	3238	5700	1610	3238	3800	1590	3238	5700	1607	3238	5700	1610
Grp Volume(v), veh/h	352	1255	242	451	755	133	235	1860	145	209	1693	179
Grp Sat Flow(s),veh/h/ln	1619	1900	1610	1619	1900	1590	1619	1900	1607	1619	1900	1610
Q Serve(g_s), s	12.8	24.1	15.4	16.0	20.0	6.8	8.4	35.6	7.6	7.5	30.2	8.0
Cycle Q Clear(g_c), s	12.8	24.1	15.4	16.0	20.0	6.8	8.4	35.6	7.6	7.5	30.2	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	358	1483	419	441	1086	580	267	2002	564	253	1977	737
V/C Ratio(X)	0.98	0.85	0.58	1.02	0.70	0.23	0.88	0.93	0.26	0.83	0.86	0.24
Avail Cap(c_a), veh/h	358	1599	452	441	1163	613	267	2002	564	253	1977	737
HCM Platoon Ratio	1.00	1.25	1.00	1.00	1.25	1.00	1.00	1.50	1.00	1.00	1.50	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.2	37.5	37.9	50.8	33.4	26.0	53.4	26.5	27.2	53.4	25.7	19.5
Incr Delay (d2), s/veh	42.9	4.2	1.6	49.1	1.7	0.2	26.0	9.2	1.1	18.4	5.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	10.7	6.1	9.3	8.6	2.5	4.3	13.2	3.0	3.6	10.7	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	95.1	41.6	39.5	99.9	35.1	26.2	79.4	35.6	28.3	71.8	30.7	20.3
LnGrp LOS	F	D	D	F	D	C	E	D	C	E	C	C
Approach Vol, veh/h		1849			1339			2240			2081	
Approach Delay, s/veh		51.5			56.0			39.8			33.9	
Approach LOS		D			E			D			C	

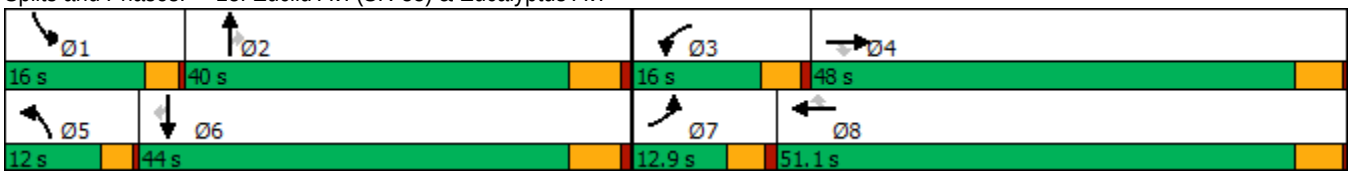
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	47.3	20.0	37.6	13.2	46.8	17.0	40.6
Change Period (Y+Rc), s	3.5	6.0	4.0	7.0	3.5	6.0	4.0	7.0
Max Green Setting (Gmax), s	9.2	41.3	16.0	33.0	9.7	40.8	13.0	36.0
Max Q Clear Time (g_c+I1), s	9.5	37.6	18.0	26.1	10.4	32.2	14.8	22.0
Green Ext Time (p_c), s	0.0	3.1	0.0	4.5	0.0	6.3	0.0	4.4

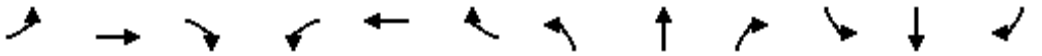
Intersection Summary	
HCM 6th Ctrl Delay	43.9
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	202	266	413	157	236	148	1769	383	260	1792	78
Future Volume (vph)	47	202	266	413	157	236	148	1769	383	260	1792	78
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	46.8	46.8	9.5	46.8	46.8	8.5	30.7	30.7	8.5	37.7	37.7
Total Split (s)	12.9	48.0	48.0	16.0	51.1	51.1	12.0	40.0	40.0	16.0	44.0	44.0
Total Split (%)	10.8%	40.0%	40.0%	13.3%	42.6%	42.6%	10.0%	33.3%	33.3%	13.3%	36.7%	36.7%
Yellow Time (s)	3.5	4.3	4.3	3.5	4.3	4.3	3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	1.0	0.5	0.5	1.0	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.8	4.8	4.5	4.8	4.8	3.5	5.7	5.7	3.5	5.7	5.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	7.5	18.9	18.9	11.6	27.7	27.7	8.6	34.7	34.7	12.6	38.8	38.8
Actuated g/C Ratio	0.08	0.20	0.20	0.12	0.29	0.29	0.09	0.36	0.36	0.13	0.40	0.40
v/c Ratio	0.39	0.59	0.63	1.13	0.31	0.40	1.06	1.03	0.63	1.27	0.94	0.12
Control Delay	54.3	41.0	19.0	123.9	29.5	5.3	135.0	61.4	24.8	187.8	38.8	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.3	41.0	19.0	123.9	29.5	5.3	135.0	61.4	24.8	187.8	38.8	5.7
LOS	D	D	B	F	C	A	F	E	C	F	D	A
Approach Delay		30.9			70.7			60.1			55.8	
Approach LOS		C			E			E			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.27	
Intersection Signal Delay: 57.4	Intersection LOS: E
Intersection Capacity Utilization 88.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 18: Euclid Av. (SR-83) & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	202	266	413	157	236	148	1769	383	260	1792	78
Future Volume (veh/h)	47	202	266	413	157	236	148	1769	383	260	1792	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	51	220	177	449	171	254	161	1923	415	283	1948	73
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	69	283	240	424	449	381	161	1972	612	237	2202	669
Arrive On Green	0.04	0.15	0.15	0.13	0.24	0.24	0.09	0.38	0.38	0.14	0.42	0.42
Sat Flow, veh/h	1714	1900	1610	3326	1900	1610	1714	5187	1610	1714	5187	1577
Grp Volume(v), veh/h	51	220	177	449	171	254	161	1923	415	283	1948	73
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1663	1900	1610	1714	1729	1610	1714	1729	1577
Q Serve(g_s), s	2.7	10.1	9.5	11.5	6.8	12.9	8.5	33.0	19.4	12.5	31.2	2.5
Cycle Q Clear(g_c), s	2.7	10.1	9.5	11.5	6.8	12.9	8.5	33.0	19.4	12.5	31.2	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	69	283	240	424	449	381	161	1972	612	237	2202	669
V/C Ratio(X)	0.74	0.78	0.74	1.06	0.38	0.67	1.00	0.98	0.68	1.19	0.88	0.11
Avail Cap(c_a), veh/h	160	910	771	424	975	826	161	1972	612	237	2202	669
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	37.0	36.7	39.4	28.9	31.2	40.9	27.5	23.4	38.9	23.9	15.7
Incr Delay (d2), s/veh	14.6	3.5	3.3	60.3	0.4	1.5	69.9	14.8	3.0	120.1	4.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.7	3.8	8.0	3.0	4.9	6.5	14.5	7.2	12.8	11.8	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.5	40.4	40.0	99.6	29.3	32.7	110.7	42.4	26.4	159.0	28.6	15.7
LnGrp LOS	E	D	D	F	C	C	F	D	C	F	C	B
Approach Vol, veh/h		448			874			2499			2304	
Approach Delay, s/veh		42.2			66.4			44.1			44.2	
Approach LOS		D			E			D			D	

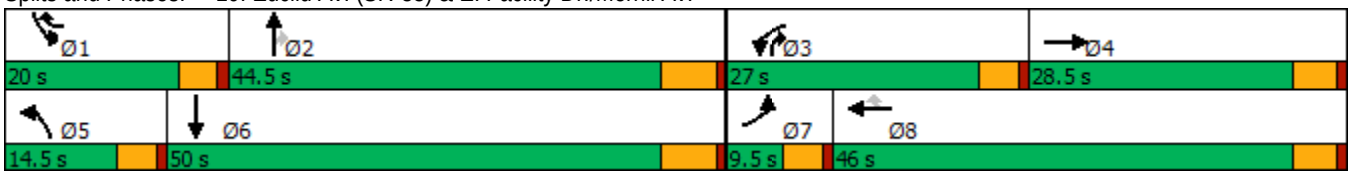
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	40.0	16.0	18.2	12.0	44.0	8.1	26.1
Change Period (Y+Rc), s	3.5	5.7	4.5	4.8	3.5	5.7	4.5	4.8
Max Green Setting (Gmax), s	12.5	34.3	11.5	43.2	8.5	38.3	8.4	46.3
Max Q Clear Time (g_c+I1), s	14.5	35.0	13.5	12.1	10.5	33.2	4.7	14.9
Green Ext Time (p_c), s	0.0	0.0	0.0	1.4	0.0	4.2	0.0	1.3

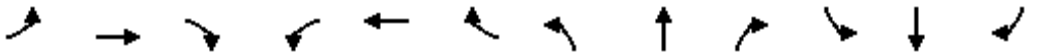
Intersection Summary	
HCM 6th Ctrl Delay	47.2
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	14	37	627	3	418	5	1838	797	390	2080
Future Volume (vph)	14	37	627	3	418	5	1838	797	390	2080
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4	3	8	1	5	2	3	1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	1	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	15.0	10.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	9.5	10.0	9.5	46.0	14.5	14.5	28.0	9.5	14.5	28.0
Total Split (s)	9.5	28.5	27.0	46.0	20.0	14.5	44.5	27.0	20.0	50.0
Total Split (%)	7.9%	23.8%	22.5%	38.3%	16.7%	12.1%	37.1%	22.5%	16.7%	41.7%
Yellow Time (s)	3.5	4.0	3.5	4.0	3.5	3.5	5.0	3.5	3.5	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	4.5	5.0	4.5	4.5	6.0	4.5	4.5	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	5.0	9.3	22.7	32.6	53.3	10.1	38.8	67.5	15.6	56.4
Actuated g/C Ratio	0.05	0.09	0.22	0.31	0.51	0.10	0.37	0.65	0.15	0.54
v/c Ratio	0.18	0.32	0.95	0.01	0.53	0.03	1.04	0.74	1.66	0.81
Control Delay	56.7	39.1	64.5	25.0	16.5	47.6	63.7	13.0	344.2	24.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.7	39.1	64.5	25.0	16.5	47.6	63.7	13.0	344.2	24.7
LOS	E	D	E	C	B	D	E	B	F	C
Approach Delay		42.8		45.2			48.4			75.1
Approach LOS		D		D			D			E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 104.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.66	
Intersection Signal Delay: 58.4	Intersection LOS: E
Intersection Capacity Utilization 96.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 19: Euclid Av. (SR-83) & E. Facility Dr./Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	37	15	627	3	418	5	1838	797	390	2080	1
Future Volume (veh/h)	14	37	15	627	3	418	5	1838	797	390	2080	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	15	40	15	682	3	444	5	1998	802	424	2261	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	29	67	25	735	484	656	22	1966	966	262	2690	0
Arrive On Green	0.02	0.05	0.05	0.22	0.25	0.25	0.01	0.45	0.38	0.15	0.62	0.00
Sat Flow, veh/h	1714	1317	494	3326	1900	1610	1714	5187	1610	1714	5358	0
Grp Volume(v), veh/h	15	0	55	682	3	444	5	1998	802	424	2261	0
Grp Sat Flow(s),veh/h/ln	1714	0	1811	1663	1900	1610	1714	1729	1610	1714	1729	0
Q Serve(g_s), s	0.9	0.0	3.0	20.4	0.1	22.9	0.3	38.5	38.5	15.5	35.1	0.0
Cycle Q Clear(g_c), s	0.9	0.0	3.0	20.4	0.1	22.9	0.3	38.5	38.5	15.5	35.1	0.0
Prop In Lane	1.00		0.27	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	29	0	92	735	484	656	22	1966	966	262	2690	0
V/C Ratio(X)	0.52	0.00	0.60	0.93	0.01	0.68	0.23	1.02	0.83	1.62	0.84	0.00
Avail Cap(c_a), veh/h	84	0	419	737	767	895	169	1966	966	262	2690	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.20	1.00	1.00	1.20	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.5	0.0	47.2	38.8	28.3	24.6	49.6	27.7	16.2	43.0	15.9	0.0
Incr Delay (d2), s/veh	13.4	0.0	2.3	18.0	0.0	0.5	1.9	24.5	6.2	296.5	2.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.4	9.6	0.1	8.0	0.1	17.2	13.7	27.7	9.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.9	0.0	49.5	56.8	28.3	25.1	51.5	52.2	22.4	339.5	18.4	0.0
LnGrp LOS	E	A	D	E	C	C	D	F	C	F	B	A
Approach Vol, veh/h		70			1129			2805			2685	
Approach Delay, s/veh		52.4			44.2			43.7			69.1	
Approach LOS		D			D			D			E	

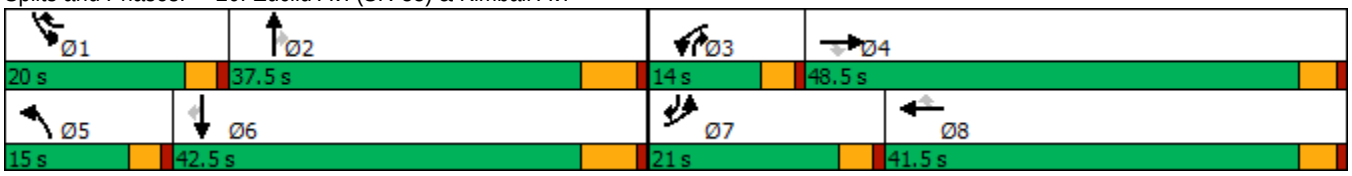
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	44.5	26.9	10.1	5.8	58.7	6.2	30.9
Change Period (Y+Rc), s	4.5	6.0	4.5	5.0	4.5	6.0	4.5	5.0
Max Green Setting (Gmax), s	15.5	38.5	22.5	23.5	10.0	44.0	5.0	41.0
Max Q Clear Time (g_c+I1), s	17.5	40.5	22.4	5.0	2.3	37.1	2.9	24.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.1	0.0	6.0	0.0	0.7

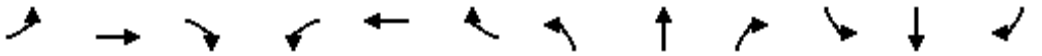
Intersection Summary	
HCM 6th Ctrl Delay	54.1
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	591	975	206	105	435	293	147	1329	159	541	1413	419
Future Volume (vph)	591	975	206	105	435	293	147	1329	159	541	1413	419
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	14.0	41.5	41.5	14.0	41.5	9.0	14.0	36.0	14.0	9.0	33.0	14.0
Total Split (s)	21.0	48.5	48.5	14.0	41.5	20.0	15.0	37.5	14.0	20.0	42.5	21.0
Total Split (%)	17.5%	40.4%	40.4%	11.7%	34.6%	16.7%	12.5%	31.3%	11.7%	16.7%	35.4%	17.5%
Yellow Time (s)	3.0	3.5	3.5	3.0	3.5	3.0	3.0	5.0	3.0	3.0	5.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.5	4.0	4.5	4.0	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	17.0	38.6	38.6	10.0	31.6	52.1	11.0	31.6	47.6	16.0	36.6	55.7
Actuated g/C Ratio	0.15	0.34	0.34	0.09	0.28	0.45	0.10	0.28	0.41	0.14	0.32	0.49
v/c Ratio	1.17	0.83	0.33	0.35	0.45	0.38	0.88	0.96	0.22	1.14	0.88	0.51
Control Delay	139.7	41.6	8.0	54.2	35.7	14.6	95.6	57.9	7.9	130.7	45.1	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	139.7	41.6	8.0	54.2	35.7	14.6	95.6	57.9	7.9	130.7	45.1	14.0
LOS	F	D	A	D	D	B	F	E	A	F	D	B
Approach Delay		70.4			30.6			56.4			59.1	
Approach LOS		E			C			E			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 57.9	Intersection LOS: E
Intersection Capacity Utilization 91.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 20: Euclid Av. (SR-83) & Kimball Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	591	975	206	105	435	293	147	1329	159	541	1413	419
Future Volume (veh/h)	591	975	206	105	435	293	147	1329	159	541	1413	419
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	609	1005	209	108	448	264	152	1370	149	558	1457	334
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	530	1187	529	301	951	653	177	1446	587	499	1677	763
Arrive On Green	0.15	0.33	0.33	0.09	0.26	0.26	0.12	0.35	0.35	0.18	0.40	0.40
Sat Flow, veh/h	3510	3610	1609	3510	3610	1610	1810	5187	1610	3510	5187	1609
Grp Volume(v), veh/h	609	1005	209	108	448	264	152	1370	149	558	1457	334
Grp Sat Flow(s),veh/h/ln	1755	1805	1609	1755	1805	1610	1810	1729	1610	1755	1729	1609
Q Serve(g_s), s	17.0	29.1	11.3	3.3	11.7	13.1	9.3	28.9	6.8	16.0	29.0	14.6
Cycle Q Clear(g_c), s	17.0	29.1	11.3	3.3	11.7	13.1	9.3	28.9	6.8	16.0	29.0	14.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	530	1187	529	301	951	653	177	1446	587	499	1677	763
V/C Ratio(X)	1.15	0.85	0.40	0.36	0.47	0.40	0.86	0.95	0.25	1.12	0.87	0.44
Avail Cap(c_a), veh/h	530	1412	629	312	1187	758	177	1452	589	499	1683	765
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.25	1.25	1.25	1.25	1.25	1.25
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.8	35.1	29.1	48.5	34.8	23.8	48.6	35.8	22.5	46.3	31.3	17.1
Incr Delay (d2), s/veh	86.9	4.3	0.5	0.3	0.1	0.1	30.9	13.1	0.2	76.7	5.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.6	12.8	4.3	1.4	5.0	4.8	5.4	12.2	2.4	11.6	11.0	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	134.6	39.5	29.6	48.8	35.0	23.9	79.5	49.0	22.7	122.9	36.5	17.5
LnGrp LOS	F	D	C	D	C	C	E	D	C	F	D	B
Approach Vol, veh/h		1823			820			1671			2349	
Approach Delay, s/veh		70.1			33.2			49.4			54.3	
Approach LOS		E			C			D			D	

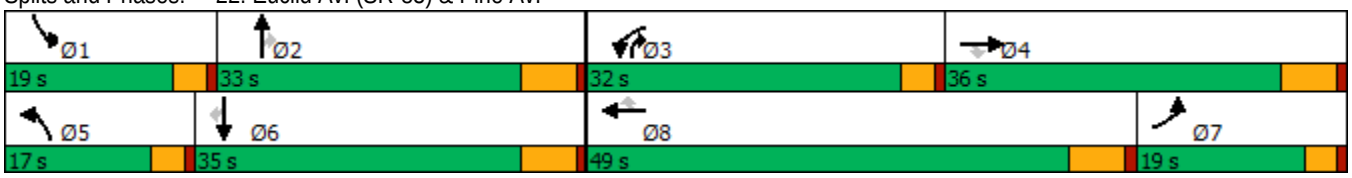
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	37.4	13.7	41.5	15.0	42.4	21.0	34.1
Change Period (Y+Rc), s	4.0	6.0	4.0	4.5	4.0	6.0	4.0	4.5
Max Green Setting (Gmax), s	16.0	31.5	10.0	44.0	11.0	36.5	17.0	37.0
Max Q Clear Time (g_c+I1), s	18.0	30.9	5.3	31.1	11.3	31.0	19.0	15.1
Green Ext Time (p_c), s	0.0	0.5	0.1	5.8	0.0	4.1	0.0	2.1

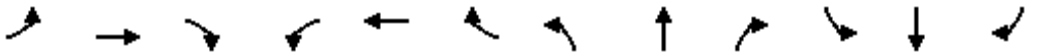
Intersection Summary	
HCM 6th Ctrl Delay	54.8
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	911	224	482	611	247	278	1070	891	391	1197	122
Future Volume (vph)	115	911	224	482	611	247	278	1070	891	391	1197	122
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.0	11.0	11.0	9.0	38.0	38.0	9.0	33.0	9.0	9.0	33.0	33.0
Total Split (s)	19.0	36.0	36.0	32.0	49.0	49.0	17.0	33.0	32.0	19.0	35.0	35.0
Total Split (%)	15.8%	30.0%	30.0%	26.7%	40.8%	40.8%	14.2%	27.5%	26.7%	15.8%	29.2%	29.2%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	3.0	3.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0	4.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	11.7	32.4	32.4	22.4	43.1	43.1	12.5	25.8	54.1	15.0	28.3	28.3
Actuated g/C Ratio	0.10	0.28	0.28	0.19	0.37	0.37	0.11	0.22	0.47	0.13	0.24	0.24
v/c Ratio	0.68	0.87	0.38	0.79	0.44	0.33	0.82	0.86	0.65	0.95	0.87	0.24
Control Delay	70.1	50.8	7.6	54.1	29.0	4.5	70.2	51.3	22.3	84.1	50.4	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.1	50.8	7.6	54.1	29.0	4.5	70.2	51.3	22.3	84.1	50.4	3.9
LOS	E	D	A	D	C	A	E	D	C	F	D	A
Approach Delay		44.8			33.5			42.1			54.8	
Approach LOS		D			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 44.2	Intersection LOS: D
Intersection Capacity Utilization 90.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Euclid Av. (SR-83) & Pine Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	911	224	482	611	247	278	1070	891	391	1197	122
Future Volume (veh/h)	115	911	224	482	611	247	278	1070	891	391	1197	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1700	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	117	930	0	492	623	250	284	1092	909	399	1221	124
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	142	1136		549	1401	593	334	1319	1137	416	1465	414
Arrive On Green	0.08	0.45	0.00	0.25	0.55	0.37	0.15	0.35	0.23	0.19	0.39	0.26
Sat Flow, veh/h	1714	3800	1610	3238	3800	1610	3238	5700	2834	3238	5700	1610
Grp Volume(v), veh/h	117	930	0	492	623	250	284	1092	909	399	1221	124
Grp Sat Flow(s),veh/h/ln	1714	1900	1610	1619	1900	1610	1619	1900	1417	1619	1900	1610
Q Serve(g_s), s	7.8	24.9	0.0	17.1	11.3	8.9	10.0	20.5	27.0	14.2	22.6	5.4
Cycle Q Clear(g_c), s	7.8	24.9	0.0	17.1	11.3	8.9	10.0	20.5	27.0	14.2	22.6	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	142	1136		549	1401	593	334	1319	1137	416	1465	414
V/C Ratio(X)	0.82	0.82		0.90	0.44	0.42	0.85	0.83	0.80	0.96	0.83	0.30
Avail Cap(c_a), veh/h	220	1136		777	1401	593	361	1319	1137	416	1465	414
HCM Platoon Ratio	1.00	1.50	1.00	1.50	1.50	1.00	1.50	1.50	1.00	1.50	1.50	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	29.4	0.0	42.5	19.0	12.0	48.4	36.0	30.8	46.8	33.6	19.6
Incr Delay (d2), s/veh	7.4	6.6	0.0	7.8	1.0	2.2	15.3	4.2	3.8	33.2	4.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	10.2	0.0	6.5	4.4	5.0	4.4	8.2	11.1	7.0	8.9	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.1	36.0	0.0	50.3	20.0	14.2	63.7	40.2	34.6	80.0	37.6	19.8
LnGrp LOS	E	D		D	C	B	E	D	C	E	D	B
Approach Vol, veh/h		1047	A		1365			2285			1744	
Approach Delay, s/veh		38.7			29.9			40.9			46.1	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	33.0	23.8	40.9	16.0	36.0	15.7	49.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	6.0	* 6
Max Green Setting (Gmax), s	15.0	27.0	28.0	30.0	13.0	29.0	15.0	* 43
Max Q Clear Time (g_c+I1), s	16.2	29.0	19.1	26.9	12.0	24.6	9.8	13.3
Green Ext Time (p_c), s	0.0	0.0	0.7	2.0	0.1	2.2	0.1	7.4

Intersection Summary	
HCM 6th Ctrl Delay	39.6
HCM 6th LOS	D

Notes

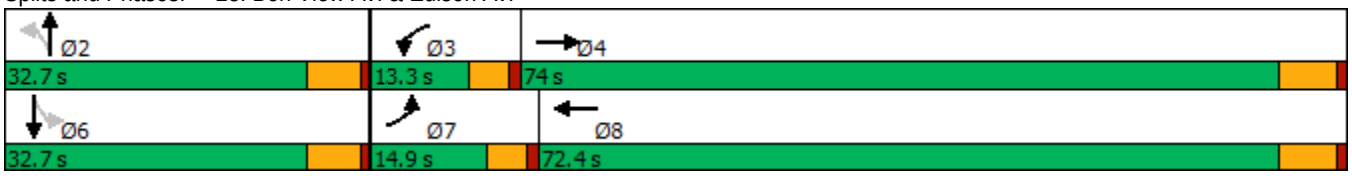
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

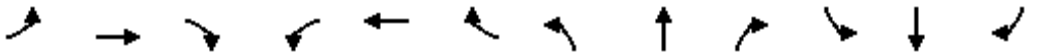
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	86	2383	95	2213	164	122	21	103
Future Volume (vph)	86	2383	95	2213	164	122	21	103
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	27.8	27.8	27.8	27.8
Total Split (s)	14.9	74.0	13.3	72.4	32.7	32.7	32.7	32.7
Total Split (%)	12.4%	61.7%	11.1%	60.3%	27.3%	27.3%	27.3%	27.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	5.8	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	9.1	68.0	8.5	67.3	23.3	23.3	23.3	23.3
Actuated g/C Ratio	0.08	0.58	0.07	0.58	0.20	0.20	0.20	0.20
v/c Ratio	0.68	0.94	0.81	0.78	0.88	0.52	0.13	0.45
Control Delay	78.1	30.3	96.7	22.1	85.7	41.9	39.5	39.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.1	30.3	96.7	22.1	85.7	41.9	39.5	39.1
LOS	E	C	F	C	F	D	D	D
Approach Delay		31.8		25.2		62.4		39.1
Approach LOS		C		C		E		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.4	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 31.2	Intersection LOS: C
Intersection Capacity Utilization 95.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 23: Bon View Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	2383	279	95	2213	9	164	122	65	21	103	58
Future Volume (veh/h)	86	2383	279	95	2213	9	164	122	65	21	103	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	91	2508	294	100	2329	9	173	128	68	22	108	61
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	113	2672	303	123	3047	12	237	262	139	215	256	145
Arrive On Green	0.07	0.57	0.57	0.07	0.57	0.57	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1714	4725	536	1714	5334	21	1236	1168	620	1206	1140	644
Grp Volume(v), veh/h	91	1814	988	100	1510	828	173	0	196	22	0	169
Grp Sat Flow(s),veh/h/ln	1714	1729	1803	1714	1729	1896	1236	0	1788	1206	0	1784
Q Serve(g_s), s	6.3	57.4	63.1	6.9	39.8	39.9	16.7	0.0	11.4	1.9	0.0	9.7
Cycle Q Clear(g_c), s	6.3	57.4	63.1	6.9	39.8	39.9	26.5	0.0	11.4	13.4	0.0	9.7
Prop In Lane	1.00		0.30	1.00		0.01	1.00		0.35	1.00		0.36
Lane Grp Cap(c), veh/h	113	1956	1020	123	1976	1083	237	0	401	215	0	400
V/C Ratio(X)	0.81	0.93	0.97	0.82	0.76	0.76	0.73	0.00	0.49	0.10	0.00	0.42
Avail Cap(c_a), veh/h	147	1956	1020	124	1976	1083	237	0	401	215	0	400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.2	23.8	25.0	54.9	19.6	19.6	51.2	0.0	40.5	46.3	0.0	39.8
Incr Delay (d2), s/veh	16.6	9.2	21.6	30.3	2.9	5.1	10.9	0.0	0.9	0.2	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	22.8	29.5	3.9	14.8	17.0	5.7	0.0	5.0	0.6	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.8	33.0	46.7	85.2	22.4	24.7	62.0	0.0	41.4	46.5	0.0	40.5
LnGrp LOS	E	C	D	F	C	C	E	A	D	D	A	D
Approach Vol, veh/h		2893			2438			369			191	
Approach Delay, s/veh		38.9			25.8			51.1			41.2	
Approach LOS		D			C			D			D	

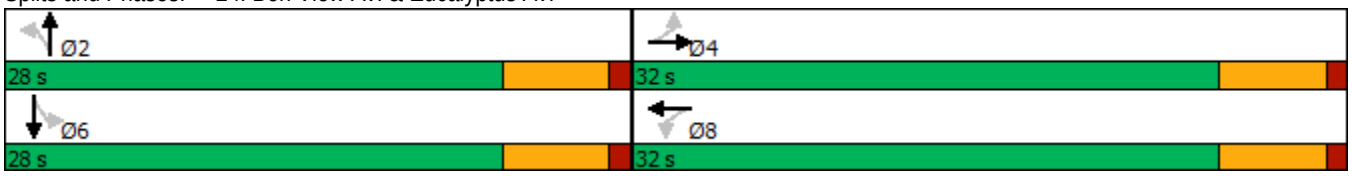
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		32.7	13.2	74.0		32.7	12.5	74.7				
Change Period (Y+Rc), s		5.8	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		26.9	8.7	67.8		26.9	10.3	66.2				
Max Q Clear Time (g_c+I1), s		28.5	8.9	65.1		15.4	8.3	41.9				
Green Ext Time (p_c), s		0.0	0.0	2.5		0.6	0.0	17.4				

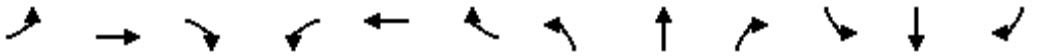
Intersection Summary	
HCM 6th Ctrl Delay	34.3
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	110	622	3	417	6	111	110	82
Future Volume (vph)	110	622	3	417	6	111	110	82
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8
Total Split (s)	32.0	32.0	32.0	32.0	28.0	28.0	28.0	28.0
Total Split (%)	53.3%	53.3%	53.3%	53.3%	46.7%	46.7%	46.7%	46.7%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8		5.8		5.8
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	21.6	21.6	21.6	21.6		14.5		14.5
Actuated g/C Ratio	0.45	0.45	0.45	0.45		0.30		0.30
v/c Ratio	0.48	0.80	0.02	0.69		0.25		0.60
Control Delay	18.1	21.3	9.0	15.6		14.3		19.6
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	18.1	21.3	9.0	15.6		14.3		19.6
LOS	B	C	A	B		B		B
Approach Delay		20.8		15.6		14.3		19.6
Approach LOS		C		B		B		B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 48.2	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 18.4	Intersection LOS: B
Intersection Capacity Utilization 76.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 24: Bon View Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	622	5	3	417	114	6	111	9	110	82	65
Future Volume (veh/h)	110	622	5	3	417	114	6	111	9	110	82	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	120	676	5	3	453	124	7	121	10	120	89	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	383	916	7	325	698	191	98	403	32	261	150	98
Arrive On Green	0.49	0.49	0.49	0.49	0.49	0.49	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	850	1884	14	771	1436	393	34	1693	135	585	631	413
Grp Volume(v), veh/h	120	0	681	3	0	577	138	0	0	280	0	0
Grp Sat Flow(s),veh/h/ln	850	0	1897	771	0	1829	1861	0	0	1628	0	0
Q Serve(g_s), s	5.2	0.0	12.1	0.1	0.0	10.0	0.0	0.0	0.0	3.9	0.0	0.0
Cycle Q Clear(g_c), s	15.1	0.0	12.1	12.2	0.0	10.0	2.5	0.0	0.0	6.5	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.21	0.05		0.07	0.43		0.25
Lane Grp Cap(c), veh/h	383	0	923	325	0	889	533	0	0	510	0	0
V/C Ratio(X)	0.31	0.00	0.74	0.01	0.00	0.65	0.26	0.00	0.00	0.55	0.00	0.00
Avail Cap(c_a), veh/h	500	0	1182	430	0	1140	1065	0	0	961	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.8	0.0	8.7	13.6	0.0	8.1	13.2	0.0	0.0	14.6	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	1.8	0.0	0.0	0.8	0.3	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	3.1	0.0	0.0	2.3	0.8	0.0	0.0	1.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.2	0.0	10.5	13.6	0.0	8.9	13.4	0.0	0.0	15.5	0.0	0.0
LnGrp LOS	B	A	B	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h		801			580			138			280	
Approach Delay, s/veh		11.0			9.0			13.4			15.5	
Approach LOS		B			A			B			B	

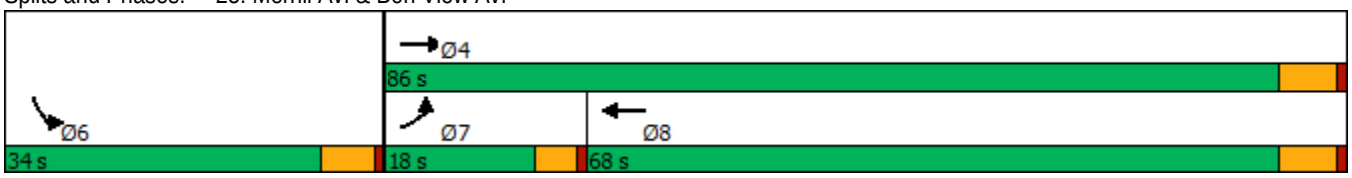
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.8		26.2		15.8		26.2				
Change Period (Y+Rc), s		5.8		5.8		5.8		5.8				
Max Green Setting (Gmax), s		22.2		26.2		22.2		26.2				
Max Q Clear Time (g_c+I1), s		4.5		17.1		8.5		14.2				
Green Ext Time (p_c), s		0.5		3.3		1.3		2.8				

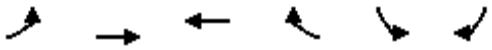
Intersection Summary												
HCM 6th Ctrl Delay			11.2									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	113	1029	837	78
Future Volume (vph)	113	1029	837	78
Turn Type	Prot	NA	NA	Prot
Protected Phases	7	4	8	6
Permitted Phases				
Detector Phase	7	4	8	6
Switch Phase				
Minimum Initial (s)	5.0	10.0	10.0	10.0
Minimum Split (s)	9.6	16.2	28.2	27.8
Total Split (s)	18.0	86.0	68.0	34.0
Total Split (%)	15.0%	71.7%	56.7%	28.3%
Yellow Time (s)	3.6	5.2	5.2	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	5.8
Lead/Lag	Lead		Lag	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	Max	Max	None
Act Effct Green (s)	11.0	79.9	64.3	14.4
Actuated g/C Ratio	0.10	0.75	0.60	0.14
v/c Ratio	0.68	0.40	0.44	0.65
Control Delay	65.6	5.6	12.9	43.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	65.6	5.6	12.9	43.8
LOS	E	A	B	D
Approach Delay		11.6	12.9	43.8
Approach LOS		B	B	D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 106.4	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 14.6	Intersection LOS: B
Intersection Capacity Utilization 55.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 25: Merrill Av. & Bon View Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	113	1029	837	55	78	89
Future Volume (veh/h)	113	1029	837	55	78	89
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1900	1900	1800
Adj Flow Rate, veh/h	120	1095	890	59	83	95
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	147	2745	2168	144	99	113
Arrive On Green	0.09	0.76	0.63	0.63	0.13	0.13
Sat Flow, veh/h	1714	3705	3531	228	788	901
Grp Volume(v), veh/h	120	1095	468	481	179	0
Grp Sat Flow(s),veh/h/ln	1714	1805	1805	1859	1698	0
Q Serve(g_s), s	7.2	11.0	13.5	13.5	10.8	0.0
Cycle Q Clear(g_c), s	7.2	11.0	13.5	13.5	10.8	0.0
Prop In Lane	1.00			0.12	0.46	0.53
Lane Grp Cap(c), veh/h	147	2745	1139	1173	213	0
V/C Ratio(X)	0.82	0.40	0.41	0.41	0.84	0.00
Avail Cap(c_a), veh/h	219	2745	1139	1173	456	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.2	4.3	9.7	9.7	44.9	0.0
Incr Delay (d2), s/veh	8.4	0.4	1.1	1.1	8.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	2.7	4.7	4.9	4.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	55.6	4.8	10.8	10.7	53.5	0.0
LnGrp LOS	E	A	B	B	D	A
Approach Vol, veh/h		1215	949		179	
Approach Delay, s/veh		9.8	10.7		53.5	
Approach LOS		A	B		D	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	86.0	19.0	13.6	72.4
Change Period (Y+Rc), s	6.2	5.8	4.6	6.2
Max Green Setting (Gmax), s	79.8	28.2	13.4	61.8
Max Q Clear Time (g_c+I1), s	13.0	12.8	9.2	15.5
Green Ext Time (p_c), s	8.9	0.4	0.0	6.2

Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

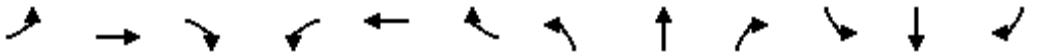
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	414	295	1097	1462	803
Future Volume (vph)	0	414	295	1097	1462	803
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	15.8	15.8	9.6	22.8	22.8	22.8
Total Split (s)	39.0	39.0	18.2	81.0	62.8	62.8
Total Split (%)	32.5%	32.5%	15.2%	67.5%	52.3%	52.3%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8	5.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	30.1	30.1	13.0	78.3	60.7	60.7
Actuated g/C Ratio	0.25	0.25	0.11	0.65	0.51	0.51
v/c Ratio	0.85	0.90	0.81	0.49	0.83	0.74
Control Delay	60.6	56.5	61.0	13.9	31.5	9.7
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0
Total Delay	60.6	56.5	61.0	14.4	31.5	9.7
LOS	E	E	E	B	C	A
Approach Delay	58.4			24.2	23.8	
Approach LOS	E			C	C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 30.0	Intersection LOS: C
Intersection Capacity Utilization 92.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 26: Grove Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	370	0	414	295	1097	0	0	1462	803
Future Volume (veh/h)	0	0	0	370	0	414	295	1097	0	0	1462	803
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				385	0	251	307	1143	0	0	1523	661
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				429	0	382	358	2405	0	0	1899	836
Arrive On Green				0.24	0.00	0.24	0.20	1.00	0.00	0.00	0.53	0.53
Sat Flow, veh/h				1810	0	1610	3510	3705	0	0	3705	1589
Grp Volume(v), veh/h				385	0	251	307	1143	0	0	1523	661
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1805	0	0	1805	1589
Q Serve(g_s), s				24.7	0.0	16.9	10.1	0.0	0.0	0.0	41.5	40.5
Cycle Q Clear(g_c), s				24.7	0.0	16.9	10.1	0.0	0.0	0.0	41.5	40.5
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				429	0	382	358	2405	0	0	1899	836
V/C Ratio(X)				0.90	0.00	0.66	0.86	0.48	0.00	0.00	0.80	0.79
Avail Cap(c_a), veh/h				501	0	445	398	2405	0	0	1899	836
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.39	0.39	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				44.4	0.0	41.4	46.9	0.0	0.0	0.0	23.3	23.1
Incr Delay (d2), s/veh				17.1	0.0	2.8	6.3	0.3	0.0	0.0	3.7	7.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				12.7	0.0	6.8	4.2	0.1	0.0	0.0	17.1	15.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				61.5	0.0	44.2	53.2	0.3	0.0	0.0	27.0	30.6
LnGrp LOS				E	A	D	D	A	A	A	C	C
Approach Vol, veh/h					636			1450			2184	
Approach Delay, s/veh					54.6			11.5			28.1	
Approach LOS					D			B			C	

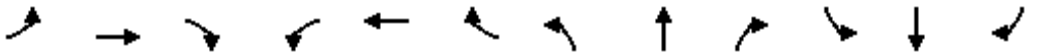
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		85.8			16.8	68.9		34.2				
Change Period (Y+Rc), s		5.8			4.6	5.8		5.8				
Max Green Setting (Gmax), s		75.2			13.6	57.0		33.2				
Max Q Clear Time (g_c+I1), s		2.0			12.1	43.5		26.7				
Green Ext Time (p_c), s		10.1			0.1	10.0		1.7				

Intersection Summary		
HCM 6th Ctrl Delay	26.4	
HCM 6th LOS	C	

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	513	0	421	879	594	1238
Future Volume (vph)	513	0	421	879	594	1238
Turn Type	Split	NA	Perm	NA	Prot	NA
Protected Phases	4	4		2	1	6
Permitted Phases			4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	30.8	30.8	30.8	26.8	9.6	22.8
Total Split (s)	38.0	38.0	38.0	54.6	27.4	82.0
Total Split (%)	31.7%	31.7%	31.7%	45.5%	22.8%	68.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.6	5.8
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	31.6	31.6	31.6	49.7	22.5	76.8
Actuated g/C Ratio	0.26	0.26	0.26	0.41	0.19	0.64
v/c Ratio	0.61	0.61	0.96	0.91	0.94	0.55
Control Delay	45.4	45.4	69.1	40.8	81.9	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.3
Total Delay	45.4	45.4	69.1	40.8	81.9	8.7
LOS	D	D	E	D	F	A
Approach Delay		56.1		40.8		32.4
Approach LOS		E		D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 40.6	Intersection LOS: D
Intersection Capacity Utilization 92.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 27: Grove Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	513	0	421	0	0	0	0	879	426	594	1238	0
Future Volume (veh/h)	513	0	421	0	0	0	0	879	426	594	1238	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	552	0	366				0	945	375	639	1331	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	900	0	401				0	1107	435	679	2487	0
Arrive On Green	0.25	0.00	0.25				0.00	0.43	0.43	0.38	1.00	0.00
Sat Flow, veh/h	3619	0	1610				0	2583	1015	3619	3800	0
Grp Volume(v), veh/h	552	0	366				0	693	627	639	1331	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1900	1698	1810	1900	0
Q Serve(g_s), s	16.2	0.0	26.5				0.0	39.3	40.2	20.5	0.0	0.0
Cycle Q Clear(g_c), s	16.2	0.0	26.5				0.0	39.3	40.2	20.5	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.60	1.00		0.00
Lane Grp Cap(c), veh/h	900	0	401				0	814	728	679	2487	0
V/C Ratio(X)	0.61	0.00	0.91				0.00	0.85	0.86	0.94	0.54	0.00
Avail Cap(c_a), veh/h	971	0	432				0	814	728	688	2487	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.65	0.65	0.44	0.44	0.00
Uniform Delay (d), s/veh	40.0	0.0	43.8				0.0	30.8	31.1	36.8	0.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	22.8				0.0	7.4	8.8	11.3	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	0.0	12.7				0.0	18.6	17.2	7.8	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	0.0	66.6				0.0	38.2	39.9	48.1	0.4	0.0
LnGrp LOS	D	A	E				A	D	D	D	A	A
Approach Vol, veh/h		918						1320			1970	
Approach Delay, s/veh		51.2						39.0			15.9	
Approach LOS		D						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	27.1	57.2		35.7		84.3
Change Period (Y+Rc), s	4.6	5.8		5.8		5.8
Max Green Setting (Gmax), s	22.8	48.8		32.2		76.2
Max Q Clear Time (g_c+I1), s	22.5	42.2		28.5		2.0
Green Ext Time (p_c), s	0.1	4.2		1.3		13.1

Intersection Summary		
HCM 6th Ctrl Delay		30.8
HCM 6th LOS		C

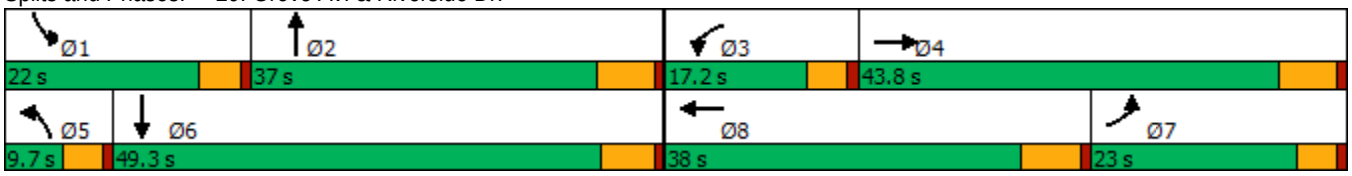
Notes

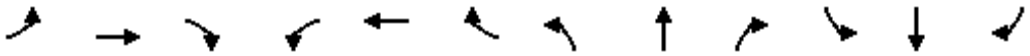
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	202	786	120	670	27	607	190	712
Future Volume (vph)	202	786	120	670	27	607	190	712
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	16.2	9.6	32.2	9.6	25.2	9.6	15.8
Total Split (s)	23.0	43.8	17.2	38.0	9.7	37.0	22.0	49.3
Total Split (%)	19.2%	36.5%	14.3%	31.7%	8.1%	30.8%	18.3%	41.1%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	4.6	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	16.7	36.0	11.3	30.6	5.1	30.9	15.8	46.2
Actuated g/C Ratio	0.14	0.31	0.10	0.26	0.04	0.27	0.14	0.40
v/c Ratio	0.85	0.77	0.75	0.92	0.37	0.79	0.85	0.68
Control Delay	78.9	41.7	79.1	56.0	70.1	46.1	80.0	32.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.9	41.7	79.1	56.0	70.1	46.1	80.0	32.0
LOS	E	D	E	E	E	D	F	C
Approach Delay		49.0		58.9		47.0		40.1
Approach LOS		D		E		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 48.5	Intersection LOS: D
Intersection Capacity Utilization 84.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 29: Grove Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	202	786	41	120	670	158	27	607	112	190	712	212
Future Volume (veh/h)	202	786	41	120	670	158	27	607	112	190	712	212
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	210	819	42	125	698	119	28	632	100	198	742	164
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	237	1109	57	151	781	133	44	858	135	225	1117	247
Arrive On Green	0.14	0.32	0.32	0.09	0.25	0.25	0.03	0.27	0.27	0.13	0.38	0.38
Sat Flow, veh/h	1714	3491	179	1714	3084	525	1714	3123	493	1714	2939	649
Grp Volume(v), veh/h	210	423	438	125	408	409	28	365	367	198	456	450
Grp Sat Flow(s),veh/h/ln	1714	1805	1865	1714	1805	1805	1714	1805	1811	1714	1805	1783
Q Serve(g_s), s	13.8	23.9	23.9	8.2	25.0	25.0	1.9	21.0	21.1	13.0	24.0	24.0
Cycle Q Clear(g_c), s	13.8	23.9	23.9	8.2	25.0	25.0	1.9	21.0	21.1	13.0	24.0	24.0
Prop In Lane	1.00		0.10	1.00		0.29	1.00		0.27	1.00		0.36
Lane Grp Cap(c), veh/h	237	573	592	151	457	457	44	496	497	225	686	678
V/C Ratio(X)	0.89	0.74	0.74	0.83	0.89	0.89	0.63	0.74	0.74	0.88	0.66	0.66
Avail Cap(c_a), veh/h	276	593	613	189	502	501	76	496	497	261	686	678
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.4	34.8	34.8	51.4	41.2	41.3	55.2	37.7	37.8	48.8	29.4	29.4
Incr Delay (d2), s/veh	22.9	4.7	4.6	18.0	17.2	17.4	5.5	9.4	9.4	23.0	5.0	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	10.6	11.0	4.1	12.7	12.7	0.8	10.1	10.2	6.8	10.8	10.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.4	39.5	39.4	69.3	58.5	58.6	60.7	47.1	47.2	71.8	34.4	34.5
LnGrp LOS	E	D	D	E	E	E	E	D	D	E	C	C
Approach Vol, veh/h		1071			942			760			1104	
Approach Delay, s/veh		45.7			60.0			47.7			41.2	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.6	37.6	14.6	42.5	7.5	49.7	22.0	35.2
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	* 6.2	6.2	* 6.2
Max Green Setting (Gmax), s	17.4	30.8	12.6	37.6	5.1	* 44	18.4	* 32
Max Q Clear Time (g_c+I1), s	15.0	23.1	10.2	25.9	3.9	26.0	15.8	27.0
Green Ext Time (p_c), s	0.1	2.4	0.0	3.7	0.0	5.0	0.1	1.9

Intersection Summary	
HCM 6th Ctrl Delay	48.3
HCM 6th LOS	D

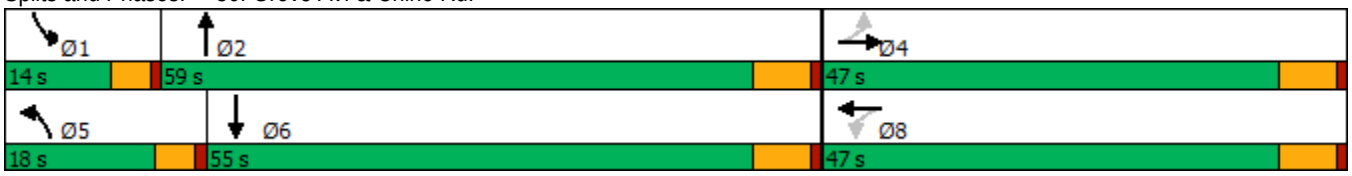
Notes

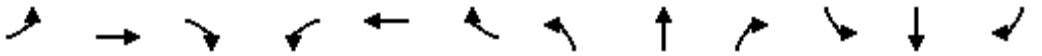
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	93	284	25	79	71	638	63	776
Future Volume (vph)	93	284	25	79	71	638	63	776
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	28.2	28.2	28.2	28.2	9.6	28.2	9.6	28.2
Total Split (s)	47.0	47.0	47.0	47.0	18.0	59.0	14.0	55.0
Total Split (%)	39.2%	39.2%	39.2%	39.2%	15.0%	49.2%	11.7%	45.8%
Yellow Time (s)	5.2	5.2	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	23.5	23.5	23.5	23.5	8.8	53.6	7.7	52.5
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.09	0.54	0.08	0.53
v/c Ratio	0.35	0.78	0.23	0.31	0.49	0.37	0.50	0.45
Control Delay	35.7	48.2	36.7	25.9	57.3	15.7	60.8	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.7	48.2	36.7	25.9	57.3	15.7	60.8	17.8
LOS	D	D	D	C	E	B	E	B
Approach Delay		45.4		27.6		19.7		20.9
Approach LOS		D		C		B		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 25.7	Intersection LOS: C
Intersection Capacity Utilization 72.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 30: Grove Av. & Chino Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	284	50	25	79	55	71	638	42	63	776	34
Future Volume (veh/h)	93	284	50	25	79	55	71	638	42	63	776	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	97	296	52	26	82	57	74	665	44	66	808	35
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	283	362	64	129	240	167	94	1874	124	84	1901	82
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.05	0.55	0.55	0.05	0.54	0.54
Sat Flow, veh/h	1269	1574	276	1049	1043	725	1714	3437	227	1714	3525	153
Grp Volume(v), veh/h	97	0	348	26	0	139	74	349	360	66	414	429
Grp Sat Flow(s),veh/h/ln	1269	0	1850	1049	0	1768	1714	1805	1859	1714	1805	1873
Q Serve(g_s), s	6.7	0.0	17.3	2.3	0.0	6.4	4.1	10.5	10.6	3.7	13.3	13.3
Cycle Q Clear(g_c), s	13.1	0.0	17.3	19.6	0.0	6.4	4.1	10.5	10.6	3.7	13.3	13.3
Prop In Lane	1.00		0.15	1.00		0.41	1.00		0.12	1.00		0.08
Lane Grp Cap(c), veh/h	283	0	426	129	0	407	94	984	1014	84	974	1010
V/C Ratio(X)	0.34	0.00	0.82	0.20	0.00	0.34	0.79	0.35	0.36	0.79	0.42	0.43
Avail Cap(c_a), veh/h	526	0	780	329	0	745	237	984	1014	166	974	1010
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.6	0.0	35.3	44.6	0.0	31.1	45.2	12.4	12.4	45.5	13.3	13.3
Incr Delay (d2), s/veh	0.7	0.0	3.9	0.8	0.0	0.5	5.3	1.0	1.0	6.0	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	7.7	0.6	0.0	2.6	1.8	3.9	4.0	1.6	5.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.3	0.0	39.2	45.4	0.0	31.6	50.5	13.4	13.4	51.5	14.7	14.6
LnGrp LOS	D	A	D	D	A	C	D	B	B	D	B	B
Approach Vol, veh/h		445			165			783			909	
Approach Delay, s/veh		38.8			33.8			16.9			17.3	
Approach LOS		D			C			B			B	

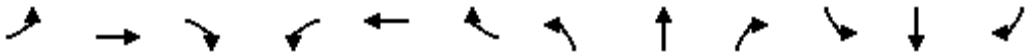
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.3	59.0		28.5	9.9	58.4		28.5				
Change Period (Y+Rc), s	4.6	6.2		6.2	4.6	6.2		6.2				
Max Green Setting (Gmax), s	9.4	52.8		40.8	13.4	48.8		40.8				
Max Q Clear Time (g_c+I1), s	5.7	12.6		19.3	6.1	15.3		21.6				
Green Ext Time (p_c), s	0.0	4.1		2.1	0.0	5.1		0.7				

Intersection Summary												
HCM 6th Ctrl Delay			22.5									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	121	174	6	59	28	635	90	660
Future Volume (vph)	121	174	6	59	28	635	90	660
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	9.6	28.2	9.6	28.2
Total Split (s)	39.0	39.0	39.0	39.0	15.0	66.0	15.0	66.0
Total Split (%)	32.5%	32.5%	32.5%	32.5%	12.5%	55.0%	12.5%	55.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.6	6.2	4.6	6.2
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	16.7	16.7	16.7	16.7	6.4	60.1	9.2	67.0
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.06	0.59	0.09	0.65
v/c Ratio	0.66	0.51	0.05	0.21	0.28	0.36	0.63	0.34
Control Delay	56.6	23.2	36.2	20.6	54.4	12.4	65.6	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.6	23.2	36.2	20.6	54.4	12.4	65.6	9.9
LOS	E	C	D	C	D	B	E	A
Approach Delay		32.3		21.4		14.0		16.1
Approach LOS		C		C		B		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 19.1	Intersection LOS: B
Intersection Capacity Utilization 52.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 31: Grove Av. & Schaefer Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	174	147	6	59	55	28	635	63	90	660	66
Future Volume (veh/h)	121	174	147	6	59	55	28	635	63	90	660	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	130	187	158	6	63	59	30	683	68	97	710	71
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	249	325	259	149	318	265	48	1970	196	121	2110	211
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.03	0.59	0.59	0.07	0.64	0.64
Sat Flow, veh/h	1289	1909	1522	1052	1867	1558	1714	3316	330	1714	3314	331
Grp Volume(v), veh/h	130	176	169	6	61	61	30	372	379	97	386	395
Grp Sat Flow(s),veh/h/ln	1289	1805	1626	1052	1805	1620	1714	1805	1841	1714	1805	1840
Q Serve(g_s), s	9.7	9.0	9.7	0.5	2.9	3.3	1.7	10.6	10.6	5.6	10.0	10.0
Cycle Q Clear(g_c), s	13.0	9.0	9.7	10.2	2.9	3.3	1.7	10.6	10.6	5.6	10.0	10.0
Prop In Lane	1.00		0.94	1.00		0.96	1.00		0.18	1.00		0.18
Lane Grp Cap(c), veh/h	249	307	277	149	307	276	48	1072	1093	121	1149	1172
V/C Ratio(X)	0.52	0.57	0.61	0.04	0.20	0.22	0.62	0.35	0.35	0.80	0.34	0.34
Avail Cap(c_a), veh/h	455	595	536	317	595	534	177	1072	1093	177	1149	1172
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	38.4	38.7	43.4	35.9	36.0	48.4	10.4	10.4	46.1	8.5	8.5
Incr Delay (d2), s/veh	1.7	1.7	2.2	0.1	0.3	0.4	4.8	0.9	0.9	9.0	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	4.0	3.9	0.1	1.3	1.3	0.8	3.8	3.9	2.6	3.4	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.3	40.1	40.8	43.5	36.2	36.4	53.1	11.3	11.3	55.1	9.2	9.2
LnGrp LOS	D	D	D	D	D	D	D	B	B	E	A	A
Approach Vol, veh/h		475			128			781			878	
Approach Delay, s/veh		41.2			36.6			12.9			14.3	
Approach LOS		D			D			B			B	

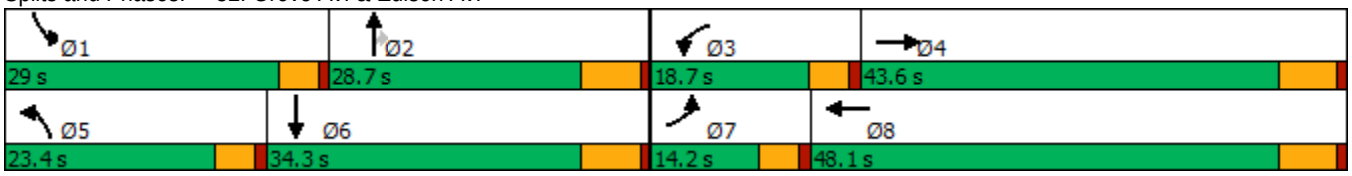
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.7	66.0		22.9	7.4	70.3		22.9				
Change Period (Y+Rc), s	4.6	6.2		5.8	4.6	6.2		5.8				
Max Green Setting (Gmax), s	10.4	59.8		33.2	10.4	59.8		33.2				
Max Q Clear Time (g_c+I1), s	7.6	12.6		15.0	3.7	12.0		12.2				
Green Ext Time (p_c), s	0.0	4.5		2.1	0.0	4.8		0.5				

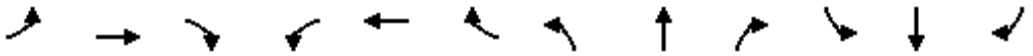
Intersection Summary			
HCM 6th Ctrl Delay		20.8	
HCM 6th LOS		C	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	82	1503	179	1274	184	553	383	322	442
Future Volume (vph)	82	1503	179	1274	184	553	383	322	442
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8	5	2		1	6
Permitted Phases							2		
Detector Phase	7	4	3	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	9.6	28.2	28.2	9.6	28.2
Total Split (s)	14.2	43.6	18.7	48.1	23.4	28.7	28.7	29.0	34.3
Total Split (%)	11.8%	36.3%	15.6%	40.1%	19.5%	23.9%	23.9%	24.2%	28.6%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	None	None	None	None	None
Act Effct Green (s)	8.8	37.4	14.1	42.7	16.8	22.2	22.2	24.4	29.8
Actuated g/C Ratio	0.07	0.31	0.12	0.36	0.14	0.19	0.19	0.20	0.25
v/c Ratio	0.70	1.05	0.96	0.80	0.83	0.89	0.91	0.99	0.62
Control Delay	82.4	76.0	106.3	38.7	77.0	64.4	50.3	94.9	42.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.4	76.0	106.3	38.7	77.0	64.4	50.3	94.9	42.9
LOS	F	E	F	D	E	E	D	F	D
Approach Delay		76.3		46.5		61.6			63.0
Approach LOS		E		D		E			E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.7	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 62.0	Intersection LOS: E
Intersection Capacity Utilization 93.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 32: Grove Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	1503	69	179	1274	96	184	553	383	322	442	69
Future Volume (veh/h)	82	1503	69	179	1274	96	184	553	383	322	442	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	88	1616	74	192	1370	103	198	595	412	346	475	74
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	109	1584	73	201	1798	135	224	677	302	349	815	126
Arrive On Green	0.06	0.31	0.31	0.12	0.37	0.37	0.13	0.19	0.19	0.20	0.26	0.26
Sat Flow, veh/h	1714	5083	233	1714	4921	370	1714	3610	1610	1714	3132	485
Grp Volume(v), veh/h	88	1099	591	192	963	510	198	595	412	346	273	276
Grp Sat Flow(s),veh/h/ln	1714	1729	1858	1714	1729	1833	1714	1805	1610	1714	1805	1813
Q Serve(g_s), s	6.1	37.4	37.4	13.4	29.4	29.4	13.6	19.2	22.5	24.2	15.8	16.0
Cycle Q Clear(g_c), s	6.1	37.4	37.4	13.4	29.4	29.4	13.6	19.2	22.5	24.2	15.8	16.0
Prop In Lane	1.00		0.13	1.00		0.20	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	109	1078	579	201	1263	670	224	677	302	349	470	472
V/C Ratio(X)	0.80	1.02	1.02	0.95	0.76	0.76	0.88	0.88	1.36	0.99	0.58	0.59
Avail Cap(c_a), veh/h	137	1078	579	201	1263	670	269	677	302	349	470	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.4	41.3	41.3	52.6	33.5	33.5	51.3	47.4	48.8	47.7	38.7	38.7
Incr Delay (d2), s/veh	19.0	32.5	42.6	49.6	4.4	8.0	22.2	12.7	184.0	46.1	1.8	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	19.9	23.0	8.3	12.3	13.8	7.0	9.5	24.1	14.3	6.9	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.4	73.8	83.9	102.2	37.9	41.5	73.5	60.1	232.7	93.8	40.5	40.6
LnGrp LOS	E	F	F	F	D	D	E	E	F	F	D	D
Approach Vol, veh/h		1778			1665			1205			895	
Approach Delay, s/veh		77.2			46.4			121.3			61.1	
Approach LOS		E			D			F			E	

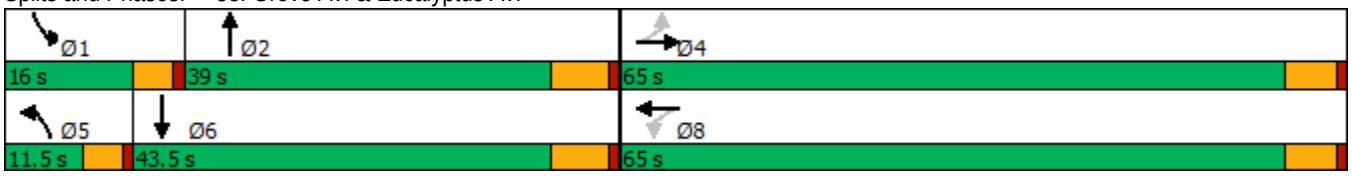
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.0	28.7	18.7	43.6	20.3	37.4	12.3	50.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	24.4	22.5	14.1	37.4	18.8	28.1	9.6	41.9
Max Q Clear Time (g_c+I1), s	26.2	24.5	15.4	39.4	15.6	18.0	8.1	31.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	2.1	0.0	6.2

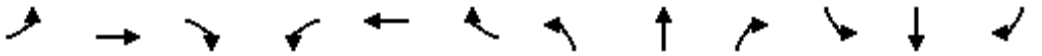
Intersection Summary	
HCM 6th Ctrl Delay	74.9
HCM 6th LOS	E

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	182	168	20	274	40	781	123	386
Future Volume (vph)	182	168	20	274	40	781	123	386
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	27.8	27.8	27.8	27.8	9.6	28.2	9.6	28.2
Total Split (s)	65.0	65.0	65.0	65.0	11.5	39.0	16.0	43.5
Total Split (%)	54.2%	54.2%	54.2%	54.2%	9.6%	32.5%	13.3%	36.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	4.6	6.2	4.6	6.2
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	51.4	51.4	51.4	51.4	6.3	33.2	10.7	40.0
Actuated g/C Ratio	0.46	0.46	0.46	0.46	0.06	0.30	0.10	0.36
v/c Ratio	1.10	0.33	0.05	0.74	0.43	0.81	0.78	0.48
Control Delay	126.3	17.7	16.3	27.8	67.5	45.1	81.4	29.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	126.3	17.7	16.3	27.8	67.5	45.1	81.4	29.0
LOS	F	B	B	C	E	D	F	C
Approach Delay		63.2		27.4		46.2		38.5
Approach LOS		E		C		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 42.7	Intersection LOS: D
Intersection Capacity Utilization 90.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 33: Grove Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	168	85	20	274	295	40	781	12	123	386	169
Future Volume (veh/h)	182	168	85	20	274	295	40	781	12	123	386	169
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	198	183	92	22	298	321	43	849	13	134	420	184
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	249	592	298	541	416	448	58	1002	15	160	814	353
Arrive On Green	0.50	0.50	0.50	0.50	0.50	0.50	0.03	0.28	0.28	0.09	0.33	0.33
Sat Flow, veh/h	863	1193	600	1184	837	901	1810	3639	56	1810	2451	1062
Grp Volume(v), veh/h	198	0	275	22	0	619	43	421	441	134	308	296
Grp Sat Flow(s),veh/h/ln	863	0	1792	1184	0	1738	1810	1805	1890	1810	1805	1709
Q Serve(g_s), s	26.0	0.0	10.9	1.3	0.0	33.2	2.8	26.3	26.3	8.7	16.4	16.7
Cycle Q Clear(g_c), s	59.2	0.0	10.9	12.2	0.0	33.2	2.8	26.3	26.3	8.7	16.4	16.7
Prop In Lane	1.00		0.33	1.00		0.52	1.00		0.03	1.00		0.62
Lane Grp Cap(c), veh/h	249	0	890	541	0	863	58	497	520	160	599	567
V/C Ratio(X)	0.80	0.00	0.31	0.04	0.00	0.72	0.75	0.85	0.85	0.83	0.51	0.52
Avail Cap(c_a), veh/h	249	0	890	541	0	863	105	497	520	173	599	567
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.2	0.0	17.8	21.5	0.0	23.4	57.2	40.8	40.8	53.4	32.1	32.1
Incr Delay (d2), s/veh	16.3	0.0	0.2	0.0	0.0	2.9	6.9	16.3	15.7	24.8	3.1	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	0.0	4.3	0.4	0.0	13.3	1.4	13.3	13.9	4.9	7.3	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.5	0.0	18.0	21.5	0.0	26.3	64.2	57.1	56.5	78.3	35.2	35.6
LnGrp LOS	E	A	B	C	A	C	E	E	E	E	D	D
Approach Vol, veh/h		473			641			905			738	
Approach Delay, s/veh		37.1			26.1			57.1			43.2	
Approach LOS		D			C			E			D	

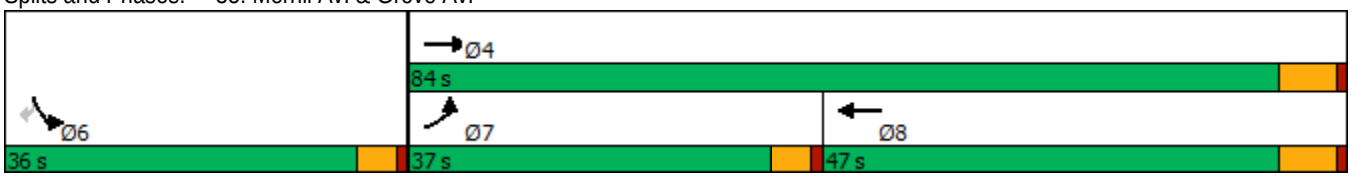
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.2	39.0		65.0	8.4	45.8		65.0				
Change Period (Y+Rc), s	4.6	6.2		5.8	4.6	6.2		5.8				
Max Green Setting (Gmax), s	11.4	32.8		59.2	6.9	37.3		59.2				
Max Q Clear Time (g_c+I1), s	10.7	28.3		61.2	4.8	18.7		35.2				
Green Ext Time (p_c), s	0.0	1.9		0.0	0.0	3.1		4.2				

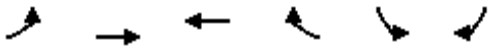
Intersection Summary			
HCM 6th Ctrl Delay		42.7	
HCM 6th LOS		D	

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	384	893	684	358	278
Future Volume (vph)	384	893	684	358	278
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	16.2	28.2	26.6	26.6
Total Split (s)	37.0	84.0	47.0	36.0	36.0
Total Split (%)	30.8%	70.0%	39.2%	30.0%	30.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	4.6
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	Max	Max	None	None
Act Effct Green (s)	29.5	77.9	43.8	27.5	27.5
Actuated g/C Ratio	0.25	0.67	0.38	0.24	0.24
v/c Ratio	0.92	0.38	0.85	0.87	0.48
Control Delay	70.3	9.5	38.3	64.2	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	70.3	9.5	38.3	64.2	6.9
LOS	E	A	D	E	A
Approach Delay		27.8	38.3	39.1	
Approach LOS		C	D	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 34.0	Intersection LOS: C
Intersection Capacity Utilization 87.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 35: Merrill Av. & Grove Av.





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	384	893	684	430	358	278
Future Volume (veh/h)	384	893	684	430	358	278
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	400	930	712	448	373	290
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	426	2445	828	519	414	368
Arrive On Green	0.25	0.68	0.39	0.39	0.23	0.23
Sat Flow, veh/h	1714	3705	2225	1335	1810	1610
Grp Volume(v), veh/h	400	930	603	557	373	290
Grp Sat Flow(s),veh/h/ln	1714	1805	1805	1660	1810	1610
Q Serve(g_s), s	26.3	12.9	35.2	35.5	23.0	19.5
Cycle Q Clear(g_c), s	26.3	12.9	35.2	35.5	23.0	19.5
Prop In Lane	1.00			0.80	1.00	1.00
Lane Grp Cap(c), veh/h	426	2445	702	645	414	368
V/C Ratio(X)	0.94	0.38	0.86	0.86	0.90	0.79
Avail Cap(c_a), veh/h	483	2445	702	645	495	440
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	8.1	32.2	32.3	43.0	41.7
Incr Delay (d2), s/veh	23.8	0.5	13.0	14.3	17.5	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.4	4.2	16.8	15.8	11.8	17.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	66.1	8.5	45.2	46.6	60.5	49.5
LnGrp LOS	E	A	D	D	E	D
Approach Vol, veh/h		1330	1160		663	
Approach Delay, s/veh		25.8	45.9		55.7	
Approach LOS		C	D		E	

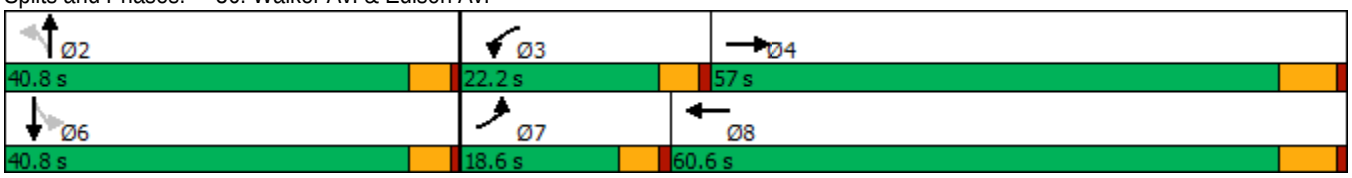
Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			84.0		30.9	33.1	50.9
Change Period (Y+Rc), s			6.2		4.6	4.6	6.2
Max Green Setting (Gmax), s			77.8		31.4	32.4	40.8
Max Q Clear Time (g_c+I1), s			14.9		25.0	28.3	37.5
Green Ext Time (p_c), s			7.0		1.3	0.3	2.1

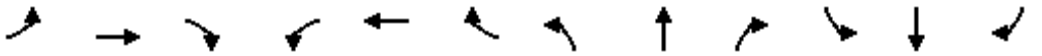
Intersection Summary		
HCM 6th Ctrl Delay		39.5
HCM 6th LOS		D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	95	1983	208	1338	91	67	173	296
Future Volume (vph)	95	1983	208	1338	91	67	173	296
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	26.7	26.7	26.7	26.7
Total Split (s)	18.6	57.0	22.2	60.6	40.8	40.8	40.8	40.8
Total Split (%)	15.5%	47.5%	18.5%	50.5%	34.0%	34.0%	34.0%	34.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	10.7	51.1	16.7	57.0	32.2	32.2	32.2	32.2
Actuated g/C Ratio	0.09	0.44	0.14	0.49	0.28	0.28	0.28	0.28
v/c Ratio	0.63	0.94	0.89	0.58	0.81	0.51	0.96	0.74
Control Delay	69.2	40.7	84.9	22.9	85.1	21.7	98.3	46.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.2	40.7	84.9	22.9	85.1	21.7	98.3	46.1
LOS	E	D	F	C	F	C	F	D
Approach Delay		42.0		30.9		37.5		62.8
Approach LOS		D		C		D		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 40.2	Intersection LOS: D
Intersection Capacity Utilization 96.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 36: Walker Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	1983	51	208	1338	65	91	67	208	173	296	69
Future Volume (veh/h)	95	1983	51	208	1338	65	91	67	208	173	296	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	100	2087	54	219	1408	68	96	71	219	182	312	73
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	123	2212	57	244	2514	121	179	124	382	233	450	105
Arrive On Green	0.07	0.43	0.43	0.14	0.50	0.50	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1714	5200	134	1714	5069	245	1014	410	1263	1106	1489	348
Grp Volume(v), veh/h	100	1387	754	219	960	516	96	0	290	182	0	385
Grp Sat Flow(s),veh/h/ln	1714	1729	1876	1714	1729	1856	1014	0	1673	1106	0	1837
Q Serve(g_s), s	6.9	45.9	46.1	15.0	23.1	23.1	11.0	0.0	17.5	18.6	0.0	22.1
Cycle Q Clear(g_c), s	6.9	45.9	46.1	15.0	23.1	23.1	33.1	0.0	17.5	36.1	0.0	22.1
Prop In Lane	1.00		0.07	1.00		0.13	1.00		0.76	1.00		0.19
Lane Grp Cap(c), veh/h	123	1471	798	244	1715	921	179	0	506	233	0	555
V/C Ratio(X)	0.81	0.94	0.95	0.90	0.56	0.56	0.54	0.00	0.57	0.78	0.00	0.69
Avail Cap(c_a), veh/h	201	1471	798	253	1715	921	179	0	506	233	0	555
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.6	32.9	33.0	50.3	21.0	21.0	51.4	0.0	35.2	50.9	0.0	36.8
Incr Delay (d2), s/veh	4.8	13.3	21.0	29.6	1.3	2.5	3.1	0.0	1.6	15.7	0.0	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	20.4	23.9	8.2	8.9	9.9	3.0	0.0	7.3	6.5	0.0	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.4	46.2	54.0	79.9	22.3	23.5	54.5	0.0	36.7	66.5	0.0	40.5
LnGrp LOS	E	D	D	E	C	C	D	A	D	E	A	D
Approach Vol, veh/h		2241			1695			386			567	
Approach Delay, s/veh		49.4			30.1			41.1			48.8	
Approach LOS		D			C			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		40.8	21.6	57.0		40.8	13.2	65.4				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		* 4.7	4.6	6.2				
Max Green Setting (Gmax), s		* 36	17.6	50.8		* 36	14.0	54.4				
Max Q Clear Time (g_c+I1), s		35.1	17.0	48.1		38.1	8.9	25.1				
Green Ext Time (p_c), s		0.2	0.0	2.4		0.0	0.0	10.8				

Intersection Summary												
HCM 6th Ctrl Delay			42.0									
HCM 6th LOS			D									

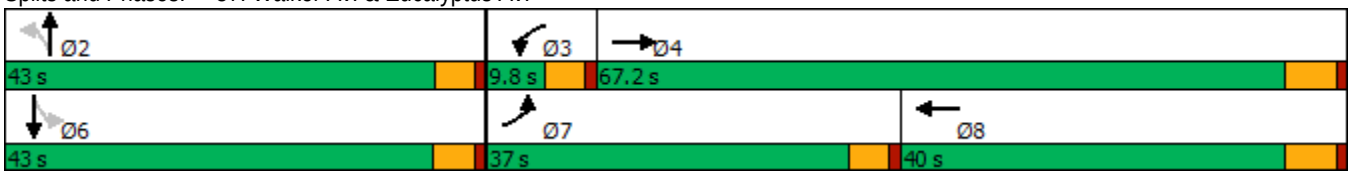
Notes

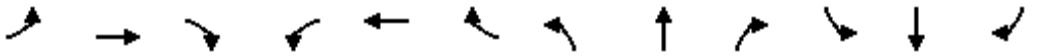
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	410	345	14	252	87	302	140	105
Future Volume (vph)	410	345	14	252	87	302	140	105
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	27.8	26.6	26.6	26.7	26.7
Total Split (s)	37.0	67.2	9.8	40.0	43.0	43.0	43.0	43.0
Total Split (%)	30.8%	56.0%	8.2%	33.3%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	3.6	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	4.6	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	29.5	65.5	5.2	34.9	30.3	30.3	30.2	30.2
Actuated g/C Ratio	0.27	0.60	0.05	0.32	0.28	0.28	0.27	0.27
v/c Ratio	0.92	0.37	0.18	0.86	0.40	0.68	1.08	0.45
Control Delay	66.1	14.9	59.8	50.6	37.6	42.0	137.4	28.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.1	14.9	59.8	50.6	37.6	42.0	137.4	28.9
LOS	E	B	E	D	D	D	F	C
Approach Delay		41.5		50.9		41.0		71.6
Approach LOS		D		D		D		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 48.9	Intersection LOS: D
Intersection Capacity Utilization 90.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 37: Walker Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	410	345	36	14	252	210	87	302	21	140	105	110
Future Volume (veh/h)	410	345	36	14	252	210	87	302	21	140	105	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	446	375	39	15	274	228	95	328	23	152	114	120
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	472	913	95	30	283	235	317	551	39	235	266	280
Arrive On Green	0.26	0.54	0.54	0.02	0.29	0.29	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1810	1692	176	1810	959	798	1229	1755	123	1104	847	892
Grp Volume(v), veh/h	446	0	414	15	0	502	95	0	351	152	0	234
Grp Sat Flow(s),veh/h/ln	1810	0	1868	1810	0	1756	1229	0	1878	1104	0	1739
Q Serve(g_s), s	28.0	0.0	15.2	1.0	0.0	32.7	7.7	0.0	18.3	15.6	0.0	12.4
Cycle Q Clear(g_c), s	28.0	0.0	15.2	1.0	0.0	32.7	20.1	0.0	18.3	33.9	0.0	12.4
Prop In Lane	1.00		0.09	1.00		0.45	1.00		0.07	1.00		0.51
Lane Grp Cap(c), veh/h	472	0	1008	30	0	518	317	0	589	235	0	546
V/C Ratio(X)	0.94	0.00	0.41	0.50	0.00	0.97	0.30	0.00	0.60	0.65	0.00	0.43
Avail Cap(c_a), veh/h	506	0	1008	81	0	518	338	0	622	253	0	575
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.0	0.0	15.8	56.5	0.0	40.3	39.5	0.0	33.6	47.9	0.0	31.5
Incr Delay (d2), s/veh	25.3	0.0	1.2	4.8	0.0	32.5	0.5	0.0	1.4	5.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.3	0.0	6.3	0.5	0.0	18.1	2.4	0.0	8.6	4.6	0.0	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.4	0.0	17.0	61.3	0.0	72.9	40.0	0.0	35.0	53.0	0.0	32.1
LnGrp LOS	E	A	B	E	A	E	D	A	C	D	A	C
Approach Vol, veh/h		860			517			446			386	
Approach Delay, s/veh		43.1			72.5			36.0			40.3	
Approach LOS		D			E			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		41.1	6.5	68.3		41.1	34.8	40.0				
Change Period (Y+Rc), s		* 4.7	4.6	5.8		* 4.7	4.6	5.8				
Max Green Setting (Gmax), s		* 38	5.2	61.4		* 38	32.4	34.2				
Max Q Clear Time (g_c+I1), s		22.1	3.0	17.2		35.9	30.0	34.7				
Green Ext Time (p_c), s		2.3	0.0	2.5		0.5	0.2	0.0				

Intersection Summary												
HCM 6th Ctrl Delay			48.1									
HCM 6th LOS			D									

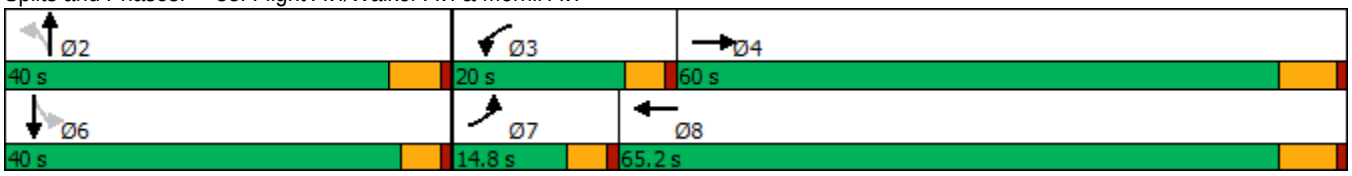
Notes

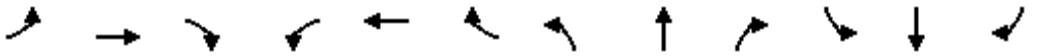
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	52	1060	107	833	114	65	96	49
Future Volume (vph)	52	1060	107	833	114	65	96	49
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	27.8	27.8	26.6	26.6
Total Split (s)	14.8	60.0	20.0	65.2	40.0	40.0	40.0	40.0
Total Split (%)	12.3%	50.0%	16.7%	54.3%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	4.8	4.8	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	5.8	5.8	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	7.7	55.5	11.0	61.1	20.6	20.6	21.8	21.8
Actuated g/C Ratio	0.07	0.53	0.11	0.59	0.20	0.20	0.21	0.21
v/c Ratio	0.45	0.69	0.64	0.45	0.92	0.58	0.68	0.50
Control Delay	60.7	22.1	62.7	15.1	100.6	26.8	60.4	17.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.7	22.1	62.7	15.1	100.6	26.8	60.4	17.6
LOS	E	C	E	B	F	C	E	B
Approach Delay		23.7		20.2		51.8		30.7
Approach LOS		C		C		D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 26.6	Intersection LOS: C
Intersection Capacity Utilization 79.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 38: Flight Av./Walker Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	1060	139	107	833	46	114	65	157	96	49	167
Future Volume (veh/h)	52	1060	139	107	833	46	114	65	157	96	49	167
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	57	1152	151	116	905	50	124	71	171	104	53	182
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	72	1630	213	142	1909	105	221	126	303	217	96	329
Arrive On Green	0.04	0.51	0.51	0.08	0.55	0.55	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1714	3210	420	1714	3478	192	1163	495	1191	1156	376	1291
Grp Volume(v), veh/h	57	647	656	116	470	485	124	0	242	104	0	235
Grp Sat Flow(s),veh/h/ln	1714	1805	1824	1714	1805	1865	1163	0	1686	1156	0	1668
Q Serve(g_s), s	3.5	29.5	29.7	7.2	17.1	17.1	11.1	0.0	13.4	9.3	0.0	13.1
Cycle Q Clear(g_c), s	3.5	29.5	29.7	7.2	17.1	17.1	24.3	0.0	13.4	22.7	0.0	13.1
Prop In Lane	1.00		0.23	1.00		0.10	1.00		0.71	1.00		0.77
Lane Grp Cap(c), veh/h	72	917	927	142	990	1024	221	0	429	217	0	425
V/C Ratio(X)	0.79	0.71	0.71	0.81	0.47	0.47	0.56	0.00	0.56	0.48	0.00	0.55
Avail Cap(c_a), veh/h	163	917	927	246	990	1024	295	0	536	303	0	549
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.0	20.3	20.3	48.5	14.8	14.8	45.3	0.0	34.9	44.7	0.0	34.8
Incr Delay (d2), s/veh	6.9	4.5	4.6	4.3	1.6	1.6	2.2	0.0	1.2	1.6	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	12.1	12.4	3.1	6.6	6.8	3.2	0.0	5.4	2.8	0.0	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.9	24.8	24.9	52.7	16.4	16.4	47.5	0.0	36.0	46.4	0.0	35.9
LnGrp LOS	E	C	C	D	B	B	D	A	D	D	A	D
Approach Vol, veh/h		1360			1071			366			339	
Approach Delay, s/veh		26.2			20.3			39.9			39.1	
Approach LOS		C			C			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		33.2	13.5	60.8		33.2	9.1	65.2				
Change Period (Y+Rc), s		5.8	4.6	6.2		* 5.8	4.6	6.2				
Max Green Setting (Gmax), s		34.2	15.4	53.8		* 35	10.2	59.0				
Max Q Clear Time (g_c+I1), s		26.3	9.2	31.7		24.7	5.5	19.1				
Green Ext Time (p_c), s		1.1	0.1	8.4		1.4	0.0	6.1				

Intersection Summary		
HCM 6th Ctrl Delay		27.2
HCM 6th LOS		C

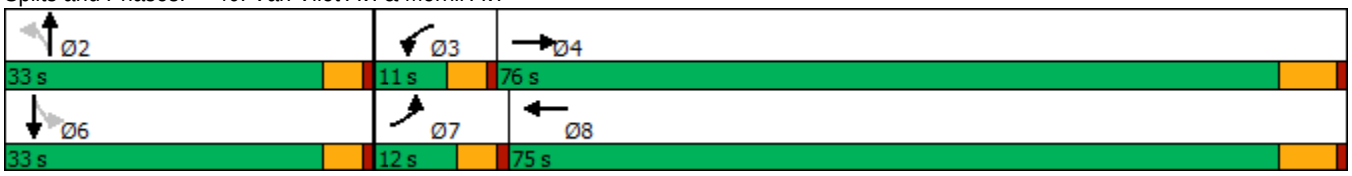
Notes

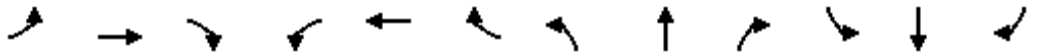
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	22	1237	14	884	38	0	75	0
Future Volume (vph)	22	1237	14	884	38	0	75	0
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	26.6	26.6	26.6	26.6
Total Split (s)	12.0	76.0	11.0	75.0	33.0	33.0	33.0	33.0
Total Split (%)	10.0%	63.3%	9.2%	62.5%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2		4.6		4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	6.0	73.3	5.5	73.0		13.2		13.2
Actuated g/C Ratio	0.06	0.72	0.05	0.72		0.13		0.13
v/c Ratio	0.24	0.54	0.16	0.38		0.30		0.60
Control Delay	53.1	8.8	52.1	7.3		12.5		32.6
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	53.1	8.8	52.1	7.3		12.5		32.6
LOS	D	A	D	A		B		C
Approach Delay		9.6		8.0		12.5		32.6
Approach LOS		A		A		B		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 101.4	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 10.4	Intersection LOS: B
Intersection Capacity Utilization 54.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 40: Van Vliet Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	1237	54	14	884	26	38	0	25	75	0	64
Future Volume (veh/h)	22	1237	54	14	884	26	38	0	25	75	0	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	24	1345	59	15	961	28	41	0	27	82	0	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	42	2501	110	29	2516	73	151	14	70	152	7	88
Arrive On Green	0.02	0.71	0.71	0.02	0.70	0.70	0.12	0.00	0.12	0.12	0.00	0.12
Sat Flow, veh/h	1714	3523	154	1714	3582	104	791	122	601	823	61	755
Grp Volume(v), veh/h	24	688	716	15	484	505	68	0	0	152	0	0
Grp Sat Flow(s),veh/h/ln	1714	1805	1872	1714	1805	1881	1515	0	0	1639	0	0
Q Serve(g_s), s	1.4	17.6	17.7	0.9	10.7	10.7	0.0	0.0	0.0	4.8	0.0	0.0
Cycle Q Clear(g_c), s	1.4	17.6	17.7	0.9	10.7	10.7	3.9	0.0	0.0	8.7	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.06	0.60		0.40	0.54		0.46
Lane Grp Cap(c), veh/h	42	1281	1329	29	1268	1322	235	0	0	247	0	0
V/C Ratio(X)	0.57	0.54	0.54	0.51	0.38	0.38	0.29	0.00	0.00	0.62	0.00	0.00
Avail Cap(c_a), veh/h	129	1281	1329	112	1268	1322	493	0	0	513	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	47.5	6.7	6.7	47.9	5.9	5.9	40.0	0.0	0.0	42.1	0.0	0.0
Incr Delay (d2), s/veh	4.5	1.6	1.6	5.1	0.9	0.8	0.7	0.0	0.0	2.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	5.2	5.4	0.4	3.2	3.3	1.6	0.0	0.0	3.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.0	8.3	8.3	53.0	6.8	6.8	40.7	0.0	0.0	44.5	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1428			1004			68			152	
Approach Delay, s/veh		9.0			7.5			40.7			44.5	
Approach LOS		A			A			D			D	

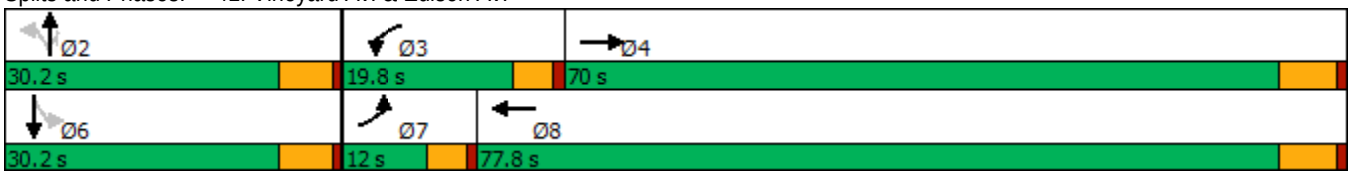
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.0	6.3	76.0		16.0	7.0	75.3				
Change Period (Y+Rc), s		4.6	4.6	6.2		4.6	4.6	6.2				
Max Green Setting (Gmax), s		28.4	6.4	69.8		28.4	7.4	68.8				
Max Q Clear Time (g_c+I1), s		5.9	2.9	19.7		10.7	3.4	12.7				
Green Ext Time (p_c), s		0.3	0.0	11.7		0.8	0.0	6.6				

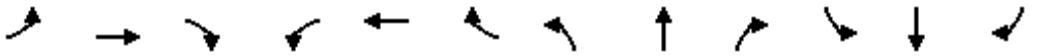
Intersection Summary												
HCM 6th Ctrl Delay			11.3									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	40	2710	192	1816	108	54	358	64	26
Future Volume (vph)	40	2710	192	1816	108	54	358	64	26
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA
Protected Phases	7	4	3	8		2			6
Permitted Phases					2		2	6	
Detector Phase	7	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	27.8	27.8	27.8	27.8	27.8
Total Split (s)	12.0	70.0	19.8	77.8	30.2	30.2	30.2	30.2	30.2
Total Split (%)	10.0%	58.3%	16.5%	64.8%	25.2%	25.2%	25.2%	25.2%	25.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	5.8	5.8	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	Max	None	Max	None	None	None	None	None
Act Effct Green (s)	6.6	63.9	15.2	74.5	21.6	21.6	21.6	21.6	21.6
Actuated g/C Ratio	0.06	0.54	0.13	0.64	0.18	0.18	0.18	0.18	0.18
v/c Ratio	0.45	1.08	0.95	0.63	0.49	0.17	0.92	0.29	0.16
Control Delay	69.2	68.6	99.5	15.2	50.2	41.0	55.4	44.4	24.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.2	68.6	99.5	15.2	50.2	41.0	55.4	44.4	24.6
LOS	E	E	F	B	D	D	E	D	C
Approach Delay		68.6		22.9		52.9			35.7
Approach LOS		E		C		D			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 49.2	Intersection LOS: D
Intersection Capacity Utilization 99.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 41: Vineyard Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	2710	74	192	1816	87	108	54	358	64	26	25
Future Volume (veh/h)	40	2710	74	192	1816	87	108	54	358	64	26	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	43	2946	80	209	1974	95	117	59	389	70	28	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	54	2761	74	217	3177	152	303	386	327	230	181	174
Arrive On Green	0.03	0.53	0.53	0.13	0.63	0.63	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1714	5193	140	1714	5071	243	1370	1900	1610	957	889	857
Grp Volume(v), veh/h	43	1953	1073	209	1344	725	117	59	389	70	0	55
Grp Sat Flow(s),veh/h/ln	1714	1729	1875	1714	1729	1856	1370	1900	1610	957	0	1746
Q Serve(g_s), s	3.0	63.8	63.8	14.6	28.5	28.7	9.2	3.1	24.4	7.8	0.0	3.1
Cycle Q Clear(g_c), s	3.0	63.8	63.8	14.6	28.5	28.7	12.3	3.1	24.4	10.8	0.0	3.1
Prop In Lane	1.00		0.07	1.00		0.13	1.00		1.00	1.00		0.49
Lane Grp Cap(c), veh/h	54	1839	997	217	2167	1163	303	386	327	230	0	355
V/C Ratio(X)	0.79	1.06	1.08	0.96	0.62	0.62	0.39	0.15	1.19	0.30	0.00	0.15
Avail Cap(c_a), veh/h	106	1839	997	217	2167	1163	303	386	327	230	0	355
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.7	28.1	28.1	52.1	13.7	13.7	44.4	39.3	47.8	43.8	0.0	39.3
Incr Delay (d2), s/veh	9.1	39.8	51.4	50.0	1.3	2.5	0.8	0.2	111.1	0.7	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	33.4	39.4	9.0	10.0	11.1	3.1	1.4	19.5	1.8	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.8	67.9	79.5	102.1	15.0	16.2	45.2	39.5	158.9	44.5	0.0	39.5
LnGrp LOS	E	F	F	F	B	B	D	D	F	D	A	D
Approach Vol, veh/h		3069			2278			565			125	
Approach Delay, s/veh		71.9			23.4			122.9			42.3	
Approach LOS		E			C			F			D	

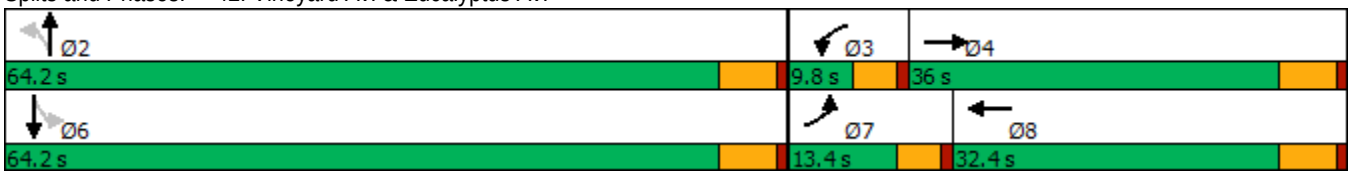
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.2	19.8	70.0		30.2	8.4	81.4				
Change Period (Y+Rc), s		5.8	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		24.4	15.2	63.8		24.4	7.4	71.6				
Max Q Clear Time (g_c+I1), s		26.4	16.6	65.8		12.8	5.0	30.7				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.4	0.0	20.5				

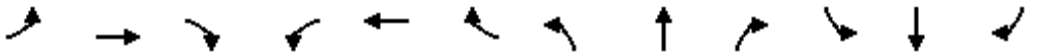
Intersection Summary												
HCM 6th Ctrl Delay			57.8									
HCM 6th LOS			E									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	101	406	35	177	202	228	129	85
Future Volume (vph)	101	406	35	177	202	228	129	85
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	27.8	27.8	27.8	27.8	27.8
Total Split (s)	13.4	36.0	9.8	32.4	64.2	64.2	64.2	64.2
Total Split (%)	12.2%	32.7%	8.9%	29.5%	58.4%	58.4%	58.4%	58.4%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8		5.8		5.8
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	8.6	31.1	5.2	23.6		56.8		56.8
Actuated g/C Ratio	0.08	0.30	0.05	0.22		0.54		0.54
v/c Ratio	0.80	0.90	0.45	0.86		0.96		0.55
Control Delay	86.4	58.2	68.4	55.6		47.6		21.0
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	86.4	58.2	68.4	55.6		47.6		21.0
LOS	F	E	E	E		D		C
Approach Delay		63.3		56.8		47.6		21.0
Approach LOS		E		E		D		C

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 105.2	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 50.5	Intersection LOS: D
Intersection Capacity Utilization 86.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 42: Vineyard Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	406	57	35	177	160	202	228	287	129	85	38
Future Volume (veh/h)	101	406	57	35	177	160	202	228	287	129	85	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	110	441	62	38	192	174	220	248	312	140	92	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	136	468	66	55	221	200	270	269	329	278	177	71
Arrive On Green	0.08	0.29	0.29	0.03	0.24	0.24	0.52	0.52	0.52	0.52	0.52	0.52
Sat Flow, veh/h	1714	1630	229	1714	918	832	430	515	630	431	339	136
Grp Volume(v), veh/h	110	0	503	38	0	366	780	0	0	273	0	0
Grp Sat Flow(s),veh/h/ln	1714	0	1859	1714	0	1750	1574	0	0	906	0	0
Q Serve(g_s), s	6.5	0.0	27.1	2.3	0.0	20.6	27.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.5	0.0	27.1	2.3	0.0	20.6	48.3	0.0	0.0	20.4	0.0	0.0
Prop In Lane	1.00		0.12	1.00		0.48	0.28		0.40	0.51		0.15
Lane Grp Cap(c), veh/h	136	0	534	55	0	421	868	0	0	527	0	0
V/C Ratio(X)	0.81	0.00	0.94	0.69	0.00	0.87	0.90	0.00	0.00	0.52	0.00	0.00
Avail Cap(c_a), veh/h	147	0	547	87	0	454	942	0	0	583	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	46.5	0.0	35.7	49.1	0.0	37.4	23.4	0.0	0.0	15.9	0.0	0.0
Incr Delay (d2), s/veh	23.9	0.0	24.6	5.5	0.0	15.7	10.9	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	15.2	1.0	0.0	10.2	18.3	0.0	0.0	3.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.4	0.0	60.4	54.7	0.0	53.1	34.3	0.0	0.0	16.7	0.0	0.0
LnGrp LOS	E	A	E	D	A	D	C	A	A	B	A	A
Approach Vol, veh/h		613			404			780			273	
Approach Delay, s/veh		62.2			53.3			34.3			16.7	
Approach LOS		E			D			C			B	

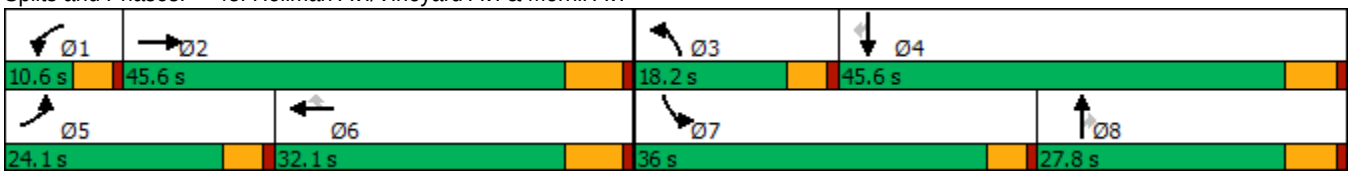
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		59.4	7.9	35.3		59.4	12.7	30.5				
Change Period (Y+Rc), s		5.8	4.6	5.8		5.8	4.6	5.8				
Max Green Setting (Gmax), s		58.4	5.2	30.2		58.4	8.8	26.6				
Max Q Clear Time (g_c+I1), s		50.3	4.3	29.1		22.4	8.5	22.6				
Green Ext Time (p_c), s		3.3	0.0	0.3		2.2	0.0	0.8				

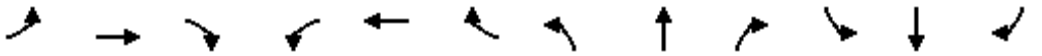
Intersection Summary												
HCM 6th Ctrl Delay			43.9									
HCM 6th LOS			D									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	242	1019	68	587	332	88	119	82	423	142	249
Future Volume (vph)	242	1019	68	587	332	88	119	82	423	142	249
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases					6			8			4
Detector Phase	5	2	1	6	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	28.2	9.6	27.8	27.8	9.6	27.8	27.8
Total Split (s)	24.1	45.6	10.6	32.1	32.1	18.2	27.8	27.8	36.0	45.6	45.6
Total Split (%)	20.1%	38.0%	8.8%	26.8%	26.8%	15.2%	23.2%	23.2%	30.0%	38.0%	38.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	19.2	39.5	6.0	26.3	26.3	10.2	13.9	13.9	31.5	35.2	35.2
Actuated g/C Ratio	0.17	0.35	0.05	0.23	0.23	0.09	0.12	0.12	0.28	0.31	0.31
v/c Ratio	0.90	0.95	0.81	0.75	0.55	0.62	0.55	0.24	0.96	0.26	0.39
Control Delay	79.3	51.1	106.8	47.1	7.5	66.8	54.8	1.5	73.1	30.6	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.3	51.1	106.8	47.1	7.5	66.8	54.8	1.5	73.1	30.6	5.2
LOS	E	D	F	D	A	E	D	A	E	C	A
Approach Delay		56.2		37.9			43.3			44.9	
Approach LOS		E		D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 47.2	Intersection LOS: D
Intersection Capacity Utilization 85.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 43: Hellman Av./Vineyard Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	242	1019	76	68	587	332	88	119	82	423	142	249
Future Volume (veh/h)	242	1019	76	68	587	332	88	119	82	423	142	249
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	263	1108	83	74	638	361	96	129	89	460	154	271
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	291	1258	94	94	919	410	120	178	151	485	583	494
Arrive On Green	0.17	0.37	0.37	0.05	0.25	0.25	0.07	0.09	0.09	0.28	0.31	0.31
Sat Flow, veh/h	1714	3404	255	1714	3610	1610	1714	1900	1610	1714	1900	1610
Grp Volume(v), veh/h	263	587	604	74	638	361	96	129	89	460	154	271
Grp Sat Flow(s),veh/h/ln	1714	1805	1854	1714	1805	1610	1714	1900	1610	1714	1900	1610
Q Serve(g_s), s	16.0	32.4	32.5	4.5	17.1	23.0	5.9	7.0	5.7	28.0	6.5	14.9
Cycle Q Clear(g_c), s	16.0	32.4	32.5	4.5	17.1	23.0	5.9	7.0	5.7	28.0	6.5	14.9
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	291	667	685	94	919	410	120	178	151	485	583	494
V/C Ratio(X)	0.90	0.88	0.88	0.79	0.69	0.88	0.80	0.72	0.59	0.95	0.26	0.55
Avail Cap(c_a), veh/h	314	667	685	97	919	410	219	392	332	505	710	601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.4	31.4	31.4	49.8	36.0	38.2	48.8	46.9	46.3	37.4	27.9	30.8
Incr Delay (d2), s/veh	25.7	15.4	15.2	31.3	4.3	22.8	4.6	5.5	3.6	26.5	0.2	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	15.8	16.2	2.7	7.6	11.2	2.6	3.5	2.3	14.7	2.9	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.0	46.8	46.6	81.0	40.3	61.0	53.4	52.4	49.9	64.0	28.1	31.7
LnGrp LOS	E	D	D	F	D	E	D	D	D	E	C	C
Approach Vol, veh/h		1454			1073			314			885	
Approach Delay, s/veh		50.7			50.1			52.0			47.9	
Approach LOS		D			D			D			D	

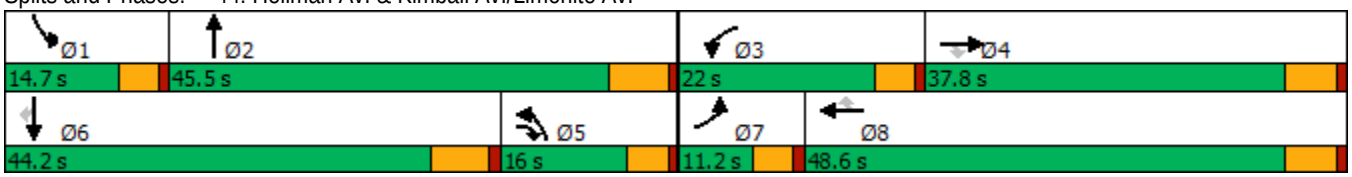
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	45.6	12.1	38.5	22.7	33.3	34.8	15.8
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	4.6	6.2	4.6	5.8
Max Green Setting (Gmax), s	6.0	39.4	13.6	39.8	19.5	25.9	31.4	22.0
Max Q Clear Time (g_c+I1), s	6.5	34.5	7.9	16.9	18.0	25.0	30.0	9.0
Green Ext Time (p_c), s	0.0	2.9	0.0	1.6	0.1	0.5	0.1	0.7

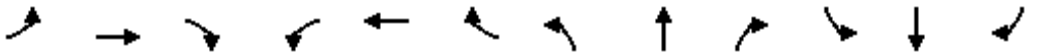
Intersection Summary	
HCM 6th Ctrl Delay	50.0
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	30	967	258	483	809	60	326	93	120	97	148
Future Volume (vph)	30	967	258	483	809	60	326	93	120	97	148
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	1	6	
Permitted Phases			4			8					6
Detector Phase	7	4	5	3	8	8	5	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	9.6	37.8	37.8	9.6	43.2	9.6	43.2	43.2
Total Split (s)	11.2	37.8	16.0	22.0	48.6	48.6	16.0	45.5	14.7	44.2	44.2
Total Split (%)	9.3%	31.5%	13.3%	18.3%	40.5%	40.5%	13.3%	37.9%	12.3%	36.8%	36.8%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	Max	None	None	None	None	None
Act Effct Green (s)	6.0	32.3	46.8	17.6	48.1	48.1	13.3	18.0	10.0	14.6	14.6
Actuated g/C Ratio	0.06	0.33	0.47	0.18	0.48	0.48	0.13	0.18	0.10	0.15	0.15
v/c Ratio	0.31	0.87	0.31	0.92	0.49	0.07	0.81	0.86dr	0.74	0.19	0.41
Control Delay	56.1	41.7	3.2	64.1	21.2	0.2	59.1	21.8	70.3	36.8	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.1	41.7	3.2	64.1	21.2	0.2	59.1	21.8	70.3	36.8	8.0
LOS	E	D	A	E	C	A	E	C	E	D	A
Approach Delay		34.1			35.5			36.1		36.1	
Approach LOS		C			D			D		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99.2	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 35.2	Intersection LOS: D
Intersection Capacity Utilization 83.3%	ICU Level of Service E
Analysis Period (min) 15	
dr Defacto Right Lane. Recode with 1 though lane as a right lane.	

Splits and Phases: 44: Hellman Av. & Kimball Av./Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	967	258	483	809	60	326	93	430	120	97	148
Future Volume (veh/h)	30	967	258	483	809	60	326	93	430	120	97	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1700	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	32	1018	272	508	852	63	343	98	348	126	102	156
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	49	1086	825	514	1573	702	664	446	398	152	397	177
Arrive On Green	0.03	0.30	0.30	0.16	0.44	0.44	0.21	0.25	0.25	0.09	0.11	0.11
Sat Flow, veh/h	1714	3610	1610	3141	3610	1610	3141	1805	1610	1714	3610	1610
Grp Volume(v), veh/h	32	1018	272	508	852	63	343	98	348	126	102	156
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1570	1805	1610	1570	1805	1610	1714	1805	1610
Q Serve(g_s), s	2.0	29.2	4.5	17.2	18.5	2.4	10.3	4.6	22.1	7.7	2.8	8.7
Cycle Q Clear(g_c), s	2.0	29.2	4.5	17.2	18.5	2.4	10.3	4.6	22.1	7.7	2.8	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	49	1086	825	514	1573	702	664	446	398	152	397	177
V/C Ratio(X)	0.65	0.94	0.33	0.99	0.54	0.09	0.52	0.22	0.87	0.83	0.26	0.88
Avail Cap(c_a), veh/h	106	1086	825	514	1573	702	664	667	595	163	1290	575
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	36.2	4.5	44.4	22.2	17.6	37.1	31.9	38.4	47.6	43.4	34.0
Incr Delay (d2), s/veh	5.3	15.8	1.1	36.6	1.3	0.3	0.3	0.2	9.4	24.9	0.3	13.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	14.5	2.0	9.0	7.6	0.9	3.8	1.9	9.2	4.2	1.2	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.4	52.0	5.6	80.9	23.5	17.9	37.5	32.1	47.9	72.5	43.7	47.2
LnGrp LOS	E	D	A	F	C	B	D	C	D	E	D	D
Approach Vol, veh/h		1322			1423			789			384	
Approach Delay, s/veh		42.6			43.8			41.4			54.6	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.1	32.5	22.0	37.8	28.7	17.9	7.7	52.1
Change Period (Y+Rc), s	4.6	6.2	4.6	5.8	6.2	* 6.2	4.6	5.8
Max Green Setting (Gmax), s	10.1	39.3	17.4	32.0	11.4	* 38	6.6	42.8
Max Q Clear Time (g_c+I1), s	9.7	24.1	19.2	31.2	12.3	10.7	4.0	20.5
Green Ext Time (p_c), s	0.0	2.2	0.0	0.6	0.0	1.0	0.0	5.8

Intersection Summary	
HCM 6th Ctrl Delay	43.9
HCM 6th LOS	D

Notes

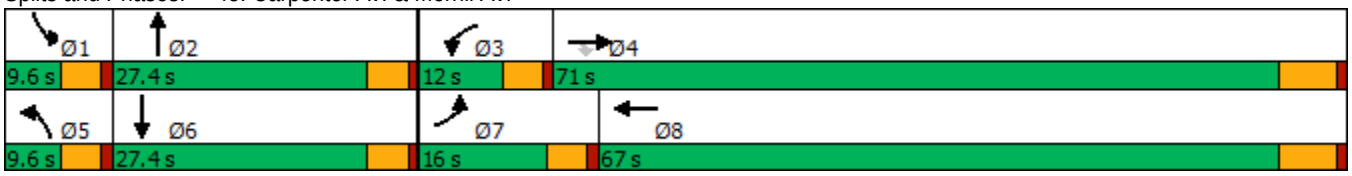
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

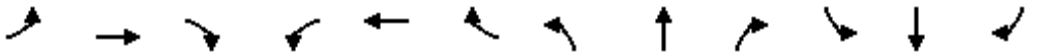
Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	SBT	Ø1	Ø5
Lane Configurations									
Traffic Volume (vph)	67	1377	80	36	822	6	7		
Future Volume (vph)	67	1377	80	36	822	6	7		
Turn Type	Prot	NA	Perm	Prot	NA	NA	NA		
Protected Phases	7	4		3	8	2	6	1	5
Permitted Phases			4						
Detector Phase	7	4	4	3	8	2	6		
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.6	28.2	28.2	9.6	28.2	26.6	26.6	9.6	9.6
Total Split (s)	16.0	71.0	71.0	12.0	67.0	27.4	27.4	9.6	9.6
Total Split (%)	13.3%	59.2%	59.2%	10.0%	55.8%	22.8%	22.8%	8%	8%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	4.6	4.6		
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	None	None	None	None
Act Effct Green (s)	8.7	66.5	66.5	6.5	62.3	0.0	0.0		
Actuated g/C Ratio	0.08	0.62	0.62	0.06	0.58	0.00	0.00		
v/c Ratio	0.53	0.67	0.08	0.38	0.44	4.77	14.00		
Control Delay	61.7	15.8	1.8	60.2	14.1	1748.8	5959.8		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	61.7	15.8	1.8	60.2	14.1	1748.8	5959.8		
LOS	E	B	A	E	B	F	F		
Approach Delay		17.1			16.0	1748.8	5959.8		
Approach LOS		B			B	F	F		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 107.1
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 14.00
Intersection Signal Delay: 633.6 — Intersection LOS: F
Intersection Capacity Utilization 77.9% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 45: Carpenter Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	1377	80	36	822	32	79	6	143	140	7	85
Future Volume (veh/h)	67	1377	80	36	822	32	79	6	143	140	7	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	73	1497	87	39	893	35	86	7	155	152	8	92
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	93	2453	1094	58	2334	91	0	9	194	0	16	188
Arrive On Green	0.05	0.68	0.68	0.03	0.66	0.66	0.00	0.13	0.13	0.00	0.13	0.13
Sat Flow, veh/h	1714	3610	1610	1714	3541	139	0	70	1551	0	130	1500
Grp Volume(v), veh/h	73	1497	87	39	455	473	0	0	162	0	0	100
Grp Sat Flow(s),veh/h/ln	1714	1805	1610	1714	1805	1875	0	0	1621	0	0	1630
Q Serve(g_s), s	4.0	21.7	1.7	2.1	11.0	11.0	0.0	0.0	9.3	0.0	0.0	5.5
Cycle Q Clear(g_c), s	4.0	21.7	1.7	2.1	11.0	11.0	0.0	0.0	9.3	0.0	0.0	5.5
Prop In Lane	1.00		1.00	1.00		0.07	0.00		0.96	0.00		0.92
Lane Grp Cap(c), veh/h	93	2453	1094	58	1190	1236	0	0	203	0	0	204
V/C Ratio(X)	0.79	0.61	0.08	0.67	0.38	0.38	0.00	0.00	0.80	0.00	0.00	0.49
Avail Cap(c_a), veh/h	205	2453	1094	133	1190	1236	0	0	387	0	0	390
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	44.6	8.4	5.2	45.6	7.4	7.4	0.0	0.0	40.5	0.0	0.0	38.9
Incr Delay (d2), s/veh	5.4	1.1	0.1	5.0	0.9	0.9	0.0	0.0	7.0	0.0	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	6.4	0.5	1.0	3.5	3.6	0.0	0.0	4.1	0.0	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.0	9.5	5.3	50.5	8.3	8.3	0.0	0.0	47.5	0.0	0.0	40.7
LnGrp LOS	D	A	A	D	A	A	A	A	D	A	A	D
Approach Vol, veh/h		1657			967			162			100	
Approach Delay, s/veh		11.1			10.0			47.5			40.7	
Approach LOS		B			B			D			D	

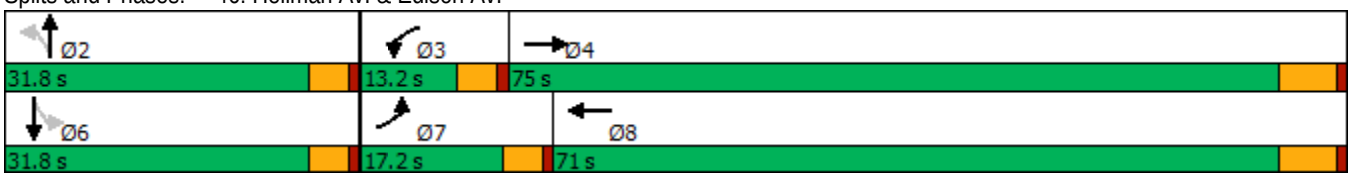
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	16.6	7.8	71.0	0.0	16.6	9.8	69.1
Change Period (Y+Rc), s	4.6	4.6	4.6	6.2	4.6	4.6	4.6	6.2
Max Green Setting (Gmax), s	5.0	22.8	7.4	64.8	5.0	22.8	11.4	60.8
Max Q Clear Time (g_c+I1), s	0.0	11.3	4.1	23.7	0.0	7.5	6.0	13.0
Green Ext Time (p_c), s	0.0	0.7	0.0	14.6	0.0	0.4	0.0	6.0

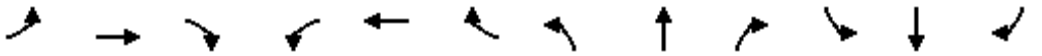
Intersection Summary	
HCM 6th Ctrl Delay	13.8
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	75	2850	100	1848	205	89	58	24
Future Volume (vph)	75	2850	100	1848	205	89	58	24
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases					2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	28.2	9.6	28.2	26.7	26.7	26.7	26.7
Total Split (s)	17.2	75.0	13.2	71.0	31.8	31.8	31.8	31.8
Total Split (%)	14.3%	62.5%	11.0%	59.2%	26.5%	26.5%	26.5%	26.5%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Max	None	Max	None	None	None	None
Act Effct Green (s)	9.7	68.8	8.6	69.7	27.1	27.1	27.1	27.1
Actuated g/C Ratio	0.08	0.57	0.07	0.58	0.23	0.23	0.23	0.23
v/c Ratio	0.59	1.08	0.89	0.69	0.77	0.80	1.05	0.17
Control Delay	70.1	69.5	112.5	20.0	62.8	44.9	178.0	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.1	69.5	112.5	20.0	62.8	44.9	178.0	17.9
LOS	E	E	F	C	E	D	F	B
Approach Delay		69.5		24.6		51.6		92.6
Approach LOS		E		C		D		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 52.4	Intersection LOS: D
Intersection Capacity Utilization 108.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 46: Hellman Av. & Edison Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	2850	96	100	1848	67	205	89	256	58	24	42
Future Volume (veh/h)	75	2850	96	100	1848	67	205	89	256	58	24	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	82	3098	104	109	2009	73	223	97	278	63	26	46
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	103	2956	98	123	3006	109	319	98	281	63	139	246
Arrive On Green	0.06	0.57	0.57	0.07	0.59	0.59	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1714	5156	171	1714	5138	186	1349	434	1243	1024	615	1089
Grp Volume(v), veh/h	82	2067	1135	109	1351	731	223	0	375	63	0	72
Grp Sat Flow(s),veh/h/ln	1714	1729	1869	1714	1729	1866	1349	0	1676	1024	0	1704
Q Serve(g_s), s	5.7	68.8	68.8	7.6	31.9	32.1	19.2	0.0	26.8	0.3	0.0	4.1
Cycle Q Clear(g_c), s	5.7	68.8	68.8	7.6	31.9	32.1	23.3	0.0	26.8	27.1	0.0	4.1
Prop In Lane	1.00		0.09	1.00		0.10	1.00		0.74	1.00		0.64
Lane Grp Cap(c), veh/h	103	1983	1072	123	2023	1092	319	0	379	63	0	385
V/C Ratio(X)	0.80	1.04	1.06	0.89	0.67	0.67	0.70	0.00	0.99	1.00	0.00	0.19
Avail Cap(c_a), veh/h	180	1983	1072	123	2023	1092	319	0	379	63	0	385
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.7	25.6	25.6	55.2	17.0	17.0	47.0	0.0	46.3	60.0	0.0	37.5
Incr Delay (d2), s/veh	5.2	32.3	44.7	47.3	1.8	3.3	6.6	0.0	43.6	114.4	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	33.1	39.5	4.8	11.6	13.1	7.0	0.0	15.7	3.9	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.9	57.9	70.3	102.5	18.7	20.3	53.6	0.0	89.9	174.4	0.0	37.8
LnGrp LOS	E	F	F	F	B	C	D	A	F	F	A	D
Approach Vol, veh/h		3284			2191			598			135	
Approach Delay, s/veh		62.2			23.4			76.4			101.5	
Approach LOS		E			C			E			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		31.8	13.2	75.0		31.8	11.8	76.4				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		* 4.7	4.6	6.2				
Max Green Setting (Gmax), s		* 27	8.6	68.8		* 27	12.6	64.8				
Max Q Clear Time (g_c+I1), s		28.8	9.6	70.8		29.1	7.7	34.1				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	17.8				

Intersection Summary		
HCM 6th Ctrl Delay		50.7
HCM 6th LOS		D

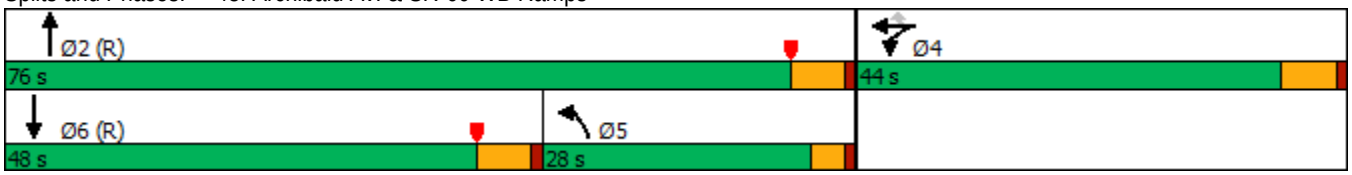
Notes

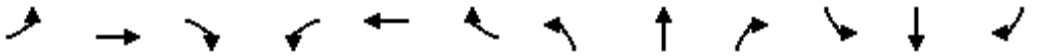
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	6	319	509	717	1751
Future Volume (vph)	6	319	509	717	1751
Turn Type	NA	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	20.0	14.2
Minimum Split (s)	29.0	29.0	28.0	61.0	33.0
Total Split (s)	44.0	44.0	28.0	76.0	48.0
Total Split (%)	36.7%	36.7%	23.3%	63.3%	40.0%
Yellow Time (s)	5.0	5.0	3.0	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.8	5.8
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	40.5	40.5	21.5	67.7	42.2
Actuated g/C Ratio	0.34	0.34	0.18	0.56	0.35
v/c Ratio	0.99	0.49	0.84	0.26	1.06
Control Delay	74.4	14.7	36.4	2.1	74.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	74.4	14.7	36.4	2.1	74.7
LOS	E	B	D	A	E
Approach Delay	53.2			16.4	74.7
Approach LOS	D			B	E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 54.2	Intersection LOS: D
Intersection Capacity Utilization 94.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 48: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	574	6	319	509	717	0	0	1751	549
Future Volume (veh/h)	0	0	0	574	6	319	509	717	0	0	1751	549
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				598	6	187	530	747	0	0	1824	437
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				568	6	510	649	3034	0	0	1857	444
Arrive On Green				0.32	0.32	0.32	0.37	1.00	0.00	0.00	0.35	0.35
Sat Flow, veh/h				1792	18	1610	3510	5358	0	0	5548	1261
Grp Volume(v), veh/h				604	0	187	530	747	0	0	1692	569
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1729	0	0	1634	1641
Q Serve(g_s), s				38.0	0.0	10.8	16.4	0.0	0.0	0.0	41.0	41.2
Cycle Q Clear(g_c), s				38.0	0.0	10.8	16.4	0.0	0.0	0.0	41.0	41.2
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.77
Lane Grp Cap(c), veh/h				573	0	510	649	3034	0	0	1724	577
V/C Ratio(X)				1.05	0.00	0.37	0.82	0.25	0.00	0.00	0.98	0.99
Avail Cap(c_a), veh/h				573	0	510	702	3034	0	0	1724	577
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.19	0.19	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				41.0	0.0	31.7	36.0	0.0	0.0	0.0	38.5	38.6
Incr Delay (d2), s/veh				52.5	0.0	0.9	1.3	0.0	0.0	0.0	17.8	34.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				24.5	0.0	10.6	5.6	0.0	0.0	0.0	18.4	21.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				93.5	0.0	32.6	37.2	0.0	0.0	0.0	56.3	72.6
LnGrp LOS				F	A	C	D	A	A	A	E	E
Approach Vol, veh/h					791			1277			2261	
Approach Delay, s/veh					79.1			15.5			60.4	
Approach LOS					E			B			E	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	76.0	44.0	28.0	48.0
Change Period (Y+Rc), s	5.8	6.0	5.8	* 5.8
Max Green Setting (Gmax), s	70.2	38.0	24.0	* 42
Max Q Clear Time (g_c+I1), s	2.0	40.0	18.4	43.2
Green Ext Time (p_c), s	5.5	0.0	0.6	0.0

Intersection Summary	
HCM 6th Ctrl Delay	50.6
HCM 6th LOS	D

Notes

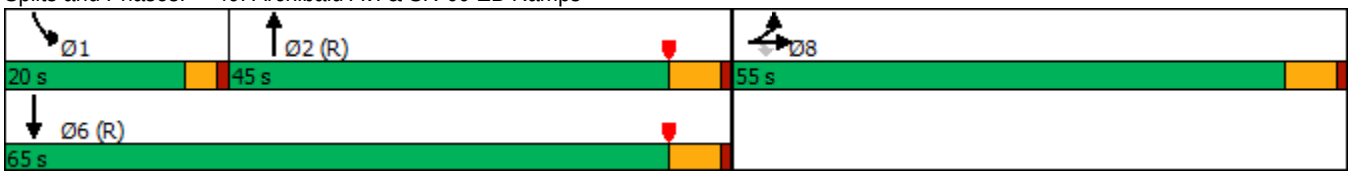
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

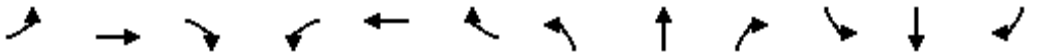
Lane Group	EBT	EBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	0	687	1092	466	1858
Future Volume (vph)	0	687	1092	466	1858
Turn Type	NA	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	18.2	5.0	20.0
Minimum Split (s)	10.8	10.8	25.8	9.0	25.8
Total Split (s)	55.0	55.0	45.0	20.0	65.0
Total Split (%)	45.8%	45.8%	37.5%	16.7%	54.2%
Yellow Time (s)	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.0	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	C-Max	None	C-Max
Act Effct Green (s)	49.2	49.2	39.2	16.0	59.2
Actuated g/C Ratio	0.41	0.41	0.33	0.13	0.49
v/c Ratio	0.19	1.03	1.34dr	1.04	0.76
Control Delay	23.5	73.4	48.2	87.4	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.8
Total Delay	23.5	73.4	48.2	87.4	11.2
LOS	C	E	D	F	B
Approach Delay	65.2		48.2		26.4
Approach LOS	E		D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 41.0	Intersection LOS: D
Intersection Capacity Utilization 94.4%	ICU Level of Service F
Analysis Period (min) 15	

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 49: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	0	687	0	0	0	0	1092	835	466	1858	0
Future Volume (veh/h)	134	0	687	0	0	0	0	1092	835	466	1858	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	140	0	466				0	1138	695	485	1935	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	567	0	505				0	2074	680	468	3060	0
Arrive On Green	0.31	0.00	0.31				0.00	0.42	0.42	0.27	1.00	0.00
Sat Flow, veh/h	1810	0	1610				0	5168	1606	3510	5358	0
Grp Volume(v), veh/h	140	0	466				0	1138	695	485	1935	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1606	1755	1729	0
Q Serve(g_s), s	6.9	0.0	33.6				0.0	20.9	50.8	16.0	0.0	0.0
Cycle Q Clear(g_c), s	6.9	0.0	33.6				0.0	20.9	50.8	16.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	567	0	505				0	2074	680	468	3060	0
V/C Ratio(X)	0.25	0.00	0.92				0.00	0.55	1.02	1.04	0.63	0.00
Avail Cap(c_a), veh/h	742	0	660				0	2074	680	468	3060	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.52	0.52	0.09	0.09	0.00
Uniform Delay (d), s/veh	30.6	0.0	39.8				0.0	26.0	34.6	44.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	15.8				0.0	0.5	30.7	23.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	14.9				0.0	7.7	24.0	7.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.9	0.0	55.6				0.0	26.5	65.3	67.2	0.1	0.0
LnGrp LOS	C	A	E				A	C	F	F	A	A
Approach Vol, veh/h		606						1833			2420	
Approach Delay, s/veh		49.9						41.2			13.5	
Approach LOS		D						D			B	

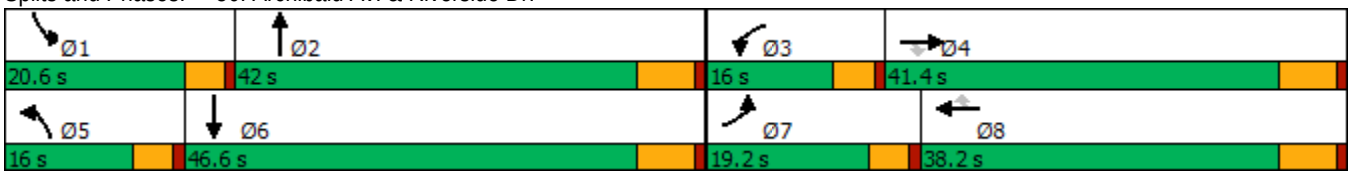
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	20.0	56.6				76.6		43.4				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	16.0	39.2				59.2		49.2				
Max Q Clear Time (g_c+I1), s	18.0	52.8				2.0		35.6				
Green Ext Time (p_c), s	0.0	0.0				22.5		2.1				

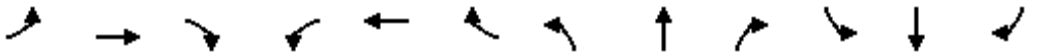
Intersection Summary			
HCM 6th Ctrl Delay			28.5
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	270	755	515	203	538	140	387	977	344	1462
Future Volume (vph)	270	755	515	203	538	140	387	977	344	1462
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	19.2	41.4	41.4	16.0	38.2	38.2	16.0	42.0	20.6	46.6
Total Split (%)	16.0%	34.5%	34.5%	13.3%	31.8%	31.8%	13.3%	35.0%	17.2%	38.8%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	14.6	32.8	32.8	11.4	29.6	29.6	11.4	36.6	15.3	40.4
Actuated g/C Ratio	0.12	0.28	0.28	0.10	0.25	0.25	0.10	0.31	0.13	0.34
v/c Ratio	1.35	0.80	0.91	1.31	0.63	0.29	1.28	0.71	0.85	1.08
Control Delay	226.7	46.1	44.9	217.1	42.5	7.0	191.3	39.0	69.5	82.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	226.7	46.1	44.9	217.1	42.5	7.0	191.3	39.0	69.5	82.5
LOS	F	D	D	F	D	A	F	D	E	F
Approach Delay		77.3			77.1			79.5		80.4
Approach LOS		E			E			E		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.35	
Intersection Signal Delay: 78.9	Intersection LOS: E
Intersection Capacity Utilization 99.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 50: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	755	515	203	538	140	387	977	92	344	1462	316
Future Volume (veh/h)	270	755	515	203	538	140	387	977	92	344	1462	316
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	287	803	391	216	572	90	412	1039	89	366	1555	272
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	213	1007	439	166	909	404	322	1528	131	419	1525	266
Arrive On Green	0.12	0.28	0.28	0.10	0.25	0.25	0.10	0.31	0.31	0.13	0.34	0.34
Sat Flow, veh/h	1714	3610	1575	1714	3610	1604	3326	4860	416	3326	4439	774
Grp Volume(v), veh/h	287	803	391	216	572	90	412	739	389	366	1210	617
Grp Sat Flow(s),veh/h/ln	1714	1805	1575	1714	1805	1604	1663	1729	1817	1663	1729	1754
Q Serve(g_s), s	14.6	24.3	28.0	11.4	16.6	5.2	11.4	21.9	22.0	12.7	40.4	40.4
Cycle Q Clear(g_c), s	14.6	24.3	28.0	11.4	16.6	5.2	11.4	21.9	22.0	12.7	40.4	40.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		0.44
Lane Grp Cap(c), veh/h	213	1007	439	166	909	404	322	1087	571	419	1188	603
V/C Ratio(X)	1.35	0.80	0.89	1.30	0.63	0.22	1.28	0.68	0.68	0.87	1.02	1.02
Avail Cap(c_a), veh/h	213	1080	471	166	982	437	322	1087	571	452	1188	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.5	39.3	40.7	53.1	39.1	34.9	53.1	35.2	35.2	50.5	38.6	38.6
Incr Delay (d2), s/veh	184.7	4.0	17.8	171.8	1.2	0.3	147.0	1.7	3.3	15.2	30.9	42.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.9	10.8	12.5	12.7	7.2	2.0	11.2	9.0	9.7	6.0	21.1	23.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	236.2	43.3	58.5	224.9	40.3	35.2	200.1	36.9	38.5	65.6	69.5	81.4
LnGrp LOS	F	D	E	F	D	D	F	D	D	E	F	F
Approach Vol, veh/h		1481			878			1540			2193	
Approach Delay, s/veh		84.7			85.2			80.9			72.2	
Approach LOS		F			F			F			E	

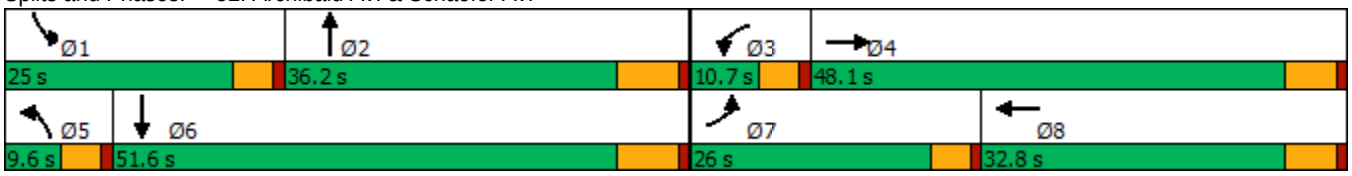
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.4	43.2	16.0	39.0	16.0	46.6	19.2	35.8
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	16.0	35.8	11.4	35.2	11.4	40.4	14.6	32.0
Max Q Clear Time (g_c+I1), s	14.7	24.0	13.4	30.0	13.4	42.4	16.6	18.6
Green Ext Time (p_c), s	0.1	5.2	0.0	2.8	0.0	0.0	0.0	3.0

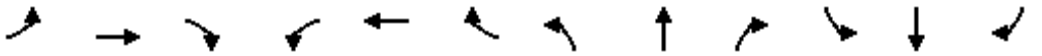
Intersection Summary	
HCM 6th Ctrl Delay	79.3
HCM 6th LOS	E

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	351	268	23	10	10	1168	322	1419
Future Volume (vph)	351	268	23	10	10	1168	322	1419
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	32.8	9.6	33.5	9.6	33.5
Total Split (s)	26.0	48.1	10.7	32.8	9.6	36.2	25.0	51.6
Total Split (%)	21.7%	40.1%	8.9%	27.3%	8.0%	30.2%	20.8%	43.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	6.5	4.6	6.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	21.6	31.9	5.7	15.4	5.1	30.0	20.6	53.6
Actuated g/C Ratio	0.20	0.30	0.05	0.15	0.05	0.28	0.20	0.51
v/c Ratio	1.09	0.76	0.27	0.27	0.13	0.92	1.05	0.60
Control Delay	116.6	41.8	59.7	14.4	56.8	48.9	106.1	22.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	116.6	41.8	59.7	14.4	56.8	48.9	106.1	22.1
LOS	F	D	E	B	E	D	F	C
Approach Delay		77.1		25.0		49.0		37.4
Approach LOS		E		C		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 105.6	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 48.5	Intersection LOS: D
Intersection Capacity Utilization 84.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 52: Archibald Av. & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	351	268	126	23	10	64	10	1168	73	322	1419	29
Future Volume (veh/h)	351	268	126	23	10	64	10	1168	73	322	1419	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	382	291	137	25	11	70	11	1270	68	350	1542	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	358	349	164	43	23	145	22	1414	76	341	2438	51
Arrive On Green	0.21	0.29	0.29	0.02	0.10	0.10	0.01	0.28	0.28	0.20	0.47	0.47
Sat Flow, veh/h	1714	1221	575	1714	222	1414	1714	5040	270	1714	5227	108
Grp Volume(v), veh/h	382	0	428	25	0	81	11	871	467	350	1020	554
Grp Sat Flow(s),veh/h/ln	1714	0	1796	1714	0	1636	1714	1729	1851	1714	1729	1878
Q Serve(g_s), s	21.4	0.0	22.9	1.5	0.0	4.8	0.7	24.9	24.9	20.4	22.9	22.9
Cycle Q Clear(g_c), s	21.4	0.0	22.9	1.5	0.0	4.8	0.7	24.9	24.9	20.4	22.9	22.9
Prop In Lane	1.00		0.32	1.00		0.86	1.00		0.15	1.00		0.06
Lane Grp Cap(c), veh/h	358	0	514	43	0	167	22	970	520	341	1613	876
V/C Ratio(X)	1.07	0.00	0.83	0.59	0.00	0.48	0.49	0.90	0.90	1.03	0.63	0.63
Avail Cap(c_a), veh/h	358	0	741	102	0	431	84	1001	536	341	1613	876
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.6	0.0	34.3	49.5	0.0	43.5	50.3	35.5	35.5	41.1	20.7	20.7
Incr Delay (d2), s/veh	66.8	0.0	5.5	4.7	0.0	2.2	6.0	10.6	17.6	55.7	0.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.2	0.0	10.2	0.7	0.0	2.0	0.3	11.0	12.8	13.3	8.3	9.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	107.4	0.0	39.8	54.2	0.0	45.7	56.3	46.1	53.1	96.8	21.5	22.2
LnGrp LOS	F	A	D	D	A	D	E	D	D	F	C	C
Approach Vol, veh/h		810			106			1349			1924	
Approach Delay, s/veh		71.7			47.7			48.6			35.4	
Approach LOS		E			D			D			D	

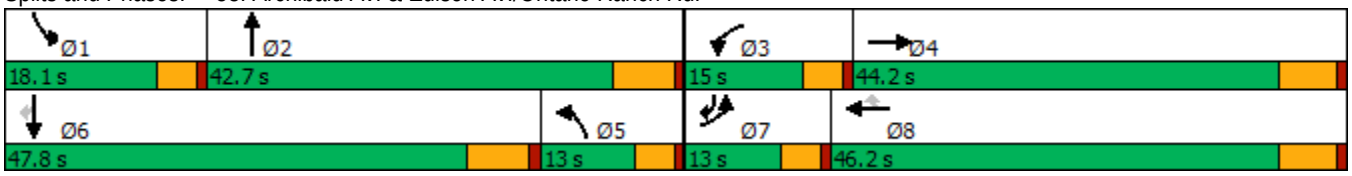
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	35.3	7.1	35.1	5.9	54.3	26.0	16.3
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8
Max Green Setting (Gmax), s	20.4	29.7	6.1	42.3	5.0	45.1	21.4	27.0
Max Q Clear Time (g_c+I1), s	22.4	26.9	3.5	24.9	2.7	24.9	23.4	6.8
Green Ext Time (p_c), s	0.0	1.9	0.0	2.3	0.0	9.7	0.0	0.3

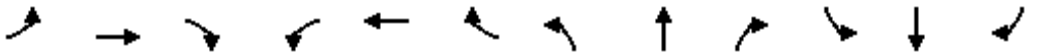
Intersection Summary	
HCM 6th Ctrl Delay	47.0
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	399	1996	591	419	1338	157	397	886	535	278	1060	429
Future Volume (vph)	399	1996	591	419	1338	157	397	886	535	278	1060	429
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	9.6
Total Split (s)	13.0	44.2		15.0	46.2	46.2	13.0	42.7		18.1	47.8	13.0
Total Split (%)	10.8%	36.8%		12.5%	38.5%	38.5%	10.8%	35.6%		15.1%	39.8%	10.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	3.6
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	4.6
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	Max	Max		None	None	None
Act Effct Green (s)	8.4	38.0	119.4	10.4	40.0	40.0	17.5	36.2	119.4	12.9	31.6	41.9
Actuated g/C Ratio	0.07	0.32	1.00	0.09	0.34	0.34	0.15	0.30	1.00	0.11	0.26	0.35
v/c Ratio	1.81	0.85	0.38	1.54	0.54	0.25	0.82	0.53	0.35	0.80	0.72	0.72
Control Delay	413.4	42.3	0.7	296.5	33.3	4.3	64.4	35.9	0.6	69.6	42.6	22.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	413.4	42.3	0.7	296.5	33.3	4.3	64.4	35.9	0.6	69.6	42.6	22.1
LOS	F	D	A	F	C	A	E	D	A	E	D	C
Approach Delay		83.6			88.5			31.7			41.9	
Approach LOS		F			F			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.81	
Intersection Signal Delay: 64.9	Intersection LOS: E
Intersection Capacity Utilization 96.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 53: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	399	1996	591	419	1338	157	397	886	535	278	1060	429
Future Volume (veh/h)	399	1996	591	419	1338	157	397	886	535	278	1060	429
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	411	2058	0	432	1379	80	409	913	0	287	1093	285
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	231	2394		286	2524	535	458	1754		341	1485	529
Arrive On Green	0.07	0.32	0.00	0.09	0.33	0.33	0.13	0.31	0.00	0.10	0.26	0.26
Sat Flow, veh/h	3238	7600	1610	3238	7600	1610	3429	5700	1610	3326	5700	1588
Grp Volume(v), veh/h	411	2058	0	432	1379	80	409	913	0	287	1093	285
Grp Sat Flow(s),veh/h/ln	1619	1900	1610	1619	1900	1610	1714	1900	1610	1663	1900	1588
Q Serve(g_s), s	8.4	29.9	0.0	10.4	17.4	4.1	13.8	15.5	0.0	10.0	20.6	9.9
Cycle Q Clear(g_c), s	8.4	29.9	0.0	10.4	17.4	4.1	13.8	15.5	0.0	10.0	20.6	9.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	231	2394		286	2524	535	458	1754		341	1485	529
V/C Ratio(X)	1.78	0.86		1.51	0.55	0.15	0.89	0.52		0.84	0.74	0.54
Avail Cap(c_a), veh/h	231	2456		286	2585	548	458	1754		382	2002	673
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.6	37.8	0.0	53.6	32.1	27.6	50.1	33.6	0.0	51.8	39.8	13.2
Incr Delay (d2), s/veh	366.7	3.3	0.0	246.3	0.2	0.1	22.3	1.1	0.0	12.9	1.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.1	13.6	0.0	13.9	7.6	1.5	7.1	6.9	0.0	4.6	9.2	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	421.3	41.1	0.0	299.9	32.3	27.7	72.4	34.7	0.0	64.8	40.8	14.0
LnGrp LOS	F	D		F	C	C	E	C		E	D	B
Approach Vol, veh/h		2469	A		1891			1322	A		1665	
Approach Delay, s/veh		104.4			93.2			46.3			40.3	
Approach LOS		F			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	42.7	15.0	43.3	22.2	37.1	13.0	45.3
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	6.5	* 6.5	4.6	6.2
Max Green Setting (Gmax), s	13.5	36.2	10.4	38.0	8.4	* 41	8.4	40.0
Max Q Clear Time (g_c+I1), s	12.0	17.5	12.4	31.9	15.8	22.6	10.4	19.4
Green Ext Time (p_c), s	0.1	5.3	0.0	5.1	0.0	7.5	0.0	9.4

Intersection Summary	
HCM 6th Ctrl Delay	76.5
HCM 6th LOS	E

Notes

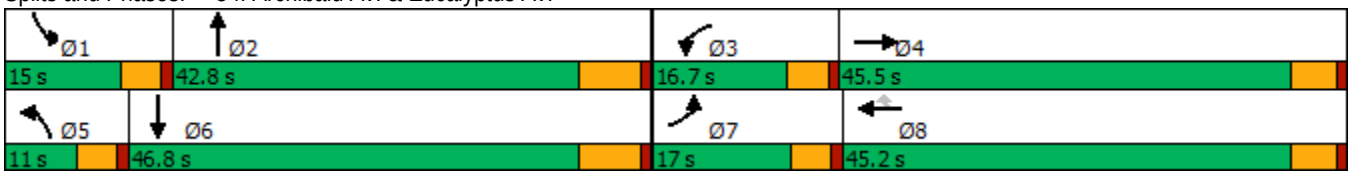
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

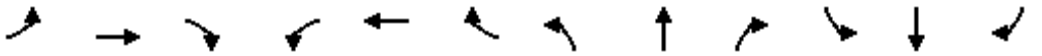
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	207	369	107	74	73	89	1493	184	1620
Future Volume (vph)	207	369	107	74	73	89	1493	184	1620
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	45.2	9.6	45.2	45.2	9.6	32.5	9.6	32.5
Total Split (s)	17.0	45.5	16.7	45.2	45.2	11.0	42.8	15.0	46.8
Total Split (%)	14.2%	37.9%	13.9%	37.7%	37.7%	9.2%	35.7%	12.5%	39.0%
Yellow Time (s)	3.6	4.2	3.6	4.2	4.2	3.6	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.2	4.6	5.2	5.2	4.6	6.5	4.6	6.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	12.5	24.9	10.6	23.0	23.0	6.5	36.6	10.5	40.6
Actuated g/C Ratio	0.12	0.24	0.10	0.22	0.22	0.06	0.35	0.10	0.39
v/c Ratio	1.07	0.76	0.70	0.10	0.18	0.90	0.98	1.13	0.91
Control Delay	127.8	32.1	68.9	30.5	2.7	114.5	50.8	153.7	38.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	127.8	32.1	68.9	30.5	2.7	114.5	50.8	153.7	38.6
LOS	F	C	E	C	A	F	D	F	D
Approach Delay		54.5		38.7			54.0		49.7
Approach LOS		D		D			D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.7	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 51.6	Intersection LOS: D
Intersection Capacity Utilization 87.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 54: Archibald Av. & Eucalyptus Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	369	305	107	74	73	89	1493	160	184	1620	102
Future Volume (veh/h)	207	369	305	107	74	73	89	1493	160	184	1620	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1700	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	220	393	324	114	79	69	95	1588	170	196	1723	109
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	206	490	400	139	813	358	106	1672	179	173	1946	123
Arrive On Green	0.12	0.26	0.26	0.09	0.23	0.23	0.06	0.35	0.35	0.10	0.39	0.39
Sat Flow, veh/h	1714	1887	1541	1619	3610	1587	1714	4757	509	1714	4986	315
Grp Volume(v), veh/h	220	376	341	114	79	69	95	1154	604	196	1194	638
Grp Sat Flow(s),veh/h/ln	1714	1805	1623	1619	1805	1587	1714	1729	1808	1714	1729	1843
Q Serve(g_s), s	12.4	20.1	20.4	7.2	1.8	3.6	5.7	33.5	33.6	10.4	33.2	33.3
Cycle Q Clear(g_c), s	12.4	20.1	20.4	7.2	1.8	3.6	5.7	33.5	33.6	10.4	33.2	33.3
Prop In Lane	1.00		0.95	1.00		1.00	1.00		0.28	1.00		0.17
Lane Grp Cap(c), veh/h	206	469	422	139	813	358	106	1216	636	173	1349	719
V/C Ratio(X)	1.07	0.80	0.81	0.82	0.10	0.19	0.89	0.95	0.95	1.14	0.88	0.89
Avail Cap(c_a), veh/h	206	704	633	190	1398	615	106	1216	636	173	1349	719
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.4	35.7	35.8	46.4	31.7	32.4	48.1	32.6	32.6	46.4	29.3	29.4
Incr Delay (d2), s/veh	82.1	4.0	4.8	13.7	0.1	0.3	54.0	16.2	25.5	109.5	8.8	15.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.9	9.1	8.4	3.4	0.8	1.4	3.9	15.4	17.7	9.4	13.9	16.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	127.6	39.7	40.6	60.1	31.7	32.7	102.1	48.8	58.1	156.0	38.1	44.5
LnGrp LOS	F	D	D	E	C	C	F	D	E	F	D	D
Approach Vol, veh/h		937			262			1853			2028	
Approach Delay, s/veh		60.7			44.3			54.6			51.5	
Approach LOS		E			D			D			D	

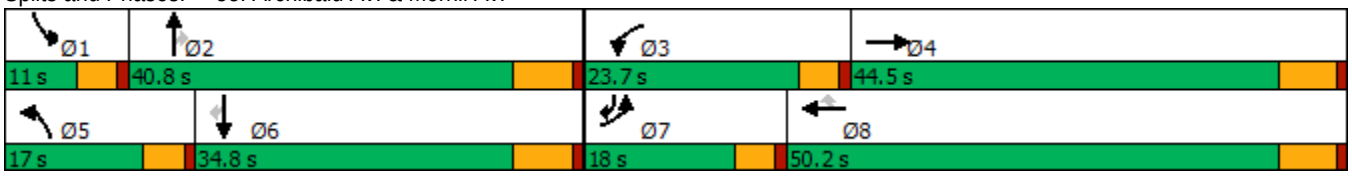
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	42.8	13.4	32.0	11.0	46.8	17.0	28.5
Change Period (Y+Rc), s	4.6	6.5	4.6	5.2	4.6	6.5	4.6	5.2
Max Green Setting (Gmax), s	10.4	36.3	12.1	40.3	6.4	40.3	12.4	40.0
Max Q Clear Time (g_c+I1), s	12.4	35.6	9.2	22.4	7.7	35.3	14.4	5.6
Green Ext Time (p_c), s	0.0	0.6	0.0	4.3	0.0	3.9	0.0	0.7

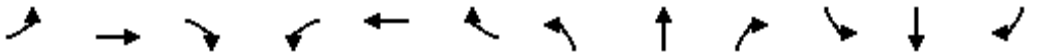
Intersection Summary	
HCM 6th Ctrl Delay	53.9
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	637	100	768	129	64	67	314	1021	193	88	1488	327
Future Volume (vph)	637	100	768	129	64	67	314	1021	193	88	1488	327
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			Free			8			2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	16.2		9.6	49.2	49.2	9.6	36.5	36.5	9.6	16.5	9.6
Total Split (s)	18.0	44.5		23.7	50.2	50.2	17.0	40.8	40.8	11.0	34.8	18.0
Total Split (%)	15.0%	37.1%		19.8%	41.8%	41.8%	14.2%	34.0%	34.0%	9.2%	29.0%	15.0%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5	5.5	3.6	5.5	3.6
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5	6.5	4.6	6.5	4.6
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min	Min	None	Min	None
Act Effct Green (s)	13.8	16.1	89.5	13.1	15.4	15.4	12.8	38.2	38.2	6.2	29.1	49.6
Actuated g/C Ratio	0.15	0.18	1.00	0.15	0.17	0.17	0.14	0.43	0.43	0.07	0.33	0.55
v/c Ratio	1.29	0.30	0.49	0.53	0.20	0.17	1.33	0.48	0.25	0.42	0.91	0.35
Control Delay	177.0	34.7	1.1	47.0	32.8	0.9	208.3	23.3	4.9	50.6	40.0	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	177.0	34.7	1.1	47.0	32.8	0.9	208.3	23.3	4.9	50.6	40.0	9.3
LOS	F	C	A	D	C	A	F	C	A	D	D	A
Approach Delay		77.8			31.6			59.0			35.2	
Approach LOS		E			C			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 89.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.33	
Intersection Signal Delay: 54.4	Intersection LOS: D
Intersection Capacity Utilization 87.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 55: Archibald Av. & Merrill Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	637	100	768	129	64	67	314	1021	193	88	1488	327
Future Volume (veh/h)	637	100	768	129	64	67	314	1021	193	88	1488	327
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	657	103	0	133	66	30	324	1053	185	91	1534	279
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	520	336		165	222	188	248	2175	667	162	1692	777
Arrive On Green	0.16	0.18	0.00	0.10	0.12	0.12	0.14	0.42	0.42	0.05	0.33	0.33
Sat Flow, veh/h	3326	1900	1610	1714	1900	1610	1714	5187	1590	3141	5187	1610
Grp Volume(v), veh/h	657	103	0	133	66	30	324	1053	185	91	1534	279
Grp Sat Flow(s),veh/h/ln	1663	1900	1610	1714	1900	1610	1714	1729	1590	1570	1729	1610
Q Serve(g_s), s	13.4	4.0	0.0	6.5	2.7	1.4	12.4	12.7	6.5	2.4	24.2	9.3
Cycle Q Clear(g_c), s	13.4	4.0	0.0	6.5	2.7	1.4	12.4	12.7	6.5	2.4	24.2	9.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	520	336		165	222	188	248	2175	667	162	1692	777
V/C Ratio(X)	1.26	0.31		0.80	0.30	0.16	1.31	0.48	0.28	0.56	0.91	0.36
Avail Cap(c_a), veh/h	520	850		382	976	827	248	2175	667	235	1714	784
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.1	30.7	0.0	37.9	34.6	34.0	36.6	18.1	16.3	39.6	27.6	13.9
Incr Delay (d2), s/veh	132.8	0.5	0.0	3.5	0.7	0.4	163.3	0.2	0.2	1.1	7.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.6	1.8	0.0	2.8	1.3	0.6	16.0	4.4	2.3	0.9	9.9	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	168.9	31.2	0.0	41.4	35.3	34.4	199.9	18.3	16.6	40.8	35.0	14.1
LnGrp LOS	F	C		D	D	C	F	B	B	D	C	B
Approach Vol, veh/h		760	A		229			1562			1904	
Approach Delay, s/veh		150.3			38.7			55.8			32.2	
Approach LOS		F			D			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	42.4	12.9	21.3	17.0	34.4	18.0	16.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	6.4	34.3	19.1	38.3	12.4	28.3	13.4	44.0
Max Q Clear Time (g_c+I1), s	4.4	14.7	8.5	6.0	14.4	26.2	15.4	4.7
Green Ext Time (p_c), s	0.0	7.0	0.1	0.5	0.0	1.7	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	60.9
HCM 6th LOS	E

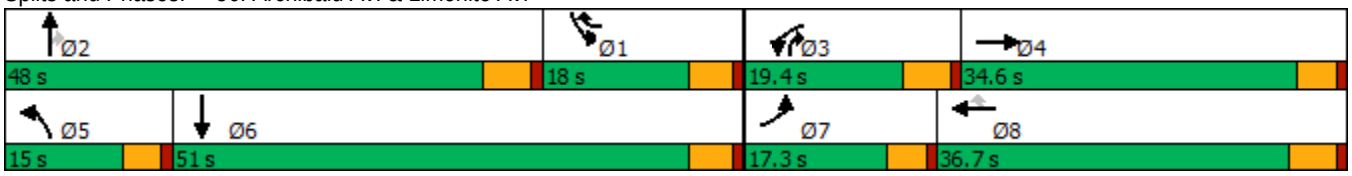
Notes

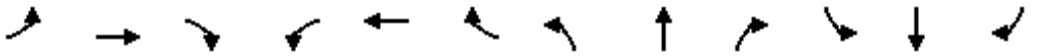
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	212	780	470	741	686	131	1155	484	655	1480
Future Volume (vph)	212	780	470	741	686	131	1155	484	655	1480
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4	3	8	1	5	2	3	1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	1	5	2	3	1	6
Switch Phase										
Minimum Initial (s)	5.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.6	34.6	11.3	36.3	11.0	9.5	46.3	11.3	11.0	43.0
Total Split (s)	17.3	34.6	19.4	36.7	18.0	15.0	48.0	19.4	18.0	51.0
Total Split (%)	14.4%	28.8%	16.2%	30.6%	15.0%	12.5%	40.0%	16.2%	15.0%	42.5%
Yellow Time (s)	3.6	3.6	4.3	4.3	4.0	3.5	4.3	4.3	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	5.3	5.3	5.0	4.5	5.3	5.3	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Max	None	None	None	Max	Max
Act Effct Green (s)	11.6	30.0	14.1	32.5	53.6	10.3	34.7	48.8	20.8	46.0
Actuated g/C Ratio	0.10	0.25	0.12	0.27	0.45	0.09	0.29	0.41	0.17	0.38
v/c Ratio	0.62	0.98	1.13	0.73	0.90	0.87	0.71	0.72	1.07	0.83
Control Delay	59.9	69.3	131.6	45.0	36.2	99.1	40.4	19.4	102.1	36.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.9	69.3	131.6	45.0	36.2	99.1	40.4	19.4	102.1	36.7
LOS	E	E	F	D	D	F	D	B	F	D
Approach Delay		67.5		63.3			39.0			54.4
Approach LOS		E		E			D			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 55.0	Intersection LOS: D
Intersection Capacity Utilization 97.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 56: Archibald Av. & Limonite Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	780	127	470	741	686	131	1155	484	655	1480	282
Future Volume (veh/h)	212	780	127	470	741	686	131	1155	484	655	1480	282
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	216	796	66	480	756	650	134	1179	473	668	1510	144
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	279	851	71	424	1109	749	158	1651	649	628	1960	187
Arrive On Green	0.08	0.25	0.25	0.12	0.29	0.29	0.09	0.29	0.29	0.17	0.38	0.38
Sat Flow, veh/h	3619	3461	287	3619	3800	1610	1810	5700	1590	3619	5124	488
Grp Volume(v), veh/h	216	437	425	480	756	650	134	1179	473	668	1120	534
Grp Sat Flow(s),veh/h/ln	1810	1900	1848	1810	1900	1610	1810	1900	1590	1810	1900	1812
Q Serve(g_s), s	7.0	27.1	27.1	14.1	21.2	15.7	8.8	22.3	14.8	20.9	31.0	31.1
Cycle Q Clear(g_c), s	7.0	27.1	27.1	14.1	21.2	15.7	8.8	22.3	14.8	20.9	31.0	31.1
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	279	467	454	424	1109	749	158	1651	649	628	1453	693
V/C Ratio(X)	0.77	0.94	0.94	1.13	0.68	0.87	0.85	0.71	0.73	1.06	0.77	0.77
Avail Cap(c_a), veh/h	382	474	461	424	1109	749	158	2024	753	628	1453	693
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	44.4	44.4	53.1	37.6	14.4	54.1	38.3	11.1	49.7	32.5	32.5
Incr Delay (d2), s/veh	6.6	25.9	26.4	84.6	1.4	10.2	31.4	1.0	3.3	54.1	4.0	8.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	15.6	15.3	11.2	9.6	10.1	5.2	10.0	4.5	13.7	14.0	14.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.1	70.3	70.8	137.7	39.1	24.5	85.5	39.3	14.4	103.8	36.5	40.6
LnGrp LOS	E	E	E	F	D	C	F	D	B	F	D	D
Approach Vol, veh/h		1078			1886			1786			2322	
Approach Delay, s/veh		68.7			59.2			36.2			56.8	
Approach LOS		E			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.9	40.1	19.4	34.9	15.0	51.0	13.9	40.4
Change Period (Y+Rc), s	5.0	5.3	5.3	* 5.3	4.5	5.0	4.6	5.3
Max Green Setting (Gmax), s	13.0	42.7	14.1	* 30	10.5	46.0	12.7	31.4
Max Q Clear Time (g_c+I1), s	22.9	24.3	16.1	29.1	10.8	33.1	9.0	23.2
Green Ext Time (p_c), s	0.0	10.6	0.0	0.5	0.0	5.5	0.2	2.3

Intersection Summary	
HCM 6th Ctrl Delay	54.0
HCM 6th LOS	D

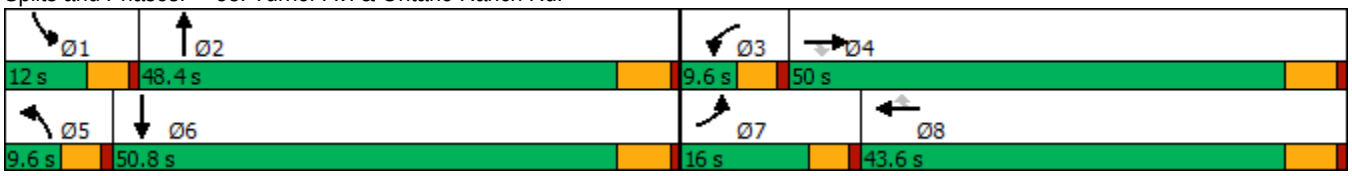
Notes

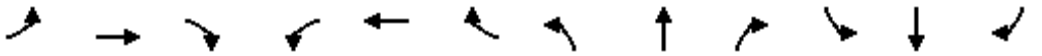
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	196	2411	48	39	1677	142	32	10	126	10
Future Volume (vph)	196	2411	48	39	1677	142	32	10	126	10
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	25.8	25.8	9.6	45.8	9.6	47.8
Total Split (s)	16.0	50.0	50.0	9.6	43.6	43.6	9.6	48.4	12.0	50.8
Total Split (%)	13.3%	41.7%	41.7%	8.0%	36.3%	36.3%	8.0%	40.3%	10.0%	42.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8	-0.6	-1.8	-0.6	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
Act Effct Green (s)	12.3	51.3	51.3	5.7	40.4	40.4	5.7	16.7	9.1	20.6
Actuated g/C Ratio	0.14	0.56	0.56	0.06	0.44	0.44	0.06	0.18	0.10	0.23
v/c Ratio	0.93	0.90	0.05	0.39	0.79	0.19	0.33	0.18	0.81	0.31
Control Delay	85.9	26.2	0.1	56.8	27.0	4.5	54.2	12.0	77.1	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.9	26.2	0.1	56.8	27.0	4.5	54.2	12.0	77.1	7.8
LOS	F	C	A	E	C	A	D	B	E	A
Approach Delay		30.2			25.9			27.1		41.1
Approach LOS		C			C			C		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 91	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 29.1	Intersection LOS: C
Intersection Capacity Utilization 82.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 58: Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	2411	48	39	1677	142	32	10	48	126	10	126
Future Volume (veh/h)	196	2411	48	39	1677	142	32	10	48	126	10	126
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	213	2621	40	42	1823	151	35	11	34	137	11	123
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	232	2790	866	74	2312	718	67	60	187	154	27	299
Arrive On Green	0.14	0.54	0.54	0.04	0.45	0.45	0.04	0.15	0.13	0.09	0.20	0.18
Sat Flow, veh/h	1714	5187	1610	1714	5187	1610	1714	406	1254	1714	134	1497
Grp Volume(v), veh/h	213	2621	40	42	1823	151	35	0	45	137	0	134
Grp Sat Flow(s),veh/h/ln	1714	1729	1610	1714	1729	1610	1714	0	1660	1714	0	1631
Q Serve(g_s), s	10.9	41.9	1.0	2.1	26.7	5.1	1.8	0.0	2.1	7.0	0.0	6.5
Cycle Q Clear(g_c), s	10.9	41.9	1.0	2.1	26.7	5.1	1.8	0.0	2.1	7.0	0.0	6.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.76	1.00		0.92
Lane Grp Cap(c), veh/h	232	2790	866	74	2312	718	67	0	247	154	0	326
V/C Ratio(X)	0.92	0.94	0.05	0.57	0.79	0.21	0.52	0.00	0.18	0.89	0.00	0.41
Avail Cap(c_a), veh/h	232	2790	866	108	2312	718	108	0	830	154	0	859
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.9	19.2	9.7	41.7	21.0	15.1	41.8	0.0	33.7	40.0	0.0	31.8
Incr Delay (d2), s/veh	37.3	7.8	0.1	2.5	2.8	0.7	2.3	0.0	0.3	40.5	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	15.9	0.3	0.9	10.1	1.8	0.8	0.0	0.8	4.5	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.3	27.0	9.8	44.2	23.8	15.7	44.1	0.0	34.0	80.4	0.0	32.6
LnGrp LOS	E	C	A	D	C	B	D	A	C	F	A	C
Approach Vol, veh/h		2874			2016			80			271	
Approach Delay, s/veh		30.3			23.7			38.4			56.8	
Approach LOS		C			C			D			E	

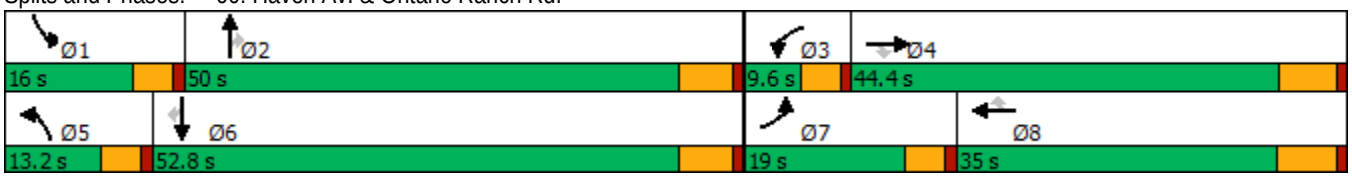
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	17.2	7.8	51.8	7.5	21.7	16.0	43.6
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	7.4	42.6	5.0	44.2	5.0	45.0	11.4	37.8
Max Q Clear Time (g_c+I1), s	9.0	4.1	4.1	43.9	3.8	8.5	12.9	28.7
Green Ext Time (p_c), s	0.0	0.2	0.0	0.3	0.0	0.8	0.0	7.1

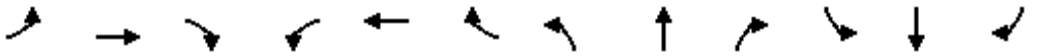
Intersection Summary	
HCM 6th Ctrl Delay	29.2
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	351	1990	81	75	1481	349	79	242	47	283	320	263
Future Volume (vph)	351	1990	81	75	1481	349	79	242	47	283	320	263
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	19.0	44.4	44.4	9.6	35.0	35.0	13.2	50.0	50.0	16.0	52.8	52.8
Total Split (%)	15.8%	37.0%	37.0%	8.0%	29.2%	29.2%	11.0%	41.7%	41.7%	13.3%	44.0%	44.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2	-2.2	-0.6	-2.5	-2.5	-0.6	-1.8	-1.8	-0.6	-1.8	-1.8
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	15.2	41.0	41.0	5.7	31.5	31.5	8.4	17.9	17.9	12.2	23.9	23.9
Actuated g/C Ratio	0.16	0.44	0.44	0.06	0.34	0.34	0.09	0.19	0.19	0.13	0.26	0.26
v/c Ratio	1.31	0.91	0.11	0.75	0.88	0.46	0.53	0.36	0.11	1.32	0.36	0.44
Control Delay	196.9	32.5	3.0	85.4	37.2	5.4	56.1	32.8	0.5	206.6	29.6	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	196.9	32.5	3.0	85.4	37.2	5.4	56.1	32.8	0.5	206.6	29.6	5.6
LOS	F	C	A	F	D	A	E	C	A	F	C	A
Approach Delay		55.4			33.3			33.7			80.2	
Approach LOS		E			C			C			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 93	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.32	
Intersection Signal Delay: 50.2	Intersection LOS: D
Intersection Capacity Utilization 87.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 60: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	351	1990	81	75	1481	349	79	242	47	283	320	263
Future Volume (veh/h)	351	1990	81	75	1481	349	79	242	47	283	320	263
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	366	2073	53	78	1543	290	82	252	35	295	333	201
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	299	2436	756	110	1883	585	115	495	221	239	755	337
Arrive On Green	0.17	0.47	0.47	0.06	0.36	0.36	0.07	0.14	0.14	0.14	0.21	0.21
Sat Flow, veh/h	1714	5187	1610	1714	5187	1610	1714	3610	1610	1714	3610	1610
Grp Volume(v), veh/h	366	2073	53	78	1543	290	82	252	35	295	333	201
Grp Sat Flow(s),veh/h/ln	1714	1729	1610	1714	1729	1610	1714	1805	1610	1714	1805	1610
Q Serve(g_s), s	15.0	30.4	1.6	3.8	23.2	12.0	4.0	5.6	1.6	12.0	6.9	9.7
Cycle Q Clear(g_c), s	15.0	30.4	1.6	3.8	23.2	12.0	4.0	5.6	1.6	12.0	6.9	9.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	299	2436	756	110	1883	585	115	495	221	239	755	337
V/C Ratio(X)	1.22	0.85	0.07	0.71	0.82	0.50	0.71	0.51	0.16	1.23	0.44	0.60
Avail Cap(c_a), veh/h	299	2436	756	112	1883	585	183	1930	861	239	2048	913
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	20.2	12.5	39.5	24.8	21.3	39.3	34.4	32.7	37.0	29.6	30.7
Incr Delay (d2), s/veh	127.1	4.0	0.2	15.7	4.1	3.0	3.0	0.8	0.3	135.9	0.4	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.3	11.1	0.5	2.0	8.9	4.4	1.7	2.4	0.6	13.8	2.9	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	162.7	24.1	12.7	55.2	29.0	24.3	42.3	35.2	33.1	172.9	30.0	32.4
LnGrp LOS	F	C	B	E	C	C	D	D	C	F	C	C
Approach Vol, veh/h		2492			1911			369			829	
Approach Delay, s/veh		44.2			29.3			36.6			81.5	
Approach LOS		D			C			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	15.8	9.5	44.7	9.8	22.0	19.0	35.2
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	11.4	44.2	5.0	* 38	8.6	47.0	14.4	28.5
Max Q Clear Time (g_c+I1), s	14.0	7.6	5.8	32.4	6.0	11.7	17.0	25.2
Green Ext Time (p_c), s	0.0	1.6	0.0	5.0	0.0	2.7	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	44.2
HCM 6th LOS	D

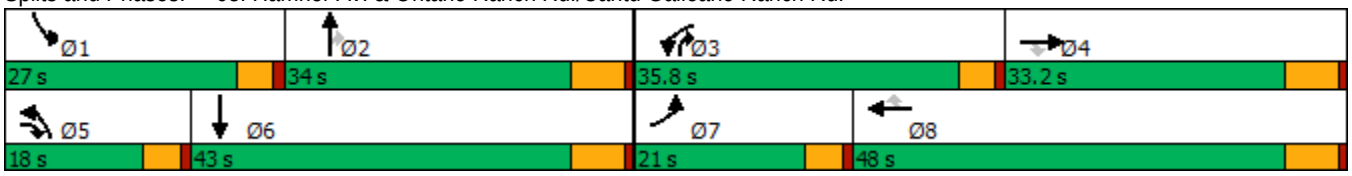
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	183	1569	537	940	1144	167	391	475	294	569	1050
Future Volume (vph)	183	1569	537	940	1144	167	391	475	294	569	1050
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4	5	3	8		5	2	3	1	6
Permitted Phases			4			8			2		
Detector Phase	7	4	5	3	8	8	5	2	3	1	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0
Minimum Split (s)	9.6	33.2	9.6	9.6	47.2	47.2	9.6	33.2	9.6	9.6	42.2
Total Split (s)	21.0	33.2	18.0	35.8	48.0	48.0	18.0	34.0	35.8	27.0	43.0
Total Split (%)	16.2%	25.5%	13.8%	27.5%	36.9%	36.9%	13.8%	26.2%	27.5%	20.8%	33.1%
Yellow Time (s)	3.6	5.2	3.6	3.6	5.2	5.2	3.6	5.2	3.6	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.6	-2.2	0.0	-0.6	-2.2	-2.2	-0.6	-2.2	-2.2	-0.6	-2.2
Total Lost Time (s)	4.0	4.0	4.6	4.0	4.0	4.0	4.0	4.0	2.4	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	Max	Max	Max	None	None	Max	None	None
Act Effct Green (s)	12.5	29.2	46.6	31.8	48.5	48.5	14.0	28.7	63.8	23.0	37.8
Actuated g/C Ratio	0.10	0.23	0.36	0.25	0.38	0.38	0.11	0.22	0.50	0.18	0.29
v/c Ratio	0.61	0.95	0.83	1.23	0.56	0.24	1.16	0.39	0.36	1.03	0.80
Control Delay	64.0	61.6	39.5	154.5	33.5	5.0	149.1	43.5	13.1	96.5	45.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.0	61.6	39.5	154.5	33.5	5.0	149.1	43.5	13.1	96.5	45.1
LOS	E	E	D	F	C	A	F	D	B	F	D
Approach Delay		56.6			81.9			71.4			61.0
Approach LOS		E			F			E			E

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 128.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.23	
Intersection Signal Delay: 67.5	Intersection LOS: E
Intersection Capacity Utilization 104.0%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 63: Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	1569	537	940	1144	167	391	475	294	569	1050	225
Future Volume (veh/h)	183	1569	537	940	1144	167	391	475	294	569	1050	225
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1900	1900	1700	1900	1900	1700	1900	1900	1700	1900	1900
Adj Flow Rate, veh/h	191	1634	283	979	1192	88	407	495	227	593	1094	36
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	258	1813	531	841	2387	674	370	1043	734	609	1407	46
Arrive On Green	0.12	0.36	0.33	0.39	0.63	0.63	0.17	0.27	0.27	0.28	0.38	0.38
Sat Flow, veh/h	3238	7600	1610	3238	5700	1610	3238	5700	1608	3238	5487	180
Grp Volume(v), veh/h	191	1634	283	979	1192	88	407	495	227	593	757	373
Grp Sat Flow(s),veh/h/ln	1619	1900	1610	1619	1900	1610	1619	1900	1608	1619	1900	1867
Q Serve(g_s), s	7.0	24.9	16.8	31.8	13.9	2.7	14.0	8.9	10.6	22.2	21.4	21.4
Cycle Q Clear(g_c), s	7.0	24.9	16.8	31.8	13.9	2.7	14.0	8.9	10.6	22.2	21.4	21.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	258	1813	531	841	2387	674	370	1043	734	609	975	479
V/C Ratio(X)	0.74	0.90	0.53	1.16	0.50	0.13	1.10	0.47	0.31	0.97	0.78	0.78
Avail Cap(c_a), veh/h	450	1813	532	841	2387	674	370	1397	833	609	1211	595
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	37.9	28.4	37.3	15.8	13.7	50.7	39.5	18.6	43.7	34.6	34.6
Incr Delay (d2), s/veh	1.6	6.7	1.0	86.6	0.7	0.4	76.0	0.3	0.2	29.9	2.6	5.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	10.4	5.6	20.5	4.8	1.0	9.0	3.8	3.4	10.2	8.6	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.3	44.6	29.4	123.9	16.5	14.1	126.7	39.8	18.9	73.5	37.2	39.8
LnGrp LOS	D	D	C	F	B	B	F	D	B	E	D	D
Approach Vol, veh/h		2108			2259			1129			1723	
Approach Delay, s/veh		43.4			63.0			66.9			50.2	
Approach LOS		D			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	26.4	35.8	33.2	18.0	35.4	13.7	55.3
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	22.4	27.8	31.2	27.0	13.4	36.8	16.4	41.8
Max Q Clear Time (g_c+I1), s	24.2	12.6	33.8	26.9	16.0	23.4	9.0	15.9
Green Ext Time (p_c), s	0.0	3.3	0.0	0.1	0.0	5.5	0.2	8.8

Intersection Summary	
HCM 6th Ctrl Delay	54.9
HCM 6th LOS	D